

APPENDIX B:  
SANTA CLARA VALLEY HABITAT  
PLAN DESIGN PHASE AND  
CONSTRUCTION PHASE  
AVOIDANCE AND MINIMIZATION  
MEASURES

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**VHP Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species**

This condition applies to all projects covered under the Habitat Plan and helps to protect species for which environmental permits cannot be granted: Contra Costa goldfields, bald eagle, American peregrine falcon, southern bald eagle, white-tailed kite, California condor, and Ring-tailed cat (= ringtail); also requires compliance with the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act. For detailed information, see Habitat Plan pages 6-7 to 6-8.

## VHP Condition 3. Aquatic Avoidance and Minimization Measures

ID	Avoidance and Minimization Measure (AMM)	Applicable to Proposed Project	
		Yes	No
	<b>General</b>		
1	Minimize the potential impacts on covered species most likely to be affected by changes in hydrology and water quality.	X	
2	Reduce stream pollution by removing pollutants from surface runoff before the polluted surface runoff reaches local streams.	X	
3	Maintain the current hydrograph and, to the extent possible, restore the hydrograph to more closely resemble predevelopment conditions.	X	
4	Reduce the potential for scour at stormwater outlets to streams by controlling the rate of flow into the streams.		X
5	Invasive plant species removed during maintenance will be handled and disposed of in such a manner as to prevent further spread of the invasive species.	X	
6	Activities in the active (i.e., flowing) channel will be avoided. If activities must be conducted in the active channel, avoidance and minimization measures identified in this table will be applied.		X
7	Personnel shall prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.	X	
8	Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations).	X	
9	Personnel shall implement measures to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means when removing sediments from the streams.		X
10	If ground disturbing activities are planned for a stream channel that is known or suspected to contain elevated levels of mercury, the following steps should be taken. 1. Avoid disturbing soils in streams known or suspected to contain high levels of mercury. 2. Soils that are likely to be disturbed or excavated shall be tested for mercury. Soils shall be remediated if: a. disturbed or excavated soils exposed to flood flows below the 2.33-year channel flow level exceed 1 ppm Hg, or b. disturbed or excavated soils above the 2.33-year flow level exceed 20 ppm Hg.		X
11	Vehicles shall be washed only at approved areas. No	X	

ID	Avoidance and Minimization Measure (AMM)	Applicable to Proposed Project	
		Yes	No
	washing of vehicles shall occur at job sites.		
12	No equipment servicing shall be done in the stream channel or immediate flood plain, unless equipment stationed in these locations cannot be readily relocated (i.e., pumps, generators).		X
13	Personnel shall use the appropriate equipment for the job that minimizes disturbance to the stream bottom. Appropriately-tired vehicles, either tracked or wheeled, shall be used depending on the situation		X
14	If high levels of groundwater in a work area are encountered, the water is pumped out of the work site. If necessary to protect water quality, the water shall be directed into specifically constructed infiltration basins, into holding ponds, or onto areas with vegetation to remove sediment prior to the water re-entering a creek.	X	
15	<p>If native fish or non-covered, native aquatic vertebrates are present when cofferdams, water bypass structures, and silt barriers are to be installed, a native fish and aquatic vertebrate relocation plan shall be implemented when ecologically appropriate as determined by a qualified biologist to ensure that significant numbers of native fish and aquatic vertebrates are not stranded.</p> <p>Prior to the start of work or during the installation of water diversion structures, native aquatic vertebrates shall be captured in the work area and transferred to another reach as determined by a qualified biologist. Timing of work in streams that supports a significant number of amphibians will be delayed until metamorphosis occurs to minimize impacts to the resource. Capture and relocation of aquatic native vertebrates is not required at individual project sites when site conditions preclude reasonably effective operation of capture gear and equipment, or when the safety of biologist conducting the capture may be compromised.</p> <p>Relocation of native fish or aquatic vertebrates may not always be ecologically appropriate. Prior to capturing native fish and/or vertebrates, the qualified biologist will use a number of factors, including site conditions, system carrying capacity for potential relocated fish, and flow regimes (e.g., if flows are managed) to determine whether a relocation effort is ecologically appropriate. If so, the following factors will be considered when selecting release site(s):</p> <ol style="list-style-type: none"> <li>1. similar water temperature as capture location;</li> <li>2. ample habitat availability prior to release of captured individuals;</li> </ol>		X

ID	Avoidance and Minimization Measure (AMM)	Applicable to Proposed Project	
		Yes	No
	<p>3. presence of other same species so that relocation of new individuals will not upset the existing prey/predation function;</p> <p>4. carrying capacity of the relocation location;</p> <p>5. potential for relocated individual to transport disease; and</p> <p>6. low likelihood of fish reentering work site or becoming impinged on exclusion net or screen.</p> <p>Proposals to translocate any covered species will be reviewed and approved by the Wildlife Agencies.</p>		
16	<p>When work in a flowing stream is unavoidable, the entire streamflow shall be diverted around the work area by a barrier, except where it has been determined by a qualified biologist that the least environmentally disruptive approach is to work in a flowing stream. Where feasible, water diversion techniques shall allow stream flows to gravity flow around or through the work site.</p>		X
17	<p>Coffer dams shall be installed both upstream and downstream not more than 100 feet from the extent of the work areas. Coffer dam construction shall be adequate to prevent seepage into or from the work area. Stream flow will be pumped around the work site using pumps and screened intake hoses. All water shall be discharged in a non-erosive manner (e.g., gravel or vegetated bars, on hay bales, on plastic, on concrete, or in storm drains when equipped with filtering devices, etc.).</p>		X
18	<p>Small in-channel berms that deflect water to one side of the channel during project implementation may be constructed of channel material in channels with low flows.</p>		X
19	<p>Sumps or basins may also be used to collect water, where appropriate (e.g., in channels with low flows).</p>		X
20	<p>Diversions shall maintain ambient stream flows below the diversion, and waters discharged below the project site shall not be diminished or degraded by the diversion. All materials placed in the channel to dewater the channel shall be removed when the work is completed. Normal flows shall be restored to the affected stream as soon as is feasible and safe after completion of work at that location.</p>		X
21	<p>To the extent that stream bed design changes are not part of the project, the stream bed will be returned to as close to pre-project condition as appropriate.</p>		X

ID	Avoidance and Minimization Measure (AMM)	Applicable to Proposed Project	
		Yes	No
22	To the extent feasible, all temporary diversion structures and the supportive material shall be removed no more than 48 hours after work is completed.		X
23	Temporary fills, such as for access ramps, diversion structures, or cofferdams, shall be completely removed upon finishing the work.	X	
24	To prevent increases in temperature and decreases in dissolved oxygen (DO), if bypass pipes are used, they shall be properly sized (i.e., larger diameter pipes to better pass the flows). Use of bypass pipes may be avoided by creating a low-flow channel or using other methods to isolate the work area.		X
25	Diversions shall maintain fish passage when the project meets the following conditions: 1) the length of the area dewatered exceeds 500 feet, and/or 2) the length of time the stream is dewatered exceeds two weeks in length. Conditions for fish passage shall be met as long as the diversion 1) maintains contiguous flows through a low flow channel in the channel bed or an artificial open channel, 2) presents no vertical drops exceeding six (6) inches and follows the natural grade of the site, 3) maintains water velocities that shall not exceed eight feet per second (8 ft/sec), and 4) maintains adequate water depths consistent with normal conditions in the project reach. An artificial channel used for fish passage shall be lined with cobble/gravel. A closed conduit pipe shall not be used for fish passage. The inlets of diversions shall be checked daily to prevent accumulation of debris.		X
26	Any sediment removed from a project site shall be stored and transported in a manner that minimizes water quality impacts.		X
27	Sediment from the San Francisco Bay Watershed, including that for reuse, will not be removed to areas any farther south than Metcalf Road in south San Jose.		X
28	Where practical, the removed sediments and gravels will be re-used.		X
29	Existing native vegetation shall be retained by removing only as much vegetation as necessary to accommodate the trail clearing width. Maintenance roads should be used to avoid effects on riparian corridors.	X	
30	Vegetation control and removal in channels, on stream banks, and along levees and maintenance roads shall be limited to removal necessary for facility inspection purposes, or to meet regulatory requirements or guidelines.		X

ID	Avoidance and Minimization Measure (AMM)	Applicable to Proposed Project	
		Yes	No
31	When conducting vegetation management, retain as much understory brush and as many trees as feasible, emphasizing shade producing and bank stabilizing vegetation. If riparian vegetation is to be removed with chainsaws, consider using saws currently available that operate with vegetable-based bar oil.		X
32	In-channel vegetation removal may result in increased local erosion due to increased flow velocity. To minimize the effect, the top of the bank shall be protected by leaving vegetation in place to the maximum extent possible.		X
33	Regional Board objectives for temperature change in receiving waters (measured 100 feet downstream of discharge point) shall not be exceeded. Receiving water and discharge water may be monitored for temperature changes after a comparison of ambient temperature to pipeline water temperature suggests the potential for change.		X
<b>Project Design</b>			
34	Use the minimum amount of impermeable surface (building footprint, paved driveway, etc.) as practicable.	X	
35	Use pervious materials, such as gravel or turf pavers, in place of asphalt or concrete to the extent practicable.	X	
36	Use flow control structures such as swales, retention/detention areas, and/or cisterns to maintain the existing (pre-project) peak runoff.	X	
37	Direct downspouts to swales or gardens instead of storm drain inlets.		X
38	Use flow dissipaters at runoff inlets (e.g., culvert drop-inlets) to reduce the possibility of channel scour at the point of flow entry.		X
39	Minimize alterations to existing contours and slopes, including grading the minimum area necessary.	X	
40	Maintain native shrubs, trees and groundcover whenever possible and revegetate disturbed areas with local native or non-invasive plants.	X	
41	Combine flow-control with flood control and/or treatment facilities in the form of detention/retention basins, ponds, and/or constructed wetlands.		X
42	Use flow control structures, permeable pavement, cisterns, and other runoff management methods to ensure no change in post-construction peak runoff volume from pre-project conditions for all covered activities with more than 5,000 square feet of impervious	X	



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		Yes	No
	surface.		
43	Site characteristics will be evaluated in advance of project design to determine if non-traditional designs, such as bioengineered bank treatments that incorporate live vegetation, can be successfully utilized while meeting the requirements of the project.	X	
44	Maintenance of natural stream characteristics, such as riffle-pool sequences, riparian canopy, sinuosity, floodplain, and a natural channel bed, will be incorporated into the project design.		X
45	Stream crossings shall incorporate a free-span bridge unless infeasible due to engineering or cost constraints or unsuitable based on minimal size of stream (swale without bed and banks or a very small channel). If a bridge design cannot free-span a stream, bridge piers and footings will be designed to have minimum impact on the stream. A hydraulics analysis must be prepared and reviewed by the jurisdictional partner, including SCVWD as appropriate, demonstrating that piers or footings will not cause significant scour or channel erosion. Whenever possible, the span of bridges will also allow for upland habitat beneath the bridge to provide undercrossing areas for wildlife species that will not enter the creek. Native plantings, natural debris, or scattered rocks will be installed under bridges to provide wildlife cover and encourage the use of crossings.		X
46	Whenever possible, the span of bridges will also allow for upland habitat beneath the bridge to provide undercrossing areas for wildlife species that will not enter the creek.		X
47	If a culvert is used, up- and downstream ends of the culvert must be appropriately designed so that the stream cannot flow beneath the culvert or create a plunge pool at the downstream end. Preference will be given to designs that allow a natural bottom (arch culvert) and/or which do not alter natural grade.		X
48	Trails will be sited and designed with the smallest footprint necessary to cross through the in-stream area. Trails will be aligned perpendicular to the channel and be designed to avoid any potential for future erosion. New trails that follow stream courses will be sited outside the riparian corridor.		X
49	The project or activity must be designed to avoid the removal of riparian vegetation, if feasible. If the removal of riparian vegetation is necessary, the amount shall be minimized to the amount necessary to accomplish the required activity and comply with public health and		X

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		Yes	No
	safety directives.		
50	If levee reconstruction requires the removal of vegetation that provides habitat value to the adjacent stream (e.g., shading, bank stabilization, food sources, etc.), then the project will include replacement of the vegetation/habitat that was removed during reconstruction unless it is determined to be inappropriate to do so by the relevant resource agencies (e.g., CDFG and USFWS).		X
51	All projects will be conducted in conformance with applicable County and/or city drainage policies.	X	
52	Adhere to the siting criteria described for the borrow site covered activity (see Chapter 2 for details).		X
53	When possible, maintain a vegetated buffer strip between staging/excavation areas and receiving waters.	X	
54	When not within the construction footprint, deep pools within stream reaches shall be maintained as refuge for fish and wildlife by constructing temporary fencing and/or barrier so as to avoid pool destruction and prevent access from the project site.		X
55	For stream maintenance projects that result in alteration of the stream bed during project implementation, its low flow channel shall be returned to its approximate prior location with appropriate depth for fish passage without creating a potential future bank erosion problem.		X
56	Increased water velocity at bank protection sites may increase erosion downstream. Therefore, bank stabilization site design shall consider hydraulic effects immediately upstream and downstream of the work area. Bank stabilization projects will be designed and implemented to provide similar roughness and characteristics that may affect flows as the surrounding areas just upstream and downstream of the project site.		X
57	When parallel to a stream or riparian zone and not located on top of a levee, new trails shall be located behind the top of bank or at the outside edge of the riparian zone except where topographic, resource management, or other constraints or management objectives make this not feasible or undesirable.		X
58	Existing access routes and levee roads shall be used if available to minimize impacts of new construction in special status species habitats and riparian zones.		X
59	Trails in areas of moderate or difficult terrain and adjacent to a riparian zone shall be composed of natural materials or shall be designed (e.g., a bridge or		X

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		Yes	No
	boardwalk) to minimize disturbance and need for drainage structures, and to protect water quality.		
60	Trail crossings of freshwater stream zones and drainages shall be designed to minimize disturbance, through the use of bridges or culverts, whichever is least environmentally damaging. Structures over water courses shall be carefully placed to minimize disturbance. Erosion control measures shall be taken to prevent erosion at the outfalls of drainage structures.		X
<b>Construction</b>			
61	Minimize ground disturbance to the smallest area feasible.	X	
62	Use existing roads for access and disturbed area for staging as site constraints allow. Off-road travel will avoid sensitive communities such as wetlands and known occurrences of covered plants.	X	
63	Prepare and implement sediment erosion control plans.	X	
64	No winter grading unless approved by City Engineer and specific erosion control measures are incorporated.	X	
65	Control exposed soil by stabilizing slopes (e.g., with erosion control blankets) and protecting channels (e.g., using silt fences or straw wattles).	X	
66	Control sediment runoff using sandbag barriers or straw wattles.	X	
67	No stockpiling or placement of erodible materials in waterways or along areas of natural stormwater flow where materials could be washed into waterways.	X	
68	Stabilize stockpiled soil with geotextile or plastic covers.	X	
69	Maintain construction activities within a defined project area to reduce the amount of disturbed area.	X	
70	Only clear/prepare land which will be actively under construction in the near term.	X	
71	Preserve existing vegetation to the extent possible.	X	
72	Equipment storage, fueling and staging areas will be sited on disturbed areas or non-sensitive habitat outside of a stream channel.	X	
73	Avoid wet season construction.	X	
74	Stabilize site ingress/egress locations.	X	
75	Dispose of all construction waste in designated areas and prevent stormwater from flowing onto or off of these areas.	X	
76	Prevent spills and clean up spilled materials.	X	
77	Sweep nearby streets at least once a day.	X	

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		Yes	No
78	In-stream projects occurring while the stream is flowing must use appropriate measures to protect water quality, native fish and covered wildlife species at the project site and downstream of the project site.		X
79	If mercury contamination may be present, the channel must be dewatered prior to commencement of the activity.		X
80	All personnel working within or adjacent to the stream setback (i.e., those people operating ground-disturbing equipment) will be trained by a qualified biologist in these avoidance and minimization measures and the permit obligations of project proponents working under this Plan.		X
81	Temporary disturbance or removal of aquatic and riparian vegetation will not exceed the minimum necessary to complete the work.		X
82	Channel bed temporarily disturbed during construction activities will be returned to pre-project or ecologically improved conditions at the end of construction.		X
83	Sediments will be stored and transported in a manner that minimizes water quality impacts. If soil is stockpiled, no runoff will be allowed to flow back to the channel.	X	
84	Appropriate erosion control measures (e.g., fiber rolls, filter fences, vegetative buffer strips) will be used on site to reduce siltation and runoff of contaminants into wetlands, ponds, streams, or riparian vegetation. Fiber rolls used for erosion control will be certified as free of noxious weed seed. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion control measures will be placed between the outer edge of the buffer and the project site.	X	
85	Seed mixtures applied for erosion control will not contain invasive nonnative species and will be composed of native species or sterile nonnative species. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives.	X	
86	Topsoil removed during soil excavation will be preserved and used as topsoil during revegetation when it is necessary to conserve the natural seed bank and aid in revegetation of the site.	X	
87	Vehicles operated within and adjacent to streams will be checked and maintained daily to prevent leaks of materials that, if introduced to the water, could be deleterious to aquatic life.		X

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		Yes	No
88	Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas.	X	
89	The potential for traffic impacts on terrestrial animal species will be minimized by adopting traffic speed limits.	X	
90	All trash will be removed from the site daily to avoid attracting potential predators to the site. Personnel will clean the work site before leaving each day by removing all litter and construction-related materials.	X	
91	To prevent the spread of exotic species and reduce the loss of native species, aquatic species will be netted at the drain outlet when draining reservoirs or ponds to surface waters. Captured native fish, native amphibians, and western pond turtles will be relocated if ecologically appropriate. Exotic species will be dispatched.		X
92	To minimize the spread of pathogens all staff working in aquatic systems (i.e., streams, ponds, and wetlands)—including site monitors, construction crews, and surveyors—will adhere to the most current guidance for equipment decontamination provided by the Wildlife Agencies at the time of activity implementation. Guidance may require that all materials that come in contact with water or potentially contaminated sediments, including boot and tire treads, be cleaned of all organic matter and scrubbed with an appropriate cleansing solution, and that disposable gloves be worn and changed between handling equipment or animals. Care should be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.	X	
93	When accessing upland areas adjacent to riparian areas or streams, access routes on slopes of greater than 20% should generally be avoided. Subsequent to access, any sloped area should be examined for evidence of instability and either revegetated or filled as necessary to prevent future landslide or erosion.		X
94	Personnel shall use existing access ramps and roads if available. If temporary access points are necessary, they shall be constructed in a manner that minimizes impacts to streams.	X	
95	To prevent inadvertent entrapment of animals during excavation, all excavated, steep-walled holes or trenches more than 2-feet deep will be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks.	X	
96	Isolate the construction area from flowing water until		X

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		Yes	No
	project materials are installed and erosion protection is in place.		
97	Erosion control measures shall be in place at all times during construction. Do not start construction until all temporary control devices (straw bales, silt fences, etc.) are in place downstream of project site.	X	
98	When needed, utilize in-stream grade control structures to control channel scour, sediment routing, and headwall cutting.		X
<b>Post-Construction</b>			
99	Conduct street cleaning on a regular basis	X	
100	Potential contaminating materials must be stored in covered storage areas or secondary containment that is impervious to leaks and spills	X	
101	Runoff pathways shall be free of trash containers or trash storage areas. Trash storage areas shall be screened or walled	X	
102	Immediately after project completion and before close of seasonal work window, stabilize all exposed soil with mulch, seeding, and/or placement of erosion control blankets.	X	
103	All disturbed soils will be revegetated with native plants and/or grasses or sterile nonnative species suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. All disturbed areas that have been compacted shall be de-compacted prior to planting or seeding. Cut-and-fill slopes will be planted with local native or non-invasive plants suitable for the altered soil conditions.	X	
104	Measures will be utilized on site to prevent erosion along streams (e.g., from road cuts or other grading), including in streams that cross or are adjacent to the project proponent's property. Erosion control measures will utilize natural methods such as erosion control mats or fabric, contour wattling, brush mattresses, or brush layers. For more approaches and detail, please see the <i>Bank Protection/ Erosion Repair Design Guide</i> in the Santa Clara Valley Water Resources Protection Collaborative's <i>User Manual: Guidelines &amp; Standards for Land Use Near Streams</i> (Santa Clara Valley Water Resources Protection Collaborative 2006).		X

ID	Avoidance and Minimization Measure (AMM)	Applicable to Proposed Project	
		Yes	No
105	Vegetation and debris must be managed in and near culverts and under and near bridges to ensure that entryways remain open and visible to wildlife and that passage through the culvert or bridge remains clear.		X
106	Prior to undertaking stream maintenance activities, reach conditions will be assessed to identify tasks that are necessary to maintain the channel for the purpose for which it was designed and/or intended (e.g., flood control, groundwater recharge). Only in-stream work that is necessary to maintain the channel will be conducted.		X
107	On streams managed for flood control purposes, when stream reaches require extensive vegetation thinning or removal (e.g., when the channel has been fully occluded by willows or other vegetation), removal will be phased so that some riparian land cover remains and provides some habitat value. In addition, vegetation removal will be targeted and focused on removing the least amount of riparian vegetation as possible while still meeting the desired flood control needs. For example, vegetation removal should be focused on shrubby undergrowth at the toe-of-slope that is most likely to increase roughness and create a flooding hazard. Vegetation on the upper banks, particularly mature tree canopy, should be maintained to the extent possible to provide habitat for birds and small mammals and shading for the active channel.		X
108	When reaches require sediment removal, approaches will be considered that may reduce the impacts of the activity. Examples of potential approaches include phasing of removal activities or only removing sediment along one half of the channel bed, allowing the other half to remain relatively undisturbed.		X
109	In streams not managed for flood control purposes, woody material (including live leaning trees, dead trees, tree trunks, large limbs, and stumps) will be retained unless it is threatening a structure, impedes reasonable access, or is causing bank failure and sediment loading to the stream.		X
110	If debris blockages threaten bank stability and may increase sedimentation of downstream reaches, debris will be removed. When clearing natural debris blockages (e.g., branches, fallen trees, soil from landslides) from the channel, only remove the minimum amount of debris necessary to maintain flow conveyance (i.e., prevent significant backwatering or pooling). Non-natural debris (e.g., trash, shopping carts, etc.) will be fully removed from the channel.		X

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		Yes	No
111	If bank failure occurs due to debris blockages, bank repairs will only use compacted soil, and will be re-seeded with native grasses or sterile nonnative hybrids and stabilized with natural erosion control fabric. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. If compacted soil is not sufficient to stabilize the slope, bioengineering techniques must be used. No hardscape (e.g., concrete or any sort of bare riprap) or rock gabions may be utilized in streams not managed for flood control except in cases where infrastructure or human safety is threatened (e.g., undercutting of existing roads). Rock riprap may only be used to stabilize channels experiencing extreme erosion, and boulders must be backfilled with soil and planted with willows or other native riparian species suitable for planting in such a manner. If available, local native species will be utilized as appropriate.		X
112	Pumps and generators shall be maintained and operated in a manner that minimizes impacts to water quality and aquatic species.	X	
113	The channel bottom shall be re-graded at the end of the work project to as close to original conditions as possible.		X
114	Erosion control methods shall be used as appropriate during all phases of routine maintenance projects to control sediment and minimize water quality impacts.	X	
115	All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods will be thoroughly inspected for wildlife by properly trained construction personnel before the pipe is subsequently buried, capped, or otherwise used or moved in anyway.	X	



**VHP Condition 12 – Design Phase and Construction Measures to Avoid and Minimize Impacts on Wetlands and Ponds**

ID	Avoidance and Minimization Measure (AMM)	Applicable to Proposed Project	
		Yes	No
<b>Design Phase</b>			
1	Locate septic facilities, if used, at least 100 feet from the edge of a wetland or pond if space allows.	X	
2	If the runoff from the development will flow within 100 feet of a wetland or pond, install vegetated stormwater filtration features, such as rain gardens, grass swales, tree box filters, or infiltration basins, to capture and treat flows.	X	
3	Plant native vegetation (shrubs and small trees) between the wetland or pond and the development such that the line of sight between the wetland or pond and the development is shielded.	X	
4	If during the environmental review process it is shown that a project has adverse indirect impacts to the wetland's function (change in hydrological functions, etc.), the project will be required to avoid these indirect effects, as determined on a case-by-case approach by the local jurisdiction, in consultation with the Implementing Entity. If a Local Partner is carrying out the activity, it will coordinate avoidance measures with the Implementing Entity. Wetlands that are not completely avoided, including indirect effects, will be considered permanently impacted and will count towards the impact caps described in Table 4-2 of the VHP and will be assessed fees as described in Chapter 9 of the VHP. If however, the local jurisdiction demonstrates to the Wildlife Agencies that the wetlands to be indirectly affected are highly degraded prior to project impacts, and the Wildlife Agencies agree, impacts will not be counted toward the impact caps described in Table 4-2 and fees will not be assessed. "Highly degraded" wetlands could include, but are not limited to, those that are indirectly affected by surrounding development or agriculture to the extent that hydrology, water quality, or habitat for covered species is adversely affected.	X	
<b>Construction Phase</b>			
5	Personnel conducting ground-disturbing activities in or adjacent to wetlands and ponds will be trained by a qualified biologist in these avoidance and minimization measures and the permit obligations of project proponents working under the VHP.	X	
6	All wetlands and ponds to be avoided by covered activities will be temporarily staked in the field by a qualified biologist to ensure that construction equipment	X	

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		Yes	No
	and personnel avoid these features.		
7	Fencing will be erected along the outer edge of the project area, between the project area and a wetland or pond. The type of fencing will match the activity and impact types. For example, projects that have the potential to cause erosion will require erosion control barriers (see below), and projects that may bring more household pets to a site will be fenced to exclude pets. The temporal requirements for fencing also depend on the activity and impact type. For example, fencing for permanent impacts will be permanent, and fencing for short-term impacts will be removed after the activity is completed.	X	
8	Appropriate erosion control measures (e.g., fiber rolls, filter fences, vegetative buffer strips) will be used on site to reduce siltation and runoff of contaminants into wetlands, ponds, streams, or riparian woodland/scrub. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion control blankets will be used as a last resort because of their tendency to biodegrade slowly and trap reptiles and amphibians.	X	
9	Erosion-control measures will be placed between the wetland or pond and the outer edge of the project site.	X	
10	Fiber rolls used for erosion control will be certified as free of noxious weed seed.	X	
11	Seed mixtures applied for erosion control will not contain invasive nonnative species, but will rather be composed of native species appropriate for the site or sterile nonnative species. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives.	X	
12	Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas.	X	
13	Trash generated by covered activities will be promptly and properly removed from the site.	X	
14	No construction or maintenance vehicles will be refueled within 200 feet of avoided wetlands and ponds unless a bermed and lined refueling area is constructed and hazardous material absorbent pads are available in the event of a spill.	X	
15	All management of pest species will be conducted in compliance with the County integrated pest management (IPM) ordinance. In addition, other requirements identified in this chapter that exceed the requirements of the IPM ordinance will be implemented.	X	

ID	Avoidance and Minimization Measure (AMM)	Applicable to Proposed Project	
		Yes	No
16	Where appropriate to control serious invasive plants, herbicides that have been approved by EPA for use in or adjacent to aquatic habitats may be used as long as label instructions are followed and applications avoid or minimize impacts on covered species and their habitats. In wetland environments, appropriate herbicides may be applied during the dry season to control nonnative invasive species (e.g., yellow star thistle). Herbicide drift will be minimized by applying the herbicide as close to the target area as possible. Herbicides will only be applied by certified personnel in accordance with label instructions.	X	
17	All organic matter should be removed from nets, traps, boots, vehicle tires, and all other surfaces that have come into contact with ponds, wetlands, or potentially contaminated sediments. Items should be rinsed with clean water before leaving each study site (U.S. Fish and Wildlife Service 2005).	X	
18	Implement measures to minimize the spread of disease and non-native species based on current Wildlife Agency protocols (e.g., Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog: Appendix B, Recommended Equipment Decontamination Procedures [U.S. Fish and Wildlife Service 2005]) and other best available science.	X	
19	Used cleaning materials (liquids, etc.) should be disposed of safely, and if necessary, taken off site for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags (U.S. Fish and Wildlife Service 2005).	X	
20	Portions of the project that occur in streams will comply with Condition 4 of the VHP.		X

## References

U.S. Fish and Wildlife Service. 2005. Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog: Appendix B, Recommended Equipment Decontamination Procedures. August. Available: <[http://www.fws.gov/sacramento/es/documents/crf\\_survey\\_appendix\\_B\\_decontamination.PDF](http://www.fws.gov/sacramento/es/documents/crf_survey_appendix_B_decontamination.PDF)>. Accessed: April 26, 2010.

**VHP Condition 15. Western Burrowing Owl**

This condition applies to projects that are located within any grassland, oak woodland, or agricultural land cover type and within the Wildlife Survey Area, or where burrowing owl nesting or breeding habitat has been documented by survey. This condition helps protect western burrowing owls by prescribing preconstruction surveys, construction buffer zones, biological monitoring, and other requirements. For detailed information, see Habitat Plan pages 6-62 to 6-67.