November 6, 2010
Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First St., N.E.
Washington, D.C. 20426

Re: MFP 2079 Draft License Application

Dear Secretary Bose,

PCWA's Hydropower Project flows cut off trail connectivity for recreationists on the vast, historical, continuous Western States Trail and its local connector trails in Auburn State Recreation Area. The North Fork and Middle Fork American Rivers, the peaking reach, would be easily crossable by recreationists, in many locations, during the high season of recreation use because natural river flows would be very low (flows approx. 75cfs), river width much narrower and the water temperature substantially warmer.

Under the first MFP 2079 license, the impacts of project flows on public safety and trail connectivity of this premier, trans Sierra trail system in the watershed were not addressed. The main backbone of the system, the Western States Trail, predates the existence of the Project as does the first 100 mile Tevis Ride, a premier endurance event which occurs on this Trail. The Western States Trail connects to the Pioneer Express Trail below the City of Auburn, and connects northeast to the Pacific Crest Trail and the Tahoe Rim trail. There are many connector trails to from the City of Auburn and El Dorado County which serve as access to WST and other areas of the watershed and the river.

Contrary to the licensee's, vague and conditional, assertion; "In general, implementation of the Proposed Action will maintain crossing opportunities at all of the crossing locations, depending on water year type and season, particularly at the higher crossing threshold." (8.9-29), the Proposed Action will reduce trail crossing opportunities, for the average trail enthusiast in ASRA during peak recreation season, as a result of typical daily operations of the Middle Fork American River Hydropower Project MFP 2079. Minimum flows for the Proposed Action are several times higher than the current 75cfs minimum, during the peak recreation season in many of the water year types. The data, as presented, doesn't represent the Project effects on the primary recreation season and the use of the higher crossing threshold is inappropriate for analysis of flow effects on this river.

In addition, three general circumstances have contributed to cumulative impacts of PCWA project operations and flows cutting off, interfering with and reducing trail and road connectivity between Placer And El Dorado Counties in the Auburn State Recreation. First, current project operation flows range from 75 cfs to 1000 cfs on a daily basis, particularly during peak recreation season. Flows above 350cfs are generally considered too risky to cross, based on Focus Group input. Thus, during summer and fall days the trail system is cut off in many locations most of the day. Second, in the early days of the Project, a major river crossing was lost when the Greenwood bridge was washed out due to the collapse of Hell Hole Dam during construction in 1964. It has never been replaced. The presumption was the area would be underwater because of the Auburn Dam. This presumption has served to shift many
costs associated with Project flows from the licensee to others over the course of the last fifty years. Third, a highly popular multiuse trail was cut off, recently, when the PCWA/USBR pump station project removed the dry riverbed crossing in the Coffer Dam. The Auburn Dam river diversion tunnel was destroyed and the river channel reconstructed to support the pump intake and create artificial rapids for a kayak play park. This was the only multiuse trail crossing in the area. Other than a feasibility report paid for by the State of California, no effort was made, by PCWA or USBR to mitigate what was identified as a significant impact of the Project.

**Requested Mitigation and Enhancement Measures to be considered in the Draft License Application** (see attached Map)

**Access:**
Add vehicle access to the North Fork American river by repurposing an existing Auburn Dam construction road.

- Provide paved road access from Highway 49, El Dorado County near the town of Cool, to Kayak Play Park, north of China Bar Area on the North Fork American river. The road access could be provided by utilizing existing Auburn Dam construction roads in the area, one of which is paved but would have to be repaired and extended. Create a parking area on the existing flat grade which is a result of the PCWA/USBR Pump Station river channel construction project.
  - The addition of the new boating run from the Confluence will add to existing parking and crowding problems that occur in the area. The Confluence is the only river access easily reached by car. Many people swim and cool off here. The visitor survey did not count visitors after 5pm, yet 74% of those surveyed said crowding negatively affected their recreation experience. Families with young children tend to stay on the North Fork, the water is warmer and has minimal velocity during the summer. Young adults tend to spread out up and downstream in the area. The Confluence is a dangerous section of the river, the current is swift, deep and turbulent, the river makes a sharp turn and rapids and boulders are nearby. The low flows that occur much of the day under the existing license, merely expose a different set of dangerous obstacles for swimmers. Strandings and drownings have occurred at this location.
  - Project flows draw swimming and river enhanced recreation, ASRA has never had the needed drivable access points to serve the average family. Particularly, the young, old and non-athletic types. The licensee must provide such access. This location is ideal, there are no rapids, boulders nor debris or vegetative strainers below the play park. The area is downstream of the Wild and Scenic designation. Costs of development would be lower since existing grading and roads would be used with minimal modification. A facility here would put the Dam construction zone to good use and still not interfere with later Dam development if that ever occurred.
  - Residents of El Dorado County would have drivable access, for the first time to the North Fork American river. This access point is near a population center and Highways 49 and 193.
  - Parking fees will help generate income for the management of this Recreation Area.
  - The kayak play park would be vehicle accessible, put in now is 3.7 miles upstream at the Confluence.
Formalized access will assist with fire suppression and law enforcement access in the canyons of ASRA.

NOTE: the Birdsall and Oregon Bar river access areas are available by walking only. Parking is approximately 3500' up canyon from the actual river access points. It is not safe to leave young children, older folks or equipment at the river while one hikes to back to the car. In addition river's edge is narrow and difficult to walk on.

Build a bridge to serve as a trail crossing and State Parks vehicle circulation over the North Fork American River near the kayak play park or anywhere downstream to Oregon Bar.

Project flows have interfered with trail connectivity along the river for the past 50 years. Under the Proposed Action, minimum flows will be much higher and result in fewer opportunities to cross the river. A bridge in this location will serve to connect a multiuse trail, (Auburn to Cool, ACT Trail) that was used by many over the last 30 years. Mountain biking has developed since the first hydro license was issued, river crossing is especially difficult carrying a bike, much lower flows are needed to get across the river. Project flows will ramp down very slowly in this section of the river and further limit crossing opportunities.

Local economy (Placer and El Dorado Counties) will benefit by new extended mileage mountain bike, ride and run events that can occur over the bridge.

A bridge in this location would expedite access to both sides of the river and benefit fire suppression and law enforcement needs.

A bridge here would enhance family oriented river access from both Placer and El Dorado Counties.

Cumulative impact repair lost trails as a result of earlier PCW/USBR Pump Station project.

The upper portion of Cardiac Bypass trail was destroyed due to road improvements for access to the China Bar parking area. Provide an alternate trail around this road.

Assure that, should Driver's Flat road be improved, an alternate equestrian trail is built to connect the equestrian parking area to the Western States Trail.

See Donna Williams letter for more details about the numerous trail impacts that were never addressed in the EIR of the Pump Station Project.

Build a bridge over the North Fork American River, the PCW/USBR Pump Station project characterized the loss of the Auburn to Cool trail as a significant impact, yet neither party decided to mitigate this loss.

Swimming and boating are flow related activities that have increased over the years in ASRA. The operation and maintenance costs for the increased activities have never been fully addressed under the first license. Licensee should provide some compensation for past underfunding of these costs.

Provide full fair share of operation and maintenance costs for management of the ASRA.

Swimming was not included in State Park's O&M proposed recreation cost measures. Swimming is a flow related activity. Costs associated with this activity must be accounted for in State Parks O&M proposed mitigation measures. Project flows, even though colder, maintain generally higher water levels in the river channel and along a greater length of the river than would otherwise occur in the unimpaired condition. More area is available for people, especially young adults, to spread out the length of the channel and cool off at the edge of the river. While the water depth, velocity and rapids
don't lend themselves to swimming laps, many areas, that require some hiking to get to, are available for cooling off, wading and water play. These areas draw recreation. Costs associated with this increase need to be included in the O&M measures.

- The baseline cost of Ranger staffing is too low in State Park's April 2010 O&M proposed recreation cost measures. Ranger staffing should be based on the mid 1980's level of staffing. Ranger staffing for the additional costs of swimming and waterplay must also be added into State Parks O&M cost breakdown. Swimming and waterplay recreation occur up and down the length of the peaking reach in ASRA. Many areas are difficult to access yet still actively visited along the river. Fire danger and crime increase when these areas are not patrolled. More Rangers, then are accounted for in the O&M proposal, are necessary to establish a presence, make public contacts and patrol these isolated and difficult to reach areas. The number of Rangers in ASRA has been reduced substantially since the early 1980's. Vandalism, assaults and other crime has increased in the ASRA. At the Confluence, only 64% of the survey respondents said adequacy of law enforcement personnel was acceptable. This, in spite of the fact that a peace officer is on-site an average of eight hours a day during the summer. On the other hand, at Ruck-A-Chucky, 72% of the survey respondents said adequacy of law enforcement personnel was acceptable. This area has been subject to many dangerous incidents, dog attacks, assaults, vandalism, fires and pot growing. The background of the respondents might account for the satisfaction with the limited amount of law enforcement in the area. Lack of sufficient Ranger Patrol in ASRA has grave consequences not only to public safety in the Recreation Area but also to the canyon top Communities above ASRA.

- Provide funding now to pay fair share of opening China Bar weekdays during the summer

  - Licensee, in consultation with emergency responders in the area, should develop a fair share cost for emergency response in ASRA.

  - Licensee must create, in consultation with State Parks, white water rescue personnel, and commercial whitewater boaters, marketing materials for ASRA and information brochures describing river safety information so that the real time flow info will have greater meaning to visitors.

**River Crossing Threshold Flows:**

Licensee has used two flow thresholds to evaluate crossing opportunities that occur as a result of the Project's default minimum flows. The inclusion of the higher of the two flows in analyzing crossing opportunities is flawed. The higher flow is based on a graph developed in 1983 for New Zealand rivers (Mosley, 1983), it represents a first cut at velocity/depth effects on individual body types in a river, it is not ground truthed for conditions encountered in this river. Field crossing studies on the Middle and North Fork American Rivers were not conducted as part of Licensee's Study Plans because, "...conducting studies at flows above 350cfs would impose unacceptable risk to the study participants and horses." (Recreation Technical Working group meeting materials July 2008) The effect of using this higher flow, picked from a graph, gives the appearance that the river is crossable for more hours a day, by the average
recreationist, than is really the case. This, in turn, diminishes the appearance of Project effects on trail crossing opportunities.

Wading, crossing and fishing in a river, and surviving, is dependent on depth, velocity and the interaction of multiple additional physical factors, such as water temperature, length of crossing, and the type of footing encountered in the river. Even the licensee agrees that "In reality, pedestrian wading and crossing is dependent upon a combination of both depth and velocity, and other factors such as substrate." (p14 REC 4 Report) We are dealing with reality. Yet, licensee continues to cling to the use of the high flow and dismiss the other factors which would have the effect of reducing any presumed crossing potential of the high flow picked from Mosley's chart. (Portion of Mosley reference attached.) Further, the consequences of failure to negotiate a crossing must be factored into any crossing suitability evaluation intended to analyze a specific river. In this river, a slip can result in a life threatening event. No evidence is presented to justify the use of this high flow. This flow is not based on these additional factors encountered in this river.

The information obtained from individuals that have many, many years of experience with actual river conditions and crossing possibilities, the Trail Focus Group, falls on Mosley's sub-teen children curve, licensee's easy to moderate curve (Figure REC 4-4). The use of the high crossing flow is not applicable, it contradicts the Focus Group information and it does not take into account the other physical features encountered in this river that have a direct effect on crossing possibilities for the average recreationist in the area.

Specific Trail Crossings Information:

General information:
Small increases in velocity significantly increase the force of flowing water on a body. Force is roughly proportional to cross sectional area times the square of the average water velocity. (website www.grow.arizona.edu)

A safe wading "rule of thumb" is velocity x depth is equal to or less than 10 (1989 Colorado State Study and Mosley 1983 summary)

Characterization of footing at crossings is based on my personal experience and corresponds closely with the REC 4 Report. River crossing temperature, in August 2007, appears to range from approximately 56F to 64F (Map AQ 12-3b Average August temperatures) No temperatures are correlated with crossings in the REC 4 report. The river bottom is generally always visible during the day.

The high flows noted below for each crossing, are too high for the average recreationist in ASRA. In all cases they exceed the Focus Group information. In several cases, they exceed the maximum depth and velocity in the existing literature presented by the licensee. (Table REC 4-5, Pedestrian Stream Crossing Criteria Based on Existing Literature and Focus Group Comments) The Pedestrian criteria is used as a comparison below because the REC 4 Report stated that for analytical purposes, it was assumed that the maximum crossing flow for pedestrians would also be applicable to equestrian crossings.
• Ford's Bar - approximately 200' wide, cobbles and coldest river temp, strainers and a turn in river, within approx 200', rapid 750' downstream, (low flow 275cfs, 1.9' deep, 2.7 fps) **High Flow 550cfs, depth 2.3', velocity 3.8 fps**, this velocity exceeds the maximum velocity on Table REC 4-5, which is 3.0 fps. High variability in velocities across this channel can take people by surprise. A slip at this depth would result in being tumbled, drug and pushed by the high velocity flows. It would be difficult to regain one's balance.

• Ruck-a-Chucky - approximately 180' wide, boulders etc, cold river temp, (low flow 125cfs, 3.2', 1.0fps) **High flow 450 cfs, depth 4.2', velocity 2.1fps**, 4.0' is the maximum depth on Table REC 4-5. distance to first rapid approximately 50', 4.2' is too deep to be considered crossable/wadable. Most people would be swimming at this depth and thus controlled by the current. The 100 mile endurance run target flow is 125cfs/3.1' deep, a cable is in place for crossing at 350cfs, 4'deep, 1.8fps, this event has support crew at all times while runners are in the water at this crossing. The REC 4 report states the event flows are conservative in order to accommodate exhausted runners who have run over 70 miles to reach the river crossing. These flows, even if conservative for elite runners, are too high for the average recreationist who would not be able to run the last 30 miles even with a fresh start.

• Poverty Bar - approximately 170' wide, visible drop on river right, smallish cobble, bottom fairly uniform, river temp cold, (low flow 225cfs, 3.1' deep 1.1fps) **High flow 550cfs, 4.1' deep 1.6 fps**, nearest rapid approximately 100', 4.1' exceeds maximum depth on Existing literature/focus group chart of 4.0, too deep to be crossable/wadable most people would be swimming and thus, at the mercy of the current.

• Mammoth Bar - approximately 165' wide, variable size cobbles, difficult footing at 200cfs, water velocity controlled and interfered with foot placement, rapid 100' downstream, (low flow 175 cfs, 1.7' deep, 3.5fps) **High flow 375cfs, 2.3' deep, 4.8fps**. 4.8fps exceeds the maximum velocity on Existing literature/focus group chart which is 3.0fps. The high flow depth x velocity product, 11.04, exceeds the rule of thumb, 10, noted above. A slip at this depth would result in being tumbled, drug and pushed by the high velocity flows. It would be difficult to regain one's balance. Down ramp takes approximately 9 hours. This is a relatively popular area because it is near a multiuse trail and a busy OHV Park on river right and has a small beach on river left.

• Coffer Dam - approximately 150' wide, uniform smaller cobble, river temp cool, rapid 2000' downstream, (low flow 175cfs, 2.2' deep, 2.1fps) **High flow 375cfs, 3.0 feet, 3.0fps**. REC 4 report noted PCW A crews were able to cross at 370cfs. Unlike the PCW A crews, the average recreationist is not trained in safe river crossing techniques and is also not always accompanied by others for support.

The Draft License Application suggests if the higher crossing threshold flows, appear to be too difficult, then the lower threshold can be used to interpret the report results. How would one determine, absent personal experience, the high flows are too difficult? This equivocation notwithstanding, the Application continually intermixes the two flows when summarizing data and drawing conclusions. The high flow is simply a number found on a graph. It was never developed to be a decision point for this river system.
especially when it concerns public safety. There is no support for the use of this flow as a threshold flow upon which to analyze Project affects. The licensee does not define the terms but simply suggests the high flow is a threshold *above which, it would likely be too difficult to cross by most pedestrians or equestrians.* (Figure REC 4-4) So, too, could 900 cfs or 1200 cfs be a flow at which most pedestrians and equestrians could not cross. The high flow was never agreed to by Recreation Technical Working Group participants and is not an appropriate parameter to evaluate effects of flow impacts on this river.

The high flow is not appropriate for the analysis of crossing opportunities. However, if it is used, then all data presentation and conclusions must be clearly separated for each flow.

**Tabulated and Graphical Data regarding river crossing opportunities:**

The generalized figure below depicts the disparity between the wide, daily fluctuations of project flows, during mid June to mid October and the much lower, more consistent flows that would occur if the river was not controlled by the hydropower Project. In some water years, a few crossing *opportunities* occur when winter and spring runoff is held back behind the dams. However, during the peak season, project flows prevent trail crossings on a daily basis. Thus crossings, during the peak season, result not so much as an 'opportunity' of the project but as a default of Project operations when baseline low flows occur.

*Figure REC 4.7. Example of Project Modification of Flows in the Peaking Reach (Mean Daily Flows).*

![Graph showing river crossing opportunities](image)

When the low baseline flows occur, crossings are simply not completely impeded. The Proposed Action will further reduce and impede trail connectivity during the primary recreation season in ASRA.

All data, for river crossing/wading must be presented as a seasonal breakdown. The use of averages across the winter and spring seasons diminishes the real flow effects that occur during the peak recreation season. Provide a table that compares Summer and Fall (easy/mod) crossing opportunities under the Proposed Action and the No Action Alternative. Segregate out the fall maintenance outages for the Fall season in this table so that the average number of hours per day crossing is possible is based on normal project operations. Include the outage crossing opportunities as a separate item. It appears Tables 8.9-
6a,b include the October maintenance outage in the Fall season. These annual 2-4 week outages do not constitute normal operations. These outages should be shown as a separate figure. Otherwise, this annual, but unique, event is distributed across the whole season and distorts the average number of hours per day that crossing is actually possible. This is of particular concern in the Dry Water Year, Winter season, where the data doesn't trend with the other data. The 2007 outage lasted from October through February 21, 2008, basically 2/3 of the Fall and most all of the Winter season. Could this account for unusually high crossing hours per day for these seasons? In addition, please explain why the Dry Water year is based on 4 years yet both the Fall and Winter seasons only count 3 years.

It is unclear how the crossing opportunities for the Proposed Action were developed. As an example, Ruck-a-chucky, Fall, Wet year Figure 8.9-4b and Table 8.9-6b, indicates 1 hour average per day crossable for the low flow. Low flow for Ruck-a-Chucky is 125cfs, the proposed minimum flow for a wet year Fall is 150cfs, 25cfs higher than the low flow crossing threshold for Ruck-a-Chucky. Please explain. Also, do these figures in the above Tables for the Proposed Action depend on the added storage at Hell Hole?

Please provide an explanation for the changes in crossing opportunities as a result of the Proposed Action.

Add a note to REC 4 Tables 4-15 c-d, which depict percentage of crossable days, that day was counted if the flow was below the threshold for 1 hour during the 7A.M. - 7P.M. time period. For the record, I would like to clarify that I did not "recommend" the 1 hour minimum as stated in the REC 4 Report, p 18. I tossed it out at the Technical Working Group meeting in a desperate attempt to glean more information from the data. I do agree that it is an acceptable base point. In May of this year, it was agreed that additional analyses, regarding this specific issue, would be considered as part of the flow proposal development process. I request that an additional Table be prepared that develops data based on consecutive flows occurring below the threshold for 4 hours during the 7A.M. - 7P.M. time period.

The two crossings farthest from Oxbow Powerhouse, Mammoth Bar and Coffer Dam, are affected by very slow down ramp rates per REC 4 Report. Daily peaking duration can be a few hours to most of the day, (Aquatics 1, p39) It takes 9 hours to ramp down from 900cfs at Mammoth Bar. If the peaking duration occurred most of the day is it possible that both Mammoth Bar and Coffer Dam crossing would not be below threshold flows before the next peaking event occurred? Down ramp effects may be especially slow under the new Proposed lower down ramp rates. How was this accounted for in the average hourly crossing Tables for the Proposed Action and No Action alternatives?

Minimum flows that allow river crossing occur as a default of typical project operations; these flows are not guaranteed. What effect would the flows needed to accommodate pumping water through the PCWA Pump station located near the Coffer Dam site have on the flows needed to allow for trail crossing? My concern is with timing of the minimum flows as they relate to flows needed at these pumps. The Pump Station near the Coffer Dam site can pump up to 100cfs and be up rated to 225cfs if needed in the future. This station pumps water up 200' to a tunnel. The electrical cost of this pumping is very high. If this Station is in use during normal peaking operations, then obviously the crossing opportunities that occur during the base minimum flows would not be affected. However, if the Pump Station is in use during times when electrical costs are at the lowest, which corresponds to base minimum
flows releases, then these flows would be increased at Oxbow to whatever flow was needed at the Pump Station. Thus, crossing opportunities would be significantly reduced. Describe what effect the volume and timing of the flow requirements for the Pump station will have on river crossing opportunities.

If you have any questions, please contact me at quingold@calwisp.net.

Thank you,

Patricia Gibbs
Member of the Public
Table 4—Summary of Flow Requirements for Human Instream Use

<table>
<thead>
<tr>
<th>Activity</th>
<th>Water surface width (W), depth (D), velocity (V) requirements</th>
<th>Preferred Sediment Requirements</th>
<th>Preferred Other Requirements</th>
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</thead>
<tbody>
<tr>
<td>Paddling/wading</td>
<td>Minimum</td>
<td>Maximum</td>
<td>Preferred</td>
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<td></td>
<td>W -</td>
<td>W -</td>
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<td></td>
<td>As above</td>
<td>As above</td>
<td>As above</td>
</tr>
<tr>
<td>Swimming</td>
<td>W 5.0</td>
<td>W -</td>
<td>W &gt;10.0</td>
</tr>
<tr>
<td>Tubing/drift diving</td>
<td>W 5.0</td>
<td>W -</td>
<td>W 20.0</td>
</tr>
<tr>
<td>White water rafting/canoeing</td>
<td>W 7.5</td>
<td>W -</td>
<td>W &gt;20.0</td>
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<tr>
<td>Tramping* (riverbed routes)</td>
<td>W -</td>
<td>W -</td>
<td>W -</td>
</tr>
</tbody>
</table>
draught of a planing jetboat provide good estimates of the minimum water surface width and depth required for those activities, respectively.

Table 4 lists the minimum, maximum and preferred depths, velocities and widths for the contact and non-contact uses listed in Table 3. These are based on criteria proposed by Cortell and Associates (1977), modified by the writer on the basis of his own experience of New Zealand conditions and after consultation with appropriately experienced colleagues. Preferred conditions for substrate and other factors have also been tabulated. Just as there are habitat suitability criteria for each life stage of fish, criteria for human instream uses are also dependent upon age-group, and on the physical characteristics of the individual. This is particularly the case for contact uses, where size and strength are needed to resist the force of flowing water. Although there is a well-known rule of thumb that the depth-velocity product (measured in metres) should not exceed 1.0 for safe wading, this varies with age and body weight; Figure 3 presents more detailed depth-velocity limits for different age and size groups.

Many of the criteria listed in Table 4 can be only approximate, because of the adaptability and diversity of individuals. This applies particularly to the white water sports of rafting, canoeing and jetboating; differences in skill and nerve are great, so that a grade III river on the International Scale ("medium difficulty. Waves are numerous, high and irregular. Passages are clear but narrow and require expertise in manoeuvring") would be terrifying for some people and merely "interesting" (a common canoeist's term) for others.

In addition to the factors included in Table 4, the suitability of a given watercourse for most, if not all, of the contact and non-contact uses is