

## IV • KRB STUDY REQUESTS

### KRB STUDY REQUEST 1: *Aesthetic Flows*

#### RESPONSE TO COMMENTS

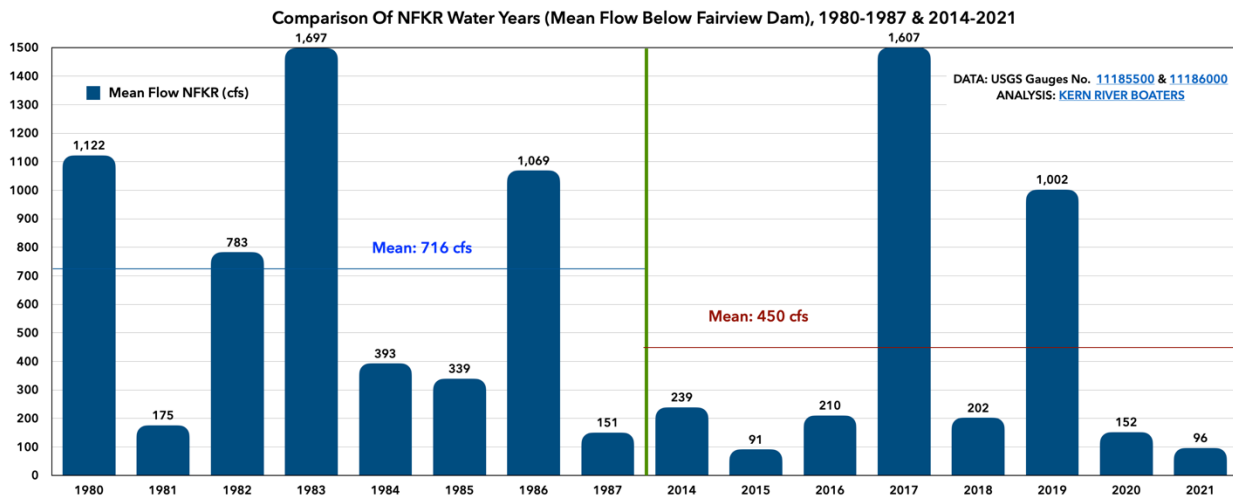
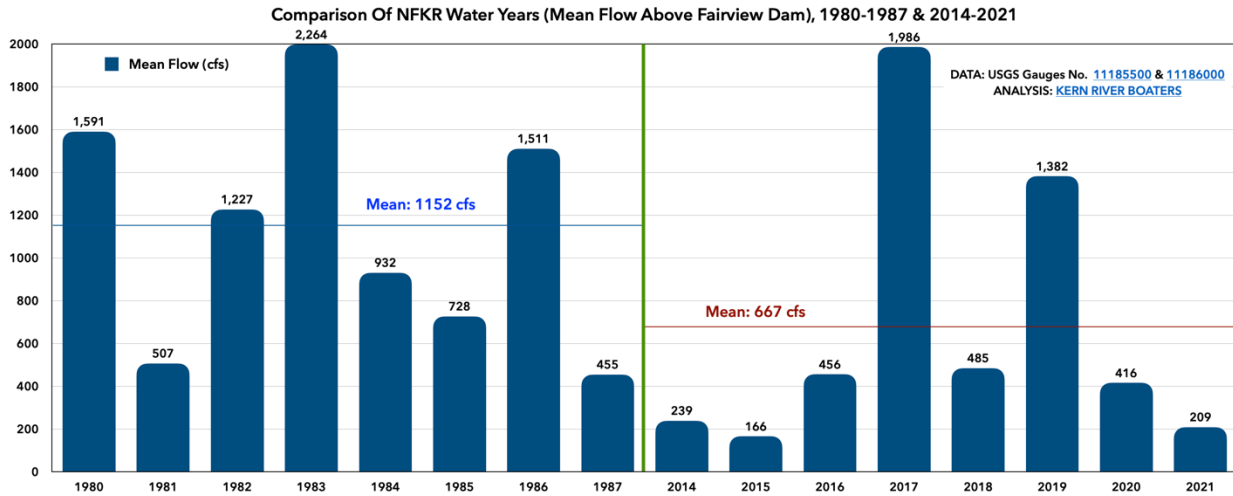
**EDISON:** *There is no evidence of a problem. . . . Regarding the Fairview Dam Bypass Reach for Wild and Scenic eligibility, per the 1982 North Fork Kern WS River Study / Final Environmental Impact Statement (USFS, 1982), the SQF stated that "A small dam detains and diverts water from the river channel at a point approximately 2 miles downstream from the Johnsondale Bridge, but does not create an extensive impoundment, nor does it greatly alter the free-flowing character of the river."* (PSP at 29.)

**KRB:** The “problem” is the result of Edison dewatering the NFKR to levels far below the lowest levels of natural flow. Over the existing POR (WY 1997-2021), the daily average flow above Fairview Dam fell below 125 cfs just 5% of the time. Flows that low are objectively rare for this river corridor. By contrast, flows in the dewatered reach below Fairview Dam fell below 125 cfs 44% of the time due to project operations. That number would have been even higher had the project not been offline for repairs so often (completely offline for 1,506 of the 9,131 days in the POR, and partially offline for at least hundreds more). Project operations turn what are rare low flow conditions on the NFKR into a routine, near-majority of days occurrence. It is reasonable to expect such dewatering to have a negative effect on the river as experienced by the humans who live in or visit that environment: the river was formed under a natural hydrograph; an unnaturally impaired hydrograph can render that formation aesthetically displeasing. Dewatering the river at Fairview Dam narrows the waters below, dries the riverbanks, exposes rocks in the riverbed that would otherwise be covered, reduces water speeds, lowers pool heights, eliminates many riffle sections, and increases areas covered with algae and other pond scum.

As for the 1982 USFS study team’s opinion that Fairview Dam “does not greatly alter the free-flowing character of the river” below, it is important to note that this judgment was essential to the eligibility of the dewatered reach as a Wild and Scenic River — without it, the reach would have been ineligible.<sup>151</sup> This was accordingly a functional judgment reflecting the relatively small size of the dam and its impoundment as well as the lack of river course alteration. A fair reading of the 1982 FEIS reveals it does not have much to say about aesthetics or visual quality based on existing flow levels in the dewatered reach; it offers no aesthetic judgment. Furthermore, flows at the time of the study and designation were much higher than those recently experienced in this drainage:

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<sup>151</sup> WSRA at § 15(b)



The 1994 USFS W&SR CMP describes a visual resource as “The composite of basic terrain, geologic features, *water features*, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors,” and directs USFS to “Strive for higher visual quality whenever practical.”<sup>152</sup> It offered this direction notwithstanding the functional conclusion of the 1982 FEIS cited by Edison; there is obviously room for improvement, as shown in the photographs accompanying our updated proposal.

Even if the passage cited by Edison from the 1983 FEIS constituted an aesthetic judgment, it would constitute a *professional* aesthetic judgment, and such is not determinative here. Research cautions us that the aesthetic judgments of river professionals

<sup>152</sup> 1994 USFS N&SFKR W&SR ROD&CMP at 45 & “Appendix C” at 18 (*italics added*), available: <https://drive.google.com/file/d/1n0D8equMZaOkwLNDGenEkV54n1WACWkp>

do not line up with the judgments of the public at-large.<sup>153</sup> Moreover, in the last proceeding, USFS noted that some commenters requested increased minimum flows for “visual quality.” USFS *did not* state there was “no evidence of a problem.” Rather, it averred, “This topic was brought out when the licensing process was nearing completion and too late to address this licensing.”<sup>154</sup> KRB has tried to raise this issue at the earliest possible moment in this proceeding. The issue of the project’s impact on aesthetics in the dewatered reach has never been scientifically studied during the project’s 101-year-long encumbrance of this outstanding river. We should study it now. For these reasons, we ask that the Commission direct Edison to implement our updated aesthetic flows study request.

### **KRB SR-1: AESTHETIC FLOWS UPDATED STUDY PROPOSAL**

*Criterion (1) – Describe the goals and objectives of each study proposal and the information to be obtained.*

The goal of this study is to describe and evaluate the effects of project operations on aesthetic flows throughout the dewatered reach of the project — 16 miles of the Wild and Scenic North Fork Kern River — and to evaluate potential measures to alleviate those effects. This would be accomplished by evaluating the aesthetic benefit of various flows released into it from Fairview Dam. The objectives of this study are to:

- (1) Document the existing aesthetic character and conditions of the dewatered reach;
- (2) Identify key observation points;
- (3) Collect photo and video documentation under various existing and controlled flow conditions throughout the reach;
- (4) Conduct a focus group assessment of controlled flow conditions at key observation points;
- (5) Determine the operational feasibility, effects on generation, and cost of providing aesthetic flow releases;
- (6) Evaluate the potential effects of aesthetic flow releases on other resources including recreational uses, aquatic resources, water quality, and project generation.

*Criterion (2) – If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.*

Not applicable.

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<sup>153</sup> Shelby, B., Brown, T.C. and Taylor, J.G., “Streamflow and recreation,” US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (1992)

<sup>154</sup> 1998 USFS NOD FONSI at Appendix E, 8

*Criterion (3) – if the requester is not a resource agency, explain any relevant public interest considerations in regards to the proposed study.*

The Commission is charged by the Federal Power Act to balance developmental values with nondevelopment values, including aesthetic values, in its formation of hydropower licenses in a manner best adapted for the affected resource, its user groups, and the goals of existing management plans. The United States Forest Service is charged with establishing conditions in hydropower licenses that are necessary for the public’s utilization and enjoyment of the affected resource, including aesthetic enjoyment.

The dewatered reach of the Wild and Scenic North Fork Kern River attracts vast members of the public throughout the year. It is the closest major perennial river to Southern California. It also has inherent outstanding values, and its visual values are to be conserved and enhanced under the Wild and Scenic River Act.<sup>155</sup> It is unique in that the dewatered reach runs close to, and is frequently viewable from, the adjacent state highway, Mountain 99. More of it is viewable from the many popular campgrounds, developed and primitive, directly next to the river. Aesthetic changes have the potential to affect public use and enjoyment of the dewatered reach. To fully evaluate the project’s effect on aesthetic flows over within the dewatered reach, and to balance potential enhancement opportunities with their costs, an aesthetic flow study is relevant to the public interest. It would also assist USFS with its obligation under Section 7 of the Wild and Scenic River Act to evaluate whether a proposed license for KR3 would directly and adversely impact the river.

*Criterion (4) – Describe existing information concerning the subject of the study proposal, and the need for additional information.*

The PAD generally describes the visual characteristics of project facilities and surrounding project lands.<sup>156</sup> However, it does not describe the relationship between decreased flows and aesthetics in the dewatered reach, nor does it cite any studies that characterize or evaluate that relationship. Information on the aesthetic conditions collected during this study would inform a decision on whether additional minimum releases from the project’s diversion would be warranted to improve the aesthetic quality of the dewatered reach. In the last proceeding, USFS noted that some commenters requested increased minimum flows for “visual quality,” but averred, “This topic was brought out when the licensing process was nearing completion and too late to address this licensing.”<sup>157</sup> It is ripe to be addressed at this early stage.

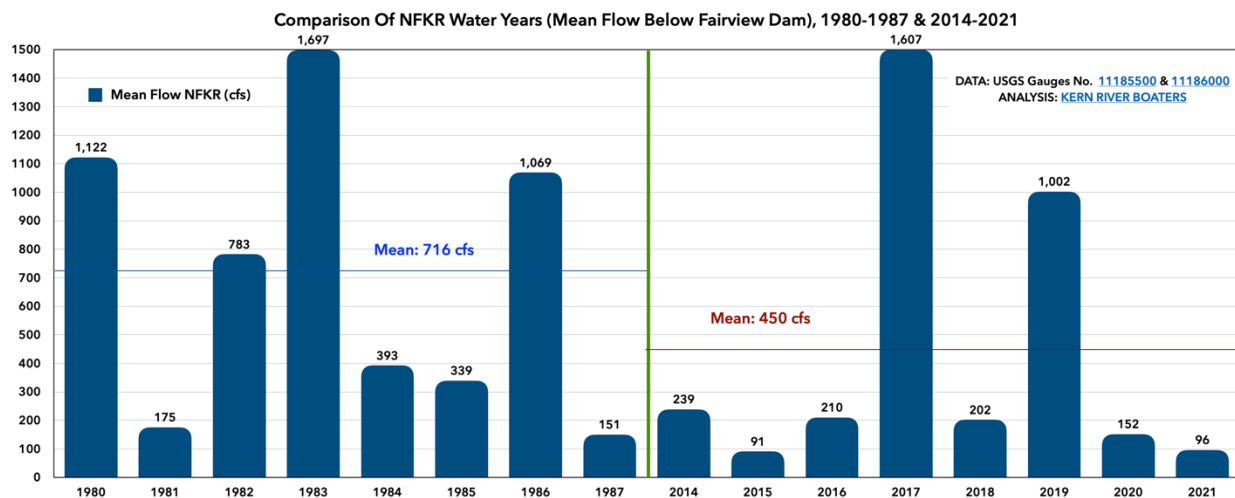
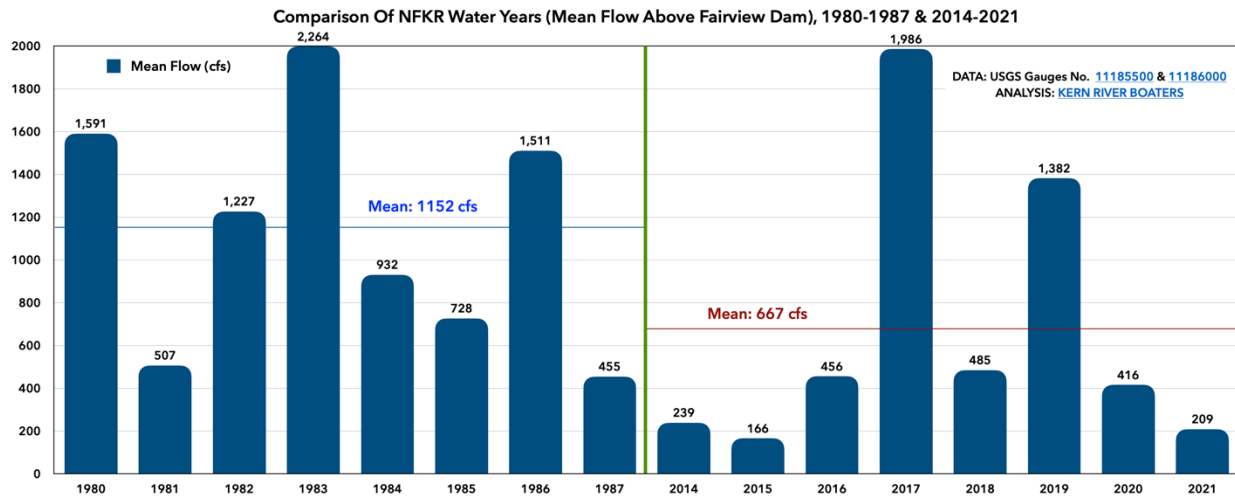
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<sup>155</sup> 1994 USFS N&SFKR W&SR ROD&CMP at 45

<sup>156</sup> PAD at 5-158 through 5-170

<sup>157</sup> 1998 USFS NOD FONSI at Appendix E, 8

A 1982 USFS study team stated that Fairview Dam “does not greatly alter the free-flowing character of the river” below. However, it is important to note that this judgment was essential to the eligibility of the dewatered reach as a Wild and Scenic River — without it, the reach would have been ineligible.<sup>158</sup> This was a functional judgment reflecting the smallness of the impoundment and dam and the lack of river course alteration. It was not an aesthetic judgment of the visual quality of the dewatered reach. A fair reading of the 1982 FEIS reveals it does not have anything to say about aesthetics or visual quality attending fish flow releases in the dewatered reach. Furthermore, flows at the time of the study and designation were much higher than those recently experienced in this drainage:



The 1994 USFS W&SR CMP describes a visual resource as “The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land

<sup>158</sup> WSRA at § 15(b)

unit and influence the visual appeal the unit may have for visitors,” and directs USFS to “Strive for higher visual quality whenever practical.”<sup>159</sup> It offered this direction notwithstanding the functional conclusion of the 1982 FEIS cited by Edison; there is obviously room for improvement.

Even if the passage from the 1982 FEIS constituted an aesthetic judgment, it would constitute a professional aesthetic judgment, and such is not determinative here. Research cautions us that the aesthetic judgments of river professionals usually do not line up with the judgments of the public at-large.<sup>160</sup> Moreover, in the last proceeding, USFS noted that some commenters requested increased minimum flows for “visual quality.” USFS *did not* state there was “no evidence of a problem.” Rather, it averred, “This topic was brought out when the licensing process was nearing completion and too late to address this licensing.”<sup>161</sup> KRB has raised this issue at the earliest possible moment in this proceeding. The issue of the project’s impact on aesthetics in the dewatered reach has never been scientifically studied during the project’s 101-year-long encumbrance of this outstanding river.

Edison routinely dewateres the NFKR to levels far below the lowest levels of natural flow. Over the existing POR (WY 1997-2021), the daily average flow above Fairview Dam fell below 125 cfs just 5% of the time. Flows that low are objectively rare for this river corridor. By contrast, flows in the dewatered reach below Fairview Dam fell below 125 cfs 44% of the time due to project operations — almost half the time. That number would have been even higher had the project not been offline for repairs so often (completely offline for 1,506 of the 9,131 days in the POR, and partially offline for at least hundreds more). Project operations turn what are rare low flow conditions on the NFKR into a routine, near-majority of days occurrence. It is reasonable to expect such dewatering to have a negative effect on the river as experienced by the humans who live in or visit that environment: the river was formed under a natural hydrograph; an unnaturally impaired hydrograph can render that formation aesthetically displeasing. Dewatering the river at Fairview Dam narrows the waters below, dries the riverbanks, exposes rocks in the riverbed that would otherwise be covered, reduces water speeds, lowers pool heights, eliminates many riffle sections, and increases areas covered with algae and other pond scum. The following images depict the dewatered reach with about 50 cfs in the riverbed on a day when 550 cfs was incoming at Fairview Dam:

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<sup>159</sup> 1994 USFS N&SFKR W&SR CMP at 45 & “Appendix C” at 18

<sup>160</sup> Shelby, B., Brown, T.C. and Taylor, J.G., “Streamflow and recreation,” US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (1992)

<sup>161</sup> USFS KR3 FONSI (1998) at Appendix E, 8





*Criterion (5) – Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.*

Project operations leave only 40-130 cfs, or less, in the dewatered reach when incoming flows are below 640-770 cfs and decreases all incoming flows above 640 and 770 cfs by 600 cfs. Edison dewateres the NFKR to levels far below the lowest levels of natural flow. As explained above, project operations turn a rare occurrence of flows below 125 cfs (5%) into a routine phenomenon (44%). That number would have been even higher had the project not been offline for repairs so often (completely offline for 1,506 of the 9,131 days in the POR, and partially offline for at least hundreds more). Project operations accordingly turn what are very rare low flow conditions on the NFKR into a routine, typical occurrence. The results of this study would provide a separate, independent vector of analysis for a minimum flow regime, and it may dovetail with agency goals on issues such as environmentally required minimum flows, angler-enjoyable fish flows, water quality flows, and enjoyable recreational flows.

*Criterion (6) – Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.*



The aesthetic flow study should follow the methods outlined in *Flows and Aesthetics: A Guideline to Concepts and Methods* (Whittaker 2017). These guidelines recommend a progressive approach with phased efforts of increasing resolution.

Phase 1 (desktop analysis and reconnaissance assessment) includes the characterization and documentation of key viewing locations and key viewing characteristics (i.e., waterfalls, vegetation, distance, etc.) in the dewatered reach. Potential use and access to these key viewing locations would be studied. From the information gathered during Phase 1, a controlled flow evaluation form would be created. In Phase 2 (documentation and assessment of controlled flow releases), Edison would tailor its diversion to release target flows selected in consultation with a focus group that would evaluate the flows. The 2017 guidelines provide considerations and recommendations on how to best identify key observation points, collaborate with the public, and conduct surveys, among other study components.

### **Desktop Analysis and Reconnaissance Assessment (Phase 1)**

#### *Focus Group*

A focus group composed of interested stakeholders should be assembled to provide assistance and input. These stakeholders should include representative members from the public, not just from the Kern River Valley, but from its primary visitor base of Southern California, from Bakersfield, out to Ventura County, down through Los Angeles, Riverside and Orange counties, and concluding in San Diego. The focus group members should allow for collaboration and agreement on multiple decision points regarding the development of the study.

#### *Key Observation Points*

In consultation with the focus group, identify key observation points to represent important landscape perspectives and viewing opportunities of the dewatered reach. Key observation points should include at least some of the following sites with extended roadside visuals and turnouts, from North to South (identified by corresponding rapid name): Bomb's Away, Fairview, Hairy Ferry, Boateater, Passing Lane, Redrock, Squashed Paddler, Golf Course, and Fender Bender. KOP's should also include views from at least some of the developed (e.g., Fairview, Goldledge, Camp 3) and primitive (e.g., Chamise, Springhill, Chico Flat) campsites. The assessment should include identification of key viewing characteristics (e.g., channels, key features/structures, waterfalls, pools) and characterization of potential use and access of these areas.

#### *Historic Data Gathering*

Assess and characterize the timing and flow ranges of historic flow exceedance events to characterize existing flow conditions as they relate to the aesthetic character of the dewatered reach.

### **Documentation and Assessment of Controlled Flow Release (Phase 2)**

#### *Controlled Flow Conditions and Evaluation Form*

With the assistance of the focus group, determine the number of releases and appropriate aesthetic flow levels for conducting a review/evaluation of identified flows from the key observation points. An explanation of the targeted aesthetic flows should be included in a study progress report provided to the Commission and interested stakeholders. A broad range of flows would allow evaluators to conduct a meaningful evaluation and identify a minimum acceptable flow and an optimal aesthetic flow. At least four flows should be evaluated as part of the flow study: current minimum fish flows, and additional low, moderate, and high flows. Edison maintains a significant ability to shape flows below Fairview Dam anywhere from the level of natural flow above Fairview Dam to a level of 600 cfs less — and anywhere in between.<sup>162</sup>

A numeric rating evaluation form of the overall view and specific elements (e.g., sound level, amount of turbulence) should be developed. The form should include questions pertaining to the evaluation of the aesthetic conditions for each key observation point location under the targeted flow ranges.

#### *Controlled Flow Assessment*

The focus group should review the flows on-site at the key observation points, complete the evaluation form, and participate in a focus group discussion (off-site). Photo and video (with sound), documentation of the observed flows reviewed by the focus group should be documented.

#### **Data Analysis and Report Preparation**

The operating consultant should prepare a report that includes discussion of the study methodology, study area, analysis and results of the Aesthetic Flow Study. The report should document the information compiled from the above efforts, including analysis and summary of the focus group evaluation form responses and discussions. The report should also include an assessment of potential effects of providing aesthetic flows on other resources, such as recreation opportunities, aquatic resources, and project power generation. Comments and criticisms of the analysis should be incorporated into the report as an appendix.

The proposed aesthetic study follows methods outlined in *Flows and Aesthetics: A Guideline to Concepts and Methods* (Whittaker 2017). Therefore, these methods are consistent with generally accepted methods for conducting an aesthetic flow study.

*Criterion (7) – Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.*

The anticipated cost for the aesthetic flow study request is estimated to be within the range of \$20,000 to \$30,000. There are no proposed alternative studies.

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<sup>162</sup> See *post*, KRB STUDY REQUEST 8: Whitewater Flows, “Comments and Response”