



December 31, 2020

Sent Via email: bparker@transcon.com

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RE: Comments on [Draft Watershed Plan and Environmental Assessment](#) (Plan-EA) for the Cove Reservoir Project

Dear Mr. Parker,

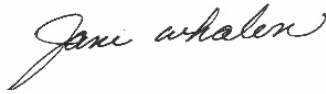
Please accept and fully consider these comments from Conserve Southwest Utah (CSU). CSU is a grassroots nonprofit 501(c)(3) organization based in Washington County, Utah, advocating for the conservation of our natural resources and was established in 2006.

CSU worked hard to help pass the Omnibus Public Lands Management Act of 2009 (P.L. 111-11). It designated the Red Cliff and Beaver Dam Wash National Conservation Areas and Wilderness Areas in Washington County. It also designated approximately 165.5 miles of the Virgin River and its tributaries across federal land within Zion National Park (28 segments) and adjacent Bureau of Land Management Wilderness (11 segments) as part of the National Wild and Scenic Rivers System.

Many CSU members and supporters live near, recreate in, and value Zion National Park. CSU's membership includes more than 2,500 individuals. These lands provide critical habitat and unique opportunities for sightseeing, hiking, camping, trail running, mountain biking, appreciation of archaeological resources and natural quiet, journaling, birdwatching, ecosystem

research, photography, and more. They are traditional homelands of Native Americans, including the Paiute Tribe. Our vision is that Southwest Utah grows in a manner that enables conservation and restoration of its natural and cultural resources. Our mission is to advocate for conservation and stewardship of our area's natural and cultural resources and implement the Smart Growth policies that enable conservation for the benefit of present and future generations.

Sincerely,



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## INTRODUCTION

CSU is concerned that the proposed action in the Plan-EA is not well thought out and lacks the supporting analysis recognizing its benefits to the watershed. It disrupts the existing watershed's ecosystem by diverting water from the East Fork of Virgin River into a reservoir and capturing 4.7 square miles of drainage behind the dam, preventing runoff from reaching the river. In our review, we suspect it is not a viable project because the sponsor doesn't have the winter and spring high water rights for the reservoir to capture this drainage water. The water right(s) used to fill a reservoir of this size has not been disclosed in the Plan-EA. The project will further diminish an already over-allocated East Fork of Virgin River, where existing deficits have not yet been addressed. It would create a new diversion from the East Fork at a time when existing water supply diversions (as well as ecological needs) already result in a functional deficit due to warming temperatures and shorter winters, leaving less snow melting in the headwaters of the East Fork's source. We are concerned that the project would worsen water deficits for other beneficial uses of the East Fork of Virgin River for Zion National Park and the Virgin River spinedace, desert sucker, and speckled dace that are imperiled Virgin River fishes and it would otherwise cause significant, un-mitigatable impacts on such uses.

For the purpose of commenting on the Plan-EA, the section in the Plan-EA receiving a comment is identified by the section number, title, and page number. Quoted text is italicized and indented. CSU's comments follow.

### **S-4.0 Purpose and Need for Action, page S-1:**

*“The purpose and need for this project is to improve agricultural water management by allowing for reliable water storage and irrigation water delivery for approximately 1,110 acres of agricultural lands located in western Kane County and 4,958 acres in Washington County, Utah, representing a potential crop increase of up to 25 percent.”*

### **CSU comment:**

The Plan-EA doesn't provide any analysis of the public benefit of spending \$30 million to provide more water to these agricultural lands so that they can produce more alfalfa hay.

The Plan-EA is insufficient because:

1. There is not demonstrated need for more irrigation water in Kane County or Washington County. Kane County had to pull out of the Lake Powell Pipeline project because the Bureau of Reclamation determined that they didn't need any more water. Washington County Water Conservancy District's (WCWCD) current claim is a need for more culinary water, not more irrigation water.
2. The water right for the project is not disclosed. The availability of water for the reservoir would affect the ability of the project to supply water to agricultural uses and to generate power. Therefore, the availability of water supply is directly related to the project's purpose and must be disclosed. The ability for the KCWCD to capture the water from the eleven subbasins above the dam to fill the reservoir needs to be verified. It is also unclear if there is enough physical water in East Fork River to sustain the reservoir over the 100-

year life span of the project. A study needs to be done on how much physical water there is flowing in the East Fork of Virgin and from the drainage up-gradient to the dam, and as water supplies decline as expected, who has the right to use it over the next 100 years, the life of the project. They also need to calculate how much water would be left in the Virgin River between the diversion for the project and where the critical aquatic species need it. These species need to include macroinvertebrates, which are the basis of the aquatic food chain. This is a critical analysis to include in the Plan-EA.

The KCWCD claims the only water being stored in the reservoir would be from the irrigation water rights of Orderville, Mount Carmel, and Glendale irrigation companies. However, the reservoir is 6,055 acre-feet in capacity, and that is much more water than the canal companies have water rights to. Table 1 shows water rights held by the three primary irrigation companies that would potentially receive water from the reservoir.

The Plan-EA does not describe: 1) whether the irrigation companies have a right to store the water up-gradient from the proposed reservoir at a different diversion point; 2) which water rights would be used to fill the reservoir; and 3) the amount of runoff water expected per year; 4) who now has rights to this water (if anyone); and 5) what is the depletion and what is the return flow and who will account for the depletion and return flow in their water right. Note that each of these irrigation company water rights is being protested, but there is no analysis of the potential impact of possible resolutions of the protests on the amount of that water for or from the reservoir.

Further, nowhere in the Plan-EA is there a description of how much depletion and return flows would be expected from water released from the reservoir to irrigate the alfalfa fields in Kane and Washington County.

**Table 1. Water rights held by irrigation companies in Kane County.**

Company	Water right	Amount of right (cfs)	Acres of beneficial use
Glendale Irrigation Company	<a href="#">81-1673</a>	7.23	Limited to 425 acres <b>THIS RIGHT IS BEING PROTESTED IN A PROPOSED DETERMINATION BOOK!*</b>
Mt. Carmel Irrigation Company	<a href="#">81-1141</a>	6.56	395 acres <b>THIS RIGHT IS BEING PROTESTED IN A PROPOSED DETERMINATION BOOK!*</b>
Orderville Irrigation Company	<a href="#">81-1139</a>	4.42 1062 AF	265 acres <b>THIS RIGHT IS BEING PROTESTED IN A PROPOSED DETERMINATION BOOK!*</b>
<b>Total</b>		<b>18.21 CFS</b>	
*Red text is taken from the Division Water Rights web site. It is uncertain if the amount of the water right is correct or disputed.			

CSU notes that the average flow of the river between November and March is 17 CFS at the Glendale USGS gage # 9404450. Table 1 points to the problem of the over-allocation of a diminishing resource water; new binding agreements will be needed to protect the ecosystem health for the fishes of the East Fork of the Virgin River and still provide water to the irrigation companies. The planned reservoir requires too much water; it would change the natural flow of the river and negatively affect the fragile natural ecosystem of the East Fork.

Just as importantly, it seems the KCWCD wants to capture runoff from the 4.7 square miles of watershed behind the dam. But not only does Utah’s water law not allow enlargement of the existing water rights of the canal companies, the Plan-EA fails to determine the amount of surface flows that would be blocked by the reservoir and dam. It would significantly change the flow of the river and needs to be accounted for. The Zion National Park Water Rights Settlement Agreement is focused on depletions, but none of this critical information on depletions and return flows is in Plan-EA.

3. The Plan-EA fails to follow the NEPA regulations 40 CFR § 1500.1(b). NEPA’s purpose is to ensure that environmental information is available to decision makers before decisions are made; it emphasizes that “accurate scientific analysis” is “essential.”

**The Plan-EA continues:**

*“An opportunity exists to provide additional renewable energy for local communities whose populations are expected to continue to increase in the near future (Kane County 2017, 2018). The existing Glendale hydroelectric plant does not meet the needs of the community, and the Orderville plant currently only generates power during the fall, winter, and early spring months. New facilities and the availability of water during the summer months would provide opportunities to help meet these energy needs.”*

**CSU comment:**

The Plan-EA fails to describe how the diversions of the East Fork to the two hydropower plants will change the timing of the flows, the temperature, and water quality. There are no site plans for the two hydropower plants or their diversions and how much water will be diverted, at what time, how will the temperature of water change and so on. The economic aspect also needs adjustment, since any revenues from the sale of hydropower will be offset by the cost of power needed to pump the water through the pipeline to the reservoir.

**The Plan-EA continues:**

*“A need exists to improve habitat for two federally-listed fish species, the Virgin River chub and woundfin, through the availability of additional water during summer months to supplement Virgin River flows in Washington County. Additional water would particularly benefit habitat in the La Verkin Hot Springs area (also known as Pah Tempe Hot Springs) where the water temperature and salinity are higher than in other parts of the river. The WCWCD currently pumps water upstream from Quail Creek Reservoir in order to decrease the water temperature and salinity levels in the La Verkin Hot Springs area. The additional yield from the Cove Reservoir water can be added to the Virgin River flows upstream of the Washington Fields Diversion Dam to further reduce the salinity levels of the Virgin River below La Verkin Hot Springs area by dilution. Lower salinity levels provide for increased crop production in the Washington Fields.”*

The Plan-EA is deficient for the following reasons:

1. Its hydrology analyses of the water for the fishes is missing and needs to be based on sound science and assumptions.
2. It does not provide a direct assessment of the reliability of the project for the projected 100-year life of the project.

3. It doesn't consider lower flows in the East Fork of the Virgin River predicted by 2050, ranging from -7 percent to -27 percent from Udall and Overpeck<sup>1</sup> and -14 percent to -31 percent from Milly and Dunne<sup>2</sup>.
4. It doesn't consider how lower flows will directly affect the natural resources of water and animals.
5. The Plan-EA fails to incorporate the cumulative effect of the Quail Lake Diversion withdrawals from the Virgin River.

From: 40 CFR 1500.1 Purpose and Policy (b): NEPA procedures are intended...

*"...to ensure that relevant environmental information is identified and considered early in the process in order to ensure informed decision making by Federal agencies. The regulations in this subchapter are also intended to ensure that Federal agencies conduct environmental reviews in a coordinated, consistent, predictable and timely manner, and to reduce unnecessary burdens and delays."*

The Plan-EA purpose and need leaves out critical information listed in these comments. The information does not provide the public with adequate, clear, and high-quality scientific analysis.

#### **S-5.0 Description of the Preferred Alternative, page S-2:**

*"Permanent facilities would consist of a 6,055-acre-foot storage reservoir, principal and auxiliary spillways, 3.2 miles of access road, and pipelines that would access the reservoir and the new Glendale hydroelectric power plant. The hydroelectric plant is an opportunity provided by the project. The cost of the plant would be borne by the applicant. The anticipated life of the dam and reservoir would be approximately 100 years following 3 years of construction. The existing Glendale hydroelectric power plant, which is currently inoperable, would be relocated to a point near the existing Orderville Diversion Dam. The power production of the new plant would be between 200,000 and 540,000 kW per year. A transmission line would be extended from the new hydroelectric plant location to an existing transmission line. The Orderville hydroelectric power plant would continue to operate at its present location and would not be modified. However, releases from the proposed reservoir could allow the plant to produce an undetermined amount of energy during the summer months when it is normally inactive. This energy production would replace normal production times in the spring and fall. It is anticipated that the Orderville plant would produce approximately 440,000 kW hours per year, resulting in an average annual gross revenue of \$19,000."*

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<sup>1</sup> Udall, B and Overpeck, J. "The Twenty-First Century Colorado River hot drought and implications for the future", AGU Water Resources Research, 4 March 2017, pages 2404, 2407, at [http://conserveswu.org/wp-content/uploads/Udall\\_et\\_al-2017-Water\\_Resources\\_Research.pdf](http://conserveswu.org/wp-content/uploads/Udall_et_al-2017-Water_Resources_Research.pdf).

<sup>2</sup> Milly, P.C.D. and Dunne, K.A. 2020. "Colorado River flow dwindles as warming-driven loss of reflective snow energizes evaporation". Science 367 (6483), 1252-1255. DOI: 10.1126/science.aay9187, at: <https://science.sciencemag.org/content/367/6483/1252.abstract>

**CSU comment:**

The Plan-EA does not describe how the releases of water from the Orderville and Glendale power plant could change the timing of flows, the temperature, the amount of flow, and how those factors might affect the Virgin spinedace, desert sucker, and speckled dace's habitat. Moreover, it is not adequate to approve these two hydropower plants in Plan-EA because so much information is missing regarding the plants' diversions from the East Fork Virgin River.

***S-9.0 Project Benefits, page S-4:***

*“The primary benefit of implementing the proposed project would be an improved availability and distribution of irrigation water for local users. The additional water is needed to offset annual shortages that occur during the summer months primarily due to a lack of storage capability. The project would further provide improved green energy production for local communities. Significant new recreation opportunities (camping, fishing, boating, day-use, etc.) would be made available. The reservoir and surrounding riparian zone would also provide limited habitat for waterfowl. Finally, the project would provide additional water for the federally-listed [sic] endangered Virgin River chub, woundfin, and southwestern willow flycatcher located downstream in the Virgin River in Washington County, Utah. While these benefits cannot be measured in dollars, the additional water would assist in the habitat management of the three listed species.”*

**CSU comment:**

CSU questions the benefit to the endangered woundfin and Virgin River chub. The woundfin is already extinct and is now grown at fish farms and put back in the river. There is no analysis provided that shows 882 acre-feet of water would be a benefit to these fishes. There needs to be analysis of how much water the WCWCD diverts from the river at the Quail Lake Diversion and how much it releases back to river. There is no description how this extra water gets to this section of the river. The diversion dam only allows a very small amount of water to flow past the diversion. The diversion severely disrupted the natural flow of river for the endangered fishes and 882 acre-feet annually may not be a significant benefit, but there is no analysis provided in the Plan-EA that it would be a benefit. Most importantly, there are no permanent agreements by all the agencies to provide this amount of water to benefit the fishes for the 100-yr life of project. We suspect the water use will change to culinary use and not be used as instream flow for the fish for more than a few years. Most troubling is that no measuring and monitoring of flows is required over the 100 years of the project for the fishes in the East Fork of the Virgin River.

***Table S-4. Summary of Resource Concerns and Potential Environmental Impacts, page S-5, et seq.***

***Water Resources, Water Resources (surface water quality and quantity):***

*“Construction activities would occur in drainages and near water sources. Two potential borrow pit sites would be accessed by crossing the East Fork Virgin River on existing dirt roads. Use of the third borrow site would not affect any water resources. Storage of surface water would provide additional water for summer irrigation and recreation. Interception of ephemeral floodwater could occur. Construction activities near water*



*areas could result in short-term water quality reduction. Long term, the proposed reservoir would provide additional water to local water users during summer months by improving irrigation system efficiencies on approximately 1,110 acres in Kane County and 4,958 acres in Washington County. Sediment resulting from ephemeral floods could be captured by the reservoir. Crossing the East Fork Virgin River to access two borrow pits could result in localized stream bank erosion and short-term sediment in the river.”*

**CSU comment:**

The Plan-EA does reveal that the trucks must drive through the East Fork of the Virgin River to access Lamb’s Pit and Tait Pit, two of the gravel pits, but it fails to assess the sedimentation associated with that disturbance. Consequently, if it takes 3 years to build the project, the impact on the river’s water quality could be significant.

***Water Resources, Waters of the U.S.:***

*“Six potentially jurisdictional determination (PJD) intermittent stream systems—one perennial stream and two artificial wetlands—are located within the study area and could be affected by construction activities. Two potential borrow pit sites would be accessed by crossing the East Fork Virgin River on existing roads. The PJD intermittent stream systems located within the actual proposed reservoir footprint would be inundated once the reservoir is filled. Two intermittent stream systems cross the proposed Glendale pipeline and would be disturbed during construction activities. No PJD systems would be disturbed by use of the borrow pits.”*

**CSU comment:**

The dry drainages above the Cove Reservoir dam are very deep and show evidence of substantial erosion, presumably because of the topography. Not enough information is provided on just how the US waters will be protected or managed and who will have rights to the water from these drainages. There is no analysis how fast the reservoir will fill from silt. Further, since these soils are noted as highly erodible making a earthen dam out of these soils could pose a risk of failure in a heavy rain storm.

***Water Resources, Riparian/Wetland Areas:***

*“Two artificial wetlands totaling approximately 0.76 acre are located within the project area. Mature riparian vegetation is located along the East Fork Virgin River. These resources could be affected by development of the proposed project. No riparian/ wetland areas are located near any of the potential borrow pit sites.”*

*“Approximately 0.17 acres of a 0.73-acre artificial wetland could be disturbed by construction of the Glendale hydroelectric power plant pipeline. This effect would be short term as the wetland would be reclaimed following construction. The other 0.03-acre wetland would not be affected. Some riparian vegetation along the river such as forbs and grasses could be lost during low flow. No riparian or wetland vegetation would be disturbed from borrow pit development and use.”*

**CSU comment:**

The project will take high water flows away from the current riparian zone that significantly changes the ecosystem and needs an analysis.

***Water Resources, Virgin River:***

*Two artificial wetlands totaling approximately 0.76 acre are located within the project area. Mature riparian vegetation is located along the East Fork Virgin River. These resources could be affected by development of the proposed project. No riparian/ wetland areas are located near any of the potential borrow pit sites.”*

*“Approximately 0.17 acres of a 0.73-acre artificial wetland could be disturbed by construction of the Glendale hydroelectric power plant pipeline. This effect would be short term as the wetland would be reclaimed following construction. The other 0.03-acre wetland would not be affected. Some riparian vegetation along the river such as forbs and grasses could be lost during low flow. No riparian or wetland vegetation would be disturbed from borrow pit development and use.”*

**CSU comment:**

The Plan-EA lacks the detailed analysis of this loss of habitat to a healthy functioning ecosystem as a whole. What is the current baseline health of the watershed’s ecosystem? Is it healthy? Is it distressed? We do know the North Fork is failing to meet healthy water quality standards because of too much grazing. It seems unlikely that more agriculture with increased use of fertilizers will help a watershed that already has too much agriculture along the Virgin River causing too many water quality problems. The Virgin River watershed is shared by two other states, Arizona and Nevada, and all care about return flows and their water quality. This analysis of the watershed as whole needs to consider the impact to downstream water rights holders as well. It could be that the Virgin River has hit its limits on development, and it is time to put a priority of protecting its ecosystem health and do some restoration projects with these federal funds, instead.

***Water Resources, Floodplains:***

*“Portions of the Glendale pipeline and new hydroelectric power plant would be located in a Federal Emergency Management Agency- (FEMA) designated Zone A floodplain. The reservoir would be located in a drainage area subject to infrequent ephemeral flash floods. None of the borrow pit sites are located near a designated floodplain.”*

*“The proposed reservoir would decrease flooding for 0.75-mile of tributary downstream from the dam site to the East Fork Virgin River. Conservation measures and BMPs would reduce the potential of flooding-related effects to the pipeline and hydroelectric plant; however, residential homes, barns, and other outbuildings located within the Zone A floodplain could be affected by severe floods.”*

**CSU comment:**

Maps of floodplain and how they would be affected by reduced winter flows and increased summer flows need to be provided. Most importantly, the change of flow patterns in the summer within the famous slot canyons of the Bureau of Land Management's Parunuweap Canyon Wilderness Study Area (WSA) of 30,800 acres has to be considered in the Plan-EA. This WSA boundary is close to the project area along the East Fork and downstream of the burrow pits.

**Wild and Scenic Rivers page S-6:**

*“The East Fork Virgin River is designated as Wild under the Wild and Scenic Rivers Act where it flows through Zion National Park. Water flows in this area may be altered.”*

*“Changes in flow rates may affect the wild qualities of the river.”*

**CSU comment:**

The Plan-EA ignores the impact of the water withdrawal to the ecosystem health of East Fork of the Virgin River, which is congressionally designated as a Wild and Scenic River. It was noted in the Plan-EA that flows may be altered but that concern was never analyzed. The Plan-EA concluded that this section of river would not be adversely affected without providing any evidence for the conclusion.

**2.6 Wild and Scenic Rivers, page 17:**

*“The East Fork Virgin River enters Zion National Park approximately 20 river miles downstream and southwest of the proposed project area. The river flows through the Park from the east boundary to the west boundary. This portion of the river has been designated as wild under the Wild and Scenic Rivers Act (National Wild and Scenic Rivers System 2018). This designation means that the river is free of impoundments and generally inaccessible, except by trail, and includes watersheds or shorelines that are essentially primitive with waters unpolluted, representing vestiges of primitive America. Outstandingly remarkable values (ORV) associated with this stretch of the river include cultural, geologic, ecological processes, wildlife, and fish. Additionally, the East Fork Virgin River was designated as a Research Natural Area in 2001. The area has been set aside for research purposes and is closed to recreation (NPS and BLM 2013).”*

**CSU comment:**

Unfortunately, the outstandingly remarkable values (ORV) of the river are not adequately analyzed in the Plan-EA. the proponents appear to have ignored the need to protect these values required by a Wild and Scenic designation. More importantly, there is a responsibility of the federal agencies to protect the values in a designated Wild and Scenic River. From the Congressional Research Service itself:

*“Restrictions on Development Projects Under the Wild Scenic Rivers Act:*

*“In addition to using reserved water rights to protect the flows of designated rivers, the WSRA provides protection for a designated river by limiting the licensing of dams, reservoirs and other water project works on, or adversely affecting, protected segments. The WSRA prohibits the Federal Energy Regulatory Commission (FERC) from licensing*

*"the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act ... on or directly affecting any river" designated as part of the national wild and scenic rivers system. Likewise, no other federal agency may "assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which [a designated] river was established." The prohibitions on water and power projects are very broad in the WSRA. The prohibitions generally limit federal agencies from recommending authorization of such projects, or appropriations to begin construction on such projects, that would have an adverse affect [sic] on the purpose of the designation.*

*"The restrictions placed on FERC and other federal agencies regarding rivers designated under the WSRA extend to rivers designated as potential additions to the wild and scenic rivers system, at least to some degree. The same prohibition on licenses for construction or assistance for construction applies for a period of three complete fiscal years following any congressional action that designates a river as a potential addition. However, if, during that period, the relevant administering agency determines that the river should not be included in the wild and scenic rivers system and provides appropriate notice to Congress, the project agency may proceed with project plans.*

*"The act does not prohibit "licensing of, or assistance to, developments below or above a wild, scenic or recreational river area or on any stream tributary thereto which will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area on the date of designation" as an addition or potential addition to the wild and scenic rivers system. ”<sup>3</sup>*

The East Fork corridor shelters one of only two designated Wild and Scenic Rivers in the state, and with 30,800 acres of its watershed formally designated by the Bureau of Land Management as a Wilderness Study Area that includes<sup>4</sup> historic significance honoring the explorations of the East Fork by John Wesley Powell, Stephen Jones, and Joseph Young in 1872, the impacts of altering flows caused by the proposed reservoir require more careful assessment. How will the project's release of more water in the summer affect the hikers in these slot canyons? NRCS must do an EIS to determine the impact of the proposed projects on this designation and Zion National Park.

### **1.1.2 Conformance with Existing Federal, State, County, and Local Land Use Plans, page 5:**

*"Furthermore, the plan states that, 'Kane County supports the protection of its Wild and Scenic River segments for the current and future use of its citizens as long as such*

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<sup>3</sup> Congressional Research Service, "The Wild and Scenic Rivers Act (WSRA): Protections, Federal Water Rights, and Development Restrictions", at: [https://www.everycrsreport.com/reports/R41081.html#\\_Toc283789983](https://www.everycrsreport.com/reports/R41081.html#_Toc283789983), accessed December 28, 2020.

<sup>4</sup> Natural Atlas, "Parunuweap Canyon Wilderness Study Area", map, at: <https://naturalatlas.com/wilderness-study-areas/parunuweap-canyon-2101438>, accessed December 30, 2020.

*designation does not affect water rights, water quality of downstream users, water resource planning, and access to and across river corridors within these designated rivers' (Kane County 2017)."*

**CSU comment:**

Kane County has stated it will not abide by the regulations that protect the East Virgin River Wild and Scenic designation. Therefore, this grant application should not be granted until there is a commitment that Wild values will be protected on this river. New agreements and assurances must be made before NRCS approves this project.

**Table S-4. Summary of Resource Concerns and Potential Environmental Impacts Animal Species, page S-7:**

*"No USFWS-designated critical habitat or suitable habitat for federally-listed threatened or endangered animal species exists within or near the proposed project area including borrow pit sites. Two listed fish species and one listed bird species are known to occur approximately 50 river miles downstream from the proposed reservoir. Water from the reservoir would improve habitat for the endangered Virgin River chub, woundfin, and southwestern willow flycatcher."*

*"Additional water provided by the proposed reservoir (up to 882 acre-feet annually) would improve federally-listed [sic] Virgin River chub, woundfin, and southwestern willow flycatcher habitat. No other impacts to listed plant or animal species is anticipated."*

**CSU comment:**

The Plan-EA omitted analysis of the proposed projects on Virgin spinedace, desert sucker and speckled dace. The *Virgin spinedace Conservation Agreement* is not considered in the Plan-EA, though it is part of the Virgin River Resource Management and Recovery Program (Program). The *Virgin River Resource Management and Recovery Program (Program)* establishes a multi-agency cooperative program of the United States Fish and Wildlife Service (USFWS), Bureau of Land Management (BLM), National Park Service (NPS), Utah Department of Natural Resources (UDNR), and the Washington County Water Conservancy District (WCWCD). Two goals have been defined for the Program. These goals have been developed from the objectives, actions, and tasks outlined in the Virgin River Fishes Recovery Plan (VRFRP), the Virgin Spinedace Conservation Agreement and Strategy (VSCAS), and the Virgin River Management Plan (VRMP). These goals include: Goal 1: Implement actions to recover, conserve, enhance, and protect native species; and Goal 2: Enhance the ability to provide adequate water supplies for sustaining human needs.

The Virgin River fishes, Virgin spinedace, desert sucker and, speckled dace, were considered to be imperiled aquatic species and are in the river reach of East Fork Virgin River.

The Spinedace Conservation Agreement was developed to expedite measures which have been identified by the USFWS and the Utah Division of Wildlife Resources for the continued existence and conservation of Virgin spinedace (*Lepidomeda mollispinis mollispinis*),

flannelmouth sucker (*Catostomus latipinnis*), desert sucker (*Catostomus clarki*), speckled dace (*Rhinichthys osculus*), and the southwestern toad (*Bufo microscaphus*). Implementation of the Program will also reduce threats to these species that might otherwise warrant listing as a sensitive, threatened, or endangered species.

NRCS must consider the Virgin Spinedace Agreement in the Plan-EA.

***S-14.0 Major Conclusions, page S-9:***

*“No significant adverse impacts to the human environment are anticipated from the implementation of the proposed project; however, impacts resulting from project implementation would be cumulative to several other actions identified in Section 4.4. Improved water distribution for irrigation and other agricultural purposes would result. Increased green energy would be produced by the relocation and improvement of the existing Glendale hydroelectric power plant and by providing water during summer months for the expanded use of the existing Orderville hydroelectric power plant. The reservoir and associated facilities would provide substantial new recreation opportunities. Additional water would be available for downstream federally-listed endangered fish habitat management in Washington County.*”

*“The Preferred Alternative is the most environmentally friendly Alternative and also has the greatest net economic benefits of all Alternatives analyzed. This Alternative represents both the Preferred Alternative and the NED Alternative.”*

**CSU comment:**

CSU explained in these comments that too much information on the project is missing for NRCS to conclude that there is no significant impact on the natural environment from this project. A full Environmental Impact Statement is required.

**SECTION 2 AFFECTED ENVIRONMENT, page 15 et seq.**

**2.2 Water Resources (Surface Water Quality and Quantity), page 15:**

*“The average annual flow for the river from 1967 to 2018 ranged from an average high of 33.8 cfs in April to an average low of 9.9 cfs in August (Appendix D). Access to two of the potential borrow pit sites (Lamb and Tait) would require vehicles to cross the East Fork Virgin River on existing dirt roads. The river carries high sediment loads during these storm events.”*

**CSU Comment:**

It will take three years to build the project, and the Plan-EA describes reductions in reservoir volume resulting from sedimentation, but the Plan-EA doesn't consider that heavy equipment will have to cross the East Fork and gather material on the other side of the river from two existing borrow sites to provide gravel and riprap for the proposed project. The sediment load in the east fork could be dramatically increased. The amount of material to build the dam and reservoir is estimated to be 4,360,000 cubic yards, the same amount of concrete used to build the

Hoover Dam and power plant.<sup>5</sup> This is also in an area with highly erodible soils that could degrade water quality downstream. NRCS must analyze how this project affects the wilderness values of the Bureau of Land Management’s Parunuweap Canyon Wilderness Study Area (WSA) (30,800 acres) downstream of project.

**SECTION 4 ENVIRONMENTAL CONSEQUENCES 4.1 Introduction, page 49:**

*“The NRCS has a responsibility under NEPA to identify and analyze potential effects on the human environment that may result from implementation of the alternative plans. This Plan-EA analyzes a No Action and a Preferred Alternative. The following describes the potential effects of implementation of each of the Alternatives on the resources described in Section 2.0.”*

**CSU Comment:**

Utah River’s Council scoping comment in 2018 regarding climate change should be considered in assessing water availability for the project. NRCS ignored the issue in the Plan-EA. Thus, the advantages and impacts of project could be much different in a climate regime where there is less precipitation. Further, the baseline date for the NO ACTION alternative is missing, such as the baseline flows of the East Fork of Virgin, depletions, timing, returns flows, temperatures and water quality.

The other alternatives studied were only about different dam sites and not the proposed purpose of the project being the need for water for growing more alfalfa. It would be much better to focus precious funds on better agricultural practices to conserve water in preparation for expected changes in precipitation patterns than spending \$20 million of federal funding such as metering all agricultural water use.

Moreover, farmers chose to grow alfalfa, a crop demanding excessive amounts of irrigation, in the second driest state in the Union. It is inappropriate to spend more taxpayer’s money to provide more water to grow more of it. Water for alfalfa would be a massive subsidy to a very small special interest group,

**SECTION 4 ENVIRONMENTAL CONSEQUENCES, Cumulative Effect, page 49:**

*The impact on the environment that would result from the incremental impact of implementation of the Preferred Alternative when added to other past, present, and reasonably foreseeable future actions regardless of the agency (federal or non-federal) or person undertaking such other action.”*

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<sup>5</sup> Bureau of Reclamation, “Hoover Dam, Frequently Asked Questions and Answers, The Dam”, at: <https://www.usbr.gov/lc/hooverdam/faqs/damfaqs.html#:~:text=There%20are%204%2C360%2C000%20cubic%20yards,dam%2C%20powerplant%20and%20appurtenant%20works>, accessed December 29, 2020.

*“The spatial definition for the cumulative effects includes the area around the proposed reservoir, upstream to the town of Glendale, and downstream along the East Fork Virgin River past the communities of Orderville, Mt. Carmel, and Mount Carmel Junction.”*

**CSU Comment:**

There was no analysis of the cumulative effects on the project of diversions upstream and downstream on the East Fork Virgin River. There is no evaluation of resizing and building a new pipeline from the reservoir, and no consideration of the effects of putting the two hydropower plants into operation. In addition, how does the Zion National Park’s sewage lagoon system in Rockville impact the health of the Virgin River? How does the problem with grazing on the North Fork impact the water quality? Since this is a proposed watershed plan it must consider the health of Virgin River watershed as an entire ecosystem.

**Miscellaneous CSU Comments:**

1. The Plan-EA includes the “East Fork Virgin River Instream Flow Memorandum of Understanding (MOU)” between Kane County Water Conservancy District, Orderville Irrigation Company, UDWR, and USFWS. This MOU discusses an agreement between the parties, regulating water flows on the East Fork Virgin River (KCWCD 2001; Appendix E). It should be updated as an agreement of proposed operation of the project and include protection to flows for the Virgin spinedace, desert sucker, and speckled dace, the imperiled Virgin River fishes. CSU requests a copy of “The East Fork Virgin River Instream Flow Study March 2001” by Watershed Systems Group of Logan, Utah, that was the basis of the study.
2. WCWCD sent a letter June 20, 2018 asking for a study to determine whether WCWCD’s water rights would be harmed by the project. They wrote: “the project must evaluate the proposed reservoir and its function on the District’s ability to capture and store water within its existing rights. Any negative impacts to existing rights and uses in the basin must be addressed to the satisfaction of the District.” CSU requests that study be completed as well on the water rights on the East Fork Virgin.
3. The NEPA analysis by Alpha Engineering, without providing any evidence, erred in its conclusion that the project would have no effect on the Wild and Scenic designation or imperiled Virgin River fishes. It also failed to consider the cumulative impact of the two Hydro-power plants on changing the flow of the river. Further, it disregarded the Conservation Spinedace Agreement and the best available science on how climate change will reduce the East Fork of the Virgin water supply to senior water right holders. They also ignored impacts to the Bureau of Land Management’s Parunuweap Canyon Wilderness Study Area (WSA) of 30,800 acres that is very close to the project area.
4. This use of federal funds for growing more alfalfa, which essentially exports water from Washington County, does not seem like the best use of NRCS funding, especially during a pandemic or afterward as the country attempts to recover from a pandemic.
5. This project is inappropriately justified on the basis of agricultural production because it’s likely that within a few years KCWCD will sell the water rights for use as M&I in Washington County and, if yielding net income to KCWCD, there is no provision for



returning the profits to the federal treasury. Moreover, farmers chose to grow alfalfa, a crop demanding excessive amounts of irrigation in the second driest state in the Union. It is inappropriate to spend more taxpayer's money to provide more water to grow more of it. Water for alfalfa would be a massive subsidy to a very small special interest group.

6. How does the proposed reduction sought by WCWCD in minimum stream flow in Virgin River from 86 to 50 cfs protect ESA-listed species between La Verkin Hot Springs and Washington Fields diversion? Dr. James Deacon's undated report (ca. 1998), claims that the 86 cfs threshold was based on the species' needs, whereas the 50 cfs threshold only considered water rights?
7. What effect would the Cove Reservoir diversion have on winter flows in the Virgin River? The north fork provides ~60% of the winter flows to the main stem, but the Quail Creek diversion typically takes all of the flow. The DWR Publication 10-18, titled "Winter Flow Storage Protocol and Bypass Flow Management at the Washington Fields Diversion", suggests reductions in flow below 60 cfs would dramatically reduce winter habitat for the Virgin River fishes between La Verkin Hot Springs and WFD. This belies the claim that 882 acre-feet would be a valuable flow to recovery the fishes.
8. In public meeting, KCWCD estimated 190 AFY evaporation; that seems unwarranted in a basin alleging inadequate water for future development. How does it compare with evaporative losses of water that would be stored underground at Sand Hollow Reservoir?
9. The Plan-EA says the CR will have a "conservation pool of approximately 300 acre-feet of water (with a maximum water depth of approximately 20 feet)" and "a surface area of approximately 34 acres" (p. 28), but there is no analysis to address whether that would support a sport fishery, and if that sport fishery would result in introductions of nonnative species that could threaten the spinedace in ZNP or the endangered woundfin and chub downstream.
10. This project would alter water flow and, if a sport fishery is provided in the CR, the project could introduce exotic fish. Page 19 acknowledges: "The chub have been drastically reduced in numbers and distribution from historic times, primarily due to water flow alterations and the presence of exotic fish, such as the red shiner (*Cyprinella lutrensis*) (UDWR 2018a). The distribution of the woundfin also has been substantially reduced from historic ranges due to water flow alterations, reductions, and the presence of exotic fish." This possibility needs to be addressed in the watershed management plan for the reservoir.
11. The Plan-EA does not identify where farmers will use CR water, how much return flow there will be, and what the water quality of that return flow will be.
12. Borrow pit impacts:
  - a. No estimates for amount of material from each pit. Table 11 only gives amounts of types of material.
  - b. No description of how to minimize dust when accessing borrow pits, p. 32 et seq. (total disturbance ~75 ac, total 4,319,000 cu yd removed), and over 7 miles of dirt road along Glendale Bench Road.
  - c. No analysis on the impact of sedimentation from extracting material from the borrow pits on the values of the Bureau of Land Management's Parunuweap

Canyon Wilderness Study Area (WSA) of 30,800 acres that is close to the project area.

13. Descriptions of operation of the hydropower plants appear to be insufficient and not adequate to approve the new Glendale hydropower plant.
14. Spillways: no analysis of whether the proposed secondary spillway will survive an overflow event, as it is an earthen structure (trapezoidal earthen channel 1,070 feet long and 30 feet wide).
15. Campground and recreation facilities
  - a. KCWCD has not arranged for management of the recreation facilities (4.1-acre outdoor recreation area, boat ramp, picnic facilities, pavilion, restrooms, 20 overnight camping facilities, 10 primitive camping sites, 10 recreational vehicle sites). (“KCWCD would anticipate contracting with a separate state or local governmental entity to manage the recreation area.”)
  - b. Does KCWCD anticipate rezoning along the access roads around the reservoir to allow the sale of property and for homes to be constructed along the access road to help finance project? Plan-EA says, “The pipeline would be an 8-inch line with fire hydrants located every 500 feet.”
  - c. There is no plan to protect against invasive species, such as quagga mussels, brought in by recreational boaters. KCWCD alleged in the public meeting that quagga mussels are not a riverine species, so they are not concerned with movement of species into other parts of the system, and that, since the biggest problems are with boats that sit for long periods of time or boats that flush ballast, and Cove Reservoir will be non-motorized. This issue needs to be addressed, nonetheless.
  - d. Increases to recreation opportunities are an insignificant justification when compared to what already exists in Kane and Washington Counties. The public has already sacrificed Glen Canyon for water recreation and southern Utah has been assailed and natural systems damaged by the over-promotion of public lands by Utah’s commercial interests; we certainly don’t need to artificially encourage more.
16. It is unclear what share of non-NRCS funding will be apportioned to KCWCD, WCWCD, and UDWR (Wildlife). (How much of the \$5,109,000 to be used for construction of the reservoir, access road and Glendale pipeline will come from WCWCD? How much of the \$2,787,000 to be used for construction of the recreation facilities and associated portion of the access road will come from WCWCD?)
17. Will increased pressure on local tourism touted as justification for the project require additional public funding for new development to support that tourism?
18. No analysis of effects of climate change on reduced water flows in Virgin River.
19. The Cove Road that goes into the reservoir is very narrow and winding. If recreation use will increase, who will be required to pay for, and ultimately improve, the road and when?
20. CSU requests that the EA include estimates of how much water would enter the reservoir from the eleven watershed subbasins that would drain into the reservoir. Further, NRCS

should disclose how much water these subbasins will contribute to the reservoir every year.

## CONCLUSIONS:

It is noteworthy that farmers along the East Fork are receiving less water in the summer, a pattern happening to agricultural producers across the West. Temperatures are rising, increasing evaporation and premature snowmelt and reducing summertime water supplies. The solution to build a dam will not likely provide extra water for the 100-yr life of the project. The East Fork, like most rivers in Utah, is already over-allocated. NRCS must determine, as best they can, how climate change will alter physical water available in these watersheds for the projected 100-year life of the project and who has the priority to use it before they approve such a large storage project. Water rights for Zion National Park, the Wild and Scenic River designation, and downstream senior water users need to be considered. Most importantly, NRCS must address the change of flow patterns in the summer within the famous narrow slot canyons of the Bureau of Land Management's Parunuweap Canyon Wilderness Study Area (WSA) of 30,800 acres. This WSA boundary is fairly close to the project area along the East Fork and downstream of the burrow pits.

KCWCD claims they have already spent \$2 million building the project piecemeal. The property for the reservoir was purchased, a pipeline was built double its original size from the proposed reservoir to the Orderville diversion, and they participated in the Orderville diversion. They left these vital components out of the environmental review of the Plan-EA. They applied for the NRCS grant in 2017 and three years later, in 2020, the project completes a watershed plan and an environment assessment omitting key information.

A major problem with the project is that it diverts water from the East Fork in two ways; building a dam to contain runoff from 4.7 square miles in eleven subbasins that would normally flow to the East Fork *plus* the diversion of mainstem East Fork flows into the reservoir. Both of these withdrawals from the East Fork watershed disrupt the natural flow of the river and neither are adequately analyzed in the Plan-EA.

KCWCD is claiming a benefit of the project, without evidence, of extra production of alfalfa for farmers on their existing fields and leaving a very small amount of water for the endangered fishes. It is unconscionable to invest \$20 million of public funds to water yet more alfalfa that will further degrade natural systems.

As we outlined in these comments, the current Plan-EA is missing crucial information and many questions are unanswered. Therefore, the conclusion in the Plan-EA that there is no significant impact of the project on environment has no merit. There is inadequate analysis of impacts to Wild and Scenic River values downstream of the project. There is inadequate analysis of effects on imperiled species by reductions in flows in the East Fork Virgin River caused by diversions into the proposed reservoir. There isn't any assurance offered that Zion National Park, or the Wild and Scenic values of the East Fork, or the Bureau of Land Management's Parunuweap

Canyon Wilderness Study Area (WSA) of 30,800 acres will be protected. These are National Conservation Lands set aside for future generations as pristine wild lands. NRCS and CSU have a responsibility to preserve these lands. Consequently, this project demands a full Environmental Impact Statement.