



## LOUP POWER DISTRICT

"SERVING YOU ELECTRICALLY"

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*Via Electronic Filing*

June 23, 2014

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

Subject: Loup River Hydroelectric Project  
Comments on Draft Environmental Assessment  
FERC Project No. 1256-031

Dear Secretary Bose:

In accordance with 18 CFR §5.25 of the Commission's regulations, Loup River Public Power District (Loup Power District or District) herein electronically files comments on the Commission's Draft Environmental Assessment (Draft EA) for the relicensing of the District's Loup River Hydroelectric Project, FERC Project No. 1256 (Project).

In summary, the District believes that the Draft EA recommendations are not adequately supported by the record and that the analysis in the Draft EA contains errors and omissions. In support of its position, as discussed further below, the District provides comments relative to the following:

- The lack of record support (including misinterpretation of study results) claiming to justify the additional measures related to flow diversion in the Draft EA recommendations
- The operational impediments to implementing the Draft EA flow recommendations that are not acknowledged in the Draft EA
- Proposed clarifications and corrections to the Draft License Articles
- Proposed content corrections to be incorporated into the Final Environmental Assessment (see Attachment A)

In particular, the District believes that the site-specific studies completed by the District (as agreed upon by the Commission and resource agencies, including the U.S. Fish and Wildlife Service [USFWS], in the Revised Study Plan [including modifications subsequent to the Initial and Revised Study Reports]) do not support the conclusion in the Draft EA that the continued operation of the Project would adversely affect whooping crane, interior least tern, piping plover, and pallid sturgeon. The Draft EA recommendations propose significant operational changes based on this adverse affect determination despite acknowledging that the claimed beneficial effects of these changes would be unknown. The recommendations are also based on speculation that the operational changes would provide benefits to these threatened and endangered species. Furthermore, the recommendations are made by 1) ignoring or dismissing study results and substantial portions of the record, which includes over 4,500 pages of data, that

document a lack of Project impact on the threatened or endangered species, and 2) misstatements and misinterpretations of the study results. Finally, the Draft EA continually refers to Project impacts since construction, when the correct time frame for evaluation of impacts is since the issuance of the current license (as stated in the Draft EA on page 10).

**The record (including study results) does not support the Draft EA recommendations related to flow requirements.**

The following are the District's comments regarding the flow requirements recommended in the Draft EA.

### **Minimum Bypass Flows (Draft License Article 404)**

Draft EA recommendation: The following measure regarding minimum flow in the Loup River bypass reach is recommended in the Draft EA:

maintain a continuous minimum flow in the Loup River bypassed reach of 275 cfs or inflow, whichever is less, from April 1 through September 30, and of 100 cfs or inflow, whichever is less, from October 1 through March 31, as measured at the USGS stream gage located near Genoa, Nebraska (gage no. 06793000) to enhance downstream habitat of fish and the federally-listed interior least tern, piping plover, and whooping crane;

Loup Power District's response: The substantial increase to the minimum bypass flows from that proposed in the Final License Application (FLA), as recommended in the Draft EA based on a claimed need for enhancement of fish habitat, is not justified in the record, as summarized below, and is arbitrary and capricious:

- **401 Water Quality Certification** – The Nebraska Department of Environmental Quality (NDEQ) has confirmed in its Certification<sup>1</sup> that Project operations are in compliance with all water quality standards and do not adversely affect water quality, including temperature. Therefore, there is no justification for the Draft EA recommended minimum bypass flow.
- **Loup River Bypass Reach Fish Community Diversity** – Contrary to the statements in the Draft EA characterizing the Project as adversely affecting fish communities in the Loup River bypass reach,<sup>2</sup> the record demonstrates that the fish community is more diverse and more abundant downstream of the Project Diversion Weir, as confirmed in fish sampling performed by the Nebraska Game and Parks Commission (NGPC)<sup>3</sup> and discussed in the Draft EA.<sup>4</sup> The Draft EA claims that minimum bypass flows are required to provide

<sup>1</sup> The Project's 401 Water Quality Certification was issued by NDEQ on January 2, 2013, based on the District's Final License Proposal and did not contain any conditions for certification.

<sup>2</sup> See the Draft EA, page xxiv.

<sup>3</sup> See the FLA, Volume 3, Appendix D, Study 5.0, Section 5.7.1.

<sup>4</sup> See the Draft EA, pages 65-67.

satisfactory<sup>5</sup> habitat conditions in the Loup River bypass reach based on the Montana Method.<sup>6</sup> However, the site-specific data in the record regarding fish quantity and diversity,<sup>7</sup> as included in the Draft EA,<sup>8</sup> does not support the results of the Montana Method, and that methodology is, therefore, not applicable to analysis of the Loup River bypass reach

- ***Frequency of Fish Kills*** – The Draft EA states that “The frequency of fish kills in the Loup River bypassed reach has likely had an adverse effect on the fish communities there.”<sup>9</sup> However, the record confirms that fish kills in the Loup River bypass reach have been limited and are related to extremely hot weather conditions.<sup>10</sup> Throughout relicensing, the District has coordinated directly with NDEQ regarding fish kill reporting in the Project bypass reach (including both the Loup and Platte river bypass reaches). As cited in the Draft EA, there have been four fish kill events over 19 years.<sup>11</sup> Frequency implies regularity, and the record does not support the implication that there have been regular fish kills in the Project bypass reach.
- ***Water Temperature*** – The Draft EA states that the proposed minimum flows would reduce the occurrence of fish kills in the Project bypass reach due to temperature excursions.<sup>12</sup> As noted above, fish kills have been infrequent. Further, this statement in the Draft EA is contrary to the results of the site-specific temperature study, performed in this relicensing proceeding, upstream and downstream of the Project’s Diversion Weir.<sup>13</sup> That study determined that there is a statistically significant relationship between water temperature and ambient air temperature, there is a statistically significant one to one (1:1) relationship between the temperature upstream and downstream of the Diversion Weir, and there is NOT a statistically significant relationship between water temperature and flow.<sup>14</sup> Contrary to these site-specific study results, the Draft EA cited the Sinokrot and Gulliver method, which is fundamentally flawed as noted in the District’s response to USFWS comments on Study 4.0, Water Temperature in the Project Bypass Reach.<sup>15</sup> As documented in the record in this proceeding, there is no statistically significant relationship between low flows and water temperature excursions for this Project.<sup>16</sup>
- ***Habitat for T&E Species and Sediment Transport*** – The Draft EA concludes that there are insufficient data to determine that minimum bypass flows would enhance downstream

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<sup>5</sup> The flow rate noted in the Draft EA would be categorized as “good” under the terminology used in the Montana Method, not “satisfactory.”

<sup>6</sup> See the Draft EA, pages 276-277.

<sup>7</sup> See the FLA, Volume 2, Exhibit E, pages E-187 to E-188.

<sup>8</sup> See the Draft EA, pages 64-67.

<sup>9</sup> See the Draft EA, page 136.

<sup>10</sup> See the FLA, Volume 2, Exhibit E, pages E-178 to E-179, and E-187.

<sup>11</sup> See the Draft EA, pages 63 and 67.

<sup>12</sup> See the Draft EA, page 137.

<sup>13</sup> See the FLA, Volume 3, Appendix C, Study 4.0, Section 5.

<sup>14</sup> See the FLA, Volume 2, Exhibit E, page E-165.

<sup>15</sup> See the Loup Power District letter to FERC dated May 11, 2011.

<sup>16</sup> See the FLA, Volume 3, Appendix C, Study 4.0, Section 5.7.

habitat for interior least terns, piping plovers,<sup>17</sup> and whooping cranes,<sup>18</sup> and that conclusion is supported by the record. Relative to habitat for the interior least terns and piping plover, there is nothing in the record to support any measurable habitat benefit as the result of minimum bypass flows. In addition, the District's Study 14.0, Alternative Project Operations and Sediment Management, evaluated the change in sediment transport indicators for placing a restriction on the Project's diversion for the entire year.<sup>19</sup> As shown in the Draft EA in Table 30 (adapted from Study 14.0, Tables 5-4 and 5-5), an increase in the minimum bypass flow as recommended in the Draft EA provides, at most, immeasurable changes in width and depth of the flowing water in the Project bypass reach.<sup>20</sup>

- **Consumptive Use** – The Draft EA improperly dismisses the impact of flow diversion changes on consumptive use related to USFWS' *de minimis* standard for effects on Platte River target species due to flow depletion.<sup>21-22</sup> In the Draft EA, the consumptive use differences were converted from acre-feet per year to cubic feet per second, which skews the determination of potential impacts. The Draft EA reports in Table 21 that the consumptive use impact of incorporating minimum flows as recommended by USFWS would be 1.7 cfs, 3.0 cfs, and 1.3 cfs for a normal, dry, and wet year, respectively.<sup>23</sup> These consumptive uses were reported by the District to FERC in units of acre-feet per year so that a direct comparison could be made to the *de minimis* threshold.<sup>24</sup> As demonstrated in the District's analysis, the net increase in consumptive use in units of acre-feet per year is 1,240 acre-feet per year, 2,170 acre-feet per year, and 990 acre-feet per year for a normal, dry, and wet year, respectively. These differences by USFWS' standard of 0.1 acre-foot represent threshold exceedances of 1,240,000 percent, 2,170,000 percent, and 990,000 percent per year and cannot be considered minimal.
- **Canal Fishery** – The Draft EA fails to acknowledge and account for the detrimental effect on the Loup Power Canal fishery that would result from the implementation of this recommended requirement. Regular diversion of water into the Loup Power Canal is needed to maintain the excellent fishery that has been established.<sup>25</sup> To comply with the Draft EA's recommended flow modification, any time inflow is less than the minimum bypass flow, the District would be required to cease diversion of water into the Loup

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<sup>17</sup> See the Draft EA, page 202.

<sup>18</sup> See the Draft EA, page 192.

<sup>19</sup> See the FLA, Volume 3, Appendix J, Study 14.0.

<sup>20</sup> See the Draft EA, page 122.

<sup>21</sup> See the Draft EA, pages 84-91.

<sup>22</sup> In the USFWS February 9, 2009, letter to FERC regarding the pre-application and scoping documents, USFWS offered the following, "The USFWS has identified 0.1 acre-foot/year as the *de minimis* threshold for considering the effects of depletions in flow in the nearest surface water tributary to the Platte River system. Projects whose depletions exceed the *de minimis* threshold would be considered to have a potentially significant effect on the Platte River target species, and would require consultation with the USFWS (<http://www.fws.gov/platteriver/deminimis.htm>)."

<sup>23</sup> See the Draft EA, page 91.

<sup>24</sup> See the Loup Power District letter to FERC dated December 6, 2012, Attachment A, Table A-1.

<sup>25</sup> See the FLA, Volume 2, Exhibit E, Section E.6.3.2.

Power Canal, resulting in stagnant water in the canal that could adversely impact the existing Loup Power Canal fishery.

### **Maximum Diversion into Loup Power Canal (Draft License Article 406)**

Draft EA recommendation: The following measure regarding maximum diversion into the Loup Power Canal is recommended in the Draft EA:

limit the maximum diversion of water into the power canal from March 1 through June 30 so as not to exceed an instantaneous rate of 2,000 cfs, as measured at the USGS stream gage located near Genoa, Nebraska (gage no. 06792500) to enhance downstream habitat of the federally-listed interior least tern, piping plover, and whooping crane;

Loup Power District's response: The Draft EA's stated purpose for recommending the limitation on diversion into the Loup Power Canal<sup>26</sup> is speculative and not supported by the record. Throughout the discussion of the cap on diverted flow, the Draft EA states that it is unknown how habitat and/or species usage of the Loup River bypass reach would change under the proposed flows.<sup>27</sup> Furthermore, the Draft EA's analysis misinterprets the results of the District's Study 14.0 in justifying the unsubstantiated benefits to habitat.<sup>28</sup> The following items clarify the correct use of the results of Study 14.0, highlight sections of the record that clearly demonstrate that the proposed maximum diversion is not necessary and would have no measurable effect, and provide additional comments related to the maximum diversion condition proposed in the Draft EA.

- ***Misinterpretation of Study 14.0*** – The Draft EA's justification for a cap on diverted flows to improve sediment transport and enhance habitat is based on misinterpretation of the results of Study 14.0, as evidenced by the following:
  - The Draft EA cites Study 14.0, which was requested by Commission staff, and states that the proposed cap on diverted flow would result in “minor” increases in sediment transport indicators width, depth, and velocity in the Project bypass reach.<sup>29</sup> Study 14.0 evaluated a cap on the maximum diversion for the entire year.<sup>30</sup> The actual increases (stated either as percentages or absolute values) would be considerably less for a 4-month period, as proposed in the Draft EA, as opposed to the 12-month period analyzed in Study 14.0. Furthermore, the actual full year values listed in the Draft EA, Table 30 (6 feet, 0.03 foot, and 0.06 foot/second for width, depth, and velocity, respectively),<sup>31</sup> of the estimated changes identified in Study 14.0 are immeasurable and undetectable, and are not reasonably considered an enhancement to downstream habitat. Based on the range of habitat types for which interior least terns, piping plovers, and whooping

<sup>26</sup> See the Draft EA, page 203.

<sup>27</sup> See the Draft EA, page 203.

<sup>28</sup> See the Draft EA, pages 203-206.

<sup>29</sup> See the Draft EA, page 121.

<sup>30</sup> See the FLA, Volume 3, Appendix C, Study 4.0, Section 5.2.2.

<sup>31</sup> See the Draft EA, page 122.

cranes have been documented to use and the unknowns relative to what is considered suitable, it is speculative that these estimated benefits would have any benefit to habitat or the species.

- ***Interior Least Tern & Piping Plover Nesting Habitat*** – The Draft EA did not properly reflect evidence in the record in this proceeding that demonstrates that the District’s operations have in fact enhanced habitat. The record clearly demonstrates that the District-constructed North Sand Management Area (SMA) has provided extensive additional habitat that has a net benefit since the beginning of the current License<sup>32</sup> (and the baseline for evaluation of impacts in the Draft EA).
  - The Draft EA recommended cap on diverted flow would have unknown impacts on habitat and actual nesting, and it is likely that some impacts would be negative.
  - As cited in the Draft EA in Tables 37, 38, 40 and 41,<sup>33</sup> the record demonstrates that the habitat created by the District at the North SMA is suitable for nesting and has had a major positive impact on interior least tern and piping plover nesting along the Loup River.<sup>34</sup> The North SMA accounts for over 21 percent of all interior least tern and 27 percent of all piping plover nesting on or along the entire Loup River (both upstream and downstream of the Diversion Weir). Furthermore, the North SMA has accounted for 41 and 46 percent of interior least tern and piping plover nesting, respectively, on or along the Loup River below the Project Diversion Weir.<sup>35</sup> Therefore, the Project has not had an overall adverse effect, as alleged in the Draft EA, but rather has had a beneficial effect on these species for which the Draft EA has not accounted.
  - A comparison of nesting upstream and downstream of the Diversion Weir was performed based on the record and shown in the Draft EA in Tables 37, 38, 40 and 41.<sup>36</sup> The upstream and downstream segments of the Loup River are approximately equal lengths, 35 miles and 34 miles, respectively.<sup>37</sup> Extrapolating the upstream on-river nesting data to downstream, the expected number of interior least tern nests per mile downstream would be 10 nests per year compared to an actual value of 6 nests per year. Similarly, the expected number of piping plover nests per mile downstream would be 4 nests per year compared to an actual value of 1 nest per year. The North SMA has provided an average of 11 interior least tern and 3 piping plover nests per year since 1987,<sup>38</sup> thereby providing a net benefit to interior least tern nesting and piping plover nesting.

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<sup>32</sup> See the FLA, Volume 2, Exhibit E.

<sup>33</sup> See the Draft EA, pages 159-160 and 165-166.

<sup>34</sup> See the FLA, Volume 2, Exhibit E.

<sup>35</sup> See the Draft EA, Table 37 and Table 40.

<sup>36</sup> See the Draft EA, pages 159-160 and 165-166.

<sup>37</sup> The USFWS analysis, as cited in the Draft EA, incorrectly uses 21 miles for the length of the Loup River upstream of the Diversion Weir. The Loup River from the confluence of the Middle and South Loup rivers to the confluence with the Platte River is 69 miles long, and the Project Diversion Weir is located at River Mile 34.2.

<sup>38</sup> See the Draft EA, Table 37 and Table 40.

- The interior least tern has been proposed for delisting as an endangered species, and the 5-year review of the piping plover status is currently underway. Furthermore, in the Draft EA, Tables 36 and 39 clearly show that the Loup River is small contributor to the population within the region and even smaller with respect to the overall populations.<sup>39</sup>
- **Habitat Criteria for Whooping Crane** – The Draft EA relied on information in the record that has been refuted. The District has recently become aware that information related to the whooping crane migration corridor and whooping crane habitat parameters contained in the Final License Application and subsequently used in the Draft EA has been questioned for its accuracy and applicability to use on other river systems and is not a reasonable basis for evaluating Project effects related to whooping crane.
  - Nebraska Whooping Crane Migration Corridor – The use of whooping crane sightings to develop the whooping crane migration corridor has been determined to be inappropriate because the use of sighting data is influenced by where and how many sighting attempts are made, resulting in a biased sample.<sup>40</sup> In particular, as to the analysis in the Draft EA, the whooping crane sighting data are biased by the high number of sighting opportunities that occur at Grand Island, Nebraska, and the Rowe Sanctuary versus other places in the central flyway. This bias can be seen in the Draft EA, Figure 19, in the concentration of red dots representing sightings near Grand Island and the eastward “bubble” that it creates on the percent usage bands.<sup>41</sup> It is the District’s understanding that newly available telemetry data show the flyway centered on Kearney,<sup>42</sup> which is further west than the flyway shown in the Draft EA, Figure 19, and subsequently reduces the flyway extension to the east (that is, toward the Project).
  - Howlin (2008), as referenced in the District’s Final License Application and the Draft EA,<sup>43</sup> has potentially been determined to have errors and is being abandoned by the Platte River Recovery Implementation Program (PRRIP) for use in making management decisions.<sup>44</sup> Furthermore, use of relative probability curves from use versus availability studies in other areas is an incorrect extrapolation of data.<sup>45</sup> As such, Howlin (2008) should not be used to make decisions regarding license conditions.
  - A new study by Pearse, et al. (2013)<sup>46</sup> uses unbiased telemetry-marked whooping crane data to assess roosting sites outside of the central Platte River to characterize stopover sites within a day’s flight (1,000 km) of the central Platte River. This ground-based study spanned from northern Texas to North Dakota and evaluated habitat used for roosting. Based on the available telemetry

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<sup>39</sup> See the Draft EA, pages 156 and 161.

<sup>40</sup> Personal communication between Matt Pillard, HDR, and Jason Farnsworth, Headwaters Inc., June 2014.

<sup>41</sup> See the Draft EA, page 181.

<sup>42</sup> Personal communication between Matt Pillard, HDR, and Jason Farnsworth, Headwaters Inc., June 2014.

<sup>43</sup> See the FLA, Volume 3, Appendix D, Study 5.0; see the Draft EA, pages 190-191.

<sup>44</sup> February 14 TAC Whooping Crane workshop Minutes, PRRIP website.

<sup>45</sup> Personal communication between Jim Jenniges, NPPD, and Howlin, June 2014.

<sup>46</sup> Personal communication between Matt Pillard, HDR, and Aaron Pearse, USGS, June 2014

information, whooping cranes use a wide variety of habitat types for roosting.<sup>47</sup> The existing habitat in the Loup River bypass reach is within the parameters of roosting habitat used by whooping cranes; however, whooping cranes have generally not been documented in the Loup River (either upstream or downstream or the Diversion Weir) for unknown reasons.

- The Draft EA statement that unobstructed channel widths “are likely the most limiting factor restricting whooping crane roosting in the vicinity of the project”<sup>48</sup> is speculative and unsupported. If unobstructed channel widths are the most limiting factor, one could expect to see more whooping cranes on the Platte River immediately south of the Project, where none have been observed.
- The habitat criteria used in the Final License Application, Draft Biological Assessment, Table 8, provided references for multiple habitat parameters at other river sites (primarily the central Platte).<sup>49</sup> These parameters were used to compare to what is available on the Loup River system above and below the Diversion Weir as part of the District’s Study 5.0, Flow Depletion and Flow Diversion. This approach was not intended to predict use of the species in the Loup River system as was done by USFWS and shown in Figure 20 of the Draft EA.<sup>50</sup>
- **Indirect Effects** – The Draft EA failed to consider the indirect effects of the recommended flow modifications related to Project dredging operations and the potential effect on interior least tern and piping plovers.
  - Reduced flow diverted into the Loup Power Canal would adversely affect Project-enhanced nesting habitat at the North SMA. The beneficial effect of Project dredging operations related to creation of nesting habitat at the North SMA is well documented<sup>51</sup>; reduction of diverted flow would result in less dredged material and thus creation of less habitat at the North SMA.
  - The Draft EA’s proposed measures include mechanical modification of sandbars in the Loup River bypass reach to an elevation that would be inundated by the dominant discharge.<sup>52</sup> Increasing flow in the Loup River bypass reach by as much as 1,500 cfs, as may result from the maximum on diversion of flows to the Loup Power Canal, could result in inundation of nests located on these mechanically modified sandbars.
  - Restricting diverted flow could result in flood stage exceedance downstream. It is likely that preventing the District from diverting its full capacity of 3,500 cfs could result in the downstream stage reaching flood stage. During storm events, if the District is able to divert only 2,000 cfs into the Loup Power Canal, the additional 1,500 cfs would be conveyed down the Project bypass reach. Those additional flows could result in flood stage exceedance downstream.

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<sup>47</sup> Personal communication between Matt Pillard, HDR, and Aaron Pearse, June 2014.

<sup>48</sup> See the Draft EA, page 190.

<sup>49</sup> See the FLA, Volume 2, Exhibit E, Appendix E-2, page 52.

<sup>50</sup> See the Draft EA, page 191

<sup>51</sup> See the Draft EA, Table 38 and Table 41.

<sup>52</sup> See the Draft EA, page 194.

- **Nebraska Water Law** – The Draft EA’s operational conditions, related to the provision of flows to benefit species, could have the effect of circumventing water rights administration in the State of Nebraska, which, common to most western states, adheres to the prior appropriation doctrine. Within its surface water statutes, the State of Nebraska has a mechanism in place for the Nebraska Game and Parks Commission (NGPC) and any Natural Resources District (NRD) to obtain an instream appropriation for recreation or fish and wildlife. The process is outlined in the Nebraska Department of Natural Resources Surface Water Statutes, Section 46-2, 107 through 46-2,119. NGPC currently holds an instream flow appropriation for 1,800 cfs along the Platte River from approximate Platte River Mile (RM) 100 to RM 33 (approximately 1.5 miles downstream of the Tailrace Canal to the Platte River confluence with the Elkhorn River), with a priority date of 1993. By requiring the District to bypass flow for a perceived fish and wildlife benefit, FERC may in effect be providing an instream flow right to USFWS and in doing so could unintentionally circumvent the processes outlined in the State of Nebraska’s Surface Water Statutes. FERC is essentially taking water from a senior appropriator for another purpose (i.e., fish and wildlife), the result of which could negatively affect all junior appropriators in the basin. Furthermore, recommended flows cannot be protected for FERC’s intended use under Nebraska law because the administrative procedures set forth in Nebraska for an instream flow were not followed. In other words, the flows provided by the District would be available for appropriation by other water users under Nebraska State Statute. For example, a water user could apply for and be granted a water right for any or all of the bypassed flows.
- **Consumptive Use** – Similar to the impacts of the recommended minimum flows, in its maximum diversion flow recommendation, the Draft EA improperly dismisses the impact of flow diversion changes on consumptive use related to USFWS’ *de minimis* standard for effects on Platte River target species due to flow depletion.<sup>53</sup> The Draft EA converted the consumptive use differences from acre-feet per year to cubic feet per second, which skews the determination of potential impacts. The Draft EA reports in Table 21 that the consumptive use impact of incorporating a maximum diversion as recommended by USFWS would be 0.8 cfs, 0.3 cfs, and 0.7 cfs for a normal, dry, and wet year, respectively.<sup>54</sup> These consumptive uses were reported by the District to FERC in units of acre-feet per year so that a direct comparison could be made to the USFWS’ *de minimis* threshold.<sup>55</sup> As demonstrated in the District’s analysis, the net increase in consumptive use in units of acre-feet per year is 600 acre-feet per year, 180 acre-feet per year, and 520 acre-feet per year for a normal, dry, and wet year, respectively. These differences by USFWS’ standard of 0.1 acre-foot represent threshold exceedances of 600,000 percent, 180,000 percent, and 520,000 percent per year and cannot be considered minimal.

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<sup>53</sup> See the Draft EA, pages 84-91.

<sup>54</sup> See the Draft EA, page 91.

<sup>55</sup> See the Loup Power District letter to FERC dated December 6, 2012, Attachment A, Table A-1.

## Lower Platte River Flows (Draft License Article 405)

Draft EA recommendation: The following measure regarding lower Platte River flows is recommended in the Draft EA:

maintain a continuous minimum flow of 4,400 cfs or inflow, whichever is less, from May 1 through June 7 in the lower Platte River as measured at the USGS stream gage located at North Bend, Nebraska (gage no. 06796000) to provide longitudinal connectivity for pallid sturgeon;

Loup Power District's response: The Draft EA's proposed maintenance of a minimum flow of 4,400 cfs in the Platte River at North Bend is arbitrary and not warranted based on the record, as summarized below. Additionally, due to operational impediments and data limitations on the Loup and Platte rivers, an instantaneous flow could not be achieved with any degree of accuracy or consistency.

- ***Peters and Parham Connectivity Analysis*** – The Draft EA's reliance on the Peters and Parham connectivity analysis to identify and justify minimum flow requirements in the lower Platte River<sup>56</sup> is arbitrary and capricious. The Draft EA acknowledges that Peters and Parham's analysis has "undergone critical review by the applicant<sup>57</sup> and other entities" and "has some flaws."<sup>58</sup> Nevertheless, without refuting the clear flaws to that analysis, the Draft EA used the analysis to recommend onerous flow restrictions on District operations for the term of a new 30-year license.
- ***Instream Flow at North Bend*** – The Draft EA fails to acknowledge existing state water rights. NGPC currently holds an instream flow appropriation for 1,800 cfs along the Platte River from approximate RM 100 to RM 33 (approximately 1.5 miles downstream of the Tailrace Canal to the Platte River confluence with the Elkhorn River). This appropriation went through the proper authority and is in compliance with Nebraska State Statute and can therefore be protected for its intended purpose.
- ***Importance of the Elkhorn River to Pallid Sturgeon Use*** – The Draft EA's analysis fails to justify the recommended flow requirement on the Project based on pallid sturgeon use of the lower Platte River. The Draft EA notes that the majority (92 percent) of captures of pallid sturgeon have occurred in the lower Platte River below the Elkhorn River confluence,<sup>59</sup> and acknowledges that "the lowermost section of the lower Platte River benefits from flows supplied by the Elkhorn River and Salt Creek during low-flow conditions."<sup>60</sup> However, the Draft EA fails to make a connection based on record evidence that the nearly 30 percent more water available downstream of the Elkhorn River is likely the most important factor in pallid sturgeon use of the lower Platte River and that the overall lower flows upstream of the Elkhorn River are the reason for lower use by pallid sturgeon.

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<sup>56</sup> See the Draft EA, page 229.

<sup>57</sup> See the Loup Power District letters to FERC dated May 11, 2011; July 30, 2012; and December 6, 2012.

<sup>58</sup> See the Draft EA, page 229.

<sup>59</sup> See the Draft EA, page 169.

<sup>60</sup> See the Draft EA, page 233.

- **Central Platte River** – The Draft EA has identified a target flow for the lower Platte River of 4,400 cfs and has recommended that the responsibility for providing that flow be placed entirely on Loup Power District, with no account for the flow inputs from the central Platte River and the responsibility of upstream water users for impacts on the lower Platte River. At North Bend, flows from the Loup River and Loup Power Canal contribute approximately 54 percent of the total annual flow, and the remaining 46 percent comes from the central Platte River and other small tributaries.<sup>61</sup> Assuming that a target flow would be appropriate in the context of the relicensing of the Project, any such target flow established for the lower Platte River should include consideration of these flow inputs as well as the appropriation currently held by NGPC. Under the Draft EA recommendation, the responsibility to meet the declared target flow at North Bend is unreasonably and inappropriately placed entirely on the Project. Furthermore, the Draft EA recommendation fails to consider depletions from current uses, some of which have yet to be realized (for example, lag effect of groundwater usage), as well as future water appropriations on both the Platte and Loup rivers, without justification, arbitrarily imposing an undue burden on the Project for the term of the new license.
- **Loup River** – The Draft EA has also failed to account for the flow depletions by other water users on the Loup River upstream of the Project, including Calamus and Sherman reservoirs and agricultural irrigation. Assuming that a target flow would be appropriate in the context of the relicensing of the Project, any such target flow established for the lower Platte River should include consideration of these upstream flow depletions and water users. Under the Draft EA recommendation, the responsibility to meet the declared target flow at North Bend is unreasonably and inappropriately placed entirely on the Project.
- **Canal Fishery** – The Draft EA fails to acknowledge and account for the detrimental effect on the Loup Power Canal fishery that would result from the implementation of this recommended requirement. Regular diversion of water into the Loup Power Canal is needed to maintain the excellent fishery that has been established.<sup>62</sup> To comply with the Draft EA’s recommended flow modification, any time that there is less than 1,000 cfs of inflow available, the District would be required to cease diversion of water into the Loup Power Canal, resulting in stagnant water in the canal that could adversely impact the existing Loup Power Canal fishery.
- **Operational Impediments** – The Draft EA recommendation fails to account for operational impediments to implementing this requirement at the Project. The USGS gage at North Bend is located approximately 65 river miles downstream of the Diversion Weir and 34 miles downstream of the Columbus Powerhouse. The different lag times to North Bend for tracking flows emanating from these two locations are approximately 24 to 36 hours long. In addition, variable inflows would come from the Platte River as well as from smaller tributaries. It is unreasonable and arbitrary to require the District to regulate Project flows to instantaneously coordinate with all of these variables.

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<sup>61</sup> Based on analysis of USGS mean daily flows from Water Year 1951 through Water Year 2013.

<sup>62</sup> See the FLA, Volume 2, Exhibit E, pages 187-188, and Volume 3, Appendix D, Study 5.0, pages 91-94.

**The Draft EA recommendations should be modified to recognize the significant operational impediments to the proposed flow requirements.**

The following are the District's comments regarding the operational impediments to implementing the Draft EA's flow recommendations.

The District reiterates that the Project does not have a dam that allows storage of inflow for use or distribution at a later time. Rather, all flow diverted into the Loup Power Canal is released from the Project within approximately one day's time. This operational condition makes it impossible for the District to comply with exact instantaneous flows of any sort.

**Minimum Bypass Flows (Draft License Article 404)**

Draft EA recommendation: The following measure regarding minimum flow in the Loup River bypass reach is recommended in the Draft EA:

maintain a continuous minimum flow in the Loup River bypassed reach of 275 cfs or inflow, whichever is less, from April 1 through September 30, and of 100 cfs or inflow, whichever is less, from October 1 through March 31, as measured at the USGS stream gage located near Genoa, Nebraska (gage no. 06793000) to enhance downstream habitat of fish and the federally-listed interior least tern, piping plover, and whooping crane;

Loup Power District's response: Regulating a prescribed continuous minimum flow in the Loup River bypass reach, as measured at the existing USGS stream gage located near Genoa (gage no. 06793000), would be virtually impossible for the following reasons:

- Operation of the Project Headworks (that is, the intake gates, sluice gates, and Settling Basin) is an art, not a science, and providing precise instantaneous flows either into the Loup Power Canal or down the Loup River bypass reach cannot be achieved, rendering the proposed limitations to be technically infeasible. Passing additional flow beyond normal leakage at the Diversion Weir can be accomplished by raising one or more sluice gates, lowering one or more intake gates, or doing some combination of both but such operations do not allow for precision due to the lengthy feedback loop associated with gage readings. The additional flow can be released over the flashboards, under the sluice gates, over the sluice gates, or any combination of the three but such additional flows cannot be exactly calibrated due to the constant presence of sand bars at the Intake Structure and the variable amount of sand in the Settling Basin. Based on these factors, it would be technically impossible to maintain a set value of instantaneous flow either into the Loup Power Canal or down the Loup River bypass reach, and any flow requirements should include provision for a reasonable range of operation.
- There is no official stream gage within a reasonable distance upstream of the Diversion Weir that can be used to measure Loup River inflow to the Project. In the Draft EA, footnote 203, inflow is defined as "the instantaneous flow at the Genoa gage while the

project is not diverting flow into the power canal.”<sup>63</sup> The Genoa gage is approximately 6 miles downstream from the Diversion Weir and the time lag for water to travel between the Diversion Weir and the Genoa gage would result in an hours-long feedback loop, which would make refined management of minimum bypass flows very problematic and create opportunities for potential non-compliance issues.

- A variable and unregulated flow of water leaks over, through, and under the Diversion Weir at all times. Based on decades of experience and readings at the Genoa gage, Project operators estimate the leakage rate to be approximately 50 cfs during the summer low flow season, when the three steel sluice gates are fully closed and the wooden flashboards are fully in place along the crest of the concrete weir. Leakage flow is continually subject to variation resulting from debris accumulation or removal; deteriorated, damaged or missing flashboards; effectiveness of sluice gate settings on concrete sills; changes in pool elevation below the top of flashboards; current status of individual sluice gate seals (that is, new, worn, or badly deteriorated); and depth of sand and sediment accumulation immediately upstream of the Diversion Weir. Depending on the combined status of all listed variables, leakage can change from day to day without any change to gate settings.
- The USGS gage on the Loup River near Genoa does not have a hydraulic control structure to facilitate accurate and precise flow measurements. The naturally braided river bottom at the gaging site is composed of continually shifting sand. This causes the principal thread of the stream (thalweg) to wander laterally back and forth between the channel banks. For these reasons, USGS personnel must frequently re-profile the river cross section and re-measure flow velocities along it. This information is continually evaluated to determine the need to recalibrate the stage-flow relationship that is used to calculate stream flow from a single stage reading per USGS protocol.
- The generally accepted flow measurement accuracy at USGS gages with fixed control structures (such as weirs, spillways, gates, and orifices) is +/- 5 percent at best. This compares with an accuracy range of +/- 10 to 15 percent for gages located at continually shifting natural river sections in sandy braided rivers. Furthermore, during low flow periods, gages on braided rivers often indicate low or no river flow when the thread of the stream has simply wandered away from the stage recorder. The measured values at this gage are typically fair and poor.<sup>64</sup>
- Gage readings at USGS gages in the vicinity of the Project are often unavailable during the winter due to ice.

Loup Power District’s conclusion: Instantaneous compliance with a specified minimum bypassed flow rate would be virtually impossible to maintain, potentially creating non-resolvable compliance issues if strict limitations are imposed. Neither the Headworks infrastructure nor the USGS stream gage near Genoa is suited for the proposed degree of flow measurement and regulation. Attempting to comply with the specified minimum flow rates, on an instantaneous basis, would unfairly cause the District to bypass considerably more water than specified and put undue pressure on the District to report out-of-compliance readings. The District suggests

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<sup>63</sup> See the Draft EA, page 272.

<sup>64</sup> See [http://waterdata.usgs.gov/nwis/measurements/?site\\_no=06793000](http://waterdata.usgs.gov/nwis/measurements/?site_no=06793000).

that a technical conference be held to discuss the draft license articles to develop workable conditions that address compliance needs as well as operational limitations.

### **Maximum Diversion into Loup Power Canal (Draft License Article 406)**

Draft EA recommendation: The following measure regarding maximum diversion into the Loup Power Canal is recommended in the Draft EA:

limit the maximum diversion of water into the power canal from March 1 through June 30 so as not to exceed an instantaneous rate of 2,000 cfs, as measured at the USGS stream gage located near Genoa, Nebraska (gage no. 06792500) to enhance downstream habitat of the federally-listed interior least tern, piping plover, and whooping crane;

Loup Power District's response: Instantaneously regulating Loup Power Canal inflow so as not to exceed a maximum value—as measured at the existing USGS stream gage located on the canal near Genoa (gage no. 06792500)—would be virtually impossible for several reasons, as follows:

- Operation of the Project Headworks is a complex and dynamic process involving many variables and limited feedback. Headworks operators must frequently adjust intake gate utilization and individual gate settings to manage both sand and water at the Intake Gate Structure. In general, the operating procedures employed were established to maximize water flow into the Settling Basin while simultaneously discouraging admission of sand and debris. These procedures are complex and require skilled operators. The system is not suited for automated operation.
- Accurately regulating inflow using gate rating tables or curves is not practical because of the continuous formation and reformation of sand bars both upstream and downstream of the Intake Gate Structure.
- The rate of flow from the Settling Basin to the canal is measured and recorded at USGS gage no. 06792500 on the Loup Power Canal near Genoa. This gage is located at the Skimming Weir, which functions as a stable hydraulic control structure and facilitates reasonably accurate flow measurement. However, the design flow velocity through the 2-mile-long Settling Basin is less than 1 foot per second. This translates to a 3 hour travel time from the Intake Gate Structure to the Skimming Weir. Therefore, Headworks operators must wait 3 hours to receive feedback on each and every adjustment they make. During that 3-hour period, debris may have obstructed a gate, dredging activity may have changed, other gate adjustments may have been necessary, or the natural project inflow may have changed.

Loup Power District's conclusion: Even with reasonably accurate USGS gage flow data, instantaneous compliance with a specified maximum diversion rate would be virtually impossible to maintain. Neither the Headworks infrastructure nor its established operating procedures are well suited to compliance with an instantaneous maximum inflow limitation. Attempting to comply with the specified maximum diversion rate, using a significantly delayed feedback loop, would unfairly cause the District to divert less than the allowable instantaneous flow. Every eligible cubic foot per second not diverted would unnecessarily reduce energy

production at both the Monroe and Columbus Powerhouses. The District suggests that a technical conference be held to discuss the draft license articles to develop workable conditions that address compliance needs as well as operational limitations.

### **Lower Platte River Flows (Draft License Article 405)**

Draft EA recommendation: The following measure regarding lower Platte River flows is recommended in the Draft EA:

maintain a continuous minimum flow of 4,400 cfs or inflow, whichever is less, from May 1 through June 7 in the lower Platte River as measured at the USGS stream gage located at North Bend, Nebraska (gage no. 06796000) to provide longitudinal connectivity for pallid sturgeon;

Loup Power District's response: Instantaneous regulating of the Project to maintain a continuous minimum flow in the Platte River—as measured at the existing USGS stream gage located at North Bend (gage no. 06796000)—would be virtually impossible for several reasons, as follows:

- The USGS gage at North Bend is not located at a hydraulic control structure. Due to the variable nature of braided rivers, the flow measurements from the North Bend gage are not dependably accurate.
- The USGS gage at North Bend is located approximately 65 river miles downstream of the Diversion Weir and 34 miles downstream of the Columbus Powerhouse. The different lag times to North Bend for flows emanating from these two locations are approximately 24 to 36 hours long. In addition, variable inflow would come from the Platte River as well as from smaller tributaries. Requiring the District to regulate Project flows to instantaneously coordinate with all of these variables is unreasonable and excessively burdensome and technically infeasible. Additionally, the District should not be held responsible for natural dry or low flow watershed conditions that reduce native flows over 34 miles of watershed below the Columbus Powerhouse, or for similar naturally dry or abnormal flow conditions in the reach between the tailrace and the North Bend gage.
- In the Draft EA, footnote 204, inflow is defined as “the instantaneous flow at the North Bend gage while the project is operating in a non-peaking mode or is not diverting flow into the power canal.”<sup>65</sup> The two operating conditions in this definition are neither mutually exclusive nor mutually inclusive because of the variable storage available in the Project regulating reservoirs. In addition, the definition does not address the time lags associated with changes in non-peaking power releases or flow diversion.

Loup Power District's conclusion: Instantaneous compliance with a specified continuous minimum flow rate at North Bend would be impossible to achieve or maintain through Project operations. Neither the Project infrastructure nor the USGS stream gage(s) are suited for the proposed degrees of flow measurement and regulation. Attempting to comply with the specified minimum flow criteria would unreasonably require the District to constantly adjust Project flows and bypass water that could otherwise be productively used for power generation. The District

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<sup>65</sup> See the Draft EA, page 272.

suggests that a technical conference be held to discuss the draft license articles to develop workable conditions that address compliance needs as well as operational limitations.

**Clarifications and corrections should be made to the Draft License Articles to make them consistent with the record evidence.**

The District has identified the following necessary revisions to the Draft License Articles included in the Draft EA, Appendix A.

***Draft License Article 402, Loup River Bypassed Reach Stream Bank Monitoring Plan*** – The extent of monitoring required by this License Article should be limited to District-owned property.

***Draft License Article 404, Seasonal Minimum Flows in the Loup River Bypassed Reach*** – As written, compliance with this License Article would be extremely difficult to achieve and/or monitor, as noted above in the discussion of operational impediments to implementing the Draft EA's flow recommendations.

***Draft License Article 405, Minimum Flow in the Lower Platte River*** – As written, compliance with this License Article would be extremely difficult to achieve and/or monitor, as noted above in the discussion of operational impediments to implementing the Draft EA's flow recommendations.

***Draft License Article 406, Maximum Diversion of Flow into the Power Canal*** – As written, compliance with this License Article would be extremely difficult to achieve and/or monitor, as noted above in the discussion of operational impediments to implementing the Draft EA's flow recommendations.

***Draft License Article 414, Tern and Plover Monitoring Plan*** – Item 2(d) should be deleted. Mechanical modification of sandbars is unnecessary based on the record, as discussed in these District comments on the Draft EA.

***Draft License Article 416, Recreation Management Plan*** – Item (4) should be deleted – the District cannot support the operation of the Off-Highway Vehicle Park without the partnership and expertise of the Nebraska Off-Highway Vehicle Association or similar organization.

The District suggests that a technical conference be held to discuss the draft license articles to develop workable conditions that address compliance needs as well as operational limitations.

**Corrections to language in the Draft EA should be incorporated into the Final Environmental Assessment.**

The District has identified content corrections that should be incorporated into the Final Environmental Assessment to be consistent with the record in this relicensing proceeding. These corrections are summarized in Attachment A.

If you have any questions regarding the District's comments or any information provided by the District, please contact me at (402) 564-3171 ext. 268.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Neal D. Suess". The signature is fluid and cursive, with the first name "Neal" being the most prominent.

Neal D. Suess  
President/CEO  
Loup Power District

Attachments: Attachment A, Draft EA Content Corrections

ATTACHMENT A

DRAFT EA CONTENT CORRECTIONS

*Attachment A – Draft EA Content Corrections*

The District has identified the following content corrections that should be addressed in the Final EA:

- On page 28, the Draft EA states the following: “On average, the Loup River contributes 34 percent of the discharge annually for the lower Platte River (Peters and Parham 2008). The contribution of water from the Loup and Elkhorn Rivers (28 percent), and Salt Creek (22 percent) (Hamel and Pegg, 2012) helps to keep the lower Platte River in better condition than the upper Platte River, where it is not unusual for portions to completely dry up at times during the hottest months of the year,” when, in fact, the Elkhorn contributes 19 to 21 percent, and the Salt contributes 5 to 8 percent. Sources:
  - U.S. Fish and Wildlife Service (USFWS). 2002. Summary Report on the Potential of Changes in Central Platte Flow Conditions to Affect Flows in the Lower Platte. December 31, 2002.
  - Nebraska Department of Natural Resources (NDNR). 1985. Platte River Water Supply Downstream From Columbus. January 1985.
- On page 43, the Draft EA states that “For 6 out of 12 months there is no flow in the Loup River bypassed reach, and very low minimum flows for the remainder of the year,” which is inaccurate. These minimum statistics indicate the lowest flow ever recorded at a gage location during the reference month. For the zero flow noted for May through October, this means that at least one instance of zero flow was recorded for each month during the Period of Record, in no way indicating a six-month period of zero flow.
- On page 47 of the Draft EA, Table 7 erroneously combines information from Tables 5, 6, and 8. Corrections to the data are as follows:

Month	Upper Platte River at Duncan, NE (cfs) <sup>1</sup>	Loup River bypassed reach at Columbus, NE (cfs) <sup>2</sup>	Loup Project outlet weir (cfs) <sup>3</sup>	Combined monthly mean flows for three sites (cfs)	Lower Platte River at North Bend, NE (cfs) <sup>4</sup>
April	2,380	1,130	<del>1,890</del> 2,100	<del>5,400</del> 5,610	5,890
May	2,500	1,110	<del>2,100</del> 1,820	<del>5,710</del> 5,430	5,800
June	2,840	1,560	<del>1,820</del> 2,020	<del>6,730</del> 6,420	<del>7,240</del> 6,730
July	1,380	678	1,380	3,438	3,620

- On page 73, the Draft EA states that “Peaking operations would also continue to have a limited effect on the flow in the Loup River bypassed reach.” However, rather than a “limited effect,” peaking operations (i.e., hydrocycling) would have no effect on the Loup River bypass reach.
- On page 96, the Draft EA states that “The alternative minimum flows would increase the flows in the Loup River bypassed reach to 100 cfs during the months of October through March, and to 275 cfs beginning in April. The specific effect of providing these minimum flows on ice jam flooding is unknown. Therefore, if ice-jam flooding were to occur, it would be important for the Loup Power District to be able to modify project operations in a manner that would allow them to alleviate the potential for flooding and protect property and public safety.” The District believes that this caveat is not adequately covered in the draft license articles, specifically, the coordination required for flow modifications would be too onerous and slow during an emergency situation.

- On page 99, Table 22 of the Draft EA contains several Average Annual Yield values inconsistent with those reported by the District. Some discrepancies are assumed to be due to rounding; others cannot be explained as the District was unable to reproduce the reported values. These discrepancies should be corrected or explained in the Final EA.
- On page 101, the Draft EA incorrectly states that the Loup River channel is not in a state of quasi-equilibrium based on the construction of jetties approximately 20 years ago and the fact that continued maintenance is required: “The south bank jetties have been reconstructed and extended as warranted since they were constructed. Additionally, seven jetties have been constructed along the north bank in 1993 and 1994. Loup Power District state they maintain these north streambank jetties in the Loup River bypassed reach to prevent further channel migration of the channel southward. The ongoing need to maintain these jetties indicates that the channel is attempting to alter its pattern and is not in a state of quasi-equilibrium.” The seven jetties were constructed in 1993 and 1994 as a result of significant high flow events in the spring and early summer of 1993. The fact that they were constructed and that others required maintenance does not necessarily mean that the channel is not in a state of quasi-equilibrium. The Loup River at Genoa gage has shown a stable trend as far back as 1997 (Figure 5-21 in Study 1.0, Sedimentation). As part of the District’s Study 1.0, Sedimentation, a body of evidence approach was used to characterize the Loup and Platte Rivers in the vicinity of the Project. As stated in Section 5.1, Summary of Conclusions, “Existing literature, including Platte River studies by USACE, USBR, and USGS; calculations of effective discharges; regime analysis; literature on the channels’ profiles; and physical observations indicate that the Loup River bypass reach and the lower Platte River are not experiencing aggradation or degradation. Instead, these analyses, particularly the bed gradation studies by others and the effective discharge and regime analysis, clearly indicate that both the Loup and lower Platte rivers are well within parameters establishing them as dynamically stable, non-aggrading and non-degrading, braided rivers.”
- In several locations, the Draft EA states that water downstream of the tailrace is “sediment deficient” (pages 102, 124, 193, 194, 205, and 236). For example, the Draft EA states, “In the lower Platte River, peaking operations has changed the stage and flow of water released downstream. The water is slightly sediment deficient, and the pulsing flows facilitate frequent wetting and drying of sandbars, which further degrades tern and plover nesting habitat. These effects are the most pronounced in the vicinity of the outlet weir, and lessen with increased distance downstream of the project” (236). There is no physical evidence to support this assertion. The record supports the contrary. The District provided documentation of this in a letter to FERC dated December 6, 2012, Attachment B, Flow Bypass for Sedimentation Response. In summary, through the use of study results and photographic and historic data, Attachment B concluded the following:
  - Tailrace return flows DO contain sediment.
  - There is no degradation at the Tailrace Return.
  - There is no sediment deficit at the Tailrace Return.
- On page 104, Table 23 of the Draft EA contains several Average Annual Yield values inconsistent with those reported by the District. Some discrepancies are assumed to be due to rounding; others cannot be explained as the District was unable to reproduce the reported values. These discrepancies should be corrected or explained in the Final EA.

- The Draft EA misstated the results of the sediment transport modeling relative to sediment augmentation: “Because the flow did not change and that the model indicated no change in the median sediment size, Lane’s relationship indicates that slope alone would need to balance the increased sediment loads introduced. However, the study report states that channel geometry adjusted to project operations through changes to the channel width rather than a change in slope. Therefore, it is likely that changes to the project operation by introducing sediment would be similarly accommodated through the changes to the channel width rather than a change in slope. Sediment augmentation would likely result in a channel that is consistent with those channels not affected by current project operation” (119). The Draft EA also states, “This analysis also shows that sediment augmentation, or depletion, introduced at the tailrace canal is propagated both downstream and upstream. Although a considerable sediment augmentation rate was needed to move a point to a different region, changes in channel geometry would likely occur with any change in sediment introduced at the tailrace canal” (120). Study 14.0, Alternative Project Operations and Sediment Management, clearly states on page 44 that the increase in sediment causes an increase in slope: “For each increase in augmentation at Site 4, the modeling showed a slight aggradational trend and an increase in channel slope. The increase in slope is necessary to convey the increased sediment load.” On page 45 of Study 14.0, Alternative Project Operations and Sediment Management, the discussion states that since the dominant discharge is relatively unaffected, the channel geometries would also be unchanged from current operations: “Because the dominant discharges for all of the augmentation scenarios at Site 4 are essentially the same as the current-operations values, no adverse or beneficial changes in channel geometry would likely occur.”
- On page 127, the Draft EA makes the following statement: “we determined that the study showed that there was nearly a 90 percent probability of exceeding the state water quality standard for temperature (i.e., 90° F) when natural flows in the Loup River at Merchiston were around 980 cfs, and a 60 percent probability for exceeding state standards for water temperature in the Loup River bypassed reach when flows were less than 150 cfs.” Study 5.0, Water Temperature in the Project Bypass Reach clearly shows that water temperature is a function of ambient air temperature. Furthermore, the District identified fundamental concerns with the Sinokrot and Gulliver method in responses to comments on the Second Initial Study Report (Loup Power District letter to FERC dated May 11, 2011).
- On page 129, the Draft EA states that “Table 14 and table 15 show that increasing water temperature occurred with decreasing flows in the Loup River bypassed reach.” The information discussed in this sentence does not correspond with the referenced tables.
- Footnote 85 on page 131 of the Draft EA states that “On August 5, 2012, a fish kill was documented in the power canal.” The confirmed date of the fish kill is August 12, 2005, not August 5, 2012.
- The District was unable to confirm the information in Tables 35 (page 143) and 60 (page 226) and suggests the Draft EA include source information for these tables or an explanation of how these values were developed.
- On page 157, the Draft EA states that “sites such as sand and gravel pits may only be suitable temporarily, as abandoned or unmanaged sites can become overrun with vegetation over time.” However, the Loup River specific data do not support this

statement. Tables 37 and 40 show that off-river nesting has been more consistent than on-river nesting on the Loup River over the past 25 years.

- On page 166, the Draft EA states that “The FWS’ Pallid Sturgeon Recovery Plan was issued in 1993 and has not been updated since then, but several recovery efforts have been implemented.” A recovery plan update was issued in January 2014.
- On page 166, the Draft EA states that “The pallid sturgeon was listed as an endangered species on September 6, 1950,” which is inaccurate. The pallid sturgeon was listed on September 6, 1990.
- On page 169, the Draft EA states that “habitat availability for pallid sturgeon is greatest in the lower Platte River below the confluence of the Elkhorn River. Ninety-two percent of pallid sturgeon captured between 2008 and 2011 in the lower Platte River were captured below the confluence of the Elkhorn River with the Platte River. Most pallid sturgeon reported nearest the project have been captured about 69 miles downstream from the project in the lower Platte River near RM 32.2.” However, the study in reference took place from 2009 through 2012.
- On page 175, the Draft EA makes the following statement, citing Hamel et al.: “a total of 137 pallid sturgeon were captured in the lower Platte River by Hamel et al. (2011).” The correct source for this is Hamel et al. 2012.
- On page 176 of the Draft EA, it should be noted that in 2009, sampling was weighted 2:1 toward Segment 1 but in 2010 and subsequent sampling years, both segments were sampled equally (Hamel 2010 and Hamel 2011).
- On page 201, the Draft EA states that “It is possible that this shift to off-river nesting sites downstream of the project diversion weir is caused by, at least in part, to the differences in the quality of on-river sandbar habitat. As Sherfy et al. (2012) notes, the emergence of suitable habitat features on sandpits in conjunction with declining quality of riverine habitat features has been a major factor in the distribution of nesting least terns and piping plovers.” This claim is not supported by Sherfy et al. and should not be attributed to these authors. This statement comes from the introduction to the Sherfy report and is not a conclusion from Sherfy’s research.
- On page 206 of the Draft EA, the table note on Table 54 indicates that the upstream length of the Loup River is 21 miles. The actual length of the upstream Loup River (to the confluence of the Middle and South Loup rivers) is approximately 35 miles.
- On page 212, the Draft EA states that “While staff agrees that higher releases prior to, and during, the early nesting season can encourage terns and plovers to nest higher on existing sandbars, staff does not have enough information to definitively assess whether the same would be true for higher flows on a sub-daily basis.” The District notes that that sub-daily flows would encourage terns and plovers to nest higher on existing sandbars due to the fact that terns and plovers cannot build a nest and lay eggs in a single day. Therefore, higher flows on a sub-daily basis would have even greater efficacy in encouraging terns and plovers to nest higher on existing sandbars.
- On page 223, the Draft EA states that “Table 59 shows that Site 3, which is upstream of the tailrace canal in the Platte River bypassed reach, is substantially unaffected by project peaking operations.” It is necessary to note that the Project Bypass Reach (both the Loup River bypass reach and the Platte River bypass reach) is absolutely unaffected by the Project, not “substantially unaffected.”

- On page 230, the Draft EA states the following: “The capture of other very small numbers of pallid sturgeon in the lower Platte River at times other than the spring (i.e., the fall), likely reflect stragglers remaining from spring movements into the river or are inadvertent stray fish that may have entered the river as part of downstream movements of fish in the Missouri River.” This is not consistent with the findings of Hamel and Pegg (2012), who documented similar use of the lower Platte River by pallid sturgeon in spring, summer and fall.
- On page 232, the Draft EA states the following: “Based on the results of various studies conducted in the lower Platte River in recent years, the entire lower Platte River is not a thriving and vibrant ecosystem throughout its entire length, as suggested by the Loup Power District, especially for pallid sturgeon because water flow issues greatly affect movement of fishes throughout its length.” The District requests citation information regarding the various studies being referenced.
- On page 235, the Draft EA states that the “staff is not convinced that the Proponents of Sound Science of the Lower Platte River Policy Coalition’s (Coalition) review of several pallid sturgeon publications concerning the pallid sturgeon in the lower Platte River were completely objective. In a filing made by Nebraska Game and Parks on February 20, 2013, Parham and Peters provide reasonable responses to many questions and concerns raised by many entities that provided review comments of their publications of 2007 and 2008, including responses to the technical review comments made by the Lower Platte Basin Coalition, the Coalition, Fennemore Craig, P.C. and others.” The District objects to the notion that the Proponents of Sound Science are not objective. This coalition was an independent group developed and funded by a consortium of Platte River water users to objectively review the Peters and Parham research. Their analysis is no more biased than the Peters and Parham work itself which was funded by the Nebraska Game and Parks Commission.
- On page 243, Table 65 of the Draft EA shows Tailrace Park as having 2 swings, which is inaccurate. Tailrace Park is home to only 1 swing.
- On page 262, the Draft EA states, “Staff values this power at \$171,289 based on \$30.54/MWh for peak generation and \$16.98/MWh for off-peak generation.” It is unclear why Staff used a blended on-peak and off-peak rate to calculate the cost of the lost generation resulting from the proposed changes in operational flow. For consistency, the District believes the lost generation should be valued at \$55.63 as this value was used for all other calculations related to the value of Project power. Using this value, lost generation resulting from the flow modifications proposed in the Draft EA should be valued as follows:
  - Minimum Bypass Flow – 6,025 MWh valued at \$335,170
  - Limit on Maximum Diversion – 6,589 MWh valued at \$366,546
  - Minimum Platte River Flow – 2,053 MWh valued at \$114,208
  - All Recommendations Combined – 14,850 MWh valued at \$826,106
- On page 275, the Draft EA states that “Additional flows in the project bypassed reach and lower Platte River would likely transport great amounts of sediment and would necessitate additional sediment be placed in the South SMA.” This statement is not supported by the record. FLA Study 1.0, Sedimentation, concluded that the Loup River Bypass Reach was flow limited and not sediment supply limited, as also noted in the Draft EA. In Study 14.0, the District evaluated the increase in sediment transport,

assuming a 2,000 cfs maximum diversion for the entire year. This resulted in an increase in sediment transport of approximately 13% for a normal hydrologic year; however, it is still less than the sediment yield (or supply). Therefore, it would not be necessary to place additional dredged material on the SMA.

- On pages 276 and 277, the Draft EA states, “In contrast, we determined that the FWS’ recommended minimum flows of 350 cfs from April 1 through September 30, and 175 cfs from October 1 through March 31, developed using the Montana Method, would provide satisfactory habitat conditions for fish communities in the Loup River bypassed reach.” The District notes that the flow rate noted by USFWS would be categorized as “good” under the terminology used in the Montana Method, not “satisfactory.”