NWE-THF-4292

Ms. Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

August 8, 2023

Re: NorthWestern Energy Response to Comments, Updated Study Report
Thompson Falls Hydroelectric Project P-1869-060

Dear Secretary Bose:

As required by the Federal Energy Regulatory Commission's (FERC or Commission) regulations implementing the Integrated Licensing Process (ILP), NorthWestern Energy (NorthWestern) filed its Updated Study Report (USR) for the Thompson Falls Hydroelectric Project No. 1869-060 (Thompson Falls Project or Project) on May 5, 2023; held its USR Meetings on May 24 and May 25, 2023; and filed its USR Meeting Summary on June 8, 2023. Section 5.15(f) of the Commission's regulations, 18 CFR § 5.15(f), provide that any participant or Commission staff may file disagreements concerning the applicant's study report meeting summary, modifications to ongoing studies, or propose new studies within 30 days of the study report meeting summary being filed (i.e., by July 9, 2023). NorthWestern received comments from the Bureau of Indian Affairs (BIA), the Confederated Salish and Kootenai Tribes (CSKT), Green Mountain Conservation District (GMCD), Montana Fish, Wildlife, and Parks (FWP), the Montana State Historic Preservation Officer (SHPO), the U. S. Fish and Wildlife Service (FWS), the Sanders County Park Board and Thompson Falls Community Trail Committee, and members of the public. The letter from SHPO is attached, as it was not previously filed with the Commission.

This letter is NorthWestern's response, as provided in section 5.15(f) of the Commission's regulations 18 CFR § 5.15(f).

I. Responses to Comments

The sections below contain a summary and excerpt of each comment received during the 30-day comment period, followed by NorthWestern's response.

Comments from the BIA

BIA 1. We are concerned that this study does not accurately depict the hydraulic conditions that fish species would encounter below the fishway. A closer look at this study likely reveals why this is the case. Where this study failed to meet its mark lies in the fact that it only assessed surface water velocity for the designated 37,000 cubic feet per second (cfs) and 2,000 cfs flows in the study design. BIA requests that NorthWestern use depth averaged velocities for all applicable flow scenarios examined in this study and revise the study to reflect this metric to assess hydraulic conditions in the tailrace for the benefit of upstream fish passage at the Project.

BIA 1 Response: The Hydraulic Conditions Study Reports – Initial Study Report (ISR) and USR utilized and report on average water velocities. The Hydraulic Conditions Study – ISR (page 2-8) states the computational fluid dynamics (CFD) model was used to simulate two-dimensional (2D) flow with depth averaged velocities at four flows (37,000, 25,000, 2,000 and 200 cfs). Velocities reported throughout the Hydraulic Conditions Study – ISR reference that depth averaged velocities are provided and not surface velocities (Pages 3-2, 3-9, 3-17, 3-25). The Hydraulic Conditions Study – USR provides similar depth averaged velocities as the ISR (Pages 2-8, 3-2, 3-9, 3-17, 3-25, 4-1). Therefore, there is no need to revise the study as requested by BIA, as the data it requested has been collected and was presented in the ISR and USR.

Further, the Hydraulic Conditions Study – USR has additional information from the three-dimensional (3D) modeling, which allows for an evaluation of flow velocity at depth across a transect, allowing for more site-specific detail on velocity conditions.

BIA 2. We note in the USR and the hydraulic conditions presentation slides on May 24, 2023, that there are notable areas near the entrance of the fishway that exceed a water velocity of 14 ft/s. and likely are not conducive to upstream fish passage. This circumstance was created during the 2,000 cfs flow. BIA recommends that NorthWestern carefully reassess the use of the 2,000 cfs flow regime to maximize upstream fish passage at the Project.

BIA 2 Response: The Hydraulic Conditions Study does not support the conclusion there are notable areas near the entrance of the fishway that exceed a water velocity of 14 feet per second (fps) and likely are not conducive to upstream fish passage (*See* Hydraulic Conditions Study – USR - Table 3-4). The Hydraulic Conditions Study found that, at the ladder entrance, velocities are less than maximum burst speed of local species of fish (14 fps) at both 2,000 and 37,000 cfs flows.

The upstream fish passage facility is equipped with a High Velocity Jet (HVJ) which is designed to discharge 20 cfs through a 14-inch-diameter orifice, producing a discharge jet velocity of approximately 19 fps into the tailrace. The purpose of the HVJ is to attract fish to the fish passage facility entrance. As shown on Figure 3-35 of the Hydraulic Conditions Study - USR, the only area at the fish passage facility entrance that exceeds 14 fps is at the HVJ outflow at 2,000 cfs discharge. This narrow band of high velocity water is there purposely, for fish attraction.

The hydraulic modeling indicates no issues with water velocity at the entrance of the fish passage facility.

NorthWestern assessed four different flow regimes in the Hydraulic Conditions Study (37,000, 25,000, 2,000 and 200 cfs) and believes the assessment of all these flows are important to maximize upstream fish passage at the Project.

NorthWestern is unclear what BIA is referring to with regards to using the 2,000 cfs flow regime to maximize upstream fish passage as NorthWestern does not use 2,000 cfs to maximize fish passage.

> BIA 3. NorthWestern should develop, implement, and evaluate additional measures to influence or encourage behavior to increase the number of fish entering the fishway and decrease the associated travel times.

BIA 3 Response: The Fish Behavior Study is not yet complete. Therefore, it is not timely to propose additional measures to enhance fish passage at the Project. NorthWestern is currently evaluating fish behavior data collected in 2023. A final Fish Behavior Study Report will be submitted with the Final License Application. NorthWestern will use this information to inform proposed fisheries protection, mitigation, and enhancement measures in the Final License Application.

> BIA 4. We are concerned that fish are experiencing hydraulic conditions that are not conducive to fish passage at the Project. The study noted that only 40 percent of fish entered the fish passage facility suggesting that the fishway entrance velocity exceeds the swimming ability of some fish species examined in this study.

BIA 4 Response: The Fish Behavior and the Hydraulic Conditions Studies - USR concluded that "velocities through much of the High Bridge and falls areas exceed the swimming ability for fish during spring flows, likely impeding fish access to upstream locations. Accessible areas for fish to move upstream during high flow are limited to the margins and bottom of the channel." Hydraulic conditions at the natural falls area and High Bridge are not ideal for upstream fish movement, however, this is the natural condition of the river channel. There are pathways along the edges and river bottom where fish can navigate these high velocities and are able to move upstream.

> BIA 5. We view this entrance efficiency as unacceptable and request that NorthWestern explore opportunities to improve hydraulic conditions in the tailrace, including those conditions within close proximity to the fishway entrance.

BIA 5 Response: Hydraulic conditions relative to water velocities near the fishway entrance appear to be within an acceptable range for fish passage. *Refer to* BIA 2 and BIA 4 Responses. However, in the Thompson Falls Hydroelectric Project Draft License Application (DLA), NorthWestern committed to evaluating and assessing opportunities to enhance the effectiveness of the existing upstream fish passage facility.

> BIA 6. We are also concerned that there is no analysis in this study that cross-references fish passage data from NorthWestern 2022 and 2023.

BIA 6 Response: This Fish Behavior Study - USR is focused on results from 2022 telemetry efforts. NorthWestern has continued to collect fish behavior information through July 31, 2023.

The 2023 results will be included in a final Fish Behavior Study Report submitted with the Final License Application filed by December 31, 2023.

> BIA 7. We strongly recommend that NorthWestern cross-reference the results of its 2021 and 2022 internal fish passage ascents (NorthWestern 2022 and 2023) with this Fish Behavior Study and ultimately reconfigure the current placement of its passive integrated transponder (PIT) arrays to provide comprehensive fish passage data within the Project's upstream fish passage facility.

BIA 7 Response: Fish passage ascent information is included in NorthWestern's annual reports and is incorporated by reference in the Fish Behavior Study - ISR. The annual reports can be accessed via NorthWestern's website at: https://www.northwesternenergy.com/clean-energy/hydropower/thompson-falls-hydro-project/annual-reports-ferc-orders.

Table 1 describes the proportion of fish from the Fish Behavior Study that ascended the ladder and were passed. See also the DLA, Exhibit E- Section 7.1.1.3

Table 1. Summary of the Rainbow and Brown Trout Detected in 2021 and 2022.

Collection Time	Species	Total Tagged	% (#) in Far Field	% (#) in Near Field	% (#) Tagged that Reached Ladder Entrance	% (#) Tagged that Ascended	% Entered that Ascended
June ‘21	RB	7	100 (7)	14 (1)	-	-	-
	LL	6	100 (6)	50 (3)	33 (2)	17 (1)	50
Sept/Oct ‘21	LL	3	100 (3)	33 (1)	33 (1)	33 (1)	100
2021 Total		**16**	**100 (16)**	**31 (5)**	**19 (3)**	**13 (2)**	**67**
March ‘22	RB	29	100 (29)	86 (25)	48 (14)	45 (13)	85
	LL	8	100 (8)	88 (7)	38 (3)	25 (2)	50
Sept ‘22	LL	17	94 (16)	35 (6)	24 (4)	12 (2)	50
2022 Total		**54**	**98 (53)**	**70 (38)**	**39 (21)**	**31 (17)**	**80**
Total Both Years		**70**	**98 (69)**	**62 (43)**	**35 (24)**	**27 (19)**	**79**

Results of other salmonids PIT tagged from the upstream fish passage facility in previous years are included in NorthWestern Energy Annual Fisheries Reports from 2021 and 2022 and in Table 2.

Table 2. Number and percent of salmonids entering the fish passage facility recorded in the entrance, Pool 7/8, and top holding pool.

21/2022 PIT Tag Detections	# Fish at Entrance	# Fish in Pool 7/8 (% of fish detected at entrance)	# Fish in Holding Pool (% of fish detected at entrance)	% of fish detected at Pool 7/8 reaching holding pool
Bull Trout	4	3 (75%)	3 (75%)	75%
Brown Trout	66	46 (70%)	40 (61%)	87%
Rainbow Trout and Rainbow-Cutthroat Hybrids	92	80 (87%)	74 (80%)	93%
Westslope Cutthroat Trout	3	2 (67%)	2 (67%)	67%
Mountain Whitefish	1	0	0	0%
Salmonids	**166**	**131 (79%)**	**119 (72%)**	**91%**

PIT-tag antenna arrays are placed throughout the upstream fish passage facility. Antenna are located at each of the two entrances, one at pool 7, and one at pool 8, and at the top of the fish passage facility where fish enter the holding pool. Since 2011, antenna placement within the fish passage facility has been guided by a Technical Advisory Committee consisting of FWP, FWS, CSKT, and NorthWestern. BIA has not demonstrated that the current placement of the PIT antenna arrays, as agreed to by the Technical Advisory Committee, fails to provide comprehensive data within the facility.

> BIA 8. NorthWestern further discusses how there is not much difference in fish movement and behavior whether study fish proceed to the fish passage facility or not, alluding to evidence of fish occurrence at the mouth of Prospect Creek. After review of the Fish Behavior Study, we can find no evidence to substantiate this claim. We request that NorthWestern provide and summarize data to support this claim. This additional analysis would greatly assist in deciphering how Prospect Creek influences the efficiency of the upstream fishway and any subsequent modifications in its operations to improve its utilization by fish.

BIA 8 Response: Figure 3-5 in the Fish Behavior Study - USR illustrates Rainbow Trout detections, and compares those that entered the fish passage facility and those that did not enter the fish passage facility. NorthWestern contends that the locations of these fish are similar and spread throughout the Project area. NorthWestern does not allude to fish occurrence at the mouth of Prospect Creek, but states “the Rainbow Trout that did not enter the passage facility appeared to remain further downstream and more oriented immediately below the High Bridge and near Prospect Creek.” Further analysis of the influence of Prospect Creek is not necessary to meet the objective of the Fish Behavior Study.

BIA 9. We can find no explanation in the study explaining how or if NorthWestern redistributes spill events to maintain attraction flows at the fishway entrance within designated criteria rather than allowing these same attraction flows to become out of compliance. Based on the hydrograph for the Clark Fork River, the flows examined in this study appear to be similar to those passed through the Project in previous years. We therefore recommend that Northwestern summarize the way it manipulates or passes higher spill volume events through the Project to maintain the appropriate attraction flows at the upstream fishway for fish species.

BIA 9 Response: The spillway operating schedule was designed to facilitate upstream fish passage while minimizing total dissolved gas (TDG) levels. The spillway operating schedule is included in the TDG Control Plan and was submitted to Montana Department Environmental Quality in October 2010 https://www.northwesternenergy.com/docs/default-source/default-document-library/clean-energy/environmental-projects/thompson-falls/thompson_falls_total_dissolved_gas_control_plan_2010.pdf

In summary, NorthWestern begins spilling by providing attraction flows at the Main Channel Dam right side and at the radial gates. As flows increase, panels are pulled on the Main Channel Dam left, resulting in unsuitable conditions for fish on the left side. However, when this happens better holding water is present on the right side thus providing attraction to the fish passage facility. As flows increase further, additional panels are pulled on alternating sides of the Main Channel Dam until the spill capacity is met. Spill at the Dry Channel Dam is only utilized to pass flow in excess of the capacity of the Main Channel Dam.

Comments from the CSKT

CSKT 1. Summarize fish behavior by capture location to assess potential behavioral differences in naïve fish versus those captured in the ladder.

CSKT 1 Response: Fish collection sites in the Fish Behavior Study – Revised Study Plan – Section 6.3 (https://www.northwesternenergy.com/docs/default-source/default-document-library/clean-energy/environmental-projects/thompson-falls/thompson-falls-relicensing/revised-study-plan-project-no.-1869.pdf) included (1) the mainstem Clark Fork River upstream of the Thompson Falls Project, (2) the lower section of the Thompson River (downstream of the confluence with West Fork Thompson River), and (3) the fish passage facility. Boat mounted electrofishing was used in the Clark Fork River to collect trout of suitable size for radio tagging. Angling was attempted in the Thompson River in 2021, but no fish of suitable size were collected. No angling attempts were made in 2022. Fish collection was contingent on accessibility of the sampling areas and water temperature necessary to allow for acceptable recovery of fish post-surgery. Fish collection, radio-tagging and transport occurred when water temperature was less than or equal to 16 degrees Celsius (°C), a standard established in collaboration with FWP for this study.

As described in Table 3, in 2021 and 2022 combined, nine Rainbow Trout were collected by electrofishing in the Clark Fork River, and 27 were collected in the fish passage facility. The majority of the Rainbow Trout (n=7) were captured during June of 2021. 19 Brown Trout were collected by electrofishing and 15 at the fish passage facility in both years.

Table 3. Trout Collection Summary for 2021 and 2022. *Source*: Fish Behavior Study - USR

Season & Year	Method	Location	RB	LL	MCFT3 Tag size (g)	Total # Fish
June '21	Electrofishing	Clark Fork River	7	6	11	13
	Angling	Thompson River	-	-	-	-
Sept/Oct '21	Ladder[1]	Clark Fork River	-	3	6.8	3
2021 TOTAL			**7**	**9**		**16**
March '22	Ladder	Ladder	27	1	11	28
	Electrofishing	Clark Fork River	2	7	11	9
Sept '22	Ladder	Ladder		11	6.8	11
	Electrofishing	Clark Fork River		6	6.8	6
2022 TOTAL			**29**	**25**		**54**
Grand Total			**38**	**34**		**70**

Notes: g = grams; LL = Brown Trout; RB = Rainbow Trout.

As noted in the Fish Behavior Study - ISR (NorthWestern 2022), tagging happened late in June 2021, with quickly warming water temperatures, and after spawning migrations for Rainbow Trout had occurred. Because of these conditions and the associated timing of radio tagging, comparisons to other capture locations and between years are of little value. All the Rainbow

[1] Fish collected at the upstream fish passage facility.

Trout collected by electrofishing in 2021 were later detected in the far field and one was located in the near field. None were detected at the passage facility entrance.

The two Rainbow Trout captured and tagged via electrofishing in the mainstem Clark Fork River upstream of the dam in 2022 were detected in the far field and near field, with none located at the fish passage entrance. The low sample size of only two provides little confidence to compare to fish passage facility captures. It does appear that capture location had little effect on a fish's ability to move to the far field and near field locations as fish from both capture locations were found to accomplish this in high proportions. Table 4 illustrates the number of radio tagged Rainbow Trout by capture location, capture time, and if they were detected in the far and near fields, and passage facility entrance or ascended the passage facility.

Table 4. Rainbow trout detections by capture location for 2021 and 2022.

Electrofishing Sampling	N	Far Field	Near Field	Passage Facility Entrance	Facility Ascent	% at Entrance	% Ascents
2021 June	7	7	1	-	-	-	-
2022 March	2	2	2	-	-	-	-
Total Rainbow Electrofishing	**9**	**9**	**3**	**-**	**-**	**0%**	**0%**

Passage Facility Sampling	N	Far Field	Near Field	Passage Facility Entrance	Facility Ascent	% at Entrance	% Ascents
2021 June	-	-	-	-	-	-	-
2022 March	27	27	23	14	13	-	-
Total Rainbow Passage Facility	**27**	**27**	**23**	**14**	**13**	**52%**	**48%**

Rainbow Trout Totals	**36**	**36**	**26**	**14**	**13**	**39%**	**36%**

Looking at Brown Trout behavior by capture location provides a more valid comparison as 19 were collected via electrofishing and 15 from the fish passage facility. In general, capture location appeared to have little impact on detections in the far and near field areas. Nearly identical proportions of Brown Trout were detected at the facility entrance and ascended the facility when comparing capture locations (Table 5).

Table 5. Brown trout detections by capture location for 2021 and 2022.

Electrofishing Sampling	N	Far Field	Near Field	Passage Facility Entrance	Facility Ascent	% at Entrance	% Ascents
2021 June	6	6	3	2	1		
2022 March	7	7	7	3	2		
2021 Sep/Oct	-	-	-	-	-		

Electrofishing Sampling	N	Far Field	Near Field	Passage Facility Entrance	Facility Ascent	% at Entrance	% Ascents
2022 Sep	6	5	1	1	1		
Total Brown Electrofishing	**19**	**18**	**11**	**6**	**4**	**26%**	**16%**
Passage Facility Sampling	**N**	**Far Field**	**Near Field**	**Passage Facility Entrance**	**Facility Ascent**	**% at Entrance**	**% Ascents**
2021 June	-	-	-	-	-		
2022 March	1	1	-	-	-		
2021 Sep/Oct	3	3	1	1	1		
2022 Sep	11	11	5	3	1		
Total Brown Passage Facility	**15**	**15**	**6**	**4**	**2**	**27%**	**13%**
Brown Trout Totals	**34**	**33**	**17**	**10**	**6**	**26%**	**15%**

CSKT 2. Add a summary of all fish movement to provide a comprehensive understanding of existing passage for both the telemetered salmonids and for the salmonid and non-salmonid fishes that were only PIT-tagged. Indicate the proportion of fish that ascended the ladder and that were successfully passed.

CSKT 2 Response: The Fish Behavior Study - USR describes the results of the radio telemetry study and the movements of fish that were radio tagged. See BIA 5 for information on radio tagged and PIT-tagged salmonids movement through the fish passage facility. NorthWestern's annual reports include additional information on non-salmonid movement through the fish passage facility, available here: https://www.northwesternenergy.com/clean-energy/hydropower/thompson-falls-hydro-project/annual-reports-ferc-orders.

CSKT 3. The hydraulic conditions study might have been more informative had it encompassed the entirety of the project footprint.

CSKT 3 Response: The FERC-approved Study Plan specifies the study area for the Hydraulic Modeling to extend from the Main Channel Dam to the High Bridge. NorthWestern extended the study area further downstream to include the area immediately downstream of the High Bridge, an enhancement to the FERC-approved Study Plan.

In 2022, the FWS, Forest Service, CSKT, and FWP filed letters with FERC requesting an extension of the geographic scope of the hydraulic modeling effort. They requested that the hydraulic modeling be extended downstream to include the entire bypassed reach, the tailraces for both powerhouses, and the area leading to Dry Channel Dam.

In FERC's September 1, 2022 *Determination on Requests for Study Modifications for the Thompson Falls Hydroelectric Project*, FERC noted that the purpose of the Hydraulic Condition

Study is to evaluate the velocity field and water depths from near the ladder entrance downstream to High Bridge to determine whether the flow field created by the discharge from the fish ladder provides a sufficient behavioral cue and if velocities are low enough as to not fatigue fish attempting to approach the fish passage facility entrance. FERC determined that extending the hydraulic modeling to include additional areas downstream of High Bridge is not needed to meet the study objectives (18 CFR § 5.15(e)(2)).

NorthWestern concurs with FERC's determination that the existing modeling is sufficient to meet the Hydraulic Conditions Study goals and objectives. The areas CSKT is requesting modeling are significantly downstream from the existing range of the model. A significant effort would be required to extend the modeling to cover such an extensive area of the river. Therefore, conducting 3-D hydraulic modeling downstream of the powerhouses and in the Dry Channel would be the equivalent of an entirely new study. CSKT has not demonstrated that this new study is warranted under FERC's regulations—particularly in light of the heightened standard required by FERC's ILP regulations at this USR stage of the relicensing effort, that any new study request "demonstrate extraordinary circumstances warranting approval." 18 CFR § 5.15(f).

> CSKT 4. Including the entirety of the project in the hydraulics condition study might yield insight for optimizing fish passage across a range of flows and operational conditions, which may require modifying the existing facility or, for example, evaluating the utility of installing capture facilities, particularly since the behavioral study report suggested that modeled velocities in much of the High Bridge and falls areas exceed the swimming abilities of fish during spring runoff, and that this likely impedes fish from moving upstream to where the passage facility is located. It is further stated that the falls and High Bridge areas are natural features of the Clark Fork River. If this is the case, could it be that other areas (e.g., near the original powerhouse, the new powerhouse or at the Dry Channel) within the project footprint historically provided alternative routes of fish passage during high flows?

CSKT 4 Response: See CSKT 3 Response. In addition, it would be unduly speculative to try to identify the pathways that fish used historically, prior to Project construction. FERC's policy for relicensing hydropower projects is to consider the conditions as they exist today to be the baseline condition. It is outside the scope of the relicensing to evaluate the pre-project conditions.

Comments from FWP

> FWP 1. Internal ladder efficiency, i.e., the number of fish that enter the ladder and are captured at the top of the ladder and ultimately pass upstream, is a critical piece of information to evaluate passage efficiency at the dam. We recommend that the number of fish that made it to the top of the ladder and were passed be the measure for estimating efficiency.

FWP 1 Response: NorthWestern's position is that the evaluation of "efficiency" is most effective when parsed out into entrance efficiency and internal ladder efficiency. This allows for potential future management actions to focus efforts that can be most beneficial to capturing desired fish species.

Refer to Table 1 and BIA 7 Response for data on internal ladder efficiency for the 2021 and 2022 fish behavior study, along with the quantity and percent of fish that were found in the far and near fields, and detected at the upstream fish passage entrance.

> FWP 2. The Fish Behavior Study – USR states, "for purposes of this report and study, fish entering the fish passage facility were considered to have completed the objective of the study, navigating the zone of passage (ZOP) and locating the fish passage facility entrance. These assumptions were used to improve the consistency of data analysis and remove confounding factors or potential biases." FWP asks that further detailed discussion and citations (if needed) on assumptions, data analysis, and confounding factors/potential biases be fully outlined.

FWP 2 Response: NorthWestern designed the Fish Behavior Study to provide the most consistent comparison of data values (fish detection locations and associated meta data) within a study season. Certain assumptions were necessary to achieve this objective. The Fish Behavior Study assumes each radio-tagged fish transported downstream and released at Flatiron Ridge Fishing Access Site (Flatiron FAS) are motivated to return upstream. The Fish Behavior Study assumes all fish collected upstream of the Thompson Falls Dam in the mainstream Clark Fork River will express the same motivation to return upstream as the fish collected at the Thompson Falls fish passage facility. In order to provide a reasonable sample size of Rainbow and Brown trout for the study, this assumption was identified in consultation with the fish and wildlife agencies as appropriate to apply in this study. As discussed above, the ability to capture fish via electrofishing in the mainstem Clark Fork River is limited, thus the fish passage facility was included in the collection sites.

The primary objective of the Fish Behavior Study is evaluating what proportion of radio tagged fish enter the ZOP and find the fish passage facility entrance. The Fish Behavior Study evaluates movement (duration of travel and pathways) of fish upstream through the ZOP. The Fish Behavior Study assumes if a fish entered the fish passage facility entrance, this movement through the ZOP is complete.

The Fish Behavior Study focuses on the ability of fish to move upstream through the ZOP and does not include travel calculations of fish that may make multiple forays to the ladder. A fish returning downstream after being passed upstream may present different motivations and behavior in its movement pattern in the ZOP. For example, a fish returning downstream may have

already moved into a tributary (e.g., Thompson River) and spawned. Thus, the motivation factors and condition of a fish returning downstream after already moving upstream through the ZOP may alter behavior and movement patterns in the ZOP. Moreover, fish that may make multiple trips to the ladder entrance may have gained knowledge, introduce biased behavior, present different fish condition based on previous experience that might bias results. Therefore, travel time (fixed station data) and pathway (mobile tracking) data are based on the information collected between the time of release at Flatiron FAS and detection in the fish ladder entrance. These boundaries provide consistent data collection for analysis without confounding factors (e.g., changes in fish behavior, fish condition) and support the initial study assumption fish are motivated to move upstream.

The method of data collection and analysis addresses the objectives of the study, which focuses on pathway(s) and rate(s) of movement fish have through the ZOP and the ability to access the fish ladder entrance. The methodology was approved by FERC in its Study Plan Determination. Further, the ZOP concept, telemetry and sample size components were all consistent with the Scientific Panel conclusions.

> FWP 3. Parsing analyses through grouping fish by collection location may provide insight into such potential differences, including how these groups of fish move through the project area and how they interact with the fish ladder. Evaluating data by species and capture location may help identify additional patterns that could assist in improving passage.

FWP 3 Response: See CSKT 1 Response.

> FWP 4. Within the Movement Patterns section of the Fish Behavior Study - USR for both brown trout (pg. 50, 1st paragraph) and rainbow trout (pg. 44-45,), the verbal description of the number of fish that enter the near field, far field and fish passage facility entrance would be more easily understandable as a percentage of the total of tagged fish in the system.

FWP 3 Response: Comment noted.

> FWP 4. Bull trout swimming ability may be better than what is reported in the literature.

FWP 4 Response: Available literature on the subject and those associated values are the best available science and appropriate values to use in this report as reported in the Fish Behavior Study – ISR – Section 3.4.

> FWP 5. This would be helpful for those only interpreting graphics using the Fish Behavior Study - USR, if depth average velocity was indeed used for all graphics.

FWP 5 Response: Depth averaged velocities are used for graphics and tables in both the Hydraulic Conditions Study – ISR and USR. On Page 2-8 the Hydraulic Conditions Study - ISR states the CFD model was used to simulate 2D flow with depth averaged velocities. Velocities reported throughout the Hydraulic Conditions Study - ISR clearly reference that depth averaged velocities are provided and not surface velocities (Pages 3-2, 3-9, 3-17, 3-25). The Hydraulic Conditions Study - USR provides similar depth averaged velocities as the ISR (Pages 2-8, 3-2, 3-9, 3-17, 3-25, 4-1).

Comments from the FWS

FWS 1. The report fails to describe the efficacy of the passage facility once the fish have found it. It is the Service's opinion that efficacy of upstream fish passage cannot be completely quantified without assessing both the ability of the fish passage facility to attract migrating fish and to pass migrating fish once they have reached the facility.

FWS 1 Response: *See* BIA 7 Response regarding internal efficiency.

FWS 2. The FWS states that they are concerned with the downstream extent of the modelling effort since the Hydraulic Conditions Study does not evaluate the full extent of the Zone of Passage's far field. These areas include portions of the Clark Fork River near the Dry Channel Dam, New Powerhouse and Old Powerhouse.

FWP 2 Response*: See* CSKT 3 Response regarding the extent of hydraulic modeling.

Comments from Montana SHPO

SHPO 1. Add informative information to various project boundary sites that could not be relocated during the current inventory. This will help improve the current record.

SHPO 1 Response*:* Current Montana SHPO guidelines (2023:23) state "when a site is located near or on the edge of the Area of Potential Effect (APE), **and access is permitted** [emphasis added], site boundaries should be inventoried and mapped … to properly record the nature and qualities of the cultural resource." NorthWestern did not have authorized access to some areas including five sites near the APE. Therefore, NorthWestern collected no new data to contribute to existing site records for these five sites and no site form updates are warranted. Given the limited space between the APE boundary and the reservoir shoreline (in many places 5 meters or less), no useful scientific data can be generated by mapping the absence of cultural deposits within the APE.

SHPO 2. For visited and updated sites, request concurrence on National Register of Historic Places eligibility from SHPO.

SHPO 2 Response: In August 2023, NorthWestern will provide the Montana SHPO with a revised cultural resource inventory report that will mimic the final cultural study report in all respects but with the addition of language to address comments received from that agency on June 15, 2023. The accompanying cover letter will specifically request concurrence on inventory methods, findings, and National Register eligibility statements.

SHPO 3. Include a map showing which areas have been fully inventoried and which areas did not get fully inventoried due to various conditions.

SHPO 3 Response*:* The 2022 cultural resource inventory covered the entire 946.7-acre APE. Of those, 873.2 of those acres (92%) were inventoried at the intensive level, with spacing of 30 meters or less between parallel transects or between individual transects and the APE boundary. The remaining 73.5 acres were inventoried at the reconnaissance level, with spacing of greater than 30 meters. Reconnaissance inventory, which covers only 8 percent of the total APE, occurred only in areas where safety concerns and dense vegetation dictated the broadening of transect intervals. The reconnaissance level areas are identified in the accompanying inventory transect maps, which are Figures 12-1 and 12-2 of Exhibit E – Section 12 of the Draft License Application.

SHPO 4. Include SHPO early in developing the HPMP.

SHPO 4 Response. On June 9, 2023, NorthWestern sent to the Montana SHPO a request for its input on NorthWestern's Draft Historic Properties Management Plan for the Thompson Falls Hydroelectric Project. SHPO replied with comments on July 6. NorthWestern will continue to consult in the coming months, with the expectation the final HPMP will be included in the FLA.

Comments from members of the public, GMCD, and community groups

Comments received from members of the public, GMCD and community groups were grouped into seven distinct areas of focus: operations effects on fisheries and aquatic habitat, wildlife habitat, aquatic invasive species, shoreline erosion, public safety, aesthetics and recreation. Although, several of the comments did not reference a specific Study Report, a response to the comment is included.

Operations Study - Fisheries and Aquatic Habitat

Community Comment 1. Comments related to fish stranding.

Community Comment 1 Response. The Operations Study – ISR - Section 2.4.2 summarizes the stranding transects surveyed during the 2021 reservoir fluctuations during three test phases. The transects were surveyed during reservoir elevations at 2396.0, 2395.5, 2395.0, 2394.5, and 2394.0 feet. A summary of the 2021 stranding transect results are provided in Table 6 (*adapted from* Operations Study – ISR-Table 3-5).

The Operations Study - USR summarizes the stranding transects surveyed two different times during 2022. Observations were made on August 24 and again on August 31 and represented reservoir elevations at 2395.8 and 2395.7 feet (within the range of Phase 1 and similar to Phase 2 during the 2021 study season). All 12 transects were walked during each survey unless they were submerged.

During surveys completed on August 24 and 31, 2022, no stranded fish were observed on dry ground or within isolated pools (Table 6). In many cases, the full 200 foot transect was not surveyed because portions of the survey transect were submerged. Other areas outside the transects were also surveyed for stranded fish, and none were found.

Table 6. Total Count of Stranded Fish for Each Survey Event during Thompson Falls Reservoir Operations Study in 2021 and 2022

Date	Reservoir Elevation (ft)	BBH	LMB	SMB	YP	NPM	PUMP	Total
7/28/2021	2396.0	-	-	-	-	-	-	**0**
7/30/2021	2394.5	1	2	0	0	0	1	**4**
8/17/2021	2395.5	19	9	-	-	1	-	**29**
8/19/2021	2395.0	3	1	-	-	-	-	**4**
9/8/2021	2394.0	89	9	2	4	1	-	**105**
8/24/2022	2395.8	0	0	0	0	0	0	**0**
8/31/2022	2395.7	0	0	0	0	0	0	**0**
Total		**112**	**21**	**2**	**4**	**2**	**1**	**142**

Notes: BBH = Black Bullhead, LMB = Largemouth Bass, SMB = Smallmouth Bass, YP = Yellow Perch, NPM = Northern Pikeminnow, PUMP = Pumpkinseed Sunfish

The results of the 2021 and 2022 operations study concluded fish stranding was limited to juvenile fish of only non-salmonid species. Fish stranding potential appeared to increase with the rate of elevation change, particularly in areas where topography sloped back into higher elevation areas, or within confined depressions.

> Community Comment 2. Comments related to generalized impacts to fish and aquatic habitat.

Community Comment 2 Response: Observations during the 2021 Operations Study found access for fish to both Cherry Creek and Thompson River remained unimpeded during all reservoir elevations evaluated. Reservoir elevations had minimal impact on habitats at the mouths of these tributaries. The relatively deep confluences with the reservoir for both tributaries help facilitate fish passage. (NorthWestern 2022). There were no impacts identified in 2021, thus no additional evaluation was continued in 2022.

> Community Comment 3. Comments related to impacts to insect communities.

Community Comment 3 Response*:* Reservoir operations are not anticipated to have any significant adverse impacts on insect communities in the Project. Reservoir fluctuations may lead to temporary displacement of aquatic insects from the habitats that they occupy. Overall, habitat in the fluctuation zone is not currently optimal for aquatic insects. However, where habitat exists that may be suitable, it is expected that displaced aquatic insects would recolonize in habitats that remain watered.

> Community Comment 4. Comments related to operation limitations and reduced functionality of the fish ladder.

Community Comment 4 Response*.* During the 2021 study (Operations Study - ISR), the fish passage facility operations were evaluated at a range of elevations (*refer to* Table 6). NorthWestern found the fish passage facility remained operable down to reservoir elevation 2394.5 feet. Below approximately elevation 2394.5 feet, water through the attraction flow pipe and the sampling workstation was reduced. Near 2394.5 feet the sampling workstation did not consistently have sufficient water for processing fish.

Additionally, in 2021, during the late summer when generation rapidly increased, vegetation plugged screens at the fish passage facility, reducing waterflow through the facility and workstation, impeding functionality of the fish passage facility.

During the 2022 study (Operations Study - USR), the fish passage facility operations were evaluated during the reservoir fluctuations (down to 2395.7 feet). Observations of the upstream fish passage facility occurred primarily during the morning hours when the facility was being checked for fish. At no time during the March – October operating season (2022) was the upstream fish passage facility unable to fully function due to the variable forebay water elevations caused by flexible generation. There were occasional times when the operation of the sampling pump and the pump to fill the lock took longer than average. However, this did not impede operations for more than 30 minutes. This primarily occurred during the fall months when aquatic vegetation plugged the upstream water intakes. Increased generation and associated flow pulled

vegetation that was floating in the reservoir towards the upstream side of the fish passage facility. (Fish Behavior Study - USR page 3-49)

Based on the 2021 and 2022 operations study seasons, NorthWestern documented that fluctuations of the reservoir at or below 2394.5 feet impact fish passage facility operations per existing configuration However, NorthWestern believes there is a relatively straightforward engineering solution to address this but wishes to evaluate it further when it assesses fish passage efficiency, as committed in the DLA.

> Community Comment 5. Comments related to impacts to wildlife habitat including migratory waterfowl, mammals, and amphibians.

Community Comment 5 Response: Reservoir operations are not anticipated to have any significant adverse impacts to wildlife habitat in the Project, *See* DLA-Exhibit E - Section 9.3.2. Reservoir fluctuations will be temporary in nature and therefore any changes to existing wildlife habitat will also be temporary. There are no anticipated long-term impacts to emergent or riparian vegetation, which are generally made up of resilient species that are naturally adapted to changing hydrologic conditions due to their robust root structure. There is the potential for changes to the density of aquatic vegetation, which was observed in the 2022 study season. Specifically, the density of submergent vegetation was reduced in the 0 to 18-inch depth range in certain areas of the reservoir (Operations Study – USR). However, there are no anticipated long-term impacts to emergent or riparian vegetation, which are generally made up of resilient species that are naturally adapted to changing hydrologic conditions due to their robust root structure.

> Community Comment 6. Comments related to increased production of aquatic invasive species (flowering rush, Eurasian watermilfoil) and algae. Flowering rush, an aquatic invasive species (AIS), was noted as an important issue.

Community Comment 6 Response: The Operations Study – ISR noted that flowering rush and yellow flag iris are AIS species that are fairly common in the reservoir and were observed at six of the nine reference points. The prevalence of these species varied depending on time of year.

The Operations Study Reports – ISR – Section 3.3.1 and USR – Section 3.3 documented a reduction in submergent aquatic vegetation in the 0 to 18-inch depth range. Fluctuating water levels under flexible operations may be a factor in this reduction. NorthWestern did not observe an increase in flowering rush in either study season, but did observe an overall reduction of aquatic plant density in the near shore area less than 18-inch depth.

Eurasian watermilfoil is an aquatic invasive species, prevalent downstream of Thompson Falls Reservoir (Operations Study – ISR – Section 3.3.1). However, it was not observed in Thompson Falls Reservoir by NorthWestern during 2021 or 2022, nor has it been observed during any other monitoring conducted by NorthWestern.

NorthWestern did not observe an increase in algae in either 2021 or 2022.

> Community Comment 7. Comments related to erosion to the riverbanks and displacement of rocks and trees.

Community Comment 7 Response: As stated in the Operations Study Reports – ISR – Section 3.2 and USR – Section 3.2, NorthWestern did not observe any erosion that appeared to be caused

by flexible operations. NorthWestern did observe erosion, but concluded the causes to be high flows associated with spring runoff, boat wakes, wave action from wind, overland flow of water due to rainfall or snowmelt events and wildlife or human paths. NorthWestern evaluated nine reference points along the reservoir between the boat restraint and the Thompson River. This area captures the majority of developed lands potentially affected by flexible operations. The reference points were chosen to represent the broad variability in soil types, landform, slope, aspect, vegetation, shoreline management, flow velocity and land use that in turn represent the variability in shoreline stability along the reservoir. Based on this methodology, any widespread erosion due to flexible operations would have been detected.

During the Operations Study, visual observations made by boat noted that historical reservoir sediment infill and some limited areas of fine-grained alluvium that is less compact experienced some surficial slumping. However, the fluctuating water levels due to Project operations did not appear to appreciably change the amount, type, or cause of erosion.

NorthWestern's assessment is that drafting the reservoir multiple times in 24 hours, or only once in 24 hours, or other frequency would not change the effects to shoreline erosion. Instead, factors unrelated to Project operations, such as spring runoff, boat wakes, wave action from wind, overland flow of water due to rainfall or snowmelt events and wildlife or human paths are the principal causes of erosion.

> Community Comment 8. Comment stating that NorthWestern did not research connection "between lower water levels, boat wake and erosion."

Community Comment 8 Response: As stated in the Operations Study Reports – ISR – Section 3.2 and USR – Section 3.2, NorthWestern observed boat wakes to be one of the causes of erosion at Thompson Falls Reservoir. While the commenter's concern pertained to erosion below the shoreline at reduced water levels, boat wakes can also cause erosion above the shoreline when at full pool when the wakes hit the shoreline. Thus, NorthWestern does not believe boat-wake erosion increases or decreases due to flexible operations.

As stated in the Operations Study – ISR – Section 3.2.2, monitoring at one of the shoreline stability reference points did provide valuable observations regarding boat wakes and their impact on shoreline stability. A few boats passed by while conducting monitoring at the reference point allowing for their wakes to be observed. Where the wakes encountered woody materials (e.g., stumps and logs) or emergent aquatic vegetation, the wake tended to be quickly dissipated with little, if any, of the wake reaching the shore. Where the wakes encountered submergent aquatic vegetation, there was some dissipation of the wake, but much less. Boat wakes did cause the sediment to be stirred up along the shoreline creating some turbidity about a foot out from the shore. However, this was just resuspension of deposited sediment next to the shore, not erosion of upland soils.

> Community Comment 9. Comment stating that there were no studies conducted examining the correlation between proposed frequency and magnitude of drawdowns and the acceleration of silt build up. Suggest limiting reservoir fluctuation to no more than one foot.

Community Comment 9 Response: Sedimentation naturally occurs in river systems as part of the normal hydrologic process. Upstream sediment is typically deposited in floodplain areas, side

channels, and river reaches with low gradient during high flow events in the spring. The incoming sediment loads during these high flow periods are significantly greater than sediment loads from localized sources. The Clark Fork River is a large watershed that drains approximately 20,900 square miles (USGS Stream Stats, 2023) and has many contributing upstream sediment sources within that large area. Sedimentation during high flow periods would occur independent of the influence flexible operations such as those proposed by NorthWestern.

> Community Comment 10. Comment stating that the shoreline erosion study didn't report any conclusive results.

Community Comment 10 Response: As stated in the Operations Study Reports – ISR – Section 4.2 and USR – Section 4.2, NorthWestern concluded that observed erosion was caused by high flows associated with spring runoff, boat wakes, wave action from wind, overland flow of water due to rainfall or snowmelt events and wildlife or human paths.

> Community Comment 11. Comment stating that previous reservoir drafts left emergent mud and weeds, which became an eye-sore and left a bad smell.

Community Comment 11 Response: Temporary impacts to aesthetic qualities (visual and olfactory) were observed as water levels fluctuated during the 2021 and 2022 study seasons. (Operations Study Report – USR - Section 4.5.2) The impacts correlated with the depth and duration of the drawdown and varied depending on how much shoreline was exposed.

> Community Comment 12. Comments related to impacts to businesses in the local community of Thompson Falls.

Community Comment 12 Response: NorthWestern believes the Project, including the proposed action, will not adversely impact business in Thompson Falls. In fact, as described in the DLA – Exhibit E – Section 15.1.2, Sanders County and the Thompson Falls area benefit substantially, both directly and indirectly from the Project. Property taxes that support county budgets are paid annually by NorthWestern. The 2022 annual property taxes attributed to the Thompson Falls Project was $2,967,441.

Salaries for five permanent staff are paid and filter through the local economy, as well as out-of-area staff, contractors, and supporting positions such as fisheries biologists with FWP that work at the Thompson Falls Project periodically and provide an economic benefit through their travel and accommodation expenses.

The Project's reservoir draws landowners who desire water frontage more so than inland properties, a feature that increases property values and property taxes paid by private owners.

Finally, providing high-quality, well-managed recreation sites to the public free of charge allows personal disposable income to support recreation trips (food, drinks, boat gas, fishing supplies, etc.) rather than site use fees.

> Community Comment 13. Comment stating that economic harm will occur through damage to boats and docks.

Community Comment 13 Response: Damage to one floating dock was observed during the 2021 study due to the inability of the structure to accommodate reduced reservoir elevations currently

allowed by the license (Operations Study Report – USR - Section 3.5.1.1). When the reservoir elevation reached 2.0 feet below full pool, the gangway became too steep for the connecting hardware and the structure sustained damage. To alleviate this situation, the dock was modified and repaired. There were no other instances of damage to docks observed.

Boats that are tightly moored to stationary docks can sustain damage if they are not able to float at reduced reservoir elevations. Two situations were observed in 2021 but both of these situations may have been avoided if the boats were moored to floating docks or if boat whips were used to distance the boat somewhat from the dock while it was moored (Operations Study – USR - Section 3.5.1.4).

> Community Comment 14. Comment stating that limiting the draft will allow for continued access which helps maintain the wellbeing and positivity of the community.

Community Comment 14 Response: The Visitor Use Survey in 2021 overlapped the 2021 operations study, which included the staged reservoir elevations below full pool. No adverse comments were received from recreationists related to reservoir fluctuations. Nearly half (45%) of respondents to the 2021 Visitor Use Survey were from the local area. Respondents were highly satisfied with recreation sites (averaging 4.0 on a five-point scale) and amenities (with average ratings of 3.6 to 4.1 on a five-point scale).

> Community Comment 15. Comments related to increased obstacles and navigation hazards along the shore and in the middle of the river.

Community Comment 15 Response: The impact to public safety due to in-water hazards were monitored during 2021 related to changing reservoir elevations. Two hazards became more visible at lower water elevations during the 2021 study, resulting in a decreased risk of contact. Two other rock outcrops became shallower as the reservoir elevation was reduced, bringing them within the depth for potential contact with watercraft, but were not visible above the water line until water elevations were reduced to near 2.5 feet below full pool. The contact risk with these two hazards increased as the water elevation decreased.

Shoals and inundated islands in the main reservoir body are generally visible and easily identifiable. Lower water elevations will make these obstacles more prominent, but the associated contact risk due to Project Operations is unchanged or possibly reduced due to increased visibility. (Operations Study – ISR - Section 4.6)

> Community Comment 16. Comments related to suggested improvements to Wild Goose Boat Launch.

Community Comment 16 Response: NorthWestern cooperates with the City of Thompson Falls for management of Wild Goose Landing Park. Through discussions with City personnel, there is not currently a viable solution to resolve the conflict created by swimmers and boaters both using the boat launch area, but NorthWestern will continue to work with the City to provide safe recreation opportunities at Wild Goose Landing Park.

> Community Comment 17. Comments stating that restricted access to boat docks and launches may impact public safety in a negative way. Safe and sufficient public access to the reservoir during the drafts of 2.5 feet or greater will be impacted. Accessibility of public

boat launches and docks will decrease during a draft. “At a 2.5-foot draft, both county boat launch ramps in the project area were unusable for most trailered watercraft.” In addition, there were comments related to restricted access to public boat launches. Boat access to and from the docks at public sites will become more challenging with lower water levels.

Community Comment 17 Response*:* Based on the Operations Study, the boat dock and boat launches at the public access sites, Cherry Creek, and Wild Goose Landing Park, remained usable when the reservoir was drawn down 2.5 feet (Operations Study – USR - Section 3.5). At Wild Goose Landing Park, at 2.5 feet below full pool, the distance from the stationary dock to boats moored at the dock made access to and from boats more challenging, but the floating dock remained watered and provided access. The public floating dock at Cherry Creek boat launch became pitched due to grounding of near-shore floats, but was still usable at 2.5 feet below full pool. Public docks are typically only used to access boats during launching or loading. Boats are not typically moored except for relatively brief periods of time, so impacts to moored boats due to flexible generation would be minimal.

Further, as described in Community Comment 18 Response, impacts were observed at private floating docks when gangways became steep because they were not built to accommodate water level fluctuations or docks became pitched because they were seated close to the shoreline. However, these situations can be alleviated, in most cases, through modifications to the structures.

Community Comment 18*.* Comments related to steep docks, access ramps, and stationary docks become unsafe for users and will need to be rebuilt to become safe. In addition, comments related to safety concerns - the angle of docks will increase when the water level is lowered. Concerns regarding personal property damage (docks and boats) and comments related to the inaccessibility to utilize boats or docks during the drawdown.

Community Comment 18 Response: Refer to the Operations Study Report- USR for a more complete description of impacts observed to docks when the reservoir elevation was lowered for flexible generation. There were no observations of stationary dock structure damage due to reservoir fluctuations during either study season, nor was access to the stationary docks from shore impacted. At some locations, access from the dock to the water became more difficult at lower water levels. Floating docks provide better recreational access to the water compared to stationary docks because the dock adjusts to pool elevation changes. While the majority of floating docks remained watered at all elevations, floating docks that were aligned perpendicular to the shoreline provided access to deeper water at lower pool elevations than docks aligned parallel to the shoreline. Floating docks with shorter gangways often had the near-shore floats of the dock grounded, though the outer edge remained watered. Floating docks also became pitched or angled if they became partly or entirely grounded at lower reservoir elevations. (Operations Study Report – USR - Section 4.5). As stated in Community Comment 17 Response, modifications to docks may be necessary to alleviate these impacts.

Community Comment 19*.* Comment stating that increased sedimentation in the river and reservoir adversely impacts recreation (boating, kayaking).

Community Comment 19 Response: Historic imagery indicates that the shoals in the main reservoir body have changed very little since 1947 (see photos below).

Results of the 2021 Visitor Use Survey also indicate that recreationists are very satisfied (an average of 4.0 on a five-point ordinal scale), including those that engage in on-water activities such as boating and kayaking.

Thompson Falls Reservoir, circa 1947

Thompson Falls Reservoir, August 1995

Thompson Falls Reservoir, October 2020

Community Comment 20. Comments related to personal shoreline property damage due to erosion.

Community Comment 20 Response: During both years of the Operations Study, there was no erosion observed related to fluctuating reservoir levels. The causes of the documented erosion were concluded to be high flows associated with spring runoff, boat wakes, wave action from wind, overland flow of water due to rainfall or snowmelt events, and wildlife or human paths. While there is a fair amount of erosion above the full-pool water's edge in the form of bank sloughing and undercutting, the reservoir bed that would be exposed by flexible Project operations would be armored by rock, cobble, gravel, woody material, and aquatic vegetation (Operations Study Report – USR - Section 4.2.)

Community Comment 21. Comments stating that a 1-foot draft would be preferred to a 2.5-foot draft of the reservoir for operations. Comment stating that a 1.5-foot draft would be preferred to a 2.5 draft of the reservoir for operations.

Community Comment 21 Response: Limiting the allowable reservoir fluctuations to less than 2.5 feet would adversely impact NorthWestern's ability to regulate the grid and to respond to increased energy demands. Specifically, it would significantly limit the duration NorthWestern could provide flexible generation and the associated value to its' customers. Additionally, NorthWestern's proposed operations modification from fluctuations of up to 4 feet to fluctuations of up to 2.5 feet is a reduction of nearly 40 percent of the volume allowed under the current license. Significant development has occurred along the shorelines of the Project under the 4-foot fluctuation scenario since the license was initially granted in 1979, and most of that development has occurred within the past 20 years or 26 years after issuance of the current license. NorthWestern believes a 2.5-foot fluctuation is a reasonable compromise that balances the resource needs with energy production needs.

Community Comment 21 Response. Comments stating that limiting the draft will help maintain property values and market stability. Comment stating that adequate water levels contribute and support to the recreational and aesthetic appeal which can impact property. Limiting the draft will protect investments made by property owners.

Community Comment 21 Response: Increased development, larger populations, and technological advancements over the last number of decades have created a need for flexible energy. Generating energy is the impetus for the Project and NorthWestern's ability to respond to that need. NorthWestern aims to balance the needs for energy production with protection of resources and community values.

Notably, there are many factors beyond NorthWestern's control that have far more influence on property values and market stability, as recently experienced in the pandemic era. Property values in areas such as Thompson Falls have increased significantly due to many factors and the existence of a waterbody likely increased values at a faster rate as compared to non-waterfront properties. Property values also increased significantly on Noxon Rapids and Cabinet Gorge reservoirs which fluctuate up to four feet and seven feet respectively on a daily basis.

Community Comment 22: General comments from the Green Mountain Conservation District: GMCD is concerned about the effect to fisheries, erosion, public safety, and

recreation caused by fluctuation of water levels. GMCD will have to issue more 310 permits because landowners will have to replace their property. Suggest reducing the fluctuation level, similar to other reservoirs.

Community Comment 22 Response: Please refer to Responses to Community Comments 1 through 18, and 20, 21 regarding the effect of the proposed operation on fisheries, erosion, public safety and recreation. Also, in the DLA – Section 13.2.2, NorthWestern indicates it will continue to work cooperatively with GMCD to implement NorthWestern's "*Shoreline Standards - Standards for the Design, Construction, Maintenance and Operation of Shoreline Facilities on NorthWestern Hydroelectric Projects"*.

Community Comment 23*.* Comment from Sanders County Park Board and Thompson Falls Community Trails Committee. Emphasize the importance of outdoor recreation and request that NorthWestern Energy allocate more funding and resources to develop and improve outdoor recreation. Wild Goose Landing – Water safety improvements. The boat ramp and swimming area need to be separated to enhance safety. The parking area along the highway at Wild Goose Landing Park has become an eyesore. Addition of a safe pedestrian path along the highway and reservoir. Cherry Creek Boat Launch – Requires attention and upgrades. Improvements to the parking lot and boat ramp, sign kiosk, and fencing are all important to improve the functionality and safety of this site.

Community Comment 23 Response: NorthWestern recognizes the importance of outdoor recreation and supports free-of-charge recreation opportunities on lands under its ownership or in the Project Boundary proposed in the Draft License Application. These recreation areas include Power Park, Island Park (including the North Shore and South Shore Parking Areas), the South Shore Dispersed Recreation Area, and Wild Goose Landing Park. NorthWestern also regularly monitors visitor use and opinions, and the 2021 Visitor Use Survey reveals that recreationists are highly satisfied with the sites and opportunities available to them. NorthWestern cooperates with the City of Thompson Falls for management of Wild Goose Landing Park and plans to continue to do so including assessing solutions for parking.

The referenced pedestrian path is designed as a commuter trail and not a recreation corridor. While the anticipated pathway alignment parallels a small portion of the Project waterway (less than 2 percent of the project perimeter), it effectively carries users out of the Project area and has no nexus to the Project. Therefore, NorthWestern is not proposing to add the suggested pedestrian path as a Project recreation site.

The recommended improvements at Cherry Creek Boat Launch have been previously documented in the 2018 Thompson Falls Recreation Visitor Survey, when a majority of site respondents indicated a preference for improvements to the site. The most common improvements suggested were fixing picnic tables, removing debris piles, improving the bathroom, and adding garbage cans. Results were provided to the Sanders County Park Board which manages the site.

Community Comment 24. A 50-year license agreement period is too long. Things change too much during that time allotment of 50 years. There's already a huge Increase in development along the shoreline in the project area and increased usage of the reservoir.

Community Comment 24 Response: Section 6 of the Federal Power Act (FPA) provides that hydropower licenses shall be issued for a term not to exceed 50 years. Section 15(e) FPA provides that any “new licenses” shall be for a term FERC determines to be in the public interest, but not less than 30 years or more than 50 years. On October 26, 2017, FERC issued a policy statement (82FR49501) adopting a 40-year default license term for new license for hydropower projects located at nonfederal dams. The policy was established to ease the economic impact of new costs, promote balanced and comprehensive development of renewable power generating resources, and encourage licensees to be good environmental stewards.

II. Conclusion

NorthWestern appreciates the comments submitted by Relicensing Participants in response to the USR. As explained above, no study modifications or new studies are warranted in the ILP; therefore, once NorthWestern submits the final Fish Behavior Study Report as part of the Final License Application, the ILP study plan will be complete. We look forward to the Commission’s study plan determination under section 5.15(f) of the Commission’s regulations, 18 CFR § 5.15(f).

Should you have any questions, please contact me at (406) 497-3382, or via email at marygail.sullivan@northwestern.com.

Sincerely,

Mary Gail Sullivan

Director, Environmental and Lands Permitting & Compliance

CC: Andy Welch, NorthWestern

John Tabaracci, NorthWestern

Attachments: Distribution List

Letter from SHPO to NorthWestern, dated June 15, 2023

MONTANA
HISTORICAL SOCIETY

Montana State Historic Preservation Office
225 N. Roberts St.
P.O. Box 201201 Helena,
MT 59620-1201

406-444-7715

June 15, 2023

Mary Gail Sullivan
NorthWestern Energy
11 E Park St
Butte, MT 59701-1711

Re: Thompson Falls Hydroelectric Project P-1869-060
Updated Study Report

Dear Ms. Sullivan:

Thank you for your letter and associated materials, received May 8, 2023, regarding the Updated Study Report for relicensing of the Thompson Falls Hydroelectric Project in Sanders County, Montana. We are following up in writing with comments we made orally at the meeting on My 24, 2023 in Missoula regarding the cultural resources portion of the updated study report.

- There are various sites within the project boundary that were recorded in the past but could not be relocated during the current inventory. If any information can be added to the record to help adjust the site boundaries or our understanding of where these sites may be located, please provide site form updates. For example, your research into Salish House (24SA0130) could help future investigators, even though the site was not relocated.
- For revisited and updated sites, please request concurrence on NRHP eligibility from SHPO so that eligibility can be formally reflected in the record as having been maintained.
- We believe that a map showing which areas have received full inventory vs. which did not due to conditions such as the water line, slope, dense vegetation, bears, land access, etc. would be extremely useful in demonstrating the extent of inventory. This would be an important reference for any future projects drawing on information from the current survey.
- Please make sure to include SHPO early on in developing the HPMP, as we will be a signatory and wish to ensure that the stipulations included not only meet the needs of the project but are also consistent with our expectations for best practices in cultural resource management.

If you have any questions or concerns, do not hesitate to contact me at (406) 444-6485 or Laura.Marsh@MT.gov. Thank you for consulting with us.

Sincerely,

Laura Marsh, M.A.
Compliance Officer
Montana State Historic Preservation Office

FILE: DOE/FERC – 2023 – 2023050811