

Appendix B Tributary 3 Bypass Facility Project Description and Discussion

Background

Under CEQA, if a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measures shall be discussed but in less detail than the significant effects of the project as proposed. (Cal. Code Regs, tit. 14, div. 6, ch. 3, §15126.4.) Therefore, potentially significant effects resulting from construction of the bypass facility (which is mitigation for the diversion of water under this project) are discussed herein.

In 2002, DFG and NMFS developed Draft Guidelines for Maintaining Instream Flows to Protect Fisheries Resources Downstream of Water Diversions in Mid-California Coastal Streams (DFG-NMFS Draft Guidelines) (California Department of Fish and Game and National Marine Fisheries Service 2002). The DFG-NMFS Draft Guidelines were recommended for use by permitting agencies (including the Division), planning agencies, and water resources development interests when evaluating proposals to divert and use water from northern California coastal streams. The DFG-NMFS Draft Guidelines recommend a bypass flow that adequately protects salmonids and aquatic resources downstream of the diversion. Specifically, a bypass no less than the February Median Flow (FMF) is recommended absent a site-specific study to determine a protective bypass flow.

For Application 30745, the FMF bypass at the lower reservoir was calculated to be 0.56 cfs (Wagner & Bonsignore 2008a). The proposed bypass facility was chosen to be located at Tributary 3 (Figure 4), since it is the tributary that contributes the most water to the lower reservoir on an annual basis.

The justification for bypassing directly into Tributary 5 (as opposed to Tributary 4 [the Spillway Channel]) stems from discussions during a site visit held on October 13, 2010, with DFG, NMFS, the Division, and the Applicant's agent and consultants. The January 9, 2009, report entitled *Peter Michael Winery, Home Ranch Property (Application 30745)—Evaluation of Kellogg Creek between Tributaries 4 and 5 to Determine Preferred Location for Tributary 5 Reservoir Bypass Releases* (ICF Jones & Stokes 2009) recommends bypassing the FMF to Tributary 5, the Historic Channel, rather than to its present location (Tributary 4). Increasing flows in Tributary 5, a Class III drainage, could enhance fish habitat in the stretch of Kellogg Creek from the confluence of Tributary 5 to the confluence of Tributary 4, potentially benefiting adult and juvenile

migration, spawning, and egg incubation in this reach of Kellogg Creek, compared to existing conditions. Additionally, water from the FMF could percolate into the ground and streambank around Tributary 5 and possibly enhance late spring and early summer flows to Kellogg Creek. Finally, the bypass of the FMF to Tributary 5 in essence would enhance 861 feet of available amphibian and benthic macroinvertebrate habitat.

Project Description

The proposed bypass design involves placing a concrete weir in a tributary upstream of the lower reservoir (Tributary 3) that would gravitationally divert the required bypass flow around the lower reservoir via a 12-inch-diameter pipeline that would be buried under the existing gravel pathway around the lower reservoir, and release the bypassed flow into the stream channel below the dam (Tributary 5). This bypass pipeline would connect with an existing 12-inch-diameter storm drain pipeline, originating near the downstream toe of the dam, which empties into Tributary 5. The total project footprint for the proposed bypass facility is approximately 0.426 acre.

Machinery expected to be used for construction of the bypass facility includes an 8-foot-wide excavator (a “312” excavator) to be used for digging an opening for the proposed weir in the channel bed of Tributary 3 and for digging the trench for the pipeline that will be routed around the eastern perimeter of the lower reservoir; a concrete-pumping truck; a haul truck, backhoe, or skip loader to bring in the required tools, rebar, and piping; and a haul truck to remove and dispose of leftover soil material from the trench for the pipeline. The amount of concrete needed to construct the weir facility is expected to be on the order of 8 cubic yards, resulting in a structure that is approximately 3 to 4 feet high from the channel bed and 20 feet in total width. The affected length of channel, including rock protection, is approximately 21 feet (about 5 feet downstream of the weir and 15 feet upstream of the weir). There would be a 4-foot-wide rectangular opening in the wall into which flashboards could be inserted to regulate the pooled water level—with all boards removed the bottom of the opening would be at about the same elevation as the thalweg of Tributary 3.

The bypass pipeline inlet would be set into the left bank of Tributary 3, approximately five feet upstream of the weir wall. The inlet would be constructed using approximately 2.5 cubic yards of concrete, and the base of the inlet would be flush with the edge of streambed. The inlet structure would be approximately 6 feet wide, 6 feet tall, and 4 feet deep, with an approximately 1-foot deep toe at the front of the structure.

It is anticipated that there will be approximately 24 cubic yards of leftover soil material from the pipeline trenching that will need to be hauled away. This material will be

disposed of onsite (i.e., on the Home Ranch property) less than a mile away at an existing disposal site near the winery and main office.

Construction activities would occur in late August or September, when Tributary 3 typically has no flowing water. The concrete-pumping truck will be stationed at a pre-existing parking area/staging area at the lower reservoir, and concrete will be pumped through a hose to the proposed weir location. Construction of the proposed bypass facility at the lower reservoir would involve the removal of up to two mature trees, one oak and one fir tree.

Refer to Figure App. B-1 and Wagner & Bonsignore's *Application 30745 of Peter Michael—Draft Compliance Plan* (2011) for additional information regarding plans and specifications of the proposed weir, as well as the pipeline routing.

Required Surveys and Mitigation Proposed under Sections 401 and 404 and the Lake and Streambed Alteration Agreement

Required Surveys

Reconnaissance-level surveys to identify potential biological resources in the vicinity of the proposed bypass facility were conducted by an ICF wildlife biologist on September 12, 2011, and by an ICF botanist on September 29, 2011. Information collected during the surveys in 2011 was used to prepare a California red-legged frog site assessment.

In general, the purposes of the reconnaissance-level surveys were to:

- Characterize natural communities and associated wildlife habitat uses in the areas examined during the surveys.
- Evaluate the potential for occurrence of special-status plant and wildlife species in the study area to determine whether additional surveys would be required during the appropriate season.
- Determine whether any potential wetlands or other water features that would qualify as water of the United States occur in the proposed bypass facility area.

The results are presented below.

California Red-Legged Frog Site Assessment

Because the proposed project is within the range of the federally listed threatened California red-legged frog (*Rana draytonii*), an evaluation of the study area's potential to

support habitat was conducted according to the USFWS's August 2005 Revised *Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog* (U.S. Fish and Wildlife Service 2005). This effort involved reviewing aerial photographs and topographic maps to identify potentially suitable habitat for red-legged frogs within 1 mile of the study area and identifying the nearest record of red-legged frogs in the CNDDDB (2011). The field portion of the site assessment was conducted on September 12, 2011, and involved assessing those features identified within 1 mile of the study area for their suitability for California red-legged frogs. These results are summarized in a report that has been submitted to the USFWS for review (as part of the Section 404 permitting process).

Water Features

In 2008, ICF Jones & Stokes conducted reconnaissance-level surveys of the proposed project area to identify and classify wetlands and other water bodies (i.e., the tributaries) that could be regulated by the USACE, RWQCB, and/or DFG. Results from these surveys are summarized in the Biological Resources section under Wetlands and Other Waters and presented in the *report entitled Peter Michael Winery, Home Ranch Property (Application 30745)—Stream Classification of Five Unnamed Tributaries to Kellogg Creek, Sonoma County (February 18–19 and March 13, 2008)* (ICF Jones and Stokes 2008).

In 2011, ICF International performed a formal delineation of potential waters of the United States within the construction footprint of the proposed bypass facility area, which contains Tributary 3. The ordinary high water mark (OHWM) of Tributary 3 was delineated according to the USACE's Regulatory Guidance Letter 05-05 as the lateral extent of USACE jurisdiction under Section 404 of the CWA.

Tree Survey

On September 12, 2011, ICF International conducted a tree survey of the trees adjacent to the lower reservoir that could be affected by the construction of the proposed bypass facility (as part of the Section 401 and Lake and Streambed Alteration Agreement permitting processes). All tree location data were collected with a global positioning system unit with sub-meter accuracy. A numbered, aluminum tree tag was placed on all surveyed trees. The species, number of trunks, diameter at breast height (dbh) (i.e., at 4.5 feet above the ground surface), tree height, dripline diameter, and overall health/vigor of each tree were recorded.

Proposed Mitigation and Avoidance Measures

Proposed mitigation and avoidance measures below are *proposed* terms and will be formalized in Sections 401 and 404 and Lake and Streambed Alteration Agreement permits issued pursuant to construction of the bypass for Application 30745.

Impacts on Special-Status Plants

The construction of the proposed bypass facility potentially could affect special-status plants. The natural communities present in the areas where construction would occur for the proposed bypass facility are the riparian area adjacent to Tributary 3 and mixed oak forest. These areas represent potential habitat for one special-status plant species identified as having high potential to occur in the study area, 20 special-status plant species identified as having moderate potential to occur in the study area, and 37 special-status plant species identified as having low potential to occur in the study area. Of these 58 plant species, 57 have specific microhabitat requirements (e.g., soil types, mesic conditions) within mixed oak forest that may or may not be met within the construction footprint for the proposed bypass facility. The construction activities associated with the proposed bypass facility potentially could affect special-status plants that occur in mixed oak forest and riparian habitats.

The following measures have been proposed in the Sections 401 and 404 and the Lake and Streambed Alteration Agreement permit applications to ensure that potential impacts on special-status plants from the proposed project are mitigated for.

- A qualified botanist will conduct preconstruction floristic surveys in the study area (excluding aquatic habitat in the lower reservoir). The botanists will conduct floristic surveys that follow the DFG botanical survey guidelines (California Department of Fish and Game 2009).
- All plant species observed will be identified to the level necessary to determine whether they qualify as special-status plants or are plant species with unusual or significant range extensions. The guidelines also require that floristic surveys be conducted when special-status plants that could occur in the area are evident and identifiable, generally during the reported blooming period.
- To account for different special-status plant blooming periods, botanical surveys must be conducted during the appropriate time period(s). Special-status plant populations identified during the floristic surveys will be mapped and submitted to CNDDDB. If no special-status plants are identified during the floristic surveys, no additional actions are required.

If special-status plants are identified during the floristic surveys, the Permittee will avoid and minimize impacts on them by taking the following steps.

- If the special-status plants are located within the construction footprint of the proposed bypass facility, the Permittee will redesign the proposed bypass facility to the extent feasible.
- If the special-status plants cannot be avoided by redesigning the proposed bypass facility, the Permittee will install protective fencing (i.e., orange construction barrier fencing and, if applicable, sediment fencing) prior to the beginning of construction. The fencing will be maintained by the Permittee for the duration of construction. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities will cease until the fencing is replaced. Protected areas will be clearly identified on construction plans and no construction personnel or equipment will enter the protected areas. A biological monitor will be on site during construction to monitor the status of the protective fencing and will stop construction if the fencing is not in place.
- The Permittee's contractor will brief its construction personnel on the sensitive biological resources within or adjacent to the construction footprint that will be avoided during construction and the penalties for not complying with permit requirements.

Impacts on Special-Status Wildlife

Foothill Yellow-Legged Frog

Construction activities in and around Tributary 3 could result in foothill yellow-legged frogs being killed and temporarily displaced from their habitat. Although this tributary was identified as providing poor breeding habitat for the species, it does represent suitable habitat for non-breeding adults. Once construction is complete, the instream bypass structure would not substantially alter the suitability of this habitat for foothill yellow-legged frog. The area downstream of the proposed bypass structure flows approximately another 30 feet until it reaches the lower reservoir. This portion of the channel represents poor quality habitat for the species because it is heavily shaded and the bed substrate consists mostly of fines.

The proposed bypass likely will improve the quality of habitat for foothill yellow-legged frog in Tributary 5 and in Kellogg Creek downstream of its confluence with Tributary 5 by increasing flow volumes, which over time will remove accumulated sediment and likely expose larger gravels and create pool and riffle habitat.

Because the proposed construction of the bypass facility is planned to occur in late summer when flows in Tributary 3 are very low or nonexistent, the potential for impacts to occur is believed to be low.

The following measures have been proposed in the Sections 401 and 404 and the Lake and Streambed Alteration Agreement permit applications to reduce impacts on foothill yellow-legged frog.

- Forty-eight hours prior to construction activities in Tributary 3 and the adjacent riparian habitat, a preconstruction survey for foothill yellow-legged frogs will be conducted by a qualified biologist. The biologist will be familiar with the foothill yellow-legged frog life cycle and conduct appropriate surveys for the applicable life stage (eggs, larvae, adults). This survey will occur during daytime hours and will involve walking upstream along the channel edge from Tributary 3's confluence with the lower reservoir to an area approximately 50 feet upstream of the proposed bypass construction site. The surveyor will visually scan upstream areas of the channel and banks with binoculars looking for basking adults and then proceed upstream looking down into the channel for larvae and eggs (depending on the time of year). All observed amphibians will be identified and recorded to species and, where possible, photographs taken. The biological monitor will possess a current California Department of Fish and Game Scientific Collecting Permit that authorizes the biologist for the capture and release of amphibians in case a foothill yellow-legged frog is observed in the work area. Survey results will be documented in a letter report and submitted to the Department of Fish and Game.
- During work in Tributary 3 and associated riparian habitat, a qualified biological monitor approved by the Department of Fish and Game will be on site to ensure that no foothill yellow-frogs are harmed during the construction of the bypass structure. The biological monitor will possess a current California Department of Fish and Game Scientific Collecting Permit that authorizes the biologist for the capture and release of amphibians in case a foothill yellow-legged frog is observed in the work area.

In addition, standard permit terms as described in the Hydrology and Water Quality sections will be included in any water right permit or license pursuant to Application 30745, which will serve to protect aquatic habitat for foothill yellow-legged frog.

California Red-Legged Frog

Construction activities in and around Tributary 3 could result in California red-legged frogs being killed and temporarily displaced from their habitat. Construction of the

bypass structure and associated pipeline could affect California red-legged frogs that use Tributary 3 and the nearby lower reservoir. As discussed in the Biological Resources section, California red-legged frog could use Tributary 3 for dispersal and/or foraging habitat but not likely breeding. The lower reservoir represents potential breeding habitat; however, it is believed to be of poor quality because it supports a large population of bullfrogs and fish. The construction of the bypass structure and associated pipeline potentially could affect California red-legged frogs that are using Tributary 3 or that are moving from the lower reservoir into adjacent uplands. Because the proposed construction of the bypass facility is planned to occur in late summer when flows in Tributary 3 are very low or nonexistent, the potential for impacts on California red-legged frogs that may occur in the stream channel is low. However, California red-legged frogs still may use the adjacent riparian habitat as refugia during these dry conditions and they could move through the proposed location of the pipeline construction.

Increased flows in Kellogg Creek downstream of its confluence with Tributary 5 following the construction of the bypass facility will improve instream conditions in this reach of Kellogg Creek. Therefore, the proposed project will not negatively affect California red-legged frog habitat in Kellogg Creek.

No other potential aquatic habitat in the study area will be affected by the proposed project.

The following measures have been proposed in the Sections 401 and 404 and the Lake and Streambed Alteration Agreement permit applications to reduce impacts on California red-legged frog.

- Forty-eight hours prior to constructing the bypass structure and pipeline a biologist experienced with the identification of California red-legged frogs will conduct daytime visual encounter surveys at the following locations:
 - Tributary 3 from its outfall into the lower reservoir to an area 50 feet upstream of the proposed bypass structure
 - The riparian and upland areas where pipeline construction and related disturbances will occur and areas within 25 feet
 - Along the shore line of the lower reservoir

The surveys will be conducted by scanning all areas from a distance using binoculars prior to approaching. The surveyor will attempt to record all amphibians and other aquatic species observed and provide estimates, or counts, of individuals observed and life stages. Photographs of observed species will be taken when and where possible. To

avoid inadvertent take of a federally listed species, no amphibians will be captured or handled during these surveys. If California red-legged frogs are observed during these surveys, the USFWS will be contacted immediately to provide further guidance. The results of these surveys will be summarized in a letter report and submitted to the USFWS and Department of Fish and Game.

- To avoid impacts on California red-legged frogs during bypass construction the following measures will be implemented prior to and during construction:
 - Tightly woven silt fencing 24 to 36 inches high and buried along the bottom 6 inches will be installed along the edge of the lower reservoir where it borders the project area to prevent California red-legged frogs from entering the construction area from the reservoir. The fencing will remain in place for the duration of construction activities.
 - A biological monitor experienced in the identification of California red-legged frogs will be on site during all construction activities that could affect of California red-legged frog to ensure that no California red-legged frogs are directly harmed by construction activities.
 - Vegetation in the riparian area and adjacent grassland that will be affected by the construction of the bypass structure and pipeline will be hand-cleared to avoid impacts on California red-legged frogs that may be using this area for refugia or dispersing through this habitat. This work will be conducted prior to any heavy construction equipment moving through these areas. Rakes will be used to clear out leaf litter prior to vegetation clearing to expose any California red-legged frogs that may be seeking shelter in these areas. Herbaceous vegetation will be cut using a powered weed trimmer or similar hand-held tool to further expose these areas and remove suitable cover for frogs so that they are not attracted to the construction site. Trees and shrubs will be removed using powered trimmers and chain saws, as needed, after the preceding activities are conducted. The biological monitor will be present during all of these activities.
 - All trenches greater than 12 inches deep will be covered at the end of the work day with either fill material, dirt ramps, or boards to ensure that California red-legged frogs do not become trapped. The biological monitor will inspect the trenches before backfilling or covering to ensure that no frogs have become trapped in the trenches and again each morning before work starts.

In addition, the permit terms described above in the Hydrology and Water Quality section will be included in any water right permit or license pursuant to Application 30745, which will serve to protect aquatic habitat for California red-legged frog.

Western Pond Turtle

Construction of the bypass structure and associated pipeline potentially could affect western pond turtle, which has been identified as occurring in the lower reservoir. Construction of the bypass could affect western pond turtle breeding activities by blocking or disrupting adult dispersal to adjacent uplands for egg-laying and disrupt or damage existing pond turtle nests that may be in riparian area and the grassy understory of the mixed oak forest where pipeline trenching will occur. In addition, construction activities could affect western pond turtle basking behavior in the lower reservoir, which is immediately adjacent to the construction area.

Western pond turtles would not likely use Tributary 3 because it is intermittent and lacks suitable basking and escape habitat, and therefore they would not be affected by instream work there.

The following measure has been proposed in the Sections 401 and 404 and the Lake and Streambed Alteration Agreement permit applications to reduce impacts on western pond turtle.

- If construction activities occur during the pond turtle nesting season (March to August), 48 hours prior to constructing the bypass structure a survey for western pond turtle nests will be conducted in the riparian and grasslands areas that will be disturbed by the construction of the bypass. The survey will be conducted by a biologist with knowledge on identifying western pond turtle nests. If a nest is identified in the construction area, the nest will be avoided until it is determined by a qualified biologist that the eggs hatched and hatchlings have left the nest. If the nest can't be avoided, the California Department of Fish and Game will be contacted to develop a plan to relocate the nest.

The implementation of the above measures developed to avoid impacts on California red-legged frog also will avoid impacts on western pond turtle by keeping them out of the work area for the duration of the construction activities.

In addition, the permit terms discussed in the Hydrology and Water Quality section will be included in any water right permit or license pursuant to Application 30745, which will serve to protect aquatic habitat for western pond turtle.

Western Red Bat

Western red bats roosting in the riparian vegetation could be affected by construction activities occurring there. The removal of trees and shrubs in the study area could directly affect western red bats if they are found to be roosting there.

The following measures have been proposed in the Sections 401 and 404 and the Lake and Streambed Alteration Agreement permit applications to reduce impacts on western red bat.

- A wildlife biologist experienced in identifying bats to species will conduct a preconstruction survey for roosting bats in the trees and shrubs scheduled for removal no more than 1 week prior to removal activities. The specific survey methodology will be developed by the surveying biologist but may include acoustic recording surveys. The survey results will be presented in a letter report to the California Department of Fish and Game.
- To avoid and minimize impacts on bats, the removal of potential roost trees will occur when bats are more likely to be able to move to outside of the area of disturbance (i.e., late in the day or early evening on warm days). Prior to cutting and trimming trees, the trees will be shaken manually or with the use of equipment to rouse any roosting bats and encourage their departure from the trees. These actions will occur only if surveys confirm that no maternity roosts are present.
- If it is determined that a maternity roost is present in the area of disturbance, the biologist will consult with the California Department of Fish and Game to determine appropriate measures to protect the maternity roost. This could include no-disturbance buffers around the bat maternity roost tree until the maternity roost is no longer active, as determined by a biologist experienced with bat behavior.

In addition, the permit terms discussed in the Hydrology and Water Quality section will be included in any water right permit or license pursuant to Application 30745, which will serve to protect riparian habitat for western red bat.

Furthermore, potential roosting habitat will be enhanced over the long term through the expansion and improvement of potential roosting habitat in the study area. This will be achieved through the enhancement of riparian habitat along Tributary 5 and Kellogg Creek. Riparian vegetation on Tributary 5 will be improved through the reintroduction of flows to this channel. This addition of water will improve the quality of the existing habitat by creating conditions more suitable for the recruitment of riparian trees and

shrubs (see discussion below). In addition, open areas along Tributary 5 will be planted with riparian trees and shrubs, if necessary¹. Also an invasive species removal plan will be developed for Kellogg Creek that will further enhance the quality of riparian habitat, thereby creating space for the recruitment and establishment of native riparian vegetation (see discussion below). These improvements to riparian vegetation will improve the long-term quality of roosting habitat in the study area.

Nesting Migratory Birds and Raptors, including Purple Martin

Nesting birds and raptors protected under the MBTA, including purple martin, could be affected by construction of the bypass facility. The riparian area and adjacent woodlands near the proposed bypass represent suitable nesting habitat for birds and raptors, which could be affected by the removal of riparian trees and shrubs that could be used for nesting and by the disturbance created during bypass construction (e.g., noise, dust, human presence). Although the proposed construction is anticipated to occur in late summer, which is typically toward the end of most nesting activity, some species of birds can nest into early September.

The following measures have been proposed in the Sections 401 and 404 and the Lake and Streambed Alteration Agreement permit applications to reduce impacts on nesting migratory birds and raptors.

- Surveys for nesting birds and raptors will be conducted by a qualified biologist within and in the vicinity of the bypass work area prior to any construction related disturbances. Because the proposed construction is slated to occur in late summer, which is toward the end of bird breeding activity, only one nest survey is recommended. The survey will be conducted 1 week prior to construction activities by a biologist experienced with conducting nesting bird surveys. The survey for nesting birds will occur in the project area and areas within 100 feet. The survey for nesting raptors will extend out to 500 feet from the project area. All bird species identified will be recorded and the results presented in a letter report to the California Department of Fish and Game.
- If nesting birds or raptors are identified in the trees and shrubs that will be removed for project construction, construction will be delayed until nesting activities are completed, as identified by a qualified biologist. If nesting birds or raptors are identified outside the immediate work area but within the survey

¹ Construction of the proposed bypass facility at the lower reservoir would only involve the removal of a few shrubs, and up to two mature trees (one oak and one fir tree). If these resources can be avoided, riparian tree and shrub planting in Tributary 5 will not be required.

limits, project activities will be evaluated for the likelihood of causing nest failure. This evaluation may include consultations with the California Department of Fish and Game to develop avoidance and minimization measures for use during construction, which likely would include the monitoring of these nests during construction by a qualified biologist and avoidance buffers.

In addition, the permit terms discussed in the Hydrology and Water Quality section will be included in any water right permit or license pursuant to Application 30745, which will serve to protect riparian habitat for nesting birds and raptors.

Furthermore, potential nesting habitat will be enhanced through the expansion and improvement of nesting habitat in the study area. This will be achieved through the enhancement of riparian habitat along Tributary 5 and Kellogg Creek. Riparian vegetation on Tributary 5 will be improved through the reintroduction of flows to this channel. This addition of water will improve the quality of the existing habitat by creating conditions more suitable for the recruitment of riparian trees and shrubs. In addition, open areas along Tributary 5 will be planted with riparian vegetation, if necessary. Also an invasive species removal plan (developed in conjunction with the Division and DFG) will be developed for Kellogg Creek that will further enhance the quality of riparian habitat, thereby creating space for the recruitment and establishment of native riparian vegetation (see discussion below). These improvements to riparian vegetation will improve the long-term quality of nesting habitat in the study area.

Special-Status Fish and Other Aquatic Organisms

In addition to the development of the invasive species removal plan (described below), DFG has also requested that a 5-year effectiveness monitoring program be conducted on Tributaries 4 and 5. The purpose of the monitoring would be to evaluate on an annual basis whether FMF releases in Tributary 5 are creating amphibian and benthic macroinvertebrate habitat as expected and whether the partially reduced streamflows in Tributary 4 are reducing habitat quality. In order to achieve this, DFG has requested that the invertebrate community in both tributaries be surveyed at the appropriate time of the year (most likely during late winter when streamflows are at their maximum).

The following measure has been included in the water right draft permit and proposed in the Sections 401 and 404 and the Lake and Streambed Alteration Agreement permit applications to reduce impacts on special-status fish and other aquatic organisms.

- Surveys for amphibians and benthic macroinvertebrates (and fish in Tributary 4) will be conducted in Tributaries 4 and 5 in accordance with a survey plan satisfactory to DFG. Prior to the construction of the bypass facility on Tributary 3, Permittee shall submit a copy of the survey plan, evidence that the plan is

satisfactory to DFG, and a copy of the initial baseline conditions report completed in accordance with the survey plan to the Deputy Director for Water Rights. Subsequent reports shall be submitted to the Deputy Director for Water Rights in accordance with the time schedule contained in the survey plan.

The methodology proposed for the benthic macroinvertebrate surveys is described in detail in the report entitled *Peter Michael, Home Ranch Property (Application 30745)—Benthic Macroinvertebrate Mitigation Monitoring Work Plan* (ICF International 2012).

Impacts on Riparian Habitat

The riparian areas that would be affected by construction of the proposed bypass facility are associated with Tributary 3, Tributary 5, and Kellogg Creek. Any areas that are cleared of vegetation, excluding the location of the weir, bypass inlet, and rock slope protection, shall be revegetated using an appropriate seed mix of native species.

Tributary 3

The construction of the proposed bypass facility would result in impacts on riparian vegetation along Tributary 3 from the removal or disturbance (e.g., trimming, root compaction) of riparian trees and shrubs. These impacts would have an adverse effect on riparian habitat, but enhancement of riparian habitat along Tributary 5 and Kellogg Creek (described below) would offset these impacts.

Furthermore, naturally occurring flows necessary for channel maintenance still will occur because operation of the proposed bypass facility on Tributary 3 will not significantly change the water volume and/or the pattern of seasonal flows in the affected watercourse. Tributary 3 appears only to support intermittent transport of fines and larger materials. Intermittent transport of sediment within the channel occurs when it is delivered to the channel by naturally occurring upstream runoff events. After construction of the bypass facility, Tributary 3 streamflow still will be routed into the pool where the proposed bypass facility would be located. The hydrologic cycle and related transport of sediment will remain in the channel system. Sediment delivery and transport to downstream reaches (i.e., the lower reservoir) after the proposed bypass facility construction therefore will occur at approximately the same rate as at present.

Tributary 5

The proposed bypass facility would result in beneficial impacts on riparian vegetation along Tributary 5 from the reintroduction of flows into the channel and the enhancement of the riparian habitat by planting native riparian species in open areas (described below). The addition of water from reintroduction of flows will improve the quality of the

existing habitat by creating conditions more suitable for the recruitment of riparian trees and shrubs. Planting native riparian vegetation in open areas, if necessary, would also enhance the riparian habitat by initiating the development of a more contiguous riparian corridor that can be used by wildlife.

Kellogg Creek

The proposed bypass facility and the removal of invasive species and the replanting of native riparian vegetation would result in beneficial impacts on riparian vegetation along Kellogg Creek (described below).

The following measures have been proposed in the Sections 401 and 404 and the Lake and Streambed Alteration Agreement permit applications to reduce impacts on riparian habitat.

- No work shall commence and no water shall be diverted, stored, or used under this permit until a copy of a Lake and Streambed Alteration Agreement between the California Department of Fish and Game and the Applicant is filed with the Division of Water Rights. Compliance with the terms and conditions of the agreement is the responsibility of the Applicant.
- The Permittee will develop an invasive species removal plan for areas of invasive plants previously identified along Kellogg Creek. A draft version of this plan has been prepared and discussed with the Division and DFG (ICF International 2011). The draft plan has identified approximately 5,300 square feet (~0.122 acre) on Kellogg Creek's streambanks and upper floodplain surfaces that have areas of invasive species (mostly Himalayan blackberry) (see Figure 10). Invasive species will be removed and bare areas hydroseeded with native grasses and herbs suitable for site conditions.
- If necessary, the Applicant will plant riparian vegetation (including oaks) along Tributary 5 to replace the potential loss of riparian vegetation along Tributary 3 during bypass facility construction at a minimum of 3:1.

These actions will be combined into a single plan that will be submitted for approval to the Division and the California Department of Fish and Game prior to bypass construction activities. The plan will include a monitoring component and success criteria to determine the effectiveness of the invasive species removal and associated hydroseeding effort, and, if necessary, riparian species plantings. Monitoring of plantings will be done annually for five years, or until plantings have been determined to have become successfully established with a minimum of 75% survival of plantings.

Additionally, the following permit term (described under impact b in the Biological Resources section) will be included in any water right permit or license pursuant to Application 30745, which will serve to protect riparian habitat.

- After the bypass structure construction is complete, the Applicant will establish a setback along Tributary 3 of 50 feet or the distance specified in Sonoma County Code, Chapter 30, Article V. Section 26-66-030, whichever is greater. The stream setback will be measured from the top of the bank on both sides of the stream. Except for activities required for operation, maintenance, and replacement of the bypass facility, no activity will occur in the setback area. These requirements shall remain in effect as long as water is being diverted under any permit or license issued pursuant to Application 30745.

Impacts on Waters of the U.S.

No wetlands occur in the construction footprint for the proposed bypass facility. Therefore, no federally protected wetlands would be affected by the construction of the proposed bypass facility.

Therefore, there would be no impact on federally protected wetlands. The construction of the proposed bypass facility would affect other waters, i.e., Tributary 3.

Tributary 3

Construction of the proposed bypass facility project would affect Tributary 3. The impacts on Tributary 3 from the proposed project would be the discharge of fill material below the OHWM and the disturbance or removal of part of the adjacent riparian area. Therefore, the Applicant will obtain and comply with the terms and conditions of the Water Quality Certification from the State Water Board (or the RWQCB) pursuant to CWA Section 401 and the CWA Section 404 Permit from the USACE. The Applicant will also enter into a Lake and Streambed Alteration Agreement from DFG pursuant to Sections 1600 to 1616 of the Fish and Game Code. The measures discussed above for impacts on riparian habitat would offset the impacts on Tributary 3 and its associated riparian habitat. The measures listed below, as proposed in the Sections 401 and 404 permit applications, will be used to avoid impacts to water quality and waters of the U.S.

- Construction activities will be conducted in late August or September when Tributary 3 typically has no flowing water in order to avoid impacts to water quality.
- The required work area within the streambed will be confined to the minimum area needed to accomplish the project.

- The contractor shall prevent any debris, soil, silt, cement that has not set, oil, or other such foreign substance from entering into or being placed where it may be washed by rainfall runoff into adjacent waters.
- Any surplus soil or construction material will be taken to an appropriate disposal site and not deposited in or near any streams.
- Straw rolls and silt fences will be placed on each side of the gravel pathway around the eastern perimeter of the lower reservoir, around the proposed weir location in Tributary 3, and on each side of the pathway that will be cleared to enable an excavator and concrete pumping hose to reach the site of the proposed weir.
- All temporary erosion and sediment control measures will be removed after the working area is stabilized or as directed by the engineer.
- Clean rock slope protection shall be used in the streambed of Tributary 3 to reduce erosion.
- Fueling of equipment will occur away from water courses, and any hazardous materials will be properly stored away from streams in the project area.
- For the cast in place structures, the area to receive wet concrete will be completely bermed and isolated to contain all and any wet concrete, even if water is not present. The berm may be made of sandbags or soil, but it shall be lined with plastic to prevent any material from seeping past the berm.
- All temporary fills will be removed and temporarily affected streambeds will be restored.

Tributary 5

As described above, diversion of water into Tributary 5 is expected to generate beneficial effects. Due to the fact that the outfall location consists of a bedrock cascade and pool complex that would serve to naturally dissipate flow energy at the pipeline outfall, an energy dissipating structure would not be required at the discharge to Tributary 5. Though considered unlikely, the possibility of increased channel and bank instability downstream of the pipe outfall exists during high flow events. The measure listed below will be used to monitor the channel stability of Tributary 5.

- The natural channel section downstream of where the 12-inch pipe releases bypass flows into Tributary 5 will be monitored after the first two large (more than 2 inches of rain) precipitation events. The same area will be monitored at the end

of the diversion season for 5 years after the issuance of a water right permit. Monitoring, consisting of an evaluation of scour and deposition patterns and an inventory of channel bed and bank stability, will be conducted by qualified personnel with expertise in channel stability monitoring.