

STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES

In re Application A-19548,) Case No. 2019-9-CC-1
 Water Division 2-A)
) ORDER OF APPROVAL
)

This matter came on for consideration before the Nebraska Department of Natural Resources (Department). The Director of the Department finds and orders as follows:

I. Procedural History

1. On July 28, 2017, the Lower Loup Natural Resources District (LLNRD or Applicant) filed Application A-19548 for a permit to appropriate water for instream flows on a portion of the Loup River for fish, wildlife, and recreation. The specified reach is located between the confluence of the North Loup and Middle Loup Rivers downstream to the Loup Power Canal Diversion near Genoa, Nebraska as measured at United States Geological Survey (USGS) streamgages 06790500 and 06785000 near St. Paul, Nebraska as described in Table 1 below.

Table 1

| <u>TIME PERIOD</u> | <u>PURPOSE</u> | <u>STREAM REACH</u> | <u>CUBIC FEET PER SECOND (cfs) OF FLOW REQUESTED</u> |
|-----------------------|--|--|--|
| | | | <u>ST. PAUL GAGES</u> |
| Jan 1- Feb 28 (29) | Maintain overwinter habitat native fish community and aquatic invertebrates. Provide foraging habitat for bald eagles and raptors. Maintain ice scour events which scour vegetation from islands/sand bars and forms and shapes channel. | Confluence of the North and Middle Loup Rivers to the Loup Power Canal Diversion | 1,700 |
| Mar 1- May 31 | Scour islands/sand bars and form and shape channel. Support spring aquatic insects. Provide spawning habitat for fish and mussels. Support migration of whooping and sandhill cranes. Provide wetland habitat for migrating waterfowl, wading birds, and shorebirds. Least tern and piping plover habitat. | | 2,400 |
| June 1- August 31 | Provide nesting shorebirds and young with a degree of protection from terrestrial predators. Maintain adequate instream habitat for fish and invertebrates and food supply for terns. Protect native fish communities from losses due to high water temperatures. Maintain connectivity between upstream and downstream river segments. Augment flow to lower Platte River and sturgeon habitat. Maintain water quality. | | 1,700 |
| Sept 1- Dec 31 | Maintain and prevent loss of native fish community, and promote survival of fish young-of-year. Provide fall migration habitat for migratory bird species, including whooping and sandhill cranes. Maintain aquatic life (e.g. growth and survival of aquatic insects and young-of-year fish). Provide foraging habitat for bald eagles and raptors. | | 1,600 |

2. As provided in Neb. Rev. Stat. § 37-807(3), the Department consulted with the Nebraska Game and Parks Commission (Commission) and determined that approval of A-19548 would not jeopardize the continued existence of endangered or threatened species or result in the destruction or modification of their critical habitat.

3. The Department published notice of the application on its website and in the Omaha World Herald, St. Paul Phonograph-Herald, and Nance County Journal on November 1, November 8, and November 15, 2017, as provided by Neb. Rev. Stat. § 46-2,114.
4. Subsequent to the published notice, the Department received one supportive comment letter from the United States Department of Interior, Fish and Wildlife Service. They indicated that granting this application would provide some measure of protection to fish and wildlife. The Department did not receive any objections requesting a formal hearing.
5. On August 9, 2019, the Department issued an Order of Denial for Application A-19548 because the Applicant did not provide sufficient evidence to support a finding that the appropriation was necessary to maintain existing recreational uses, and existing fish and wildlife species; that the rate and timing of the appropriation was the minimum necessary to maintain the beneficial uses of the appropriation; and that the appropriation was in the public interest as required by Neb. Rev. Stat. §§ 46-2,115(2), 46-2,115(4), 46-2,115(5), and 46-2,116.
6. On September 4, 2019, LLNRD filed a request for hearing under Neb. Rev. Stat. § 61-206.
7. On December 11, 2019, the Department issued an Order that granted the LLNRD's request for hearing. The Order stated that the Department and LLNRD agreed to develop a supplemental record in lieu of holding an in-person hearing.
8. On December 6, 2021, the LLNRD and Department stipulated to the supplemental record. Hereinafter, this Order will refer to the supplemental record as follows:

Exhibit 1- Affidavit of Joe Citta
Exhibit 2- Affidavit of Russ Callan
Exhibit 3- A report by J. David Allan entitled "An Assessment of the Benefits to Fish and Wildlife of an Instream Flow Appropriation for the Loup River, Nebraska Revised and Expanded, 28, May 2020"
Exhibit 4- United States Fish and Wildlife Service comment letter on Application A-19548
Exhibit 5- A report by Daniel J. Phaneuf entitled "Economic Analysis of Alternative Uses of Unappropriated Flows in the Lower Loup Natural Resources District" Version date: April 23, 2020
Exhibit 6- Nebraska Game and Parks Commission comment letter dated April 3, 2020
Exhibit 7- Letter to the Nebraska Game and Parks Commission from the Department dated March 30, 2021
Exhibit 8- Nebraska Game and Parks Commission annual progress report entitled "Angler Use and Fish Community Dynamics in the Middle Loup and Loup River Basins and Sherman Reservoir" (March-November 1996)
Exhibit 9- Nebraska Game and Parks Commission annual progress report entitled "Angler Use and Fish Community Dynamics in the Middle Loup and Loup River Basins and Sherman Reservoir" (March-November 1997)

Exhibit 10- Nebraska Game and Parks Commission comment letter dated October 18, 2021

Exhibit 11- A report by Jonathan Spurgeon et al. entitled "River- Wide Habitat Availability for Fish Habitat Guilds: Implications for In-Stream Flow Protection"

Exhibit 12- A chart by the Nebraska Game and Parks Commission entitled "Lower Niobrara and Loup River Fish Species Comparisons" (7-6-2021)

Applications A-19548 and A-19406, which are both part of the Department's files

II. Instream Flow Statutes

1. An application for instream flows shall be approved only if the Director finds that the application meets the criteria set forth in Neb. Rev. Stat. § 46-2,115, namely:
 - (1) In order to allow for future beneficial uses, there is unappropriated water available to provide the approved instream flow rate at least twenty percent of the time during the period requested;
 - (2) The appropriation is necessary to maintain the existing recreational uses or needs of existing fish and wildlife species;
 - (3) The appropriation will not interfere with any senior surface water appropriation;
 - (4) The rate and timing of the flow is the minimum necessary to maintain the existing recreational uses or needs of existing fish and wildlife species; and
 - (5) The application is in the public interest.
2. In determining whether an application is in the public interest, Neb. Rev. Stat. § 46-2,116 requires consideration of:
 - (1) The economic, social, and environmental value of the instream use or uses including, but not limited to, recreation, fish and wildlife, induced recharge for municipal water systems, and water quality maintenance; and
 - (2) The economic, social, and environmental value of reasonably foreseeable alternative out-of-stream uses of water that will be foregone or accorded junior status if the appropriation is granted.
3. "An applicant bears the burden of providing the director with enough evidence on which to base a decision." *Ponderosa Ridge LLC v. Banner County*, 250 Neb. 944, 972 (1996).
4. The Department has reviewed the supplemental record for this matter and has determined that the Applicant did meet its burden of proof regarding the required findings as set forth in Neb. Rev. Stat. §§ 46-2,115 (1)-(5) and 46-2,116(1)-(2) for supporting fish species and recreation. Therefore, Application A-19548 should be approved for those purposes subject to the following conditions as set forth below.

III. Unappropriated Water

In order to allow for future beneficial uses, Neb. Rev. Stat. § 46-2,115 (1) requires that the requested instream flow rate be available at least 20 percent of the time during the period requested.

Applicant provided a hydrologic analysis of unappropriated water in the report "Evaluation of Streamflow Frequencies and Unappropriated Streamflows in the Loup River Basin and Lower Platte River Basin" Updated Analysis, December 2016. The methodology and results as shown on Table 4, Page 8, of the report, indicate that there is unappropriated water available to provide for the instream appropriation. All flows were available at least twenty percent of the time during the analysis periods for the two gages relied upon (1995-2014 and 1976-2014), respectively.

Flows requested, and rates available at least 20 percent of the time at the St. Paul Gages (USGS 06790500 and 06785000) for the different time periods of the year (1995 - 2014) are listed in Table 2 below.

Table 2

| Time Period | Flow (cfs) Requested | Amount Available 20% |
|--------------------|-------------------------|-------------------------|
| Jan 1 - Feb 28 | 1,700 | 2,750 |
| March 1 - May 31 | 2,400 | 3,260 |
| June 1 - August 31 | 1,700 | 2,464 |
| Sept 1 - Dec 31 | 1,600 | 2,590 |

The requirement under Neb. Rev. Stat. § 46-2,115(1) has been met.

IV. Instream Appropriation will not Interfere with Senior Surface Water Appropriations

Neb. Rev. Stat. § 46-2,119 provides that instream flow appropriations are subject to the prior appropriation doctrine. The requested instream flow appropriation would receive a priority date of the date of submittal of the application. Therefore, granting the application will not interfere with senior water appropriations.

The requirement under Neb. Rev. Stat. § 46-2,115(3) has been met.

V. Studies to Identify Specific Stream Reaches

Neb. Rev. Stat. § 46-2,109 requires an applicant to conduct studies to identify specific stream segments which the applicant considers to have need for instream flows. Such studies are required to quantify the instream flow needs in the identified stream segments. As referenced above, on December 6, 2021, LLNRD submitted supplemental documents to the Department, in fulfillment of this requirement.

The requirement under Neb. Rev. Stat. § 46-2,109 has been met.

VI. The Appropriation is Necessary to Maintain the Instream Use or Uses for which it has been Requested.

Application A-19548 requests an instream flow appropriation to maintain habitat for the current fish community, migratory birds, and recreation. Neb. Rev. Stat. § 46-2,115(2) requires a finding of a sufficient causal link between maintaining the flow and maintaining the use for which the flow is requested. *In re Application A-16642*, 236 Neb. 671, 698 (1990).

Studies provided in the supplemental record relate, and the Commission corroborated, that species assemblages and life cycle requirements are comparable among Nebraska's streams and rivers which are similar in size, planform, and hydrological regime; and that studies of the Niobrara River provide a suitable surrogate model for assessing the instream flows needed to support fish and wildlife in the Loup River.

In the report by J. David Allan, "An Assessment of the Benefits to Fish and Wildlife of an Instream Flow Appropriation for the Loup River, Nebraska" (Allen 2020) (E3), the following information was provided:

Specifically, the Loup River fish assemblage is broadly similar to the Niobrara assemblage, and its common species occupy the same five guilds identified in the Niobrara, including lobate margin, run, riffle, slackwater, and habitat generalist. It is therefore evident that the Loup River harbors the same or very similar habitat units as the Niobrara.

This transferability, for rivers as similar as the Niobrara and the Loup, provides the opportunity to estimate the flow threshold in the Loup River at which habitat loss becomes stressful to the fish community. In fact, detailed studies in the Niobrara identified various thresholds depending on river segment, bioperiod, and guild. Following the precautionary principle, Parasiewicz et al. (2014) selected the highest values, which were based on segment 1 of the Niobrara. Depending on bioperiod, the threshold value on which instream flows eventually were based, ranged from 0.15 to 0.20 cfs. Applying those values to the drainage area at the North/Middle Loup confluence (12,377 sq mi), Loup River recommended flows would fall between 1,856 and 2,475 cfs, depending on bioperiod. These values are remarkably close to the original Loup instream flow request of 1600-2400 cfs, calculated from water availability (Table 4). This is strong evidence that the requested instream flow allocation would indeed be protective of habitat for the fish guilds of the Loup, which has the same species found in the Niobrara. The requested allocation is slightly below what would be justified from the Niobrara studies, but is very similar, and is within the statutory requirement that the requested flow be available. (E3).

The Department consulted with the Commission pursuant to Neb. Rev. Stat. § 46-2,114 regarding the transferability of the data from the Niobrara instream flow application. (E7, E10). The Commission provided the following conclusion:

The portions of the Niobrara River where previous instream flow studies were conducted and the portion of the Loup River where the LLNRD is pursuing an instream flow appropriation are similar. One could expect flows of similar proportions in each system to result in similar habitats for aquatic species. Data has also been collected and provided to the [Department] showing fish species and assemblages are almost identical between these two river segments. Therefore, we agree the findings from the Niobrara River instream flow assessment can be transferred to the Loup River in this situation. (E10).

Two Commission reports "Angler Use and Fish Community Dynamics in the Middle Loup and Loup River Basins and Sherman Reservoir" (March-November 1996) & (March-December 1997) clearly show the present fish community structure and document intensity and seasonality of sport fishing. (E8, E9). There was no specific recreational streamflow requested in Application A-19548, but maintenance of the fish community is necessary for this type of recreation. Therefore, there is a linkage established between streamflow and maintenance of the requested recreational use.

It is concluded that a causal link exists and granting Application A-19548 will establish an appropriation that can provide flows that maintain the fish community and recreation.

The requirements under Neb. Rev. Stat. § 46-2,115(2) have been met.

VII. Rate and Timing is Minimum Necessary

Neb. Rev. Stat. § 46-2,115(4) requires the applicant to demonstrate that the "rate and timing of the flow is the minimum necessary to maintain the existing recreational uses or needs of existing fish and wildlife species."

The Department agrees that studies and analysis done in support of instream flow appropriation A-19406 on the Niobrara River are applicable to the reach of the Loup River subject to Application A-19548. The Applicant and the Commission have asserted that flows of similar proportions in each system result in similar habitats for aquatic species. (E3, E10, E12). Data has also been collected and provided to the Department showing fish species and assemblages are almost identical between these two river segments. (E3, E9, E10, E12).

The report in Application A-19406, "Developing Environmental Flows for Fish and Wildlife: A Mesohabitat Study on the Niobrara River," Parasiewicz et al. (2014), details the process which was used for determining instream flows on the Niobrara River and is plausible to apply the scientific basis for determining the instream flows requested in Application A-19548. The report describes how the requested instream flows protects common habitat for the fish community and are within a reasonable range to those identified for the Loup River as the minimum

necessary to maintain the integrity of the riverine environment for fish and recreation.

Application A-19548 requests different flow amounts at different times of the year to maintain the needs of the existing fish community. These are called "bioperiods." Using the annual hydrograph, four bioperiods that generally cover annual life history of the various fish guilds were identified and the minimum necessary flow corresponding to each bioperiod was determined. Application A-19548, subdivided by bioperiods, is identified as follows:

- A. **A-19548A.** The purpose is to maintain overwinter habitat and promote winter survival for the existing fish community from January 1 through February 28.

1,700 cfs is the minimum flow necessary to be appropriated to maintain habitat for the fish community and support recreation.

- B. **A-19548B.** The purpose is to provide instream flows to support spawning and to maintain habitat for the existing fish community during the period from March 1 through May 31.

2,400 cfs is the minimum flow necessary to be appropriated to maintain habitat for the fish community and support recreation.

- C. **A-19548C.** The purpose is to provide instream flows to protect fish from high water temperatures and maintain habitat for the existing fish community during the period from June 1 through August 31.

1,700 cfs is the minimum flow necessary to be appropriated to maintain habitat for the fish community and support recreation.

- D. **A-19548D.** The purpose is to provide instream flows to promote survival of fish young-of-the-year and maintain habitat for the existing fish community from September 1 through December 31.

1,600 cfs is the minimum flow necessary to be appropriated to maintain habitat for the fish community and support recreation.

It is concluded that the Applicant has requested flow rates that are reasonable amounts which are necessary to maintain the fish community in its present condition and support recreation.

The requirements under Neb. Rev. Stat. § 46-2,115(4) have been met for the purpose of supporting fish species and recreation. The Applicant has not met their burden of proof to support a finding that a specific streamflow supports avian species. The Applicant may present evidence that the requested flows support avian species at the first 15-year review pursuant to Neb. Rev. Stat. § 46-2,112.

VIII. Public Interest

Neb. Rev. Stat. § 46-2,115(5) requires determining whether an application for an instream appropriation is in the public interest, and Neb. Rev. Stat. § 46-2,116 requires the Director to consider the economic, social, and environmental value of the instream use, as well as the value of reasonably foreseeable alternative out-of-stream uses of water that will be forgone or accorded junior status if the appropriation is granted.

The value of reasonably foreseeable out-of-stream uses is described in "Economic Analysis of Alternative Uses of Unappropriated Flows in the Lower Loup Natural Resources District", Phaneuf (2017). (E5). The report found that access to irrigation adds \$95 per acre/per year to farm profits within the LLNRD. The report also explored the potential for irrigation development and estimated economic benefits over the next ten years from allocating unappropriated surface water to irrigation uses of nearly \$262,000 annually.

Instream flow benefits documented by Applicant include a range of public interest variables, including but not limited to: water quality, livestock watering, increased private land values, recreation, threatened and endangered species, hydro-electric power, drinking water, and groundwater aquifer recharge. The report acknowledges economic benefits from an instream flow appropriation arise primarily from nonmarket environmental services. The report also concludes that households in the LLNRD are willing to pay \$47 per year on average to maintain instream flow in the Lower Loup River.

Additionally, the supplemental record provided by the Applicant regarding the necessity, timing, and amount of flow requested for the instream uses of fish and recreation is sufficient to support a conclusion that approval of Application A-19548 is in the public interest.

The requirements under Neb. Rev. Stat. §§ 46-2,115(5) and 46-2,116 have been met.

IX. Conclusion

Applicant has provided sufficient evidence to support a finding that Application A-19548 meets the criteria set forth in Neb. Rev. Stat. §§ 46-2,115 (1)-(5) and 46-2,116 (1)-(2) for fish and recreation. The Applicant has not met their burden of proof to support a finding that a specific streamflow supports avian species. The Applicant may present evidence that the requested flows support avian species at the first 15-year review pursuant to Neb. Rev. Stat. § 46-2,112.

ORDER

It is hereby ORDERED that Application A-19548 is APPROVED subject to the following conditions:

1. The priority date of A-19548A, A-19548B, A-19548C, and A-19548D (collectively referred to hereinafter as "Appropriations") is July 28, 2017.
2. The source of water for the Appropriations is the Loup River.
3. The instream flow for the Appropriations will be administered on the stream reach between the confluence of the North Loup and Middle Loup Rivers downstream to the Loup Power Canal Diversion near Genoa, Nebraska as measured by the combined flows at United States Geological Survey (USGS) stream gages 06790500 and 06785000 near St. Paul, Nebraska. It shall be the responsibility of the appropriator to ensure stream gages remain operational at these two locations for the Department's administration.

4. Appropriation A-19548A shall not exceed 1,700 cfs. The water shall be beneficially used instream to maintain the fish community and for recreation from January 1 through February 28 (February 29 in "leap years").
5. Appropriation A-19548B shall not exceed 2,400 cfs. The water shall be beneficially used instream to maintain the fish community and for recreation from March 1 through May 31.
6. Appropriation A-19548C shall not exceed 1,700 cfs. The water shall be beneficially used instream to maintain the fish community and for recreation from June 1 through August 31.
7. Appropriation A-19548D shall not exceed 1,600 cfs. The water shall be beneficially used instream to maintain the fish community and for recreation from September 1 through December 31.
8. The appropriator may present evidence that the requested flows support avian species at the first 15-year review pursuant to Neb. Rev. Stat. § 46-2,112. The Department will review any provided evidence to determine whether avian species should be added as an approved beneficial use for the Appropriations.
9. Failure to comply with all laws and regulations pertaining to surface water appropriations, any orders issued by the Director of the Department, or the provisions of this Order of Approval may result in the cancellation of the Appropriations, temporary closing of the Appropriations, administrative penalty, or any combination thereof.
10. This Order of Approval is not a guarantee that water will be available for the Appropriations. Nebraska law gives priority to senior appropriations. If in the future you are not receiving sufficient amounts of water to satisfy the Appropriations, and if there are junior appropriations upstream, you may call for water by contacting your local field office.
11. As set forth in Neb. Rev. Stat. § 46-2,112, the Appropriations will be subject to review by the Department every 15 years after the date of this Order of Approval. In addition to the optional documentation supporting avian species as described in Paragraph 8 above, such review will require written documentation from the owner of the Appropriations showing that the Appropriations continue to be beneficially used and are in the public interest. The documentation supporting a continued finding of beneficial use and public interest may include but not be limited to: a report of species studies or surveys, a report of recreational-use studies or surveys, a report of the appropriator's management actions taken to protect the Appropriations from adverse effects from water users, and a report that indicates that minimum flows remain available and any management actions carried out by the appropriator to preserve such flows. Based on this review, the Director may by order, modify or cancel, in whole or in part, the Appropriations.

DEPARTMENT OF NATURAL RESOURCES


Thomas E. Riley, P.E., Director

May 24, 2022

CERTIFICATE OF SERVICE

A copy of this Order of Approval was posted on the Department's website and provided to the Department's field office in Ord, Nebraska. A copy of this Order of Approval was mailed on May 24, 2022, to the following:

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B.J. Green, Clerk