Condition 62	Section 7 Consultation

The proposed project may affect federally-listed species (including Morro shoulderband snail and California red-legged frog) and as such, the EPA shall initiate formal consultation with USFWS pursuant to Section 7(a)(2) of the federal ESA. All mandatory terms and conditions, and reasonable and prudent measures pertaining to incidental take prescribed within the Biological Opinion and Nationwide Permit for the project the shall be fulfilled and implemented.

Evidence of compliance:
Please refer to the attached Biological Opinion, dated February 9, 2011. The Biological Opinion details a series of avoidance and minimization measures proposed by the USDA (see attached pages 12-15) as well as terms and conditions imposed by the FWS (see pages 33-34). The USDA is responsible for ensuring the conditions of the Biological Opinion are met. A separate binder is located in the Public Works Department that tracks the conditions specific to the Biological Opinion, most of which are conditions to be satisfied during construction.

The project does not proposed to place fill within the jurisdiction of the Army Corps of Engineers, and therefore, a Nationwide Permit will not be required.

Condition Satisfied

Jason H. Giffen

Director, SLO County Planning

2-9-2012

Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
81440-2011-F-0053

February 9, 2011

Pete Yribarren
Community Programs Specialist
U.S. Department of Agriculture
3530 West Orchard Court
Visalia, California 93277-7360

Subject: Biological Opinion for the Los Osos Wastewater Project, San Luis Obispo County, California (8-8-11-F-5R)

Dear Mr. Yribarren:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the revised proposed Los Osos Wastewater Project (LOWWP), San Luis Obispo County, California and your request for re-initiation dated November 24, 2010. The U.S. Department of Agriculture (USDA) has determined that the proposed action is likely to adversely affect the federally endangered Morro shoulderband snail (*Helminthoglypta walkeriana*) and its critical habitat. Your request was received in our office on November 29, 2010. Our response is made in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act)(16 U.S.C. 1531 et seq.).

As part of the request to reinitiate consultation with the Service for biological opinion 8-08-2010-F-14, you determined that the current proposed action is not likely to adversely affect the federally endangered Morro Bay kangaroo rat (*Dipodomys heermannii morroensis*), the federally threatened California red-legged frog (*Rana aurora draytonii*), or designated critical habitat for either species. Built into the project description are measures that would ensure avoidance of adverse effects to Morro Bay kangaroo rat and California red-legged frog. Based upon our review of these measures, we concur with your determination that the proposed project is not likely to adversely affect these two species. Additionally, you determined that the proposed action would have no effect on the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), and Indian Knob mountainbalm (*Eriodictyon altissimum*) and the federally threatened Morro manzanita (*Arctostaphylos morroensis*) and Monterey spineflower (*Chorizanthe pungens* ssp. *pungens*). The project would also have no effect on critical habitat designated for the southwestern willow flycatcher, least Bell's vireo, or Monterey spineflower.

While willow flycatchers (*Empidonax traillii*) occur in San Luis Obispo County, the subspecies of willow flycatcher that receives protection under the Act (*E. t. extimus*) does not. For this

TAKE PRIDE® IN AMERICA

reason, the proposed action would have no effect on this taxon or its designated critical habitat. Migrant solitary least Bell's vireos have been observed within the area of the proposed action; however, no breeding pairs have been observed anecdotally or documented. Coastal San Luis Obispo County is not within the historical breeding range for the taxon; however, in response to recovery efforts, least Bell's vireos have been expanding their range and recolonizing areas unoccupied for years (Service 1998a). While the subspecies is not expected to be breeding within the proposed action area, seasonal restrictions are included in the project description that would allow for avoidance of any adverse effects. No critical habitat has been designated for least Bell's vireo within the proposed action area. While both Morro manzanita and Indian Knob mountainbalm are known to occur in the proposed action area and, specifically, on the Broderson parcel (CNDDB 2010, County of San Luis Obispo Public Works Department 2010a), neither is present in areas where project activities would affect either species (County of San Luis Obispo Department of Public Works 2009, 2010e). As such, there would be no effect to either of these plant species. At one time, an occurrence of Monterey spineflower was recorded for the Los Osos area (CNDDB 2009). Subsequent taxonomic work conducted by Dr. James Reveal determined this occurrence to be *Chorizanthe angustiflia* (County of San Luis Obispo Department of Public Works 2010a,e) and, as such, the proposed action would have no effect on the listed entity. Additionally, no critical habitat for Monterey spineflower was designated in San Luis Obispo County. Based upon this information, we concur with your determination that the proposed action would have no effect on the southwestern willow flycatcher, least Bell's vireo, Indian Knob mountainbalm, Morro manzanita, or Monterey spineflower. There would also be no effect to any designated critical habitat for these species. As such, these five species are not addressed further in this opinion.

This biological opinion is based on information relevant to your November 24, 2010, request, including the revised biological assessment (County of San Luis Obispo Department of Public Works 2010e), results of a habitat assessment and protocol visual survey for Morro Bay kangaroo rat at the Mid-Town site (Villablanca 2010), results of Morro shoulderband snail surveys at the Mid-Town Site (County of San Luis Obispo Department of Public Works 2010f), and clarification of actions that could occur on private property (e.g., lateral connections; County of San Luis Obispo Department of Public Works 2010g). We also reviewed information that was used in the preparation of biological opinion 8-08-2010-F-014: the biological assessment (County of San Luis Obispo Department of Public Works 2010b); Rare Plant Survey Report for the Los Osos Wastewater Project – Broderson Leach Field (County of San Luis Obispo Department of Public Works 2010c); General Biological Survey and Habitat Assessment for the Los Osos Wastewater Project – Giacomazzi and Andre Sites (County of San Luis Obispo Department of Public Works 2010d); Morro Bay Kangaroo Rat Habitat Assessment for Tonini Ranch (Villablanca 2009a); Protocol Visual Survey for Morro Bay Kangaroo Rat, Los Osos Wastewater Project, Tonini Ranch (Villablanca 2009b); Appendix G of the Draft Environmental Impact Report for the Los Osos Wastewater Project (Michael Brandman Associates 2008); Appendix Q.8 of the Final Environmental Impact Report for the Los Osos Wastewater Project (Michael Brandman Associates 2009), resumes for County personnel submitted on April 12, 2010; biological opinion 1-8-04-F-48; and other information contained in Service files housed at our Ventura Fish and Wildlife Office (VFWO). In a conference call between you; Julie M.

Vanderwier and Rick Farris, staff biologists in the VFWO; and representatives from the County Department of Public Works (DPW) and State Water Resource Control Board, held on December 8, 2010, the USDA committed to extended discretionary authority onto private lands for the installation of laterals and septic tank decommissioning. A complete ecord for this consultation can be made available at the VFWO.

CONSULTATION HISTORY

On March 30, 2000, the Service issued a biological opinion to U.S. Environmental Protection Agency (EPA) for geotechnical field exploration activities that included soil borings and sounding holes at the Broderson and Morro Shores sites (Service 2000). On August 15, 2001, the EPA initiated formal consultation on the wastewater project proposed at that time; however, the EPA and the Service agreed to mutually withdraw from formal consultation for the project on October 18, 2002, because the Service had not yet completed the biological opinion on the leach field testing activities at the Broderson site. On January 10, 2003, the biological opinion for the leach field testing was issued (Service 2003) and concluded that both the geotechnical field operations and leach field testing activities were not likely to jeopardize the continued existence of the Morro shoulderband snail. The EPA reinitiated formal consultation for the wastewater project on February 25, 2004, and biological opinion 1-8-04-F-48 was issued on April 20, 2005 (Service 2005).

After work on the former wastewater project was halted and the bankruptcy of the Los Osos Community Services District (LOCSD) occurred in 2005, legislation (Assembly Bill 2701) to authorize transfer of wastewater authority from the LOCSD to the County of San Luis Obispo (County) was approved. The DPW began work on the design of a new wastewater project in 2006 using many of the elements of the previously-approved LOCSD project, including the gravity sewer system, pump stations, and use of the Broderson parcel for leach fields. Pre-consultation electronic mail and telephone conversations between VFWO and County DPW staff were conducted to exchange information regarding the new elements of the project and for us to provide guidance on endangered species issues. As part of the County's compliance with the California Environmental Quality Act (CEQA), we submitted a comment letter on the Draft Environmental Impact Report (DEIR) to provide guidance regarding potential endangeres species issues (USFWS 2009).

A number of measures and project conditions set forth in the 2001 Final Environmental Impact Report (FEIR) and 2004 Coastal Development Permit (CDP) for the LOWWP included in the project description for biological opinion 1-8-04-F-48, have yet to be fulfilled although take of Morro shoulderband snail and impacts to its habitat did occur. The CDP expired on August 11, 2007, and the FEIR and BO were rendered moot because the former project was not completed and the Federal nexus (funding via EPA and the California State Water Resources Control Board's [SWRCB] State Revolving Fund [SRF]) was lost when the LOCSD defaulted on the loan. Information regarding how the County will resolve these issues is contained in the Project Description section of this opinion.

A portion of project costs are funded through the USDA's Rural Utilities Program using Federal stimulus funds provided by the American Reinvestment and Recovery Act (ARRA). The project's eligibility to apply was made possible by a Congressional waiver. The County is also anticipating participation in the State Water Resource Control Board's SRF Program and will likely receive additional Federal funds through the Water Resources Development Act.

A pre-consultation meeting with staff from the VFWO, USDA, EPA, U.S. Army Corps of Engineers, SWRCB, and County DPW was held on December 10, 2009, at the VFWO office. Attendees heard a description of the current LOWWP project and how it compares to the former LOCSD project. Also discussed were agency roles and responsibilities and the County DPW's proposed approach to resolve outstanding issues from the previously approved project. Subsequent to this meeting, we received a request to expedite the consultation from the County Board of Supervisors on February 22, 2010, to allow the County to apply for USDA Rural Utilities Development ARRA funds.

On April 14, 2010, the Service issued Biological Opinion 8-08-10-F-14 as part of our interagency consultation with the USDA regarding the County of San Luis Obispo's LOWWP. As part of the California Coastal Commission's approval of the CDP for the current LOWWP, several measures were added during their June 11, 2010 meeting. Relevant to this consultation is the requirement to stabilize and restore environmentally sensitive habitat values (ESHA) at the Mid-Town site (formerly known as the Tri-W site). This will be accomplished through site stabilization and habitat restoration activities that would result in adverse effects to Morro shoulderband snail not identified or analyzed in the biological opinion 8-08-10-F-14; thus triggering the need to reinitiate consultation.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Los Osos is an unincorporated coastal community of approximately 15,000 residents located in western San Luis Obispo County at the southern end of Morro Bay, approximately 12 miles west of the City of San Luis Obispo, California. The community is bounded by Morro Bay and its estuary and Morro Bay State Park to the north, Montaña de Oro State Park to the west and southwest, rural open space to the southeast, and production agricultural lands to the east. The City of Morro Bay lies approximately 2 miles to the north. The LOWWP is a proposal by the County of San Luis Obispo to develop a wastewater collection/treatment and recycled water reuse system to serve the majority of the community of Los Osos (which includes an area known as Baywood Park).

Water quality degradation in the community Los Osos has been an issue of concern to the California Regional Water Quality Control Board (CRWQCB) since the 1970s. Septic systems are the sole method of wastewater treatment and disposal throughout the community. As many of the existing parcels are considered to be too small for conventional leach fields, deeper

seepage pits have frequently been used for wastewater disposal. In areas where the depth to groundwater is shallow, many of these seepage pits discharge directly into the upper aquifer with no separation. Contaminated groundwater sometimes reaches the surface, especially during the rainy season (CRWQCB 2001).

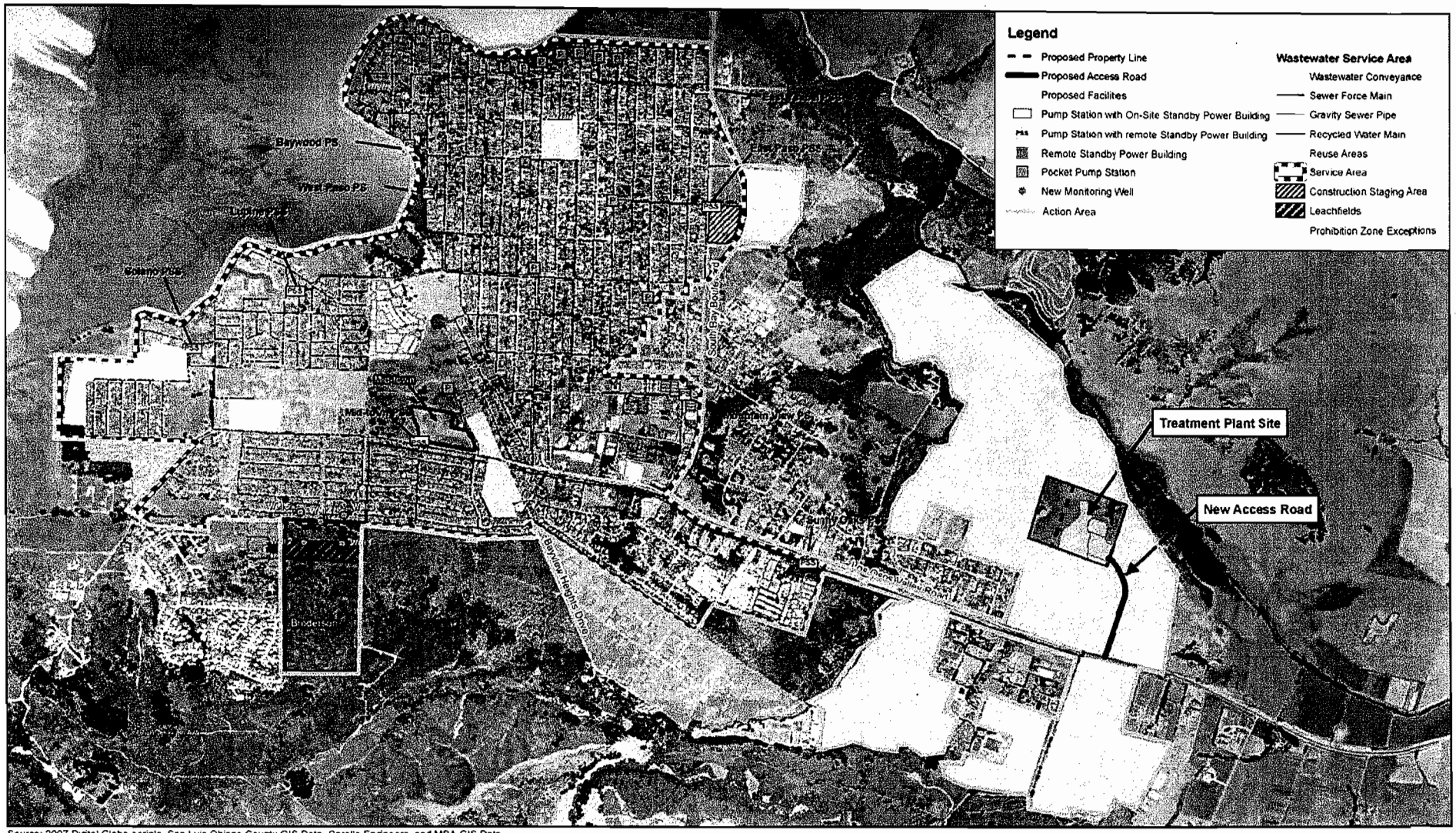
Elevated levels of fecal coliform are present in Morro Bay and indicate that other pollutants such as bacterial, viral, or cyst forming pathogens may be present (CRWQCB 2002). Human and animal illnesses can result from eating seafood that has been contaminated by these pathogens. Illness can also result from coming in contact with water or accidentally ingesting water in contaminated areas. Portions of the commercial oyster beds in Morro Bay have been closed for harvest by the California Department of Health Services per the United States Food and Drug Administration's National Shellfish Sanitation Program standards because of high fecal coliform levels. Based on the level of fecal coliform bacteria, seasonal restrictions have been imposed on commercial shellfish harvesting in other portions of Morro Bay; however, no restrictions are in place on non-commercial shellfish harvesting related to these levels (CRWQCB 2002).

In 1983, the CRWQCB adopted Resolution 83-13 that prohibits (effective November 1, 1988) discharges of waste from individual and community sewage systems within portions of the community (i.e., the prohibition zone). This resolution restricts the use of existing septic systems and additional discharges that would occur from new septic systems. Since 1988, existing septic systems in the prohibition zone have been considered to be discharging illegally (CRWQCB 2001).

To remedy these issues, the County proposes to develop a wastewater collection, treatment, and recycled water reuse system to serve the majority of the community of Los Osos. Key objectives of the LOWWP are to develop a community wastewater project that will comply with CRWQCB Waste Discharge Requirements and alleviate groundwater contamination (primarily nitrates) that has occurred partially because of septic system use throughout the community. Other objectives include the incorporation of measures to avoid and minimize potential environmental impacts on the community and surrounding areas; to meet water quality requirements while minimizing costs to mitigate affordability impacts on the community; to comply with all applicable local, State of California, and Federal ordinances, laws, and permitting requirements (e.g., ESHA standards, cultural resource concerns); to address water resource issues by mitigating project impacts on saltwater intrusion; and to maintain a diversity of options for beneficial re-use of recycled water. Project construction is anticipated to commence in fall 2011 and expected to take between 16-36 months. Figure 1 depicts the action area along with proposed project components that are also discussed below.

Treatment Plant Facility

The wastewater treatment plant facility would be sited on approximately 38 acres of a 100-acre parcel known locally as the Giacomazzi property. This parcel is located north of Los Osos Valley Road and west of Clark Valley, just east of the community of Los Osos. The Giacomazzi site contains both prime soils and soils of statewide importance with the western 62 acres



Source: 2007 Digital Globe aerials, San Luis Obispo County GIS Data, Carollo Engineers, and MBA GIS Data.

2,000 1,000 0 2,000
Feet

Figure 1
Overall Project Site Plan
Los Osos Wastewater Project 2010

consisting of prime agricultural soils with a long history of production agriculture (e.g., irrigated row crops). These 62 acres are currently contract-farmed to a mix of high value vegetable crops and would not be developed as part of the proposed action. Development would be restricted to the easternmost 38 acres. A former farmhouse complex is present to the west outside of the proposed development area. All of the original farm buildings have been removed and have been replaced by a modular residence. A 30-acre rectangular public lot would surround the treatment facility and the existing modular would remain as part of the larger parcel. This would allow the row crop operation to continue in private ownership with a buildable area located outside of prime soils. The 38-acre project site was historically cultivated; however, crop production ceased at some point in the past 20 years. Cultivation still occurs regularly for weed control purposes; however, no crop is produced. The wastewater treatment plant facility is expected to occupy approximately 22 acres of the 38-acre portion, with the undeveloped balance being found in ESHA. The treatment facility would consist of an extended aeration wastewater treatment system with tertiary filtration. Extended aeration relies primarily on the acceleration of natural biodegradation of waste by aerobic bacteria to treat collected wastewater. Extended aeration would be accomplished either with an oxidation ditch or Biolac® secondary process; the abundance of oxygen and carbon also results in de-nitrification of the waste. This wastewater treatment technology is employed in hundreds of locations worldwide and have demonstrated the ability to remove nitrates from wastewater to achieve those levels required by the Regional Water Quality Control Board for the community of Los Osos. Treatment components include:

- Headworks - to screen out inorganics, de-grit, and measure the wastewater inflow. A small septage receiving station would be included to accept septage from that portion of the community that is not included in the wastewater collection area and would remain on septic systems.

- Oxidation ditch/Biolac® - to treat the wastewater to secondary treatment levels.

- Secondary Clarification - to settle out the suspended solids in the treated wastewater.

- Tertiary treatment to provide "disinfected tertiary recycled water" as defined at Section 60301.230 of Title 22 of the California Code of Regulations for unrestricted reuse.

- Biosolids management to process and dispose of biosolids removed from the treated wastewater on an ongoing basis.

- An odor control system to control odors by using an inorganic media system to trap and scrub foul air from within the buildings enclosing the headworks and the biosolids dewatering equipment.

The treatment plant facility would be designed with a capacity to treat a maximum average annual dry weather flow of approximately 1.1 million gallons per day (mgd) that takes into account the implementation of a water conservation program that is expected to conserve between 150,000 and 330,000 gallons per day for the projected build out population of 18,428

residents within the collection zone. At current indoor water use rates, 14,428 persons would generate wastewater flows of 1.25 mgd; the project has a goal of reducing indoor water use to below 50 gallons per day per person which would equate to 0.92 mgd wastewater flows at build-out.

Collection System

The collection system consists of the installation of approximately 235,000 linear feet of pipe (195,000 feet of gravity pipe; 26,000 feet of force mains; and 14,000 feet of conveyance line to the treatment plant site at Giacomazzi from the Mid-Town site). Within the collection area, all of the septic tanks would be abandoned or re-purposed for rainwater storage and all wastewater would be collected through a series of gravity and pressurized (pumped) pipe lines that would convey wastewater to the treatment plant. The collection system would serve a build-out population of 18,428 within the service area. The collection system components include main lines; piping connections to property lines; laterals to connect the building to the system, pumps, force mains; and back-up power generators. Nine pump stations and 13 pocket pump stations would be constructed to provide continuous pressure in the force mains that would enable the transfer of wastewater to the treatment plant from areas that cannot be served by gravity. Pump stations would be located on vacant lots purchased by the project or within public rights-of-way. These stations would generally be required in low-lying areas and where pipeline depths approach 11 feet in depth. The stations would use electrically driven submersible pumps set in precast concrete vaults with two to four pumps per station. Also mounted close to the pump station would be a weather proof and vandal resistant electrical control panel to control the operation of the pumps. A dedicated stand-by power facility would be located at the Lupine, East Ysabel, East Paso, Sunny Oaks, and Mid-Town pump station sites. The stand-by power facility for the Mountain View pump station would be located at the nearby LOCSD well site at the intersection of South Bay Boulevard and Nipomo Avenue. A single standby power facility located at the LOCSD's Eighth and El Moro Avenue Water Operations Maintenance Yard would serve both the West Paso and pump stations.

Recycled Water and Reuse Sites

The project would reuse recycled water in a number of ways. Recycled water would be returned directly to the upper aquifer at two leach field sites: the Broderson property and the existing Bayridge leach field. The Broderson property consists of an approximately 81-acre rectangular shaped parcel located south of Highland Drive. Approximately 8 acres would be used to construct a conventional leach field; the remainder of the site would be placed in permanent biological open space. The leach lines would be placed in trenches 5 to 6 feet deep and parallel to Highland Drive. Following construction, the leach field would be revegetated with local native coastal dune scrub plant species; however, the leach lines would need to be excavated and replaced periodically. Maintenance and replacement of the leach lines would occur on a rotational basis so that the entire leach field would not be excavated at one time. The existing Bayridge leach field currently serves the Bayridge neighborhood with common septic tanks and a leach field. These tanks would be abandoned or repurposed to collect rainwater and the leach

field would be used for recycled water instead of septic tank leachate. In addition, the project includes a suite of re-use options aimed at optimizing options to compensate for seawater intrusion. These re-use options include agriculture and urban reuse, as well as environmental reservations to handle the remainder of the recycled water depending on the season. Due to its key role in reducing seawater intrusion, the Broderson site is the primary recycled water reuse element. Approximately one-third of the recycled water (up to 448 acre feet on an average annual basis) would be placed at the Broderson site, primarily during the wet winter months. During the summer, the majority of recycled water would be directed to urban and agricultural reuse (e.g., irrigation). Urban re-use focuses on existing turf areas at 4 schools, the community park, and a golf course. Agricultural re-use focuses on existing irrigated lands that draw from the Los Osos groundwater aquifer. The Bayridge leach field would provide subsurface flows to Willow Creek in order to support existing willow riparian habitat. Willow Creek is outside of the wastewater service area so existing septic tanks and leach fields would remain; however, the Bayridge leach field is intended to offset any losses of underflow from nearby newly collected areas. A system of new monitoring wells would be installed down-gradient of the Broderson site. These, along with other existing wells in the community, would be used to track the movement and behavior of percolated water to maximize the efficiency of the site.

Water Conservation

The project would implement a comprehensive water conservation program designed to reduce flows into the wastewater treatment plant as well as reduce the community's contribution to seawater intrusion currently occurring in the Los Osos Groundwater Basin. Because of the reduction and eventual halt of construction in the wastewater service area beginning in the 1980's, many of the homes and businesses in the community were built before current water conservation requirements. Consequently, the per capita indoor water use rate is considered moderately high for the area. The latest calculations from the two water companies serving the wastewater service area indicate indoor water use rates near 66 gallons per day. Information regarding other California central coast communities indicates that indoor use rates below 50 gallons per day per capita are achievable with the use of modern technology, including low flush toilets, low flow showerheads, and under sink hot-water circulators. Retrofit to low-flow plumbing fixtures prior to project hook-up would be required.

Restoration and Enhancement

Special Condition #3 developed as part of the Coastal Commission's June 11, 2010 approval requires that the Broderson, Mid-Town, treatment plant, and pump station sites be restored and enhanced to self-sustaining natural habitat and that these areas be managed and protected in perpetuity. Although only a small portion of the Mid-Town site is proposed for LOWWP facilities (0.25 acre), approximately 6.5 acres will need to be graded to create a stable landform such that erosion and sedimentation do not threaten the long-term restoration and enhancement efforts. In order to facilitate a return to native coastal scrub habitat more quickly after necessary site grading at Mid-Town, and to provide Morro shoulderband snail habitat and sanctuary during all phases of restoration activities, the County DPW will maintain several areas in their current

state. These areas either were not graded during the 2005 work on the site or have experienced significant natural plant establishment since that time. The Mid-Town restoration plan would then identify these areas as "Environmentally Sensitive Areas" on plans and activities in these areas would be limited to removal of invasive, non-native plant species.

Early Initiation of Restoration Work at the Mid-Town Site

Restoration of site stability of the Mid-Town site is a priority for the County DPW. Erosion onsite may compromise the integrity of Los Osos Valley Road located at its southern boundary. Two large gullies are rapidly headcutting through the disturbed sands toward the roadway. A combination of concentrated stormwater flows off of Los Osos Valley Road and the unstable landform post-2005 grading created this erosion. Such erosion could cut into the shoulder and threaten the road resulting in safety issues. If future run-off events begin to endanger the road and shoulder before the Mid-Town site can be stabilized as part of the overall LOWWP, the County DPW proposes to address the issue in two ways, depending on the erosion pattern. If the erosion is concentrated at one of the culvert outlets, a combination of filter fabric and angular rock from 0.5 to 1 ton in size would be installed at the outlet to prevent further head-cutting. If less concentrated sheet flow threatens the integrity of the road or shoulder, native soil would be placed and compacted to restore the shoulder. This early restoration work would be conducted incorporating identified minimization measures discussed in subsequent text. A portion of project costs will be funded through the USDA's Rural Utilities Program using Federal stimulus funds provided by the ARRA. The LOWWP's eligibility to apply was made possible by a Congressional waiver. The County is also anticipating participation from the SWRCB's SRF program.

Construction Activities

Both the County's contractor and individual property owners are responsible for portions of the LOWWP as described below.

Contractor Responsibilities

Construction of the collection system and the raw wastewater and recycled water conveyance systems involves the installation of collection pipes within easements and public rights-of-way using trenching techniques. Because of the predominance of sandy soils in the Los Osos area, a sheeting and shoring system will be used to comply with California Occupational Safety and Health Administration regulations. Trenching also requires dewatering in shallow groundwater areas, as well as stabilizing measures. Baker tanks will be moved from one temporary location to another as needed during construction to contain the water pumped during dewatering operations. In general, construction activities will have multiple pipe-runs excavated at a time for project efficiency. The collection system construction also involves installing submersible pump stations that, in turn, involve excavation and construction of underground vaults. These vaults could be pre-cast or cast-in-place concrete. Once the collection system is installed in each area, the roadway will be repaved. A construction yard will be located within the Los Osos

community to support collection system construction by providing a lay down yard for pipeline, a storage yard for materials and equipment, and trailers for construction administration. The previous LOCSD wastewater project included a 5- to 8-acre construction yard at the northwest corner of Pismo Avenue and South Bay Boulevard. The site was cleared of vegetation at that time. This location has been tentatively identified as the LOWWP collection system construction yard; however, a final location will be selected during the project final design. Other potential staging locations have been identified on the Mid-Town site. Construction of the treatment plant, biosolids processing facilities, and storage ponds involve grading, excavation for facility construction, and construction of the buildings and facilities. The Broderson leach field site will be excavated, backfilled with gravel for drainage, and then covered first by a geotextile fabric and then by native soil backfill. Percolation piping will be installed about one foot below the geotextile fabric layer (Crawford, Multari and Clark Associates 2000).

Property Owner Responsibilities

Property owners have the responsibility to install a lateral that connects from their building to the sewer lateral stub out that ends at their property line. Responsibility for retrofitting plumbing fixtures to ensure all fixtures are low-flow, in accordance with the water conservation measures, also belongs to the property owner (Crawford, Multari and Clark Associates 2000). If the existing septic tank does not need to be removed, the property owner will have the responsibility to decommission their existing septic tank. Decommissioning involves pumping out the tank, removing the top of the tank, and back-filling the tank with sand. There are other methods to abandon the existing septic tanks that will increase their usefulness for returning recycled water to the upper aquifer; however, use of these options is at the property owner's discretion and expense. For properties that currently have a septic tank in the backyard (approximately 25 percent), the property owner has the responsibility to install a new lateral line from the structure's backyard or front yard to the property line. The LOWWP project engineers anticipate that property owners with low-elevation backyard septic tanks (approximately 5 percent), will also need to install and maintain a low pressure grinder pump to move the sewage from their backyard to the front yard (Carollo Engineers 2007).

Lateral connections and septic system abandonment activities on private property are considered a part of the Federal action proposed by the USDA and they will extend their discretionary authority as the lead Federal action agency onto private lands for these purposes (Vanderwier pers. comm. 2010). The County DPW will implement the terms and conditions of the biological opinion on behalf of USDA.

Effects resulting from private property activities related to connecting to the wastewater system are considered to be interdependent and interrelated for two reasons. First, the USDA and SRF programs require any project proposed for funding to be a complete and functioning facility. In the case of the LOWWP, the overall project purpose can only be met if private property owners connect to the wastewater collection system. Although the USDA may not provide funding for these activities in all cases, they require the connections to be made. Those funding agreements executed between the USDA and the County require that the County adopt and enforce a

mandatory hook-up ordinance. Consequently, connection to the collection system by private property owners is a requirement of the Federal lead agency. Second, the County, through its existing land use and construction permit authorities can and will fully enforce all terms and conditions of USDA and SRF funding agreements that pertain to affected private properties. Funding agreements in turn require compliance with all Federal environmental requirements, including all minimization measures and those reasonable and prudent measures, and terms and conditions of the biological opinion. The County's authority to require implementation of Federal requirements on private properties stems from both the County's Coastal Zone Land Use Authority and building code authority. The CDP issued for the LOWWP includes the laterals on private property. As none of the existing developments in the community have been previously permitted for connection to a wastewater collection system, it therefore functions for these connections. As the CDP is issued to the County (i.e., not to individual property owners), the County can and will require compliance with all State of California and Federal requirements. To ensure implementation of environmental and permit requirements, a construction (i.e., plumbing) permit issued by the County will be required for each connection to the sewer main. Using the County's database of parcels that contain potential habitat for Morro shoulderband snail, those applicable parcels will be flagged for inspection and/or monitoring by a federally permitted County biologist or consulting biologist to minimize adverse effects to the species. For these reasons, compliance is considered to be assured.

Measures to Minimize Adverse Effects

The USDA has proposed to include measures in the proposed action to minimize adverse effects to the Morro shoulderband snail, as well as measures to avoid adverse effects to other federally listed species not addressed in this biological opinion. The measures constitute a portion of the total commitments being made to by the County to reduce impacts to biological resources during the construction and operation phases of the LOWWP. The full complement of minimization measures are presented in Appendix C of the Biological Assessment (County of San Luis Obispo Public Works Department 2010e) and all are incorporated by reference into the project description for the proposed action.

<u>Morro Shoulderband Snail</u>

- A Service-authorized biologist will conduct training sessions for all project-related personnel immediately prior to the start of vegetation removal, grading, and ground-disturbing construction-related activities.

- Construction areas will be clearly marked with high visibility flagging or barrier fencing. Construction equipment and personnel will be restricted to the marked areas.

- A Service-authorized biologist will be retained to monitor all vegetation removal, grading, and ground-disturbing construction-related activities that will take place within habitat suitable (inclusive of private property for purposes of lateral installation and/or septic tank decommissioning) for the Morro shoulderband snail. Monitoring activities will be required

daily until completion of initial disturbance at each location and to ensure appropriate minimization measures are implemented during construction. The monitor will be granted full authority to stop work at his or her discretion and will stop work if project-related activities occur outside the demarcated boundaries of the construction footprint. The monitoring biologist will stop work if Morro shoulderband snails are detected within the proposed construction footprint and will capture and relocate them to suitable habitat out of harm's way prior to construction activities resuming. If no suitable habitat opportunities are available in the immediate vicinity of the construction footprint, salvaged and relocated specimens may also be transported to an off-site location approved by the Service.

- Prior to the initiation of project-related activities that would result in vegetation removal, soil disruption, or any construction, the approximately 73 acres of the Broderson property not part of the proposed leach fields will be secured and granted, in perpetuity, to an appropriate agency or conservation organization who will assume the responsibility for its management. A long-term management and monitoring program will be prepared and approved by the Service and the California Department of Fish and Game (Department). The County will be responsible for the allocation of appropriate funding necessary to implement the management and monitoring of the conserved lands.

- The existing degraded coastal dune scrub at the Broderson property will be restored and maintained to promote its function as habitat for Morro shoulderband snail and sensitive plants and wildlife species that are local or endemic to the area. Restoration activities will be conducted by qualified personnel with expertise in restoration ecology and knowledge of local sensitive plant and wildlife species. Restoration activities will be conducted in accordance with a Restoration Plan specifically prepared for the effort and approved by the Service and the Department. Similarly, habitat restoration and maintenance will be implemented according to a Habitat Mitigation and Monitoring Plan to evaluate the progress and success of this effort.

- Habitat restoration activities will include measures for the removal and eradication of competitive, invasive, and/or non-native (i.e., target) plant species known to occur in the local area, including veldt grass (*Ehrharta calycina*) and pampas grass (*Cortaderia* spp.). Activities that involve the removal of invasive species will be employed so as not to cause unnecessary trampling or removal of native species. Techniques used in the removal of target plant species will result in the least damage to native species. Any disturbed portions of the acquired Broderson acreage will be evaluated for their restoration potential to coastal dune scrub habitat that could support Morro shoulderband snail, Morro Bay kangaroo rat, and other locally sensitive coastal dune scrub species.

- The restoration effort will include the implementation of a seed collection program to gather materials from native sources. The seed collection program will be prepared for approval by the County, Service, and Department prior to the commencement of vegetation removal, soil disruption, and/or grading and other construction-related activities. The focus of collection will be plant species that will be affected by project implementation.

Collection will be conducted by personnel with demonstrated expertise in seed collection and storage techniques and occur during the appropriate time of year for seed production and harvesting for each species.

- The County will provide annual reports to the USDA and Service documenting the results of all restoration and monitoring activities. Annual reports will be provided for a minimum of 5 years or until it is determined that the requisite performance criteria have been met. The County will provide a written report to the USDA and Service within 90 days following the completion of the proposed project. The report must document the number of Morro shoulderband snails captured and relocated from project areas, the locations of all Morro shoulderband snail relocations, and the number of Morro shoulderband snails known to have been be killed or injured. The report will contain a brief discussion of any problems encountered in implementing minimization measures, results of biological surveys, observations, and any other pertinent information.

Morro Bay Kangaroo Rat

- Prior to the initiation of any vegetation clearing, revegetation/habitat restoration, soil disruption, grading, and/or ground-disturbing construction-related activities within the leach field area on the Broderson parcel or any other location within the action area that has potential for occurrence of the species (as determined in coordination with the Service and Department), the County will work with the Service and Department to develop and implement a "no take" strategy for the Morro Bay kangaroo rat. This strategy will include specific take avoidance measures and provide a survey, monitoring, and contingency plan should the identified required periodic maintenance of the leach field area create suitable habitat for the species. Prior to its implementation, the strategy will be reviewed and approved by the Service and the Department and made part of a formal agreement to be signed by all parties.

California Red-Legged Frog

- All staging areas, as well as those areas where fueling and maintenance of vehicles and other equipment would occur, will be located at least 20 meters from riparian habitat or water bodies. The contractor or County will ensure that contamination of habitat does not occur during such operations.

- Prior to the onset of work near any riparian habitat, the USDA will ensure that the contractor or County has prepared a plan to allow a prompt and effective response to any accidental spills.

- To avoid potential timing conflicts between construction and the breeding season for the California red-legged frog, work activities adjacent to Los Osos Creek will only commence after March 31 and be completed by October 31, annually.

- Night-time illumination at the treatment plant site will meet the following requirements of the County's Estero Area Plan in order to be shielded from riparian areas and creeks (i.e., all lighting fixtures will be shielded so that neither the lamp nor the related reflector interior surface is visible from adjacent properties and light hoods will be dark-colored). No night lighting will be used unless necessary for active maintenance activities at the plant, or under emergency conditions.

- Tributaries to Warden Creek on the Giacomazzi property will be restored to provide improved habitat for the California red-legged frog. Drainages currently devoid of riparian vegetation will be revegetated with native riparian canopy and emergent species to provide additional shade, cover, and breeding habitat. The current practice of removing all vegetation within and adjacent to Los Osos Creek and tributaries to Warden Creek will cease.

Least Bell's Vireo

- Construction in and around riparian habitat associated with Los Osos Creek will occur only between September 15 and October 31. If surveys are conducted by a Service-authorized biologist from March 15 through June 15 and least Bell's vireo breeding activity is not detected, this construction window may be expanded to include the months of July and August.

Outstanding Issues from the Previous LOCSD LOWWP

The following paragraphs discuss issues from the LOWWP FEIR, CDP, and biological opinion 1-8-04-F-48.

LOCSD 2001 Final Environmental Impact Report

Mitigation measure BIO-4 required the purchase of the "single largest remaining privately held undeveloped parcel within the Los Osos greenbelt (Broderson), which totals 80 acres" and its donation to "a resource agency or organization for long term stewardship and protection." In addition to the land acquired, the LOCSD was to allocate $10,000 per year (indexed to an inflation multiplier), in perpetuity, for the management of the property, even though it would eventually be owned by a different party. While the Broderson parcel was acquired by the LOCSD, it was never transferred to a conservation or management entity as required, and no funding has been provided for the management of the property.

Mitigation measure BIO-16 required the LOCSD (in conjunction with the Department, the Service, the County, and the California Coastal Commission Commission to prepare and execute an implementing agreement for a habitat conservation plan (HCP) or Natural Community Conservation Plan (NCCP) for the long-term preservation of habitat remaining within the community of Los Osos. A preliminary draft HCP was prepared and submitted to the Service in 2005. While the Service reviewed the draft HCP and submitted comments to the LOCSD in

November 2005, there has been no action on the part of the LOCSD to address these comments or make progress towards completion of the HCP process.

Coastal Development Permit

For the former wastewater project, mitigation measures provided in the FEIR were incorporated as conditions in the CDP. Similar to FEIR mitigation BIO-4, Condition 68(c)(i) of the CDP required that, prior to construction, approximately 40 acres be acquired as mitigation for impacts to coastal scrub and its constituent species and that, pursuant to Condition 68(c)(v), this land be granted to an appropriate agency or conservation organization in perpetuity with deeded guarantees of non-development or transfer. While the Broderson parcel was purchased by the LOCSD to fulfill Condition 68(c)(i), the acreage was never granted as required in Condition 68(c)(v). In addition, Condition 68(e) required that the LOCSD contribute $10,000 per year towards the maintenance and restoration of the Broderson mitigation site. As noted above, no funds have been allocated or set aside by the LOCSD for this purpose. Condition 76 incorporated the intent of FEIR mitigation BIO-16.

Biological Opinion 1-8-04-F-48

Take of Morro shoulderband snail and impacts to its habitat occurred as part of the former, uncompleted wastewater project. By the incorporation of both mitigation measures from the 2001 FEIR and conditions of the 2004 CDP into the project description and minimization measures, the Service exempted this take and concurred with the EPA's determination that take associated with the former project would not result in jeopardy for Morro shoulderband snail or destroy or adversely modify its critical habitat.

Resolution of Issues

Because the current LOWWP proposes many of the same facilities within the same area, it is physically comparable to the previous project impacts to Morro shoulderband snail and its habitat. Take of the species at the Mid-Town site would be substantially less (0.25 acre vs. 11 acres) than occurred as part of site preparation for the former project. The current County FEIR and CDP contain the same measures as the former project relative to Morro shoulderband snail and these have again been included as minimization measures in the project description. As stated above, the County would ensure that 73 acres of the Broderson site not needed for the leach fields is conveyed to an agency or conservation entity along with monies to ensure that the long-term management and enhancement of habitat prior to the initiation of project-related activities that would result in vegetation removal, soil disruption, or construction. The balance of the currently vacant portion of the Mid-Town site will be restored to functioning native habitat and effects to Morro shoulderband snail associated with this action are analyzed as part of this opinion. Any future projects at the site would be required to obtain separate exemption from or authorization of take for this species before there could be use and/or reliance on the sewer system.

Monitoring and Reporting Plan

Annual Reports

Annual reports will be submitted by the County to the USDA and Service by January 31 of each year to document project progress, compensation activities, and results of pre-construction surveys required. Each report would address project sites scheduled for the following construction season and state whether effects at the sites would be within the limits set forth in this biological opinion. These reports would include photographs of all phases of the Project (preconstruction, during, and post construction), monitoring logs and training session reports, as well as a summary of all minimization and avoidance measures and how they were implemented. Any issues encountered during the project, and recommendations made to address them, would be provided.

The annual reports would document the presence of any sensitive or listed species encountered during project activities and the avoidance measures taken. Any take incidental to project activities would be documented. The Service shall be notified immediately by facsimile or telephone and in writing within one (1) working day of any unanticipated take of Morro shoulderband snails and the take or suspected take of listed wildlife species not authorized in this biological opinion. If such take occurs, the report and agency notification would include the date, time, and location of the incident or of the finding of a dead or injured animal, and any other pertinent information. Notification should be directed to the U.S. Fish and Wildlife Service, VFWO, Attention Diane K. Noda, 2493 Portola Road, Suite B, Ventura, California 93003; phone (805) 644-1766; and fax (805) 644-3958.

Biological Monitoring Reports

Annual biological monitoring reports will be submitted by the County to USDA and the Service by January 31 of each year for the duration of project construction. These reports will include a discussion of the status and progress of all minimization measures implemented. If monitoring results indicate that additional measures are necessary to meet the goals set in the biological opinion, additional recommendations will made and next steps agreed upon with appropriate agencies.

Final Report

A final report would be submitted by the County to the USDA and Service within 60 days of the end of project activities. This report will provide a summary of all annual reports and include a discussion regarding project activities and those minimization measures implemented.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

Jeopardy Determination

The jeopardy analysis in this biological opinion relies on four components: (1) the *Status of the Species*, which describes the range-wide condition of the Morro shoulderband snail, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which analyzes the condition of the Morro shoulderband snail in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the Morro shoulderband snail; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the Morro shoulderband snail; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the Morro shoulderband snail.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed federal action in the context of the current status of the Morro shoulderband snail, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the Morro shoulderband snail in the wild.

The jeopardy analysis in this biological opinion places an emphasis on consideration of the range-wide survival and recovery needs of the Morro shoulderband snail and the role of the action area in the survival and recovery of the species as the context for evaluation of the significance of the effects of the proposed federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Adverse Modification Determination

This biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied on the statutory provisions of the Act to complete the following analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this biological opinion relies on four components: (1) the *Status of Critical Habitat*, which describes the range-wide condition of designated critical habitat for the Morro shoulderband snail in terms of primary constituent elements, the factors responsible for that condition, and the intended recovery function of the critical habitat overall; (2) the *Environmental Baseline*, which analyzes the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated and interdependent activities on the primary constituent elements and how that will influence the recovery role of the affected critical habitat units; and (4) *Cumulative Effects*, which evaluates the effects of future non-Federal activities in the action area on the primary

constituent elements and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed Federal action on the critical habitat of the Morro shoulderband snail are evaluated in the context of the range-wide condition of the critical habitat, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the primary constituent elements to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the Morro shoulderband snail.

The analysis in this biological opinion places an emphasis on using the intended range-wide recovery function of critical habitat for the Morro shoulderband snail and the role of the action area relative to that intended function as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the adverse modification determination.

STATUS OF THE SPECIES

Morro Shoulderband Snail

The Morro shoulderband snail was federally listed as endangered on December 15, 1994 (Service 1994) and a recovery plan for the species and four plants from western San Luis Obispo County was published in September 1998 (Service 1998). A 5-year status review for the Morro shoulderband snail was completed in 2006 (Service 2006) and will be updated in 2011. Critical habitat for the Morro shoulderband snail was designated on February 7, 2001 (Service 2001). The majority of information provided below is summarized from these documents.

The Morro shoulderband snail is a member of the land snail family Helminthoglyptidae. The genus *Helminthoglypta*, the shoulderband snails of California, is a complex of many species, each with a relatively small range and, therefore, relatively vulnerable to extinction (Burke et al. 1999). The Big Sur shoulderband snail (*Helminthoglypta umbilicata*) occurs sympatrically with Morro shoulderband snail (Walgren 2003). The Chorro shoulderband snail (*H. morroensis*) was once thought not to occur sympatrically with, the Morro shoulderband snail (Roth and Tupen 2004); however we now know that these two species do occasionally co-occur (Tenera 2006).

The recovery plan for the Morro shoulderband snail describes its current distribution as areas south of Morro Bay, west of Los Osos Creek, and north of Hazard Canyon (Service 1998). The species occurs throughout the community of Los Osos and in the dunes north of Morro Bay. Although the exact geographic range of the Morro shoulderband snail is uncertain, we do not expect it to extend much beyond the region it is now known to inhabit (Walgren 2003).

The Morro shoulderband snail is found in the accumulated leaf litter and on the undersides of lower shrub branches in coastal dune scrub vegetation, particularly mock heather (*Ericameria*

ericoides), seaside golden yarrow (*Eriophyllum staechadifolium)*, deerweed (*Lotus scoparius*), and dune almond (*Prunus fasciculata* var. *punctata*). Morro shoulderband snails have been found in introduced iceplant (*Mesembryanthemum* spp. and *Conicosia puginoniformis*), fig-marigold (*Carpobrotus edulis*), and veldt grass (*Ehrharta calycina*). Morro shoulderband snails appear to prefer coastal dune scrub shrubs species that exhibit dense, low growth with ample contact to the ground. Based on this observation, favorable microclimate for the species may depend on these species continuing to provide partial shading and structure to serve as windbreaks to moderate temperatures and moisture loss within accumulated plant litter.

Most active or non-aestivating Morro shoulderband snails are observed during environmental conditions when increased moisture availability likely facilitates the species' ability to find food, disperse, and find mates. In the dry season, Morro shoulderband snails typically aestivate in accumulated litter or attach to low-lying branches of shrubs. The microclimate under shrubs provides the necessary moist and moderated environment for Morro shoulderband snails to survive the drier months of the year. Although no studies have been conducted to determine how Morro shoulderband snails are affected when disturbed during aestivation, aestivating Morro shoulderband snails may suffer physiological stress or even death upon disturbance of shrubs and accumulated leaf litter if subsequently exposed to drier, hotter, or otherwise more desiccating conditions. Snails in this genus aestivate by producing an epiphragm (a seal of dried mucus in the aperture of the shell) to reduce water loss during the dry season.

The greatest threat to the Morro shoulderband snail is loss of habitat through partial or complete removal of native vegetation. Habitat loss, fragmentation, and degradation can result from urban development and invasion of habitat by non-native plant species, particularly veldt grass. Although the Morro shoulderband snail has been found in iceplant and veldt grass, non-native plant species can dominate to the exclusion of native plant species and substantially reduce the suitability of habitat for the species. As dehydration is a major threat to all terrestrial mollusks, shrub species function to provide shade and windbreaks to reduce the drying effects of wind at ground level. Woody debris also provides shelter for Morro shoulderband snails and may act as a source of nutrients for fungi, a potential food source for Morro shoulderband snails.

Other threats to the species include direct trampling, soil disturbance, and soil compaction. Morro shoulderband snails are likely also threatened by the application of pesticides and/or herbicides. The aging structure of dune vegetation is also believed to play a role in reducing habitat suitability as older shrubs that no longer make contact with the ground may not provide the necessary microclimate in terms of temperature and moisture.

Critical Habitat for Morro Shoulderband Snail

Critical habitat for the Morro shoulderband snail was designated on February 7, 2001 (66 *Federal Register* 9233; Service 2001). The primary constituent elements of critical habitat for the Morro shoulderband snail include the following: sand or sandy soils needed for reproduction; a slope not greater than 10 percent to facilitate movement of individuals; and the presence of native coastal dune scrub vegetation. A total of 2,566 acres of critical habitat for

Morro shoulderband snail was designated in three units. All were considered to be occupied and subject to threats identified in the listing rule. Primary constituent elements of critical habitat for the Morro shoulderband snail include the following: sand or sandy soils needed for reproduction; a slope not greater than 10 percent to facilitate movement of individuals; and the presence of native coastal dune scrub vegetation. Each critical habitat unit represents a core population of Morro shoulderband snail and considered to be essential for maintenance of the species' geographic distribution and genetic variability (Service 2001).
As we consider each Critical Habitat Unit to be essential to the species' conservation (recovery) as a whole, we will focus on the individual units that would be affected by the proposed project and make our determination regarding the effects of the proposed action to critical habitat for the Morro shoulderband snail. Various project activities would occur within Critical Habitat Units 2 and 3; however, none are proposed in Critical Habitat Unit 1.

ENVIRONMENTAL BASELINE

Action Area

The implementing regulations for section 7(a)(2) of the Act define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 *Code of Federal Regulations* 402.02).

The project will provide wastewater treatment for properties within the Wastewater Service Area, including all the properties within the RWQCB-designated Prohibition Zone except for the Martin Tract and Bayview Heights subdivisions and open space properties. The RWQCB decided to allow these two excluded large-lot subdivisions to remain on septic systems rather requiring them to join the LOWWP Wastewater Service Area. Another subdivision, the Monarch Grove subdivision, will discontinue using their package wastewater treatment plant and connect their existing wastewater collection system to the new LOWWP collection system. Some LOWWP project components for wastewater collection, treatment, and effluent reuse will be contained within the prohibition zone; other potential components are located outside the Wastewater Service Area. The proposed project areas are at several locations within and outside the Los Osos Community.

Treatment Plant Site: The Giacomazzi property consists of an approximate 38-acre rectangular shaped parcel approximately 1,500 feet north of the intersection of Los Osos Valley Road and Clark Valley Road. Access to the site is provided from Los Osos Valley Road through the adjacent 43-acre Andre property. Current uses on these sites include one single-family residence on each property and high voltage power lines and towers owned by Pacific Gas & Electric on the western portion of the Andre property.

Pump Station Sites: These consist of both the Mid-Town collection site and the collection system pump stations:

- Collection System Pump Stations -- The gravity collection system is considered a hybrid gravity collection system since it includes a limited number of low pressure grinder pumps to pump wastewater from low-lying residences. In addition, several small pump stations of varying capacities pump wastewater collected from low-lying collection system subareas to higher elevations so that the wastewater can flow by gravity to the main pump station at the Mid-Town site. The low-pressure grinder pumps and small pump stations are proposed at key locations within the collection system.

- Mid-Town Collection Site -- The Mid-Town site was the location of the wastewater treatment facility proposed by the LOCSD in 2001. The LOCSD started construction and partially cleared and graded the Mid-Town site, but halted construction in 2005. Since then, the vegetation is returning to native scrub habitat suitable for the Morro shoulderband snail. The site is an 11.7-acre irregularly shaped parcel adjacent to the north side of Los Osos Valley Road. The property is currently "dual-zoned" with allowed uses in the Office/Professional and Commercial Retail or Public Facilities Land Use Categories. An area of approximately 0.25 acre at the southwest corner of the site will be used to construct an underground central pump station to pump wastewater collected from the Los Osos Wastewater Service Area to the treatment plant. Standby power for this pump station will be on an approximately 0.10 acre site across Palisades Avenue to an already disturbed area of Los Osos Community Park.

<u>Recycled Water Leach Fields and Re-use Sites</u>: These include the Broderson, Bayridge, and agricultural and urban re-use sites.

- Broderson -- The Broderson property consists of an approximately 81-acre rectangular shaped parcel located south of Highland Drive. Approximately 8 acres of the site will be used to construct a recycled water leach field; 0.25 acre used to improve the access road, and the remainder of the site will be placed in permanent open space and added to the greenbelt surrounding the Los Osos Community.

- Bayridge -- The Bayridge leach field is on the north side of Las Encinas Drive, approximately 300 feet west of Oak Ridge Drive in the southeast portion Los Osos. The leach field occupies three parcels totaling approximately 0.7 acre. The site has been graded and is now covered by non-native vegetation, with iceplant the dominant species present.

- Agricultural and Urban Re-Use -- All urban re-use sites are fully developed; the only physical change is the conversion of irrigation systems to reclaimed water use, as allowed by California law and encouraged by numerous State resource agencies. Any excavation needed to physically make plumbing connections will occur in areas already fully developed and previously disturbed. All urban re-use sites are within the areas to be served by the wastewater collection system and all pipeline routes previously surveyed as part of the wastewater project. All agricultural reuse sites are currently developed with agricultural uses. The primary physical change is the conversion of irrigation systems to

reclaimed water use. Any excavation needed to physically make plumbing connections will occur in areas previously disturbed by agricultural operations.

Staging Areas: The Paso Robles staging site is located at the southeast corner of Paso Robles Avenue and 18th Street. This area will be used for storage of construction materials and equipment prior to and during construction of the LOWWP. A Morro shoulderband snail survey was conducted in December 2002 on the southeast corner of this site. The survey located two empty snail shells in the coastal sage scrub near the perimeter of the property. The 4.7 acre site was graded in 2005 and the coastal sage scrub habitat was removed. The entire site now consists of ruderal/disturbed vegetation. This property was used as staging during the 2005 LOWWP effort, and some materials remain on-site today. Staging on the Giacomazzi site and possibly the Andre site will take place outside of environmentally sensitive areas. Staging on the Mid-Town site, prior to complete site restoration, may also occur. Staging areas would be graded to restore site contours, and after staging activities cease, would be planted with coastal dune scrub species.

Status of Morro Shoulderband Snail in the Action Area

Morro shoulderband snails are known to occur throughout the action area wherever suitable cover, food sources, and moisture regimes exist. The following discussion provides information regarding species presence or absence at locations considered to be major project components.

Treatment Plant Site: No live Morro shoulderband snails or shell were identified at the location for the treatment plant at the Giacomazzi site (County of San Luis Obispo Public Works Department 2010d). The species is typically restricted to areas west of Los Osos Creek; however, the species was detected east of Los Osos Creek at Warden Creek on the Lee property, approximately 1 mile northwest of the northern boundary of the Giacomazzi property (Tenera 2006). Both Morro shoulderband and Chorro shoulderband snails were found on this property with the Morro shoulderband snails being associated with coastal scrub habitat and Baywood fine sands.

Andre Property: The portion of the Andre site that would serve as an access road to the treatment facility site is dominated by non-native annual grassland, with small stands of coyote brush (*Baccharis pilularis*). Soils are mapped as Concepcion loam. A biological constraints analysis prepared for the previous LOCSD project determined that because of the soils onsite, Morro shoulderband snail was unlikely to inhabit the area but that the Chorro shoulderband snail may be present near coastal scrub (Morro Group 2004). Biological surveys conducted in December 2009 did not reveal any species of snails. Numerous pieces of scrap lumber and plywood are scattered through the grassland and appear to have been undisturbed for at least a few years. As part of the 2009 surveys, biologists carefully lifted many of these pieces of wood; however, no snails were present.

Mid-Town Site: Live individuals and empty shells of Morro shoulderband snail were found on the Mid-Town site as part of site preparation activities for the former wastewater project. Live individuals were captured and relocated to the North Coast Audubon's Sweet Springs Preserve.

While the Mid-Town site is currently in a fairly disturbed condition, much of it is recovering to coastal dune scrub and other habitats that are being re-occupied by the species (Tenera 2010). The 0.25 acre pump station site is situated on parts of the parcel where plant regeneration has been lowest (between 10-15 percent cover of native coastal dune scrub species including: deerweed (*Lotus scoparius*), beach bush lupine (*Lupinus chamissonis*), and California croton (*Croton californicus*). Approximately 70 percent is bare soil and the remainder is iceplant and veldt grass. The 0.10 acre stand-by power site is located in an area of the parcel that has experienced more robust vegetation establishment with about 50 percent cover by deerweed, veldt grass, and beach bush lupine, with lesser amounts of other native and non-native plants. The Mid-Town site was again surveyed during the month of October 2010 with all areas examined to determine the presence/absence and distribution of live Morro shoulderband snails, empty shells, suitable habitat, or other resources considered to be sensitive (County of San Luis Obispo 2010f). As this survey effort was considered to be an update of known information, only two surveys were performed (USFWS 2010). During the first survey conducted on October 7, 2010, 4 Morro shoulderband snails were observed along with one Class A shell. In addition, approximately 300 European garden snails were observed. During the second survey conducted on October 30, 2010, 7 Morro shoulderband snails were observed along with dozens of European garden snails. Distribution of Morro shoulderband snail appears to be light and fairly uniform throughout the Mid-Town site, with a greater number occurring on the northern and eastern portions of the property.

Other Pump Station Locations: The potential exists for Morro shoulderband snail to be present in varying densities at the location of the other 8 pump stations and 13 pocket stations particularly where coastal scrub is present (e.g., East Santa Ysabel Avenue and South Bay Boulevard, East Paso Robles Avenue and 18th Street, and Lupine Street and Donna Avenue).

Collection System: The collection system will primarily be constructed in the street rights-of-way and in ruderal, disturbed or ornamental areas in and along road shoulders and on private residential parcels (e.g., the lateral connections). Some Morro shoulderband snails may be associated with landscaping and fragmented coastal scrub on the private parcels. Twenty lots with quality habitat have been identified and will be subject to pre-construction survey and relocation of any identified Morro shoulderband snails. The identified receptor site is anticipated to be those protected portions of the Mid-Town property where there is extant or recovering coastal dune scrub and small recovering populations of Morro shoulderband snail.

Leach Fields and Re-use Sites: The lower portions of the Broderson site that would be used as leach fields for recycled water have supported high densities of Morro shoulderband snails in the past. The species has also been documented on the upper slopes of the Broderson site in open areas containing coastal dune scrub (County of San Luis Obispo Public Works Department 2010a). A number of the re-use areas (shown on Figure 1) are known to provide habitat for, or be occupied by, the Morro shoulderband snail; notably those in the western region of the action area, immediately east of South Bay Boulevard and immediately east of the Los Osos Oaks

Preserve south of Los Osos Valley Road (Service files, County of San Luis Obispo Public Works Department 2010a).

Staging Areas: Morro shoulderband snails are expected to occur at the Paso Robles staging site, particularly in those areas where the coastal dune scrub is present. Use of the Mid-Town site as a staging area would not result in additional effects not already discussed.

Critical Habitat for the Morro Shoulderband Snail

As previously stated, a total of 2,566 acres of critical habitat in three units was designated for Morro shoulderband snail on February 7, 2001 (66 *Federal Register* 9233). Unit 1 contains 1,830 acres (or 72 percent) of the total area designated, and encompasses areas managed by the California Department of Parks and Recreation (Montaña de Oro State Park) and the City of Morro Bay. This unit includes the length of the spit and the foredune areas extending south toward Hazard Canyon. No portion of Critical Habitat Unit 1 is within the identified action area.

Critical Habitat Unit 2 consists of 320 acres (12 percent of the total) found on the north-facing slopes of the Irish Hills. The 204-acre Morro Ecological Reserve (formerly known as the Bayview site) and the 80-acre Broderson site are the largest tracts of land in this unit. The ecological reserve is owned by the Department and the Broderson site is owned by the LOCSD. Primary constituent elements of critical habitat for the Morro shoulderband snail exist on the lower slopes of the Broderson site. While much of the coastal dune scrub present on lower portions of the unit has been heavily disturbed by the invasion of non-native plant species (e.g., veldt grass and *Eucalyptus globulus*), hikers, and equestrian use, Unit 2 contains a sustainable population of Morro shoulderband snails that could be expanded with appropriate management.

Critical Habitat Unit 3 is 420 acres (16 percent of the total) of high-quality coastal dune scrub habitat that includes the undeveloped areas between Los Osos Creek and the community of Baywood Park in northeast Los Osos. This unit supports the northernmost intact habitat for Morro shoulderband snail in Los Osos. This unit contains sustainable populations of the species. The proposed Paso Robles staging area occurs within the boundary of critical habitat Unit 3; however, this parcel is separated from the other preserved areas in the unit by South Bay Boulevard and the community of Baywood Park. Only limited areas containing the primary constituent elements are present. The protection of Unit 3 is essential to maintain the species genetic variability and geographic distribution. This unit has favorable habitat conditions for the expansion and persistence of sustainable populations of Morro shoulderband snail. With the reduction of threats through appropriate management, we expect Unit 3 to continue to support a large population that will contribute toward the recovery of the Morro shoulderband snail.

EFFECTS OF THE ACTION

Morro Shoulderband Snail

Due to the large action area, variety of action agents, and the cryptic nature of the Morro

shoulderband snail, we do not expect all individuals to be found, captured, and relocated. Furthermore, if the proposed construction occurs during the dry season, Morro shoulderband snails would likely be aestivating. Conducting surveys for snails when they are inactive substantially increases the difficulty in their location. Additionally, aestivating Morro shoulderband snails may also suffer physiological stress or even death upon disturbance of their shelter sites. These effects would be greatly reduced by minimizing handling time of individuals and by employing only persons experienced in handling the species and who are familiar with their habitat needs when relocation is required. Even with the incorporation of minimization measures, we anticipate that some Morro shoulderband snails would be killed as a result of the proposed action.

The text below first discusses those general effects that could happen throughout the project area dependent upon the action(s) performed at the site and then provides more specific information for specific project components.

Potential General Effects: As part of the proposed action Morro shoulderband snails may be injured or killed by vehicles, heavy equipment, foot traffic, or other activities associated with construction and restoration activities associated with the proposed action. To minimize adverse effects to Morro shoulderband snails and their critical habitat during construction of the wastewater project, the County would employ Service-authorized biologists to clearly delineate access routes and construction footprints, using flagging or construction fencing. These biologists would also conduct pre-construction surveys and relocate Morro shoulderband snails out of harm's way into adjacent suitable habitat.

Morro shoulderband snails may also be accidentally injured or killed during habitat restoration and management activities. The primary methods typically used to remove non-native invasive plant species in the Los Osos area include hand and mechanical removal in which target plants are pulled by hand or with hand tools, mowing, or solarization (placing black or clear plastic over the soil surface to increase soil temperature and block sunlight) and/or herbicide application. The hand pulling or mowing of weeds may cause damage to or loss of shelter sites which provide cover and appropriate microclimate for Morro shoulderband snails. Adverse effects would be reduced by limiting the number of access routes into the treatment area so that trampling native vegetation and disturbing accumulated plant litter underneath shrubs is kept to a minimum. Demarcating the treatment area would minimize disturbance to Morro shoulderband snail shelter sites outside of the designated treatment areas. Solarization has the potential to kill or injure Morro shoulderband snails if they are trapped beneath the plastic and subjected to the resultant high temperatures and lack of sunlight, however, surveying and relocating Morro shoulderband snails to adjacent suitable habitat prior to installation of plastic would minimize adverse effects from this method.

Morro shoulderband snails may be accidentally injured or killed during surveys or relocation activities. The County proposes to reduce the likelihood of injury or mortality by minimizing handling time and by ensuring that surveys and relocation efforts are conducted only by Service-authorized biologists. Mortality at relocation sites would be reduced by carefully placing the

snails under dense vegetation that would provide a suitable microclimate. Death or injury could occur if Morro shoulderband snails are accidentally crushed during survey efforts. However, Service-authorized biologists would slowly and carefully inspect the ground for the presence of Morro shoulderband snails and avoid stepping on or under shrubs in order to minimize the likelihood that individuals would be killed during surveys.
The potential effects of herbicides on Morro shoulderband snails are not known, although a study on aquatic snails exposed to glyphosate concluded the herbicide caused abnormalities in snail development and reproduction (Tate et al. 1997). Morro shoulderband snails could be exposed to herbicides by ingestion and absorption while living in, or migrating through, a recently treated area. Direct herbicide spray or drift from spray could contaminate soil; leaves, stems and branches of shrubs; leaves, mold, and fungi in plant litter; and potential shelter sites for Morro shoulderband snails, including downed wood, rocks, or debris piles. Surveying and relocating Morro shoulderband snails each day prior to beginning work activities would minimize direct contact with herbicide spray. Clearly demarcating all treatment areas would minimize herbicide spray from contacting Morro shoulderband snails outside of designated work areas. Shielding native plants with plastic sheeting, buckets, or tubs would minimize herbicide contamination of plant litter and soil, and would minimize contact with Morro shoulderband snails that are foraging or moving about.

Potential Effects by Location

- Treatment Plant Site: The treatment plant site at Giacomazzi does not have appropriate habitat for the Morro shoulderband snail and the species was not observed during surveys conducted in December 2009. As such, it is not anticipated that the species will be affected by construction and operations at this site.

- Andre Property: Similar to its neighbor, the Giacomazzi parcel, the Andre property lacks suitable habitat for the species and no Morro shoulderband snails were found as part of surveys conducted in 2009. As such, no adverse effects to the species are anticipated.

- The Mid-Town Site: The Mid-Town site is made up of scattered coastal dune scrub interspersed with disturbed grassland. As previously stated, this site was graded in 2005; however, native plant regeneration is naturally occurring. Surveys conducted in 2010 indicate that onsite distribution of Morro shoulderband snail appears to be light and fairly uniform throughout the property, with a greater numbers occurring on the northern and eastern portions of the property. The restoration and enhancement of approximately 6.5 acres of the Mid-Town site is expected to affect a limited number of Morro shoulderband snails as the October 2010 surveys revealed the presence of Morro shoulderband snails in portions of the Mid-Town site that will need to be graded for site restoration. Approximately 1.8 acres, some of which support Morro shoulderband snails, will remain undisturbed as they currently provide good habitat. These 1.8 acres will also serve as the receptor sites for relocated snails during work on the remainder of Mid-Town and also for work on private lands (e.g., laterals). The remainder of the site, 3.7 acres, will not be graded, but will be planted with native species to improve their habitat value. In

summary, those individuals present in areas that would require remedial grading necessary to stabilize the parcel and prepare it for restoration back to coastal dune scrub would be adversely affected in the short-term. In the long-term, effects to the species have the potential to be beneficial as the restoration efforts, if successful, would re-establish suitable habitat into which Morro shoulderband snails that remain onsite and those that may disperse from adjacent occupied habitat could establish and/or expand their populations. Because of the young age of the coastal dune scrub plant community in the 0.25-acre site for the underground pump station in the southwest corner, there is little duff under the plants to provide habitat for the Morro shoulderband snail. The likelihood of occurrence is low in this area, but based on the October, 2010 surveys, a few Morro shoulderband snails may be present. With both the restoration activities and the pump station construction, identified individuals present within the construction area would be affected by capture and relocation activities. An anticipated low number of undiscovered individuals would likely be killed.

- Other Locations for Pump Stations: Given the location of the other 8 pump stations and 13 pocket stations (see Figure 1), the potential exists for Morro shoulderband snail to be present in these areas particularly where coastal scrub is present (e.g., East Santa Ysabel Avenue and South Bay Boulevard, East Paso Robles Avenue and 18th Street, and Lupine Street and Donna Avenue). As with individuals present at the central pump station on the Mid-Town site, identified Morro shoulderband snails would be subject to the effects associated with capture and relocation and the anticipated low number of unidentified individuals would likely be killed.

- Collection System: The majority of the collection system would be constructed within the street rights-of-way that are generally highly disturbed and comprised of ruderal vegetation. Most of the length of the pipelines would be along Los Osos Valley Road in areas or habitat considered to be unsuitable for the species. It is anticipated that approximately 0.5 acre of impacts to coastal dune scrub associated with the collection system in these rights-of-way as this habitat would be completely removed for the construction of the collection system. Lateral connections to individual customers and abandonment of septic systems would also temporarily disturb land, some of which may support Morro shoulderband snails. Some parcels that contain better-quality coastal scrub habitat (approximately 20) will be affected during installation of laterals and decommissioning of septic systems. Low numbers of identified individuals would be subject to the effects associated with capture and relocation and an unknown but anticipated very low number of unidentified individuals would likely be killed.

- Leach Fields and Re-Use Sites: The construction of the leach field at the Broderson will result in the recurring, temporary loss of habitat for Morro shoulderband snail and direct mortality of those Morro shoulderband snails not identified and subject to capture and relocation activities. The Bayridge leach field site is expected to function without rehabilitation, so no disturbance is planned and so no adverse to Morro shoulderband snail or its habitat are anticipated.

- Staging Areas: The Paso Robles staging site was graded in 2005 and the small amount of habitat (0.1 acre) was removed; however, it is possible that Morro shoulderband snails could be present in extremely small numbers and those not identified for capture and relocation could be killed.

Critical Habitat for the Morro Shoulderband Snail

The Broderson leach field site is part of critical habitat Unit 2 for the Morro shoulderband snail. This unit includes both coastal dune scrub and maritime chaparral and is known to support substantial populations of the species.

The construction of the leach field and access road on the Broderson site would result in the direct removal of up to 8 acres of critical habitat for the Morro shoulderband snail. As previously stated, the area where the proposed leach field would be constructed has been subject to past disturbances including invasion by non-native plant species, hiking, and equestrian use. Although up to 8 acres of critical habitat within Unit 2 would be affected by construction of the proposed leach fields, the primary constituent elements would still exist throughout the majority of the 320-acre unit, both on the Broderson site and on the larger, contiguous Morro Dunes Ecological Reserve. Because the County would leave areas of native vegetation in place instead of excavating the entire leach field at once and would restore disturbed areas with suitable native habitat for the Morro shoulderband snail, primary constituent elements for the Morro shoulderband snail will not be completely lost at any one time within the 8-acre area. The amount of critical habitat that would be removed during construction is considered to be small relative to the amount that would still exist within Unit 2. The area to be disturbed constitutes only 2.5 percent of the 320 acres in Unit 2. Consequently, we do not expect construction of the leach field on the Broderson site to limit the ability of Unit 2 to support a sustainable population of Morro shoulderband snails. The conservation of approximately 73 acres on the Broderson site will benefit the Morro shoulderband snail and its critical habitat because it would result in on-going monitoring and habitat restoration that would not otherwise occur.

Within Unit 3, approximately 0.1 acre of coastal dune scrub at the Paso Robles staging area was affected by the actions associated with the former wastewater project. The overall disposition of the site is disturbed in nature; however, some primary constituent elements may be recovering. Because the amount of critical habitat that would be adversely affected within this unit is small and fragmented from other areas within the unit, we do not believe its loss will limit the ability of the 420-acre unit to support a sustainable population of Morro shoulderband snails in any way. Conserved lands that make up the majority of Unit 3 would continue to support the species and maintain genetic variability and geographic distribution of Morro shoulderband snails in the area.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future

Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Based upon the analysis in the previous biological opinion for the LOCSD wastewater project, we expect the CRWQCB to remove the building moratorium established by Resolution 83-13 when the proposed wastewater project is operational. This lifting of the moratorium would likely result in the build-out of those vacant lots that remain within the wastewater service area. Approximately 125 acres of degraded and fragmented Morro shoulderband snail habitat could be removed within this area as a result of the anticipated build-out. The wastewater service area consists primarily of parcels (approximately 500) that are less than 1 acre in size. These small parcels contain an estimated 25 acres of fragmented and degraded Morro shoulderband snail habitat. The remaining 40 or so lots within the wastewater service area that are greater than 1 acre in size contain approximately 100 acres of potential Morro shoulderband snail habitat that is, for the most part, also fragmented and degraded. None of the parcels in the wastewater service area are within designated critical habitat for the Morro shoulderband snail or identified in the recovery plan as important for the recovery of this species (Service 1998b).

The County is developing a Habitat Conservation Plan to address development both inside and outside the sewer service area. Other covered activities anticipated to be addressed in the plan include operation and maintenance, required hazard abatement (i.e., fuels reduction, creation of defensible space), and facility development. As part of this plan, the County is seeking authorization for incidental take of the Morro shoulderband snail pursuant to section 10(a)(1)(B) of the Act.

CONCLUSION

After reviewing the current status of the Morro shoulderband snail and its critical habitat, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that construction of the LOWWP, as proposed, is not likely to jeopardize the continued existence of the Morro shoulderband snail or destroy or adversely modify critical habitat for the Morro shoulderband snail. We have reached these conclusions for the following reasons:

1. The County will implement measures to minimize the adverse effects of the proposed project the Morro shoulderband snail and its critical habitat, inclusive of those contained in the FEIR and CDP;

2. Relatively few adult Morro shoulderband snails are likely be injured or subject to direct mortality because of the proposed pre-activity surveys that will afford the opportunity for capture/relocation activities and other protective measures included in the project description;

3. Habitat restoration activities incorporated into the project description would contribute to the conservation and recovery of Morro shoulderband snail;

4. Protection and management of 73 acres at the Broderson site (part of Critical Habitat Unit 2 for the Morro shoulderband snail) will contribute to the conservation and recovery of the species; and

5. The amount of critical habitat that would be affected as a result of the proposed project in Units 2 and 3 is very small relative to the amount that would still be available for the Morro shoulderband snail within each unit. Each Unit would continue to function to support sustainable populations of the Morro shoulderband snail and maintain the species' geographic distribution and genetic variability.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary and USDA must include them as binding conditions of any contracts associated with the proposed action, for the exemption in section 7(o)(2) to apply. The USDA has a continuing duty to regulate the activity covered by this incidental take statement. If the USDA fails to require its contractors to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to its authorization, or contracts, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the USDA must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

All Morro shoulderband snails found within the project area may be subject to take in the form of capture during relocation efforts. A subset of captured Morro shoulderband snails may experience a significant disruption of normal behavioral patterns to the point that reaches the level of harassment. Any Morro shoulderband snails that remain in the project area may be subject to increased predation, crushed or entombed during construction activities, or be otherwise injured or killed.

We cannot determine the precise number of Morro shoulderband snails that may be killed, injured, harassed, or harmed as a result of the proposed action. Numbers and locations of Morro shoulderband snails within a population vary from year to year. Incidental take of Morro shoulderband snails would be difficult to detect because of their small body size and finding dead or injured specimens is unlikely. Take by predation as a result of exposure due to project activities would likely be impossible to detect. As the County has proposed to use those minimization measures described in the project description section of this document, we anticipate that relatively few Morro shoulderband snails are likely to be killed or injured during this work in compared to those that would be moved out of harm's way.

This biological opinion does not exempt any activity from the prohibitions against take contained in section 9 of the Act that is not incidental to the action as described in this biological opinion. Take that occurs outside of the action area or from any activity not described in this biological opinion is not exempted from the prohibitions against take described in section 9 of the Act.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the take of Morro shoulderband snails:

1. Worker education programs and clearly-defined operational procedures must be implemented by the USDA and County.

2. Only Service-authorized biologists may survey for, monitor, handle, capture, and/or relocate Morro shoulderband snails.

3. Service-authorized biologists must have the authority to stop work if project-related activities occur outside the demarcated project boundaries if Morro shoulderband snails are detected.

4. The USDA must ensure that the amount and form of incidental take is commensurate with the analysis contained within this biological opinion.

The Service's evaluation of the effects of the proposed actions includes consideration of the measures proposed by the USDA to minimize the adverse effects of the waste water project on the Morro shoulderband snail and critical habitat. Any subsequent changes to these measures may constitute a modification of the proposed action and warrant reinitiation of formal consultation, as specified at 50 CFR 402.16. These reasonable and prudent measures are intended to clarify or supplement the protective measures included in the description of the proposed action.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the USDA must ensure that the

County complies with the following terms and conditions, which implement the reasonable and prudent measures described above.

1. The following term and condition implements reasonable and prudent measure 1:

   The worker education program must be presented by a Service-approved biologist with experience in the identification of Morro shoulderband snail and its habitat. The program must include descriptions and pictures of the Morro shoulderband snail, relevant provisions of the Endangered Species Act, specific measures being implemented to conserve the Morro shoulderband snail as they relate to the project and the project boundaries within which the work will occur and identify a chain-of-command for all operational activities that would occur in Morro shoulderband snail habitat.

2. The following terms and conditions implement reasonable and prudent measure 2:

   a) Only Service-authorized biologists may survey for, monitor, capture, handle, or relocate Morro shoulderband snails. Eric Wier, Kate Ballantyne, and John Farhar are hereby authorized to independently conduct these activities as described in this biological opinion. Katie Drexhage, Kelly Sypolt, and Trevis Warner are authorized to conduct such activities only under the direct supervision of Eric Wier, Kate Ballantyne, and/or John Farhar. The USDA must request the Service's authorization of any other biologists it wishes to employ to conduct these activities relative to the proposed project. This request must be in writing and received by the Service at least 21 days prior to the intended start date.

   b) Any areas not identified (e.g., staging areas) in the project description and biological assessment for the proposed action must be surveyed for the presence of Morro shoulderband snail. Survey results must be provided to the Service to ensure that any effects to Morro shoulderband snail do not exceed that identified and analyzed in this biological opinion.

3. The following term and condition implements reasonable and prudent measure 3:

   A Service-authorized biologist must monitor the proposed project area(s) daily during work activities until completion of initial site disturbance at each project site and have the authority to stop project activities that occur outside the demarcated boundaries of the construction footprint and access road until such time as identified Morro shoulderband snails can be relocated to suitable habitat out of harm's way or the Service is contacted regarding how to proceed regarding the presence of an unanticipated federally listed species within the work area.

4. The following term and condition implements reasonable and prudent measure 4:

   If more than 15 adult Morro shoulderband snails are found dead or injured during project

implementation, the USDA or County must contact the VFWO as soon as possible so that we can review the project activities and effects analysis to determine if additional protective measures are needed.

REPORTING REQUIREMENTS

The County must provide a written report to the Service within 90 days following completion of the proposed project. The report must document the number and size of any Morro shoulderband snails relocated from the action area, the date and time of relocation, and a description of relocation sites. The report must also state the number of Morro shoulderband snails killed or injured, describing the circumstances of the mortalities or injuries if known. The report must contain a brief discussion of any problems encountered in implementing minimization measures, results of biological surveys and sighting records, and any other pertinent information such as the acreage affected and restored or undergoing restoration of each habitat type.

In addition, the County must submit the results of any habitat restoration or enhancement activities conducted in relation to the proposed project. This timeframe may be modified with approval from the Service. We encourage you to submit recommendations regarding modification of or additional measures that would improve or maintain protection of the Morro shoulderband snail and simplify compliance with the Act.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The USDA should encourage the County to prepare and seek publication of an article in a peer reviewed journal that describes the restoration program implemented as part of the LOWWP in order to contribute to the body of knowledge regarding similar activities being undertaken for the recovery of listed species and to allow others to benefit from those lessons learned such that we may increase the success of similar, future habitat restoration efforts.

The USDA should encourage the County to prepare and seek publication of an article or note in a peer-reviewed journal that describes all of those habitat types in which Morro shoulderband snails are found during the course of the project to provide a greater understanding of the diversity of habitats in which the species occurs.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the request for consultation. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions, please contact Julie M. Vanderwier at (805) 644-1766, extension 222.

Sincerely,

/s:/ Diane K. Noda

Diane K. Noda
Field Supervisor

REFERENCES CITED

Burke, T.E., J.S. Applegarth, and T.E. Weasma. 1999. Management recommendations for survey and manage - Terrestrial Mollusks. USDA Forest Service R-5/6, DOI Bureau of Land Management OR/WA/CA.

California Natural Diversity Data Base (CNDDB). 2009. Rarefind 3.1.0 results for San Luis Obispo County, February 4, 2009.

California Regional Water Quality Control Board (CRWQCB). 2001. Status report on the Los Osos Community Services District wastewater project, San Luis Obispo County. San Luis Obispo, California.

California Regional Water Quality Control Board (CRWQCB). 2002. Support document for Morro Bay total maximum daily load for pathogens (including Chorro and Los Osos Creeks). San Luis Obispo, California.

Carollo Engineers, in association with Crawford, Multari & Clark Associates and Cleath and Associates. 2007. San Luis Obispo County, Los Osos Wastewater Project Development, Potential Viable Project Alternatives: Rough Screening Analysis Report. March.

County of San Luis Obispo, Public Works Department. 2010a. Los Osos Wastewater Project Biological Assessment. January.

County of San Luis Obispo, Public Works Department. 2010b. Los Osos Wastewater Project Biological Assessment, Amended. March.

County of San Luis Obispo, Public Works Department. 2010c. Rare Plant Survey Report for the Los Osos Wastewater Project – Broderson Leach Field.

County of San Luis Obispo, Public Works Department. 2010d. General Biological Survey and Habitat Assessment for the Los Osos Wastewater Project – Giacomazzi and Andre Sites.

County of San Luis Obispo, Public Works Department. 2010e. Los Osos Wastewater Project Biological Assessment. December 15.

County of San Luis Obispo, Public Works Department. 2010f. Morro Shoulderband Snail Modified Protocol Survey Report for the Los Osos Wastewater Project – Mid-town Site. Memorandum from Kate Ballantyne to Julie Vanderwier, November 4.

County of San Luis Obispo, Public Works Department. 2010g. LOWWP Private Property Effects: Laterals and Septic System Abandonments. Memorandum from Mark Hutchinson to the Los Osos HCP Team, October 26.

Michael Brandman Associates. 2008. Draft Environmental Impact Report; County of San Luis Obispo; Los Osos Wastewater Project, Appendix G and Appendix Q.8. Prepared for County of San Luis Obispo Public Works Department

Roth, B. 1985. Status survey of the banded dune snail, *Helminthoglypta walkeriana*. Final report. U.S. Fish and Wildlife Service, Sacramento Endangered Species Office, California.

Roth, B. and J. Tupen. 2004. Revision of the systematic status of *Helminthoglypta walkeriana morroensis* (Hemphill 1911) (Gastropoda: Pulmonata). Zootaxa. 616:1-23.

Tate, T.M., J.O. Spurlock, and F.A. Christian. 1997. Effect of Glyphosate on the development of *Pseudosuccinea columella* snails. Archive of Environmental Contamination and Toxicology 33:286-289.

Tenera Environmental. 2006. Letter report from Mr. Dan Dugan to Mr. Steve Kirkland, USFWS regarding Morro shoulderband snail occurrence. April 3.

Tenera Environmental, Inc. 2006. Letter from Dan Dugan to Steve Kirkland, VFWO, regarding presence of Morro and Chorro shoulderband snails on the Lee Property. April 3.

Tenera Environmental. 2010. Letter report from Mr. Dan Dugan to Mr. Dan Gilmore, General Manager, Los Osos Community Services District, regarding survey results for Morro shoulderband snail associated with removal of the perimeter fence at the Mid-Town site. January 19.

U.S. Fish and Wildlife Service (Service). 1998a. Draft recovery plan for the least Bell's vireo. U.S. Fish and Wildlife Service, Portland, OR. 139 pp.

U.S. Fish and Wildlife Service (Service). 1998b. Recovery plan for the Morro shoulderband snail and four plants from western San Luis Obispo County, California. U.S. Fish and Wildlife Service, Portland, Oregon. 75 pp.

U.S. Fish and Wildlife Service (Service). 2000. Biological opinion for geotechnical field exploration activities for the Los Osos Community Services District wastewater treatment facility, Los Osos, San Luis Obispo County, California (1-8-00-F-8). Ventura Fish and Wildlife Office, Ventura, California.

U.S. Fish and Wildlife Service (Service). 2001. Final Determination of Critical Habitat for the Morro Shoulderband Snail (*Helminthoglypta walkeriana*). 50 CFR Part 17. Prepared by the U.S. Fish and Wildlife Service, Ventura California for the U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service (Service). 2003. Biological opinion for field testing activities for the Los Osos Community Services District wastewater treatment facility, Los Osos, San Luis Obispo County, California (1-8-02-F-66). Ventura Fish and Wildlife Office, Ventura, California.

U.S. Fish and Wildlife Service (Service). 2005. Biological Opinion for the Los Osos Wastewater Project Project, San Luis Obispo County, California (1-8-04-F-48). Ventura Fish and Wildlife Office, Ventura, California.

U.S. Fish and Wildlife Service (Service). 2006. Banded Dune Snail (*Helminthoglypta walkeriana)* [=Morro shoulderband snail (*Helminthoglypta walkeriana)* and Chorro shoulderband snail (*Helminthoglypta morroensis)*]; 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service. Ventura, California.

U.S. Fish and Wildlife Service (Service). 2009. Comments on the Draft Environmental Impact Report, County of San Luis Obispo, Los Osos Wastewater Project, SCH No. 2007121034. Ventura Fish and Wildlife Office.

U.S. Fish and Wildlife Service (Service). 2010. Proposed Modification to Survey Guidelines for the Morro Shoulderband Snail, letter from VFWO to Kate Ballantyne, County of San Luis Obispo. October 26.

Villablanca, F. 2009a. Morro Bay Kangaroo Rat (*Dipodomys heermanni morroensis*) habitat assessment relative to Los Osos Sewer Project proposed for Tonini Ranch. Prepared for County of San Luis Obispo Public Works Department. February 20.

Villablanca, F. 2009b. Protocol Visual Survey for Morro Bay kangaroo rat, Los Osos Wastewater Project, Tonini Ranch. July 30.

Villablanca, F. 2010. Habitat Assessment and Protocol Visual Survey for Morro Bay kangaroo rat at the Mid-Town site. Letter report to Eric Wier, County of San Luis Obispo Department of Public Works, November 11.

Walgren, M. 2003. The current status of the Morro shoulderband snail (Helminthoglypta walkeriana). Masters Thesis, California Polytechnic State University. San Luis Obispo, California.