Appendix D – Environmental and Permitting Constraints Analysis

Padre Associates, Inc., May 25, 2007.

NIPOMO COMMUNITY SERVICES DISTRICT

SUPPLEMENTAL WATER ALTERNATIVES ENVIRONMENTAL AND PERMITTING CONSTRAINTS ANALYSIS

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1.0 INTRODUCTION

At the request of Boyle Engineering Corporation (Boyle), Padre Associates, Inc. (Padre) has prepared this environmental and permitting constraints analysis for supplemental water supply alternatives under consideration by the Nipomo Community Services District (NCSD). The following provides an overview of the primary environmental constraints and permitting issues associated with the six supplemental water supply alternatives under consideration by the NCSD.

1.1 SCOPE OF SERVICES

Padre's scope of services included the following tasks:

- Collection and analysis of existing environmental data for the water supply options;
- Preparation of a constraints analysis identifying potential environmental impacts associated with each of the water supply options;
- Identification of permitting requirements for each alternatives;
- Preparation of a permitting requirements matrix which presents a list of resource surveys and other pertinent environmental information that would be required by permitting and regulatory agencies.
- Preparation of this report presenting Padre's findings regarding the environmental and permitting constraints for the supplemental water alternatives under consideration.

This report is divided into five sections: Section 1 introduces the supplemental water supply alternatives. Section 2 provides a discussion of the federal, state, and local agencies that would be involved in permitting any of the alternatives and types of anticipated permits needed. Section 3 presents an overview of environmental resources that may be affected by the alternative projects and potential constraints to constructing the alternative projects. Section 4 provides a summary of salient points and Padre's recommendations. Section 5 presents the references cited in the report.

1.2 DESCRIPTION OF ALTERNATIVES

Presented below are descriptions of each of the water supply alternatives discussed in this report. Refer to Figure 1 for the relative locations of the proposed features of each alternative.

Alternative No. 1 (Sea Water/Cooling Water):

This alternative would include a water treatment facility located at either the ConocoPhillips (COP) Santa Maria Refinery using process cooling water as a water source, desalination of sea water at another location owned and operated by NCSD, or at the South San Luis Obispo County Sanitation District (SSLOCSD) Wastewater Treatment Facility located in Oceano.

Alternative No. 2 (Oso Flaco Lake Wells): This alternative would involve treating shallow groundwater or agricultural runoff at Oso Flaco Lake and delivering the treated water to the NCSD distribution system. This alternative may include extraction of either shallow ground

water, or surface runoff from agricultural lands into Oso Flaco Lake could be used as a water supply. The NCSD would build a new ocean outfall for the brine. In addition, enough water would be treated so that "cleaner" water would be released into the watershed to improve the health of the Oso Flaco wetlands.

Alternative No. 3 (Water Trading with CCWA Agencies): The State Water Project is a complex system of dams, reservoirs, power and pumping plants, canals, and aqueducts built to convey water from Lake Oroville to the Sacramento Delta, then on to Central and Southern California. The Coastal Branch of the State Water Project consists of (1) water conveyance facilities built by the California Department of Water Resources and (2) regional distribution and treatment facilities constructed by a cooperative group of local water agencies and cities operating as the Central Coast Water Authority (CCWA). Coastal Branch Phase II of the State Water Project was built between 1993 and 1997 to bring State water to San Luis Obispo and Santa Barbara Counties as per the Water Supply Contracts entered into by the State and both counties.

This alternative would consider acquiring unused capacity in the State Water Project (SWP) from one or more CCWA project participants, including acquiring exchange water from one or more CCWA project participants including Golden State Water Company. Water could be provided via a turnout along the State Water Pipeline within the NCSD boundary. This water would then either be delivered directly to the NCSD water system via pipeline from the Tefft Street turn-out, at a Bonita Well turnout, or indirectly via aquifer storage and recovery. As an option, NCSD could buy water directly from the CCWA or utilize aquifer storage and recovery for use of CCWA water for seasonal water needs.

Alternative No. 4 (Santa Maria Valley Groundwater): The City of Santa Maria may be willing to sell some of their entitlement to underflow water to NCSD. Facilities required to utilize this resource would include a wellfield, possibly treatment (based on regulatory review), pumping, storage, and a connection from the proposed wellfield to the District distribution system. It is assumed collector wells would be located along the Santa Maria River, near the end of Hutton Road or at the Bonita Well site.

Alternative No. 5 (Groundwater Recharge from Southland Wastewater Treatment Facility): This alternative would develop a groundwater recharge program within the Nipomo Mesa Management Area (NMMA) involving recharge of the groundwater basin with recycled water from Southland Wastewater Treatment Facility (WWTF). The NCSD owns and operates the Southland Wastewater Treatment Facility (WWTF), located just west of Highway 101 in the southern portion of Nipomo. It is anticipated recycled water could be pumped to the proposed recharge facilities during certain periods of the year. It is understood that the NCSD proposes to locate the proposed recharge facilities within the vicinity of the local groundwater pumping depression identified in previous studies of the Nipomo mesa groundwater basin. As an option under this alternative, NCSD could exchange water rights with Black Lake Golf Course, Black Lake development landscaping, and the Woodlands Golf Course and utilize treated wastewater for irrigation water at these areas.

The proposed groundwater recharge of recycled water within the study limits would not introduce a new supplemental water source from outside the NMMA, however, it would be

intended to provide a means to manage and help stabilize the groundwater basin within the subject area. As proposed, this alternative is intended to function as a groundwater management program and not a true supplemental water alternative.

Alternative No. 6 (Treated Water Exchange with Agricultural Water Users): The Southland WWTF provides secondary treatment for a mixture of domestic and industrial wastewater from part of the Nipomo community. This alternative would include a groundwater exchange program involving delivery of recycled water from Southland WWTF to potential agricultural users within the vicinity of the groundwater pumping depression previously identified in the Nipomo Mesa. As directed by NCSD staff, the boundary limits of this alternative include the depressed groundwater basin bounded by the Oceano and Santa Maria River Faults and within the NMMA.

The proposed groundwater exchange of recycled water for agricultural production will not introduce a new supplemental water source from outside the NMMA; however, it will be intended to provide a means to manage and redistribute the water balance within the subject area of the NMMA. As proposed, this scenario will provide for the transfer of a non-potable water source (reclaimed water from Southland WWTF) to potential agricultural users for either direct reuse in irrigation of crops or for percolation and subsequent recovery. In exchange, the groundwater previously pumped by the same agricultural users would either be: (1) directly pumped (at the subject wells) and transmitted for use by NCSD; or (2) indirectly extracted by NCSD at existing or new well locations.

2.0 PERMITTING REQUIREMENTS

This section lists and discusses the regulatory agencies that have jurisdiction and their permitting requirements within the area of the water supply alternatives under consideration. Proposed alternatives would require various federal, state, and local approvals, depending on the alternative. Refer to Table 1 for a general list of anticipated permitting agencies that would be involved with permitting one or more alternatives. Presented below is a description of each regulatory agency's anticipated role in review and permitting of the proposed alternatives.

2.1 FEDERAL AGENCIES

United States Army Corps of Engineers (USACE). The USACE would likely be the lead federal agency for the proposed project for placement of fill (including temporary trench spoils) within navigable waters of the U.S. under Section 404 of the Clean Water Act. The USACE also issues permits for construction of facilities within navigable waters in accordance with Section 10 of the Rivers and Harbors Act of 1899. During review of a permit application, the USACE will consult with the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) to identify potential effects to federally-listed endangered and threatened species as required under Section 7 of the Endangered Species Act (ESA). A Biological Assessment would be required as part of this consultation to provide sufficient information for the USACE, USFWS, and NOAA Fisheries to fully determine the project's potential to affect federally-listed threatened or endangered species. A review of potential impacts to cultural or historical resources is coordinated through consultation with the State Historic Preservation Office.

A Jurisdictional Waters of the U.S. survey (wetlands delineation) may also be required to identify wetlands that may be impacted by the project. The USACE's jurisdiction under Section 404 of the Clean Water extends to the ordinary high water mark of a river or stream.

USACE permitting would likely affect Alternatives 1, 2, 3, and 4, wherever new construction of conveyance pipelines or other facilities would impact federal waters. Without more detailed engineering specifications, it is unclear to what extent federal waters may be affected. Depending on the alternative selected for implementation, the proposed project may potentially fall within one or more Nationwide Permits (NWP) developed by the USACE for major routine types of construction projects within federal waters.

National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries). NOAA Fisheries is responsible for the protection of marine fish and mammal species by administering the regulations listed in the ESA, Marine Mammal Protection Act, and the Magnuson-Stevens Fishery Management and Conservation Act. Based on the preliminary information available, NOAA Fisheries may not be involved for onshore portion of the alternatives unless the selected project would result in disturbance within the Santa Maria River or Nipomo Creek. The USACE would consult with NOAA Fisheries for potential impacts to marine fisheries and marine mammals for an ocean outfall pipeline proposed under alternative Nos. 1 or 2.

United States Fish and Wildlife Service (USFWS). The USFWS will be requested to review the project by the USACE with respect to potential impacts to federally-listed threatened

or endangered species. Such consultation will be initiated during the 404 or 10 permit process. Impact of critical habitat may also result in seasonal restrictions and recommendations for habitat restoration. Potential endangered species impacts under alternatives 1 through 4 may include potential takes of listed species known to occur in creeks and wetlands along pipeline routes. Under the Alternative 2 scenario, impacts to water quality or quantity within Oso Flaco Lake or creek could affect habitat. The USFWS would be a key stakeholder in mitigation of potential affects of water withdrawals from the Oso Flaco lake watershed. Additionally, impacts from desalination proposals would be required to avoid takes of habitat or individual Western snowy plover or least tern from proposed seawater intake structures or brine outfall lines.

2.2 STATE AGENCIES

Central Coast Regional Water Quality Control Board (RWQCB). The RWQCB's primary responsibility is to protect the quality of the surface and groundwater within the Central Coast region for beneficial uses. The duty is carried out by formulating and adopting water quality plans for specific ground or surface water bodies, by prescribing and enforcing requirements on domestic and industrial waste discharges, and by requiring cleanup of water contamination and pollution.

Pursuant to Section 401 of the Clean Water Act, the USACE permit under Section 404 is not active until the State of California first issues a water quality certification to ensure that a project will comply with state water quality standards. The authority to issue water quality certifications in the project area is vested with the RWQCB. All of the considered alternatives would involve construction activities which would expose greater than one acre of disturbed construction area to stormwater runoff, and would require enrolling for coverage under the General Construction Stormwater Permit issued by the State Water Resources Control Board and enforced by the RWQCB.

Alternative No. 1 (Seawater/Cooling Water) would likely include requirement of a National Pollutant Discharge Elimination System/Waste Discharge Requirements (NPDES/WDR) permit from the RWQCB for brine discharge to the ocean associated with any of the three scenarios. Also, Alternative No. 2 (Oso Flaco Agricultural Return Water) may also involve the discharge of treated brine to the ocean, requiring a NPDES/WDR permit from the RWQCB. Brine discharges would be required to meet state and federal water quality standards for ocean disposal in accordance with the California Ocean Plan. Impacts to marine organisms from brine discharge would also be considered a potential significant impact under the CEQA.

California Coastal Commission. The California Coastal Commission regulates development activities along California's coastline and within the designated coastal zone under the authority of the California Coastal Act. Within the Nipomo area, the coastal zone boundary extends inland from the coastline to Highway 1. Projects approved by the County within the coastal zone can be appealed to the Coastal Commission for independent review for consistency with the Coastal Act. Additionally, projects with construction activities seaward of mean high tide line or affecting coastal streams or environmental sensitive habitat areas (ESHAs) fall within the Coastal Commission's original jurisdiction and would require a Coastal

Development Permit issued by the Coastal Commission. Alternatives 1 and 2 would be located within the coastal zone and would be subject to Coastal Commission review and approval.

California State Lands Commission (CSLC). The CSLC manages the state's submerged tidelands along the California coast from the mean high tide line and seaward for three nautical miles. Construction of facilities within CSLC jurisdiction would require a state lands lease. Approval of the state lands lease is made by the commission, composed of the lieutenant governor, the state controller, and the state finance director. Alternatives 1 and 2 would include ocean outfall structures placed in CSLC jurisdiction and would require a state lands lease.

California Department of Fish and Game (CDFG). CDFG administers Section 1600 of the California Fish and Game Code. The regulation requires a Lake or Streambed Alteration Agreement (SAA) between CDFG and the applicant before the initiation of any construction project that will: 1) divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake; 2) use materials from a streambed; or 3) result in the disposal or deposition of debris, waste, or other loose material where it can pass into any river, stream, or lake.

The CDFG also administers a number of laws and programs designed to protect fish and wildlife resources. Principle of these is the California Endangered Species Act of 1984 (CESA - Fish and Game Code Section 2050), which regulates the listing and take of state endangered (SE) and threatened species (ST). Under Section 2081 of CESA, CDFG may authorize the take of an Endangered and/or Threatened species, or candidate species through an Incidental Take Permit. However, plant or animal species that are "Fully Protected" under state law cannot be taken and no Incidental Take Permits may be issued. In the project area, the California least tern, the Southern sea otter, and the white-tailed kite are all fully-protected species.

Alternatives 1, 2, 3, and 4 would likely require SAA permits from the CDFG for pipeline creek crossings. The CDFG is a trustee agency under CEQA, and would likely provide comment on the CEQA document regarding potential project impacts to animal and plant species designated rare, threatened/endangered, or fully-protected status.

California Department of Health Services (DHS). DHS is responsible for overseeing the quality of water once it is in storage and distribution systems. DHS oversees the self-monitoring and reporting program implemented by all water purveyors, performs inspections, and assists with financing water system improvements for the purpose of providing safer and more reliable service. A Water Supply Permit Amendment would be required from DHS for any of the alternatives under consideration.

California Department of Transportation (Caltrans). Caltrans is responsible for managing California's highway and freeway systems and works collaboratively with local agencies to ensure proper management of local roadway systems. Caltrans reviews all requests from utility companies, developers, volunteers, nonprofit organizations, etc., desiring to conduct various activities within their right-of-way (ROW). Construction activity being proposed along a Caltrans ROW would require a Standard Encroachment Permit from Caltrans prior to project implementation. This could potentially occur with all alternatives except Alternatives 5 and 6.

2.3 LOCAL AGENCIES

County of San Luis Obispo. All of the alternatives would be within the jurisdiction of San Luis Obispo County land use regulations (SLO County). SLO County will require that a conditional (or minor) use permit, grading permit, and building permit be issued for the construction and operation of the project facilities (i.e. pipelines, wells, and storage) and will analyze the project to determine consistency with any applicable standards or policies. SLO County may impose specific requirements/conditions be incorporated into the permit governing the design or operation of the project and may not approve the permit unless it is found to be consistent with the County's General Plan and Land Use Ordinance. The County would be a permitting agency under CEQA and would rely on the NCSD's CEQA determination in issuance of permits. Encroachment along county roadways would require a standard encroachment permit issued by the County Public Works Department.

San Luis Obispo County Air Pollution Control District (APCD). The APCD would review proposed project for compliance with applicable Federal, State and local air quality control criteria. For any of the alternatives, NCSD likely would be required to submit a Construction Activity Management Plan to the APCD which will address construction-related dust control and equipment emissions. The CAMP will be required to address construction-related air impacts through various mitigation techniques. Detailed documentation of proposed project emissions (such as from organics removal during treatment) will be required to obtain Authority to Construct/Permit to Operate permits, if needed.

San Luis Obispo County Division of Environmental Health. The County Division of Environmental Health (SLODEH) is the local approval agency for issuance of water supply well permits or injection wells within a drinking water aquifer. Wellhead protection regulations require a minimum separation of water supply wells from wastewater disposal facilities. Under Title 22 regulations, the SLODEH may require any injected water to meet drinking water standards prior to injection.

2.4 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The NCSD would act as the lead agency for compliance with the California Environmental Quality Act (CEQA) for implementation of any of the water supply alternatives under consideration. The NCSD would prepare an Initial Study/ Mitigated Negative Declaration (IS/MND) or Environmental Impact Report (EIR) for the selected project, depending on the level of impacts anticipated. During the CEQA process, NCSD would consult with other state and local agencies regarding concerns and suggested mitigation for environmental impacts. Environmental issues that arise during CEQA processes will be addressed through project design modifications or mitigation measures included in the CEQA document. Following completion of the CEQA process, the NCSD would submit permit applications to regulatory agencies as appropriate and negotiate permit conditions as needed.

Table 1. Permit Requirements Summary

Agency	Permit/Approval	Regulated Activity	Authority
Federal Agencies			
U.S. Army Corps of Engineers (USACE)	Section 404 permit Section 10 permit	Discharge of dredged or fill material into water of the U.S. during construction. Jurisdictional water include territorial seas, tidelands, rivers, streams, and wetlands	Section 404 Clean Water Act (33 USC 1344). Rivers and Harbors Act
U.S. Fish and Wildlife Service (USFWS)	Endangered Species Act, Section 7 consultation	Impacts to federally-listed species and species proposed for listing.	16 USCA 1513 50 CFR Section 17
NOAA Fisheries	ESA, Section 7 consultation	Impacts to federally-listed species and species proposed for listing.	16 USCA 1513 50 CFR Section 17
State of California Agencies			
Regional Water Quality Control Board	Section 401 Water Quality Certification SWPPP Permit NPDES/WDRs	Discharges that may affect surface and ground water quality.	Clean Water Act Porter-Cologne State Water Quality Act (1969)
California Coastal Commission	Appeal Jurisdiction within Coastal Zone	Projects within Coastal Zone approved by County can be appealed to Coastal Commission for review and approval.	California Coastal Act
California Department of Fish and Game (CDFG)	1602 Permit Section 2081 Management Agreement	Crossing of streams and rivers that will result in disturbance to the streambed. Potential adverse effects to State-listed species	Sections 1601-1607 of California Fish and Game Code. Section 2081 of the Fish and Game Code
California State Lands Commission	State Lands Lease	Project activities offshore of mean high tide line.	California Public Resources Code, Division 6.
California Department of Health Services	Water Supply Permit Amendment	New water source	Ca Health and Safety Code, Div. 104, Part 12, Chapter 4 Article 7, Section 116525
California Department of Transportation	Standard Encroachment Permit	Construction activity within Caltrans right-of-way.	California Streets and Highway Code
Local Agencies			
County of San Luis Obispo Planning and Building Department	Development, Grading, Building Permit	Land use, grading, drainage, encroachment permit	San Luis Obispo County Code
San Luis Obispo APCD	Authority to Construct	Emissions associated with construction may require permits.	Clean Air Act
County of San Luis Obispo Division of Environmental Health	Well Construction Permit	Construction new water supply wells	California Water Code

3.0 ENVIRONMENTAL CONSTRAINTS

The following section describes the potential environmental constraints associated with the six water supply alternatives under consideration by the NCSD. Based on Padre's initial review of the project alternatives and review of permitting requirements, the probable issues that will need to be addressed during the permitting process for this project are biological resources including wetlands, cultural resources, geology and soils, and hydrology/ water quality. The following provides an overview of the environmental issue areas with emphasis on the sensitive biological resources that are expected to occur within the project area due to the presence of suitable habitat. The resources and required mitigation, if any, will be the focus of the respective regulatory agency review during the permit acquisition phase of the project.

3.1 BIOLOGICAL RESOURCES

Padre conducted a desk-top review to determine potential biological resource constraints within the vicinity of the identified water supply alternative location. This review included a query of the California Natural Diversity Database (CNDDB [CNDDB, 2006]) for the purposes of identifying documented occurrences of special-status plant and animal species within the vicinity of the alternative projects. Figures 2 through 5 illustrate the known occurrences of special-status species in relationship to the water supply alternatives under consideration. The figures illustrate a representative sample or ranges for known species occurrences.

3.1.1 Federally-Listed Animal Species

California red-legged frog (*Rana aurora draytonii*). The California red-legged frog (CRLF) is a federally-listed threatened species and a California species of special concern. The CRLF occurs in different habitats depending on their life stage and season. CRLF breed from November through March. All stages are most likely to be encountered in and around breeding sites, which include marshes, springs, permanent and semi-permanent natural ponds, ponded and backwater portions of streams, as well as artificial impoundments such as stock ponds, irrigation ponds, and siltation ponds. This species prefers dense emergent and bank vegetation including willow (*Salix* sp.), cattail (*Typha* sp.), and bulrush (*Scirpus* sp.). The absence of these plant species within the site does not exclude the possibility that the site provides CRLF habitat, but the presence of one or all of these plants is an important indicator that the site may provide foraging or breeding habitat (USFWS, 2005).

CRLF is a concern for alternatives 1, 2, and 4 due to the known presence or suitable habitat in creeks and wetlands within the project Nipomo area, especially around Oso Flaco Lake and Oso Flaco Creek. As such, formal Section 7 consultation pursuant to Section 404 of the Clean Water Act would be useful between the USACE and the USFWS to further assess potential CRLF impacts due to project implementation and the need for project-specific avoidance and minimization measures. This would include preparation of a Biological Opinion (BO) by the USFWS which will ultimately result in approval for authorized individuals to survey for and, as necessary, relocate CRLF from the project area during project implementation (i.e., "Take Statement").

Steelhead – Southern California ESU (*Oncorhynchus mykiss irideus*). Steelhead have been divided into 15 evolutionary significant units (ESU) based on similarity in life history, location, and genetic markers. The Southern California ESU was listed as federally endangered by the NOAA Fisheries in 1997. Southern California steelhead is also a California species of special concern. Steelhead are an anadromous form of rainbow trout that reproduce in freshwater, but spend much of their life cycle in the ocean, where increased prey density provides a greater growth rate and size. The Southern California ESU includes all naturally spawned populations of steelhead (and their progeny) in streams from the Santa Maria River (inclusive) to the southern extent of the species' range (U.S. – Mexico border). Historical information suggests that the Santa Maria River supported a steelhead run in the early 1900s. Currently, there is no evidence suggesting presence of this species in the Santa Maria River for several decades. However, it is assumed this species has the potential to occur within the Santa Maria River during periods of adequate flow (i.e., January through April).

Steelhead may not be a significant species of concern for the alternatives under consideration unless there would be an affect to the Santa Maria River. Existing fish migration barriers that exist at Nipomo Creek currently impede migration of steelhead upstream of the Hutton Road area. As part of the USACE permit process, Section 7 consultation per the ESA will be conducted with NOAA Fisheries to further assess potential steelhead impacts due to project implementation and the need for project-specific avoidance and minimization measures.

Western Snowy Plover (*Charadrius alexandrinus*) . The coastal population of nesting western snowy plover is federally-listed threatened species and a California species of special concern. The western snowy plover frequents sandy beaches and estuarine shores within the project site; requiring sandy, gravely or friable soil substrates for nesting. Western snowy plover breeding and nesting is currently being monitored by State Parks as part of their ongoing efforts to document snowy plover activity within the area. Plovers are known to occur in suitable habitat areas from Guadalupe Dunes to Pismo Beach. This species would be of concern for alternative Nos. 1 and 2 associated with any construction activities within Nipomo-Guadalupe dune complex.

California Least Tern (*Sterna antillarum brownii*). The California least tern is a migratory bird that is protected under both the provisions of the federal and California endangered species acts as endangered. Many areas of coastal habitat for the California Least Tern have been significantly modified by human activities, such as marinas and industrial development, and housing. Other threats to tern populations include increased predation (a result of anthropogenic factors and habitat modification), potential for washouts by significantly high tides, and recreation. Least tern spring migrants arrive and move through the area around the latter part of April. Egg-laying usually occurs at most of the sites by late May, with hatching chicks present in mid June. Least tern are known to occur in suitable habitat areas from Guadalupe Dunes to Pismo Beach.

3.1.2 Special-Status Plants

Gambel's water cress (*Rorippa gambellii*). Gambel's watercress is a federally and state-listed endangered species in the mustard family (Brassicaceae). Gambel's water cress occurs in freshwater or brackish marshes and swamps between 5 and 330 meters. This

species typically blooms from April to September. Gambel's water cress is known to occur in only four remaining locations in California.

La Graciosa thistle (*Cirsium loncholepis).* La Graciosa thistle is a federally endangered, state threatened species, and a CNPS List 1B species. This species is a perennial herb in the sunflower family (Asteraceae) that typically blooms May through August. La Graciosa thistle occurs in coastal dunes, brackish marshes, or riparian scrub often in association with lake edges, riverbanks, and other wetlands.

Nipomo Mesa lupine (*Lupinus nipomensis*). Nipomo Mesa lupine is an annual herb in the pea family (Fabaceae) that occurs in coastal dune habitat between 10 and 50 meters. This species typically blooms from December through May. Nipomo Mesa lupine is a federally endangered, state threatened species, and a CNPS List 1B species. This species is known from only one extended occurrence of five populations on Nipomo Mesa in San Luis Obispo County.

San Luis monardella (*Monardella frutescens*). San Luis monardella is a rhizomatous herb in the mint family (Lamiaceae). San Luis monardella is a CNPS List 1B species that is known to occur in San Luis Obispo and Santa Barbara Counties. This species inhabits coastal dunes and coastal scrub habitat associated with sandy soils between 10 and 200 meters. San Luis monardella generally blooms from May to September.

Blochman's leafy daisy (*Erigeron blochmaniae*). Blochman's leafy daisy is a rhizomatous herb in the sunflower family (Asteraceae) known to occur in San Luis Obispo and Santa Barbara Counties. Blochman's leafy daisy is a CNPS List 1B species. This species typically blooms from June through August and occurs in coastal dune and coastal scrub habitat between 3 and 45 meters.

Dune larkspur (*Delphinium parryi* ssp. *blochmaniae*). Dune larkspur is a CNPS List 1B species known to occur in San Luis Obispo, Santa Barbara, and Ventura Counties. This species is a perennial herb in the buttercup family (Ranunculaceae) that inhabits coastal dune and chaparral habitat between 0 to 200 meters. Dune larkspur generally blooms from April through May.

3.1.3 Other Potentially Occurring Special-Status Species

Although species described in this section are not indicated on the occurrences maps included (Figures 2 – 5), they have been included based on their occurrences within the Nipomo area.

Coast horned lizard (*Phrynosoma coronatum frontale*). The coast horned lizard is a federal species of concern and a California species of special concern that occurs in a variety of open habitats that provide sites for basking, sandy or sandy-loam substrates for night-time burial, and a suitable prey base (the species feeds almost exclusively on native ants). It was historically distributed throughout the Central and Coast Range of California, but now occurs at scattered, disjunct locations within this former range. The coast horned lizard produces clutches of 6 to 21 eggs from May to June and hatching typically occurs in August through September. A single coast horned lizard was observed within the non-native grassland/coastal sage scrub habitat area along the south side of the Santa Maria River in 2005 (Douglas Wood &

Associates, Inc., 2006). The coast horned lizard has the potential to occur throughout the Nipomo area. As such, mitigation to avoid and/or minimize impacts to coast horned lizard during project implementation would be determined during consultation with CDFG.

Southwestern pond turtle (*Clemmys marmorata pallida*). The southwestern pond turtle is a federal species of special concern and a California species of special concern. It is an aquatic turtle inhabiting streams, marshes, ponds, and irrigation ditches within woodland, grassland, and open forest communities. However, it requires upland sites for nesting and over-wintering. Stream habitat must contain large, deep pool areas (six feet) with moderate-to-good plant and debris cover, and rock and cobble substrates for escape retreats. Southwestern pond turtle was observed in Nipomo Creek during a reconnaissance-level survey conducted by Padre in July 2004. Therefore, it has been determined that this species has the potential to occur within Nipomo Creek area during implementation, including portions of the Santa Maria River. As such, mitigation to avoid and/or minimize impacts to southwestern pond turtle during project implementation would be determined during consultation with USFWS and CDFG.

Two-striped garter snake (*Thamnophis hammondi*). The two-striped garter snake is a California species of special concern which is highly aquatic and is typically found near permanent fresh water streams associated with willow habitat. This species occurs historically and currently throughout southern California streams, including the central coast. Small mammal burrows are used as over-wintering sites for the snake (Jennings, 1994). This species has the potential to occur within Nipomo Creek. Mitigation to avoid and/or minimize impacts to two-striped garter snake during project implementation would be determined during consultation with CDFG.

Blochman's ragwort *(Senecio blochmaniae).* Blochman's ragwort is a CNPS list 4 species. This species typically occurs in coastal dunes and coastal floodplains. Blochman's ragwort is a subshrub, perennial herb that blooms from May to October. A sparsely scattered population of this species (<50) was identified by Padre in 2004 within the northern sand banks of the Santa Maria River channel, directly adjacent to the existing concrete processing facility located directly west of Highway 101. Suitable habitat for this species exists along the Santa Maria River corridor. Measures to avoid and/or mitigate impacts to Blochman's ragwort would be determined during consultation with CDFG.

Nuttall's milk-vetch (*Astragalus nuttallii* var. *nuttallii*). Nuttall's milk vetch is a CNPS list 4 species, which was identified in the project area during the 2005 biological survey of the project area (Douglas Wood & Associates, Inc., 2006). Both locations were along the southern levee of the Santa Maria River within the disturbed grassland and coastal sage scrub habitat areas. Suitable habitat for this species exists along the Santa Maria River corridor. Measures to avoid and/or mitigate impacts to Nuttall's milk-vetch would be determined during consultation with CDFG.

Monarch Butterfly *(Danaus plexippus).* The Monarch butterfly does not have federal or state listing status, but is included as a sensitive species by the CNDDB and is a species of local concern in San Luis Obispo County. Winter roost sites extend from Northern Mendocino to Baja California, Mexico. The listing by CDFG is based on limited wintering roost sites within the Central California coast portion of the butterfly's West Coast wintering range. The Monarch butterfly can be found in a variety of habitats, especially those supporting milkweed plants

(Asclepias sp.), the primary food source of the caterpillars. These butterflies frequent grasslands, prairies, meadows, and wetlands, but avoid dense forests. In the winter, Monarchs cluster together in large numbers in eucalyptus, cypress, and Monterey pine trees, often on the edge of open areas. Measures to avoid and/or minimize impacts to Monarch butterflies and/or pre-activity surveys would be determined during the CEQA process and consultation with CDFG.

Raptor and Migratory Bird Species. Raptor and migratory bird species protected under the Migratory Bird Treaty Act (16 USC 703-712); CDFG Code Section 3503, and CDFG Code Section 3503.5 may nest within the area during project implementation. These include ground nesters (western meadowlark and lark sparrow), small tree/shrub nesters (bushtit, American robin, northern mockingbird, loggerhead shrike, house finch, and lesser goldfinch) and several raptors which require large trees, such as eucalyptus for nesting purposes (turkey vulture, red-tailed hawk, red-shouldered hawk, great-horned owl, barn owl, white-tailed kite and Cooper's hawk). Short-term impacts to these species may occur from vegetation clearing, debris removal, trenching and HDD operations, dust deposition and noise disturbance associated with the construction activities. Vegetation removal and subsequent grading activities may destroy nests, nestlings, or hatchlings of these protected bird species, and would be considered a significant impact. As such, measures, such as seasonal constraints and/or pre-activity nesting bird surveys to avoid and/or minimize impacts to raptors and migratory birds, would be determined during the CEQA process and consultation with CDFG.

3.2 WETLANDS/WATERS OF THE U.S.

The USACE is responsible for the issuance of permits for the placement of dredged or fill material into waters of the United States (waters) pursuant to Section 404 of the Clean Water Act (33 USC 1344). As defined by the USACE at 33 CFR 328.3(a)(3), waters are those that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; tributaries and impoundments to such waters; all interstate waters including interstate wetlands; and territorial seas. (Note: Based on the recent U.S. Supreme Court decision in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* [2001], and guidance from the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency [2001], the Federal government no longer asserts jurisdiction over isolated waters and wetlands under Section 404 of the Clean Water Act based on the "migratory bird rule." Further guidance on the issue of isolated wetlands and waters is expected (U.S. Army Corps of Engineers, 2001).

Wetlands are a special category of waters, and are defined at 33 CFR 328.3(b) as: "...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

In non-tidal waters, the lateral extent of USACE jurisdiction is determined by the ordinary high water mark (OHWM), which is defined as the: "*...line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial*

vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." (33 CFR 328[e]).

In addition, a wetland definition has been adopted by the USFWS to include both vegetated and non-vegetated wetlands, recognizing that some types of wetlands may lack vegetation (e.g., mudflats, sandbar, rocky shores, and sand flats), but still provide functional habitat for fish and wildlife species (Cowardin, et al., 1979). These wetlands are defined as "*...lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.*" Some of the USFWS-defined wetlands are not regulated by the Federal government.

The upper (landward) limit of USFWS-defined wetlands are the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover; the boundary between soil that is predominantly hydric and soil that is predominantly non-hydric; or in the case of wetlands without vegetation or soil, the boundary between land that is flooded or saturated at some time each year and land that is not (Cowardin et al., 1979). The lower limit in inland areas is established at a depth of 6.6 feet below the water surface; unless emergent plants, shrubs, or trees grow beyond this depth, at which the deepwater edge of such vegetation is the boundary (Cowardin et al., 1979).

Based on the definitions above, both waters of the U.S. and USACE-defined wetlands are present within the Santa Maria River floodplain, Nipomo Creek, and the Oso Flaco Lake and Oso Flaco Creek areas. Oso Flaco Lake occupies a surface area of 82 acres is classified by the USFWS as a palustrine emergent wetland. Additionally, several of the nearby drainages and associated storage ponds that act as tributaries to Nipomo Creek and the Santa Maria River, such as those occurring along the Nipomo Mesa have the potential to fall under the USACE jurisdiction. Wetlands and creeks impacted by pipeline installation activitieswould need to be restored or replaced. In the event a selected alternative would affect designated wetlands, an agency-approved Wetlands Mitigation and Monitoring Plan would need to be implemented as part of the project.

3.3 CULTURAL RESOURCES

Alternatives involving construction activities and placement of project-related infrastructure (i.e. pipelines, tanks, treatment plants) would require evaluation and analysis of the potential for effect on culturally-sensitive resources. Alternatives would require delineation of pipeline routes and placement of project facilities prior to implementing cultural records searches and/or surveys. The Dana Adobe, located on South Oakglen Avenue, is a designated California Historical Landmark. Sensitive cultural sites are known to exist near the Dana Adobe in eastern Nipomo.

3.4 GEOLOGY AND SOILS

The information discussed in this section was determined through a review of the San Luis Obispo County Safety Element (1998). Depending on jurisdiction, project alternatives would be reviewed for geologic (e.g. active faults, liquefaction) and other safety issues. Within the general project area (i.e. south-western San Luis Obispo County and the Santa Maria area), there is a potentially active fault (Santa Maria River Fault) and areas of moderate to high liquefaction, particularly in the coastal dune areas around Oso Flaco Lake. Areas located within 100-year flood plain zones include the Santa Maria River and the Oso Flaco Lake area. This area is also considered a "dam inundation zone". Additionally, areas east of the Guadalupe-Nipomo Dunes Complex (e.g. Conoco-Phillips Refinery, Nipomo) are subject to substantial wildland fire risk. Although no specific permits may be required in relation to these hazards, the projects will be reviewed for land-use policy consistency during the CEQA and County permitting process.

3.5 HYDROLOGY AND WATER QUALITY

Water Quality. It is Padre's understanding that Boyle will provide the NCSD with an assessment of water quality issues associated with the development of the water supply alternatives and provision of potable water in accordance with state and federal water quality standards within a separate document. The following discussion focuses on water quality and hydrologic impacts that may arise from the construction of each of the water supply alternatives. Water quality impacts would be connected to construction site erosion/spills/etc, frac-outs (as discussed), and discharges from each alternative. Hydrologic impacts would be due to extractions from certain sources and discharges to certain locations.

With increased development and storm water runoff, a wide variety of nutrients and constituents of concern have been introduced into state waters. Nutrient wastes in the form of sewage, agricultural fertilizers, and manure lead to reduced dissolved oxygen in surface waters and limit the capacity of water to support aquatic organisms. Constituents of concern, such as industrial wastes, insecticides, and herbicides, can poison wildlife and become concentrated in the food chain.

Oso Flaco Lake and Oso Flaco Creek has been identified by the RWQCB as an "impaired water body" under Section 303d of the Clean Water Act because of elevated levels of nitrates associated with irrigated agriculture within the watershed. Oso Flaco Creek is also listed as an impaired water body for elevated fecal coliform bacteria concentrations. Restoration of water quality at Oso Flaco Lake by the RWQCB has focused primarily on agricultural return water quality and quantity (RWQCB, 2006). Additionally, Nipomo Creek has been designated an "impaired water body" under Section 303d because of elevated fecal coliform bacteria concentrations.

HDD Drilling Techniques. Horizontal directional drilling (HDD) techniques involve the installation of pipelines without open-trenching. HDD installation methods are environmentally-preferable to open-trenching in most cases because it can be utilized to avoid impacts to sensitive resources such as creeks and wetlands. "Frac-outs", or the loss of drilling fluids to the surrounding environment, are a risk in utilizing HDD drilling techniques. The potential for "frac outs" should be minimized by incorporating engineering and geologic information and

developing a drilling and drilling fluid monitoring program that is appropriate for the existing subsurface geological conditions. The HDD drilling plans should specify drilling parameters such as drilling equipment capacity, directional bore depths, entry, and exit angles. Drilling fluid properties including fluid weight, viscosity, water loss, and gel strength should be designed and monitored by a qualified engineer. Only bentonite-based drilling mud is allowed for use within state waters in California. Compounds that may be toxic to fish are prohibited from use as additives to drilling mud mixtures.

4.0 SUMMARY AND RECOMMENDATIONS

The following section provides a summary of the permitting issues and requirements for the water supply alternatives under consideration by the NCSD. A summary of the permitting requirements is presented in Table 2, followed by general recommendations on a permitting strategy.

4.1 SUMMARY OF ENVIRONMENTAL/PERMITTING ISSUES BY ALTERNATIVE

The following provides an overview of the expected agency jurisdictional issues and associated permits that may be required for the various water supply alternatives:

Alternative No. 1 (Seawater/Cooling Water): Although specific locations are not identified under this alternative, proposals for desalination facilities along California's coast have raised unique issues that would need to be addressed through project design and agency negotiations. The California Coastal Commission has raised concerns about brine disposal impacts to marine resources. Open seawater intakes structures have been effectively prohibited by the Coastal Commission due to entrainment and take of marine organisms. One method of mitigating concerns associated with desal intake system construction within the beach areas would be to utilize existing intake structures or outfall pipelines. As a result of concerns about open ocean intake pipelines, most desalination facilities currently under consideration along the Central and South Coasts of California include beach water intake systems that utilize wells or intake galleries that would draw brackish water from permeable zones within the coastline and beach areas.

The design of a beach well intake system can result in a separate set of environmental impacts. The Nipomo-Guadalupe Dune complex is a unique and sensitive area that has been heavily protected by land acquisition, land use planning, and regulatory activities. Numerous threatened or endangered species, such as the Western snowy plover and the California least tern, are present within the dune complex and along the beach areas of the Nipomo-Guadalupe dunes.

The area around the Conoco-Phillips refinery is known to contain special-status plant species (e.g. Nipomo Mesa Lupine, La Graciosa Thistle, Dune Larkspur), as well as sensitive habitat (Central Coast Dune Scrub).

Selection of one of the seawater or cooling water alternatives will require review and approval of a Coastal Development Permit by the County of San Luis Obispo which would be appealable to the Coastal Commission. The State Lands Commission would require a state lands lease for placement of an ocean outfall line in state waters. The ocean outfall line would also require a Section 404/10 permit from USACE for construction in navigable waters. Pipeline

facilities associated with any of the options would likely require permits from the USACE, RWQCB, and CDFG for pipeline creek crossings. A Caltrans encroachment permit would be required for pipeline crossings at Highway One. A RWQCB NPDES/WDR permit would be required for the disposal of brine into the Pacific Ocean or other form of injection or disposal options that may affect surface or ground water quality.

Alternative No. 2 (Oso Flaco Lake Watershed): This alternative would involve treating shallow groundwater or agricultural runoff within the Oso Flaco Lake watershed and delivering the treated water to the NCSD distribution system. This alternative may include returning a portion of the treated flow to the watershed for environmental uses.

The Oso Flaco Creek Watershed covers approximately 10,370 acres. The western terminus for the watershed is Oso Flaco Lake, owned by California State Parks. Oso Flaco Creek flows out of the lake and meanders ¼-mile to the Pacific Ocean through active sand dunes. Oso Flaco Lake is the largest of four small freshwater lakes located in the Guadalupe Nipomo Dunes Complex. The freshwater lake occupies a surface area of 82 acres and is classified by the U.S. Fish and Wildlife Service as palustrine emergent wetlands, a valuable habitat for wildlife, and subsequently a resource for many recreational and educational activities.

Oso Flaco Lake and Little Oso Flaco Lake are usually at maximum pool due to the steady flow of agricultural runoff. It has been estimated that 6,371 acres in the watershed are irrigated, primarily with pumped groundwater, and that 17,564 acre-feet per year (AFY) of water are applied, resulting in 968 AFY of agricultural runoff. Efforts are currently underway to improve irrigation efficiency to both reduce the quantity of water applied and the volume of agricultural runoff. It has been estimated that if 100% of the irrigated area were to adopt sprinkler/drip systems, the annual runoff volume would decrease to 440 AFY (CRCD, 2004).

The critical environmental issue associated with this alternative is ensuring that significant negative impacts would not occur to Oso Flaco Lake, Little Oso Flaco Lake or associated creeks. Impacts would be considered significant if less environmental flows to the creeks and lakes would result in reduced habitat for endangered species. The County of San Luis Obispo has designated Oso Flaco Lake as a Sensitive Resource Area in its South County Coastal Area Plan (1988). Activities within Sensitive Resource Areas are required to undergo extra scrutiny to ensure that damage to the resource will not result from proposed projects. Hydrologic modeling of the watershed would be required to show that water levels within the lakes would not be significantly affected through water withdrawal upstream. A project that improves water quality in Oso Flaco Lake could be leveraged as a desirable outcome for stakeholders in the area, including State Parks, RWQCB, USFWS, CDFG, the Dunes Center, and agricultural water users.

This alternative project would require review and approval of Coastal Development Permits by the County of San Luis Obispo and the Coastal Commission for the outfall line extending into the ocean. The State Lands Commission would require a state lands lease for placement of an ocean outfall line. The ocean outfall line would also require a Section 404/10 permit from USACE for construction in navigable waters. Pipeline facilities associated with any of the options would likely require permits from the USACE, RWQCB, and CDFG for pipeline creek crossings. A Caltrans encroachment permit would be required for pipeline crossings at Highway One. A RWQCB NPDES/WDR permit would be required for the disposal of brine into

the Pacific Ocean or other form of injection or disposal options that may affect surface or ground water quality.

Formal Section 7 consultation would be required with the USFWS due to the presence of CRLF within the Oso Flaco Creek area. NOAA Fisheries would be consulted by the USACE for potential impacts associated with an ocean outfall to marine fisheries and marine mammals. The level of disturbance during construction of pipelines to environmentally sensitive areas could be minimized through the use of HDD construction techniques.

Alternative No. 3 (Water Trading with CCWA Agencies): This alternative would consider acquisition of unused capacity in the State Water Pipeline (SWP) from one or more CCWA project participants, including acquiring exchange water from one or more CCWA project participants. Water could be provided via a turnout along the State Water Pipeline within the NCSD boundary. This water would then either be delivered directly to the NCSD water system, or indirectly via aquifer storage and recovery.

As new construction activities would be minimal with this alternative, agency jurisdictional issues would be less than other alternatives. The use of a CCWA interconnection at the Tefft Street site may require a pipeline crossing at Nipomo Creek. If it can be determined that creek and wetland crossings can be avoided, USACE, RWQCB, and CDFG permits would not be required. Furthermore, impacts to special-status wildlife and plants could be minimized if construction is limited to disturbed and developed areas. NOAA Fisheries most likely will not be a key permitting agency under this alternative provided that surface water flows within the Santa Maria River are not affected. Existing fish passage barriers in Nipomo Creek have almost eliminated the likelihood of steelhead in Nipomo Creek. A Caltrans encroachment permit would be required for a pipeline crossing at Highway 101, if required.

Recent litigation regarding the State Water Project's Harvey O. Banks intake facility have included the judge's threat to require the California Department of Water Resources (DWR) to stop pumping water from the delta. The main issue centers around fish takes that are have not been permitted by the USFWS and NOAA Fisheries under the Endangered Species Act. It is Padre's understanding that CDFG and DWR are in negotiations with NOAA Fisheries and the USFWS which may result in an agreement being enacted to allow continued water withdrawals from the delta area with allowed incidental take of fish species.

Alternative No. 4 (Santa Maria Groundwater): This alternative would include the development of wells at either the Hutton Road area or at the Bonita well site to extract groundwater, which then would be conveyed to NCSD through a pipeline. Selection of one of the seawater or cooling water alternatives will require review and approval of a discretionary development permit by the County of San Luis Obispo. Pipeline facilities associated with any of the options would likely require permits from the USACE, RWQCB, and CDFG for any pipeline creek crossings. A Caltrans encroachment permit would be required for pipeline crossings at Highway 101, if crossed. NOAA Fisheries most likely will not be a key permitting agency under this alternative provided that surface water flows within the Santa Maria River are not affected. Existing fish passage barriers in Nipomo Creek have almost eliminated the likelihood of steelhead in Nipomo Creek.

Alternative No. 5 (Groundwater Recharge from Wastewater Treatment Facility): This alternative would include the construction groundwater recharge facilities within a specified area where groundwater depressions are known. This alternative would require a discretionary permit from the County of San Luis Obispo for the construction of water transmission and disposal facilities. It is anticipated that pipeline alignments associated with this alternative could be designed to avoid wetlands and sensitive habitat areas through environmental planning and site design. It is also anticipated that wetland and creek pipeline crossings would not be required for this alternative. A WDR permit modification from the RWQCB would be required for the disposal of treated wastewater at the proposed recharge facilities. No Caltrans encroachment permit would be required if conveyance facilities did not cross Highways 1 or 101.

Alternative No. 6 (Treated Water Exchange with Agricultural Water users). This alternative would include an exchange of treated wastewater for agricultural water within a specified area where groundwater depressions are known. This alternative would require a discretionary development permit from the County of San Luis Obispo for the construction of water transmission and storage facilities. It is anticipated that pipeline alignments associated with this alternative could be designed to avoid wetlands and sensitive habitat areas through environmental planning and site design. It is also anticipated that wetland and creek pipeline crossings would not be required for this alternative. A WDR permit modification from the RWQCB would be required for the beneficial re-use of treated wastewater at the proposed agricultural lands. No Caltrans encroachment permit would be required if conveyance facilities did not cross Highways 1 or 101.

4.2 GENERAL RECOMMENDATIONS

Biological Resources. The preliminary review of the project alternatives identified potential constraints related to habitat for protected species within the Oso Flaco Lake, Nipomo-Guadalupe Dunes and other wetland/creek areas in the project area. The following are recommendations to minimize impacts to biological resources:

- Complete required CRLF protocol-level surveys during the CRLF breeding season (January 1 through June 30) to identify all known populations of CRLF within the limits of the project boundary and nearby areas. This would be accomplished once project alternative details and engineering specifications can clearly define areas of potential impact. As an example, potential impacts to the CRLF and associated habitat areas can be avoided and/or minimized through additional pipeline-route deviations and/or adjustments.

- Where necessary, the use of HDD construction methods across creeks and streams would minimize impacts to wetland/ jurisdictional waters and special-status species with the potential to occur in the area.

- Rare plant species (e.g. Nipomo Mesa Lupine, La Graciosa Thistle, Dune Larkspur) are located within the vicinity of Oso Flaco Lake and the Conoco-Phillips Refinery. Coastal Dune Scrub, considered a sensitive habitat, is common in this area. Botanical surveys may be needed to determine the likelihood of impacts within any final selected pipeline alignments, or other treatment plant facilities. Impacts to rare

plants may be avoided through route-deviations or other strategic placement as feasible, and/or through seed collection and restoration, as necessary.

Wetlands/Waters of the U.S. A high-level preliminary review of the project alternatives and site survey(s) conducted to date identified potential constraints related to regulated waters of the U.S. and wetlands. Following are recommendations to minimize impacts to wetlands and Waters of the U.S.:

- Where necessary, the use of HDD construction methods across creeks and streams would minimize impacts to wetland/ jurisdictional waters and special-status species with the potential to occur in the area.
- Whenever possible, limit construction activities to within previously disturbed or developed areas to avoid impacting sensitive habitat areas. A wetland delineation may be required to determine the likelihood of impacts to identified wetlands within final selected pipeline alignments and other impacted areas.
- "Frac-outs", or the loss of drilling fluids to the surrounding environment, and potential release of drilling mud into sensitive aquatic areas, are considered serious offenses by regulatory agencies. The potential for "frac-outs" should be minimized by incorporation of engineering and geologic information and development of a drilling and drilling fluid monitoring program that considers the existing geological conditions.
- Creek crossings and/or HDD operations may be limited by CDFG, RWQCB, and NOAA Fisheries to April 15 through October 15 to avoid impacts to water quality and associated sensitive species.

Cultural Resources. Alternatives involving construction activities and placement of project-related infrastructure (i.e. pipelines, tanks, treatment plants) would require evaluation and analysis of the potential for effect on culturally-sensitive resources. Alternatives would require delineation of pipeline routes and placement of project facilities prior to implementing cultural records searches and visual survey.

Table 2. Matrix of Required Permits by Alternative

Alternatives/Options	USACE – 404/10 Permit	USFWS – Section 7	NOAA Fisheries – Section 7	California Coastal Commission Appeal Jurisdiction	California State Lands Commission	CDFG- SAA	Regional Water Quality Control Board (RWQCB) – 401 Cert.	RWQCB – NPDES/WDR	RWQCB - SWPPP	DHS – Water Supply Permit	Caltrans – Encroachment Permit	County of San Luis Obispo Permits	SLO APCD – Authority to Construct	SLO Environmental Health	Relative Difficulty for Permitting (Low to High)	Biological-related mitigation Required (H=High, L=Low)	Permitting Time Requirement
Alternative 1 – Seawater/Cooling Water Treatment	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	H	H	24-36 mos.
Alternative 2 – Oso Flaco Agricultural Water	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	H	H	24-36 MOS.
Alternative 3 – Water trading with CCWA agencies	☒	☒	☒	☐	☐	☒	☒	☐	☒	☒	☒	☒	☐	☐	L	L	12-18 MOS.
Alternative 4 – Santa Maria Groundwater	☒	☒	☒	☐	☐	☒	☒	☐	☒	☒	☐	☒	☐	☒	L	L	12-24 MOS.
Alternative 5 – Groundwater Recharge with Treated Water from Southland WWTF	☐	☐	☐	☐	☐	☐	☐	☒	☒	☒	☐	☒	☐	☒	L	L	12 MOS.
Alternative 6 – Agricultural Water Exchange	☐	☐	☐	☐	☐	☐	☐	☒	☒	☒	☐	☒	☐	☐	L	L	12 MOS.

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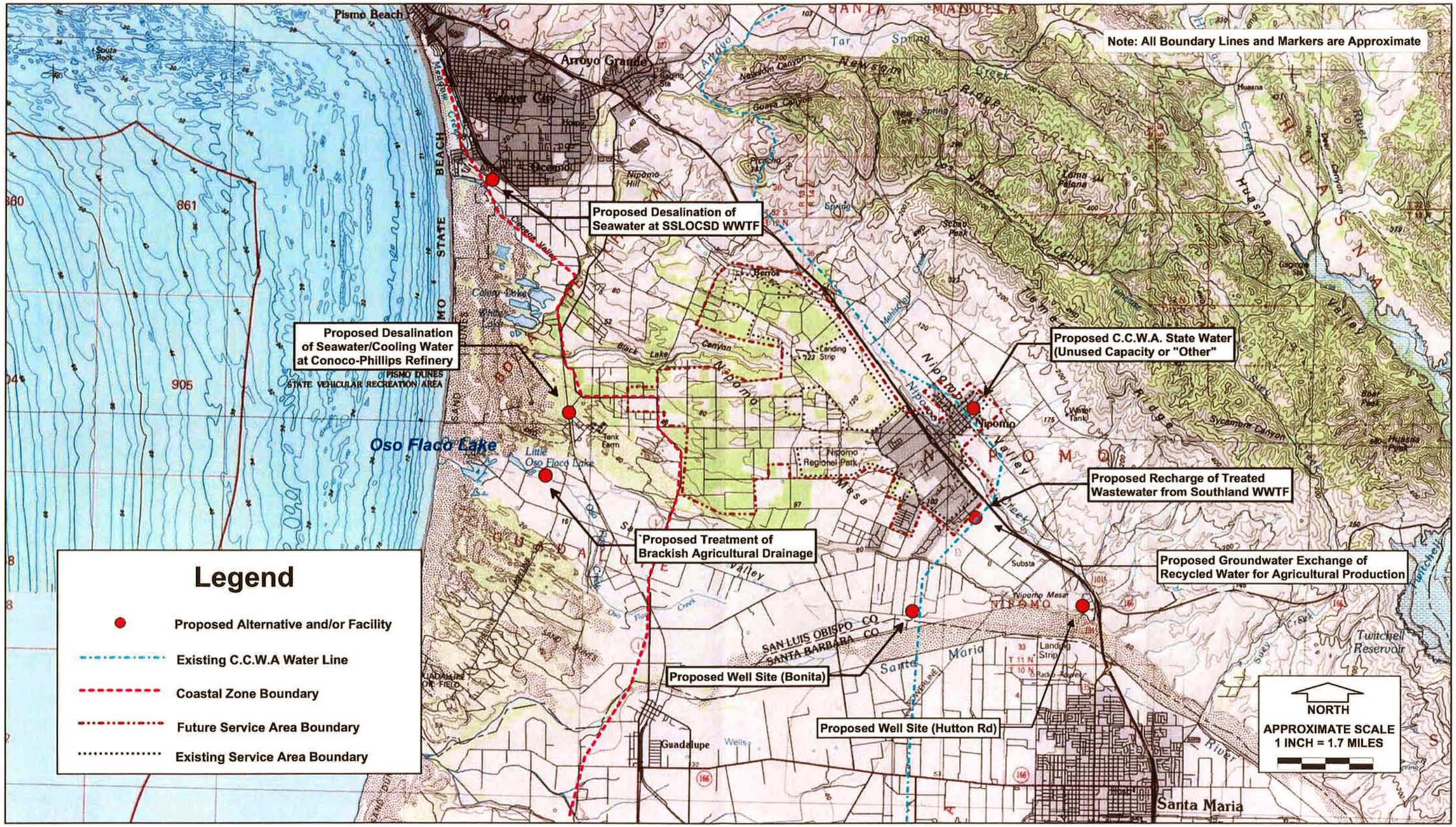
May 2007
Project No. 0602-0901



Source: Boyle Engineering; TOPO! c 2001 National Geographic Holdings (www.topo.com)

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Alternatives Constraints Analysis

PROJECT ALTERNATIVES LOCATION MAP

FIGURE 1

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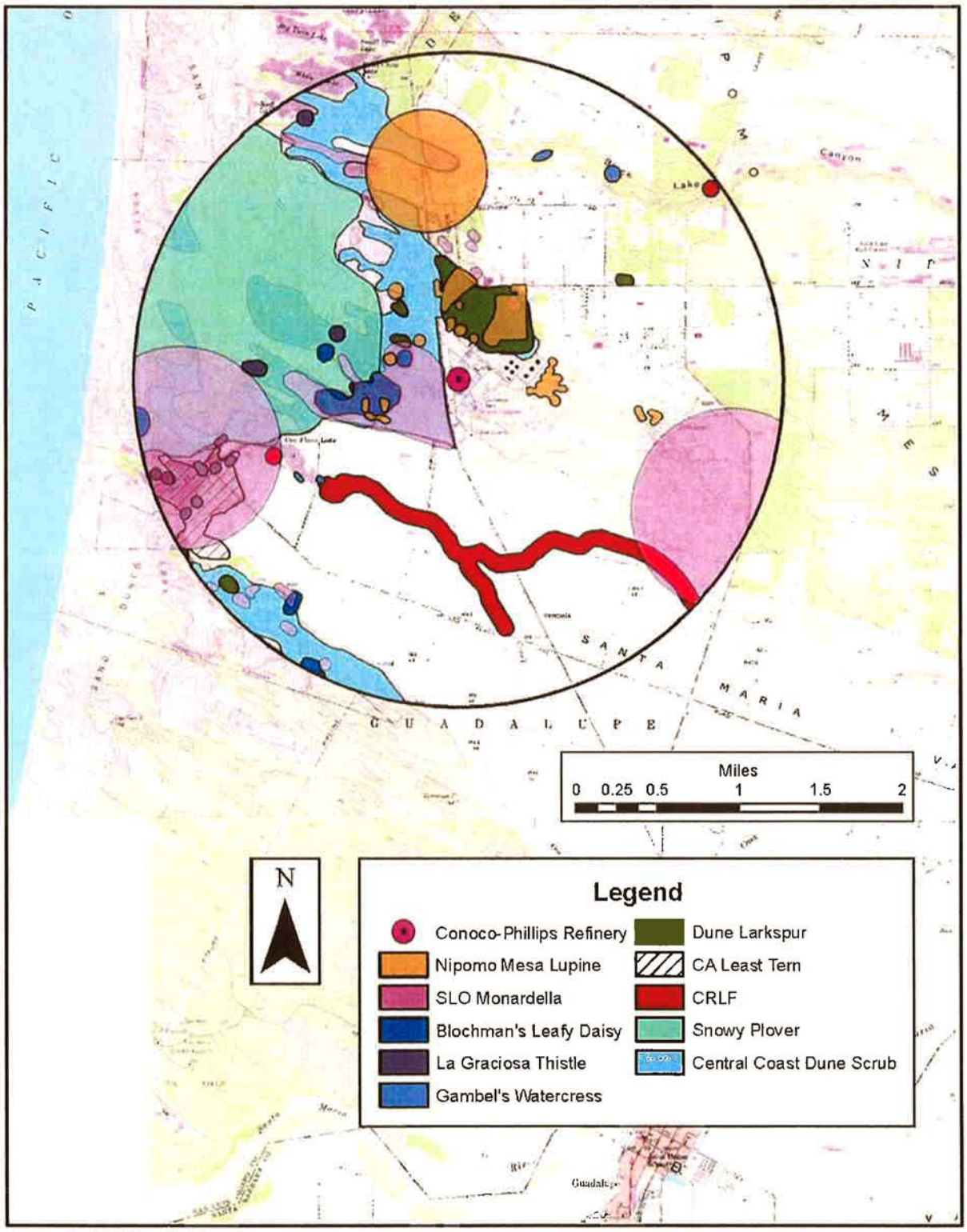

Source: CNDDB RareFind 3

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FIGURE 2

Special-Status Species Occurrences in 2-Mile Radius of Conoco-Phillips Refinery

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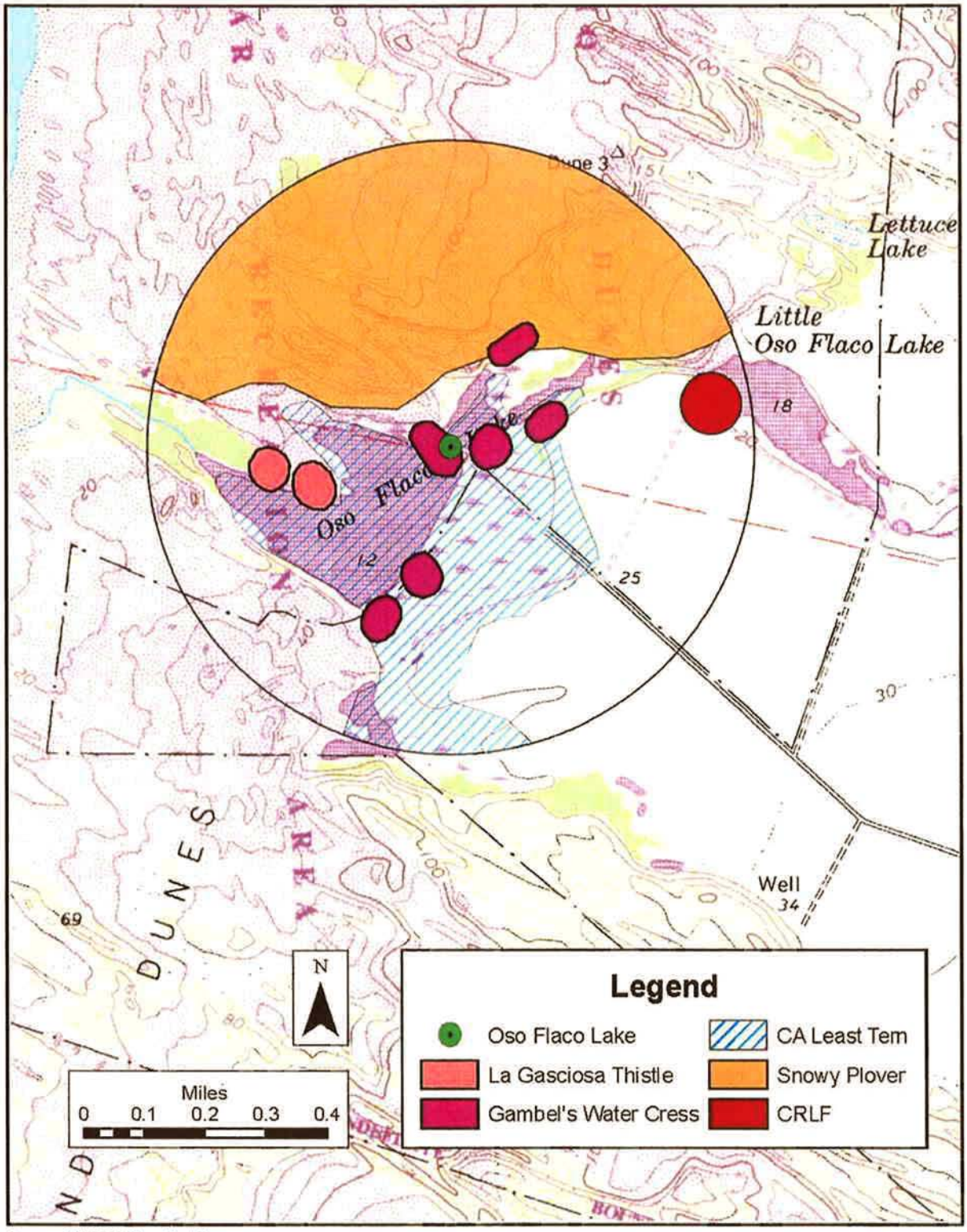

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FIGURE 3

Special-Status Species Occurrences in 0.5-mile Radius of Oso Flaco Lake

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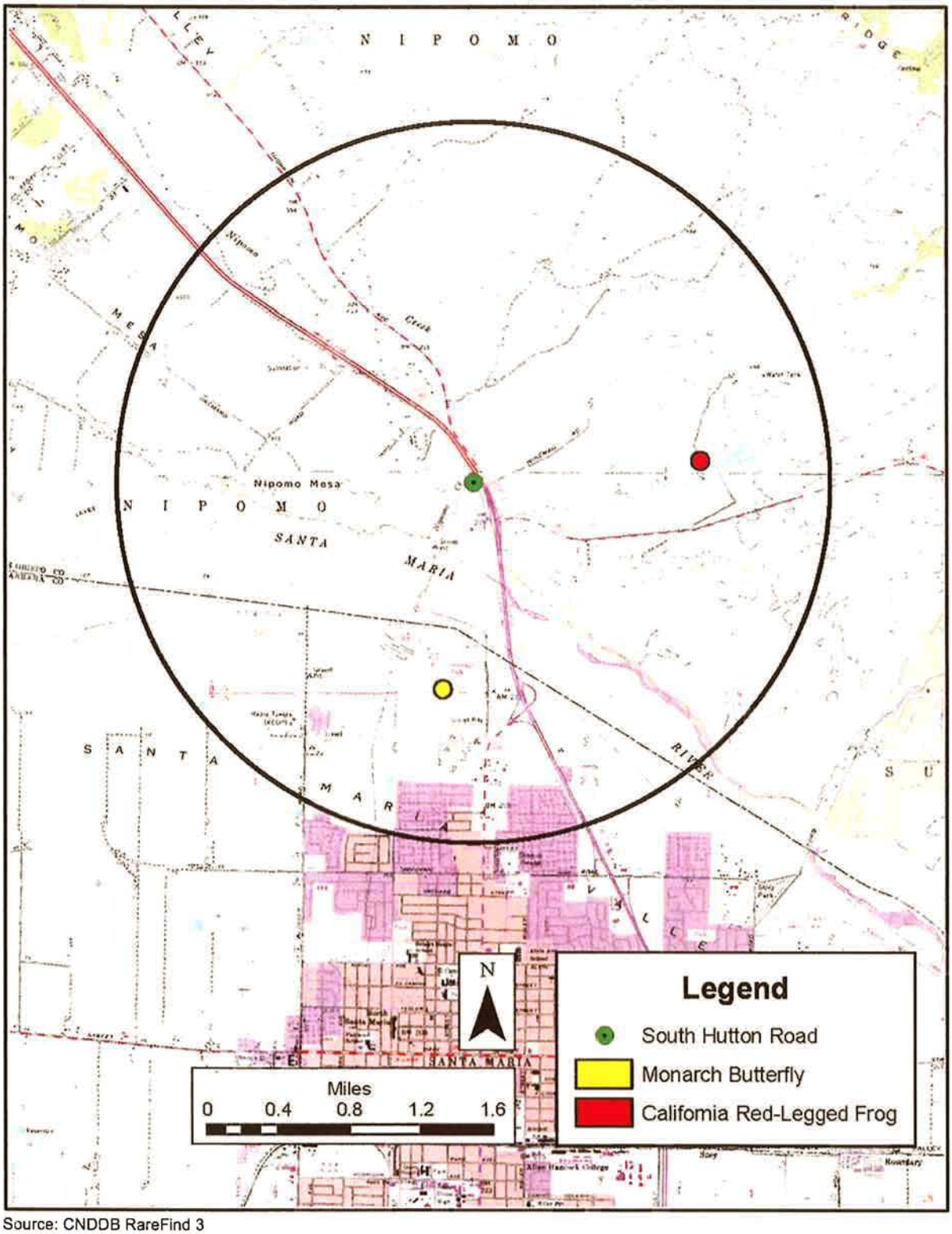
Project No. 0602-0901



Source: CNDDB RareFind 3

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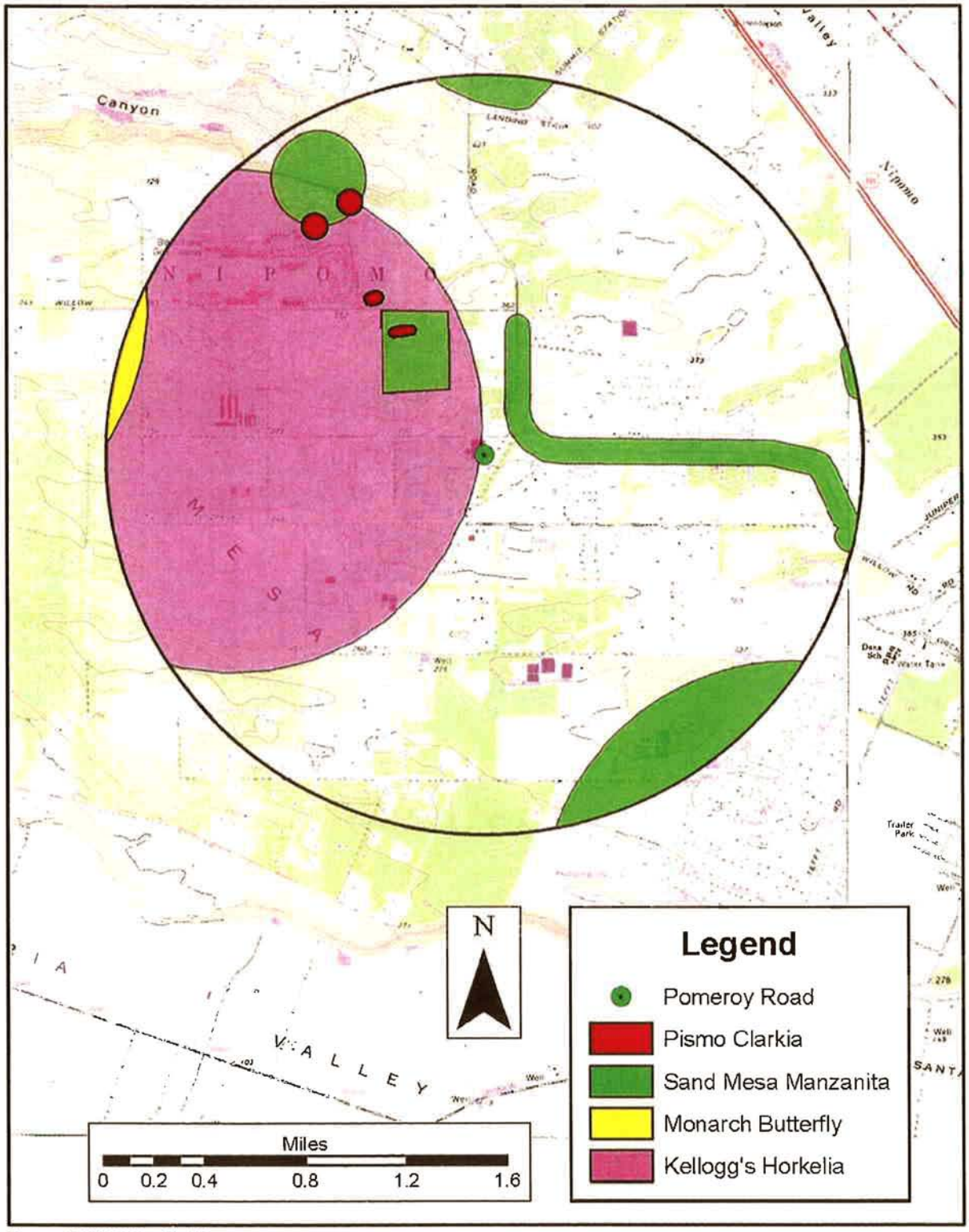
Alternatives Constraints Analysis

FIGURE 4

Special-Status Species Occurrences in 2-Mile Radius of South Hutton Road

May 2007
Project No. 0602-0901



Source: CNDDB RareFind 3

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FIGURE 5

Special-Status Species Occurrences in 2-Mile Radius of Pomeroy Road