AGENDA ITEM NO.
H1

COUNTY OF HUMBOLDT

For the meeting of: June 5, 2018

Date: May 31, 2018

To: Board of Supervisors

From: Supervisors Estelle Fennell and Rex Bohn

Subject: Resolution Adopting the County of Humboldt's Position Regarding the Future of the Potter Valley Project on the Eel River

RECOMMENDATION(S): That the Board of Supervisors adopt the attached resolution stating the County of Humboldt's position regarding the future of the Potter Valley Project.

SOURCE OF FUNDING: N/A

DISCUSSION:

On May 15, 2018, the Board of Supervisors approved a motion for Supervisors Estelle Fennell and Rex Bohn, the County's representative and alternate to the Eel-Russian River Commission ("ERRC"), to create a policy on the County's position regarding the future of the Potter Valley Project and bring it back to the Board before the ERRC meeting on June 8, 2018, in Ukiah.

The ERRC is a joint powers authority with directors from Humboldt County, Mendocino County, Lake County, and Sonoma County. The ERRC was established in 1978 to support regional coordination on watershed conservation, flood control, and economic stimulus and development within the two watersheds. The Potter Valley Project has been a primary focus of discussion for the ERRC since its creation.

Approval Estelle Fennell

Prepared by Hank Seemann, Public Works Deputy-Director Approval

REVIEW:
Auditor _____ County Counsel _____ Human Resources _____ Other _____

TYPE OF ITEM:
_____ Consent
_____ Departmental
_____ Public Hearing
XX Other Board Initiated (20 min)

PREVIOUS ACTION/REFERRAL:

Board Order No. H-4

Meeting of: May 15, 2018

BOARD OF SUPERVISORS, COUNTY OF HUMBOLDT
Upon motion of Supervisor Seconded by Supervisor

Ayes
Nays
Abstain
Absent

SEE ACTION SUMMARY

and carried by those members present, the Board hereby approves the recommended action contained in this Board report.

Dated: _____
By: _____
Kathy Hayes, Clerk of the Board

The Potter Valley Project is a hydropower facility, owned by Pacific Gas & Electric ("PG&E") and located in Mendocino County, that diverts water from the Eel River into the Russian River (Attachment 1). Impacts from the Potter Valley Project on Eel River fisheries, water supply, water quality, and recreation have been a longstanding concern.

PG&E's license from the Federal Energy Regulatory Commission ("FERC") expires in 2022. In 2017, PG&E initiated actions to renew the FERC license. Also in 2017, Congressman Jared Huffman convened an ad hoc committee to address the issues and concerns in the Eel River and Russian River watersheds with the goal of identifying a "two-basin solution" that could be advanced in the re-licensing process.

In May 2018, PG&E announced its intent to put the Potter Valley Project up for auction. The concept of a regional entity, such as ERRC, assuming ownership and becoming the licensee for the facility has been suggested. This concept will likely be explored over the next several months.

The attached resolution (Attachment 2) was developed based on the goals, policies, and implementation measures contained in the Water Resources Element of the General Plan, and with input from the Fish & Game Advisory Commission, which advises the Board on fish and game matters (Attachment 3). Supervisor Fennell consulted with the Wiyot Tribe and City of Fortuna on an initial draft of the resolution.

Public Works has retained Craig Tucker, a consultant with considerable experience working on the Klamath River dams, to assist the County with discussions and negotiations regarding the Potter Valley Project. An initial briefing memo is contained in Attachment 4.

OTHER AGENCY INVOLVEMENT: N/A

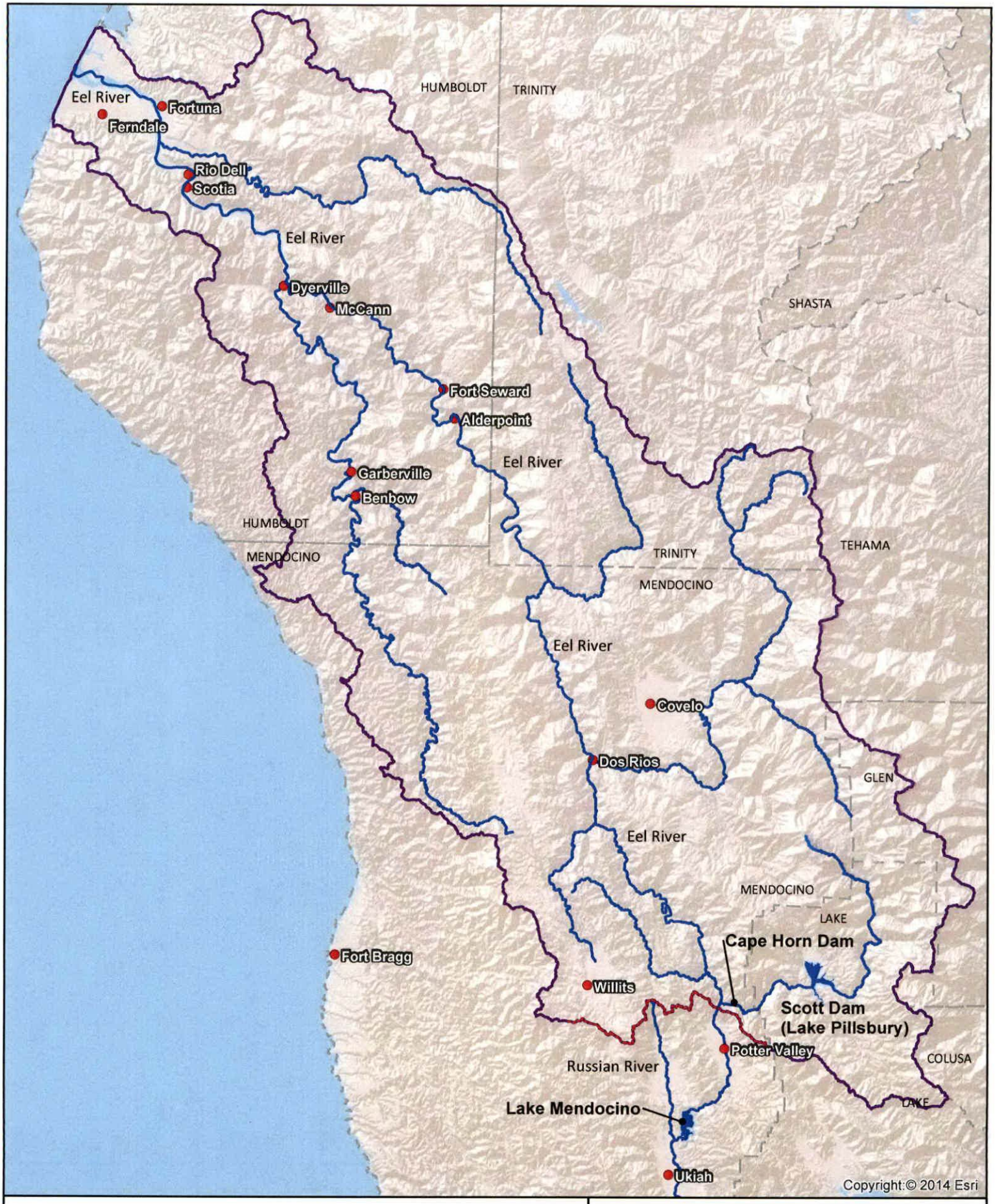
ALTERNATIVES TO STAFF RECOMMENDATIONS: Board discretion

ATTACHMENTS:

Attachment 1	Eel River Watershed Map
Attachment 2	Resolution Adopting the County of Humboldt's Position Regarding the Future of the Potter Valley Project on the Eel River
Attachment 3	Letter (April 2018) from the Humboldt County Fish & Game Advisory Commission
Attachment 4	Briefing memo (May 31, 2018)

Attachment 1

Eel River Watershed Map



Eel River Watershed with County Boundaries

Imagery: ESRI Basemap Service
Created: May 31, 2018
Humboldt County Public Works

N W E S

0 5 10 Miles

1:750,000

Attachment 2

Resolution Adopting the County of Humboldt's Position Regarding the Future of the Potter Valley Project on the Eel River

BOARD OF SUPERVISORS, COUNTY OF HUMBOLDT, STATE OF CALIFORNIA
Certified copy of portion of proceedings, Meeting of June 5, 2018

RESOLUTION NO. 18-56

RESOLUTION ADOPTING THE COUNTY OF HUMBOLDT'S POSITION REGARDING THE FUTURE OF THE POTTER VALLEY PROJECT ON THE EEL RIVER

WHEREAS, the Potter Valley Project, currently owned by Pacific Gas & Electric (PG&E), was constructed on the main stem of the Eel River in Mendocino County between 1905 and 1922 to generate hydroelectric power, and through its operation serves as an inter-basin transfer of water from the Eel River basin to the Russian River basin; and

WHEREAS, the benefits of water diversions to the Russian River have come at the expense of substantial downstream impacts to the Eel River and its fisheries; and

WHEREAS, the main stem of the Eel River flows through Humboldt County for approximately 81 river miles before discharging into the Pacific Ocean; and

WHEREAS, the export of water from North Coast watersheds is one of Humboldt County's most significant water resource policy issues; and

WHEREAS, the ecosystem services and beneficial uses of the Eel River are a vital part of Humboldt County's core community values; and

WHEREAS, residents and communities within Humboldt County depend on the Eel River for water supply, fishing, recreation, and many other uses; and

WHEREAS, the County of Humboldt recognizes the importance of the Eel River to the Wiyot Tribe, Bear River Rancheria, Blue Lake Rancheria, Round Valley Indian Tribes, and other affected tribes for ceremonial, medicinal, practical, and subsistence uses; and

WHEREAS, the Potter Valley Project has contributed to habitat degradation, declining fish populations, economic losses, and loss of recreational opportunities within Humboldt County; and

WHEREAS, the Potter Valley Project has redistributed the natural wealth of the Eel River to the detriment of downstream communities in Humboldt County; and

WHEREAS, the Potter Valley Project has deprived the residents of Humboldt County from fully utilizing the resources of the Eel River; and

WHEREAS, PG&E's hydropower license for the Potter Valley Project expires on April 14, 2022; and

WHEREAS, Congressman Jared Huffman convened an ad hoc committee of interested parties in 2017 to work toward a two-basin solution that addresses issues and concerns in the Eel River and Russian River watersheds; and

BOARD OF SUPERVISORS, COUNTY OF HUMBOLDT, STATE OF CALIFORNIA
Certified copy of portion of proceedings, Meeting of June 5, 2018

RESOLUTION NO. 18-56

WHEREAS, PG&E announced, on May 10, 2018, its intent to put the Potter Valley Project up for auction; and

WHEREAS, the County of Humboldt has a duty, as a political subdivision of the State of California, to protect and restore the natural resources within County boundaries.

NOW, THEREFORE, BE IT RESOLVED THAT THE HUMBOLDT COUNTY BOARD OF SUPERVISORS ADOPTS THE FOLLOWING POSITION STATEMENT REGARDING THE FUTURE OF THE POTTER VALLEY PROJECT:

- The County of Humboldt believes that decommissioning and full or partial removal of the Potter Valley Project is inevitable due to the aging infrastructure, low power production, and high cost of upgrading the facility to comply with current dam safety and environmental regulations.

- The County of Humboldt believes that restoration of fish populations in the Eel River will be best achieved through removal of Scott Dam to allow volitional fish passage to spawning and rearing habitat historically used by migrating salmonids.

- The County of Humboldt will actively participate in the hydropower re-licensing process administered by the Federal Energy Regulatory Commission, Congressman Jared Huffman's Potter Valley Project Ad Hoc Committee, and discussions exploring the potential transfer of the Potter Valley Project to a regional (multi-county) entity.

- The County of Humboldt recognizes that the Potter Valley Project provides tangible benefits to other counties and supports a collaborative approach to solving the regional issues and concerns.

- The County of Humboldt supports Congressman Huffman's call for a two-basin solution with co-equal goals and believes that consideration of Russian River water users' interests will be essential to achieving a comprehensive solution.

- The County of Humboldt will advocate strongly on behalf of the water users and natural resources within Humboldt County for water supply reliability, fish populations that support sustainable harvest opportunities, and full restoration of beneficial uses within the Eel River.

- The County of Humboldt will advocate for elimination of summer and fall water diversions and restoration of the Eel River's natural flow regime to restore and enhance fisheries, water quality, water supply, and recreational opportunities.

- The County of Humboldt will advocate for thorough consideration of the decommissioning alternative through the hydropower re-licensing process.

BOARD OF SUPERVISORS, COUNTY OF HUMBOLDT, STATE OF CALIFORNIA
Certified copy of portion of proceedings, Meeting of June 5, 2018

RESOLUTION NO. 18-56

- The County of Humboldt will advocate for PG&E (or its successor) to sponsor a participatory process involving all affected stakeholders prior to the submittal of a final re-licensing application.

- The County of Humboldt will advocate for technical studies that fully address the primary concerns for Eel River watershed health and sustainability, which include: fish passage necessary for access to spawning and rearing habitat above Scott Dam; fish passage survival at Cape Horn Dam (for both adults and juveniles); downstream geomorphic effects; effects on environmental cues (flow and temperature) for migrating salmonids and other fish species; effects on invasive species (such as the Sacramento pikeminnow); effects on tribal uses and resources; and effects on downstream municipal, domestic, and agricultural water supply.

- With regard to a potential regional entity assuming operation of the facility, the County of Humboldt will advocate for full recovery of the County's costs; protection from liability; fair and equitable representation in the governance structure; and assurances that the needs of the Eel River and downstream communities will be satisfied.

Dated: June 5, 2018

Ryan Sundberg, Chair
Humboldt County Board of Supervisors

Adopted on motion by Supervisor Fennell, seconded by Supervisor Wilson, and the following vote:

AYES:	Supervisors	Bohn, Sundberg, Fennell, Wilson, Bass
NAYS:	Supervisors	--
ABSENT:	Supervisors	--
ABSTAIN:	Supervisors	--

STATE OF CALIFORNIA)
County of Humboldt)

I, KATHY HAYES, Clerk of the Board of Supervisors, County of Humboldt, State of California, do hereby certify the foregoing to be an original made in the above-entitled matter by said Board of Supervisors at a meeting held in Eureka, California.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Seal of said Board of Supervisors.

By Ryan Sharp
Deputy Clerk of the Board of Supervisors of the
County of Humboldt, State of California

Attachment 3

Letter (April 2018) from the Humboldt County Fish & Game Advisory Commission

April 2018

Re: Humboldt County Engagement in Eel River Management

Humboldt County Board of Supervisors,

The Humboldt County Board of Supervisors and Humboldt County have not established a policy or otherwise formalized input into the Federal Energy Regulatory Commission's proposed relicensing of the two dams on the upper mainstem Eel River. The two dams and associated diversion tunnel are called the "Potter Valley Project" by proponents of continued diversions from the Eel River. The current License Expires on April 14, 2022.

This letter provides a background on the issues at stake in the proposed relicensing and a basis for policy that would protect the interests of Humboldt County implicated in relicensing.

The Eel River, the third largest river in California, flows south to north from Lake County to the Pacific Ocean in Humboldt County. While the mouth of the Eel River is nearly two hundred miles north of the mouth of the Russian River, part of the rivers' headwaters is separated by only two miles. In 1908, those 2 miles were connected by the establishment of a water pipeline that links the two river systems. Eel River water is diverted through this pipeline to turbines which generate a relatively small – and inexorably declining – amount of electricity.

Once used to generate power, the Eel River water is released to flow into the East Fork of the Russian River. The diverted water flows to supply water users from Redwood Valley to northern Marin County. Those water users obtain the water for free.[1]

In 2017, the Federal Energy Regulatory Commission (FERC) opened a process to consider renewal of the Eel River dams' 50-year federal license. By the time the current license expires on April 14, 2022, both the Cape Horn and Scott Dams will be more than a century old.

Despite evidence that both dams cause serious harm to Eel River fisheries, including chinook salmon and winter and summer steelhead trout, PG&E is not proposing to "make any major modification to the Project or its operation under the new license."[2] Additionally, it is not clear whether PG&E intends to seek relicensing. Rather, PG&E may prefer to divest itself of the project.

While it is possible that other interests might in theory find a way to make the dams and diversion at least less of a money-losing proposition, that would depend on turning PG&E's power generation water rights into consumptive water rights that could then be monetized in the Russian River. It is far from clear that such a transmutation could even be accomplished; it would certainly take years to do so. Otherwise, the only party in the Russian River drainage with

[1] Kovner, Guy. 2017. 109-year-old Potter Valley Project the controversial link between Russian and Eel Rivers. Retrieved from https://eelriver.org/wp-content/uploads/2016/10/109-year-old-dam_press-democrat_4.28.2017.pdf

[2] PG&E. 2018. Potter Valley Project (FERC #77). Retrieved from https://www.pge.com/en_US/safety/electrical-safety/safety-initiatives/potter-valley/potter-valley-project.page?WT.mc_id=Vanity_pottervalley

any right to Eel River water is the Potter Valley Irrigation District (PVID), which holds less than 10,000 acre feet of rights to Eel River water.

Meanwhile, any new owner would still face the same substantial challenges as PG&E in continuing relicensing. There is no path forward for the Eel River dams and diversion that does not go through FERC relicensing. Part of this process will include the National Marine Fisheries Service (NMFS) requiring provisions for fish passage as part of any new license. Scott Dam is 138 feet tall and has no fish passage at all. The agency has made it clear that it will prioritize 'volitional' passage, which would allow fish at any life stage to move up and down the river past the dam at any time.

Similarly, the State Water Resources Control Board (SWRCB) has authority to include mandatory conditions on any new license to protect water quality, as for example from the very high levels of methylmercury accumulation noted in the reservoir. Because we already know that electrical generation from the dams and diversion tunnel doesn't even cover the costs of maintaining the structures, it is hard to give much credence to suggestions that the dam would be relicensed to produce even less power than it does today. But it is even less realistic to suggest that the dams will even continue to produce the limited amount of power they produce under today's conditions.

Finally, any potential purchaser of the dams and diversion tunnel must reckon with the potential costs associated with the dams' substantial liabilities. Not only do the dams kill salmon, harbor predatory pike minnow, and impair water quality: there are many reasons to be very concerned about their integrity and the danger dam failure may present to downstream communities. Not only was the construction of Scott Dam changed in mid-construction, but the slope the dam is attached to continues to move. PG&E and dam safety officials assure the public Scott Dam is safe, but those assurances are based on precisely the same inspections that said the Oroville Dam had no foreseeable problems. In fact, Scott Dam was built only a mile or so from a large earthquake fault.

REASONS TO ENGAGE IN THE FEDERAL ENERGY REGULATORY COMMISSION PROCESS

ECOLOGICAL HEALTH

The Eel River is home to many wonderful flora and fauna, including three salmonid species listed under the federal and state Endangered Species Acts; California Coastal Chinook, Southern Oregon Northern California Coho, and Northern California Steelhead. Additionally, the Eel River provides habitat to numerous wildlife species not considered endangered. Eel River fisheries have been essential to tribal peoples for millennia, and the mainstay of commercial and recreational fishers through most of the twentieth century. In fact, the Eel River supported a commercial salmon fishery during the late-19th and early-20th centuries, producing a peak output of 15,000 cases of canned salmon during 1883. The cannery data can be roughly translated into population estimates for historic runs of Chinook salmon that ranged between

100,000 and 800,000 fish per year, declining to roughly 50,000-100,000 fish per year in the first half of the 20th century.[3] Today, however, these fisheries are facing extinction.

Scott Dam, which allows no fish passage at all, blocks access to more than 250 miles of high-quality spawning habitat in cold, clean streams on the Mendocino National Forest. While the lower Cape Horn dam has a fish ladder, there is increasing evidence the reach between the two dams is an ecological trap for young salmonids, because cold water flows from the upper dam delay downstream migration until temperatures in the mainstem Eel are dangerously high. Refer to Figure 1 for Eel River watershed temperature monitoring data showing high temperature ranges in the mainstem.

The National Marine Fisheries Service has concluded that it will be necessary to remove Scott Dam to restore the Upper Mainstem Eel River population of steelhead. Similarly, in its 2017 Multi-Species Recovery Plan, the agency noted the benefits to the Upper Eel River population of chinook salmon from removal of Scott Dam (emphasis added):

> Thirty to forty-five miles of historical Chinook habitat is blocked by Scott Dam. **Of this, much of the highest quality spawning habitat is inundated by Lake Pillsbury. Therefore, a fish passage facility *only* providing access over Scott Dam may not yield desired productivity targets for Chinook salmon.** Thorough investigations need to occur to determine if decommissioning of Scott Dam is a feasible option and if it is necessary to achieve long-term viability of the Upper Eel River Chinook population. **If decommissioning of Scott Dam were to occur, the return of the natural hydrologic regime, sediment transport, and habitat availability would improve historical spawning habitat and flow regimes for the rearing and outmigration of juvenile Chinook salmon.** The FERC re-licensing process for the Potter Valley Project begins in 2017 and will require thorough evaluations of all potential impacts associated with the Potter Valley Project. These evaluations may require additional measures than those that currently exist to ensure that the Upper Eel River Chinook population is on a viable long-term recovery trajectory.

Research indicates that allowing fish passage at Scott Dam would open roughly 79 miles of Chinook habitat, 288 miles of Steelhead rearing habitat, and 181 miles of Steelhead spawning habitat.[4] In 2015, and throughout the drought, low-flow conditions within the Eel River exposed salmon to disease, predation, and poor water quality. At that time the Wiyot Tribe Natural Resources Directory advised that "Agencies need to emphasize restoration projects in the estuary to ensure quality holding habitat. Furthermore, water diversion of all types urgently need to be addressed to return Eel River flows to natural levels." During that same period of time fishing

---

[3] Yoshiyama, Ronald and Moyle, Peter. 2010. Historical Review of Eel River Anadromous Salmonids, with Emphasis on Chinook Salmon, Coho Salmon and Steelhead. Retrieved from https://eelriver.org/wp-content/uploads/2017/07/Yoshiyama-Moyle_Historical-Reivew-of-Eel-River-Anadromous-Salmonids-Final-Report-2010.pdf

[4] Cooper, Emily. 2017. An Estimation of Salmonid Habitat Capacity in the Upper Mainstem Eel River. Retrieved from https://eelriver.org/wp-content/uploads/2017/05/An-Estimation-of-Salmonid-Habitat-Capacity-in-the-Upper-Mainstem-Eel-River_Emily-Cooper_3.2017.pdf

guide Eric Stockwell reported observing fish going blind in the low water quality conditions.[5] The survival of these fish species depends upon increasing seasonal low flow levels, decreasing annual high-water temperatures, and opening fish passage to habitat beyond the dams.

PUBLIC SAFETY: DAM STABILITY

Scott Dam was built on unstable geology. Movement of the underlying geology lend to dam failure.[6][7] In the wake of the near-disaster at the Oroville Dam, roughly half the age of the Eel River dams, concerns about the integrity especially of Scott Dam have not been persuasively addressed.

PUBLIC SAFETY: MUNICIPAL WATER SUPPLY

In June of 2014, the State Water Resources Control Board issued a notice to the City of Rio Dell that they no longer had a legal right to draw more than 50-gallons per day per resident of water out of the Eel River to supply citizens.[8] The Eel River is the city's sole source of water.[9] Under the curtailment agricultural use of water was forbidden.[10] The crisis was based on the determination that there was not sufficient water available to supply the citizens of Rio Dell after satisfying senior water rights, including those belonging to the town of Scotia immediately upriver. During the curtailment of Rio Dell's municipal water supply PG&E continued to divert Eel River water out of the basin to supply irrigation water to the Potter Valley Irrigation District.[11]

LOCAL ECONOMY

While there is no longer commercial fishing on the Eel River, salmon and steelhead from the Eel are a part of the commercial ocean fishery. Protecting these fish and abundant water flows supports the local economy. For example, economic stimulations derived from Eel River, nature-based tourism and recreation activities have previously been estimated to be over $3,000,000 annually.[12]

We recommend that the Humboldt County Board of Supervisors allocate resources to allow for full participation in the FERC relicensing process to ensure management of the Eel River's

---

[5] Houston, Will. 2015. Eel River salmon go blind awaiting rain. Retrieved from http://www.times-standard.com/article/NJ/20151027/NEWS/151029830

[6] PG&E. 2016. Scott Dam FERC Part 3 Safety Review. Retrieved from https://eelriver.org/wp-content/uploads/2017/07/Scott-Dam-Geology-and-Seismicity-9.2016.pdf

[7] Friends of the Eel River. 2018. Eel River Dams Relicensing. Retrieved from https://eelriver.org/about-us/potter-valley-project/pvprelicensing/

[8] Kemp, Kym. 2014. Water! Water! State Lifts 50 Gallon Per Person Per Day Restriction on Rio Dell Residents, Others Not So Lucky. Retrieved from https://lostcoastoutpost.com/2014/aug/4/water-water-everywhere/

[9] Stansberry, Linda. 2014. Rio Dry. Retrieved from https://www.northcoastjournal.com/humboldt/rio-dry/Content?oid=2689683

[10] Houston, Will. 2014. Emergency rationing in Rio Dell after state curtails junior water rights. Retrieved from http://www.times-standard.com/article/zz/20140710/NEWS/140718774

[11] State Water Resources Control Board Staff Report. 1997. Proposed Action to be taken by the Division of Water Rights Pending Water Rights Applications within the Russian River Watershed. Retrieved from http://www.krisweb.com/biblio/russian_swrcb_dwr_1997_staffrptproposedactions.pdf

[12] Ihara, Daniel and Marshall, Matthew. 2004. Economic Benefits to Mendocino and Lake Counties from Removing the Dams on the Eel River. Retrieved from https://eelriver.org/wp-content/uploads/2016/08/Economic-Benefits-to-Mendocino-Lake-Counties.pdf

resources in a manner that is beneficial to Humboldt County. Full participation ought to include the development of formalized positions and policies related to the Federal Energy Regulatory Commission's proposed relicensing of the two dams on the upper mainstem Eel River.

ANNUAL ADVOCACY ACTIVITIES

Below is list of the type of activities that a Humboldt County representative ought to engage in to support Eel River advocacy work:

- Review of environmental studies pertaining to the Eel River.
- Participation in FERC stakeholder meetings, including:
  - The Eel-Russian River Commission
- Information review, synthesis and dissemination.
- Develop Humboldt County position on dam and river management.
- Advocate for Humboldt County position on dam and management.

Sincerely,
Humboldt County Fish & Game Advisory Commission

Attachment 4

Briefing memo (May 31, 2018)

Briefing Paper

To: **Hank Seemann, Humboldt County Public Works**

Prepared by: **S. Craig Tucker, Ph.D.**

Date: **May 31, 2018**

Subject: **General Principles for Addressing Issues Related to the Eel River and Potter Valley Project Re-licensing**

The purpose of this Briefing Paper is to provide a summary of the re-licensing process for the Potter Valley Project (PVP) and suggest four guiding principles for engagement on regional discussions regarding the PVP's future.

BACKGROUND

The Eel River flows south to north from its headwaters in Lake County, through portions of Trinity and Mendocino counties, to its outlet to the Pacific Ocean in Humboldt County. The Eel is the third largest watershed entirely in California (3,684 square miles). In 1905, the Eel River Power and Irrigation Company began construction on what become known as the PVP. The PVP began with the construction of Cape Horn Dam, creating Van Arsdale Reservoir, and a one-mile-long tunnel connecting the Eel River to the Russian River in Potter Valley. Because Van Arsdale is a relatively small impoundment (approximately 700 acre-feet), the diversion could only be operated in winter months. In 1921, Scott Dam was built further upstream creating an 94,000 acre-foot impoundment known as Lake Pillsbury (current capacity is approximately 77,000 acre-feet). With this additional storage, the project could divert water and generate power year-round. While the mouth of the Eel River is nearly two hundred miles north of the mouth of the Russian River, the two rivers are intimately connected at their headwaters by the PVP.

SUMMARY OF HYDROPOWER RE-LICENSING

As with all privately-owned power projects, the Federal Energy Regulatory Commission (FERC) has jurisdictional authority pursuant to the Federal Power Act to regulate and license the PVP. However, the outcome of the current FERC process, and the fate of PVP, will likely be determined by concerns over the water diversion and not that of power generation.

PG&E describes the PVP as a 9.2 megawatt (mW) hydropower facility or enough to power 6,000 homes. This is a bit misleading as 9.2 mW may be the nameplate capacity of the power generators but environmental regulations and FERC flow requirements (and natural flow variability) limit diversions in such a way that the actual power produced is a fraction of the facility's capacity. The amount of electricity produced is negligible relative to PG&E's portfolio, and the value of the energy alone does not warrant the capital investment required to pursue a new license from FERC.

The original reason for constructing the PVP may have been power generation; however, the consequence was the creation of a massive out of basin diversion to the Russian River watershed, which in turn fueled agricultural development in Potter Valley and areas downstream. Until 1979, the average annual diversion of Eel River water at Cape Horn Dam was 152,600 acre-feet (33% of inflow)[1]. By 2004,

[1] PG&E, August 29, 2017. Questions on Power Production for Potter Valley Project Ad Hoc Committee.

National Marine Fisheries Service (NMFS) issued a biological opinion on PVP operations under the federal Endangered Species Act which in turn led to significant changes. The result was an increase in releases to the Eel River and reduced annual diversions to Potter Valley. From 2007 to 2016, the average annual diversion of Eel River water at Cape Horn Dam was 64,400 acre-feet (21% of inflow).

In 2017, FERC initiated the public process to consider renewal of the federal license for the PVP. FERC must consider the public costs and benefits of project operations in the context of a host of contemporary laws and regulations designed to protect environmental resources and water quality, public safety, and power customers. The process calls for significant public participation and engagement of local governments, agencies, and stakeholder advocacy groups.

In the most straightforward cases, a FERC relicensing proceedings is managed by the project owner as an application developed with stakeholder input for FERC's consideration. FERC may simply approve the application or issue an application with mandatory terms and conditions. For controversial projects, such as the PVP, the project owner and stakeholders often negotiate a settlement agreement that specifies conditions of a new license application that settlement parties all agreed to. The benefit of a settlement agreement is that it reduces the risk of litigation by stakeholders and demonstrates community support for a license application, which has some influence on FERC's decision to approve the license. With these considerations in mind, Congressman Jared Huffman initiated an ad hoc committee in early 2017 for discussions among interested parties with a goal of developing a "Two-Basin Solution" scenario that could be advanced for consideration to the state and federal agencies with conditioning authority under the FERC relicensing process.

In May 2018, PG&E announced a desire to sell the PVP, fundamentally because the cost of relicensing, operations, and maintenance is greater than the value of the power produced. However, the PVP has a secondary benefit that is in some ways outside the scope of FERC. The PVP provides a significant out-of-basin diversion to the Russian River watershed that supports agriculture and water supply in Mendocino and Sonoma counties. While the Potter Valley Irrigation District purchases water from PG&E, other water users in the Russian River watershed do not pay for this water or operation of the diversion.

Because of the magnitude of the water diversions and the economic benefits in Mendocino and Sonoma counties, there is considerable interest in maintaining the PVP in some form, despite the project's lack of value as a power plant. Conversely, restorationists, tribes, fishermen, and communities dependent on the Eel River for drinking and irrigation water seek to eliminate or reduce water diversions and decommission all or part of the project. Operation of the PVP has perennially dewatered the Eel River, degraded water quality, affected fluvial processes, and blocked anadromous fish passage into the upper reaches of the Eel River watershed for a century.

EEL RIVER FISHERIES

The Eel River once played host to prolific runs of salmon, steelhead, and Pacific lamprey. Although early fish counts are sparse, commercial canneries were operating at the mouth of the Eel as early as 1854, producing a peak output of 15,000 cases of canned salmon in 1883. Data from the canneries lead researchers to estimate that annual runs of Chinook salmon ranged between 100,000 and 800,000 fish a year. Today, runs of Chinook average about 1,000 fish a year- a 99% decline. The decline of coho, steelhead and Pacific lamprey are of a similar magnitude.[2]

[2] Yoshiyama and Moyle, "Historical Review of Eel River Anadramous Salmonids, with Emphasis on Chinook Salmon, Coho Salmon and Steelhead."

California Trout and the UC Davis Watershed Sciences Center recently published a peer-reviewed report detailing the risks of California native fishes. The report notes that all of the Eel's native salmonids (Chinook, Coho, and Steelhead) are listed as threatened under the Endangered Species Act.[3]

Eel River Chinook runs are considered valuable as they are not supported by a hatchery and thus preserve 'wild' genetics unlike runs on neighboring large rivers such as the Klamath which are hatchery influenced.

THE EEL IS A FEDERALLY DESIGNATED WILD AND SCENIC RIVER

A total of 398 miles of the Eel River and its major tributaries are protected under the National Wild and Scenic Rivers system, with 97 miles classed as Wild, 28 miles as Scenic, and 273 miles as Recreational. About 155 miles of the main stem are designated, from the mouth to a point just below Cape Horn Dam. The Middle Fork is also Wild and Scenic from its confluence with the Eel to the boundary of the Yolla Bolly–Middle Eel Wilderness. The South Fork is designated from its mouth to the Section Four Creek confluence, the North Fork from its mouth to Old Gilman Ranch, and the Van Duzen River from its mouth to Dinsmore Bridge.[4] These designations effectively preclude the construction of additional dams and diversions in the future.

GENERAL PRINCIPLES

Clearly, the Eel River Basin is important to Humboldt County's economy, cultures, and water resources. Given that the relicensing proceeding currently underway will determine to what extent the next generation of Humboldt residents will enjoy and use Eel River fishery and water resources, four guiding principles are suggested for engaging in the FERC relicensing process and any settlement discussions related to the fate of the PVP and Eel River restoration:

1. Science Based Decision Making. Policy decisions are a product of our beliefs and our values – both of which are predicated on the known facts of a matter. Fisheries and water quality restoration are complex issues guided by a host of scientific disciplines ranging from biology to physics. Our decisions regarding the specific elements of a new PVP FERC operational license, project surrender license, or settlement agreement should be predicated on the best available science that meets the criteria: a) it is generated by a reputable source, b) it has been subject to independent peer review, and c) it discloses the uncertainties associated with any conclusions.[5]

2. Achieve a more Natural Flow Regime. Although dams and diversions have long served to provide for energy, recreation, drinking water, irrigation and flood control, ecologists have come to understand that the native flora and fauna of a given river basin evolved under a natural flow regime that created the complex web of connected life cycles. Today, it is broadly accepted that a fundamental component of river restoration is to, as closely as possible under current conditions, re-create the natural flow regime.[6]

3. Acknowledge and Respect the Regional Needs. Although the PVP was developed as a power project, the resulting water diversion to the neighboring Russian River has become important to

[3] Moyle et al., "State of the Salmonids: Status of California's Emblematic Fishes 2017."
[4] "Wild and Scenic Rivers Program (U.S. National Park Service)."
[5] Sullivan et al., "Defining and Implementing Best Available Science for Fisheries and Environmental Science, Policy, and Management."
[6] Poff et al., "The Natural Flow Regime."

Russian River Basin agricultural interests and a direct benefit to the Sonoma County Water Agency and its customers. The PVP links the two watersheds along with the interests of Lake, Humboldt, Mendocino and Sonoma Counties. The reality of this linkage was acknowledged by the county governments in 1978 which led to the formation of the Eel-Russian River Commission. In order to reach a politically and legally durable outcome that serves Humboldt County's interests, the needs of Russian River Basin stakeholders who have depended on PVP diversions for a century will need to be considered.

4. Restore the Eel River Fisheries. The Eel River has provided sustenance to residents of what is now Humboldt County for millennia. After colonization, the abundance of salmon in the Eel River supported canneries from 1857 to 1921 when diversions and aggressive logging practices led to steep and rapid declines.[7] Humboldt County should seek restoration of the Eel River fisheries that exceeds the minimal requirements of the Endangered Species Act. The Eel River fishery should be restored such that it once again has self-propagating populations of wild Chinook, Summer Steelhead, Winter Steelhead, Pacific Lamprey, and Coho salmon that allow harvest opportunities for Humboldt County's sport, commercial, and tribal fishermen.

REFERENCES

"A Closer Look at the Project Linking Russian, Eel Rivers." Santa Rosa Press Democrat, April 9, 2017. http://www.pressdemocrat.com/news/6866643-181/100-year-old-potter-valley-project-the.

Baumann, Adrian Fernandez. "PG&E Will Relinquish Control of Potter Valley Project • The Mendocino Voice." *The Mendocino Voice* (blog), May 10, 2018. https://www.mendovoice.com/2018/05/pge-potter-valley-project-water/.

Moyle, Peter B, Robert A. Lusardi, Patrick J. Samuel, and Jacob V.E. Katz. "State of the Salmonids: Status of California's Emblematic Fishes 2017." UC Davis Watershed Sciences Center, August 2017. http://caltrout.org/wp-content/uploads/2017/08/SOS-II_Final.pdf.

National Marine Fisheries Service. "Endangered Species Act Recovery Plan for the Southern Oregon/Northern California Coast Coho Salmon Evolutionarily Significant Unit." Department of Commernce, September 30, 2014.

Pacific Gas and Electric. "Proposed Study Plan for Potter Valley Hydroelectric Project (FERC Project No. 77)," September 14, 2017. https://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20170914-5039.

———. "Revised Study Plan for Potter Valley Hydroelectric Project (FERC Project No. 77)," January 16, 2018. https://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20180116-5131.

Frederiksen, Justin. "PG&E Announces Plans to Sell Potter Valley Project." *Ukiah Daily Journal*. Accessed May 21, 2018. http://www.ukiahdailyjournal.com/article/NP/20180510/NEWS/180519976.

[7] Yoshiyama and Moyle, "Historical Review of Eel River Anadramous Salmonids, with Emphasis on Chinook Salmon, Coho Salmon and Steelhead."

Kovner, Guy. "PG&E Plan to Sell Key Hydro Project Unsettles North Coast Water World." *Santa Rosa Press Democrat*, May 12, 2018. http://www.pressdemocrat.com/news/8314850-181/pge-plan-to-sell-mendocino.

"Potter Valley Project - Wikipedia." Accessed May 19, 2018. https://en.wikipedia.org/wiki/Potter_Valley_Project#cite_note-PID-1.

"Potter Valley Project (FERC #77)." PGE.com, n.d.

Stansberry, Linda. "Rio Dry." North Coast Journal. Accessed May 20, 2018. https://www.northcoastjournal.com/humboldt/rio-dry/Content?oid=2689683.

Turpin, Terry. "Study Plan Determination for the Potter Valley Project," February 15, 2018.

"Wild and Scenic Rivers Program (U.S. National Park Service)." Accessed May 19, 2018. https://www.nps.gov/orgs/1912/index.htm.

Yoshiyama, Ronald M, and Peter B Moyle. "Historical Review of Eel River Anadramous Salmonids, with Emphasis on Chinook Salmon, Coho Salmon and Steelhead," n.d., 132.