

SOUTHERN UTAH WILDERNESS ALLIANCE, ET AL.

IBLA 2002-340, etc. ^{1/}

Decided July 12, 2005

Appeals from a decision record and finding of no significant impact issued by the Acting Manager, Grand Staircase-Escalante National Monument, Bureau of Land Management, approving construction of the New Wide Hollow Reservoir and related diversion structures, pipelines, and roads (EA UT-030-99-007), and from a subsequent decision granting a right-of-way based on that decision record and finding of no significant impact. UTU-79720.

Set aside and remanded.

1. Environmental Policy Act--Environmental Quality: Environmental Statements--Federal Land Policy and Management Act of 1976: Rights-of-Way--National Environmental Policy Act of 1969: Environmental Statements

The reasonableness of a FONSI will be upheld if the record establishes that BLM took a “hard look” at the proposed action, carefully reviewed environmental problems, identified all relevant areas of environmental concern, and made a convincing case that the environmental impacts are insignificant or that any such impacts will be reduced to insignificance by the adoption of

^{1/} The following appeals are consolidated and disposed of by this decision: Southern Utah Wilderness Alliance, IBLA 2002-340; Main Canyon, L.C., IBLA 2002-341; Escalante Wilderness Project, IBLA 2002-344; Main Canyon, L.C., IBLA 2003-83; and Southern Utah Wilderness Alliance, et al., IBLA 2003-84. A related appeal, Sevier River Water Users, IBLA 2002-442, was dismissed by order dated May 29, 2003, because appellant Sevier River Water Users was not a “party to the case” under 43 CFR 4.410(a) and therefore lacked standing to appeal.

appropriate mitigation measures. A party challenging BLM's decision has the burden of demonstrating with objective proof that the decision is premised on a clear error of law or demonstrable error of fact, or that the analysis failed to consider a substantial environmental question of material significance to the proposed action. Where a FONSI is based on mitigation measures designed to minimize acknowledged adverse environmental impacts, analysis of the proposed mitigation measures and how effective they would be in eliminating those impacts is required. A mitigation plan must be sufficiently developed and explained to provide a convincing case that significant environmental impacts will be reduced to insignificance. A FONSI will be set aside where an appellant has shown that the proposed actions will have a significant impact to riparian resources and that BLM has failed to demonstrate that the proposed mitigation measures will reduce those impacts to insignificance.

APPEARANCES: Liz Thomas, Esq., Moab, Utah, and Joro Walker, Esq., Salt Lake City, Utah, for Southern Utah Wilderness Alliance, The Wilderness Society, and Utah Rivers Council; Bruce H. Shapiro, Esq., Salt Lake City, Utah, and Borys Tkacz, Rockville, Maryland, for Main Canyon, L.C.; Patrick Diehl, Escalante, Utah, for Escalante Wilderness Project; James E. Karkut, Esq., Office of the Field Solicitor, U.S. Department of the Interior, Salt Lake City, Utah, for the Bureau of Land Management; Stephen H. Urquhart, Esq., St. George, Utah, ^{2/} Bartt Carter, President, New Escalante Irrigation Company, and Louise Liston, President, Wide Hollow Water Conservancy District, Escalante, Utah, for intervenors Wide Hollow Water Conservancy District and New Escalante Irrigation Company.

OPINION BY ADMINISTRATIVE JUDGE HUGHES

Southern Utah Wilderness Alliance, The Wilderness Society, and Utah Rivers Council (referred to collectively as "SUWA") (IBLA 2002-340), Main Canyon, L.C. (Main Canyon) (IBLA 2002-341), and Escalante Wilderness Project (EWP) (IBLA 2002-344) have separately appealed the April 19, 2002, Decision Record and Finding of No Significant Impact (DR/FONSI) and the underlying environmental assessment (EA) (UT-030-99-007), issued by the Acting Manager, Grand Staircase-

^{2/} Stephen H. Urquhart, Esq., filed a withdrawal of counsel with the Board on June 23, 2003.

Escalante National Monument (Monument), Bureau of Land Management (BLM), approving a right-of-way for the New Wide Hollow Reservoir project.

Main Canyon (IBLA 2003-83) and SUWA (IBLA 2003-84) have also separately appealed BLM's subsequent issuance of a grant for an approved right-of-way to Wide Hollow Water Conservancy District (WHWCD) (UTU-79720), effective October 22, 2002. That grant is based on the DR/FONSI at issue herein. Accordingly, by order dated May 29, 2003, the Board consolidated these appeals. At the same time, it granted the motion to intervene submitted by WHWCD and the New Escalante Irrigation Company (NEIC), the project proponents, to appear as respondents in support of BLM's decision. ^{3/}

BACKGROUND

WHWCD is a non-profit entity formed in 1990 to assist in the development and management of water resources in the Escalante area. WHWCD provides this assistance by obtaining funding to aid private parties in managing and conserving water supplies. NEIC, the owner and operator of one of two irrigation companies in the Escalante area, irrigates approximately 2,700 acres of farmland with water shares currently issued by the company. (EA at 1.) The existing Wide Hollow Reservoir is an off-stream reservoir fed by a canal from a small diversion structure on the upper Escalante River. Constructed in 1953 to store irrigation water, it serves as the major water facility for the NEIC water system. Although the reservoir originally had a 2,400 acre-foot storage capacity, sedimentation has reduced that capacity by 42 percent to 1,400 acre-feet. Id.

In October 1998, WHWCD applied for a right-of-way pursuant to Title V of the Federal Land Policy and Management Act of 1976 (FLPMA), 43 U.S.C. § 1761(a)(1) (2000), to construct a new reservoir and associated diversion structures, pipelines, and access roads on public and private lands in sec. 34, T. 34 S., R. 2 E., and secs. 3, 8, 9, 17, and 18, T. 35 S., R. 2 E., Salt Lake Meridian, Garfield County, Utah. ^{4/} (EA Cover Sheet; EA at 1.) The proposed New Wide Hollow Reservoir would flood approximately 224 acres, have a storage capacity of about 6,100 acre-feet, and

^{3/} In this order, the Board also granted BLM's motion to dismiss the appeal docketed as Sevier River Water Users, IBLA 2002-442, on the ground that the appellant was not a "party to the case," as required by 43 CFR 4.410(a). The Board denied WHWCD and NEIC's request for expedited consideration and SUWA's and EWP's separate petitions for stay. (Order dated May 29, 2003, at 2-3.)

^{4/} Although the project is not located within the Grand Staircase-Escalante National Monument, the public land within the project area is managed by the Monument Office. (EA at 1.)

increase the average annual irrigation water yield for the Escalante area about 7 percent from 8,028 acre-feet (85 percent of demand) to 8,678 acre-feet (92 percent of demand). (EA at 1.)

BLM prepared an initial EA for the New Wide Hollow Reservoir project and provided it to the public for comment in February 1999. After reviewing the public's comments and concerns, BLM determined that further data collection and analysis were necessary. BLM drafted a second EA that it offered for public comment in March 2000. BLM examined the public comments on the second EA and again decided that additional data accumulation and evaluation were warranted. After gathering and analyzing the additional data, BLM prepared and disseminated the final EA at issue here. *Id.* at 1-2, 47.

In its description of the purpose and need for the project, the EA noted that the existing demand for irrigation water in the Escalante area for agricultural purposes and lawn and garden use was approximately 9,472 acre-feet. According to the EA, the current system provided about 85 percent of that need, but the storage capacity of the existing reservoir was declining due to increased sedimentation, and pressure drops sometimes interrupted water delivery. The EA explained that the 436 percent increase in water storage capacity of the proposed 6,100 acre-foot reservoir could help satisfy the unmet demand and alleviate water delivery problems. The EA stated that the existing Wide Hollow Dam, which was listed as a "high-hazard" dam by the Utah State Engineer, did not meet current dam safety standards and could fail in an earthquake and that the reservoir spillway would be inadequate in the event of a major flood or seismic event. While acknowledging that the proposed New Wide Hollow Reservoir would also fall into the "high-hazard" category, the EA indicated that the proposed reservoir would be constructed under the parameters defined by the Utah Dam Safety Act of 1990, which would mitigate concerns about the loss to human life and consider seismic issues. (EA at 2.)

The EA analyzed four alternatives in detail: Alternative A (the proposed action), which included construction of a new reservoir, new pipelines, new associated diversion structures, and new access roads; Alternative B (the no-action alternative), which continued the current situation; Alternative C, which adopted the proposed action's construction of a new reservoir, but used the existing diversion and pumping structures to fill the new reservoir and eliminated the use of a road on the northern side of the proposed reservoir; and Alternative D (the preferred alternative), which incorporated the proposed action's construction of a new reservoir, pipelines, diversion structures, and access roads (other than the road on the northern side of the reservoir), but placed a higher priority on maintaining the surface flow in North and Birch Creeks (the loci of the new diversion structures) through the imposition of additional design specifications and mitigation measures. (EA at 10-11.) The EA

also identified various alternatives that BLM had considered but rejected without detailed analysis, including repairing and raising the existing dam and dredging the old reservoir, obtaining additional irrigation by drilling wells to tap groundwater, and decreasing irrigation water needs through conservation. (EA at 9-10; see also EA, Appendix (App.) H.)

The preferred alternative incorporated the reservoir, discharge pipeline, associated diversion structures, and access road for maintenance delineated in the proposed action. (EA at 16, referring to Alternative A for a complete description of these elements.) The EA described these components as the construction of an off-stream 6,100-acre-foot reservoir, pipelines, associated diversion structures, and access roads for maintenance. (EA at 12.) The reservoir (covering approximately 224 acres and having an estimated life of 100 years) and the diversion structures would be entirely on public land, while the pipelines and access roads would cross both public and private land. Id. The dam would be an earthen structure built with 600,000 cubic yards of on-site material; its crest would be 930 feet long, 130 feet high, and approximately 6,150 feet above sea level. Id. The water for the new reservoir would come year-round from two diversions via buried and suspended pipelines operating on gravity flow to eliminate pressure drops and pumping costs. Id. at 13.

According to the EA,

[t]he first diversion would be in North Creek Canyon, approximately 1½ miles upstream from the mouth of the canyon. The diversion structure and approximately 1 mile of buried pipeline would be on public land. The pipeline would run along the north side of the creek, in an old roadbed, for approximately ¼ mile, be suspended across North Creek, then run in the existing roadbed to the canyon mouth.

The second diversion would be in Main Canyon, approximately 2 miles up Birch Creek from its confluence with North Creek. The diversion structure and about ½ mile of this pipeline would be on public land. The pipeline would be buried parallel to the south side of Main Canyon Road, outside of the existing disturbance area of the road, for approximately 200 yards. The pipeline would then be buried within the existing roadbed to the confluence of the North Creek drainage. This pipeline and the North Creek pipeline would converge on private property and continue to the reservoir site. The last ¼ mile of pipeline would cross public land before feeding into the reservoir. The right-of-way width for the construction and maintenance of the pipeline would be 25 feet.

Diversion structures and sand traps would be built at the head of each pipeline * * *. A concrete diversion structure would be built across each stream channel funneling water into a collection pipe and the sand traps. Flood and high water flows [would] not be diverted. The sand traps would be designed to slow the water flow, allowing sediment to settle. The sediment would periodically be flushed out the bottom of the traps and back to the stream channels by manually opening the valve at the bottom of the sand trap. Water flowing into the sand trap would flush the sediment out, and flood waters in the creek would then redistribute the sediment downstream. The diversion structure in North Creek would extend approximately 25 feet downstream and 90 feet across the streambed. The diversion structure in Birch Creek would extend approximately 20 feet downstream and 100 feet across the streambed. There would also be an earthen berm, extending approximately 20 feet downstream and 50 feet across the streambed, alongside the diversion structure in Birch Creek. The purpose of this berm would be to prevent a flood from eroding around the diversion structure. The sand traps would be approximately 32 feet wide and 180 feet long. The total areas of disturbance would be approximately 0.18 acres in North Creek, and 0.20 acres in Birch Creek.

Water from the reservoir would be transported to the existing irrigation line through a new buried 24-inch pressurized pipeline. This discharge line would run from the dam across less than ¼ mile of public land, then through the privately-owned agricultural fields in Wide Hollow (parallel to the existing road), turn south and tie into the existing line (also on private property). The right-of-way width for construction of the pipeline, on public land, would be 25 feet; once construction activities were completed, the right-of-way width for maintenance of the pipeline would be 25 feet. No pipeline rights-of-way would be used as travel routes after construction, with the exception of maintenance activities connected with the operation of the reservoir and associated structures (such as fixing breaks in the pipelines and/or cleaning out the pipelines).

There is an existing road to the proposed reservoir site. Most of it is on private land, with one small 500 foot section on public land. This access road would be reconstructed with native material, using gravel cover where needed to make the road passable year-round to facilitate construction and maintenance. All maintenance of this road would be the responsibility of the Wide Hollow Water Conservancy

District. Road access to the diversion structures would be over existing roads in North Creek and Main Canyon. * * * .

(EA at 13-14.)

In order to deliver water to the new reservoir while maintaining the health of riparian vegetation in the North Creek riparian zone on BLM lands, the preferred alternative established surface flow amounts that would bypass the diversions. (EA at 16.) Under the preferred alternative, both diversion flow amounts (water diverted into the reservoirs) and bypass flow amounts (water allowed to flow downstream past the diversions, remaining in the streambed) would be measured by a device with an automatic recorder built into the diversion structure. These amounts could be adjusted by increasing bypass amounts if monitoring indicated a downward trend in the health of riparian communities from baseline conditions and decreasing those amounts if monitoring revealed the opposite. Id. The EA calculated the bypass flow amounts for the base flow of both North and Birch Creeks by using calibrated crop coefficients for irrigated crops in Utah adjusted to account for irrigation efficiency and other factors to estimate the consumptive use requirements for willows and cottonwoods. (EA at 16-17; EA, App. L at 1-2.) The bypass flow amounts were in addition to monsoonal storm events (thunderstorms) and snow-melt peak flows that exceeded the capacity of the diversion pipes and therefore could not be diverted to the reservoir. Id. at 16.

The following bypass flow amounts for North Creek (all in cubic feet per second (cfs)) were designed to maintain the existing physical function of the riparian area by mimicking “the naturally occurring stream hydrology profile which has provided for the development and maintenance of the existing physical and biological system” (EA at 16): 0.05 for January and February, 0.10 for March, 0.50 for April, 0.80 for May, 1.20 for June, 1.50 for July, 1.10 for August, 0.70 for September, 0.40 for October, 0.10 for November, and 0.50 for December. See EA at 17, Table 1. Under this alternative, flows generated by spring snow melt between April 1 and June 15, which are important for the hydrologic recharge of the floodplain aquifer and for the sediment transport and deposition processes critical for establishment and maintenance of cottonwoods, would be allowed to flow past the diversions under certain conditions:

1. Bypass of highs flows would occur 2 times every 5 years,
2. Bypass would occur on years of average to above-average snow pack based on the April data at the Clayton and Widstoe Snowtell stations as determined by the BLM,

3. Bypass would last from 2 to 3 weeks and would focus on the receding limb of the hydrograph,
4. The length and timing of item number 3 would be at the discretion of the BLM, [and]
5. No diversion of flows would occur during this 2 to 3 week time period.

(EA at 17-18.)

In order to create conditions fostering the regeneration of willows and herbaceous vegetation in Birch Creek, the preferred alternative set the base flow for that creek at 0.25 cfs year round. The EA noted that “[i]f regeneration proves successful, the vegetation would build up soils and gradually form a floodplain capable of withstanding flood events.” (EA at 18.) The EA states as follows concerning spring snow melt:

Spring snow melt above the year-round 0.25 cfs would not flow past the diversion at this time, with the exception of peaks that exceed the capacity of the diversion pipe. Currently, the stream system is not capable of dispersing the energies of high flow, so vegetation is not able to become established. If regeneration of willows and herbaceous vegetation proves to be successful at the lower, constant flows, then spring snow melt could be diverted in the future.

(EA at 18.) It appears that BLM meant to state that, if herbaceous vegetation becomes established, spring snow melt could be allowed to bypass the diversions and flow down the stream bed, since there would be sufficient vegetation to absorb the energy of the much higher spring snow melt water flow.

The preferred alternative also required monitoring of portions of both creeks above and below the diversion structures:

Monitoring would occur before diversions were in place, and every 3 years after the diversions were fully functioning, in order to assess whether riparian areas were being maintained.

Prior to any diversions of water, the BLM would initiate an inventory and monitoring program to gather baseline information on existing vegetation, wildlife species, and riparian-obligate invertebrates. Monitoring of both North Creek and Birch Creek riparian areas would

occur. The objectives of monitoring would be to determine whether the existing condition and trend in North Creek was being maintained, and to determine whether progress toward Proper Functioning Condition in Birch Creek was being achieved. Three types of sampling procedures would be used to monitor vegetation changes: 1) vegetation cross-section composition, 2) greenline composition, and 3) woody species regeneration * * * .

If monitoring in North Creek indicated that physical and/or ecological condition showed a downward trend from baseline conditions, based on changes in the percentage of composition relative to woody species regeneration[,] then water diversions from this Creek would be reduced until that downward trend was reversed and baseline condition was again achieved. A downward trend is defined as a decrease in vegetative community reproduction and diversity. Once baseline condition was again achieved, diversions could be reevaluated. Monitoring would be conducted to detect effects on riparian condition.

If monitoring in Birch Creek indicated that physical and/or ecological condition showed a downward trend from baseline conditions, based on changes in the percentage of compositions relative to woody species regeneration[,] then water diversions from this creek would be reduced until that downward trend was reversed and baseline condition was again achieved. Changes to diversions would be based on monitoring. Once baseline condition was again achieved, diversions could be reevaluated for daily flows during the growing season.

The BLM has established national goals and objectives for managing riparian resources on public lands (Riparian-Wetland Initiative for the 1990's USDI, 1991, BLM/WO/GI-91/001+4340; BLM Manual 1737; and UT-IM-93-93). The overall objective is to ensure that riparian-wetland areas are functioning properly in order to provide the widest variety of vegetation and habitat diversity for wildlife, fish, and watershed protection. To assess whether this objective is being achieved within the analysis area, Proper Functioning Condition surveys would be conducted at least once every 5 years.

Monitoring of water temperatures in both Creeks would be conducted to determine whether any changes were occurring as a result of diversions. Water temperature would be taken above the diversions in order to get a baseline measurement that would be unaffected by the diversions. Water temperature would also be taken below the

diversions to detect any changes associated with the withdrawal of water. Monitoring would be conducted from May to September on a weekly basis for 3 years to establish a baseline and then monthly after that. If monitoring showed water temperature about State standards for 3A waters (refer to Chapter III–Affected Environment)^{5/} as a result of diversions, then diversion volumes would either be decreased or diversions would only be done at night (when solar heating does not occur) in order to meet State standards.

Two peizometers would be installed on each Creek. These devices would provide BLM with data on the alluvial groundwater table and would be monitored to ensure that the water stays at the mesoriparian level (20-40 inches below the ground surface) for plant availability.

(EA at 18-19.)

The EA discussed the affected environment, focusing on the resources that could be affected by implementation of the action alternatives, including four resources involved in these appeals: (1) Wetlands/riparian zones; (2) threatened, endangered, candidate, or sensitive animal species; (3) Native American religious concerns/cultural resources; and (4) water quality. (EA at 19-28.)

In its discussion of wetlands/riparian zones, the EA defined the four functioning classes for riparian area assessments utilized by BLM: (1) Proper Functioning Condition, (2) Functioning at Risk, (3) Non-functioning, and (4) Unknown. Id. at 21-22. The EA also delineated the three phases of the “natural hydrograph” critical for preserving riparian vegetation and the maintenance of proper functioning condition: (1) Spring snow melt, generally a 3-week to 2-month period essential (a) for maintaining the channel and floodplain, (b) for depositing the fine sediment on the floodplain necessary for the creation of good germination sites for cottonwood and willow seedlings, and (c) for recharging the alluvial aquifer; (2) summer base flow, the period from mid-June through September coinciding with the growing season crucial for (a) fostering the vigor of woody species,

^{5/} The discussion of water quality found in Chapter III of the EA indicated that both Birch and North Creeks were classified as 3A waters “protected for cold water species of game fish and other cold water aquatic life, including necessary aquatic organisms in their food chain” under the Utah Department of Water Quality standards and that the maximum acceptable temperature for Class 3A waters, which both creeks currently met, was 20° C with a maximum change of ±2°. (EA at 28; see EA, App. O.)

(b) regenerating herbaceous species, and (c) maintaining the alluvial water at the mesoriparian level needed to prevent deterioration of riparian vegetation; and (3) thunderstorm (monsoonal) events, which occur during July and August and are important for (a) recharging the alluvial aquifer, (b) dispersing and depositing fine sediment within the floodplain, and (c) creating surfaces for the following year's cottonwood seed germination. Id. at 22-23.

The EA described the 5.6 miles of North Creek located on public land as a perennial stream with a well developed, 34.76-acre riparian area containing dense and multi-storied riparian vegetation, including multiple classes of birch, cottonwood, and various species of willow, with rushes and sedges along the stream banks. The EA noted that the riparian area in North Creek was in Proper Functioning Condition with a static trend and that it was being monitored every 4 years. The EA added that the periodic drying up of the Creek in low moisture years to fill up the existing North Creek Reservoir, a practice that would end once the new reservoir was constructed, was not of sufficient duration to affect the riparian resources. Id. at 23-24. The EA contained the hydrograph showing existing conditions in North Creek, graphically depicting the existing average flow regime for North Creek. See EA at 24, Figure 1.

The EA stated that the 5.9-mile, 22.16-acre riparian segment of Birch Creek located on public land was rated as Functioning at Risk, probably due to the gravelly soil in the streambed, which provided little stability for plant establishment, as well as to flood events that periodically scoured the drainage. The EA characterized the segment of the Creek on public land as a heavily scoured and downcut drainage with a high proportion of exposed banks and patchy riparian vegetation composed primarily of cottonwoods and willow along the drainage. The EA indicated that some regeneration was occurring among the cottonwoods and willows and that there was evidence of stream stabilization in some segments with new sediment deposition and seedling establishment, all of which suggested that the trend was improving. Such improvement was in conformance with the objective set out in the Utah Riparian Management Policy (Riparian Policy) (Instruction Memorandum (IM) UT-93-93) of maintaining and/or improving riparian areas to Proper Functioning Condition. (EA at 24-25.) The EA also noted that Birch Creek's flow regime resembled the pattern of North Creek, although flow amounts were much lower (about 20 percent of those for North Creek), with increases in flow between April and July due to snow melt, growing season average flows of 2.6 cfs in August and 2.7 cfs in September, and winter flows ranging from 1.8 cfs in October to 3.1 cfs in March. Id. at 25. These existing conditions were depicted graphically on the hydrograph for Birch Creek. (EA Figure 2.)

In its discussion of threatened, endangered, candidate, or sensitive animal species, the EA stated that a Utah Division of Wildlife Resources (UDWR) survey and

assessment of the BLM-administered portion of North Creek for potential southwestern willow flycatcher habitat had revealed little or no habitat sufficient to support that species. Nor had BLM surveys detected any southwestern willow flycatchers on that part of the Creek. (EA at 25-26.) The EA further observed that no yellow-billed cuckoo had been found in the project area and that, although both North and Birch Creeks contained suitable breeding habitat for the common yellowthroat (a Utah State sensitive species), that species had not been spotted in the project area. Id. at 26.

In its section addressing Native American religious concerns and cultural resources, the EA stated that an inventory of the proposed Wide Hollow Reservoir project area had uncovered five prehistoric archaeological sites considered unusual because they occupied a single place during a particular time and held features and artifacts similar but not identical to other sites. The EA indicated that, before the proposed construction activities, test excavations might be required for the mitigation of the four small sites located in the proposed reservoir pool area and, possibly, the one site along one of the pipelines. The EA noted that, if those test excavations suggested that the sites had additional research potential, the sites could be fully excavated after consultation with the State Historic Preservation Officer (SHPO) and Tribal officials about appropriate options, including the Hopi Preservation Office's suggestion that the project proceed without conducting data recovery. (EA at 27-28; see EA, App. N—Summary Report of Inspection for Cultural Resources.)

The EA also limned the environmental consequences of each alternative. In its discussion of the environmental impacts of the preferred alternative (Alternative D) on wetlands and riparian zones, the EA noted that imposed stipulations would minimize the direct input of sediment into the stream system caused by diversion structure construction and pipeline installation. (EA at 31.) As to impacts to North Creek, the EA stated that approximately 6,000 feet of riparian area on public land and 2,500 feet of riparian area on State and private land would be affected by diversion of water from the stream. According to the EA, the condition and trend of riparian habitat in North Creek would be maintained through implementation of the stipulations identified in Alternative D, which would be added to the right-of-way grant. The EA pointed out that BLM would monitor the condition of the riparian area to determine whether it was being degraded by continuing to read the existing standard photo plot study and by collecting and monitoring species composition and vegetation density data at least twice annually. The EA indicated that three types of monitoring would occur to ensure that sufficient surface flow would remain in North Creek to maintain its riparian area in its existing condition. The EA reiterated that, if monitoring indicated that the physical and/or ecological condition of the riparian resource were being degraded from baseline conditions as a result of the diversions, water diversions during the growing season would be curtailed until that downward

trend was reversed and baseline condition was again achieved. At that point, diversions would be reinitiated (starting with 20 percent of daily flows) and then monitored to ensure that the new level of diversion did not result in any adverse effects to riparian condition. (EA at 32.)

The EA observed that, since spring runoff and high flow events occurred periodically in North Creek, the diversion structures were designed so that the flood gates closed during high flows, eliminating all water diversion and allowing all water flow to remain in North Creek. According to the EA, “[a]s a result of these actions, there is a reasonable expectation that existing riparian conditions [in North Creek] could be maintained during periods of normal or above normal precipitation. Conversely, there is a reasonable expectation that during below average precipitation the existing riparian conditions could not be maintained.” (EA at 32.) The EA further noted that the abandonment of North Creek Reservoir for water storage would eliminate the periodic drying up of North Creek during summer months, benefitting the approximately 4½ miles of stream on BLM and National Forest Service lands by improving the vigor of the riparian vegetation. *Id.* at 32-33. In summary, the EA stated:

The designed hydrograph under Alternative D for North Creek bears a much closer resemblance to a natural hydrograph. The bypass of flows during spring snow melt 2 out of 5 years would ensure the opportunity for cottonwood and willow regeneration and the maintenance of multiple age classes. The summer base flow should be adequate to support a shallow water table that would retain the vigor of riparian vegetation. If any indications of deterioration in riparian health were detected via monitoring, the bypass flow amounts would be altered. The monitoring interval for this stream is 5 years after construction of the diversion and includes the collection of baseline information prior to the inception of the proposed project.

(EA at 33.) The EA also graphically depicted the pre-diversion hydrograph for North Creek as well as the post-diversion hydrographs for the creek under Alternative D during both average and spring runoff years. *Id.* at 33, Figure 5.

The EA also delineated the preferred alternative’s effects on Birch Creek. After reciting BLM policy to improve or maintain riparian areas in proper functioning condition, the EA acknowledged that diversion of flows during the growing season would cause the stream to remain in at-risk condition or degrade to non-functioning condition. The EA emphasized that the ecological processes sustaining riparian vegetation communities fit the pattern of the hydrological regime and that, therefore, perpetuation of the processes critical to sustaining a healthy riparian community

required the retention of the three phases of the natural hydrograph, *i.e.*, spring snow melt, summer base flow, and monsoonal events. (EA at 34.) The EA recognized, however, that “[t]he designed hydrograph under Alternative D for Birch Creek does not resemble a natural hydrograph.” *Id.*

After reciting that a BLM senior hydrogeologist had identified 0.37 cfs for Birch Creek as an adequate maintenance flow to retain water table depths in the mesoriparian zone, the EA indicated that the bypass flows would be reevaluated if the water table appeared to be declining or vegetative recovery was not forthcoming. The EA noted that the monitoring interval for this stream had been set at 3 years, once the diversion structure was in place, and that the monitoring included the collection of baseline information before project implementation. (EA at 34.)

In discussing the hydrograph for Birch Creek under Alternative D, the EA stated that, each year, flows would be discharged downstream from the periodic flushing of sediment basins and that bypass flows would occur during monsoonal events. Further, in very wet years, some additional bypass of flows would occur during the snow-melt time period. (EA at 34.)^{6/} The EA graphically depicted both the pre-diversion Birch Creek hydrograph and the changes to the hydrograph following construction of the diversion. *Id.*, Figure 6.

The EA further indicated that seasonal stream volumes between April and September downstream from the diversions would decrease by 95 percent in North Creek and by 62 percent in Birch Creek. *See* EA at 35, Table 3. These seasonal flows, the EA explained, correlated with certain riparian vegetation characteristics, such as riparian area width, 98 percent of the variability of which was empirically related to seasonal stream discharge. *Id.* at 35.

In addressing the preferred alternative’s impacts on threatened, endangered, candidate, and sensitive animal species, the EA acknowledged that North Creek contained marginal nesting habitat for the southwestern willow flycatcher and that, although Birch Creek did not contain such habitat, both creeks might be used by the species during migration. (EA at 36.) The EA noted that both UDWR and the U.S. Fish and Wildlife Service (FWS) had recommended that sufficient water be allowed to flow year round in North Creek to allow riparian-obligate species (including the southwestern willow flycatcher) to persist and reproduce on BLM-administered land. The EA also noted that FWS had determined that the preferred alternative “may affect, but is not likely to adversely affect[,] southwestern willow

^{6/} We note that the EA states elsewhere that the Birch Creek stream system “is not capable of dispersing the energies of high flow, so vegetation is not able to become established.” (EA at 18.)

flycatchers.” Id. at 36-37; see EA, App. D. Since the project area fell within the breeding range of the yellow-billed cuckoo (a designated candidate species), the EA indicated that, while Birch Creek did not have potential habitat for this species, the project would decrease the suitability of North Creek’s denser riparian vegetation as a potential breeding site for the species. Id. at 37. The EA further stated that both creeks contained suitable breeding habitat for the common yellowthroat, a Utah State sensitive species, which might be reduced by implementation of the preferred alternative. Id.

According to the EA, the impacts to Native American concerns and cultural resources under the preferred alternative would be identical to those created by the proposed action. These effects included the flooding of three archaeological sites when creating the reservoir and the further damaging of one previously disturbed site when constructing the pipeline. The EA noted that these sites (as well as one additional site that would not be directly impacted by either construction or flooding) had been determined by BLM and the Utah SHPO to be potentially eligible for the National Register of Historic Places under 36 CFR 60.4(d). The EA further explained that a full-scale mitigation plan for each of the affected sites would be developed in consultation with the Utah SHPO, the Advisory Council on Historic Preservation, and other interested parties as required by section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470f (2000), ^{7/} and that the Hopi Preservation Office’s request that consideration be given to an option not to conduct data recovery would be addressed during that consultation process. The EA pointed out, however, that the sites would be adversely affected by the project regardless of whether excavation occurred. (EA at 41.)

In discussing the preferred alternative’s effects on water quality, the EA recognized that diversion of water from North Creek during the summer months could affect the long term survival of some temperature dependent aquatic invertebrate species by periodically raising below-diversion water temperatures above State standards for Class 3A waters. The EA pointed out, however, that monitoring of water temperature both above and below the diversion structures in both North

^{7/} Section 106 of NHPA provides:

“The head of any * * * department or independent agency having authority to license any undertaking shall, prior to the * * * issuance of any license, * * * take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or is eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation * * * a reasonable opportunity to comment with regard to such undertaking.”

16 U.S.C. § 470f (2000).

and Birch Creeks would indicate when maximum temperatures were being exceeded and that diversion volume and/or timing would be adjusted to return the water temperature to within Class 3A water standards. ^{8/} Id. at 42-43.

The EA briefly addressed the cumulative effects of the preferred alternative, concluding that no other projects were planned that would affect wetlands/riparian areas and that there were no past, present, or presumably future actions that would affect invasive non-native species, irrigation water availability in the Escalante area, or water quality within the analysis area. (EA at 43.) The EA further noted that the monitoring described in the alternatives and in Appendix K were sufficient for the proposal. See EA at 44. The EA also provided a summary of the public comments (EA, App. S) and additional supporting materials. See EA, Apps. A through R.

In the April 19, 2002, DR/FONSI, the Acting Monument Manager concluded that, consistent with the analysis in the EA, implementation of the preferred alternative would not have a significant effect on the human environment and that an environmental impact statement (EIS) was not required. He therefore decided to grant a right-of-way to WHWCD for construction of diversion structures, pipelines, reservoir, and access roads for the New Wide Hollow Reservoir project as described in the preferred alternative (Alternative D) of the EA, subject to the mitigation measures, conditions of approval, and monitoring plan set forth in the decision. ^{9/}

The Acting Monument Manager explained that he had selected Alternative D because it allowed the applicant “to reasonably exercise [its] right to place the water to beneficial use granted by the State of Utah and accomplishe[d] the stated purpose of increasing water storage capacity and meeting the water supply needs of the local community while providing for all practicable means to avoid or minimize environmental harm.” (DR/FONSI at 1.) He further found that the project specifications, mitigation, and conditions described in the EA, along with the additional mitigation, conditions of approval, and monitoring incorporated into his decision, reduced environmental impacts sufficiently to render it unlikely that the approved alternative would create unnecessary or undue degradation of public lands; that all practicable means to avoid or minimize environmental harm had been adopted; and that implementation of the project conformed to the Escalante management framework plan (MFP). Id.

^{8/} It is not specified how this would be done while maintaining required water levels in the reservoir.

^{9/} We note that the DR/FONSI makes no direct reference to construction of the dam itself, except insofar as it refers to WHWCD receiving a right-of-way “for the construction of * * * [a] reservoir.” (DR/FONSI at 1.)

The Acting Monument Manager presented his reasons for rejecting the other alternatives, concluding that: Alternative A, the proposed action, did not provide adequate protections for the riparian areas associated with Birch Creek and North Creek; Alternative B, the no action alternative, did not accomplish the stated purpose of increasing the water supply and meeting the needs of the local community; and Alternative C, pumping water from the existing diversions to the new reservoir, excessively increased WHWCD's pumping costs.^{10/} (DR/FONSI at 1.) He specified that the mitigation measures and conditions of approval shown on Appendix A to the decision^{11/} and the monitoring plan set forth in Appendix K to the EA would be incorporated as stipulations into the right-of-way grant; he also specified that BLM would be present during all phases of the project to ensure compliance with the right-of-way stipulations. (DR/FONSI at 1-2.)

The mitigation measures integrated into the DR/FONSI relevant to these appeals included:

2. Monitoring of the North Creek and Birch Creek riparian zones within the project area will be done to achieve the following:
 - a. Determine current vegetative conditions (baseline data prior to stream diversions) and,
 - b. Detect any ecologic changes in the post-project (stream diversions) riparian vegetation over time.

The inventory and monitoring methods that will be employed * * * are generally referred as "greenline" methods of riparian monitoring. Greenline monitoring focuses on vegetative communities instead of individual species and tracks their change in composition (usually expressed as a percentage) over time. Three sampling methods will be utilized. The vegetation cross-section method will evaluate the health of vegetation across the valley floor. Transects along the greenline will provide a measurement of the streamside

^{10/} According to the EA, adopting this alternative would increase annual pumping costs by \$90,000 and lead to an annual operating deficit of between \$21,500 and \$61,500. See EA at 39.

^{11/} Appendix A, which the DR/FONSI refers to as "Attachment A," was inadvertently omitted from the copy of the DR/FONSI sent to interested parties. BLM subsequently forwarded a copy of the omitted appendix to those parties, with an Apr. 30, 2002, cover letter acknowledging the omission and extending the appeal period for the DR/FONSI.

vegetation. Lastly, the woody species regeneration method will measure the density and age class structure of shrub or tree species present in the sampling area. Taken together, these three sampling procedures can provide an evaluation of the health of all the vegetation in a given riparian area. A baseline inventory will be accomplished using these methods prior to any water diversions. Thereafter, these monitoring methods will be repeated at least once every 3 years to determine if negative riparian vegetative conditions occurred as a result of water diversions. A negative result will then trigger the appropriate management change in order to counteract these negative riparian trends.

* * * * *

Photographs will be taken at the beginning and end of greenline transects, and representative photographs taken of the entire sampling reach. * * * Repeat photography at all photo points will be done at least every three years, and during the same season of year as the original photos.

* * * [T]rend in riparian vegetation change will be used to guide management decisions as to the minimum flows and timing of flows necessary to achieve stated riparian community composition objectives. If monitoring shows a change of a 25% or greater decline in baseline riparian vegetation community objectives (a shift to dry site vegetation), this will result in management re-evaluating the percentage of allowable diversion on a per season basis to be taken from the average daily flows. Riparian vegetation acts as the most efficient buffer to resist flood events and maintain channel equilibrium. Dry site vegetation (if it encroaches into the riparian zone) does not provide for adequate channel and bank stability. Additionally, riparian vegetation is important in all or some phases of the life cycle of many wildlife species (including mammals, birds, reptiles, and amphibians). The monitoring program is designed to provide management with the information to ensure that adequate flows are provided in order to sustain the affected riparian areas in an ecologically functioning condition.

3. Prior to any diversions of water, the BLM will initiate an inventory and monitoring program to gather baseline information on existing vegetation, wildlife species, and riparian-obligate invertebrates. Monitoring of both North Creek and Birch Creek riparian areas will

occur. The objectives of monitoring will be to determine whether the existing condition and trend in North Creek is being maintained, and to determine whether progress toward Proper Functioning Condition in Birch Creek is being achieved. * * * Monitoring will take place every three years after the diversions are fully functioning, in order to assess whether riparian areas are being maintained.

4. Monitoring will be conducted to detect effects on riparian condition in North Creek. If monitoring indicates that physical and/or ecological condition shows a downward trend from baseline conditions, then water diversions from this creek during the growing season (April 1 - September 30) will be reduced until that downward trend is reversed and baseline condition is again achieved. A downward trend is defined as a decrease in vegetative community reproduction and diversity. Once baseline condition is again achieved, diversions could then be reevaluated. The existing standard photo plot study will be read on at least a * * * [twice per year] basis. Data on species composition and vegetation density will also be collected and monitored on at least a [twice a year] basis. Data collection and monitoring will be conducted by the BLM.

5. If monitoring in Birch Creek indicates that physical and/or ecological condition shows a downward trend from baseline conditions, then water diversions from this creek during the growing season (April 1 - September 30) will be reduced until that downward trend is reversed and baseline condition is again achieved. Once baseline condition is again achieved, diversions could then be reevaluated for daily flows during the growing season. Monitoring will be conducted to detect effects on riparian condition.

6. Proper Functioning Condition (PFC) surveys will be conducted by the BLM on the public land portions of both North Creek and Birch Creek. These PFC surveys will be conducted at least every five years.

7. [WHWCD] will be required to maintain a constant flow of water in North Creek below the diversion during the growing season (April 1 - September 30). If monitoring indicates that adequate amounts of water are flowing to maintain the riparian area in baseline condition, then additional water would be diverted, but only in small increments since threshold flows for maintaining these riparian areas are not known.

8. Flood and high water flows will not be diverted. Sand traps will be designed to slow water flow, allowing sediment to settle. The sediment will periodically be flushed out the bottom of the traps and back into the stream channels by manually opening the valve at the bottom of the sand trap.

* * * * *

10. Snow melt generated flows will be allowed to flow past the diversions under the following conditions:

- a. Bypass of high flows will occur two times every five years;
- b. Bypass will occur on years of average to above-average snow pack, based on the April data at the Clayton and Widstoe Snowtell Stations as determined by the BLM;
- c. Bypass will last from 2-3 weeks, as determined by and at the discretion of the BLM.

11. Spring snow melt above the year-round 0.25 cfs will not flow past the diversions (with the exception of peaks that exceed the capacity of the diversion pipes), unless determined otherwise by the BLM.

* * * * *

18. Monitoring of water temperatures in both North Creek and Birch Creek will be conducted by the BLM or [WHWCD] to determine whether any changes are occurring as a result of water diversions. Water temperature will be taken above the diversions in order to get a baseline measurement. Water temperature will also be taken below the diversions to detect any changes associated with the withdrawal of water. Monitoring will be conducted from May to September, on a weekly basis, for three years to establish a baseline and monthly thereafter. If monitoring shows water temperature exceeds State standards for 3A waters (20°C, with a maximum change of $\pm 2^\circ\text{C}$) as a result of diversions, then diversion volumes will be decreased or diversions will only be done at night (when solar heating does not occur) in order to meet State standards.

(DR/FONSI, Appendix A at 1-5 (emphasis in original).)

SUWA, Main Canyon, and EWP each appealed the DR/FONSI and underlying EA. While those appeals were pending, on October 22, 2002, BLM issued right-of-way grant UTU-79720 to WHWCD authorizing the construction, operation, maintenance, and termination of a 6,100 acre-foot reservoir (with the crest height of the dam being approximately 130 feet and the crest length being approximately 930 feet) encompassing approximately 224 acres; four 36- or 24-inch buried and suspended pipelines; two water diversion structures and two sand traps; and access roads on public lands. The stipulations incorporated into the right-of-way grant, attached to the grant as Exhibit C, are similar to, but not identical with, the mitigation measures and conditions of approval included in Appendix A to the DR/FONSI. SUWA and Main Canyon also appealed the issuance of the right-of-way grant. ^{12/}

ARGUMENTS ON APPEAL

On appeal, SUWA argues that BLM violated numerous requirements of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4332 (2000). SUWA avers that the EA is inadequate and violates NEPA because it is based on conclusory statements and assumptions unsupported by scientific data or rationale. Specifically, SUWA asserts that BLM has provided no scientific support for the EA's bypass flow and riparian health statements. It asserts that the bypass flows, or consumptive use requirements, that BLM asserts will maintain the riparian vegetation of cottonwood trees, willows, and birches, were calculated using "consumptive use of irrigated crops in Utah," rather than for woody riparian vegetation. (SUWA SOR at 12.) SUWA submits that BLM's implicit recognition of this flaw and attempt to compensate for it by applying two different 50 percent adjustments fails because BLM does not explain why it considered irrigated crop coefficients to be good surrogates for woody riparian vegetation or how it determined the adjustment factors. Id. at 13-14. ^{13/} SUWA

^{12/} Both SUWA and Main Canyon base their appeals of the issuance of the right-of-way grant on the arguments raised in their appeals of the DR/FONSI. See generally Amended SUWA SOR and Main Canyon SOR (IBLA 2003-83) (expressly incorporating Main Canyon SOR filed in IBLA 2002-341). Since our discussion of the issues raised in the appeals of the DR/FONSI govern resolution of all the consolidated appeals, we will not separately address the appeals of the right-of-way grant.

^{13/} We find it necessary to comment on an aspect of SUWA's presentation. SUWA's attorneys freely used quotation marks in the paragraph on page 13 of its SOR condemning BLM's use of the two 50 percent increases, citing to BLM's document entitled Estimated Consumptive Use Requirements for Willows and Cottonwoods near Escalante, Utah (EA, App. L):

"Highlighting the fact that 'irrigated crops' estimates do not apply to woody,
(continued...)

supports its assertions with the declaration of Dr. Robert Ohmart (SUWA SOR, Ex. 8 (Ohmart Decl.)), who characterizes BLM's utilization of agricultural values (rather than known evapotranspiration values) as merely "best guesses." He also disputes as unfounded BLM's reliance on base flow amounts to retain the vigor of riparian vegetation, citing the lack of long-term data supporting that reliance. (SUWA SOR at 12-14; Ohmart Decl. ¶¶ 15 and 17.)

SUWA notes that the EA's and DR/FONSI's bypass flow recommendations contradict those presented in the second EA (EA #2) prepared for the project. According to SUWA, the BLM Natural Resource Specialist's recommendations in EA #2 for maintaining the existing riparian habitat along North Creek called for preserving a sufficient minimum flow through the growing season to sustain a high enough water table to support woody species, allowing spring run-off events inundating the floodplains to continue in order to sustain seedbed conditions and germination important for cottonwood seeds, and retaining periodic high flow events. (SUWA SOR at 15, citing EA #2, App. J, attached to SUWA SOR as Ex. 9.) SUWA points out that the Natural Resource Specialist specifically acknowledged in EA #2 that the lack of data on flow regimes, bankfull discharge, and channel profiles rendered it difficult to accurately determine the amount of maintenance flow needed to sustain the riparian community and hydrologic functions of North Creek. SUWA observes that, given the lack of sufficient time to gather the necessary information, the specialist relied on reconnaissance-level methodology to determine that the

^{13/} (...continued)

riparian vegetation, BLM tried to compensate for the differences by adjusting the calculated consumptive use amount by an arbitrary 50%, to take into account 'irrigation efficiency.' *Id.* [(This citation is to Appendix L to the EA.)]. Acknowledging that this adjustment might not be adequate, and still 'guessing' that the needs of trees and other riparian vegetation differs substantially from irrigated crops, BLM added yet another 50% 'fudge factor' increase to the bypass flow for North Creek to 'account for' the maintenance and recruitment of herbaceous vegetation. *Id.* [(This again cites to Appendix L to the EA.)]. For Birch Creek, rather than increase the flow another 50%, BLM decided the bypass flow would be 'based on July consumptive use quantity with a 50% increase to account for herbaceous vegetation.' EA Appendix L." (SUWA SOR at 13 (emphasis supplied).)

As we would expect, some of the quoted words and phrases appear in the cited text (e.g., "irrigated crops," "irrigation efficiency," "account for," and "based on [the] July consumptive use quantity with a 50% increase to account for herbaceous vegetation"). However, neither "guessing" nor "fudge factor" appears therein.

It would be most significant if BLM had admitted in its estimate of consumptive use requirements that it was "guessing" and using "fudge factors." It did not. SUWA's use of quotation marks in this context is misleading.

stream flow in North Creek should be maintained at 60 percent of the annual stream flow during the growing season (4.62 cfs) and 40 percent of the annual average stream flow during the non-growing season (3.08 cfs), and that the stream flow in Birch Creek should be retained at 100 percent of the mean daily flow during the growing season (0.66 cfs) and 40 percent of the flow in the non-growing season (0.26 cfs). (SUWA SOR at 15-16; SUWA SOR, Ex. 9.)

SUWA dismisses as unpersuasive BLM's explanation that the EA rejected the significantly higher bypass amounts calculated in EA #2 because those amounts were based on a flawed 5-year statistical average and emphasized aquatic life rather than the health of riparian vegetation. According to SUWA, the discrepancy is too extreme to justify uncritical acceptance of the substantially lower bypass amounts in the current EA, especially since BLM lacks sufficient data to support those amounts and to sustain the FONSI. (SUWA SOR at 16; SUWA SOR, Ex. 9.)

SUWA points out that, although the EA recognized that riparian vegetative communities have evolved to fit natural flow peak patterns, BLM adopted a flat, minimal flow amount devoid of natural peaks for Birch Creek and a substantially reduced peak flow regime in average years for North Creek, both of which deviate from that natural hydrologic regime. SUWA submits that the EA's failure to provide any reliable data demonstrating that these reduced and altered flow patterns will not have significant impacts on the riparian habitat for these creeks is especially egregious since the peak flow regimes are critical to the maintenance, health, and functionality of both creeks. (SUWA SOR at 16-17; Ohmart Decl. ¶ 14.) SUWA further complains that BLM ignored the comments provided by FWS and the National Park Service (NPS) expressing concerns over the adverse impacts the proposed diversion would have on North Creek's valuable riparian community and Birch Creek's natural healing process (SUWA SOR, Exs. 10 and 11 (FWS comment letters)) and identifying additional information needed to adequately evaluate the project (SUWA SOR, Ex. 12 (NPS comment letter)). (SUWA SOR at 18-20.)

SUWA contends that BLM's decision to issue a FONSI and not prepare an EIS was arbitrary and capricious and violates NEPA because BLM has not shown that the project will not cause significant impacts and because substantial questions remain as to the project's impacts. SUWA identifies several factors listed in 40 CFR 1508.27 as indicative of significance which it claims mandate preparation of an EIS here. Specifically, SUWA asserts that the effects of this project are highly controversial under 40 CFR 1508.27(b)(4) because a substantial dispute exists over the size, nature, or effect of the project, citing the NPS and FWS comment letters, the Ohmart Declaration, and the additional data collection and analysis animating the preparation of three EAs for the project. (SUWA SOR at 22-26.)

SUWA further asserts that the project affects an ecologically critical area as delineated in 40 CFR 1508.27(b)(3). SUWA points out that these ecologically critical riparian areas occupy less than 1 percent of the land in Utah but support nearly 95 percent of the wildlife species in the area and represent some of the most important and productive ecosystems in Utah. (SUWA SOR at 27; Ohmart Decl. ¶ 8; Riparian Policy (UT IM-93-93) (SUWA SOR, Ex. 7).) SUWA avers that preparation of an EIS is mandated by BLM's acknowledgments that diversion of 62 percent of the flow in North Creek during below average precipitation periods would hamper maintenance of the existing riparian condition of the creek and that diversion of 95 percent of the flows in Birch Creek during the growing season would perpetuate the creek's at-risk condition or degrade it to non-functioning condition, coupled with the lack of scientific data supporting BLM's claim that existing riparian conditions in North Creek would be maintained during periods of normal or above precipitation. (SUWA SOR at 27-28, citing EA at 32-33.)

SUWA notes that the project undisputedly will affect cultural sites eligible for listing in the National Register of Historic Places and argues that, in accordance with 40 CFR 1508.27(b)(8), this fact necessitates preparation of an EIS. (SUWA SOR at 28-29.) SUWA also maintains that, given the absence of information about the practical effect of the diversions and the lack of effective proposed mitigation measures to offset environmental damage, uncertain environmental effects and unknown risks exist about the project which, according to 40 CFR 1508.27(b)(5), mandate preparation of an EIS. (SUWA SOR at 29-30.)

SUWA questions BLM's reliance on mitigation measures to support the FONSI. According to SUWA, the mitigation measures listed in Appendix A to the DR/FONSI simply restate the monitoring plan found in Appendix K of the EA and fail to prescribe specific and effective corrective actions to reduce impacts to insignificance should certain resource conditions develop. (SUWA SOR at 32.) SUWA specifically points to mitigation measures 2, 4, 5, 8, 10, and 11 either as failing to clearly define and scientifically justify the thresholds triggering corrective action and the efficacy of that action or as illustrating the conflicts among the various mitigation measures. *Id.* at 33-34. SUWA further avers that it, FWS, and NPS all agree that the monitoring plan incorporated into the DR/FONSI suffers from the same flaws undercutting the mitigation measures and thus does not compensate for those inadequate mitigation measures. *Id.* at 34-36. In light of the lack of baseline data and scientific analysis in the EA and BLM's failure to show the effectiveness of the adopted mitigation measures and monitoring plan in reducing impacts to insignificance, SUWA submits that BLM must prepare an EIS before proceeding with the project. *Id.* at 36-38.

SUWA also argues that the EA did not consider a reasonable range of alternatives as required by 42 U.S.C. § 4332(E) (2000). SUWA highlights the water

conservation alternative as one deserving detailed analysis, asserting it alone totally conforms to the Riparian Policy. SUWA further avers that, since the preferred alternative would increase water supply by only seven percent at most, the EA should have fully evaluated the alternative of dredging the existing reservoir to increase storage capacity, which would raise water yield by five percent while using the existing diversions and nullifying the need for new diversions on Birch and North Creeks. SUWA claims that BLM deprived the public and the decision-maker of the complete information needed to reach a reasoned decision by refusing to comprehensively consider these and other alternatives suggested by FWS and NPS that would create significantly less environmental impacts and comply with both the Riparian Policy's proscription of new surface disturbing activities in riparian areas and FLPMA's requirement that ecological, environmental, and archaeological sites be protected. (SUWA SOR at 38-42.)

SUWA contends that BLM failed to take the requisite hard look at the environmental effects of the project on riparian areas and wildlife. Relying on the previously identified deficiencies, SUWA asserts that the EA's failure to determine, based on scientific or other reliable data, the impact to riparian vegetation from the severely reduced streamflows did not constitute the hard look mandated by NEPA. (SUWA SOR at 43-44.) SUWA similarly maintains that the EA's cursory analysis of the project's impacts on the yellow-billed cuckoo, a candidate species entitled to special protections, and the dearth of surveys or data for wildlife species other than the yellow-billed cuckoo, southwestern willow flycatcher, and common yellowthroat demonstrate that BLM did not take a hard look at the impacts of the project on wildlife. (SUWA SOR at 44-46; see also FWS Aug. 15, 2001, comment letter (EA, App. D) and BLM Manual 6840.06C.)

SUWA's last NEPA argument focuses on BLM's failure to reevaluate the project's impacts in light of significant new circumstances and information. SUWA rests this claim on a May 2, 2002, article in the Garfield County News, which quotes the president of WHWCD as stating that the delays in processing the right-of-way application had necessitated decreasing the size of the reservoir from over 6,000 acre feet to 4,000 acre feet. (Amended SUWA SOR at 47, 49; see EWP SOR, Attachment 1.) SUWA insists that not only does this 40 percent downsizing render doubtful the project's estimated 7 percent increase in water yield, but it also raises the possibility that other alternatives with less environmental impacts might be equally likely to achieve the same result. (Amended SUWA SOR at 49-51.) SUWA therefore asserts that, in accordance with 40 CFR 1502.9, BLM must consider and evaluate this new information and supplement the EA by analyzing a reasonable range of appropriate alternatives based on this new information. (Amended SUWA SOR at 51-52.)

Finally, SUWA argues that BLM's approval of the project violated the Riparian Policy, IM UT-93-93 (SUWA SOR, Ex. 7). SUWA contends that BLM is bound by three policy statements set forth in the Riparian Policy which direct that riparian areas be maintained or improved to Proper Functioning Condition; that no surface disturbing activities be permitted within 100 meters of riparian areas unless no practical alternatives exist, all lasting impacts can be completely mitigated, or the activities will benefit and enhance the riparian areas; and that riparian areas be improved at every opportunity. *Id.* at 3; SUWA SOR at 47. SUWA avers that, contrary to these policy directives, the approved project authorizes construction of new structures directly within the riparian areas despite the existing practical alternatives, the diversions' unmitigated impacts, and the project's lack of benefit to the affected riparian areas. SUWA adds that the permitted diversion of flows during the growing season admittedly will, at best, perpetuate the at-risk condition of Birch Creek and, at worst, cause the creek to degrade to non-functioning condition and that the bypass flows in North Creek may not be enough to maintain the existing riparian condition in a dry period. SUWA concludes that the dewatering activities clearly will not improve the riparian conditions in the affected areas. (SUWA SOR at 47-49.)

Main Canyon, the owner of property downstream from the authorized diversion in Birch Creek, similarly charges that the approved project will have significant deleterious effects on the environment and that an EIS therefore must be prepared. Main Canyon contends that the reduction of water flows to Birch Creek during the growing season violates BLM's Riparian Policy and will degrade the health of riparian vegetation on private lands below the diversion. Main Canyon asserts that the resulting loss of amenity vegetation, such as cottonwoods and willows, along the private stretches of Birch Creek will reduce both visual quality and property values. Main Canyon further maintains that the elimination of seasonal snowmelt peaks could encourage the establishment of exotic invasive plant species in violation of Executive Order 13112, signed in February 1999, which, Main Canyon avers, prohibits actions that may lead to the spread of invasive species. According to Main Canyon, water diversions in Birch Creek will also lead to increases in water temperature exceeding Utah water quality standards for Class 3A waters and harming temperature dependent aquatic invertebrate species. The proposed monitoring plan will not timely detect changes in riparian health, Main Canyon submits, because the contemplated 3-year time period between the growing season stream flow diversion and the riparian health assessment is too long, especially considering that trees subject to a tenfold reduction in stream flow will decline in health and possibly die within a single growing season if the area has already suffered several years of drought. (Main Canyon SOR at 1-2.)

On appeal, EWP, like SUWA, asserts that the decrease in the size of the reservoir renders obsolete the analysis in the existing EA and raises questions about

the reduced project's ability to increase irrigation water deliveries, as well as NEIC's plan to abandon the North Creek Reservoir. (EWP SOR at 1.) EWP notes that BLM has acknowledged that the outcome of a pending State lawsuit over 10,000 acre feet of water currently diverted each spring into North Creek could require the preparation of a new analysis for the project and avers that BLM should await judicial resolution of that suit before deciding whether to approve the project. Id. at 1-2, citing EA, App. S at 23.

EWP contends that BLM failed to give due weight to the public interest, as distinct from the interests of NEIC shareholders and Escalante residents. Specifically, EWP submits that the purported seven percent increase in average annual deliveries of irrigation is too small to justify the project even as a business proposition; that the EA fails to offset the current \$15,000 annual pumping costs against the \$12,000 to \$16,000 annual monitoring costs associated with the preferred alternative; that agriculture is a liability in Garfield County, which includes Escalante, and should not be encouraged; that the proposed dam, like the current dam, would be a high hazard dam; that, as BLM has admitted, the flow reductions could damage riparian areas along both creeks, harm wildlife, and impair the public's enjoyment of those areas, as well as violate BLM's duties to maintain or improve riparian areas to proper functioning condition and to work toward recovery and eventual delisting of threatened and endangered species; that the EA fails to give sufficient weight to the negative impacts of the proposed project on the existing reservoir, the diminishment of which would reduce the attractiveness of the Petrified Forest State Park campground; and that the value of the project does not justify the destruction of archaeological sites potentially eligible for the National Register of Historic Places. Id. at 2-4.

EWP criticizes the EA's socioeconomic analysis as defective because, in addition to overstating the importance of the agricultural sector and ignoring the project's negative effects on the Petrified Forest State Park, the EA fails to give any real weight to the value of functioning riparian areas. EWP maintains that, contrary to the EA's assertion that no monetary value can be placed on those areas because no markets exist for them, real estate agents routinely evaluate the worth of land with healthy vegetation versus land without such vegetation, and experts capable of designing models for consumptive water use should surely be able to devise models for determining the economic value of elements like functioning riparian systems. EWP adds that, in any event, rather than presenting an objective socioeconomic analysis, the EA unjustifiably favored agriculture and farmers over recreation and tourists. Id. at 5.

EWP objects to the excessive guesswork in the environmental impact analysis throughout the EA. In particular, EWP cites the use of known water requirements for

irrigated alfalfa as the basis for estimating the unknown water requirements for willows and cottonwoods, the inconsistencies and illogical explanations rampant throughout the EA's discussions of its stream flow and bypass determinations, the studies actually cited in the EA which cast doubt on the established bypass flows' sufficiency to maintain the current riparian conditions in both North and Birch Creeks, the lack of clarity and specificity in the mitigation measures and monitoring plan, the potential conflict between the project and BLM's obligations under the Endangered Species Act, and the contradictory statements in the EA about the project's effects on water temperature and quality. (EWP SOR at 5-9)

EWP questions the vagueness of the stream flow changes mandated if monitoring indicates a downward trend, averring that the lack of specific ranges of possible bypass flow additions opens the door to future disputes over the amounts of the necessary increases. (EWP SOR at 9.) EWP also objects to the EA's failure to adequately evaluate the water conservation alternative and Alternative C. EWP asserts that neither the changes to the existing irrigation and water delivery systems connected to the water conservation alternative nor the increased pumping cost associated with Alternative C justifies dismissal of those alternatives. EWP further submits that the EA misstates the effect of existing water rights on the part of the Escalante River proposed for wild and scenic river designation; that the EA relies on an outdated 1981 MFP; that evaporative and seepage losses should be included in the EA's analysis of the new reservoir's ability to store water from year to year; and that the EA's cavalier treatment of candidate species' habitat could ultimately lead to the listing of such species which would threaten the viability of the project. *Id.* at 10-11. EWP concludes that all the issues raised in its appeal demonstrate that BLM should withdraw the EA and prepare a full-scale EIS addressing the potential significant impacts of the project. *Id.* at 11-12.

In its answer, BLM asserts that it properly considered reasonable alternatives to the proposed action. BLM submits, that, unlike an EIS which must contain a detailed analysis of alternatives, an EA's alternatives analysis is bound by a rule of reason and practicality and need not be exhaustive. (BLM Answer at 13-14.) BLM contends that it properly rejected the water conservation alternative as beyond its jurisdiction, noting that 40 CFR 1502.14(a) (relied upon by SUWA) addresses the requirements for an EIS not an EA. As to the alternative of dredging the existing reservoir, BLM avers that a 1992 feasibility study on raising the dam and dredging the reservoir indicated that those activities would partially flood the Petrified Forest State Park and require relocation of various park facilities, a culinary pipeline, and an access road and, in any event, would not solve the reservoir's sedimentation problem. BLM argues that this study, coupled with a 1993 inspection of the dam's spillway revealing its inadequacy in the event of a major flood and a geotechnical study of the dam's foundation exposing its susceptibility to failure in an earthquake, more than

suffice to satisfy its obligation to explain why it did not study that alternative in detail. (BLM Answer at 15-16.)

BLM maintains that it took the requisite hard look at the potential impacts of the project and that its decision that the project would not have significant impacts is reasonable and supported by the record. BLM insists that it carefully considered the potential impacts the project's diversions and bypass flows could have on the riparian areas along North and Birch Creeks. BLM denies that the EA was based on inadequate information, pointing out that the historical information cited as missing has never been collected and that its absence does not undermine the EA because an EA necessarily is based on incomplete and uncertain information. In any event, BLM submits that the mitigation measures incorporated into its approval of the preferred alternative ensure the acquisition of baseline data before any water diversions occur. (BLM Answer at 16, 18-20.)

BLM contends that its calculations of the bypass flows necessary to maintain the riparian areas along North and Birch Creeks are reasonable. BLM explains that it formed a technical team consisting of UDWR personnel, NEIC board of directors members, and BLM resource specialists to determine appropriate bypass flows for each creek, i.e., what minimum flow was necessary to preserve the riparian vegetation in each creek. BLM avers that the lack of surface flow requirement data for the riparian vegetation led the team to adopt the calibrated crop coefficient standard used by UDWR to determine water requirements for water-intensive irrigated crops such as alfalfa, as adjusted upward to account for factors including density of vegetation, soils, topography, and channel geometry, to compute the effective bypass flows for the creeks. (BLM Answer at 20-21.) According to BLM, the resulting bypass flows for North Creek mirror the naturally occurring hydrograph and have a reasonable expectation of maintaining existing riparian conditions during normal or above-average precipitation periods. *Id.* at 21. Although the bypass flows assigned to Birch Creek do not mimic the natural hydrograph for that creek, BLM asserts that the flows were based on the estimated consumptive use requirements for the relatively higher flow month of July, but admits that the diversion of flows during the growing season would result in the creek remaining in at-risk condition or deteriorating to non-functioning condition. *Id.* at 21-22.

BLM counters the attacks on the use of calibrated crop coefficients and the concomitant support for the percentage method espoused in EA #2 by asserting that the percentage of stream flow methodology used in EA #2 was based on a 1984 BLM publication directed towards maintaining aquatic life habitat in the stream itself rather than riparian vegetation, and that the short, 5-year gauged flow period undermined the validity of the use of a statistical average. BLM submits that disagreements over its explanation on this technical issue do not invalidate that

explanation, especially since BLM is entitled to rely on the reasoned analysis of its experts. (BLM Answer at 22-23.)

BLM disputes the allegations that the bypass flows specified in the EA are too small to maintain riparian vegetation in either creek. BLM characterizes these allegations as speculative and devoid of the supporting scientific data and studies needed to establish error in BLM's analysis, an analysis which, BLM claims, demonstrates that it thoroughly considered the potential impacts to the creeks from the water diversions and the bypass flows necessary to minimize such impacts. BLM adds that it carefully considered and responded to comments on this issue and revised the EA as appropriate and that the challenges to its conclusions merely represent differences of opinion insufficient to establish error on its part. (BLM Answer at 23-24.) BLM discounts Dr. Ohmart's declaration, questioning his qualifications as an expert on bypass flow issues and averring that, in any event, his criticisms of BLM's methodology fail to identify the specific methodology BLM should have used other than that the calculations should have been based on existing published native community data. BLM maintains that such unsupported disapproval is not the objective proof needed to demonstrate error in BLM's analysis. *Id.* at 24-25.

BLM contends that its mitigation measures are reasonable. According to BLM, the 20 mitigation measures incorporated into the approved action enumerate specific, pre-diversion monitoring and survey work intended to establish a baseline inventory of existing vegetation, wildlife species, and riparian obligate species, as well as post-diversion periodic monitoring activities designed to determine the effect of the water diversions on baseline conditions in each creek and establish any consequent appropriate reductions in diversions and increases in bypass flow. (BLM Answer at 25-26, citing DR/FONSI, App. A, Mitigation Measures Nos. 3-6.) BLM denies Main Canyon's complaint that the 3-year period between the diversion of water in the growing season and the assessment of riparian health is too long for the reason that Main Canyon has failed to provide any credible data or study to support that contention. BLM submits that SUWA's and EWP's objections to the EA's monitoring requirements as internally inconsistent, insufficiently detailed, and excessively vague must fail because they are based on the mitigation measures found in Appendix K of the EA rather than on the conditions of approval specified in Appendix A to the DR/FONSI, which do not contain the challenged language. (BLM Answer at 27.) BLM distinguishes the precedent cited by SUWA on the ground that, in this case, BLM found that the preferred alternative would not have significant impacts, not that mitigation measures were needed to reduce impacts to below the significance threshold, and because the EA here discussed possible mitigation measures in some detail, rather than ignoring such measures. *Id.* at 28.

BLM further asserts that its selection of the preferred alternative is consistent with the Riparian Policy. According to BLM the policy statements relied upon by SUWA simply set forth general goals, not mandatory terms and conditions, for BLM management of riparian areas. (BLM Answer at 29.) To the extent that the Riparian Policy can be interpreted as imposing specific duties, BLM contends that the procedures for integrating that policy into land use planning and environmental analyses, not the broad policy statements, set forth those obligations. BLM avers that it has complied with those responsibilities by analyzing alternatives to the possible diversion of water from the creeks and explaining why those alternatives were not selected, identifying specific mitigation measures needed to prevent long-term impacts to the riparian areas on North and Birch Creeks, and documenting the minimum amounts of bypass flows BLM's experts determined were essential to prevent degradation of the riparian areas. *Id.* at 30-31; Riparian Policy, IM UT-93-93 (SUWA SOR, Ex. 7), at 10.

BLM contends that the project is not "controversial" as that term is used in 40 CFR 1508.27(b)(4) and therefore does not require preparation of an EIS. Noting that case law has interpreted "highly controversial" to refer to substantial disputes as to the size, nature, or effect of a Federal action rather than to opposition to a use, BLM counters each ground proffered as evidence of the alleged controversy. BLM asserts that its preparation of three draft EAs demonstrates its commitment to performing a thorough NEPA analysis and informing the public of the results of that evaluation. BLM interprets the FWS and NPS comments identifying concerns about potential impacts and suggesting items to be studied as additional indications of the proper functioning of the NEPA process rather than as harbingers of substantial controversy. BLM also reiterates that, even if the public comments can accurately be construed an outpouring of public protest, opposition to a project does not establish that the project is "highly controversial" under the regulations. (BLM Answer at 31-32.)

BLM dismisses SUWA's and EWP's claim that the reduction in the size of the reservoir reported in a newspaper article renders obsolete the EA's analysis of the project and mandates reconsideration of the need for the downsized project, the environmental effects of that project, and additional newly viable alternatives. While acknowledging its awareness of the article, BLM avers that no WHWCD representative has advised it that the article was accurate and/or that WHWCD does not plan on constructing and operating the project proposed by WHWCD, analyzed in the EA, approved in the DR/FONSI, and described in the right-of-way grant. (BLM Response to Amended SUWA SOR at 4.)

BLM also discounts EWP's remaining NEPA claims as general complaints unsupported by any facts or data necessary to establish a violation of that statute.

(BLM Answer at 33.) BLM therefore submits that the EA satisfies NEPA and the DR/FONSI should be affirmed. Id. at 33-34.

In their answer, WHWCD and NEIC (collectively the “project proponents”) contend that the appellants have failed to establish by objective proof that the EA was based on a clear error of law or fact or that it failed to consider a substantial environmental question of material significance to the project. (Project proponents’ Answer ^{14/} at 2.) They, like BLM, dismiss Dr. Ohmart’s declaration as simple criticism, not objective proof, and aver that mere differences of opinion do not justify overturning the reasoned analysis of BLM’s experts. Id. They further assert that, rather than undermining the validity of the final EA, BLM’s revisions of the earlier EAs demonstrated its responsiveness to public concerns and led to a final EA which crafted an alternative fusing their proposed project and the area’s resource requirements into an alternative conforming to BLM’s broad management responsibilities. Id. at 3.

In addition to adopting BLM’s response to the appeals, the project proponents characterize appellants’ arguments about riparian impacts as mere speculation designed to delay the project. They point out that BLM’s development of the preferred alternative arose from its determination that the proposed project might harm the riparian environment and adopted measures designed to protect that resource by ensuring necessary bypass flow amounts. According to the project proponents, appellants’ objections to the methodology used by BLM’s experts to calculate sufficient bypass flow amounts rest on simple conjecture, not compelling scientific data, and do not suffice to establish that a different methodology would have been preferable. (Project proponents’ Answer at 4.)

The project proponents also discuss the compelling public interests served by the project. They contend that the continual sedimentation of the existing reservoir has caused the reduction in per-acre hay yield from between five and seven tons to between one and one and a half tons that directly impacts farmers’ ability to meet their financial obligations, a situation the project is intended to rectify. They further aver that the Town of Escalante would also benefit from the new reservoir because over 300 of the 1661.5 NEIC water shares are used to water gardens, pastures, and orchards within city limits, which lessens the strain on culinary water consumption. According to the project proponents, these benefits, coupled with the elimination of the average annual \$17,000 pumping costs currently incurred to pressurize the existing irrigation system, clearly outweigh the potential harm to riparian areas,

^{14/} The project proponents filed both an answer and an errata to that answer. References in this opinion will be to the errata to the answer which will be denominated “Project proponents’ Answer.”

which, they submit, will be mitigated by the monitoring and other requirements included in the approved alternative. (Project proponents' Answer at 4-5, citing Affidavit of Kim Keefe attached to Projects proponents' Answer.)

Both SUWA and EWP have responded to BLM's and the project proponents' Answers. In addition to reiterating the arguments made in its SOR, SUWA counters BLM's challenge to Dr. Ohmart's expertise in riparian issues by pointing out that, as his declaration and the vita attached to the declaration make abundantly clear, he has extensive experience, has published papers, and has performed research regarding riparian ecology and habitats. (SUWA Reply at 6-7 n.2.) While agreeing that an EA may be less detailed than an EIS, SUWA disputes BLM's contention that the major assumptions and gaps in this EA are acceptable, averring that, even if an EA often is based on incomplete and uncertain information, it must still contain scientific support for its decision which is absent here. *Id.* at 9 n.7. SUWA considers unpersuasive BLM's explanation for its use of irrigated crop data to calculate consumptive use requirements for cottonwoods and willows. SUWA submits that, while valid reasons may exist for considering aquatic life flow determinations irrelevant to this project, nothing in the record objectively supports the use of the irrigated crop plus adjustments method selected by BLM, especially given BLM's failure to delineate how it derived the adjustments and why those adjustments differ for each creek. *Id.* at 7, 13. SUWA further discounts BLM's reliance on the technical review team as support for the bypass flow decisions because the team did not include a clear proponent of protecting riparian areas. *Id.* at 12-13 n. 11.

SUWA disputes BLM's interpretation of the Riparian Policy. SUWA insists that the Riparian Policy's stated objective of establishing an aggressive riparian area management program to maintain, restore, and/or improve riparian values undermines BLM's supposition that the policy statements in the Riparian Policy can be ignored as long as the EA documents riparian issues and impacts. According to SUWA, the Riparian Policy affirmatively promotes protecting riparian areas, not simply describing the impacts authorized actions would have on those areas. (SUWA Reply at 15-16, citing Riparian Policy at 2 and 3.)

SUWA denies that it bases its contention that the highly controversial nature of the project mandates preparation of an EIS on "mere opposition" to the project, pointing out that both FWS and NPS joined it in identifying specific questions about the size, nature, and effects of the proposal. (SUWA Reply at 17-20.) SUWA further maintains that the mitigation measures incorporated into the DR/FONSI do not suffice to preclude the necessity of preparing an EIS because they are vague, fail to particularize the conditions triggering application of the mitigation measures, and neglect to identify the actions required to offset impacts arising from implementation of the project. *Id.* at 20-22. SUWA finds particularly troublesome the fact that the

mitigation measures attached to the DR/FONSI are not identical to the stipulations incorporated into the right-of-way grant, noting that the stipulations omit any reference to a percentage decline in baseline riparian vegetation, but include the imprecise downward trend language and thus will likely be less effective than the mitigation measures included in the DR/FONSI. Id. at 21-22 n.12.

In addition to repeating the arguments raised in its SOR, EWP's response also disputes BLM's characterization of the dredging and water conservation alternatives as impractical or ineffective and questions BLM's contention that the duty to consider alternatives outside the agency's jurisdiction applies only to an EIS and not to an EA. (EWP Response at 2 n.2.) Although EWP objects to BLM's interpretation of the Riparian Policy as contrary to the intent of that Policy, EWP avers that, even if BLM's interpretation were adopted, the Policy directives cited by BLM require that an EA document the minimum acceptable amount of water needed to be retained from a diversion to prevent degradation of the riparian area, which neither the EA nor the DR/FONSI does in this case. Id. at 4-5.

DISCUSSION

[1] Section 102(2)(C) of NEPA, 42 U.S.C. § 4332(2)(C) (2000), requires Federal agencies to prepare an EIS for a major Federal action significantly affecting the quality of the human environment. In making the threshold determination of whether an EIS is necessary, the agency may prepare an EA documenting its consideration of all relevant matters, and the agency may go forward with the project if the analysis in the EA establishes that the project will not have a significant impact on the human environment. A BLM decision to approve an action based on an EA and FONSI will generally be affirmed if BLM has taken a "hard look" at the proposed action, identified relevant areas of environmental concern, and made a convincing case that the environmental impacts are insignificant or that any such impact will be reduced to insignificance by the adoption of appropriate mitigation measures. Armando Fernandez, 165 IBLA 41, 49 (2005); Great Basin Mine Watch, 159 IBLA 324, 352 (2003); Southern Utah Wilderness Alliance, 158 IBLA 212, 219 (2003); Owen Severance, 118 IBLA 381, 385 (1991).

The Board will ordinarily uphold a BLM determination that a proposed project, with appropriate mitigation measures, will not have a significant impact on the quality of the human environment if the record establishes that a careful review of environmental problems has been made, all relevant environmental concerns have been identified, and the final determination is reasonable. Armando Fernandez, supra; Great Basin Mine Watch, supra; The Ecology Center, Inc., 140 IBLA 269, 271 (1997); Blue Mountains Biodiversity Project, 139 IBLA 258, 265-66 (1997). A party challenging BLM's decision has the burden of demonstrating with objective proof that

the decision is premised on a clear error of law or demonstrable error of fact, or that the analysis failed to consider a substantial environmental question of material significance to the proposed action. Armando Fernandez, supra; Great Basin Mine Watch, 159 IBLA at 353; Southern Utah Wilderness Alliance, 158 IBLA at 219-20; The Ecology Center, 140 IBLA at 271. Mere differences of opinion provide no basis for reversal. Armando Fernandez, supra; Great Basin Mine Watch, supra; Rocky Mountain Trials Association, 156 IBLA 64, 71 (2001).

Applying these principles to the appeals before us, we find that BLM did not take the requisite hard look at the project's potentially significant impacts to riparian areas and failed to convincingly demonstrate that the incorporated mitigation measures would reduce those impacts to insignificance. Accordingly, we conclude that BLM's decision to approve the preferred alternative was not reasonable given the record before it and set aside the DR/FONSI and the right-of-way grant issued pursuant to that decision.

Several key factors underlie our decision. BLM does not dispute the importance of riparian areas and their resources; to the contrary, the EA expressly acknowledges that BLM has established national goals and objectives for managing riparian resources on public lands to ensure that riparian-wetland areas are functioning properly in order to provide the widest variety of vegetation and habitat diversity. See EA at 19; see also Riparian Policy, IM UT 93-93 (SUWA SOR, Ex. 7). ^{15/} The acknowledged value of these resources and the stated policy objective of maintaining or improving riparian areas to proper functioning condition provide the framework for our analysis of the issues raised in the appeals before us.

Although BLM maintains that it properly calculated the bypass flow amounts necessary to meet riparian goals and objectives, we disagree. BLM has failed to offer persuasive evidence supporting its decision to base riparian vegetation consumptive use requirements on calibrated crop coefficients for irrigated crops in Utah and has provided no rationale at all for its computation of the purportedly appropriate adjustment factors or its application of different adjustments to each creek. BLM also has not explained its decision to ignore the natural flow regime in setting the bypass amount for Birch Creek, an omission especially glaring given the EA's emphasis on the importance of mimicking the natural hydrograph. See EA at 34. Nor does BLM justify why, contrary to the EA's explicit statement that BLM's senior hydrogeologist

^{15/} We note that the Policy was issued on Mar. 11, 1993, with an expiration date of Sept. 30, 1994. Although it is unclear whether BLM's Utah State Office had reissued or extended the Policy (see Southern Utah Wilderness Alliance, 164 IBLA 33, 42 n.9 (2004)), neither the EA nor BLM's Answer questions the viability of the Policy or its relevance to the issues raised by this appeal.

identified 0.37 cfs as an adequate maintenance flow to retain water table depth in the mesoriparian zone (EA at 34), it established 0.25 cfs as the year-round bypass flow amount for Birch Creek. See EA at 18. These defects fatally undermine the reasonableness of BLM's bypass flow calculations, a conclusion bolstered by BLM's own admissions that the diversion of flows in Birch Creek during the growing season would result in the creek remaining in at-risk condition or deteriorating to non-functioning condition and that, during below-average precipitation periods, the diversion in North Creek would jeopardize the maintenance of that creek's existing riparian condition. See EA at 30, 32; BLM Answer at 21, 22 .

Those admissions also unequivocally undercut BLM's claim that the project would not have significant impacts on the quality of the human environment. The questions raised about the project's impacts on riparian and other resources in the FWS and NPS comment letters and in Dr. Ohmart's declaration cast additional doubt on the validity of BLM's FONSI. See, e.g., SUWA SOR, Exs. 8, 10, 11, and 12. An appellant is not required to show that significant effects will, in fact, occur; rather the standard is whether the appellant "has alleged facts which, if true, show that a proposed project may significantly degrade some human environmental factor." Columbia Basin Land Protection Ass'n v. Schlesinger, 643 F.2d 585, 597 (9th Cir. 1980) (emphasis in original), quoted in Foundation for North American Wild Sheep v. United State, 681 F.2d 1172, 1178 (9th Cir. 1982). Appellants have met that burden in this case. ^{16/}

Although BLM's Answer explicitly eschews any reliance on mitigation measures to reduce impacts to insignificance (see BLM Answer at 28 (EA revealed no significant impacts and did not find that mitigation measures were necessary to reduce such impacts below a significance threshold)), to the extent the DR/FONSI can be construed as relying on the incorporated mitigation measures to minimize the project's impacts, that reliance is unwarranted. When a FONSI is predicated on a determination that mitigation measures will sufficiently minimize potentially significant impacts, NEPA requires that the agency analyze the proposed mitigation

^{16/} The CEQ regulations concerning preparation of an EIS encourage the environmental reviewer to scrutinize "[t]he degree to which the effects on the quality of the human environment are likely to be highly controversial." 40 CFR 1508.27(b)(4). That term properly refers to cases where a substantial dispute exists as to the size, nature, or effect of the action. Glacier-Two Medicine Alliance, 88 IBLA 133, 143-44 (1985), citing Rucker v. Willis, 484 F.2d 158, 162 (4th Cir. 1973). Inasmuch as the present appeals challenge the size and nature of the effects of the proposed action and as we have concluded that BLM did not properly address such effects, it would appear that those effects are "highly controversial" under 40 CFR 1508.27(b)(4). BLM should address this question on remand.

measures and reasonably assess their efficacy in reducing impacts to insignificance. Klamath Siskiyou Wildlands Center, 157 IBLA 332, 338 (2002); Powder River Basin Resource Council, 120 IBLA 47, 60 (1991); Nez Perce Tribal Executive Committee, 120 IBLA 34, 43-44 (1991); ^{17/} Idaho Natural Resources Legal Foundation, Inc., 115 IBLA 88, 91 (1990). An appellant has the burden of establishing that BLM failed to properly consider appropriate mitigation measures or that the contemplated measures will be inadequate to accomplish their intended purpose. Klamath Siskiyou Wildlands Center, *supra*. Simple differences of opinion, even by experts, regarding the effectiveness of various mitigation measures provide no basis for reversal. *Id.*

Although BLM was not required

to develop a complete mitigation plan detailing the “precise nature of the mitigation measures,” the proposed mitigation measures must be “developed to a reasonable degree.” [Wetlands Action Network v. U.S. Army Corp. of Engineers, 222 F.3d 1105, 1121 (9th Cir. 2000).] A “perfunctory description,” Okanogan Highlands Alliance v. Williams, 236 F.3d 468, 473 (9th Cir. 2000) (quoting Neighbors of Cuddy Mountain [v. U.S. Forest Service], 137 F.3d [1372,] 1380 [(9th Cir. 1998)]), or “‘mere listing’ of mitigation measures, without supporting analytical data,” is insufficient to support a finding of no significant impact. *Id.* (quoting Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1151 (9th Cir. 1998)). In evaluating the sufficiency of mitigation measures, we consider whether they constitute an adequate buffer against the negative impacts that may result from the authorized activity. Specifically, we examine whether the mitigation measures will render such impacts so minor as to not warrant an EIS. *See* Greenpeace Action [v. Franklin], 14 F.3d [1324,] 1332 [(9th Cir. 1992)].

National Parks & Conservation Association v. Babbitt, 241 F.3d 722, 734 (9th Cir. 2001).

BLM divides the mitigation measures incorporated into the DR/FONSI into pre-diversion measures detailing the monitoring and survey work needed to create a baseline inventory of existing vegetation, wildlife species, and riparian-obligate species within the riparian areas of North and Birch Creeks and into post-diversion

^{17/} In Nez Perce Tribal Executive Committee, we also distinguished between the requirements for completeness of a mitigation plan for purposes of an adequate EIS and those requirements for purposes of an EA relying on mitigation measures to support a FONSI. 120 IBLA at 43-44, n.13.

measures, including periodic monitoring to determine the water diversions' effects on baseline conditions in each creek and any appropriate reductions in the amount of water diverted. See BLM Answer at 25. While the pre-diversion measures will provide vital baseline data, they do not ensure that the impacts of the authorized activity will be insignificant.^{18/}

The post-diversion mitigation measures directing reductions in diversion flows when post-diversion monitoring indicates a downward trend (Mitigation Measures 2, 4, and 5), while clearly designed to minimize damage caused by the diversions, do not ensure that any harm will be reduced to insignificance. Although Mitigation Measure 2 identifies a 25 percent or greater decline in the baseline riparian vegetation community percentages as the trigger point for management re-evaluation of the percentage of allowable diversion water on a per season basis, it does not require that corrective action be taken. Nor has BLM explained why it selected a 3-year monitoring interval or shown that 3 years is a reasonable interval because any damage occurring during the interim period would not be irremediable. Additionally, none of the other mitigation measures adopt the 25 percent decline standard. For example, although Mitigation Measure 4 defines "downward trend," it does not include the 25 percent decline trigger point in that definition.

The adopted mitigation measures also contain varying time spans between the various monitoring activities. For example, Mitigation Measures 2 and 3 contain a 3-year monitoring interval; Mitigation Measure 4, which addresses North Creek, states that photo plot studies will be read and that data on species composition and vegetation density will be collected and monitored at least twice a year; Mitigation Measure 5, which discusses Birch Creek, contains no explicit monitoring schedule; and Mitigation Measure 6 indicates that Proper Functioning Condition surveys will be conducted at least every 5 years. It is unclear which of these monitoring activities will form the basis for BLM's downward trend determinations.^{19/} Additionally, the record is devoid of any analytical data demonstrating that the mitigation measures are reasonably likely to reduce the project's impacts to insignificance. The mitigation

^{18/} That data should, arguably, have been obtained before BLM approved the project. We note that BLM relies on these pre-diversion mitigation measures to counter SUWA's contention that the EA was defective because it did not set forth detailed information on existing riparian vegetation and other baseline data necessary for informed decision-making. See BLM Answer at 19-20.

^{19/} While the twice a year program included in Mitigation Measure 4, which provides for the reductions in the diversion from North Creek, would normally be read as setting the time periods for evaluating the conditions in that creek, the lack of any time frame in the comparable mitigation measure for Birch Creek (Mitigation Measure 5) militates against uncritically accepting that assumption.

measures incorporated into the DR/FONSI therefore are insufficient to support BLM's FONSI.

Our conclusion that the record does not support BLM's determination that approval of the project would not have a significant impact on the human environment and that the DR/FONSI and right-of-way issuance, therefore, must be set aside renders unnecessary any discussion of the additional issues raised by these appeals. Nevertheless, upon remand, BLM should carefully assess these arguments, including whether WHWCD and NEIC now envision a significantly smaller reservoir, and if so, how that changes not only the direct and indirect effects of the project, but also the purpose and need for the project and the availability and viability of reasonable alternatives to achieve that purpose and need. ^{20/}

^{20/} An EA must include a brief discussion of alternatives as mandated by section 102(2)(E) of NEPA, 42 U.S.C. § 4332(2)(E) (2000). See 40 CFR 1508.9(b); 516 DM 3.4(A). See also Great Basin Mine Watch, 159 IBLA at 354, and cases cited. Section 102(2)(E) of NEPA requires, independent of the necessity to file a formal EIS, that every Federal agency "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E) (2000). See also 40 CFR 1501.2(c), 1508.9(b). The requirement that appropriate alternatives be studied applies to the preparation of an EA even if no EIS is found to be warranted. Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228-29 (9th Cir. 1988), cert. denied, 489 U.S. 1066 (1989); Great Basin Mine Watch, supra.

Section 102(2)(E) requires BLM to consider "appropriate alternatives" to the proposed action as well as their environmental consequences. See 40 CFR 1501.2(c) and 1508.9(b); City of Aurora v. Hunt, 749 F.2d 1457, 1466 (10th Cir. 1984); Great Basin Mine Watch, supra; Southern Utah Wilderness Alliance, 158 IBLA at 217; Larry Thompson, 151 IBLA 208, 219 (1999). "Such alternatives should include reasonable alternatives to a proposed action, which will accomplish the intended purpose, are technically and economically feasible, and yet have a lesser impact. 40 CFR 1500.2(e)." Headwaters, Inc. v. BLM, 914 F.2d 1174, 1180-81 (9th Cir. 1990); City of Aurora v. Hunt, 749 F.2d at 1466-67; Great Basin Mine Watch, supra; Southern Utah Wilderness Alliance, 158 IBLA at 217; Sierra Club Uncompahgre Group, 152 IBLA 371, 378-79 (2000); Defenders of Wildlife, 152 IBLA 1, 9 (2000); Larry Thompson, 151 IBLA at 219-20; see also 43 CFR 1501.2, 1502.14, 1508.9; Wyoming Outdoor Council, 147 IBLA 105, 114 (1998). Mere disagreement or difference of opinion as to the proper alternative does not suffice to establish error in BLM's choice of alternatives. Great Basin Mine Watch, supra.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decisions appealed from are set aside and the matter is remanded to BLM for further action consistent with this opinion.

David L. Hughes
Administrative Judge

I concur:

James F. Roberts
Administrative Judge