Appendix C

Response to Comments on Draft WFET Report

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Response to Comments Colorado Basin Watershed Flow Evaluation Tool Draft Report			
No.	**Organization**	**Comment**	**Response**
1	Karn Stiegelmeier; Summit County Commissioner	Map ID 2: Snake River WFET does confirm focus mapping, but that is for now, not in the future. Flows can drop to 2 cfs per ISF and are more likely in the future with additional snowmaking, these "protected" flows may not meet ecological risk numbers.	Comment noted.
2	Karn Stiegelmeier; Summit County Commissioner	Map ID 3: Recreation is also at risk in this segment, however the Town of Silverthorne and has acquired and RICD and will build a kayak park below Dillon Dam. Town of Silverthorne has also done fish habitat work in conjunction with CDOW on this segment. Finally the Gold Medal fishery goes to Green Mtn Reservoir, so segment 4 and beyond. Protection is provided by an instream flow and through the Comprehensive Agreement with Denver Water.	Comment noted. Also, analysis conducted as part of this study did not examine the current risk to recreational segments. The purpose of the analysis in this study was to set a baseline for future analysis.
3	Karn Stiegelmeier; Summit County Commissioner	Map ID 4: Segment 4 should extend between Willow Creek and Columbine landing, not just Harrigan creek and S. Rock Crk. It is also a gold medal segment. Commercial rafting occurs in this segment, Denver Water will often provide flows over Labor Day for this purpose. Some level of flow protection is provided through the Comprehensive Agreement with Denver Water.	Comment noted. The mapping used for this study was from the Colorado Basin's original nonconsumptive mapping effort and was not updated as part of this study. As that mapping is updated in the future commenter to make sure this comment is integrated at that time.
4	Karn Stiegelmeier; Summit County Commissioner	Map ID 5: Significant habitat improvements have occurred through a large portion of this segment, implemented by the Blue Valley Ranch.	Comment noted and included in report.
5	Sharon Clarke; Roaring Fork Conservancy	Comments were made on the following segments from Table 4-1 of the draft report: 36, 41, 42, 43, 44, 45, 46, 47, 48, 48A, 49, 53, 54, 66, and 67.	Comments noted and table was revised to include information from comments.
6	Gerry Knapp; Aurora Water	Role of CWCB. Page 1-2 of the draft report identifies that the CWCB has been working closely with the Roundtables on non-consumptive issues. We suggest that this statement be expanded to note that this is solely a report of the Colorado Roundtable, that it is not a CWCB report, and that the methodology used in the report are not endorsed by the CWCB. Without this information, the report implies that CWCB is onboard with the WFET methodology.	Report has been revised to address this comment.

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7	Gerry Knapp; Aurora Water	Quantification of Recreation Needs. CS-U has previously provided comments regarding the quantification of recreational needs. In addition to these prior comments, we note that throughout the report it is implied that the WFET was used to estimated recreational needs. Conversely, it is our understanding that early attempts to use the WFET for recreational purposes failed (i.e. the Tennant Method), and that recreational needs were instead estimated from professional judgment and published user guidebooks.	The final report clarifies how recreational flows were developed separate from the WFET flow ecology relationships.
8	Gerry Knapp; Aurora Water	Riparian Vegetation. We understand that the riparian assessment applies only to cottonwoods. In some sections of the report, it is inferred that the results of the WFET assessment apply to broader riparian areas, not just to cottonwoods. It would be helpful if the term “riparian” could be replaced with “cottonwood” throughout the study.	See section 2.2 Applications and Capabilities of the WFET for Ecological Attributes where language agreed by the NCNA subcommittee included " While the ecological attributes that WFET chose to model are important in their own right, there is an assumption that these attributes are also indicators of potential changes in diverse ecological systems, e.g., that cottonwoods also represent other riparian species and that trout also represent other fish."

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9	Gerry Knapp; Aurora Water	Risk Data Matrix. We believe that much of the information in the Risk Data Matrix is confusing and contradictory, and is based on non-technical and emotional perceptions of individual Roundtable members that are without scientific support. We have attached an electronic copy of the excel spreadsheet of this matrix, with numerous specific comments provided for many of the identified at risk stream reaches. 1. Impact Analysis of Future Projects We understood that this study evaluated **existing** flow conditions in the watershed, and that it was intended to identify resources that are **currently** at risk. Conversely, many of the issues identified in the matrix are not associated with existing conditions, but instead are a presumptive conclusion (without analysis) of what would occur with future water development. For example, under Segment 5 (Blue River below Green Mountain Reservoir) it is identified that recreation, fish, sediment transport and other resources are threatened by a Green Mountain Pumpback. We do not believe it is appropriate to opine what future impacts may be without a detailed study of how a project may be operated, what stream flow may occur after the project, and what site specific environmental conditions exist. To our knowledge, this project is not even proposed at this time, and to complete an impact analysis without any data is inappropriate. We suggest that under the "issues" column, all references to future projects and perceived future conditions should be deleted throughout the matrix. 2. Issues Contradictory to WFET Results The issues of concern that are identified in the matrix are frequently contradictory to the results of the WFET. The matrix frequently indicates a minimal risk from the WFET, and this finding frequently conflicts with information in the "issues" column. This inconsistency should be explained or resolved.	See comment 3. The purpose of this study was not to update previous mapping developed by the Roundtable and the CWCB. The CWCB plans to update SWSI 2010 in the future and associated nonconsumptive needs assessment mapping. These comments are more appropriate for when that effort occurs.
10	Gerry Knapp; Aurora Water	3. Matrix Format We have the following suggestions related to the descriptive headings in the matrix. o Attributes at Risk: Instead of "Riparian Ecological Function" perhaps this should be titled "Cottonwood Abundance or Recruitment". o Resource Values at Risk: A definition of what "risk" means would be helpful. o Can Flow be Part of Solution: This implies that a problem is known to exist, which may not always be the case. Perhaps the title should instead be "Can Flow Reduce Risk". o Quantity of Water to Improve Risk Status: A more descriptive title would be "Quantity of Water to Make Risk Status Minimal"	These comments were included into Table 4-1 of the final report. For "riparian ecological function" and "resource values at risk" these columns were defined during phase 1 of the roundtable's mapping effort.

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11	Pat Wells; Colorado Springs Utilities	We believe it is appropriate to separate the recreational flow evaluation component from the Watershed Flow Evaluation Tool (WFET). This would help clarify how the recreational and ecological tools work and how they should be appropriately applied, and will allow any future updates or refinements to the flow ecology or recreational flow relationships to be made independently, thereby minimizing the level of work, confusion, etc. We recommend renaming the recreational flow relationship evaluation something like the "Usable Day Evaluation Tool for Recreational Flow Preferences" and separating this evaluation tool from the WFET.	This suggestion was incorporated into the final report.
12	Pat Wells; Colorado Springs Utilities	The recreation flow relationships described in the WFET report appears to be based, in large part, on a 2007 online instream flow study conducted for the Upper Colorado River Basin by American Whitewater conducted to support early deliberation and negotiation by the Upper Colorado River Wild & Scenic Rivers Stakeholder Group (SG). It is important to note that there was widespread disagreement within the SG about the validity and utility of the survey and associated results at the time the study was completed. Furthermore, we are not aware that the SG has endorsed the use of the American Whitewater Instream Flow Study (AW Study) for purposes outside of its negotiation of provisional resource guides on Segments 4 through 7 of the Colorado River. As a result of these and other factors, I believe that it may not be appropriate for the AW Study to be featured so prominently in the Colorado Basin Roundtable's nonconsumptive needs assessment. Specific issues and concerns that we have with the AW Study are described in greater detail in the comments below.	Comment noted.

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13	Pat Wells; Colorado Springs Utilities	Recreational flow evaluations are subjective in nature, as they incorporate personal and social preferences and may be easily biased by such factors as survey design, composition of the survey respondent pool, subjective interpretations of what constitutes minimum, optimum, and high flows, and other related factors. Social values, management goals, and in some cases, the study proponent will define whether "optimum flows" consist of those flows at the peak of the acceptability rating, some other positive value (e.g., value of 1 vs. 3), or a specific flow range. Furthermore, the acceptability of flows will vary by user type (e.g., commercial vs. private), type of watercraft, experience level, and other factors and may change over time with social preferences and technological innovations. While a usable days analysis provides useful information on the frequency that recreational flow ranges can be met in any given year for a river segment, we believe it is equally important to look at other metrics such as user days, number and type of commercial permits issued, river access, level of conflict between private and commercial floatboating, economic conditions, weather, etc. when judging both the short and long-term "health" of a recreational floatboating resource. We would appreciate additional discussion of these concepts in the report, perhaps in a "capabilities and limitations" section for the usable days metric.	A section similar to what is mentioned in this comment is included in the final report.
14	Pat Wells; Colorado Springs Utilities	Page 2-12. There is little to no discussion in Section 2.7 regarding how instream flow survey data and the structural norm approach are used to define social preferences for recreational flows, and in turn, how these social preferences translate to "usable days". The first mention of "usable days" appears in the last sentence of the second paragraph in Section 3.6.	This comment has been addressed in the final report.
15	Pat Wells; Colorado Springs Utilities	Page 2-12. In the first sentence of the second paragraph of Section 3.6, the report states that the *"usable days analysis utilizes the flow ranges presented in Table 3-1 and compares this information to historic hydrology."* Please clarify what is meant by "historic hydrology". Does this mean existing hydrologic conditions with current water management practices, pre-development conditions, or some other period or condition?	This comment has been addressed in the final report.

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16	Pat Wells; Colorado Springs Utilities	Appendix H, Page 4. The last three sentences of the second paragraph of the section titled ***Structural Norm Approach…***do not seem to correspond to what is displayed in the "bubble graphs" depicted in various figures throughout the report. The text states that "*small bubbles indicate less potential agreement over the acceptability of a specific flow"* which seems to be the opposite of what is shown in the figures and described in the text. For instance, the bubble at 700 cfs in Figure 1 is large and is intended to show a low level of agreement regarding whether these flows are acceptable. Accordingly, the smallest bubbles in Figure 1 exist between flows of 900 and 1,300 cfs, where there is expected to be the most agreement among floatboaters on what constitutes "optimal flows". According to the text, the bubble at 700 cfs should be the smallest bubble on the graph, not the largest, and vice versa for flows approximating 1,300 cfs. Please revise the text or graphs, or provide additional explanation, as appropriate.	This is now Appendix J and was updated based on comments from the Colorado Water Conservation Board.
17	Pat Wells; Colorado Springs Utilities	Appendix H, Page 5. We have concerns about how the survey data in the AW Study were collected, whether the survey respondents reflect a "representative sample" of river users in the study area, and whether the survey results truly reflect the flow preferences across the entire floatboating community, or predominantly reflect the preferences of the private floatboating community. First, internet surveys typically do not lend themselves to acquiring "simple random samples" of respondents of a community, and it is easy to "stack the deck" with a particular type of respondent based on word of mouth or rallying a particular interest group to provide input. Second, internet surveys can provide biased or inaccurate results if the survey tool, for instance, isn't designed to ask questions in a proper manner or if a respondent is allowed to take the survey multiple times. Third, identifying flow preferences is, by nature, subjective in its own right and what may look or feel like 1,300 cfs to one floatboater may feel like 1,100 cfs or 1,500 cfs to another user. Perhaps most importantly, we are concerned that of the 242 survey respondents, the vast majority of respondents (83%) were private boaters. As a result, the flow preferences of the commercial guide and commercial customer are highly underrepresented in the survey and the flow preferences described in the report are most likely biased toward the higher flows that are generally preferred by the private boating community. This is supported by the fact that 96% of the survey respondents consider themselves to be "expert paddlers" (e.g., Class III/IV or better), which indicates that most survey respondents have a high level of expertise and most likely prefer the higher challenge experiences that come with higher flows.	This is now Appendix J and was updated based on comments from the Colorado Water Conservation Board.

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18	Pat Wells; Colorado Springs Utilities	Appendix H, Page 9. In the analysis of survey results, it is noted in the second sentence of the last paragraph that *"acceptability levels increased with higher recorded water levels, indicating that higher flows were optimum for paddling this stretch."* While it is true that floatboaters seem to prefer flows in excess of 1,100 cfs, the acceptability curve essentially flattens out at flows above 1,000 cfs. Therefore, the acceptability of flows at 1,400 cfs, for instance, is essentially the same as for flows in excess of 2,000 cfs, and is only slightly higher than for flows of 1,000 cfs. We suspect that channel morphology in this section has as much to do with acceptability of flows and the user experience as the actual flows in this reach of the Upper Colorado River.	This is now Appendix J and was updated based on comments from the Colorado Water Conservation Board.