

**COMPARISON TABLE  
WINDY GAP FIRING PROJECT MITIGATION  
IMPACTS TO WEST SLOPE STREAMS  
POST-WILDLIFE COMMISSION PROCEEDINGS  
August 12, 2011**

Measure	DEIS Mitigation	Mitigation Plan Approved by Wildlife Commission	Deficiencies	TU's Proposed Mitigation
<b>Temperature</b>	Evaluate benefits of increasing bypass to the Colorado River from existing 90 cfs to 135 cfs while Windy Gap pumping in July; if beneficial, may consider increase under unspecified water supply conditions	<p>Reduce or curtail diversions whenever monitoring reveals stream temp in the Colorado below Windy Gap Dam is within 1°C of acute state standard; not implemented if no causal relationship between flow reduction and temp benefits</p> <p>Reduce diversions if stream temp approaches chronic state std but only if Granby is expected to spill</p> <p>Two gages in the Colorado River in cooperation with DW</p>	<p>Mitigation for acute stream temp impacts are appropriate provided causal relationship is not a condition to implementation; 404(b)(1) guidelines provide project may not cause <b>or contribute to</b> violation of standards</p> <p>Measures to protect from chronic stream temp are insufficient; WGFP will divert even when Granby does not spill; 404(b)(1) guidelines provide project may not cause or contribute to violation of standards – both acute and chronic</p>	Reduce Project diversions whenever monitoring reveals stream temp in the Colorado below Windy Gap Dam is w/n 1°C of acute or chronic state std
<b>Flushing Flows</b>	None	Reduce Project diversions to allow 600 cfs flushing flows for 50 consecutive hours every 3 years; allow higher flushing flows in same frequency and duration if storage reserves are 60,000 acre-feet or more	<p>Flushing and channel maintenance flows are essential to ensure the survival of trout fisheries and their food supply</p> <p>600 cfs have been proven insufficient to move sediment, much less</p>	Reduce Project diversions when periodic flushing and channel maintenance flows are not achieved, as defined as part of monitoring and adaptive management

			maintain the channel	
<b>Monitoring &amp; Adaptive Management</b>	None	None	<p>With over 75% of native stream flows to be removed, available information is insufficient to fully assess impacts; anticipated reduced flows have the potential to push already impacted and dewatered streams beyond their “tipping point.”</p> <p>Monitoring and adaptive management is an essential component of mitigation but is currently not included as a mitigation measure enforceable through the federal permits</p>	<p>Develop and implement a monitoring and adaptive management plan that includes collection of baseline information, indicators of aquatic and stream health and other critical components</p> <p>Purpose of the Plan is to monitor, prevent, and respond to negative changes in trout and other aquatic life in streams affected by the Project</p> <p>Sufficient funding to respond to adverse impacts should be provided (see Mitigation Fund below)</p> <p>Implementation to be coordinated with enhancement efforts</p>
<b>Mitigation Fund</b>	None	None	<p>Stream work, including creation of pool and riffle habitat and similar work, will be needed to adjust habitat conditions to expected reduced flow conditions</p> <p>DOW estimate of cost for Colorado River work is \$500K per mile – TU estimates 20 miles work potentially needed for a total of \$10 million needed, not including maintenance</p> <p>WRA study estimates cost to WGFP consumers @ \$1.60 per year, per household, per \$5 million if charged</p>	<p>Establish a \$7 million fund for stream projects to mitigate impacts on the Colorado River downstream of Windy Gap Reservoir identified as part of monitoring and adaptive management (assumes remaining \$3 million need to be provided by DW as part of Moffat mitigation</p> <p>Subdistrict to be responsible for maintenance</p> <p>Use of funds to be coordinated with “enhancement” efforts to maximize benefits</p>

			as water rates; \$67 per tap per \$5 million if charged as tap fees	
<b>Windy Gap Reservoir Bypass</b>	None	None	<p>A very shallow reservoir, Windy Gap heats up stream water, accumulates/contributes silt and sediment, is a significant source of nutrients in the form of bird feces, prevents upstream migration of aquatic life, blocks downstream movement of natural bedload, and has been a source of whirling disease that eliminated the robust Colorado River rainbow trout population.</p> <p>Bypassing flows around Windy Gap Reservoir is likely to significantly improve conditions in the Colorado River downstream of the reservoir and mitigate for the additional impacts of WGFP and the Moffat Project.</p>	<p>Conduct study of benefits of constructing a bypass around Windy Gap Reservoir; if benefits result, Subdistrict responsible for building it (current cost estimate: \$6 million)</p>

**COMPARISON TABLE  
MOFFAT PROJECT MITIGATION  
WEST SLOPE IMPACTS  
POST-WILDLIFE COMMISSION PROCEEDINGS  
August 12, 2011**

<b>Mitigation Measure</b>	<b>DEIS Mitigation</b>	<b>Mitigation Plan Approved by Wildlife Commission</b>	<b>Shortcomings</b>	<b>TU's Proposed Mitigation</b>
<b>Temperature</b>	<p>Up to 250 AF @ rate of no more than 4 cfs beginning August to address temp impacts in entire west slope impact area</p> <p>Contribute \$\$ to GCWIN temperature monitoring efforts</p>	<p>No obligation to release 250AF if DW declares drought in its system</p> <p>One real time temp gage to be installed in Ranch Creek; two in the Colorado in cooperation with Northern</p>	<p>404(b) guidelines provide project may not cause of contribute to violation of water quality standards; temp stds are already being exceeded in July and August; project expected to increase frequency of exceedences</p> <p>DW proposed mitigation does NOT address project depletions in July, when the project will be increasing diversions most (est. 1300AF+) and additional stream temp stds exceedences are anticipated</p>	<p>Reduce project diversions whenever monitoring reveals stream temp is w/n 1°C of state acute or chronic std</p> <p>Or</p> <p>Commit addt'l 1300 AF to Address potential July exceedences</p>
<b>Flushing Flows</b>	None	None	<p>Flushing and channel maintenance flows are essential to ensure the survival of trout fisheries and their food supply</p> <p>Proposed Moffat Project will significantly reduce existing peak flows, contributing to already deteriorated conditions which include excessive sediment deposition, armoring of the stream</p>	<p>Restrict diversions when periodic flushing and channel maintenance flows are not achieved</p> <p>Define flushing and channel maintenance flow needs as part of monitoring and adaptive management plan</p>

			bed, and wide and shallow stream channels	
<b>Monitoring &amp; Adaptive Management</b>	None	None as part of Mitigation	<p>With over 75% of native stream flows to be removed, available information is insufficient to fully assess impacts; anticipated reduced flows have the potential to push already impacted and dewatered streams beyond their “tipping point.”</p> <p>Monitoring and adaptive management is an essential component of mitigation but is currently not included as a mitigation measure enforceable through the federal permits</p>	<p>Develop and implement a monitoring and adaptive management plan that includes collection of baseline information, indicators of aquatic and stream health and other critical components</p> <p>Purpose of the Plan is to monitor, prevent, and respond to negative changes in trout and other aquatic life in streams affected by the Project</p> <p>Sufficient funding to respond to adverse impacts should be provided (see Mitigation Fund below)</p> <p>Implementation to be coordinated with enhancement efforts</p>
<b>Mitigation Fund</b>	None	\$750,000 for stream work to mitigate project impacts on the Fraser River and Wms Fork River basins	<p>Stream work, including creation of pool and riffle habitat and similar work, will be needed to adjust habitat conditions to expected reduced flow conditions</p> <p>FlyWater Report identifies \$7.1 million need for stream work in Fraser basin areas to be impacted by Moffat Project, not including maintenance</p> <p>DOW estimate of cost for Colorado River work is \$500K</p>	<p>Establish a \$7.1 million fund available for stream projects to mitigate impacts on the Fraser River basin identified as part of monitoring and adaptive management</p> <p>Establish a \$3 million fund for stream projects to mitigate impacts on the Colorado River downstream of Windy Gap Reservoir identified as part of monitoring and adaptive management (assumes remaining</p>

			<p>per mile – TU estimates 20 miles work potentially needed for a total of \$10 million needed, not including maintenance</p> <p>WRA report estimates cost to DW consumers @ 54 cents per year, per household, per \$5 million if charged as water rates; \$129 per tap per \$5 million if charged as tap fees</p>	<p>\$7 million need to be provided by Subdistrict as part of WGFP mitigation)</p> <p>DW to be responsible for maintenance</p> <p>Use of funds to be coordinated with “enhancement” efforts to maximize benefits</p>
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