

Hidden Valley Ranch LLC- Site Plan Agreement between Hidden Valley Ranch LLC, National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW)

For the Template Safe Harbor Agreement for Coho Salmon (*Oncorhynchus kisutch*)

A. Introduction

This Site Plan Agreement for the Template Safe Harbor Agreement (Agreement) for Southern Oregon and Northern California Coast (SONCC) Evolutionarily Significant Unit (ESU) of coho salmon (the Covered Species) is between the Mallet Hidden Valley Ranch Partnership, soon to be Hidden Valley Ranch LLC (hereinafter referred to as the Permittee), National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW). This Site Plan Agreement, combined with the measures prescribed in the Agreement, may serve as the basis for NMFS to issue a federal enhancement of survival permit (Permit) to the above named Permittee pursuant to section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (ESA). The joint and respective responsibilities of NMFS, CDFW and the Permittees are detailed in the Template Safe Harbor Agreement. The Site Plan Agreement is subject to terms of the Template Safe Harbor Agreement and Permit.

This Site Plan Agreement documents site-specific information detailing the Permittee's enrolled property, including the location of the property and management authority of the Permittee, the Enrolled Property baseline conditions, existing and, as available, proposed future land-use activities, the duration of this Site Plan Agreement and requested permit. This Site Plan Agreement also documents the agreed-upon conservation measures to be undertaken by the Permittee on the enrolled property that are expected to benefit coho salmon.

B. Enrolled Property

B.1. General narrative and map describing property

Hidden Valley Ranch (HVR) is owned and operated by Hidden Valley Ranch LLC (Permittee). The HVR is located within the Agreement Area along Big Springs Road in central Siskiyou County (41°34'57'' N latitude, 122°26'18''W longitude). The HVR includes a total of 431± acres, with 150 ± acres under irrigation at the time of this agreement. The HVR is generally a cow/calf operation with a small segment of the operation producing sheep. Approximately 1.5 miles of the Shasta River is adjacent to the HVR, within what has been designated the **Upper Shasta Reach** in the Agreement. Baseline Conditions of this reach are described in Appendix 2 of the Template Safe Harbor Agreement. The approximate property boundaries and general location of the HVR within the Agreement Area is shown in Figure 1.

B.2. Legal Description of Property Boundary

APN: 020-050-020 & 020-040-080

With an easement over 020-050-330 to convey prior rights water from the Shasta River to the HVR. Ownership and covered area is shown on Figure 1. The Legal Description from Landowner Deed and easement is included as **Appendix A**.

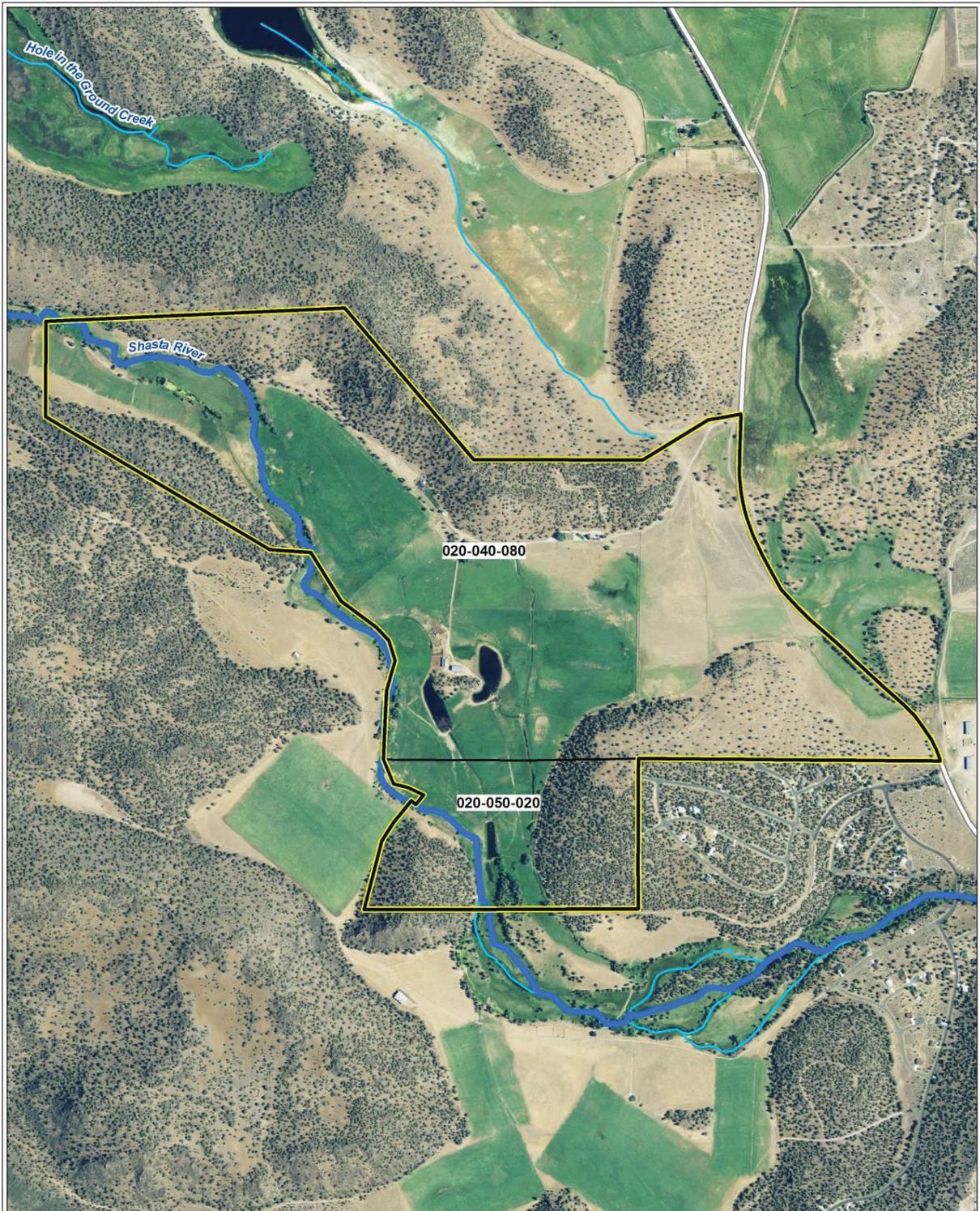
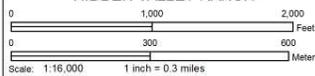
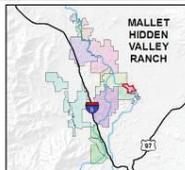


Figure 1- Ownership
HIDDEN VALLEY RANCH



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- Adjudicated diversions
- Safeharbor ownership
- Safeharbor parcels
- Rivers and Streams
- Rivers
- Major Streams
- Minor Streams

B.3. Description of Water Rights

HVR uses a combination of water sources for irrigation, all referenced in Table 1 and shown on Figure 2. There are two springs located adjacent to the Shasta River, near the south property boundary, referred to as the “Pond Springs”. These two springs are included in the Shasta River Decree, listed as diversion numbers 160 and 161, with a combine adjudicated amount of 0.25 cfs between March 1 and November 1 and 0.1 cfs between November 1 and March 1 for stock water. HVR also files Statements of Water Use with the State Water Resources Control Board on these springs (Appendix B) for the riparian use of this water over the adjudicated amount. The Electronic Water Rights Information Management System (eWRIMS) numbers for HVR are S023705 and S023706 and HVR’s Statements of Water Use, which indicate a combined use of 4 cubic feet per second (cfs) for diversion numbers 160 and 161, which is the full capacity of the infrastructure, as referenced in Table 1.

HVR also has a spring/seep located up gradient from the previously described adjudicated springs, referred to as the “Upslope Spring”. Currently, this spring flows directly into the ranch’s irrigation system and is not currently connected to the river, its flow is inconsistent and its discharge is heavily dependent upon water year type, snow pack and storage elevation in Dwinnell Reservoir (Lake Shastina). In 2017 the spring water production was monitored, up to 6 cfs of spring water was utilized for irrigation use and up to 8 cfs of spring water was released to the river. The use of this spring has been considered a riparian use and reported on water use statements under eWRIMS number S024837, as referenced in Table 1

The HVR has a prior right of 464 acre-feet stored in Dwinnell under diversion #158 and they can take this water between March 1 and November 1 until their storage right is depleted. The prior right is delivered by Montague Water Conservation District (MWCD) via the cross canal to the Shasta River, historically diverted at a rate of 2 cfs or less and also has a winter right from diversion 158 of 0.5 cfs. HVR diverts prior right water from the Shasta River approximately 4,000-feet downstream from MWCD main canal. This point of diversion is located on a neighboring property, approximately 1 mile upstream from the HVR southern property boundary and conveyed to HVR by a combination of open ditch and pipeline. The diversion structure and the conveyance is essential infrastructure for the ranch’s operations.

HVR also has a groundwater well that can produce up to 1500 gpm, but the well is not currently operated/used as a regular part of the irrigation system but is used as backup during extreme dry periods when spring production is absent and/or use of prior rights stored water is depleted. HVR may utilize the groundwater well to irrigate the newly acquired 97 acres along Big Springs Road. The use of this well shall be done in compliance with requirements of SB88 and regulations adopted by and through the local Groundwater Sustainability Agency (GSA) for Siskiyou County. The permittee agrees to inform the parties when the well will be used to allow the parties to monitor for any adverse impacts to the river. It should be noted the permittee will only utilize the well in extreme dry conditions for irrigation of acreage normally irrigated through the use of riparian springs/adjudicated water resources. The economic viability of using the well as an irrigation source for the 97 acres is yet to be determined. If such a determination is made that supports use, the permittee agrees to meet and confer with the parties to allow comparison of stream flows before and after use of the well.

Table 1 shows the HVR diversion and irrigation information. Figure 2 shows the HVR's place of use as stipulated in the Shasta River Decree and the DWR irrigated acreage coverage.

Under this Site Plan Agreement, the HVR will continue to irrigate the same amount of acreage as in the past, however the water sources for that irrigation will change as described in Section D and E making more spring water available instream for the Covered Species.

Table 1- Water Rights and Use Summary

Diversion #/Water Source	Permit/Adjudicated /Filed Water Use Statement Amounts	Description	Season Duration	Total Ac-ft per season diverted	Acreage Irrigated with Diversion	Average Days per Season diverted
Adjudicated Irrigation Sources						
158	464 ac-ft	Prior Rt Diversion- Storage Right	March 1-Nov 1	464 ac-ft	126	244
158	0.5 cfs	Prior Rt Diversion	November 1- March 1	Stock water/winter right		
160	0.25 cfs	Pond Spring- Located adjacent to river at upstream boundary	March 1-Nov 1	120 ac-ft	37	244
161						
160	0.1 cfs	Pond Spring- Located adjacent to river at upstream boundary	November 1- March 1	Stock water/winter right		
161						
Riparian Irrigation Sources						
eWRIMS S023706 at #160	2 cfs- Riparian Rt	Pond Spring- Located adjacent to river at upstream boundary	The ranch has filed water use statements for riparian use of spring water that the spring produced in excess of the above identified adjudicated rights at #160/161			
eWRIMS #S023705 at #161						
Upslope Spring (eWRIMS #S024837)		Upslope Spring- Located upslope from adjudicated spring	Discharge from this spring varies throughout the season and from year to year. There have been years the spring was entirely dry. Approximately 2.25 cfs is used for irrigation purposes applied on 163 acres when spring is flowing . It could be assumed that the spring is available on average a 150 days/season.			
Groundwater Irrigation Sources						
Groundwater well ¹		Located in East Pasture	March 1-Nov 1	552 ac-ft ²	150 ³	244

Notes:

- 1- The groundwater well has a capacity of 1500 gpm and was originally intended to irrigate 53 acres of the east pasture.
- 2- In the future the well could potentially irrigate the 53 acres of east pasture in the event of a drought, as well as the 97 acres along Big Spring Road, totally 150 acres under irrigation from the well. It was assumed that the application rate would be 3.68 ac-ft/acre/season would be applied.
- 3- At this time HVR does not intend to use the well for regular irrigation due in part to costs to operate. If used, it will be after careful economic analysis to irrigate crops such as hay, alfalfa or maybe hops. The additional 97 acres is higher ground than the existing ranch boundary and cannot receive spring or diverted water.

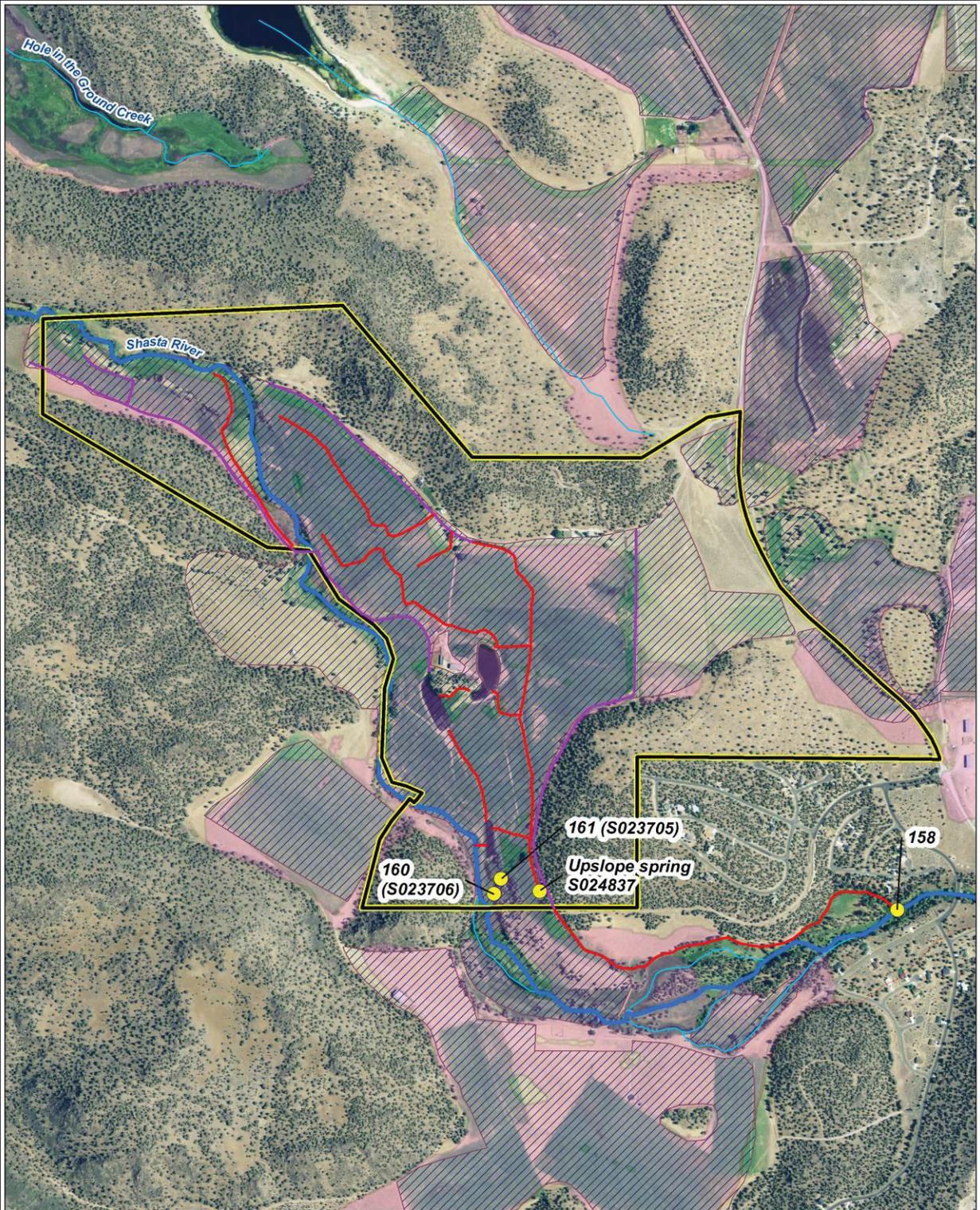
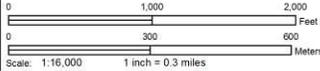
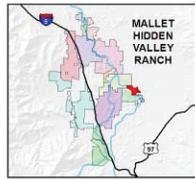


Figure 2- Water Rights
HIDDEN VALLEY RANCH



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LEGEND

- | | | |
|--------------------------|------------|---------------|
| Adjudicated diversions | Open Ditch | Rivers |
| Safeharbor ownership | Pipe | Major Streams |
| DWR Irrigated Areas | Tailwater | Minor Streams |
| Adjudicated Place of Use | Berm | |
| | Slough | |
| | Other | |

C. Routine Land Use

C.1. Present Routine Land Use

The HVR consists of approximately 431 acres, with approximately 150 acres under irrigation for livestock grass production which will continue under this Site Plan Agreement, with the potential to also irrigate 97 acres along Big Spring Road with the groundwater well, if used, the irrigation rate would be a maximum of 2 cfs. All of the 150 acres currently under irrigation are considered grass pasture and are flood irrigated. The HVR has approximately 8,408 feet of buried mainline with irrigation risers, 3,347-feet of conveyance pipeline and 6,120-feet of open ditch. The HVR also has three storage ponds, with approximately 20 acre-feet of total storage, that are used to create the head needed to deliver water to certain areas of the ranch and/or catch tailwater for re-use. All of these irrigation practices will continue under the Agreement subject to Beneficial Management Activities, AMMs and Baseline Conditions described below.

HVR is a cow/calf operation with a small herd of sheep. The herd size averages 130 pair (cow/calf) with approximately 40 pair of sheep (ewe/lamb). These numbers are consistent with the industry average of one pair per acre of natural feed. The ranch operation raises or lowers these numbers based on market conditions and available feed, either natural (grass pasture) or supplemental (hay).

There is one bridge and two rocked stream crossings on the HVR. Wet crossings and watering access lanes are defined with either control gates and/or electric fencing tape. Locations of these access points are shown on the map, page 47 with one water access/crossing located midway in Riparian Zone 2 (under tag showing boundaries of riparian zones)... The wet crossing at the downstream side of the bridge may also be utilized by heavy equipment. This wet crossing is utilized for equipment at a minimum of once per year up to approximately 20 days annually for activities including harrowing of pastures, ditch cleaning, pipeline maintenance, and fence repairs. Equipment not able to fit on the bridge only crosses at the wet crossing down stream of the bridge. Wet crossings of the stream by cattle are limited to riparian grazing management activities, generally 2-3 times per year in accordance with the riparian grazing plan included in the appendix. The wet crossing/watering access points were established in accordance with CADFW design criteria when constructed 2011 and 2014 as part of approved riparian fencing projects which included these crossing/access lanes. Further detail can be found under Crossing Maintenance. The ranch has established off channel watering, however off channel watering access capability is limited in one pasture adjacent to the north side of the zone 2 access lane due to its remoteness to appropriate infrastructure.

ATVs are the primary vehicle type used on the ranch and may cross the wet crossing only when moving cattle through the stream. ATV's utilize the bridge at the west end of the ranch daily, up to four crossings a day during the irrigation season and once per day during the winter months. There are also two water lanes and two off channel watering troughs.

There are 6,258-feet of ranch road with 54-percent paved or rocked and the remaining with native soils exposed.

Irrigation Management

The springs on the HVR are generally utilized to their fullest extent when they are flowing for irrigation. There have been a few recent years (2013 and 2014) where the Upslope Spring was not flowing at all and the springs adjacent to the river (“Pond Springs” or #160/161) were significantly diminished.

All springs flow directly into the ranch’s irrigation ditch network. The #160/161 adjudicated Pond Springs (which are adjacent to the river) flows into a series of small ponds to create the hydraulic head required to deliver water across the river through a flume and through 900-feet of open ditch and 4,818-feet of buried mainline to flood irrigate the “west forty”. The Upslope Spring flows directly into a network of open ditches and ponds to irrigate the central pastures on the ranch, known as the “bunkhouse pasture”. The spring water charges approximately 2,744-feet of open ditch and 2,260-feet of buried mainline with flood risers (constructed in 2010). The spring’s discharge fluctuates depending on water year and snowpack, with the spring adjacent to the river being the more dependable source of water however this spring can only irrigate approximately 30% of the total ranch’s irrigated pasture land due to the low elevation in relation to the majority of pasture.

HVR may divert prior rights water from March 1 to November 1 of each year. The prior rights water is delivered from MWCD down the Shasta River to the HVR diversion, a distance of approximately 4000-feet. The head gate is set to divert approximately 3.5 cfs at the point of diversion, being conveyed down approximately 1000-feet of open ditch to the fish screen. The tubular fish screen is connected to a 15-inch buried mainline that currently delivers approximately 2.0 cfs for irrigation. Approximately 0.5 cfs of the diverted water is lost through ditch seepage and approximately 1.0 cfs returns to the river via a fish bypass return channel. The 2.0 cfs prior right is then delivered to the place of use via approximately 1500-feet of open ditch and 2,500-feet buried mainline. This 1500 feet portion of open ditch was piped and connected to the existing buried pipeline in April, 2018. The prior right water is used to irrigate the eastern-most pastures from 1,300-feet of buried mainline with flood risers. The prior rights water flows across the east pasture and any tailwater is then picked up in the main ditch. This reclaimed tailwater is added to the riparian spring water when available and appropriate to irrigate the bunkhouse pasture, and other down slope pastures between the main ditch and the barn complex/bunk house pastures.

HVR has implemented measures to increase delivery of water and irrigation efficiencies on the ranch including installing a pipeline infrastructure system, which has improved irrigation efficiency and reduced tailwater (described below under Beneficial Management Activities).

Irrigation Maintenance

Ditch cleaning

The open irrigation ditches are prone to vegetation encroachment, which slows the conveyance of water and clogs the buried mainlines. The ditches need to be mechanically cleaned at least yearly to remove vegetation and repair breaches, by using a backhoe. The head works of all the pipelines have grates that are cleaned daily to keep them functioning

properly. Clean out of the pipelines and the irrigation risers have to be fully opened to flush the pipes of sediment and vegetation. Irrigation maintenance cleaning is required annually, at a minimum, and as needed throughout the irrigation season.

Diversion cleaning

The rock riffle at the diversion structure and the head gate can become clogged with debris, blackberries, or become part of beaver dams. They need to be periodically cleared mechanically to ensure proper operation. This entails the use of heavy equipment every few years, as needed, to clear large woody debris in the spring of the year prior to diversion operation. A CDFW Sec. 1600 LSAA permit exists for this purpose since 2000.

Fish Screen cleaning

Since the existing fish screen is a passive tube screen placed down ditch, it needs to be cleaned daily to ensure the full prior right volume can be conveyed to the pipeline. It often becomes clogged with vegetation and at times needs to be cleaned more often than once per day. Screen cleaning consists of hand raking vegetation off the screen which will be covered under the Site Plan Agreement until replaced with a on channel cone screen. After the installation of the proposed fish screen, as described in Section E.2.b, the Permittee will need to periodically lift the screen with the assistance of heavy equipment to clean out any sedimentation that has settled in the screen structure. The proposed screen is a self-cleaning screen, so daily hand cleaning of the screen will not be necessary, however brushes will need to be checked yearly and replaced when needed, approximately every 5 years.

Pasture Grazing Management

The HVR has six distinct pastures where cattle graze. Cattle are rotated through the six pastures as part of HVR's pasture management. The cattle are moved every 21 to 42 days based upon growth rates of grass and water availability, time of year, etc. The number of cattle or sheep grazing in a pasture is dependent upon the size of the pasture(s). The larger pastures support numbers up to 75 pair or more while the smaller ones support 50 to 60 pair. These numbers are not a fixed herd limit and are adjusted as conditions change, either by drought, abundance of feed, seasonal growing patterns, and the availability of supplemental feed. Grazing in the three riparian zones is limited to specified times and conditions as outlined in the riparian grazing management plan (see appendix). The Permittee manages pastures for retention of at least 4-6 inches of stubble remaining during the growing season. This practice improves productivity of grass forage and also helps to reduce solar radiation of irrigation waters and increases soil water retention due to increased soil shading.

Riparian Grazing Management

The entire riparian area on the HVR has been fenced in cooperation with the Shasta Valley Resource Conservation District (RCD) over the last 5 years. The HVR has exclusion fences to exclude cattle from the northern portion of the ranch for portions of the grazing season and to protect riparian functions. However, invasive plant species became established in the exclusion area, and over the last several years the gates to the riparian zone have been opened for cattle access for portions of time during the irrigation season, between April 1 and September 1. The time frame of cattle access has been managed to a limited time period to avoid stream bank disturbance. A detailed riparian grazing management plan is included in the Appendix D of this site plan and is part of the conservation measures that

will be employed for the life of this agreement. HVR has and will continue to follow this riparian grazing management plan as produced in cooperation with UC Davis Cooperative Extension, Ken Tate, PHD and/or as stipulated in the AMMs. Cattle and sheep will be restricted from the riparian zones in all areas when and where spawning conditions and activity are found to be present.

Fence Maintenance

The entire riparian area on the HVR has been fenced in cooperation with the Shasta Valley RCD over the last 5 years. Riparian fence ranges from 10 feet to 100 feet from edge of stream bank to allow vegetation to grow within the riparian zone, with average distance around 30 feet. Fence maintenance includes periodic inspection of wire, clips, and posts, and repaired/replacement of each as needed. Regular fence maintenance also includes removal of “blown debris” along fence lines and removal of rock or fallen branches from nearby trees.

Road Maintenance

The main ranch road from Big Springs Road to the residences and barn complex on HVR is a combination of asphalt and aggregate base/rock. The aggregate base is maintained on an annual basis, or as needed, to minimize erosion. The other ranch road located within the pastures are native soils and only utilized for irrigating purposes, mostly by All Terrain Vehicles (Quads). The pasture roads are also utilized periodically by heavy equipment when ditches are cleaned or infrastructure requires maintenance.

Crossing Maintenance

One crossing had been reinforced with angular rock when it was used to access the west 40 acres during construction of the buried pipeline, which was in 2011. The other crossing and the watering lane was rocked when the riparian fence was constructed in 2014; both locations are shown on the riparian grazing map included in Appendix. These wet crossings are kept clear of debris via hand work or with heavy equipment depending on debris amount or type. Clearing of the crossings using heavy equipment is typically done in the spring after winter storms and is done from the bank. Regular inspections are performed to prevent massive build ups or clogs to stream flows. Debris consists of aquatic vegetation and dead wood. Other debris that is not on the rocked crossings is left in the stream.

Herbicide/Fertilizer/Pesticide Use

HVR does not use pesticides of any kind.

The use of herbicides is limited to over-the-counter products such as Round-up, Milestone, or Capstone. Use is done in accordance with the manufacturer’s label directions for use, for application rates and periods of use to obtain the best response. Use of herbicides in the riparian zones is limited to spot use of Milestone in problematic areas to control exotic weeds such as poison hemlock and star thistle where other treatments such as trampling by cattle or use of fire are not viable. The spot treatment within riparian zones for herbicide is done by hand when necessary, which would not exceed 0.25 gallons of mix throughout the entire riparian area per year (0.02 gallons/acre of riparian area). Herbicide will be applied in the spring when plants are growing. Third party application of herbicides may occur under County of Siskiyou weed abatement programs by which HVR has no control over type,

frequency, method, or location of application, but would most likely be along the county road.

HVR does periodically fertilize its irrigated pastures. This is usually accomplished in the very early spring months, prior to the commencement of irrigation. The fertilizer currently applied varies based upon the analysis of soil/grass needs. The analysis is done prior to application to assure the correct mix and rate of application will achieve the desired result. The mix is typically a nitrogen based time released, sticky pellet that adheres to the plant material and soil thus avoiding “floating away” with irrigation water. Riparian zones ARE NOT fertilized under any circumstances.

C.2. Avoidance and Minimization Measures

Water Diversion and Diversion Facilities

A1. Install a locking head gate or valve sized appropriately for the authorized diversion, that can regulate flow, and a functional measuring device or flow meter on any structure or facility connected to a stream used to divert water to facilitate better control and monitoring of water delivery within three years, unless specified otherwise in this site plan, of the effective date of the Agreement on or in all water diversion structures identified in this Agreement. The designs for head gates or valves and measuring devices in State Watermaster or Special Watermaster District Service areas shall be approved by DWR or said Special District, if applicable, in coordination with the Parties. All measuring devices and methods of water measurement shall be constructed and maintained to meet a 10% measuring accuracy for points of diversion that divert greater than or equal to 200 acre feet per year, and a 15% measuring accuracy for points of diversion that divert less than 200 acre feet per year. Data from real-time devices can be available throughout the year, and raw data will also be downloaded and included in the annual SHA report.

A2. Fish passage will be provided for all life stages when sufficient flows are available per this site plan descriptions.

Irrigation Management and Maintenance

B1. During regular maintenance work at diversions and fish screens, the permittee will minimize the discharge of sediments, debris, fine organic matter, and/or muddy, turbid, or silt-laden waters into natural waterways. The permittee will clean instream structures as necessary to maintain proper function.

B2. The permittee will regularly inspect all fish screens and bypass pipes or channels to verify that they are effectively protecting salmonids and other fish species in accordance with CDFW and NMFS fish screening criteria. When necessary, the permittee will clean and repair all fish screens and bypass pipes or channels. If a fish screen is removed for cleaning or repair and inchannel work is necessary, the permittee will ensure either that a replacement screen is installed immediately or water is not flowing through the area where the screen is removed by either implementing isolation or dewatering of the work site in coordination with the fish relocation effort described later in this document.

B3. When a bypass pipe is present, the bypass entrance(s) shall be installed and operated such that all life stages of the Covered Species can easily locate and enter them. All components of the bypass system, from entrance to outfall, shall be designed and operated to minimize the potential for debris blockage and must be sized to accommodate all life stages of fish and aquatic species which may be drawn into the diversion. Sufficient flow (site specifically determined depending on the volume and type of bypass structure) will be supplied from the diversion into a fish bypass to safely and efficiently return fish back to the stream. Bypass outfalls shall be designed and located so that there is sufficient depth and velocity to avoid injury to all life stages of fish and aquatic life which may be directed into a bypass pipe.

B4. When cleaning/maintaining irrigation or drainage ditches or ponds, the permittee will work when the ditch is as dry as possible to minimize or eliminate surface water turbidity and sediment transport. The permittee will place sediment and organic materials excavated from ditches or ponds in a location where the materials cannot wash into any stream channel or Covered Species habitat.

B5. Permittee will regularly monitor and repair as necessary any earthworks or facilities designed to minimize tailwater entering natural waterways.

B6. Planned Instream work shall occur only when Covered Species are least likely to be present or affected by the project; between June 15 and November 1, or as approved by NMFS and CDFW.

B7. In the case where the fish screen is down ditch, the Permittee shall notify NMFS and CDFW at least 5 days prior to closing a headgate or valve when fish stranding may occur in the diversion conduit, to allow fish rescue notification and coordination by qualified individuals, NMFS and CDFW or otherwise mutually agreed upon individuals.

B8. Water releases from off-channel impoundments, ponds, and tailwater basins will be conducted in a manner that minimizes turbidity, siltation, elevated temperatures, or pollution impacts to waterways supporting Covered Species. Water shall be released in the early morning (prior to 10:00 am) and/or during cool times of the year, and will be released as gradually as possible to minimize fine sediment discharges. If the release timing and rate is not feasible, Permittee will contact NMFS and CDFW prior to release.

Riparian Grazing Management

C1. Develop and implement a riparian grazing management plan (Appendix D) in coordination with UC Cooperative Extension or other range management specialists.

C2. Fenced riparian areas may be grazed in accordance with the grazing management plan developed for the HVR. The grazing management plan will address standard grazing management principles, such as the seasonal timing, duration, and intensity (number of livestock allowable per unit area [i.e., stocking rate]), of livestock grazing within the riparian zone and will explain how the proposed management plan will result in improved riparian function and enhanced aquatic habitat. In addition, the grazing plan will describe the means by which the flash grazing will avoid and minimize impacts to streambanks, riparian vegetation, spawning and rearing areas, and avoid direct impacts to spawning and rearing coho salmon.

C3. To avoid direct impacts to Covered Species spawning, incubation, and emergence, grazing in riparian pastures with streams that are accessible to the Covered Species will be allowed from May 1 to November 1 or as approved by NMFS and CDFW. The permittee

will perform at least one of the following actions prior to grazing livestock in riparian pastures where livestock could enter a stream between November 1 and May 1:

- Obtain written concurrence from NMFS and CDFW that potential Covered Species spawning habitat does not occur adjacent to the riparian pasture.
- If potential spawning habitat occurs adjacent to the riparian pasture, perform weekly redd surveys between November 1 and January 15. Redd surveys may be performed by NMFS, CDFW, or a qualified biologist. If surveys are performed by a non-agency biologist, written survey results will be provided to NMFS and CDFW for concurrence prior to grazing. If redds are not detected during the redd surveys, riparian grazing may occur in conformance with the Participant's riparian grazing management plan.
- If redds are determined to be present, livestock may graze within the riparian pasture between November 1 and April 30 if a temporary electric exclusion fence or wire is installed between the riparian pasture and the stream bank, and provisions are made to supply off-channel stockwater. Electric fence must be checked and maintained daily.

Fence Maintenance

D1. Inspect riparian exclusion fencing during and after each season of grazing and after high flow events where over bank flows may inundate fences and prior to and after riparian grazing has occurred. If riparian exclusion fencing is damaged, repair fencing and move livestock, as appropriate, to minimize resource impacts. If cattle are present, riparian fences shall be repaired within 30 days.

D2. If riparian fences are lost due to a catastrophic event, the permittee shall notify agencies of the loss in the annual report. The permittee will repair up to 50 percent of fencing, and request funding assistance for the remaining repairs beyond this percentage of commitment. Cattle shall not have access to areas of riparian areas normally excluded through other provisions of the AMM's.

Road Maintenance

E2. Minimize erosion and sedimentation from roads and road work. Rock road crossings and approaches to stream channels to minimize sedimentation. Utilize mulch or other suitable materials, as necessary, to minimize sediment runoff and transport to surface waters. Apply mulch so that not less than 90% of the disturbed areas are covered. Apply all mulches, except hydro-mulch, in a layer not less than two (2) inches deep. Where appropriate, all mulches shall be kneaded or tracked-in with track marks parallel to the contour, and tackified as necessary to prevent excessive movement. All exposed soils and fills, including the downstream face of the road prism adjacent to the outlet of culverts, will be reseeded with non-invasive species at a rate which will ensure establishment.

E3. Planned Instream work shall occur only when Covered Species are least likely to be present or affected by the project, typically from June 15 through November 1.

Crossing Maintenance

F1. Cross livestock and vehicles only at stable designated locations where potential spawning gravel, incubating eggs, and fry are not present. Wet crossings for cattle should be armored with rock. Fencing should be installed to guide the cattle to the crossing and across the stream on the armored surface while minimizing impacts to the stream and stream banks.

- Factors considered when selecting a crossing location include the stream gradient, channel width, and the ability to maintain the existing channel slope. Generally, to construct a crossing, a boulder weir is placed on the downstream side of the crossing and angular quarry rock is placed in the crossing location; the width of the crossing does not exceed 25 feet; the crossing spans the entire width of the channel; the crossing is “keyed” into the bank on each side; the approaches on both sides do not exceed a slope of 3:1; and bank armoring (usually using quarry rock) is added where needed.
- Angular rock will be applied to the crossing during the period of June 15 through November 1 and maintained over time. The diameter of angular rock will be selected so as to eliminate the risk of angular rock becoming a grade control affecting channel conditions. In locations where the stream crossings occur on intermittent streams, application of rock shall occur when the stream channel is dry.
- Once a crossing is established, the landowner will corroborate with agency staff after high flow events and/or after gravel introduction, to inspect the crossing and ensure it has not been compromised. The inspection shall be completed in spring or early summer.

F2. When operating vehicles in wetted portions of a stream channel, check and maintain vehicles on a daily basis to prevent leaks of materials that, if introduced to water, could be deleterious to aquatic life, wildlife, or riparian habitat; minimize the number of passes through the stream to avoid increasing the turbidity of the water to a level that is deleterious to aquatic life; and allow the work area to “rest” after each individual pass of the vehicle that causes a plume of turbidity above background levels, resuming work only after the stream has reached the original background turbidity levels.

Herbicide/Fertilizer/Pesticide Use/Fuel

G1. Ensure that any pesticide or herbicide is handled and applied by a licensed applicator (when required) in accordance with and all applicable, federal, state, local laws, regulations, procedures, and guidelines. Application of pesticides will be in conformance with the pesticide label as well as any required buffers from anadromous streams. The permittees will apply herbicides/pesticides, if any, in conformance with the applicable label directions, as well as any required buffers from anadromous streams in conformance with the Order entered in Washington Toxics Coalition et al. v. Environmental Protection Agency et al., (W.D. Wash No. C01-132C) (January 22, 2004). When possible, areas will be spot treated to reduce the amount applied. Use of broad spectrum insecticides will be minimized or avoided as they are more likely to be harmful to non-target organisms including fish and aquatic insects if exposed. Chemicals with the lowest possible toxicity rating will be used when possible. Use of mobile, pre-emergent herbicides will be minimized or avoided as they can impact non-target plants in the riparian area leading to other impacts such as sedimentation. The Applicant will avoid or minimize exposing aquatic resources by

managing spray drift. This includes using modern spray equipment (e.g., low volume or electrostatic sprayers); routinely checking for nozzle wear and calibrating the sprayer frequently throughout the growing season; turning off the sprayer along creeks, drainages and in the turn-around areas; supervising the spraying to minimize effects to surface waters.

G2. Use care to minimize fertilizer use in applications that could result in nutrient loading to natural waterways.

G3. Review label information and avoid the use of any material known to be detrimental to fish where it could impact Covered Species.

G4. Use or store stationary petroleum-powered equipment in a manner to prevent the potential release of petroleum materials into natural waterways by use of drip pans or other measures.

G5. Refuel machinery and handle or store hazardous materials no less than one hundred and fifty (150) feet away from the edge of any water body. All unused or leftover materials will be transported off-site and properly disposed of, when applicable.

Flood or Emergency Events

H1: Prior to, during or immediately after the event, NMFS and CDFW will be contacted and AMMs will be developed in coordination with the permittee for the particular flood or emergency circumstances.

H2: NMFS and CDFW will be notified within 14 days of beginning emergency work per Fish and Game Code 1610.

D. Description of Baseline Conditions

Baseline Conditions and Beneficial Management Activities

Baseline Conditions means the habitat conditions for the Covered Species on the Enrolled Property when NMFS approves this Site Plan Agreement. The Enrolled Property is within the Upper Shasta Reach of the Agreement Area. Baseline Conditions for the Enrolled Property are the conditions described in Appendix 2 of the Template Safe Harbor Agreement for these reaches of the Shasta River.

Elevated Baseline Conditions are certain Baseline Conditions improved as a result of certain Beneficial Management Activities. Elevated Baseline for this Site Plan Agreement are the improved fish passage and flow conditions that will result from the following actions:

Implement efficiency projects from point of diversion to place of use and committing to releasing 0.5 cfs of spring water to the river continuously (when spring production allows at a flow above the adjudicated amount), construct Tailwater infiltration berms to reduce impacts associated with irrigation tailwater, provide upto 3 cfs spring water instream from June 1 – September 15, as described in Table 3 in Section E.2.a and replacing the existing fish screen with an on channel self-cleaning screen.

Table 2 summarizes the Beneficial Management Activities required to maintain Baseline Conditions and to achieve Elevated Baseline Conditions on the Enrolled Property for the term of the Site Plan Agreement. The Beneficial Management Activities implement habitat enhancement actions recommended in the Template Safe Harbor Agreement (Appendix 2) for the Upper Shasta reaches of the Shasta River.

Table 2- Summary of Beneficial Management Activities

Habitat Parameter	Net Conservation Benefit Actions		
	Present Day Baseline (Maintain)	Elevated Baseline Condition (Restore; Implement and Maintain)	Other Beneficial Management Activities (Restore; Measures to Avoid and Minimize Impacts)
Hydrology/Water Quality	<ul style="list-style-type: none"> -Maintain existing pipeline infrastructure as described in E.1.a. - Continue irrigation practices to reduce tailwater temperature impacts as described in E.1.a. - Continue to release spring water into the river at the end of the irrigation season (November 1- March 1) as described in Section E.1.a. 	<ul style="list-style-type: none"> -Implement efficiency projects from point of diversion to place of use and commit to releasing 0.5 cfs of spring water to the river continuously for the term of this agreement as described in Section E.2.a. -Construct and maintain tailwater infiltration berms, as described in Section E.2.a - Provide a maximum of 3 cfs spring water for instream contribution from June 1 – September 15, as described in Table 3 in Section E.2.a. Permissive instream flow dedication through a Water Code section 1707 of this riparian right will be filed to protect the ranches rights and ensure the exchange is authorized by the State Water Board. 	<ul style="list-style-type: none"> - Collect tailwater in open ditches and reuse on HVR as described in Section E.3.a. -Participate in a reach-wide diversion management strategy as described in Section E.3.a. -Implement soil moisture monitoring to ensure adequate irrigation as described in E.3.a. -Voluntarily release additional spring water over the 3cfs committed to under Elevated Baseline when the ranch is adequately irrigated.

Passage/Migration/Screening	-Maintain unimpeded fish passage conditions at the HVR diversion and agrees to yearly inspection as described in Section E.1.b.	-Construct an on channel new fish screen as described in Section E.2.b.	-Implement beaver BMPs as described in E.3.b.
Instream Habitat Complexity	-Leave woody debris from existing trees place as described in Section E.1.c.		-Provide access for implementation of large wood enhancement on the HVR as shown on Habitat Improvement map in Appendix and as described in Section E.3.c.
Riparian Condition	<p>-Perform yearly maintenance on existing riparian fencing as described in E.1.d.</p> <p>- Maintain crossings and stockwater as described in Section E.1.d.</p>		<p>-Replace up to 50% of riparian fencing if needed due to flood damage as stipulated in Section E.3.d.</p> <p>-Participate in additional riparian planting projects as described in Section E.3.d.</p> <p>- Implement the riparian grazing plan as described in Section E.3.d and outlined in Appendix D.</p>

Substrate Quality			-Provide access to implement spawning gravel enhancement on the HVR at locations stipulated on the Habitat Improvement map in Appendix and described in Section E.3.e
Pasture Management	-Manage pasture grazing as described in Section E.1.f.		
Assessments/Studies	-Allow for the usage of existing studies performed on the ranch to further understand baseline conditions. These studies are summarized in Section E.1.g.		- Allow access for studies as described in Section E.3.g.
Supplementation			-Allow access for salmonid supplementation and all associated monitoring activities

E. Description of Beneficial Management Activities

This section provides a detailed description of Conservation and Habitat Enhancement Activities to be implemented on the Enrolled Property for the benefit of the Covered Species.

E.1. Actions Required to Maintain Baseline Conditions

This section and Figure 3 details the actions required to maintain Baseline Conditions. This includes any land and/or water management activities that are being implemented, or have been implemented on the Enrolled Property that benefit the Covered Species and will be maintained over the duration of the Template Safe Harbor Agreement.

E.1.a. Hydrology/Water Quality

Increased delivery and irrigation efficiencies:

- The Permittee will operate and maintain the 8,378 feet of pipeline infrastructure that has replaced open unlined ditches in several pastures for better irrigation efficiency, to reduce water use and reduce tailwater impacts to the Shasta River. A map of the existing irrigation system is included in Appendix C.

Tailwater Reduction

Tailwater has been reduced in the bunkhouse pasture where pipelines were installed in 2011. According to the Shasta Valley RCD Tailwater Reduction Monitoring Report (Agreement Number #09-666-551) pre-project tailwater production was 546 acre-feet/season in 2011, with post project tailwater production measured at 126 acre-feet/season in 2012; a total reduction of over 75-percent. The Permittee will continue to operate and maintain pipelines and flood irrigate pastures, monitoring tailwater for each set performed in the course of irrigating pastures. In addition to the pipelines, a tailwater berm project has been implemented and managed to collect tailwater in the bunk house pasture, as described in Section E.2.a.

-The Permittee will continue to flood irrigate pastures adjacent to the river and prone to quick runoff, typically starting around 6 PM and ending around 10 AM (night or cool periods) utilizing recently installed pipelines, dependent upon plant needs and irrigation schedules. According to the Shasta Valley RCD Tailwater Reduction Monitoring Report the nighttime tailwater temperatures are generally between 15 and 19 degrees C. Through rotational irrigation sets, the goal is to reduce or negate tailwater all together but when such does occur, tailwater is collected in the berm area, cooled overnight and released the following morning before 10 AM.

Spring water contributions

-The Permittee will continue to bypass all spring (#160/S023706, 161/S023705, S024837) production to the river from November 1 to March 1, with exception of the ranch's non-irrigation (stockwater) season water right of 0.6 cfs. Landowner is committed to spring water released during this time period to assist Adult Migration and Spawning.

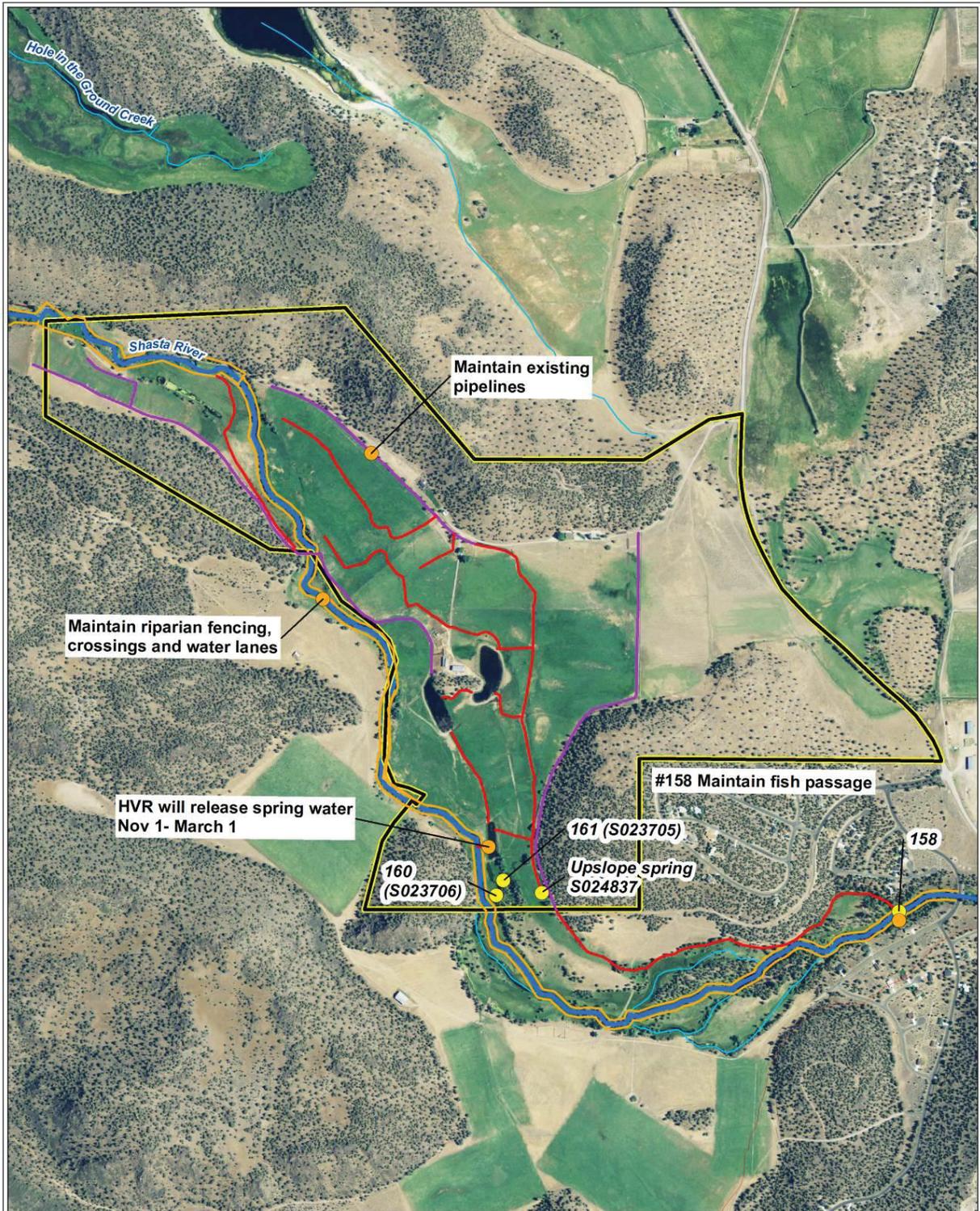
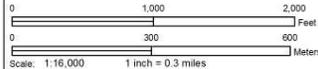


Figure 3- Baseline Conditions

HIDDEN VALLEY RANCH



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LEGEND

- | | | |
|------------------------|---------------------|--------------------|
| Baseline practices | Baseline Conveyance | Rivers and Streams |
| Adjudicated diversions | Open Ditch | Major Streams |
| Riparian fencing | Pipe | Minor Streams |
| Safeharbor ownership | Tailwater | |
| | Berm | |
| | Slough | |
| | Other | |

E.1.b. Passage/Migration/ Diversion Screening

The delivery of prior right water via diversion 158 consists of a boulder weir impoundment control by a waterman valve. The boulder weir was rebuilt in 2000 after winter storm damage. A streambed alteration agreement was obtained from CDFW for construction, operation, and maintenance of the boulder weir and diversion. It has been deemed passable to fish by NOAA and DFW staff even at low flow conditions (3 cfs).

-The Permittee agrees to regular inspection of the boulder weir by NOAA and/or DFW staff to ensure passage and will maintain this boulder weir for the term of this agreement to allow for fish passage and function of the diversion.

E.1.c. Instream Habitat Complexity

Large Woody Debris

-The Permittee agrees to leave natural woody debris from existing trees in place along the banks throughout the property for refugia.

E.1.d. Riparian Condition

Riparian Planting

-Within the riparian fenced areas, efforts to establish riparian trees have been taken along approximately 300 feet of river bank at the south end of the property up to a distance of approximately 20-feet from the bank.

Riparian Fencing

-Riparian exclusion fencing has been completed for the entire ranch. The Permittee will continue to perform the yearly maintenance (replace posts, functioning gates, etc) of the riparian fence over the duration of the Agreement. Riparian fencing widths range from 10 feet to over 100 feet along the river and as much as 500 feet (estimate of the SW hill corner of the ranch). All riparian zones will continue to be managed under riparian grazing plan, where cattle are only allowed to access area under HVR management, they don't have free access.

Crossings

There are two cattle "wet" crossings and one watering access point, both of which are reinforced with angular rock to reduce impacts riparian area. A light load bridge acts as a cattle crossing to the west 40 pasture, however it cannot support heavy equipment. Therefore, the rocked low water crossing is used when heavy equipment is needed in the west pasture, which happens infrequently.

- The Permittee will maintain the crossings to ensure they are useable for cattle while minimizing impacts to the stream for the term of the Agreement. The Permittee will follow conditions stipulated in it's existing LSAA permit.

Stock Watering

-Cattle have access to water via water access lanes, ponds, ditches, and/or water troughs which restrict access and reduce adverse impacts to the riparian area, which will be maintained by the Permittee for the term of the agreement and no other instream sources are deemed necessary.

E.1.e Substrate Quality

Riparian Fencing

-Riparian exclusion fencing has been completed for the entire ranch, with the exclusion zones widths ranging from 10 feet to over 100 feet along the river and as much as 500 feet (SW hill corner of the ranch), which benefits substrate quality due to more stable banks. The Permittee commits to maintain all riparian fencing into the future if livestock are present.

E.1.f. Pasture Management

Pasture Grazing Management

- Pasture management has been implemented on HVR to avoid overgrazing, which has been associated with increased tailwater production and heating, sedimentation, increased water use, etc. Pastures are divided into 6 distinct areas through which the cattle are rotated based upon the size of the herd and the size of the pasture. Herd movements are done based upon the height of the grass (amount of available feed) for the size of the herd. HVR is committed to cross fencing (See E.3.f) the larger pastures to better manage overall stubble heights at a desired 6” height during the growing season. Cattle will remain in a designated pasture until another pasture has enough height (volume) of grass to support the herd or when the grass in the current holding pasture is at a general stubble height of 4”. Cattle are provided hay (grown off site) during winter/early spring periods, as well as when pasture grass is unavailable due to weather conditions (drought conditions, etc.) The Permittee will continue existing pasture management and does not propose additional actions at this time.

E.1.g Assessments/Studies

Access for Studies:

- The Permittee will continue to allow access to CDFW to maintain a passive integrated transponder (PIT) tag antenna array to monitor fish movement onto the ranch. The array is located at the downstream end of the ranch.
- The Permittee will also continue to work with research entities such as UC Davis, Shasta Valley (RCD), CDFW, USFWS, and NMFS to conduct studies to describe salmonid habitat conditions, life history requirements, and productivity to help inform efforts to improve survival and productivity of coho salmon in the future.

E.2. Actions Required to Achieve Elevated Baseline Conditions

This section and Figure 4 details the actions required to achieve and maintain Elevated Baseline conditions. This includes any land and water management activities that will be implemented and maintained on the enrolled property during the term of the Agreement to improve unsuitable habitat conditions for the Covered Species.