

Projects Committee Meeting
Thursday, May 2, 2024 7:30 AM
Lower Platte North NRD Office
P.O. Box 126
Wahoo, NE 68066

1. UNFINISHED BUSINESS

2. SWCP

Attached is the 2024 SWCP policy for approval. Only recommended change is increasing our maximum cost-share assistance to \$15,000.

2.A. SWCP Application Approvals

<u>Dana Kuhl</u>	<u>Saunders</u>	<u>200 trees</u>	<u>\$ 375.00</u>
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2.B. SWCP Payments

2.C. SWCP Cancellations

2.D. Wahoo Creek Cost Share Approvals

3. JOINT WATER MANAGEMENT ADVISORY BOARD (JWMAB)

3.A. East Fremont/Elkhorn Township Drainage - FEMA HMPG

We received congressional letters of support (attached) from Senator Fischer, Senator Ricketts, and Congressman Flood.

3.B. West Fremont - FEMA BRIC

3.C. Rawhide Creek Watershed - NRCS WFPO

The Rawhide WFPO regular monthly update meeting occurred 4/15, primary topics discussed:

- Wetlands issues: NRCS pushed back on JEO's wetland benefits calculations in the initial economics BCA; NRCS felt that too many benefit \$\$ were being applied to wetland creations with this being a "flood reduction" project. There are also concerns about the impacts with building the detention cells within existing stream wetland areas and the amount of mitigation that would be required. JEO altered grading plans to stay out of wetland boundary. Reducing the wetland impacts will also have a positive impact on Platte River depletion calculations.
- The local Airport Authority will need to provide sign-off on the plan; there is concern about the Merlyn England detention cell complex drawing in waterfowl and the detention cell lies in direct flight path of the runway.
- There was discussion regarding requirements for easement acquisitions. WFPO (NRCS) is not requiring the sponsor to obtain any "flood" easements for the Fremont cut-off ditch portion, only structure

footprint and construction easements. This differs from the N. Bend Drainage Ditch repair which FEMA has instructed the NBDD to acquire easements outside of structure footprint.

- Plan EA submittal to NRCS national end of April*

3.D. North Bend Drainage District

The district is still working through some easement questions for the North Bend Cutoff Ditch project. Larry plans to attend a future meeting to ask for assistance with repair for the Central Cutoff Ditch. Attached are some documents.

3.E. Cotterell Diking and Drainage District

4. SHELL CREEK WATERSHED

4.A. Shell Creek Implementation - 319 & NET

Bill Bos submitted two applications for approval within our Shell Creek Environmental Enhancement Plan:

Roger Gehring	Alternate water/tank	\$8,061
August Runge	Grade stab/WW	\$9,184

As of 4/30, Bill reports that an approved on-site wastewater system is being installed:

Kenneth Nelson	Onsite Wastewater	\$4,800
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Next SCWIG meeting is June 18th at the Columbus NRCS office.

5. WAHOO CREEK WATERSHED

5.A. Dam Site Planning Update

On 4/22 Gottschalk, Chapman and Elliott gave an update to the Saunders County Supervisors on the status of the Wahoo Creek WFPO. The focus was the updated timeline and the two county road impacts of the project: Road P (Site 26) and Road G (Site 77). Previously, the county had balked at the idea of additional work to keep Road P open as it's a minimum maintenance road, but now they would like to see what it would take. The estimated plan (same for both roads) would be a road raise with a box culvert to allow for permanent pool to stay below the road, but in flood conditions the roads could still flood. Mainelli/Wagner is the county's engineer and has been tasked with working with Olsson to draw up a design(s).

5.A.1. Design - Olsson

Staff met with Olsson design team on 4/18 to discuss construction timeline for the first three sites, site 77 alternatives, and Platte River depletions.

- The plan for the first three will be a 11/1 start date. This will allow for tree removal without any stipulations for bat/bird nesting seasons. Olsson expects to have all three designs back to DNR by 4/30; unless re-engineering is required due to depletions. We expect to have our 404 permit from USACE by 6/30. This would allow us to go to bids mid-late summer.

- Olsson worked through multiple alternatives to change the principal spillway design from the planned 72" pipe to an accepted NRCS standard 48" concrete pipe. The preferred alternative (3 in attachment) includes; same top of dam elevation, a two foot decrease in perm pool (~30 acre less), an increase in aux spillway elev, and an estimated \$513,800 decrease in construction. There is also further investigation needed into the breach path for this structure with concerns to the southern portion of Wahoo. At present site 77 is classified as significant hazard.
- Multiple meetings have occurred between NRD, Olsson, NRCS, FWS to discuss Platte River depletions. NRCS, NRDs, FWS, and NeG&P have a programmatic agreement that relates to in-stream flows within the Platte River to protect T&E species. Under this agreement ANY project that could have depletion "calculated" at 25 ac/ft or more for the life of the project must have additional mitigation, or operational/designs to alleviate the depletion. New guidance requires incorporating first-time fill for all wet dam structures. We are developing a strategy to work with USGS stream gauges to determine when river levels are allowable to allow structures to fill and stay within FWS/G&P requirements for T&E species.

Olsson invoice and progress report is attached.

5.A.2. Real Estate - Olsson & Great Plains Appraisal

Danielle has started collecting title reports for the next series of easement acquisitions, and we are developing a plan to schedule out the order we feel will be most efficient. Current invoice attached.

The status for the three remaining sites:

Vanek: their attorney has requested new appraisals, and a commitment that Road P will remain open.

Fujan: has major concerns over noxious weeds (is thistle) and wants the NRD to extend the two year weed management (listed in purchase agreement) to ten years.

Snitily: Where the negotiations sit at this point, and the planned timeline we need for fall construction, it is time that we need to develop a plan.

5.A.3. Funding - NRCS WFPO & NeDNR JEDI

Our current WFPO agreement ends 9/30 and we will need to either file an extension (as previously done) or re-apply for a new agreement. Allen Gehring, NRCS state engineer, advises re-applying for a new contract agreement as this will allow for; more than one year extension, additional cost estimates to be included. The caveat with filing a new application would be a 30-45 day "dead period" that would not allow for any WFPO reimbursements. This would require any Olsson design work (covered under WFPO) to be:

1. Paused during the transition period. This option is not preferred with our

planned bidding period for first three sites.

2. Any incurred costs to be covered by JEDI funds, which is allowable under our JEDI agreement.

5.B. Water Quality - NWQI & 319

Paperwork for our new WHP/NWQI position was submitted. We are still hopeful to have an agreement ready for Board meeting. Drew is working on updating the Watershed Management Plan that will make this area eligible for 319 funding. 319 funding will compliment the new position and NRCS cost share programs.

6. LOWER PLATTE RIVER CORRIDOR ALLIANCE

6.A. Management Plan Update

The Watershed Management Plan was updated and submitted to NDEE and EPA for approval. The 2024-2029 update is attached for Board approval with plans to approve at the next Coordinator Alliance meeting (?May 29th?).

6.B. Trend Analysis

Trend analysis proposal is progressing with NDEE 319 program committing \$15,000. Total cost from November 2023 was \$148,100. USGS will contribute \$48,300. This leaves \$84,800 to be split over two years by remaining members: LPS, Papio, LPN, MUD, Lincoln Water, NeDNR, and NE G&P. UNL has not committed. With out UNL, this is \$6,057 over two fiscal years = \$12,114 total. Direction from committee is requested.

7. LESHARA DRAINAGE IMPROVEMENT

Phase I of the project finished up construction towards the end of March. The Village has secured CDBG funding for Phase II of the project. JEO is working on developing our agreement with the Village for Phase II. Jake Miriofsky with JEO plans to be at next months committee meeting to give an update. Several pictures taken by Sean are attached.

8. HAZARD MITIGATION PLAN UPDATE

A kickoff meeting occurred on March 26th in the Board Room. Fifteen individuals attended including four County Emergency Managers, and representatives from Schuyler, Fremont, and North Bend. Materials are attached and a link to the project website: <https://www.jeo.com/lpnnrd-hmp>. Our next public meeting is scheduled for the afternoon of June 17th at the Lake Wanahoo Education Building.

9. OTHER

10. ADJOURNMENT

**Lower Platte North
Natural Resources District**

**Soil & Water Conservation Program
(SWCP)**

LPNNRD Board Approval 5/13/2024

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LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT POLICY 2024 SOIL & WATER CONSERVATION PROGRAM (SWCP)

I. PURPOSE

The purpose of this program is to provide guidance for administering federal (EPA 319 grants), state (NSWCP, Environmental Trust grants) and local cost-share assistance as an incentive to landowners for the construction and application of soil and water conservation practices.

II. ELIGIBILITY, DISTRIBUTION OF FUNDS

- A. Any landowner within the Lower Platte North NRD (LPNNRD), individual, partnership, corporation or other legal entity is eligible to apply for SWCP funds.
- B. Cost-share program funds will be approved and distributed based on the number of high priority applications received each fiscal year (July 1 - June 30).
- C. Funds may be reserved and targeted toward high priority watersheds and projects as determined and approved by the LPNNRD Projects Committee and Board.
- D. Unobligated or unused SWCP funds in priority watersheds may be redistributed to other areas if not used in a timely manner.
- E. The LPNNRD may supplement the Nebraska Soil and Water Conservation Program (NSWCP) state funds with available federal, other state & local funds. The amount of local funds budgeted and available will be decided each year.
- F. Landowners will be expected to apply for available federal EQIP cost-share funding when applicable and available for eligible high priority practices A, C through M, before state and local cost share funding is approved. It is also generally expected to approve available state funding before local funds are considered.
- G. Lands for Conservation (LFC) program is exempt from the payment cap stipulations of the SWCP policy.

III. APPLICATION REQUIREMENTS

- A. Eligible SWCP applicants are to apply at their local NRCS Service Office (also the LPNNRD office if for tree planting or windbreak renovations). Applications with appropriate NRCS comments/recommendations are to be forwarded to the NRD for consideration.
- B. Applications will contain sufficient information to include:
 - 1. Date construction (summer or fall) is expected to be completed.
 - 2. Type of Project to be installed.
 - 3. Whether the proposed project is located in a priority watershed area or if other special conditions exist.
 - 4. An aerial photograph showing the project location.
 - 5. Total estimated cost-share needed for the project.
 - 6. When applying for a small dam or grade stabilization structure, the estimated percent of land treatment draining to the proposed site (Attachment C).

IV. ELIGIBLE HIGH PRIORITY PRACTICES

- A. **Establishment of warm and cool season grass on crop land**
- B. **Small conservation project (terraces, basins, diversion, grass waterways and/or underground outlets) applications.** This priority practice includes newly established

grass waterways and/or replacement grass waterways.

- i. Small projects are only eligible on fields where a complete no-till cropping management system is currently being applied.
- ii. Existing grassed waterway applications must be over 10-years old and part of an approved terrace system or on 100% no-tilled fields)
- iii. Small Projects may involve the construction of a new terrace and/or sediment & water control basins systems or it may include the extension of an existing terrace system with the inclusion of sediment & water control basins (this priority does “NOT” include the replacement of functionally obsolete terrace systems, waterways and sediment & water control basins in excess of 10-years old).
- iv. Small projects do not include practice of installing tile outlets into existing functional terrace outlet systems (refer to priority G).
- v. Small projects will not exceed \$5000.00 in cost incentive request.
*For small projects, landowners will not be expected to apply for available federal EQIP cost-share funding for eligible high priority practice B. It will generally be expected to approve available state funding before local funds are considered.

- C. ***Construction of new terrace systems** (includes replacement of functionally obsolete terrace systems in excess of 20-years old).
- D. **Construction of sediment & water control basins when part of a new terrace system where cost share incentives exceeds \$5,000** (Attachment A).
- E. **Construction of Diversions when part of a new terrace system or dam** (Attachments A & C).
- F. **Planned Grazing Management Systems** (Attachment B)
- G. *** Installation of Tiled Outlets into Existing Terraces** (includes the storage portion of the terrace).
- H. **Water Impoundment and Grade Stabilization Structures** (Attachment C)
- I. **Tree/Shrub Planting** (Only when NRD stock is provided and planted by the District) For riparian buffer strips, field, acreage and farmstead windbreaks and for wildlife habitat 200- tree/shrub minimum is required for riparian buffer strips, and for field and farmstead windbreaks. A 300-tree/shrub minimum is required for wildlife habitat. An eligible high priority practice under our Soil and Water Conservation Program (SWCP), at 50% cost share assistance on handplanting of 600 or more trees, provided that the cooperators use our tree planting machine. It is further recommended that final approved payments will be subject to LPNNRD inspection. (4/2022)
- J. **Windbreak Renovation** (Attachment D)
- K. **Supplementing EOIP Contracts in Priority Areas**
When federal EQIP funds are approved in LPNNRD priority areas, the District may approve additional local and/or state cost share not to exceed the established maximum cost share percentage approved for a practice or the specific area.
- L. **Emergency Repair of Conservation Practices** (Attachment E)
- M. **Lands for Conservation (LFC) Program :** (Attachment F) **Any approved EQIP contract that agrees to the terms of the LFC program; summer construction Jun 1 – September 30 of the calendar year.**

***NOTE:** Cost share only applies toward the tile outlet portion of approved terrace systems to establish a stable outlet. A stable outlet is considered to be on land that has a 2% grade or less. A landowner may choose to install a portion of the outlet without cost share

assistance provided that it meets NRCS design standards and specifications.

V. INELIGIBLE PRACTICES

A. Any application that would allow the installation of terraces on land that has established

grass will not be approved.

- B. The LPNNRD will not approve any conservation practice that will encourage the conversion of grassland, including CRP land, to crop land. This includes CRP land in the last year of the contract.
- C. Rebuilding grassed waterways or tile outlets if under 10-years old. Note: Cost share for replacing grass waterways will be considered on a case-by-case basis when over ten (10) years old and part of an approved terrace system or on 100% no-till fields (see IV. M.).
- D. Work that is considered normal maintenance of existing conservation practices.
- E. Rebuilding terraces on existing terrace lines.
- F. Terraces systems on Class VI land or greater.
- G. Sediment removal from small dams or other impoundments and/or from adjacent lands of said structures.
- H. Work started or constructed prior to approval.
- I. Livestock Waste Pits.
- J. The District will not provide cost share for practices on farmland that does not have a certified Nitrogen operator or on irrigated land where the irrigated acres are not certified by LPNNRD.
- K. Any practice on fields that are determined sod-busted by the NRCS.
- L. Repair of damage to conservation practices that is determined to be landowner negligence in performing normal maintenance as outlined in NRCS specifications.

VI. APPLICATION SUBMITTAL, APPROVAL & PROJECT COMPLETION PERIODS

A. Summer Construction Applications (For June through September 15):

To insure LPNNRD consideration, **applications for summer construction must be submitted by February 1.** Most generally, the Projects Committee will review, rank and recommend summer application approvals prior to construction season. . However, consideration and approval of summer applications received after **February 1** may occur depending on available funds. All **summer construction projects are to be completed by September 15** and **final paperwork submitted to the LPNNRD office by October 15.** The Projects Committee will review all uncompleted or unpaid applications at the end of each period to determine **if** application extensions and/or cancellations are warranted. **The field must be available for construction by August 1. The area must be planted to a cover crop or a crop preceding or after construction. The crop or cover may be harvested or pastured during the contract period.** Work not completed by **September 15,** may be canceled or receive reduced cost share as determined by the Projects Committee/Board.

NOTE: Cooperators who are approved for incentive payments within special designated watersheds, must follow these same summer construction requirements (refer to the “Lands for Conservation Program” – Attachment F).

B. Fall Construction Applications (September through December project completion):

To insure LPNNRD consideration, applications for fall construction must be received by **July 1.** Most generally, the Projects Committee will review, rank and recommend fall construction application approvals prior to fall construction season. However, additional approvals for fall work may occur after July/August as funds are available.

Approved fall applications will be given until December 31 to complete the work. The Committee will review all unpaid applications at the end of each year to determine application extensions and cancellations.

C. Grass, Tree Planting, Windbreak Renovation Applications:

Application periods for grass establishment will be approved based on NRCS seed and seeding specifications. Applications for trees are generally considered for approval just before the spring planting season. For approved Windbreak Renovation applications, tree removal will normally be completed in the summer or fall so the site will be ready before spring tree planting.

D. Small Dam Application (Attachment C):

To ensure consideration for approval, the **District will need NRCS/NRD technician recommended applications by December 15.** The Projects Committee will review and prioritize and submit a recommendation for approval at the January Board Meeting.

E. LPNNRD Signatures on Approved Applications & Related Documents:

The Manager, Assistant Manager and Projects Coordinator are authorized to sign Board approved SWCP applications, Completion and Document Certifications and other related documents on behalf of the LPNNRD.

VII. 2024 PRIORITY AREAS & ELIGIBLE COST-SHARE PERCENTAGES

Priority areas for 2023 listed below are given first consideration for District cost share assistance. Each year, high priority practice applications located in priority areas are reviewed and approved by the Projects Committee and Board for the upcoming program year. The cost-share assistance payment may not exceed a total of the eligible percent for an area when combining all sources of federal, state and local assistance. If there is not enough funding for all applications for all listed priority areas, the Projects Committee may rank areas for approval or approve a lower maximum cost share percent.

	Targeted Areas	Notes
A.	LPNNRD Lands North of the Platte River	Platte, Boone, Madison, Colfax & Dodge Counties. Shell Creek is also in ET & EPA 319 grant area - actual percent depends on priority area and practice as defined in approved grant application).
B.	Lake Wanahoo (Sand/Duck Creek) Watershed	
C.	Czechland Lake Recreation Area Watershed	
D.	Homestead Lake Recreation Area Watershed	
E.	Wahoo Creek Sub-Basins	Dunlap Creek; North Fork Wahoo Creek; Miller Branch Creek. These Wahoo Creek Sub-Basins are designated EQIP NWQI, EPA 319 and Environmental Trust Priority Areas.
F.	Skull Creek Watershed	It is anticipated to alternate this watershed with the Bone Creek Watershed every two years
G.	Watersheds Above All Existing and Planned LPNNRD Flood Control Structures	Non-public structures that are or will be LPNNRD Flood Control Structures operated and maintained by the District
H.	Watersheds Above Proposed or Completed Landowner SWCP Cost Share Dams	That will or have received LPNNRD assistance
I.	Voluntary Compliance of Verified Erosion & Sediment Complaints	District-wide
J.	All High Priority Practice Summer Applications	District-wide (June 1 through September 15 completion)
K.	Tree/Shrub Planting	District-wide
L.	Voluntary Compliance of Verified Erosion & Sediment Complaints	District-wide
M.	All High Priority Practice Summer Applications	District-wide (June 1 through September 15 completion)
N.	Tree/Shrub Planting	District-wide

VIII. COST SHARE PERCENTAGE - PRACTICE EXCEPTIONS

The maximum cost share percentage for most high priority conservation practices will be 75%; depending on the where the practice is located (**Refer to VII. above**). The exception to this is for the following high priority practices:

- A. **Water Impoundment Dams and Grade Stabilization Structures: 65% - 75%**
(Attachment C)
- B. **Windbreak Renovation Practice: 50%** (Attachment D)
- C. **Emergency Repair of Conservation Practices: 50%** (Attachment E)

IX. MAXIMUM COST SHARE LIMITS

A. **General Maximum Limit:**

A cooperator may receive **up to \$15,000 SWCP funds** within any program year (July 1 - June 30) for most high priority practices unless otherwise specified below.

B. **Priority Areas with Federal or State Grant Funding:**

Within priority areas (**Wahoo Creek and Shell Creek e.g.**) that are receiving reimbursable federal or state grant funding, the maximum limits may be exceeded to expedite use of those special funds within the specified grant period time line.

C. **Planned Grazing Systems – Livestock Well Pumping Plants:**

The maximum limit for planned grazing systems is \$12,500, however a maximum cost share limit of \$5,000 will also apply toward the livestock well and well pumping plant components (combined) when part of the approved system (Attachment B).

D. **Water Impoundment & Grade Stabilization Structures:**

The maximum limit for water impoundment dams and grade stabilization structures is \$15,000 upon NRCS recommendation and Projects Committee/Board approval on a case-by-case basis (Attachment C).

E. **Windbreak Renovation:**

The maximum limit for windbreak renovation is \$1,000 per landowner per year (Attachment D).

F. **Emergency Repair of Conservation Practices:**

The maximum limit for emergency repair of conservation practices is \$1,000 per landowner per year (Attachment E).

G. **2024 Summer Conservation Practices in Non-Priority Areas:**

For 2022, the maximum limit for approved conservation practices in non-priority areas will be \$15,000 per landowner per year.

X. AMENDMENTS FOR ADDITIONAL COST SHARE

When applications are approved under the maximum limit, additional funds, up to the limit, may be approved if notified by the landowner or technician before construction. LPNNRD staff is authorized to approve an additional \$1,000 above the original approval (up to the maximum limit) if the request is received from the landowner and/or technician prior to construction. Staff will notify the Projects Committee of any staff authorized changes.

XI. APPLICATION EXTENSIONS

Extensions may be granted for inclement weather or for other conditions beyond the landowner's control. All extension requests will be considered by the Projects Committee and Board on a case-by-case basis. No more than one 6-month extension can be approved for the same application.

XII. CONSERVATION PRACTICE DESIGN, STAKING & PERMITS

- A. All conservation measures must be designed and staked by Natural Resources Conservation Service personnel (NRCS), NRD technicians or other NRCS approved technical service providers. All completed conservation work must be according to the NRCS design standards and specifications as outlined in the NRCS Procedures Handbook for LPNNRD.
- B. The landowner is responsible for contacting the NRCS office to secure funds and schedule the layout (design and staking) of the approved work
- C. The landowner is responsible for obtaining all required local, state and federal permits.

XIII. SUBMITTING BILLS & PAPERWORK ON COMPLETED WORK

- A. The landowner is responsible for submitting all bills to the NRCS office. The NRCS will calculate the eligible cost share payment (on NSWCP form # 3) and submit completed and properly signed paperwork to the LPNNRD.
- B. Drawings of the completed practices at to be provided by the NRCS/NRD technician on an aerial photo and submitted with the payment request.

XIV. COST SHARE PAYMENTS

- A. LPNNRD has approved use of NeDNR's 2024 conservation practice payment rates for calculating SWCP contract cost-share payments. Payments will be based on NeDNR's conservation practice payment rates that were in force at the time the application was approved. The cost-share percent may be lowered if summer work is extended into fall.
- B. The LPNNRD calculates and pays cost-share on terraces only by the linear foot, not by the cubic yard.
- C. The cost-share percentages are calculated by multiplying the eligible cost share percentage by the approved cost share practice payment schedule rate or actual cost whichever is less. The cost-share assistance payment may not exceed a total of the eligible percent for an area when combining all sources of federal, state and local assistance.
- D. **Splitting Cost-Share Percentages:** When a field splits two cost-share priority areas, the corresponding eligible cost share percentage will be applied to each portion of the field being treated. When a field splits into a non-priority area, that area will be allowed up to 50% cost share assistance, if the non-priority area is 50% or less of the entire field being treated.
- E. When grant funds are available special conditions aligned with terms of grants will be implemented; in some cases a higher payment percentage rate, or payment cap may be allowed.

XV. PAYMENT OVERRUNS AND LANDOWNER REQUESTED REFUNDS

A. Payment Overruns:

Overruns of up to 10 % above the approved project amount may be approved by staff. Overruns above 10% will need Board approval. Payments are not to exceed the maximum cost share limits set for the various practices. Exception to this is when payments are combined with grant funds in priority areas.

B. Landowner Refunds:

If an SWCP practice is purposely damaged, removed or destroyed within ten years after completion (25 years for a small dam), the cooperator who received cost share, will be requested to reimburse the District, all or a portion of the SWCP cost share funds, as determined by the Projects Completion (25 years for a small dam), the cooperator who received cost share will be required to reimburse the District all or a prorated portion of the funding assistance, as determined by the Projects Committee and Board.

SWCP ATTACHMENT A
SEDIMENT & WATER CONTROL BASINS AND DIVERSIONS

This attachment is to help clarify the use of sediment & water control basins and diversions as an eligible cost-share practice. Basins and diversions are to be used as a part of an approved conservation system according to the NRCS technical guides and field manual.

- A. Sediment & water control basins and diversions may be approved as a high priority practice when in conjunction with terraces or dams.
- B. Basins and diversions will be considered a high priority practice when a part of a terrace system or in conjunction with a 100% no-till system. A 100% no-till system must have the goal of controlling soil erosion to soil replacement levels (“T”). A 100% no-till system is accepted land treatment when ephemeral and gully erosion is controlled, or “T” is met. Basins and/or diversions built separately on a terraced field are not considered a part of the terrace system.
- C. Basins and diversions not part of a terrace system may be considered as a high priority practice on fields where the NRCS or NRD technician determines terraces are not feasible and/or they offer the most practical solution to a problem. This will be determined by the Projects Committee on a case-by-case basis.

LOWER PLATTE NORTH NRDSWCP ATTACHMENT B PLANNED GRAZING SYSTEM PRACTICE

I. GENERAL REQUIREMENTS

- A. An applicant must have at least 40 acres of connecting grassland to be developed into at least two grazing cells with planned rest periods in accordance with Natural Resources Conservation Service (NRCS) recommendations.
- B. Applicants must complete a minimum 10-year planned grazing system developed by the NRCS prior to submitting an application.
- C. Applicants are required to sign a 10-year cost-share agreement with the LPNNRD. (Form NSWCP-10)
- D. All approved cost-share items must meet NRCS Standards and Specifications.
- E. Funds for approved practices may be used on CRP lands if such lands are in the last year of the CRP contract.
- F. The amount and type of eligible practices approved for each application will be determined by the overall grazing system plan and the most cost effective alternative available.
- G. Cost-share on eligible practices will be based on the approved cost-share percentage times the approved practice payment schedule cost share rate or 75 percent of the actual cost, whichever is less.

II. ELIGIBLE PRACTICES

- A. **Cross Fencing:** Only fencing designed to facilitate cell division is eligible for cost-share (Standard 382 specifications). Boundary fences are not eligible for cost-share.
- B. **Livestock Water Dugouts:** Dugouts will be sized by daily animal needs and Nebraska Engineering Handbook Standards.
- C. **Livestock Well Installation:** Livestock wells will be sized to provide a maximum of 15 gallons of water per animal-unit per day within each cell. No cost-share will be available for domestic or irrigation wells. Well test holes are not eligible for cost-share.
- D. **Pumping Plants for Livestock Wells** (As outlined by State NSWCP Guidelines): While a cooperator may receive up to \$12,500 SWCP funds toward completing a Planned Grazing System, a maximum cost share limit of \$5,000 will apply toward the livestock well and well pumping plant component (combined) if part of the approved system.
- E. **Livestock Water Tanks:** Tanks sized according to standard storage requirements in the NRCS Technical Guide, Standard 614, are eligible.
- F. **Livestock Water Pipeline Installation**

**LOWER PLATTE NORTH NRD
SWCP ATTACHMENT C
GUIDELINES FOR WATER IMPOUNDMENT (SMALL DAMS) &
GRADE STABILIZATION STRUCTURES**

I. PURPOSE

The purpose of this program is to assist landowners with the construction of water impoundment and grade stabilization structures on their property.

II. ELIGIBLE PROJECT ITEMS

A. Eligible Project Costs Include:

1. Construction (Not to include site preparation)
2. Seeding (Structure and emergency spillway)
3. Fencing when required by the NRCS

III. LAND TREATMENT REQUIREMENT

To be eligible for cost-share assistance, a minimum of 75% land treatment is required within the watershed above each proposed structure site. To calculate this percentage, non-highly erodible land is considered treated.

Land Treatment Definition:

Land treatment is defined as any practice or combination of practices (i.e. terraces, no-till etc.), that control soil erosion rates on highly erodible soils to soil replacement levels or less (Soil replacement level or "T" = 5 tons/acre in the LPNNRD). Any approved NRCS farm plan that treats land to "T" qualifies under this definition (8/2/00 Projects Committee).

IV. COST-SHARE PERCENTAGE AND MAXIMUM ASSISTANCE

The cost-share percent for approved applications outside selected priority areas is up to a maximum of 65%. For small dams approved within selected LPNNRD priority areas, the cost-share rate is up to a maximum of 75%. Eligible assistance will be based on the eligible cost-share percent times the county average costs or 75% of actual costs whichever is less. The maximum cost-share limit will be \$15,000 upon NRCS recommendation and Projects Committee approval on a case-by-case basis (see Special conditions below).

Special conditions: The Board may approve a higher cost-share percentage and increase the maximum assistance if an application site is above an LPNNRD recreation area, within a targeted watershed or when other special conditions exist. The Board may also approve a lower cost-share percent and decrease the maximum assistance for structure sites of lower priority. **Special** conditions will be evaluated by the Board on a case-by-case basis.

V. PRIORITY AREAS

Priority-areas for small dams and grade stabilization structures include the following watersheds:

- A. Sand & Duck Creek
- B. Wahoo Creek*

- C. Skull Creek
- D. Shell Creek* (Additional grant funding available)
- E. Bone Creek
- F. Watersheds above Pubic Recreation Structures (e.g. Czechland Lake, Homestead Lake, Lake Wanahoo)
- G. Above all existing LPNNRD Operated and Maintained Watershed Structures.

VI. APPLICATION ELIGIBILITY AND SIGN-UP

- A. Any landowner within the Lower Platte North NRD who is an individual, a partnership, a corporation or other legal entity.
- B. Applications may be submitted any time during the year; however, only NRCS inspected and recommended applications received by December 15, will ensure consideration for the following construction year. Unapproved applications will expire on May 1 of each year, requiring a new landowner application for future consideration. The Projects Committee will review, prioritize and submit a recommendation for approval at the January Board Meeting.
- C. The applicant shall apply at the county NRCS office on forms provided by the LPNNRD. An aerial photo showing the proposed project location must accompany the application. The application must be signed by the applicant and sent to the LPNNRD before December 15 of each year to insure consideration for the immediate year's construction.
- D. At the time of application, the NRCS will be requested to provide an estimate of drainage acres, percentage of land treatment present, quantities and costs for the project.

VII. APPLICATION EVALUATION AND TENTATIVE APPROVAL

- A. Application sites will be inspected by LPNNRD and NRCS representatives to evaluate feasibility, benefits and cost. Benefits to be evaluated will include but not be limited to: flood control, grade control, erosion and sediment control, wildlife habitat enhancement, livestock water, and protection to public roads and property.
- B. The Projects Committee will most generally review, prioritize, and make recommendations on applications at their January meeting.
- C. The NRD Board of Directors will generally approve, reject, or table each request at the January Board Meeting.
- D. After receiving LPNNRD approval, the applicant will be required to submit a \$500 deposit to the NRD before a survey or design is started. The deposit will be returned to the applicant after project completion. If the deposit is not received by February 1, the application will be canceled. If the applicant withdraws from the project after the design has been complete, the deposit will be retained by the LPNNRD unless conditions in XII. B. apply.
- E. In February of each year, the Natural Resources Conservation Service will be requested to proceed with survey and design of approved projects.
- F. After receiving LPNNRD approval, the applicant will be given two years to obtain necessary permits, complete the structure and submit all required paperwork. If the project is delayed due to adverse weather conditions, or other conditions beyond the

applicant's control, an extension may be granted by the LPNNRD Board of Directors. Extensions will be considered by the LPNNRD Board on a case-by-case basis.

VIII. LAND RIGHTS, AGREEMENTS AND PERMITS

- A. The applicant is responsible for obtaining any required easements and any required federal, state and local (i.e. NDNR, Army COE, and County Zoning) permits.
- B. The applicant is responsible for the relocation or modification of water lines, power lines and telephone lines and pay the costs involved.
- C. The applicant will be required to enter into a 25-year cost-share agreement with the LPNNRD. This agreement states that the applicant will refund cost-share funds if the project is removed, altered, or modified without the consent of the LPNNRD.

IX. STRUCTURE DESIGN AND CONSTRUCTION

- A. The NRCS will be requested to survey, design, and supervise all structures approved by the LPNNRD Board.
- B. Construction will not commence until formal notice to proceed is given by the LPNNRD. This notice will be given after NRD Board approval, and after receiving the applicant's deposit and signed cost-share agreement.

X. FINAL APPROVAL AND PAYMENT

- A. Final Approval and Payment will occur when:
 - 1. The project is completed and certified by the NRCS/NRD technician to meet all NRCS standards and specifications.
 - 2. The completed application form NSWCP-3 is signed and returned to the LPNNRD with a copy of all project bills.

XI. OPERATION AND MAINTENANCE

The landowner is responsible for all operation and maintenance after project construction.

XII. SMALL DAM DEPOSIT REQUIREMENT & REIMBURSEMENT

- A. The applicant will be required to submit a \$500 deposit to the NRD before a survey or design is started. The deposit will be returned to the applicant after NRCS approves the completed project and all paperwork is submitted and approved by the District. If the deposit is not received by February 1, the application will be canceled. If the applicant withdraws from the project after the design has been complete, the deposit will be retained by the LPNNRD unless conditions in B. apply.
- B. If a landowner does not proceed with the small dam project because the final cost estimate is 40% or more over the original project estimate, the LPNNRD will return the \$500 deposit based on financial hardship. All other conditions will be reviewed by the Projects Committee on a case-by-case basis.

**LOWER PLATTE NORTH NRD
SWCP ATTACHMENT D
WINDBREAK RENOVATION PRACTICE**

I. PURPOSE

To provide for the restoration of farmstead, acreage or field windbreaks that have been rendered substantially ineffective due to the death of trees or other windbreak plantings as a result of weather, disease, or other natural causes.

II. PLAN REQUIREMENT

A windbreak renovation plan is to be based on a plan reviewed and approved by a forester of the Nebraska Forest Service. The forester is to certify that the windbreak has lost its effectiveness, should be renovated and that they approve the plan of renovation.

III. SITE PREPARATION

Tree removal off the site is required to be accomplished in late fall/early winter at least before the planting occurs the following spring. The only area that is replanted with a new windbreak receives cost share for removal costs. Tree removal work should not be initiated until the application is approved by the Lower Platte North NRD and the landowner agrees to replant the windbreak in the same area.

IV. COST SHARE RATE AND MAXIMUM ASSISTANCE

The windbreak renovation cost-share payment will not be based on a cost greater than the county average unit cost adopted by the USDA-FSA. The renovation practice is not to include the replanting of the windbreak because of different cost-share percentage rates. The windbreak planting cost-share will be separate. The Lower Platte North NRD will cost share at a 50% rate, up to \$1,000.

Tree planting cost-share is eligible for riparian buffers, farmsteads, acreages, field and livestock protection windbreaks. Windbreaks must contain 200 or more trees and shrubs which are purchased through and planted by the NRD. When the planting is strictly for wildlife habitat, a minimum of 300 trees/shrubs purchased and planted by the NRD is required.

**LOWER PLATTE NORTH NRD
SWCP ATTACHMENT E
FOR EMERGENCY REPAIR OF CONSERVATION PRACTICES**

I. PURPOSE

On occasion, the LPNNRD Board of Directors may approve local SWCP funds for the Repair of conservation practices damaged from intense rainstorms. The decision for approving emergency repair funds will be considered annually, with the location and total amount of available funds dependent on the severity of storm damage to conservation practices in designated areas in the District. When approved by the Board, Emergency repair funds will be allocated in the following manner:

- A. The LPNNRD Board will consider approval of the amount and eligible area for emergency repair funds, with a recommendation from the Projects Committee. Typically, this will occur on or prior to the LPNNRD September Board Meeting.
- B. Only eligible Conservation Practices, two years old and newer that were originally built to NRCS design specifications, will be eligible for cost-share assistance.
- C. The committee will consider approval of emergency repair assistance only when it is determined by an NRCS technician that the damage was not due to landowner negligence in performing normal maintenance as outlined in NRCS O&M specifications.
- D. To be eligible for emergency repair funds, the landowner must be following an approved NRCS farm plan.
- E. Prior to LPNNRD approval, applications will receive recommendations from LPNNRD and NRCS staff. The LPNNRD Projects Committee will prioritize application practices and areas.
- F. Eligible assistance will be 50% of the approved amount up to a maximum of \$1,000 per landowner per program period.

**LOWER PLATTE NORTH NRD
SWCP ATTACHMENT F
2024 LANDS FOR CONSERVATION PROGRAM
)**

Purpose: The Lands for Conservation program provides landowners with an incentive to get conservation structures constructed on the land during the growing season.

1. The Lands for Conservation program will be on contractual basis between the landowner (cooperator) and the Lower Platte North Natural Resources District for one year while conservation practices are being established. Applications deadline for each calendar year will be February 1.
 2. Sediment and Water Control Basins with tile outlets and/or terraces with grassed waterways and terraces with tile outlets qualify for this program. Sediment and Water Control Basins/Terraces and/or waterways must be seeded during the contract period.
 3. NRCS and/or NRD personnel will design terraces with waterways or tile drains or Sediment and Water Control Basins with tile outlets. These practices must protect the entire field on which they are established. However, the area under contract will be the smallest practical area to encompass the practices, as agreed upon with the cooperator.
 4. Land enrolled in another program (ex: CRP) may not be eligible for Lands for Conservation contracts.
 5. Sediment and Water Control Basins with tile outlets and terraces with waterways or tile outlets may be cost-shared through the EQIP program administered by Natural Resources Conservation Service (NRCS). If federal funds are not available, cost-sharing assistance may be available through LPNNRD's Soil & Water Conservation Cost-Share Program.
 6. **Construction must be done between June 1 and September 15.** The field must be available for construction by August 1. The area enrolled in the LPNNRD Lands for Conservation will be planted to cover crop or a non-grain forage crop (forage sorghum, etc.) preceding and/or after construction. The crop or cover may be harvested or pastured during the contract period.
 7. **For 2024: Payment is \$164.00 per acre*.**
*Payment Rate will be reviewed annually. Payment rate is based on 2023 Nebraska Non-Irrigated Cropland Cash Rent Paid per Acre, Source: USDA National Agricultural Statistics Service.
Payment will not be processed and forward to the NRD applicant until the project (including the planting of the cover crop) has been certified as completed by the NRCS.
 8. If used for permanent pasture before or after the contract period, these areas are not eligible for the Lands for Conservation Program. Money received through this program resulting in permanent pasture after the contract period, must be returned. Land can be used for hayland as a normal part of the crop rotation.
 9. If ownership of land changes during the contract period, the contract becomes void. The new owner may continue the contract, if agreed to with the Lower Platte North NRD.
 10. Approval of contracts will be on a rotating basis.
 11. The landowner will contract for the construction of Sediment and Water Control Basins, terraces, waterways, tile outlets and any other necessary construction.
 12. Terraces, Sediment and Water Control Basins, waterways and tile outlets must be maintained for 10 years or as long as the current owner has control of the land, whichever is less.
 13. **Eligible Watersheds for the Lands for Conservation Program: Within the Wahoo Watershed, three of the HUC 12 sub watersheds were identified as highest priority areas for this program: North Fork-Wahoo Creek, Dunlop Creek and Miller Branch-Wahoo Creek. The Shell Creek Watershed. Applications OUTSIDE of priority watersheds will be evaluated after high priority applications.**
-

United States Senate
WASHINGTON, DC 20510

April 18, 2024

Kayed Lakhia, Director
Hazard Mitigation Assistance Division
Mitigation Directorate Federal Insurance and Mitigation Administration
Federal Emergency Management Agency
400 C Street, SW
Washington, DC 20472

Dear Ms. Lakhia:

I ask your careful consideration of the City of Fremont's Federal Emergency Management Agency's (FEMA) application for the Building Resilient Infrastructure and Communities (BRIC) grant.

The City of Fremont and Dodge County have experienced some of the nation's highest rates of flooding events since the U.S. began tracking impacts in 1953. Nebraska's Flood Hazard Mitigation Plan repeatedly ranks Dodge County among the top 10 counties for exposure to riverine flooding. Expected annual losses in the county are ranked among the highest in the state. BRIC funding for their drainage improvement project would greatly reduce the risk of future flooding in these areas.

Thank you for your consideration.

Sincerely,



Deb Fischer
United States Senator

MIKE FLOOD
1ST DISTRICT, NEBRASKA

WASHINGTON OFFICE
343 CANNON HOUSE OFFICE BUILDING
WASHINGTON, D.C. 20515
(202) 225-4806

LINCOLN DISTRICT OFFICE
301 SOUTH 13TH STREET
SUITE 100
LINCOLN, NE 68508
(402) 438-1598

COMMITTEE ON FINANCIAL SERVICES
SUBCOMMITTEES:
DIGITAL ASSETS, FINANCIAL TECHNOLOGY,
AND INCLUSION
HOUSING AND INSURANCE

Congress of the United States
House of Representatives
Washington, DC 20515

April 17, 2024

Administrator Deanne Criswell
Federal Emergency Management Agency
P.O. Box 10055
Hyattsville, MD 20782-8055

Dear Administrator Criswell,

I write to express my support for the Building Resilient Infrastructure and Communities (BRIC) grant submitted by the City of Fremont, Dodge County, and the Lower Platte North Natural Resources District, all entities within Nebraska's 1st Congressional District. This BRIC grant application for the Fremont/Elkhorn Township Drainage Improvement Project was filed in February 2024 and is currently under review by FEMA. The total project cost is \$57 million, with the grant request of approximately \$43 million representing 75% of the project cost with local entities committed to funding the remaining 25%.

Fremont and Dodge County have experienced some of the nation's highest rates of flooding events since the U.S. began tracking impacts in 1953. Federal investment in communities at high risk of flooding has ramped up significantly in the past three years. However, funding has been disproportionately directed to East and West Coast states with only 22% of total funding going to interior and Gulf Coast states. Another statistic also illustrates how geographic distribution of funding has been uneven, with half the states collectively receiving less than 5% of this year's BRIC funding. I encourage FEMA to consider the flooding risks present in Midwest states, particularly Nebraska.

I applaud Fremont, Dodge County, and the Lower Platte North Natural Resources District as well as the numerous other governmental, business, and community partners that have come together to submit the BRIC grant application for the Fremont/Elkhorn Township Drainage Improvement Project and respectfully request FEMA give full and fair consideration to their submission. Please contact my District Director, Deb Schorr at 202-734-9362 should you have any questions about the proposal. Thank you for your time and attention to this matter.

Yours very truly,



Michael J. Flood

MJF:des

PETE RICKETTS
NEBRASKA

SUITE 139
RUSSELL SENATE OFFICE BUILDING
WASHINGTON, DC 20510-2710
(202) 224-4224

COMMITTEES:
FOREIGN RELATIONS
ENVIRONMENT AND PUBLIC WORKS
AGING

United States Senate

April 18, 2024

Hon. Deanne Criswell
Administrator
Federal Emergency Management Agency
500 C St SW
Washington, DC 20024

Dear Administrator Criswell,

I write to request your consideration for the Building Resilient Infrastructure and Communities (BRIC) grant application for \$39,582,102 submitted by the City of Fremont, NE located in Dodge County. In the last twenty years, Dodge County has had six federal disaster declarations related to flooding impacts from severe storms and climate:

- FEMA-1517-DR in July of 2004
- FEMA-4014-DR in August of 2011
- FEMA-1779-DR in July of 2008
- FEMA-4325-DR in August of 2017
- FEMA-1924-DR in September 2010
- FEMA-4420-DR in March of 2019

The City of Fremont, Dodge County, and the Lower Platte North Natural Resource District (LPNNRD) have been working together to identify mitigation solutions to reduce flood risk throughout the region for many years, as well as continually coordinate emergency management efforts post-disasters. If awarded the BRIC grant, the City of Fremont has stated they will strengthen the surrounding township's resilience against future floods along with the greater watershed in eastern Nebraska, including downstream wells in the cities of Lincoln and Omaha.

I ask that you please give all due and fair consideration, in accordance with all rules and regulations, to the City of Fremont's grant application for the BRIC grant. If you have any questions regarding this letter, please contact Trinity Chappelle in my Omaha office; she may be reached by phone at 402-550-8050 or by email at Trinity_Chappelle@ricketts.senate.gov.

Respectfully,



Pete Ricketts
United States Senator

April 16, 2024

Central Cut-Off Ditch

Larry & Justin,

Here is estimate for repairing the Central Cut-Off Ditch. We would be trucking in fat clay from the Lyman-Richey site in Fremont. We would push it over the edge of the slope and compact with the excavator bucket and dozer tracks if not too steep.

Based on our survey there is about 4,650 CY of fill needed. If you round that up to 5,000 CY at \$12/CY you would be spending \$60,000.

Bid does not include: Testing, permits, erosion control, seeding or bond.

Sincerely,



Matt Pruss
Vice President

CUTOFF DITCH

Legend

14

Old Lincoln Hwy

Old Lincoln Hwy

Old Lincoln Hwy

Old U.S. 30

Old Lincoln Hwy

Old Lincoln Hwy

3

Google Earth

Image © 2024 Airbus



1000 ft

CUTOFF DITCH

Legend



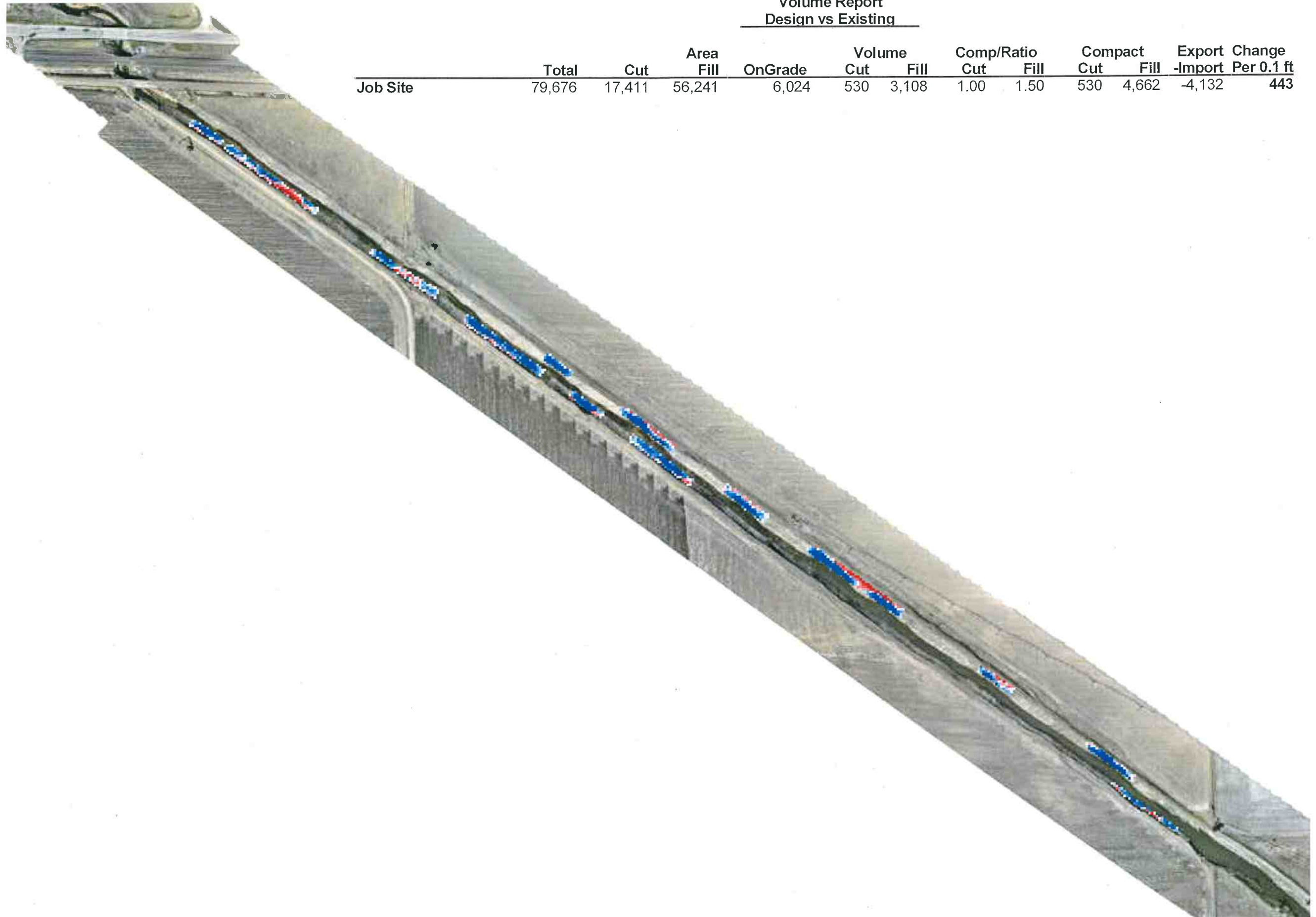
Google Earth

Image © 2024 Airbus

1000 ft

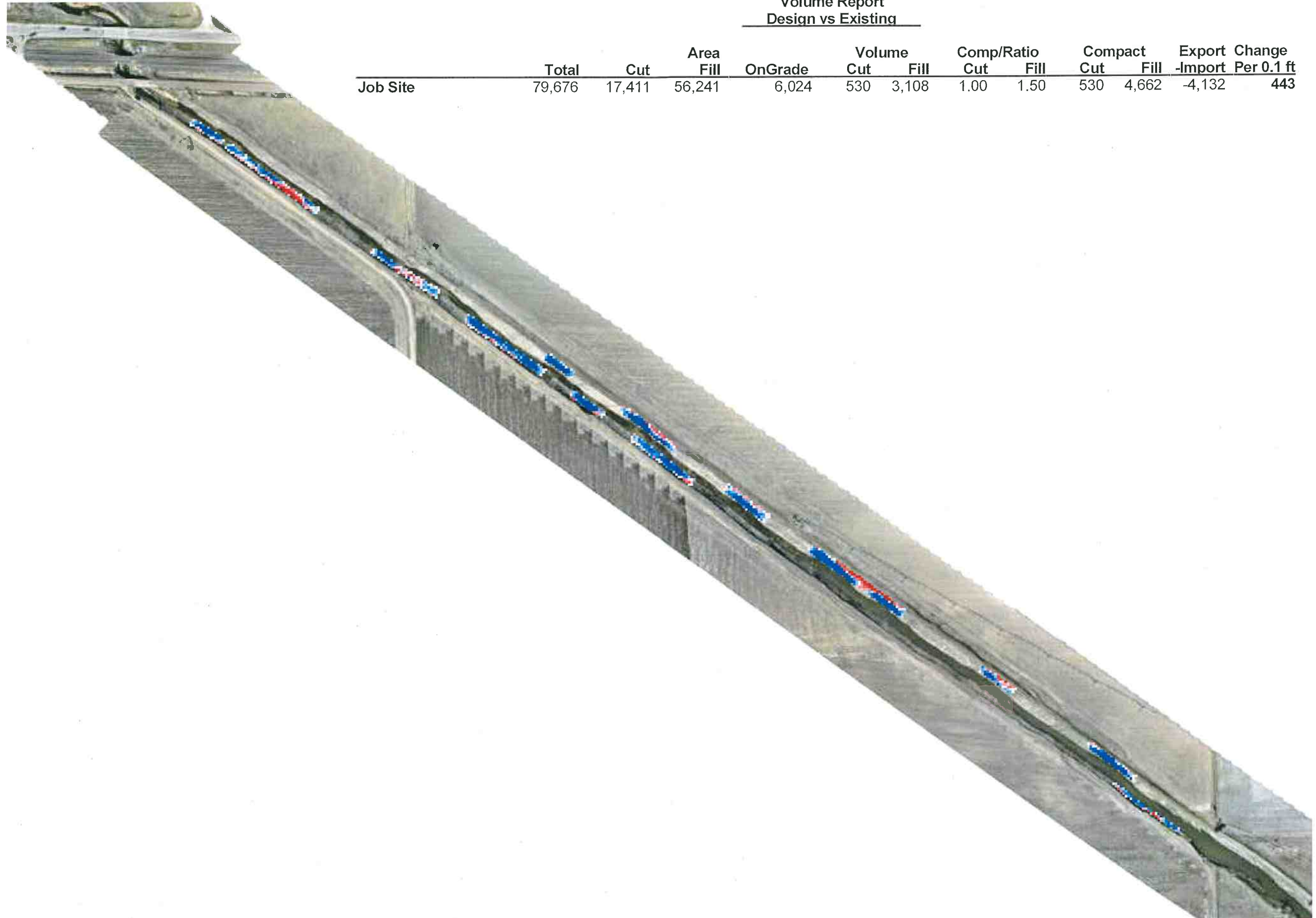
Volume Report
Design vs Existing

	Total	Cut	Area Fill	OnGrade	Volume		Comp/Ratio		Compact		Export Change	
					Cut	Fill	Cut	Fill	Cut	Fill	-Import	Per 0.1 ft
Job Site	79,676	17,411	56,241	6,024	530	3,108	1.00	1.50	530	4,662	-4,132	443



Volume Report
Design vs Existing

Job Site	Total	Cut	Area Fill	OnGrade	Volume		Comp/Ratio		Compact		Export	Change
	79,676	17,411	56,241	6,024	Cut	Fill	Cut	Fill	Cut	Fill	-Import	Per 0.1 ft
					530	3,108	1.00	1.50	530	4,662	-4,132	443



LPNNRD

Cover Sheet For NSWCP Cost-Share Applications

Date 4-25-2024 Land Legal 31-19-1w
Landowner Rogee Goering Phone # 402.276.1139
Address 37875 261 Ave. Hta SS# _____
City Platte Center State NE. Zip 68653
Operator _____ Phone# _____
Address _____
City _____ State _____ Zip _____

1. Cost-Share Request: (circle one option per application)

- A. Establishment of warm or cool season grass on cropland.
- B. New Terraces with Tile Outlets
(has never been terraced before) (existing terraces on field are 20 years old or older)
- C. New Terraces with grass waterways
(has never been terraced before) (existing terraces on field are 20 years old or older)
- D. Install Tile outlets into existing terrace system
(this practice is for summer sign-up only, with a \$3,500.00 cost-share limit and limited payment on dirt work.)

E. Water Impoundment Structure
(75% land treatment required above structure site)

F. Other Electric Livestock well and Pipeline

TANKS
AND Pond Fence
exclusion
Non-cost share

2. If approved, when do you plan to do the work? Summer or Fall

3. Has this area been in grass or trees in the last 5 years? Yes or No

4. Is the proposed project located within the drainage of an existing or proposed NRD watershed structure, or watershed targeted for accelerated land treatment?

Yes or No If yes which watershed? Shell Creek

5. Comments Plans to do this Summer 2024

NRCS Estimate \$ 10,666.00

Description of project on Backside

Project Committee

Roger currently has cattle on the North and South side of County road. Rotates between both pastures during summer months. The north pasture has a well on it, but the south pasture currently does not. He does not own the north pasture. ~~It~~ Without a water source on the south pasture it does not allow him to be in a rotational grazing system.

He will fence out the pond to exclude cattle from entering the pond. Only emergency use only. Non/cost share.

Also he will provide 2 day storage in the tanks. Non/cost share.

By providing a water source this will keep the pasture in grass for the future allowing the producer to best utilize the grass available.

Wahoo Creek Site 77

Comparison between pipe diameters

By: Dan Lightbody

3/28/2024

inputs - OK to change

Calculations - DO NOT CHANGE

Material Costs

48" RCPP	1200	LF
72" RCPP	2500	LF
48" Riser	225000	EA
48" impact	250000	EA
72" Riser	360000	EA
72" impact	400000	EA
Earthwork	5	CY

Pipe length 176 LF

	Conduits	Pipe Dia (in)	Pool Elev.	Aux Width (ft)	Earthwork (yd ³)	pipe	Riser	impact basin	earthwork	Total	Distance off base
Alternative 1	2	48	1244	200	0	\$422,400	\$450,000	\$500,000	\$0	\$1,372,400	\$172,400
Alternative 2	1	72	1244	200	0	\$440,000	\$360,000	\$400,000	\$0	\$1,200,000	Base
Alternative 3	1	48	1242	200	0	\$211,200	\$225,000	\$250,000	\$0	\$686,200	-\$513,800
Alternative 4	1	48	1244	350	75,000	\$211,200	\$225,000	\$250,000	\$375,000	\$1,061,200	-\$138,800



Progress Report for Wahoo Creek Watershed Dams Sites



Lower Platte North NRD

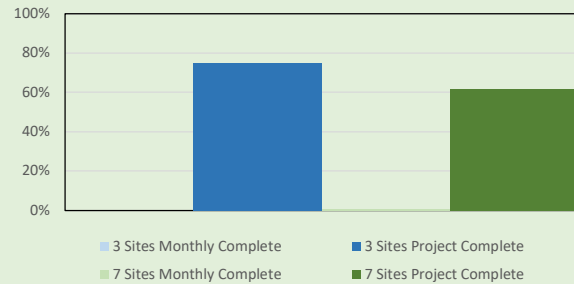
For Work Completed During The Month Of : **March, 2024**
(through 04/06/24)

Project # 018-3423 Dam Site 26A, 26B, &27 Project Phase	Phase Budget	Billings for Month		Project Total Billings to Date	
		Current Earned/Billings	% Completed This Month	JTD Earned/Billings	% Completed Overall
010 - Project Management/Meetings	\$ 23,213		0.0%	\$ 14,067.55	60.6%
020 - Geotechnical Engineering	\$ 224,493		0.0%	\$ 226,775.48	101.0%
030 - Dam Design	\$ 184,885		0.0%	\$ 199,168.83	107.7%
040 - Permitting	\$ 86,634		0.0%	\$ 60,884.18	70.3%
050 - Survey and Legal Descriptions	\$ 11,142		0.0%	\$ 23,636.47	212.1%
060 - Community/Public Participation	\$ -			\$ -	
070 - Construction Services	\$ 171,962			\$ 1,590.75	0.9%
				\$ -	
3 Sites Totals	\$ 702,329	\$ -	0.0%	\$ 526,123.26	74.9%

Project # A18-3423 (separate invoice) Sites 55, 66, 77, 82, 84, 85, &86 Project Phase	Phase Totals	Billings for Month		Project Total Billings to Date	
		Current Earned/Billings	% Completed This Month	JTD Earned/Billings	% Completed Overall
100 - Project Management/Meetings	\$ 60,813		0.0%	\$ 33,240.14	54.7%
110 - Geotechnical Engineering	\$ 592,047	\$ 1,943.37	0.3%	\$ 581,152.77	98.2%
120 - Dam Design	\$ 425,202	\$ 9,509.64	2.2%	\$ 414,375.73	97.5%
130 - Permitting	\$ 244,810	\$ 6,929.88	2.8%	\$ 157,524.55	64.3%
140 - Survey and Legal Descriptions	\$ 28,165		0.0%	\$ 33,529.76	119.0%
150 - Community/Public Participation	\$ 30,000		0.0%	\$ 5,899.20	19.7%
160 - Other	\$ -			\$ -	
170- Construction Services	\$ 603,992			\$ -	0.0%
7 Sites Totals	\$ 1,985,029	\$ 18,382.89	0.9%	\$ 1,225,722.15	61.7%

Billings For Month	\$ 18,382.89
Total Billings To Date	\$ 1,751,845.41
Project Budget	\$ 2,687,358.00
Budget Remaining	\$ 935,512.59

% Budget Spent Per Site



Summary Of Work Completed This Month	
Sites 26A, 26B, & 27	Sites 55,66,77,82,84,85, & 86
-Meeting with NRCS and Fish & Wildlife to discuss depletion calculations for Sites 26a, 26b, and 27	-Completed field exploration for Site 55 -Meeting to discuss Site 77 spillway design and modifications -Updating depletion calculation and responses for permit -Coordination and discussions with USACE

Planned Work For Next Month	
Site 26A, 26B, & 27	Sites 55, 66, 77, 82, 84, 85, & 86
-Goal is to have State approval by end of April or early May	-Design process for remainder of dams: 85 and 86 and then design and construction of 55, 66, 77, and 84 -Depletion calculation for 2nd six dams. Determination if any modifications are needed based upon results. -Geotechnical analysis for Site 55 and laboratory testing

For questions regarding billings, please contact Andrew Phillips at (402) 440-8807 or aphillips@olsson.com

Invoice



601 P St Suite 200
PO Box 84608
Lincoln, NE 68501-4608
Tel 402.474.6311, Fax 402.474.5063

April 23, 2024
Invoice No: 494983

Ryan Chapman
Lower Platte North NRD
PO Box 126
Wahoo, NE 68066-0126

Invoice Total \$18,382.89

Olsson Project # A18-34230 Lower Platte North NRD Wahoo Creek Watershed & 7 Dam Sites
Phase II
Professional services rendered March 10, 2024 through April 6, 2024 for work completed in accordance with agreement.

Phase	110	Geotechnical Engineering		
Labor				
			Hours	Amount
		Project Professional	12.25	1,880.50
		Administrative/Clerical	.75	62.87
		Totals	13.00	1,943.37
		Total Labor		1,943.37
			Total this Phase	\$1,943.37

Phase	120	Dam Design		
Labor				
			Hours	Amount
		Project Professional	11.75	1,803.74
		Assistant Professional	13.50	1,437.62
		Designer	26.00	3,320.72
		CAD Operator	42.00	2,947.56
		Totals	93.25	9,509.64
		Total Labor		9,509.64
			Total this Phase	\$9,509.64

Phase	130	Permitting		
Labor				
			Hours	Amount
		Project Manager	31.00	5,471.50
		Project Professional	9.25	1,089.94
		Assistant Professional	4.00	368.44
		Totals	44.25	6,929.88
		Total Labor		6,929.88

INVOICE PAYMENT IS REQUESTED WITHIN 30 DAYS

Project	A18-34230	Lower Platte North NRD Wahoo Creek Water	Invoice	494983
---------	-----------	--	---------	--------

Total this Phase **\$6,929.88**

AMOUNT DUE THIS INVOICE **\$18,382.89**

Authorized By: Andrew Phillips

INVOICE PAYMENT IS REQUESTED WITHIN 30 DAYS

Invoice



601 P St Suite 200
PO Box 84608
Lincoln, NE 68501-4608
Tel 402.474.6311, Fax 402.474.5063

April 18, 2024
Invoice No: 494185

Ryan Chapman
Lower Platte North NRD
PO Box 126
Wahoo, NE 68066-0126

Invoice Total \$5,143.36

Olsson Project # 023-00443 LPNNRD Wahoo Creek Watershed Flood Reduction Project Real Estate Services

Professional services rendered through April 6, 2024 for work completed in accordance with our Agreement dated February 17, 2023.

Phase 100 Real Estate Acquisitions

Labor

	Hours	Amount	
Principal	19.75	4,686.87	
Designer	1.00	127.72	
Administrative/Clerical	2.25	148.47	
Totals	23.00	4,963.06	
Total Labor			4,963.06

Reimbursable Expenses

Personal Vehicle Mileage	81.07	
Shipping and Delivery	99.23	
Total Reimbursables	180.30	180.30

Total this Phase \$5,143.36

Billing Limits

	Current	Prior	To-Date
Total Billings	5,143.36	43,963.41	49,106.77
Limit			210,000.00
Balance Remaining			160,893.23

AMOUNT DUE THIS INVOICE \$5,143.36

Billings to Date

	Current	Prior	Total
Labor	4,963.06	40,782.39	45,745.45
Expense	180.30	3,181.02	3,361.32
Totals	5,143.36	43,963.41	49,106.77

Email invoices to: rchapman@lpnnrd.org; selliott@lpnnrd.org and CC: jbreunig@lpnnrd.org

Authorized By: Danielle Allen



Lower Platte River
CORRIDOR ALLIANCE

LEAD. ORGANIZE. INSPIRE.
The voice of the Lower Platte.



2024 - 2029 REVISION TO THE WATER QUALITY MANAGEMENT PLAN for The Lower Platte River Corridor Alliance

Approved by EPA on **TBD**, 2024

2024 – 2029 Revision to the Water Quality Management Plan for the Lower Platte River Corridor Alliance

This document constitutes a revision and amendment to the 2019 – 2024 Water Quality Management Plan for the Lower Platte River Corridor Alliance (LPRCA), which includes the Lower Platte – Shell, Lower Platte, Salt and Lower Elkhorn Hydrologic Unit Code 8 (HUC 8) watersheds, hereinafter referred to as the “LPRCA Watersheds”. This amendment will be attached to the original LPRCA Water Quality Management Plan upon finalization. The Water Quality Management Plan, including this revision, is intended to serve as a coordination guide for the Lower Platte River Corridor Alliance, conservation organizations, communities, and educational institutions to plan and implement water quality management projects in the LPRCA Watersheds. It is expected that potential project sponsors will communicate and coordinate their activities in the LPRCA Watersheds with the key partners in the plan, including the Papio-Missouri River NRD (Papio NRD), Lower Platte North NRD (LPNNRD), Lower Platte South NRD (LPSNRD), and Nebraska Department of Environment & Energy (NDEE). Other plan stakeholders and members of the LPRCA include the Nebraska Department of Natural Resources (DNR), Nebraska National Guard and Camp Ashland, University of Nebraska-Lincoln (UNL), Nebraska Game and Parks Commission (NGPC), and the United States Geological Survey (USGS).

Highlights of Accomplishments 2019-2024

In 2023, the LPRCA began scoping monitoring well installation in Springfield, Nebraska. Monitoring well clusters will be installed upstream and downstream of the City of Springfield’s Wellhead Protection Area (WHPA) to monitor the baseline nitrate conditions in the soils and groundwater. The LPRCA will also coordinate with the City of Springfield to implement Urban Stormwater BMPs such as bioswales, rain gardens, and improved pet waste and soil health management to reduce the introduction of nitrate into the WHPA. This project is part of the Lower Platte River Water Quality and Springfield, NE Drinking Water Protection Management Implementation: Phase 1 Project.

The mission of the LPRCA is to foster the development and implementation of locally drawn strategies, actions, and practices to protect, enhance, and restore the vitality of the Lower Platte River’s resources. The LPRCA continues to meet semiannually to coordinate and plan efforts to support this mission, where the Water Quality Management Plan is a key focus. Meetings involve a variety of public agencies and private consultants, who regularly give Lower Platte relevant updates from their respective organizations. Beyond the Water Quality Management Plan, the programs and projects discussed involve active studies (e.g. USGS Stream Gauges, Stream Cameras, Trend Analyses), ongoing projects (e.g. Platte River Railroad Obstruction) and future work (e.g. LPNNRD Drainage Project with Dodge County and City of Fremont, Lower Platte River Aquatic Ecosystem Restoration Comprehensive Study Update). The LPRCA also conducts outreach activities, such as an airboat tour of the Lower Platte River in 2023. The group continues to grow and complete impactful water and environmental work in the Lower Platte River area.

Amendments to the Water Quality Management Plan 2024 – 2029

1. The Water Quality Management Plan for the Lower Platte River Corridor Alliance is amended to extend from **TBD**, 2024 through **TBD**, 2029. Goals, objectives, tasks, priorities, and other actions, with the exception of those amended in this document, continue as guidance for implementing nonpoint source management projects in the

LPRCA Watersheds. Priority watershed selection, load reduction data and significant land use data remain the same due to insignificant overall change in the LPRCA Watersheds.

2. All references to the Nebraska Department of Environmental Quality (NDEQ) are amended to the Nebraska Department of Environment and Energy (NDEE) reflecting the Department's name change.
3. On Page 17 the following statement is made:

The 2016 Nebraska Water Quality Integrated Report prepared by NDEQ identified both segments of the lower Platte River as impaired. Segment LP1–10000 is identified as impaired for aquatic life due to selenium and for a fish consumption advisory. LP1–20000 is identified as impaired for recreation due to *E. coli* (NDEQ, 2016).

The statement is amended to be the following (changes in red), as revised by subsequent publications of the Nebraska Surface Water Quality Integrated Report:

The 2020 Nebraska Water Quality Integrated Report prepared by NDEE identified both segments of the lower Platte River as impaired. Segment LP1–10000 is identified as impaired for Recreation use due to *E. coli* bacteria, impaired for Aquatic Life use due to a Fish Consumption Advisory for Hazard Index Compounds and impaired for Public Drinking Water Use due to Arsenic. LP1–20000 is identified as impaired for Recreation use due to *E. coli* bacteria and impaired for Public Drinking Water Use due to Arsenic (NDEE, 2020).

Note that no further changes to these waterbodies were reported within the 2022 Nebraska Water Quality Integrated Report. The addition of arsenic impairment is due to a 2019 revision of Nebraska's water quality standards which lowered the arsenic drinking water standard from 10 µg/L to 0.18 µg/L. The removal of selenium impairment for LP-10000 is due to an update of the Selenium assessment methods for acute water quality standards reflecting EPA's priority toxic pollutants method.

The 2020 Nebraska Water Quality Report is further appended to the References section on pages 83-84 as:

NDEE 2021, 2020 Surface Water Quality Integrated Report.

4. On Page 74 the following statement is made:
 - Loup River – Impaired for Recreation—bacteria; and Aquatic Life—fish consumption. A TMDL has been approved.
 - Elkhorn River – Impaired for Recreation—bacteria. A TMDL has been approved.
 - Salt Creek – Impaired for Recreation—bacteria; Aquatic Life—Ammonia, Chloride; Fish consumption advisory; Impaired aquatic community; Agriculture Water Supply—conductivity. A TMDL has been approved.

The statement is amended to be the following (changes in red), as revised by subsequent publications of the Nebraska Surface Water Quality Integrated Report:

- Loup River – Impaired for Recreation—bacteria. A TMDL has been approved.

- Elkhorn River – Impaired for Recreation—bacteria. A TMDL has been approved.
- Salt Creek – Impaired for Recreation—bacteria; Aquatic Life—Ammonia, Copper; Impaired Aquatic Community. A TMDL has been approved.

The 2022 Nebraska Water Quality Report is further appended to the References section on pages 83-84 as:

NDEE 2023, 2022 Surface Water Quality Integrated Report.

5. Schedule and Milestones (Table 16, Page 77) is revised to reflect the new project timeline. See **Attachment 1**. The narrative schedules on Pages 76 and ES8 are adjusted to reflect the new project timeline.
6. The following impairment tables from the 2022 NE IR Report are appended as an additional series of Tables under the Management Plan Implementation section. See **Attachment 2**.
7. On Page 74 the following statement is made regarding septic tank system replacement:
 “If the homeowner wishes to upgrade to current design standards, the homeowner may request up to 60% reimbursement (not to exceed \$3,000) for the replacement of the system in addition to 60% reimbursement (not to exceed \$300) for pumping and inspection.”

Per NDEE’s current guidelines, the statement is amended as follows:

“If the homeowner wishes to upgrade to current design standards, the homeowner may request up to 60% reimbursement (not to exceed **\$15,000**) for the replacement of the system in addition to 60% reimbursement (not to exceed \$300) for pumping and inspection.”

The homeowner must still provide proof that the new system has been properly registered with NDEE.

8. On Page 64 under Management Initiative 2, a third bullet is added as follows:
 - Implement Voluntary Septic Tank Upgrade Program
 - Contributing Watershed Coordination Plan
 - **Implement Wellhead Protection Plan(s) (as applicable) within Wellhead Protection Areas (see Figure 9) as Special Priority Areas**
9. Figure 9, displaying the current Wellhead Protection Areas, is amended as shown in **Attachment 3**.

ATTACHMENT 1
REVISED TABLE 16. PLAN IMPLEMENTATION
MILESTONES

Table 16 (Amended). Plan Implementation Milestones

Milestone	1	2	3	4	5	6-10	11-20
	2024	2025	2026	2027	2028	2029-2035	2036-2046
Plan Re-Evaluation	Annually						
Implement Information and Outreach Strategies	Ongoing						
Identify funding for Priority 1 Watershed Implementation	X	X	X	X	X	X	X
Implementation of BMPs association with Priority 1 Watersheds				X	X		
Priority 1 Watersheds Composite <i>E. coli</i> load reduction					6.62E+16 CFU/ Year = 10% of Total Load Reduction Needed to meet TMDL goal at Louisville	TBD ¹	TBD ¹
Initiate Contributing Watershed Coordination Plan			X				
Identify funding for Voluntary Septic Tank Inspection Program		X	X				
Develop Details and Outreach Materials for Voluntary Septic Tank Inspection Program			X				
Perform first septic tank inspection			X				
Perform first cost-share septic tank remediation			X				
Watershed Plan Update (every 5 years)	X					X	X

¹As Priority I Watersheds are re-evaluated and assigned during Watershed Plan updates, the E. Coli load reductions will be calculated. The intent of full Watershed Plan implementation is to achieve the 1.49E+17cfu annual reduction needed at the Louisville gauge to achieve the TMDL limit.

ATTACHMENT 2
2022 NEBRASKA WATER QUALITY INTEGRATED
REPORT IMPAIRMENT TABLES

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
Lakes											
EL1-L0010	Highway 275 Bypass Lake No. 1	NA	NA		NA		NA	NA	3		
EL1-L0020	Highway 275 Bypass Lake No. 2	NA	NA		NA		NA	NA	3		
EL1-L0030	Highway 275 Bypass Lake No. 4 (Johnson Park Lake)	NA	S		NA		NA	S	2		Fish Consumption Assessment completed
EL1-L0040	Highway 275 Bypass Lake No. 3	NA	NA		NA		NA	NA	3		
EL1-L0050	Hooper City Lake	NA	NA		NA		NA	NA	3		
EL1-L0060	West Point City Lake (Neligh Park Lake)	NA	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α (Total Nitrogen, Total Phosphorus)	Lake renovated 2004, Fish Consumption Assessment completed
EL1-L0070	Pilger Reservoir	NA	S		S		S	S	2		Fish Consumption Assessment completed
EL1-L0075	Red Fox Lake (WMA)	NA	S		NA		NA	S	2		Fish Consumption Assessment completed
EL1-L0080	Maskenthine Reservoir	S	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Fish Consumption Assessment completed
EL1-L0090	Leigh Tri-County Lake	NA	NA		NA		NA	NA	3		
EL1-L0095	Maple Creek Recreation Area Lake	I	I		NA		NA	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Fish Consumption Advisory (Mercury)	New Lake built in 2011, Fish Consumption Assessment completed
EL1-L0100	Wood Duck Lake (WMA)	NA	NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL1-L0110	Loes Lake (Wood Duck WMA)	NA	NA		NA		NA	NA	3		
EL1-L0120	Pillar Lake (Wood Duck WMA)	NA	NA		NA		NA	NA	3		
EL1-L0130	Wood Duck Pond (Wood Duck WMA)	NA	NA		NA		NA	NA	3		
EL1-L0140	Dead Timber Lake	NA	S		S		S	S	2		Fish Consumption Assessment completed
EL2-L0010	Lyons City Park Lake	S	NA		NA		NA	S	2		
EL2-L0020	Wayne Izaak Walton Lake	NA	NA		NA		NA	NA	3		
EL3-L0010	Willow Creek Reservoir	I	I		S		S	I	5	Recreation - Algae Toxins (Microcystin), Aquatic Life - Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Fish Consumption Assessment completed
EL3-L0020	Pierce City Lake	NA	NA		NA		NA	NA	3		
EL4-L0005	Andy's Lake	NA	NA		NA		NA	NA	3		
EL4-L0010	Ta-Ha-Zouka Park Lagoon	NA	S		NA		NA	S	2		Fish Consumption Assessment completed
EL4-L0020	Skyview Lake	S	I		S		S	I	5	Aquatic Life - Chlorophyll α (Unknown)	TN and TP are supporting, Fish Consumption Assessment completed
EL4-L0025	Horseshoe Bend (Tilden City Lake)	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Lake renovated 2003
EL4-L0030	Antelope County Country Club Lake	NA	NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL4-L0040	Penn Park Lake (Neligh)	NA	S		NA		NA	S	2		Fish Consumption Assessment completed
EL4-L0050	Goose Lake	NA	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
EL4-L0060	O'Neill City Lake	NA	S		NA		NA	S	2		Fish Consumption Assessment completed
EL4-L0070	Atkinson Lake (SRA)	NA	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
EL4-L0080	Swan Lake	NA	S		NA		NA	S	2		Fish Consumption Assessment completed
EL4-L0090	Overton Lake	NA	S		NA		NA	S	2		Fish Consumption Assessment completed
EL4-L0100	Fish Lake	NA	S		NA		NA	S	2		Fish Consumption Assessment completed
EL4-L0110	Peterson Lake	NA	NA		NA		NA	NA	3		
EL4-L0120	Twin Lake R.C. - North Lake (WMA)	NA	NA		NA		NA	NA	3		
EL4-L0130	Twin Lake R.C. - South Lake (WMA)	NA	NA		NA		NA	NA	3		
Streams											
EL1-10000	Elkhorn River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	Se 4C justification approved 3/09†, <i>E. coli</i> TMDL approved 9/09, Fish Consumption Assessment completed
EL1-10100	Unnamed Creek		NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL1-10200	Big Slough		S		NA		S	S	2		Aquatic Community Assessment completed
EL1-10300	Rawhide Creek		S		S		S	S	1		Aquatic Community Assessment completed
EL1-10400	Rawhide Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL1-10500	Rawhide Creek		NA		NA		NA	NA	3		
EL1-10600	Bell Creek		S		S		S	S	1		Aquatic Community Assessment completed
EL1-10610	Brown Creek		NA		NA		NA	NA	3		
EL1-10620	Little Bell Creek		NA		NA		NA	NA	3		
EL1-10630	Unnamed Creek		NA		NA		NA	NA	3		
EL1-10700	Bell Creek		I		NA		NA	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
EL1-10800	Unnamed Creek		NA		NA		NA	NA	3		
EL1-10900	Maple Creek	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Impaired Aquatic Community (Unknown)	Se 4C justification approved 3/09†, E. Coli TMDL approved 9/09, Aquatic Community Assessment completed, Fish Consumption Assessment completed
EL1-10910	Crystal Creek		NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL1-10920	East Fork Maple Creek		S		S		S	S	1		Aquatic Community Assessment completed
EL1-10930	West Fork Maple Creek		S		S		NA	S	2		
EL1-10931	Dry Creek		NA		NA		NA	NA	3		
EL1-10931.1	South Fork Dry Creek		NA		NA		NA	NA	3		
EL1-10932	Dry Creek		I		NA		NA	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
EL1-10933	Unnamed Creek		NA		NA		NA	NA	3		
EL1-10934	Unnamed Creek		NA		NA		NA	NA	3		
EL1-10940	West Fork Maple Creek		I		NA		NA	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
EL1-11000	Clark Creek		NA		NA		NA	NA	3		
EL1-20000	Elkhorn River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	Se 4C justification approved 3/09†, E. coli TMDL approved 9/09, Aquatic Community Assessment completed, Fish Consumption Assessment completed
EL1-20100	Pebble Creek	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	Se 4C justification approved 3/09†, E. Coli TMDL approved 9/09, Aquatic Community Assessment completed, Fish Consumption Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL1-20110	Silver Creek		NA		NA		NA	NA	3		
EL1-20120	Unnamed Creek		NA		NA		NA	NA	3		
EL1-20121	Unnamed Creek		I		NA		S	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
EL1-20130	Unnamed Creek		S		NA		NA	S	2		Aquatic Community Assessment completed
EL1-20200	Pebble Creek		NA		NA		NA	NA	3		
EL1-20210	South Branch Pebble Creek		NA		NA		NA	NA	3		
EL1-20220	North Branch Pebble Creek		NA		NA		NA	NA	3		
EL1-20300	Pebble Creek		NA		NA		NA	NA	3		
EL1-20400	Cuming Creek		S		S		NA	S	2		
EL1-20410	Willow Creek		NA		NA		NA	NA	3		
EL1-20500	Cuming Creek		NA		NA		NA	NA	3		
EL1-20600	Fisher Creek		NA		NA		NA	NA	3		
EL1-20700	Plum Creek		S		S		NA	S	2		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL1-20800	Plum Creek		NA		NA		NA	NA	3		
EL1-20810	Dry Creek		NA		NA		NA	NA	3		
EL1-20820	Kane Creek		NA		NA		NA	NA	3		
EL1-20900	Plum Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL1-21000	Rock Creek	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
EL1-21100	Leisy Creek		NA		NA		NA	NA	3		
EL1-21200	Sand Creek		NA		NA		NA	NA	3		
EL1-21300	Humbug Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL1-21310	South Humbug Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL1-21400	Humbug Creek		NA		NA		NA	NA	3		
EL1-21500	Payne Creek		NA		NA		NA	NA	3		
EL1-21600	Cedar Creek		NA		NA		NA	NA	3		
EL1-21700	Indian Creek		NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL1-21800	Butterfly Creek		NA		NA		NA	NA	3		
EL1-21900	Union Creek	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Fish Consumption Assessment completed, Aquatic Community Assessment completed
EL1-21910	Sand Creek		NA		NA		NA	NA	3		
EL1-21920	Meridian Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL1-21921	Tracy Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL1-21930	Meridian Creek		NA		NA		NA	NA	3		
EL1-22000	Union Creek	I	S		S		NA	I	5	Recreation (<i>E. coli</i>)	
EL1-22010	Taylor Creek		NA		NA		NA	NA	3		
EL1-22100	Union Creek		I		NA		NA	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
EL1-22200	Unnamed Creek		NA		NA		NA	NA	3		
EL1-22300	Unnamed Creek		NA		NA		NA	NA	3		
EL2-10000	Logan Creek	I	I		I		S	I	5	Recreation (<i>E.coli</i>), Aquatic Life (Natural Selenium), Agricultural Water Supply (Selenium)	Se 4C justification approved 3/09†, Fish Consumption Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL2-10100	Unnamed Creek		NA		NA		NA	NA	3		
EL2-10200	Little Logan Creek		S		S		S	S	1		Aquatic Community Assessment completed
EL2-10210	Unnamed Creek		NA		NA		NA	NA	3		
EL2-10300	Little Logan Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL2-10400	Big Slough Creek		NA		NA		NA	NA	3		
EL2-20000	Logan Creek	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	
EL2-20100	Rattlesnake Creek		NA		NA		NA	NA	3		
EL2-20200	Unnamed Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL2-20300	Middle Creek		S		S		S	S	1		
EL2-20400	Rattlesnake Creek		I		NA		NA	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
EL2-20500	Unnamed Creek		NA		NA		NA	NA	3		
EL2-20600	Unnamed Creek		NA		NA		NA	NA	3		
EL2-20700	Coon Creek		I		NA		S	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
EL2-20800	South Logan Creek	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Fish Consumption Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL2-20810	Dog Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL2-20900	South Logan Creek		S		S		NA	S	2		
EL2-20910	Deer Creek		NA		NA		NA	NA	3		
EL2-20911	Unnamed Creek		NA		NA		NA	NA	3		
EL2-20920	Deer Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL2-21000	South Logan Creek		NA		NA		NA	NA	3		
EL2-30000	Logan Creek		S		S		NA	S	2		
EL2-30100	North Logan Creek		S		S		NA	S	2		
EL2-40000	Logan Creek		S		S		NA	S	2		
EL2-40100	Baker Creek		I		NA		S	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
EL2-40200	Middle Logan Creek		I		S		S	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
EL2-40300	Perrin Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL3-10000	North Fork Elkhorn River	I	S		NA		NA	I	5	Recreation (<i>E. coli</i>)	Fish Consumption Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL3-10100	Spring Creek		NA		NA		NA	NA	3		
EL3-20000	North Fork Elkhorn River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	Se 4C justification approved 3/09†, E. coli TMDL approved 3/09, Aquatic Community Assessment completed, Fish Consumption Assessment completed
EL3-20100	Hadar Creek		NA		NA		NA	NA	3		
EL3-20200	Willow Creek	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed, Fish Consumption Assessment completed
EL3-20300	Willow Creek	NA	NA		NA		NA	NA	3		
EL3-20400	Dry Creek	I	S		NA		NA	I	5	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed
EL3-20500	Dry Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL3-30000	North Fork Elkhorn River		S		S		S	S	1		Aquatic Community Assessment completed
EL3-30100	West Branch North Fork Elkhorn River		NA		NA		NA	NA	3		
EL3-30110	Breslau Creek		NA		NA		NA	NA	3		
EL3-40000	North Fork Elkhorn River		NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL4-10000	Elkhorn River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	E. coli TMDL approved 9/09, Aquatic Community Assessment completed, Fish Consumption Assessment completed
EL4-10100	Unnamed Creek		NA		NA		NA	NA	3		
EL4-10200	Unnamed Creek		NA		NA		NA	NA	3		
EL4-10300	Unnamed Creek		NA		NA		NA	NA	3		
EL4-10400	Battle Creek	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed, Fish Consumption Assessment completed
EL4-10500	Battle Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL4-10600	Deer Creek		NA		NA		NA	NA	3		
EL4-10700	Buffalo Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL4-10800	Dry Creek		NA		NA		NA	NA	3		
EL4-10900	Al Hopkins Creek		NA		NA		NA	NA	3		
EL4-11000	Giles Creek		NA		NA		NA	NA	3		
EL4-11100	Ives Creek		NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL4-11200	Trueblood Creek		NA		NA		NA	NA	3		
EL4-11300	Cedar Creek	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	
EL4-11310	Blacksnake Creek		NA		NA		NA	NA	3		
EL4-11400	Cedar Creek		NA		NA		NA	NA	3		
EL4-20000	Elkhorn River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	E. coli TMDL approved 9/09, Fish Consumption Assessment completed
EL4-20100	Belmer Creek		NA		NA		NA	NA	3		
EL4-20200	Antelope Creek		NA		NA		NA	NA	3		
EL4-20300	Clearwater Creek	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed
EL4-20400	Clearwater Creek		NA		NA		NA	NA	3		
EL4-20500	Cache Creek		S		S		NA	S	2		
EL4-20600	Cache Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL4-20700	South Fork Elkhorn River	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed
EL4-20800	South Fork Elkhorn River		S		NA		S	S	2		Aquatic Community Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
EL4-30000	Elkhorn River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	E. coli TMDL approved 9/09, Fish Consumption Assessment completed, Aquatic Community Assessment completed
EL4-30100	Willow Swamp Creek		NA		NA		NA	NA	3		
EL4-30200	Dry Creek		S		S		S	S	1		Aquatic Community Assessment completed
EL4-30300	Dry Creek		NA		NA		NA	NA	3		
EL4-30400	Holt Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL4-30500	Holt Creek		S		NA		S	S	2		Aquatic Community Assessment completed
EL4-40000	Elkhorn River	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed
EL4-40100	South Fork Elkhorn River		NA		NA		NA	NA	3		
EL4-40200	North Fork Elkhorn River		NA		NA		NA	NA	3		

***Cancer risk compounds** -Aroclor-1248 (PCB-1248), Aroclor-1254 (PCB-1254), Aroclor-1260 (PCB-1260), cis-chlordane, Chlordane, trans-chlordane, DDD, DDE, DDT, Dieldrin, Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, cis-nonachlor, trans-nonachlor, Oxychlordane, Pentachloroanisole, Trifluralin

***Hazard index compounds**- Aroclor-1254 (PCB-1254), Lindane (g-BHC), cis-chlordane, Chlordane, trans-chlordane, DDT, Dieldrin, Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, cis-nonachlor, trans-nonachlor, Oxychlordane, Pentachloroanisole, Trifluralin, Mercury, Cadmium, Selenium

¹ XXX# designates in Title 117 an undesignated waterbody. See Title 117 Chapter 2.004.

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
Lakes											
LO1-L0010	Columbus City Park Pond	NA	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LO1-L0020	Columbus Izaak Walton Lake	NA	NA		NA		NA	NA	3		
LO1-L0030	Pawnee Park Lake (Columbus)	NA	NA		NA		NA	NA	3		
LO1-L0040	Stires Lake	NA	NA		NA		NA	NA	3		
LO1-L0050	Wagner's Lake	NA	NA		NA		NA	NA	3		
LO1-L0060	Loup Power District Headgate Pond No. 1	NA	NA		NA		NA	NA	3		
LO1-L0070	Loup Power District Headgate Pond No. 2	NA	NA		NA		NA	NA	3		
LO1-L0080	Loup Power District Headgate Pond No. 3	NA	NA		NA		NA	NA	3		
LO1-L0090	Loup Power District Headgate Pond No. 4	NA	NA		NA		NA	NA	3		
LO1-L0100	Loup Power District Headgate Pond No. 5	NA	NA		NA		NA	NA	3		
LO1-L0110	Stevenson's Lake	NA	NA		NA		NA	NA	3		
LO1-L0120	Wolbach City Lake	NA	NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO1-L0125	Spalding Lake	NA	NA		NA		NA	NA	3		
LO1-L0130	Pibel Lake	NA	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α (Total Nitrogen, Total Phosphorus)	Lake renovated 2018, Fish Consumption Assessment completed
LO1-L0140	Lake Ericson	NA	S		S		S	S	2		Fish Consumption Assessment completed
LO2-L0010	North Loup Lake (SRA)	NA	I		NA		S	S	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LO2-L0015	Davis Creek Reservoir	S	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LO2-L0020	Ord City Lake	NA	S		NA		S	S	2		Fish Consumption Assessment completed
LO2-L0030	Burwell Lake	NA	NA		NA		NA	NA	3		
LO2-L0040	Burwell Park Lake	NA	NA		NA		NA	NA	3		
LO2-L0050	Calamus Reservoir	S	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), pH, Chlorophyll α (Total Nitrogen, Total Phosphorus)	Fish Consumption Assessment completed
LO2-L0055	Willow Lake B.C.	NA	S		NA		NA	S	2		Fish Consumption Assessment completed
LO2-L0060	Clear Lake	NA	S		S		S	S	2		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO2-L0070	Enders Overflow Lake	NA	NA		NA		NA	NA	3		
LO2-L0080	Long Lake (SRA)	NA	S		S		S	S	2		
LO2-L0090	South Twin Lake (WMA)	NA	NA		NA		NA	NA	3		
LO2-L0100	Dew Lake (Valentine NWR)	NA	NA		NA		NA	NA	3		
LO2-L0110	Crooked Lake (Valentine NWR)	NA	NA		NA		NA	NA	3		
LO2-L0120	East Long Lake (Valentine NWR)	NA	NA		NA		NA	NA	3		
LO2-L0180	Cow Lake (Valentine NWR)	NA	NA		NA		NA	NA	3		
LO2-L0250	Coleman Lake (Valentine NWR)	NA	NA		NA		NA	NA	3		
LO2-L0260	Rat and Beaver Lake (WMA)	NA	S		NA		S	S	2		Fish Consumption Assessment completed
LO2-L0270	Mule Lake (Valentine NWR)	NA	NA		NA		NA	NA	3		
LO2-L0280	Devil's Punch Bowl Lake	NA	NA		NA		NA	NA	3		
LO3-L0010	Farwell South Reservoir	NA	S		NA		S	S	2		Fish Consumption Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO3-L0020	Sherman Reservoir	S	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), (Total Phosphorus)	Fish Consumption Assessment completed
LO3-L0030	Bowman Lake (SRA)	NA	NA		NA		NA	NA	3		
LO3-L0040	Victoria Springs Lake (SRA)	NA	NA		NA		NA	NA	3		
LO3-L0050	Bessey Fish Pond (Nebraska National Forest)	NA	S		NA		S	S	2		Fish Consumption Assessment completed
LO3-L0060	Spring Valley Lake	NA	NA		NA		NA	NA	3		
LO3-L0070	Frye Lake	NA	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LO3-L0090	Alkali Lake	NA	S		S		S	S	2		Naturally alkaline Sandhills lake
LO4-L0010	Ravenna Lake (SRA)	NA	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LO4-L0020	Beaver Creek Lake (SWA)	NA	NA		NA		NA	NA	3		
LO4-L0030	Ansley City Lake	NA	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll a (Total Nitrogen)	Lake renovated 2003, Fish Consumption Assessment completed
LO4-L0040	Melham Park Lake (Broken Bow)	NA	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LO4-L0045	Pressey Pond (WMA)	NA	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Previously listed as LO4-LXXX1, permanent Waterbody ID assigned 6/19, Fish Consumption Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO4-L0050	Arnold Lake (SRA)	NA	I		NA		S	S	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
Streams											
LO1-10000	Loup River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	E. coli TMDL approved 1/06, Fish Consumption Assessment completed
LO1-10100	Barnum Creek		NA		NA		NA	NA	3		
LO1-10200	Cherry Creek		NA		NA		NA	NA	3		
LO1-10300	Unnamed Creek		NA		NA		NA	NA	3		
LO1-10400	Looking Glass Creek		S		NA		NA	S	2		Aquatic Community Assessment completed
LO1-10500	Looking Glass Creek		NA		NA		NA	NA	3		
LO1-10600	Beaver Creek	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Fish tissue assessment completed, Aquatic Community Assessment completed
LO1-10610	Bogus Creek		NA		NA		NA	NA	3		
LO1-10700	Beaver Creek	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed, Fish Consumption Assessment completed
LO1-10800	Beaver Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LO1-10900	Beaver Creek		S		NA		S	S	2		Aquatic Community Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO1-10910	Unnamed Tributary		NA		NA		NA	NA	3		
LO1-11000	Beaver Creek		NA		NA		NA	NA	3		
LO1-20000	Loup River	NA	NA		NA		NA	NA	3		
LO1-20100	Unnamed Creek		NA		NA		NA	NA	3		
LO1-20200	Loup River Canal	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Fish tissue assessment completed
LO1-30000	Loup River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	E. coli TMDL approved 1/06
LO1-30100	Council Creek		NA		NA		NA	NA	3		
LO1-30200	Plum Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LO1-30300	Cedar River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	E. coli TMDL approved 1/06, Fish Consumption Assessment completed
LO1-30310	Timber Creek		S		S		S	S	1		
LO1-30311	South Branch Timber Creek		I		NA		S	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
LO1-30312	North Branch Timber Creek		NA		NA		NA	NA	3		
LO1-30320	Clear Creek		NA		NA		NA	NA	3		
LO1-30400	Cedar River	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO1-30500	Cedar River		S		NA		S	S	2		Aquatic Community Assessment completed
LO1-30510	Dry Cedar Creek		NA		NA		NA	NA	3		
LO1-30600	Cedar River		NA		NA		NA	NA	3		
LO1-30610	Little Cedar Creek		NA		NA		NA	NA	3		
LO1-30620	Big Cedar Creek		NA		NA		NA	NA	3		
LO1-30700	Spring Creek		S		S		S	S	1		
LO1-30710	West Branch Spring Creek		NA		NA		NA	NA	3		
LO1-30800	Spring Creek		NA		NA		NA	NA	3		
LO2-10000	North Loup River	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	E. coli TMDL approved 1/06, Aquatic Community Assessment completed, Fish Consumption Assessment completed
LO2-10100	Auger Creek		NA		NA		NA	NA	3		
LO2-10200	Munson Creek		I		S		S	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
LO2-10300	Davis Creek		S		S		S	S	1		Aquatic Community Assessment completed
LO2-10400	Mira Creek		S		S		S	S	1		Aquatic Community Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO2-10410	South Branch Mira Creek		S		S		S	S	1		
LO2-10420	North Branch Mira Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LO2-10500	Messenger Creek		NA		NA		NA	NA	3		
LO2-10600	Spring Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LO2-10700	Elm Creek		NA		NA		NA	NA	3		
LO2-10800	Unnamed Creek		NA		NA		NA	NA	3		
LO2-10900	Dane Creek		I		S		S	I	5	Aquatic Life - Impaired Aquatic Community (Unknown), (May-June Atrazine)	Aquatic community assessment completed
LO2-11000	Haskell Creek		NA		NA		NA	NA	3		
LO2-11100	Turtle Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LO2-11200	Bean Creek		NA		NA		NA	NA	3		
LO2-11300	Calamus River	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	
LO2-11310	Gracie Creek		NA		NA		NA	NA	3		
LO2-11320	Bloody Creek		NA		NA		NA	NA	3		
LO2-11330	Skull Creek		NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO2-11400	Calamus River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	E. coli TMDL approved 1/06
LO2-11500	Calamus River	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	
LO2-11600	Calamus River		S		S		S	S	1		Aquatic Community Assessment completed
LO2-20000	North Loup River	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Temperature (Unknown)	Fish Consumption Assessment completed, Aquatic community assessment completed
LO2-20100	Goose Creek	S	I		S		S	I	5	Aquatic Life - Temperature (Unknown)	Aquatic Community Assessment completed
LO2-20200	Goose Creek		I		NA		S	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic community assessment completed
LO2-30000	North Loup River	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Temperature (Unknown)	E. coli TMDL approved 1/06
LO2-30100	Pass Creek		NA		NA		NA	NA	3		
LO2-40000	North Loup River	S	I		S		S	I	5	Aquatic Life - Temperature (Unknown)	E. coli TMDL approved 1/06, Aquatic Community Assessment completed, results were inconclusive - site will be reassessed†
LO2-40100	Brush Creek		NA		NA		NA	NA	3		
LO2-40200	Big Creek		S		NA		NA	S	2		Aquatic Community Assessment completed
LO2-50000	North Loup River		NA		NA		NA	NA	3		
LO2-60000	North Loup River		S		NA		S	S	2		Aquatic Community Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO2-70000	North Loup River		S		NA		S	S	2		Aquatic Community Assessment completed
LO2-70100	Mud Creek		NA		NA		NA	NA	3		
LO3-10000	Middle Loup River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	E. coli TMDL approved 1/06, Fish Consumption Assessment completed
LO3-10100	Lake Creek		NA		NA		NA	NA	3		
LO3-10200	Turkey Creek		I		S		S	S	5	Aquatic Life (May-June Atrazine)	Aquatic Community Assessment completed
LO3-10300	Oak Creek		S		S		S	S	1		
LO3-10400	Oak Creek	I	S		S		S	S	2	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed
LO3-20000	Middle Loup River	S	S		S		S	S	1		
LO3-30000	Middle Loup River	S	S		S		S	S	1		Fish Consumption Assessment completed, Aquatic community assessment completed
LO3-40000	Middle Loup River	S	S		S		S	S	1		Fish Consumption Assessment completed, Aquatic Community Assessment completed
LO3-40100	Unnamed Creek		NA		NA		NA	NA	3		
LO3-40200	Wagner Creek		NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO3-40300	Lillian Creek		NA		NA		NA	NA	3		
LO3-40400	Victoria Creek		NA		NA		S	S	2		Aquatic Community Assessment completed, results were inconclusive - site will be reassessed†
LO3-50000	Middle Loup River	S	S		S		S	S	1		Aquatic Community Assessment completed
LO3-50100	Dismal River	S	I		S		S	I	5	Aquatic Life - Temperature (Unknown)	Fish Consumption Assessment completed
LO3-50200	Dismal River	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed
LO3-50300	Dismal River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	<i>E. coli</i> TMDL approved 1/06
LO3-50310	South Fork Dismal River	I	S		S		NA	I	5	Recreation (<i>E. coli</i>)	
LO3-50320	South Fork Dismal River		NA		NA		NA	NA	3		
LO3-50330	North Fork Dismal River	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed
LO3-50340	North Fork Dismal River		NA		NA		NA	NA	3		
LO3-60000	Middle Loup River	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Temperature (Unknown)	Aquatic Community Assessment completed
LO3-70000	Middle Loup River	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Aquatic community assessment completed
LO3-70100	South Branch Middle Loup River		S		S		NA	S	2		
LO3-70200	North Branch Middle Loup River		S		NA		S	S	2		Aquatic Community Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO3-70210	Middle Branch Middle Loup River		S		S		S	S	1		Aquatic Community Assessment completed
LO3-70300	North Branch Middle Loup River		S		S		NA	S	2		
LO4-10000	South Loup River	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	E. coli TMDL approved 1/06, Aquatic Community Assessment completed, Fish Consumption Assessment completed, E. coli Impairment being addressed in the South Loup WMP beginning 9/17
LO4-10100	Mud Creek	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Impaired Aquatic Community (Unknown), (May-June Atrazine)	Aquatic Community Assessment completed, E. coli & Atrazine TMDLs approved 5/12
LO4-10110	Spring Branch		NA		NA		NA	NA	3		
LO4-10120	Clear Creek		NA		NA		NA	NA	3		
LO4-10200	Mud Creek	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Impaired Aquatic Community (Unknown)	E. coli TMDL approved 5/12, Aquatic Community Assessment completed
LO4-10210	Dutchman Valley		NA		NA		NA	NA	3		
LO4-20000	South Loup River	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	E. coli TMDL approved 1/06, Aquatic community, Fish Consumption Assessment completed, E. coli Impairment being addressed in the South Loup WMP beginning 9/17
LO4-20100	Spring Creek		NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LO4-30000	South Loup River	I	S		S		S	I	5-alt	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed, <i>E. coli</i> Impairment being addressed in the South Loup WMP beginning 9/17
LO4-30100	Sand Creek		NA		NA		NA	NA	3		
LO4-30200	Unnamed Creek		NA		NA		NA	NA	3		
LO4-40000	South Loup River	I	S		S		S	I	5-alt	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed, <i>E. coli</i> Impairment being addressed in the South Loup WMP beginning 9/17
LO4-40100	North Fork South Loup River		NA		NA		NA	NA	3		
LO4-50000	South Loup River		S		S		NA	S	2		

***Cancer risk compounds** -Aroclor-1248 (PCB-1248), Aroclor-1254 (PCB-1254), Aroclor-1260 (PCB-1260), cis-chlordane, Chlordane, trans-chlordane, DDD, DDE, DDT, Dieldrin, Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, cis-nonachlor, trans-nonachlor, Oxychlordane, Pentachloroanisole, Trifluralin

***Hazard index compounds**- Aroclor-1254 (PCB-1254), Lindane (g-BHC), cis-chlordane, Chlordane, trans-chlordane, DDT, Dieldrin, Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, cis-nonachlor, trans-nonachlor, Oxychlordane, Pentachloroanisole, Trifluralin, Mercury, Cadmium, Selenium

† See Appendix B: Ecological Justification for Excluding Specific Bio-Indicator Results When Determining Attainment Status of the Aquatic Life Beneficial Use for Nebraska’s 2014 Water Quality Integrated Report

¹ XXX# designates in Title 117 an undesignated waterbody. See Title 117 Chapter 2.004.

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McCarragher, D. B. 1977. Nebraska’s Sandhills Lakes. Nebraska Game and Parks Commission. Lincoln, NE.

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
Lakes											
LP1-L0010	Louisville Lake No. 1 (SRA)	S	S		NA		NA	S	2		Fish Consumption Assessment completed
LP1-L0020	Louisville Lake No. 1A (SRA)	NA	S		NA		NA	S	2		
LP1-L0030	Louisville Lake No. 2 (SRA)	S	S		NA		S	S	2		Fish Consumption Assessment completed
LP1-L0040	Louisville Lake No. 3 (SRA)	S	NA		NA		NA	S	2		
LP1-L0050	Louisville Lake No. 2A (SRA)	S	NA		NA		NA	S	2		
LP1-L0060	Jenny Newman Lake (Platte River State Park)	NA	I		NA		NA	I	5	Aquatic Life - Chlorophyll α (Total Phosphorus)	
LP1-L0070	Schramm Park Ponds (10 Ponds) (SRA)	NA	NA		NA		NA	NA	3		
LP1-L0080	Qwest Lake (Mahoney State Park)	S	NA		NA		NA	S	2		Name changed from U.S. West Lake to Qwest Lake in 2012
LP1-L0090	Baright Lake (Mahoney State Park)	S	NA		NA		NA	S	2		Name changed from Owen Marina Lake to Baright Lake in 2012
LP1-L0100	Two Rivers Lake No. 5 (SRA)	S	S		NA		NA	S	2		Fish Consumption Assessment completed
LP1-L0110	Two Rivers Carp Lake (SRA)	NA	NA		NA		NA	NA	3		
LP1-L0120	Two Rivers Lake No. 6 (SRA)	S	NA		NA		NA	S	2		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP1-L0130	Two Rivers Lake No. 1 and 2 (SRA)	S	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LP1-L0140	Two Rivers Lake No. 3 (SRA)	S	NA		NA		NA	S	2		
LP1-L0150	Two Rivers Lake No. 4 (SRA)	S	NA		NA		S	S	2		
LP1-L0160	Fremont Lake No. 14 (SRA)	NA	NA		NA		NA	NA	3		
LP1-L0170	Fremont Lake No. 13 (SRA)	NA	NA		NA		NA	NA	3		
LP1-L0180	Fremont Lake No. 12 (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus)	Fish Consumption Assessment completed
LP1-L0190	Fremont Lake No. 19 (SRA)	NA	NA		NA		NA	NA	3		
LP1-L0200	Fremont Lake No. 15 (Victory) (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus)	Fish Consumption Assessment completed
LP1-L0210	Fremont Lake No. 11 (SRA)	NA	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LP1-L0220	Fremont Lake No. 18E (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus)	
LP1-L0230	Fremont Lake No. 17 (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Phosphorus TMDL to address Total Phosphorus, Chlorophyll α & pH approved 1/13
LP1-L0240	Fremont Lake No. 10 (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus)	Fish Consumption Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP1-L0250	Fremont Lake No. 20 (SRA)	S	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α (Total Nitrogen, Total Phosphorus)	Phosphorous TMDL to address Algal Toxins approved 9/07, Fish Consumption Assessment completed
LP1-L0270	Fremont Lake No. 16 (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Phosphorus TMDL to address Chlorophyll α & pH approved 1/13
LP1-L0280	Fremont Lake No. 9 (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus)	
LP1-L0290	Fremont Lake No. 1 (SRA)	S	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Phosphorous TMDL to address Total Phosphorous, Chlorophyll α , Dissolved Oxygen and pH approved 1/13, Fish Consumption Assessment completed
LP1-L0300	Fremont Lake No. 2 (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Phosphorous TMDL to address Total Phosphorous & Chlorophyll α approved 1/13, Fish Consumption Assessment completed
LP1-L0310	Fremont Lake No. 3 (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α , Dissolved Oxygen (Total Nitrogen, Total Phosphorus)	Phosphorus TMDL to address Total Phosphorus, Chlorophyll α , & Dissolved Oxygen approved 1/13
LP1-L0315	Fremont Lake No. 3A (SRA)	NA	NA		NA		NA	NA	3		
LP1-L0320	Fremont Lake No. 5 (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Phosphorus TMDL to address Total Phosphorus, Chlorophyll α , pH, & Dissolved Oxygen approved 1/13
LP1-L0330	Fremont Lake No. 4 (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Phosphorus TMDL to address Total Phosphorus, Chlorophyll α & pH approved 1/13
LP1-L0340	Fremont Lake No. 6 (SRA)	NA	NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP1-L0350	Fremont Lake No. 7 and 8 (SRA)	S	I		S		S	I	5	Aquatic Life - Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Phosphorus TMDL to address Total Phosphorus, Chlorophyll α & pH approved 1/13
LP1-L0355	Homestead Lake	S	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α (Total Nitrogen, Total Phosphorus)	Fish Consumption Assessment completed
LP1-L0360	Schuyler East Park Pond	NA	NA		NA		NA	NA	3		
LP1-L0370	Schuyler City Lake (South Park Lake)	NA	NA		NA		I	I	4r	Aesthetics - Algae Blooms (Unknown)	TN and TP not assessed, Lake renovated in 2006 and will be targeted for reassessment
LP1-L0380	Camp Luther Pond	NA	NA		NA		NA	NA	3		
LP1-L0390	McAllister Lake	NA	NA		NA		NA	NA	3		
LP1-L0400	Christopher Cove Lake	NA	NA		NA		NA	NA	3		
LP1-L0410	Country Club Shores Lake	NA	NA		NA		NA	NA	3		
LP1-L0420	Columbus Country Club Lake	NA	NA		NA		NA	NA	3		
LP1-L0430	Oconee Siphon Pond	NA	NA		NA		NA	NA	3		
LP1-L0440	Lake North	S	I		S	S	S	I	5	Aquatic Life - Chlorophyll α , pH (Total Phosphorus)	Fish Consumption Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP1-L0450	Lake Babcock	I	I		NA	S	S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LP2-L0010	Memphis Lake (SRA)	S	I		S		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LP2-L0015	Lake Wanahoo	NA	I		NA		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α (Total Nitrogen, Total Phosphorus)	New lake built in 2012, Fish Consumption Assessment completed
LP2-L0020	Hedgefield Lake (WMA)	NA	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), pH	Fish Consumption Assessment completed
LP2-L0030	Wagon Train Lake	S	I		S		S	I	5	Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus)	Phosphorous TMDL to address Total Phosphorous & Dissolved Oxygen and Sediment TMDLs approved 10/02, Lake Renovated 2001, Fish Consumption Assessment completed
LP2-L0040	Holmes Lake	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Phosphorous TMDL to address Total Phosphorous & Dissolved Oxygen and Sediment TMDLs approved 7/03, Lake renovated 2005, Fish Consumption Assessment completed
LP2-L0050	Stagecoach Lake	S	I		S		I	I	5	Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus), Aesthetics (Sediment)	Fish Consumption Assessment completed
LP2-L0060	Oak Lake	NA	I		NA		S	I	5	Aquatic Life - Dissolved Oxygen (Unknown), (Natural Chlorides)	TN and TP not assessed, Salinity is natural. Fish Consumption Assessment completed
LP2-L0065	Regional Center Pond	NA	NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP2-L0070	Cottontail Lake (17A)	S	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LP2-L0080	Killdeer Lake (WMA)	NA	S		NA		NA	S	2		Fish Consumption Assessment completed
LP2-L0090	Yankee Hill Lake	S	I		S		S	I	5	Aquatic Life - Fish Tissue Advisory (Mercury), Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Phosphorus TMDL to address Total Phosphorus and Sediment TMDLs approved 9/02, Lake Renovated in 2006 and reassessed in 2015-16, Fish Consumption Assessment completed
LP2-L0100	Bowling Lake	NA	I		NA		S	I	5	Aquatic Life - Fish Tissue Advisory (Mercury), Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Lake Renovated in 2006 and will be targeted for reassessment in 2021, Fish Consumption Assessment completed
LP2-L0110	Bluestem Lake	I	I		S		I	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus), Aesthetics (Sediment)	Fish Consumption Assessment completed
LP2-L0120	Wildwood Lake	S	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α , Dissolved Oxygen (Total Nitrogen, Total Phosphorus)	Lake Renovated 2004, Fish Consumption Assessment completed
LP2-L0130	Conestoga Lake	S	I		S		I	I	5	Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus), Aesthetics (Sediment)	Fish Consumption Assessment completed, Lake drained for a renovation as of 2018
LP2-L0140	Olive Creek Lake	S	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α , pH, Dissolved Oxygen (Total Nitrogen, Total Phosphorus)	Fish Consumption Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP2-L0150	Branched Oak Lake	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus)	Fish Consumption Assessment completed
LP2-L0160	Pawnee Lake	S	I		S		I	I	5	Aquatic Life - Fish Tissue Advisory (Mercury), Chlorophyll α (Total Nitrogen, Total Phosphorus), Aesthetics (Sediment)	Sediment TMDL approved 3/01, Fish Consumption Assessment completed
LP2-L0170	Merganser Lake (25A)	NA	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LP2-L0180	Teal Lake (27C)	NA	NA		NA		NA	NA	3		
LP2-L0190	Red Cedar Lake	S	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LP2-L0200	Wild Plum Lake (26A)	S	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LP2-L0210	Tanglewood Lake (27C)	NA	NA		NA		NA	NA	3		
LP2-L0220	Meadowlark Lake	S	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α (Total Nitrogen, Total Phosphorus)	Lake renovated 2006, Fish Consumption Assessment completed
LP2-L0230	Twin Lakes WMA Pond	NA	NA		NA		NA	NA	3		
LP2-L0240	East Twin Lake	S	I		S		S	I	5	Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus)	Fish Consumption Assessment completed
LP2-L0250	Timber Point Lake (6C)	S	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury)	Fish Consumption Assessment completed
LP2-L0260	West Twin Lake	NA	I		S		S	I	5	Aquatic Life - Chlorophyll α (Total Nitrogen, Total Phosphorus),	

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
										(Ammonia)	
LP2-L0270	Czechland Lake	NA	I		S		S	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α , pH (Total Nitrogen, Total Phosphorus)	Fish Consumption Assessment completed
LP2-L0280	Redtail Lake	NA	I		NA		NA	I	5	Aquatic Life - Fish Consumption Advisory (Mercury), Chlorophyll α (Total Phosphorus)	Fish Consumption Assessment completed
Streams											
LP1-10000	Platte River	I	I	I	S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Fish Consumption Advisory (Hazard Index Compounds*) Public Drinking Water Supply (Arsenic)	<i>E. coli</i> TMDL approved 9/07, Fish Consumption Assessment completed
LP1-10100	Fourmile Creek		S		S		S	S	1		Aquatic Community Assessment completed
LP1-10110	Eightmile Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP1-10111	Bachelor Branch		NA		NA		NA	NA	3		
LP1-10200	Fourmile Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP1-10210	Unnamed Creek		NA		NA		NA	NA	3		
LP1-10300	Fourmile Creek		NA		NA		NA	NA	3		
LP1-10400	Zwiebel Creek		NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP1-10410	Unnamed Creek		NA		NA		NA	NA	3		
LP1-10500	Zwiebel Creek		NA		NA		NA	NA	3		
LP1-10600	Turkey Creek		NA		NA		NA	NA	3		
LP1-10700	Cedar Creek		NA		NA		NA	NA	3		
LP1-10710	Unnamed Creek		NA		NA		NA	NA	3		
LP1-10800	Cedar Creek		NA		NA		NA	NA	3		
LP1-10900	Springfield Creek		S		S		NA	S	2		
LP1-11000	Buffalo Creek		S		S		NA	S	2		
LP1-11100	Mill Creek		NA		NA		NA	NA	3		
LP1-11200	Decker Creek	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed
LP1-11300	Fountain Creek		S		S		NA	S	2		
LP1-11400	Unnamed Creek		NA		NA		NA	NA	3		
LP1-11500	Pawnee Creek		S		NA		S	S	2		Aquatic Community Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP1-11510	West Branch Pawnee Creek		NA		NA		NA	NA	3		
LP1-11600	Pawnee Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP1-11700	Western Sarpy Ditch		S		NA		S	S	2		Aquatic Community Assessment completed
LP1-20000	Platte River	I	S	I	S		S	S	5	Recreation (<i>E. coli</i>), Public Drinking Water Supply (Arsenic)	E. coli TMDL approved 9/07, Fish Consumption Assessment completed
LP1-20100	Clear Creek		NA		NA		NA	NA	3		
LP1-20110	Upper Clear Creek		NA		NA		NA	NA	3		
LP1-20200	Clear Creek		NA		NA		NA	NA	3		
LP1-20300	Otoe Creek		NA		NA		NA	NA	3		
LP1-20400	Skull Creek		S		S		S	S	1		Aquatic Community Assessment completed
LP1-20410	Unnamed Creek		NA		NA		NA	NA	3		
LP1-20500	Skull Creek		NA		NA		NA	NA	3		
LP1-20600	Shell Creek	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	
LP1-20610	Taylor Creek		NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP1-20620	Loseke Creek		S		S		NA	S	2		Fish Consumption Assessment completed
LP1-20621	Schaad Creek		NA		NA		NA	NA	3		
LP1-20621.1	Unnamed Creek		NA		NA		NA	NA	3		
LP1-20630	Loseke Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP1-20631	Unnamed Creek		NA		NA		NA	NA	3		
LP1-20640	Loseke Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP1-20700	Shell Creek		S		S		S	S	1		Atrazine TMDL approved 9/07
LP1-20710	Unnamed Creek		NA		NA		NA	NA	3		
LP1-20720	Elm Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP1-20800	Shell Creek		I		S		S	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
LP1-20810	North Shell Creek		NA		NA		NA	NA	3		
LP1-20900	Shell Creek		NA		NA		NA	NA	3		
LP1-21000	Lost Creek		S		S		NA	S	2		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP1-21010	Shonka Ditch		S		NA		NA	S	2		
LP1-21100	Lost Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP1-21200	Lost Creek		NA		NA		NA	NA	3		
LP1-21300	Bone Creek		S		S		NA	S	2		
LP1-21310	Unnamed Creek		NA		NA		NA	NA	3		
LP1-21400	Bone Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP1-21500	Unnamed Creek		NA		NA		NA	NA	3		
LP1-21600	Deer Creek		NA		NA		NA	NA	3		
LP1-21700	Unnamed Creek		NA		NA		NA	NA	3		
LP1-21800	Loup River Canal	S	S		NA	S	S	S	2		Fish Consumption Assessment completed
LP2-10000	Salt Creek	I	S				S	I	4a	Recreation (<i>E. coli</i>)	<i>E. coli</i> TMDL approved 9/07, Fish Consumption Assessment completed
LP2-10100	Wahoo Creek	I	S		S		S	I	4a	Recreation (<i>E. coli</i>)	<i>E. coli</i> TMDL approved 9/07, Aquatic Community & Fish Consumption Assessment completed
LP2-10110	Clear Creek	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	Aquatic Community Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP2-10111	Silver Creek		S		S		NA	S	2		
LP2-10120	Clear Creek		I		S		NA	I	5	Aquatic Life (Ammonia)	
LP2-10121	Johnson Creek		I		NA		NA	I	5	Aquatic Life - Impaired Aquatic Community (Unknown), (May-June Atrazine)	Aquatic Community Assessment completed
LP2-10130	Clear Creek		S		S		NA	S	2		
LP2-10140	Silver Creek		I		S		S	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
LP2-10150	Mosquito Creek		S		S		NA	S	2		
LP2-10160	Sand Creek		I		S		S	I	5	Aquatic Life (May-June Atrazine)	Aquatic Community Assessment completed
LP2-10161	Duck Creek		S		S		S	S	1		Aquatic Community Assessment completed
LP2-10170	Sand Creek		S		S		S	S	1		Aquatic Community Assessment completed
LP2-10171	Spring Creek		NA		NA		NA	NA	3		
LP2-10180	Sand Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP2-10200	Wahoo Creek		S		S		NA	S	2		
LP2-10210	Cottonwood Creek		I		S		NA	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP2-10211	Unnamed Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP2-10220	Miller Branch		S		S		S	S	1		Aquatic Community Assessment completed
LP2-10230	North Fork Wahoo Creek		S		S		NA	S	2		
LP2-10231	Unnamed Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP2-10240	North Fork Wahoo Creek		NA		NA		NA	NA	3		
LP2-10300	Wahoo Creek		S		S		NA	S	2		
LP2-10310	Dunlap Creek		NA		NA		NA	NA	3		
LP2-10400	Wahoo Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP2-10500	Callahan Creek		I		NA		NA	I	4c	Aquatic Life - Iron (Naturally Elevated)	
LP2-10600	Robinson Creek		I		NA		NA	I	4c	Aquatic Life - Iron (Naturally Elevated)	
LP2-10700	Greenwood Creek		I		NA		NA	I	4c	Aquatic Life - Iron (Naturally Elevated)	
LP2-10800	Dee Creek		I		NA		S	I	4c	Aquatic Life - Iron (Naturally Elevated)	Aquatic Community Assessment completed
LP2-10900	Camp Creek		I		NA		S	I	4c	Aquatic Life - Iron (Naturally Elevated)	Aquatic Community Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP2-11000	Rock Creek		I		S		S	I	4c	Aquatic Life - Iron (Naturally Elevated)	Fish Consumption Assessment completed, Aquatic Community Assessment completed
LP2-11010	North Fork Rock Creek		I		NA		S	I	4c	Aquatic Life - Iron (Naturally Elevated)	Aquatic Community Assessment completed
LP2-11100	Rock Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP2-11110	Ash Hollow Creek		NA		NA		NA	NA	3		
LP2-11120	Little Rock Creek		NA		NA		NA	NA	3		
LP2-11200	Rock Creek		NA		NA		NA	NA	3		
LP2-20000	Salt Creek	I	I				S	I	5	Recreation (E. coli), Aquatic Life (Aluminum)	E. coli TMDL approved 9/07, Aquatic Community Assessment completed, Fish Consumption Assessment completed
LP2-20100	Jordan Creek		NA		NA		NA	NA	3		
LP2-20200	Stevens Creek		S		S		NA	S	2		
LP2-20300	Little Salt Creek		I				S	I	5	Aquatic Life - Impaired Aquatic Community (Unknown), (Copper, Ammonia)	Aquatic Community Assessment completed
LP2-20400	Dead Man's Run	I	I		S		S	I	5	Recreation (E. coli), Aquatic Life - Dissolved Oxygen (Unknown), pH	E. coli TMDL approved 9/07
LP2-20500	Oak Creek	I	I				S	I	5	Recreation (E. coli), Aquatic Life - Fish Consumption Advisory (Mercury), (Chloride)	E. coli TMDL approved 9/07, Fish Consumption Assessment completed

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP2-20510	Elk Creek		S		S		NA	S	2		
LP2-20511	West Oak Creek		NA		NA		NA	NA	3		
LP2-20520	Elk Creek		NA		NA		NA	NA	3		
LP2-20600	Oak Creek	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
LP2-20610	North Oak Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP2-20611	Wagon Tongue Creek		NA		NA		NA	NA	3		
LP2-20612	Bates Branch		S		NA		S	S	2		Aquatic Community Assessment completed
LP2-20700	Oak Creek		S		NA		S	S	2		Aquatic Community Assessment completed
LP2-20710	Middle Oak Creek		I		S		S	I	5	Aquatic Life (May-June Atrazine)	Aquatic Community Assessment completed
LP2-20800	Oak Creek		I		S		S	I	5	Aquatic Life (May-June Atrazine)	
LP2-20900	Antelope Creek	S	I				S	I	5	Aquatic Life (Copper)	E. coli and Ammonia TMDLs approved 9/07
LP2-21000	Middle Creek		S		S		S	S	1		Aquatic Community Assessment completed
LP2-21010	South Branch Middle Creek		NA		NA		NA	NA	3		

Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP2-21100	Middle Creek		I		S		S	I	4a	Aquatic Life (May-June Atrazine)	Atrazine TMDL approved 9/07
LP2-21200	Haines Branch		S				NA	S	2		
LP2-21210	Holmes Creek		S		S		S	S	1		
LP2-21300	Haines Branch		NA		NA		NA	NA	3		
LP2-21310	Cheese Creek		NA		NA		NA	NA	3		
LP2-21400	Haines Branch		NA		NA		NA	NA	3		
LP2-21500	Beal Slough	I	S		S		S	I	5	Recreation (<i>E. coli</i>)	
LP2-30000	Salt Creek	I	I		S		S	I	5	Recreation (<i>E. coli</i>), Aquatic Life - Impaired Aquatic Community (Unknown)	E. coli TMDL approved 9/07, Fish Consumption Assessment completed, Aquatic Community Assessment completed
LP2-30100	Cardwell Branch	I	S		S		NA	I	5	Recreation (<i>E. coli</i>)	
LP2-30200	Hickman Branch		S		NA		S	S	2		Aquatic Community Assessment completed
LP2-40000	Salt Creek		S		S		NA	S	2		
LP2-40100	Wittstruck Creek		NA		NA		NA	NA	3		
LP2-40200	Spring Branch		NA		NA		NA	NA	3		

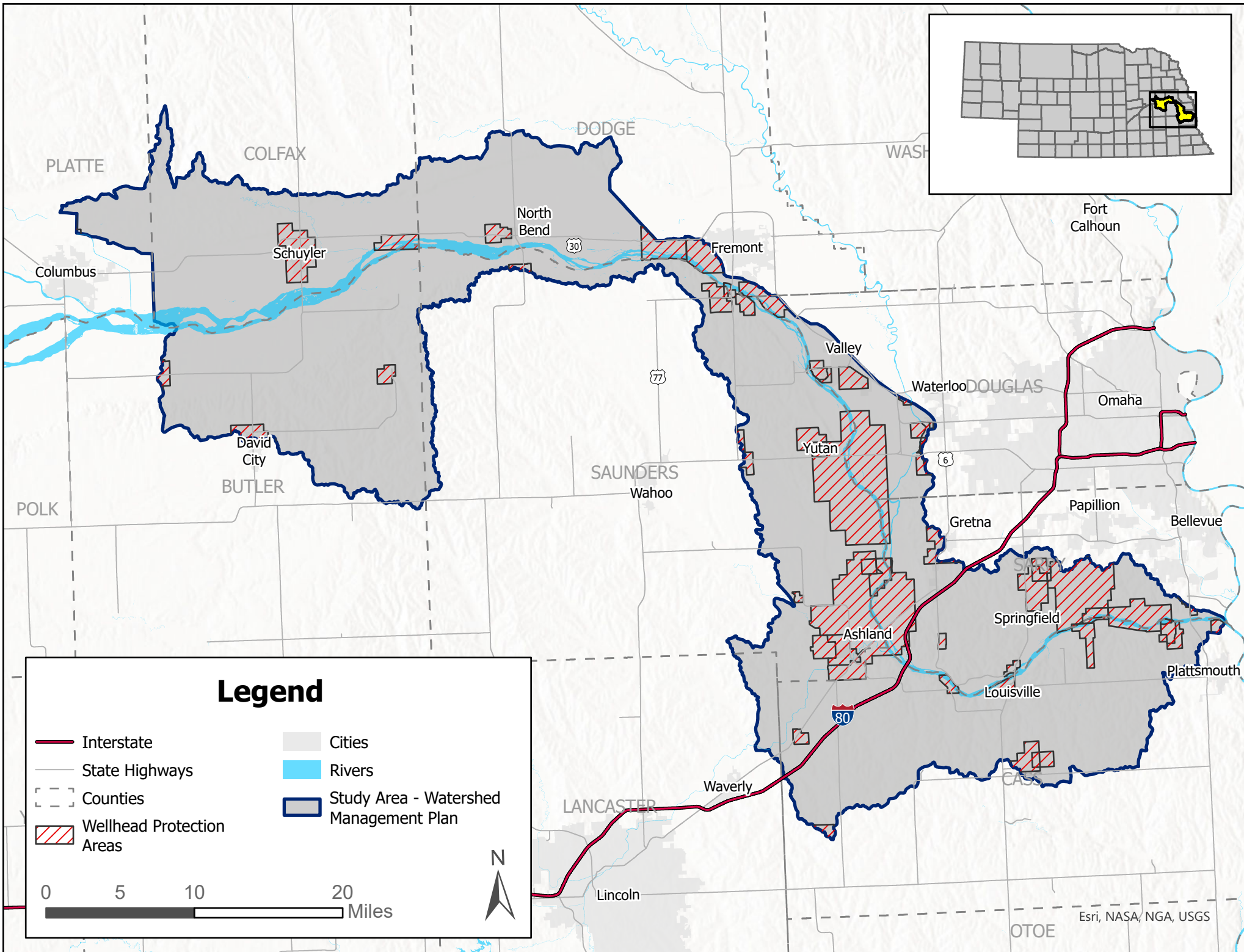
Waterbody ID	Waterbody Name	Recreation	Aquatic Life	Water Supply			Aesthetics	Overall	2022 IR	Impairments (Causes)	Comments/Actions
				Public Drinking	Agricultural	Industrial					
LP2-40300	Olive Branch		I		S		NA	I	5	Aquatic Life - Impaired Aquatic Community (Unknown)	Aquatic Community Assessment completed
LP2-40310	North Branch		S		NA		S	S	2		Aquatic Community Assessment completed

***Cancer risk compounds** -Aroclor-1248 (PCB-1248), Aroclor-1254 (PCB-1254), Aroclor-1260 (PCB-1260), cis-chlordane, Chlordane, trans-chlordane, DDD, DDE, DDT, Dieldrin, Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, cis-nonachlor, trans-nonachlor, Oxychlordane, Pentachloroanisole, Trifluralin

***Hazard index compounds**- Aroclor-1254 (PCB-1254), Lindane (g-BHC), cis-chlordane, Chlordane, trans-chlordane, DDT, Dieldrin, Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, cis-nonachlor, trans-nonachlor, Oxychlordane, Pentachloroanisole, Trifluralin, Mercury, Cadmium, Selenium

¹ XXX# designates in Title 117 an undesignated waterbody. See Title 117 Chapter 2.004.

ATTACHMENT 3
REVISED FIGURE 9. WELLHEAD PROTECTION
AREAS



Legend

- Interstate
- State Highways
- Counties
- Wellhead Protection Areas
- Cities
- Rivers
- Study Area - Watershed Management Plan

0 5 10 20 Miles



Trend Analysis on Continuous Water Quality in the Lower Platte River

USGS Nebraska Water Science Center
Matt Moser, Brenda Densmore, and Dave Rus

In partnership with the Lower Platte River Corridor Alliance

Introduction:

With continuous water quality data being collected in cooperation with the Lower Platte River Corridor Alliance (LPRCA) over the past 15 years, datasets are now sufficient to begin looking for potential water quality trends that are occurring in the lower Platte River. These data sets can be examined using modeling techniques to account for wet and dry years or missing data and detect water quality trends or facilitate comparisons between sites to better understand how the water quality in the Lower Platte River has changed over the monitoring. This short proposal describes the type of modeling that the USGS could complete in cooperation with the LPRCA to gain more information about the water quality of the Lower Platte River as represented by this monitoring data.

The Lower Platte River Corridor Alliance has cooperated with the USGS Nebraska Water Science Center since 2007 to collect continuous water quality data at four stream locations strategically placed in the lower Platte River basin to target specific watersheds. These include:

- Platte River at Louisville has had seasonal collection of water temperature, specific conductance, dissolved oxygen, and turbidity since the fall of 2007. Beginning in 2012, continuous nitrate data were also collected seasonally.
- Elkhorn River at Waterloo has had seasonal collection of water temperature, specific conductance, dissolved oxygen, and turbidity since the fall of 2007. Beginning in 2016, continuous nitrate data were also collected seasonally.
- Platte River at Leshara has had seasonal collection of water temperature, specific conductance, dissolved oxygen, turbidity, and nitrate since 2016.
- Salt Creek near Ashland has had seasonal collection of water temperature, specific conductance, dissolved oxygen, and turbidity since the fall of 2007.

The USGS has provided the Lower Platte River Corridor Alliance and the Natural Resources Districts (NRD) with bi-yearly updates on the collected data with graphs, data summaries, and observations on how these continuous water quality variables were changing from year to year. These continuous data sets have also supported other water management operations and studies in these streams by documenting current water quality conditions.

The continuous water quality monitors can provide data for trend analysis over several years, river conditions, and multiple parameters. Continuous water quality monitors provide the ability to look at short term fluctuations in the river that traditional sampling can miss, as well as data that can be collected and analyzed over a variety of flow conditions. Continuous data such as this, provide the ability to look at a more complete picture of river conditions.

To date (2023), statistical analysis of the continuous water quality data being collected has not been completed to better understand how water temperature, specific conductance, dissolved oxygen, turbidity, and nitrate are changed seasonally, during wet and dry years, and year to year over the period of data collection. Therefore, the full value of this continuous data record is not well understood.

Objectives:

The LPRCA and the USGS NEWSW are interested in completing statistical trend analysis on the continuous water quality data from the beginning of each record up to and including the 2023 monitoring season to better understand how these monitored parameters are changing over time. This project will also include an analysis of discharge trends during the same time period.

Conceptual approach:

The high-frequency data from continuous water quality monitoring provides many benefits but also provide challenges to the statistical analysis of trends because of the serial correlation (dependence upon previous data values) inherent in the measurements. Since many wide-spread, readily available continuous water quality data sets are just recently reaching length thresholds that make trend analysis practical (generally around 10 years), trend analysis using these types of data are an active research topic.

Using order statistics of daily values from continuous water quality data in Virginia streams, Porter and others (2020) were able to perform a trend analysis on high frequency data. The USGS Nebraska WSC would follow a similar method to analyze data and look for trends on data collected in Nebraska. Daily values would be utilized for data to run linear regressions on continuous water quality data in the lower Platte. This approach would look at overall trends occurring throughout the time frame and not analyze every single point.

The linear regressions would only focus on the extremes and averages observed within each selected time frame, and then compare those extremes and averages against similar time frames throughout the 15-year period where data have been collected. The USGS NEWSW would utilize previous R packages already established by the USGS and available in R to analyze the data.

Temporal changes in daily discharge statistics will be explored using methods available in the EGRET software (Hirsch and De Cicco, 2015). Daily discharge records can be used to perform Mann-Kendall trend tests, and the associated Thiel-Sen slope estimates, to create Quantile-Kendall plots (Hirsch, 2018) to evaluate discharge trends across the range of discharge values at each of the sites for a specified timeframe. These statistics will be explored as a possible method for trend analysis at the four sites in the lower Platte River. In addition to these trend analyses at each site, sites will be compared to better understand how the full system is changing over the years contributions to the system from the tributaries vs from the Central Platte.

The USGS also previously produced concentration predictions using surrogate relations in the Lower Platte River. These relations were published through a USGS Scientific Investigations Report (Schaepe et al, 2014) and were funded in part by a NET grant. These surrogate equations were developed using continuous water quality data collected from 2007 to 2011 and comparing those data to a USGS sample dataset. When these two data sets are combined, their relations were able to compute additional concentrations of analytes of concern that were occurring in the stream throughout that period. The USGS is proposing to add in data collected from 2011 to 2023 to these equations to update the data to better reflect stream concentrations

over the entire monitoring period. This will help represent the concentrations of additional constituents more accurately in the rivers. By updating these equations, better calculations would be made of real time concentrations of concern such as atrazine, *E.coli*, phosphorus, suspended sediment, and ammonia.

Potential outcome of the study:

The Lower Platte River Corridor Alliance and member NRDs have water quality management plans in place on the Platte River and its tributaries. Part of these water quality management plans are to look at impaired watersheds and water flowing into the river. The trend analysis being proposed can look at the collected continuous water quality data to help determine if long term management changes are impacting the water quality of the lower Platte River. The trends analysis will be able to account for wet vs dry years and see a clearer picture of how the water quality of the system is changing independent of discharge. Often during dry years, the amount of runoff into the channel is diminished which also decreases the quantity of contaminants and likewise during very wet years extremes in water quality are observed.

Long term changes can also possibly identify changes occurring in regard to climatic effects. The temperature in the lower Platte River can be analyzed throughout the previous 15+ years to see if any changes have occurred or are occurring.

The outcomes of this study will also provide a better understanding of how continuous water quality parameters in the Lower Platte River watersheds are changing over time since data collection started. The R scripts used to complete the data analysis will be created in a way that future years of collected data can be further analyzed through these same scripts. The statistical methods used will be described in a USGS scientific investigations report and the R script and resulting trends data will be published as a USGS data release in ScienceBase.

Study duration: 2 years

Data analysis will primarily occur during Federal Fiscal Year (FY) 2024, with report writing beginning at the same time. The final scientific investigations report and data release will be published in FY 2025.

Cost estimate:

The anticipated cost for the data analysis and report production are expected to be \$148,100. This cost will be split between the USGS and Lower Platte Corridor Alliance members electing to participate in the trend analysis. Of the total cost, the USGS will be contributing \$48,300 and the LPRCA members contributing \$99,800.

References:

Helsel, D.R., Hirsch, R.M., Ryberg, K.R., Archfield, S.A., and Gilroy, E.J., 2020, Statistical methods in water resources: U.S. Geological Survey Techniques and Methods, book 4, chap. A3, 458 p., <https://doi.org/10.3133/tm4a3>. [Supersedes USGS Techniques of Water-Resources Investigations, book 4, chap. A3, version 1.1.]

Hirsch, R.M., and De Cicco, L.A., 2015, User guide to Exploration and Graphics for RivEr Trends (EGRET) and dataRetrieval: R packages for hydrologic data (version 2.0, February 2015): U.S. Geological Survey Techniques and Methods book 4, chap. A10, 93 p., <https://dx.doi.org/10.3133/tm4A10>.

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Kendall, M.G., 1975, Rank correlation methods (4th ed.): London, Charles Griffin.

Porter, A.J., Webber, J.S., Witt, J.W., and Jastram, J.D., 2020, Spatial and temporal patterns in streamflow, water chemistry, and aquatic macroinvertebrates of selected streams in Fairfax County, Virginia, 2007–18: U.S. Geological Survey Scientific Investigations Report 2020–5061, 106 p., <https://doi.org/10.3133/sir20205061>.

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Sen, P.K., 1968, Estimates of the regression coefficient based on Kendall's tau: Journal of the American Statistical Association, v. 63 p. 1379–1389

Yang, G., and Moyer, D.L., 2020, Estimation of nonlinear water-quality trends in high-frequency monitoring data: The Science of the Total Environment, v. 715, p. 136686, accessed February 2020 at <https://doi.org/10.1016/j.scitotenv.2020.136686>.

For any additional questions or comments, please reach out to:

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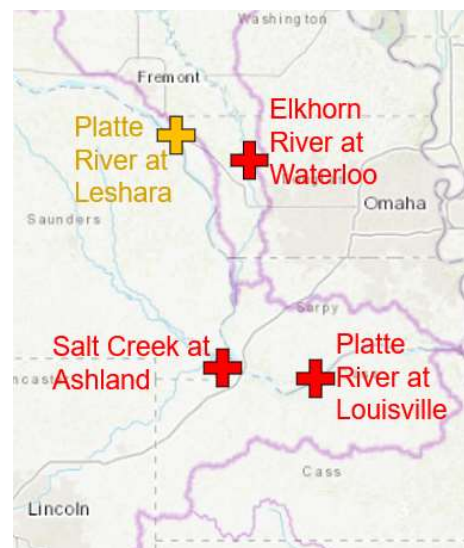
USGS – LPRCA Water Quality Gages in the Lower Platte River

The USGS Nebraska Water Science Center has been cooperating with the Lower Platte Corridor Alliance to collect continuous water quality data in the lower Platte River. Four gages have recorded continuous water-quality data seasonally since 2007. Readings of water temperature, specific conductance, dissolved oxygen, turbidity, and nitrate are taken every 15 minutes and the data are transmitted hourly to the USGS webpages. These water quality measurements provide information for a variety of goals in the Lower Platte River, some of which include:

- Monitoring in support of the Lower Platte River’s Water Quality Management Plan
- Potential to identify the water-quality impacts from management and land use changes in the contributing basin and to provide a baseline for future comparisons.
- Assessing the stream health for fisheries
- Better characterization of nitrate concentration in the drinking water source of many Nebraskans.
- Inform those who use the river for recreating of potential water quality risks.
- Development of surrogate estimates to help better quantify loads of non-monitored parameters.

This data collection effort has been funded by multiple agencies that are a part of the LPRCA. The Platte River at Leshara site is funded as a joint agreement between the USGS, Lower Platte South, Lower Platte North, Papio-Missouri, Lincoln Water System and Metropolitan Utilities District.

The remaining three sites; Louisville, Waterloo, and Salt Creek, are funded through USGS, Lower Platte South NRD, and Papio-Missouri NRDs. Data collection will continue under the current agreement through the 2024 calendar year.



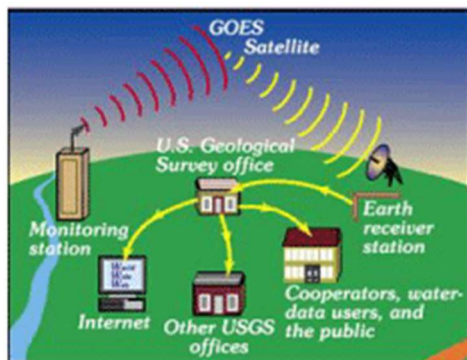
What is continuous real-time water quality?

Real-time water quality refers to in-stream water-quality measurements made available on the web in real-time. Water-quality measurements are recorded in time intervals as small as 5 minutes to hourly and are often referred to as continuous. These time-dense (continuous) stream data are made available on the Web in near real-time (available at <http://waterdata.usgs.gov/nwis>). Providing these data in real-time informs the user of stream conditions for various uses and public safety.



Real-time water quality information is made possible because of improvements in sensor and data recording technology since the first in-stream sensors were developed in the 1950-60s to directly measure or compute concentrations of many water-quality constituents. Sensors that measure water-quality properties or constituent concentrations are available for specific conductance, pH, water temperature, turbidity, dissolved oxygen, and nitrate. Sensors also are available that measure portions of the electromagnetic spectrum (light) that indicate adsorption or scatter (turbidity, chlorophyll, nitrate, and fluorescence) or sound (acoustic Doppler technology,). In-stream chemical analyzers and portable field laboratories for nitrate and phosphorus also are available. Many additional new sensors are being developed as the need for these data increase.

Increasingly, the USGS, in cooperation with other Federal, Tribal, State, and local agencies and non-governmental organizations, are using these innovative real-time monitoring approaches to collect continuous and immediate water-quality information that is then used as surrogates for many other constituents in water including, sediment, indicator bacteria and nutrients. In recent years, selected field measurements are available in real-time from more than 3,000 USGS sites available at <https://waterdata.usgs.gov/nwis>.



Continuous real-time information on water quality is a vital asset that helps safeguard lives and property and ensures adequate water resources for a healthy State economy. Increased data-collection frequency provides an improved understanding of factors affecting water quality. Continuous real-time water-quality data are needed for decisions regarding drinking water, water treatment, regulatory programs, recreation, and public safety.



Why continuous and real time?

Continuous real-time information is a vital asset that helps safeguard lives and property and ensures adequate water resources for a healthy economy. Continuous real-time water-quality data are needed for decisions regarding drinking water, water treatment, regulatory programs, recreation, and public safety. Additionally, increased data-collection frequency provides an improved understanding of factors that affect water quality.

Advances related to monitoring technology are enhancing our understanding of water-quality issues. These advancements include, for example, innovation and new water-quality sensors, monitors (multiple sensors in a single probe), data recorders, and transmission equipment. In-stream water-quality sensors provide continuous measurements (typically, every 5-60 minutes) of water-quality conditions that may vary widely over short periods of time, such as before, during, and after storms or during tidal fluctuations. When these data are available in real time, water management officials can be notified of these changes and are able to respond by altering treatment or collecting additional data. Additionally, real-time measurements for temperature, conductance, and turbidity can be statistically related to other important properties, such as indicator bacteria that are more costly and difficult to monitor and analyze. Continued development, testing, and deployment of a new generation of real-time sensors for water quality have the potential to greatly increase the level of information available.


Advantages of continuous and real-time data:

- USGS real-time water-quality data are available to everyone on the Internet.
- The time-density of continuous data improves our knowledge and understanding of relations between water quality and changes in hydrology, geology, and land use.
- Increased data-collection frequency provides an improved understanding of factors that affect water quality.
- Continuous data provide richer data sets for developing tools and models for extending observed water quality to unmeasured streams and enables development of better management tools for ensuring stream quality protection.
- Notification of water resource managers in real time, eliminating delay between sample collection and lab analysis may be critical for warning the public for recreation or for water treatment.
- Real-time data can decrease time and costs associated with manual sampling.
- Continuous data provide better measures of water quality relative to water-quality criteria compared to a few samples collected during a year.
- Continuous data measure water quality changes at night and during storms when samples are seldom collected and when storm events can have major effects on concentrations and loads.





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Meeting Minutes

KICKOFF MEETING

LOWER PLATTE NORTH NRD HAZARD MITIGATION PLAN 2025

Meeting Information

Meeting Type: Kick-off

Date: March 26, 2024

Time: 10:00am – 11:30am

Location:

In Person – LPNNRD Office, Wahoo

Purpose

- To Inform
- Seek Input
- Seek Approval

Agenda

1. Introductions

- Attendees:
 - Becky Appleford – JEO
 - Karl Dietrich – JEO
 - Anthony Kohel – JEO
 - Ryan Chapman – LPNNRD
 - Sean Elliot – LPNNRD
 - Will Brueggeman – LPNNRD
 - Drew ten Bensel – LPNNRD
 - Terry Miller – Saunders County EM
 - Tim Hofbauer – Platte County EM
 - Tom Smith – Dodge County EM
 - Mark Arps – Colfax County EM
 - Daryl Holmberg – Schuyler
 - Don Glodowski – Schuyler
 - Mark Byrd – Fremont
 - Theresa Busse – North Bend

2. Project Description & Planning Area Map

- a. Update 2020 Lower Platte North NRD Hazard Mitigation Plan
 - i. FEMA Updated Planning Requirements
 - ii. Project Funding
- b. Threat and Hazard Identification and Risk Assessment (THIRA)
- c. Drought Management Plan
- d. Project Schedule
 - THIRA and Drought Plan will have their own kickoff meetings that will be scheduled later.

3. Regional Planning Team Roles and Responsibilities
 - a. Support the Planning Process
 - b. Assist in Data Collection
 - c. Assist in Public Engagement
 - i. Project Website: <https://www.jeo.com/lpnnrd-hmp>. County, NRD, and Community websites should link to the project website if possible.
 - ii. Project Flyer
 - Will be created by JEO.
 - iii. Public Survey
 - A draft survey be created by JEO and shared with the Regional Planning Team for review and comment.
 - d. Attend Meetings
 - 2 Hybrid Meetings: Wahoo and David City
 - 1 Virtual Meeting
 - One-on-one meeting w/ Fremont
4. 2020 Goals and Objectives
 - a. Review previous Goals and Objectives
 - All agreed on the suggested changes (see Goals Document)
5. Hazard Identification
 - a. 2025 Hazard Selection
 - All agreed on the suggested hazard changes for 2025 (see Hazards Document)
6. Participation Requirements & Potential Participants
 - a. Participation Criteria for Inclusion in the Hazard Mitigation Plan
 - i. Taxing Authority (i.e. Communities, Counties, School Districts, Fire Districts, etc.)
 - b. Potential Participants List
 - Fremont noted that Fremont Fire Department is part of the City of Fremont; however, Fremont Rural Fire District is not.
 - c. Vulnerable Populations to reach out to:
 - Schuyler and Southern Fremont (Large Spanish speaking populations)
7. Other Comments
 - The NRD would like a heat map of rural water sources for fire districts to use in the event of a grass/wildfire.
 - Fire Hydrant issues at some SIDs (locations and lack of pressure). Water pressure is also an issue in Colon.
8. Next Steps:
 - a. Data Collection
 - b. Schedule and attend Round 1 Meetings
 - c. Project Press Release
 - Will be created by JEO.
 - d. Contact List Review

9. Contact Information

- a. Becky Appleford, rappleford@jeo.com, 402-392-9915
- b. Karl Dietrich, kdietrich@jeo.com, 402-742-7213
- c. Ryan Chapman, rchapman@lpnrd.org, 402-443-4675





2025 HMP GOALS AND OBJECTIVES

GOAL 1: PROTECT THE HEALTH AND SAFETY OF RESIDENTS

Objective 1.1: Reduce or prevent damage to property or prevent loss of life or serious injury (overall intent of the plan).

Objective 1.2: Improve real-time monitoring of hazards with stream gauges, weather stations, and other technology where data gaps are identified.

GOAL 2: REDUCE FUTURE LOSSES FROM HAZARD EVENTS

Objective 2.1: Provide protection for existing structures, future development, community lifelines, services, utilities, and trees.

Objective 2.2: Develop hazard specific plans, conduct studies or assessments, and retrofit buildings and facilities to mitigate hazards and minimize their impact.

Objective 2.3: Minimize the impact of hazard events through enacting or updating ordinances, permits, laws, or regulations.

GOAL 3: INCREASE PUBLIC AWARENESS AND EDUCATION REGARDING VULNERABILITY TO HAZARDS

Objective 3.1: Develop and provide information to the public, visitors, and property owners about their risk and vulnerability to hazards.

GOAL 4: IMPROVE EMERGENCY MANAGEMENT CAPABILITIES

Objective 4.1: Develop or update City and/or County Emergency Response Plan(s) and procedures and increase the capability to respond.

Objective 4.2: Develop or improve Evacuation Plans and procedures.

Objective 4.3: Improve warning systems and ability to communicate with the public before, during, and following a disaster or emergency.

GOAL 5: ENHANCE OVERALL RESILIENCE AND PROMOTE SUSTAINABILITY

Objective 5.1: Incorporate hazard mitigation and adaptation into updating other local planning endeavors (e.g., comprehensive plans, zoning ordinance, subdivision regulation, etc.).



Lower Platte North NRD 2025 Hazard Mitigation Plan Update
 Hazard Identification

2021 State Hazards	2020 Lower Platte North NRD Hazards	2025 Lower Platte North NRD Hazards
Animal Disease	Agricultural Disease (Animal and Plant)	Animal and Plant Disease
Dam Failure	Chemical Spills – Fixed Site	Dam Failure
Drought	Chemical Spills – Transportation	Drought
Flood/Flash Flood	Dam Failure	Extreme Temperatures
Human Infectious Disease	Drought	Flooding
Levee Failure	Extreme Heat	Grass/Wildfire
Plant Disease and Pests	Flooding	Hazardous Materials Release
Severe Thunderstorm	Grass/Wildfire	Levee Failure
Severe Winter Storms	Hail	Severe Thunderstorms
Terrorism	High Winds	Severe Winter Storms
Tornado	Levee Failure	Terrorism and Cyber Attack
Wildfire	Severe Thunderstorms	Tornadoes and High Winds
Other Hazards of Concern:	Severe Winter Storms	
<ul style="list-style-type: none"> • Chemical Fixed Sites and Transportation 	Terrorism and Civil Disorder	
<ul style="list-style-type: none"> • Extreme Temperatures 	Tornadoes	
<ul style="list-style-type: none"> • Power Failure 		

Changes:

- Changed Agricultural Disease to Animal and Plant Disease (incorporates Emerald Ash Borer)
- Combined Chemical Fixed Sites and Chemical Transportation into Hazardous Materials Release
- Changing Extreme Heat to Extreme Temperatures
- Combined Hail into Severe Thunderstorms
- Combined Tornadoes and High Winds
- Replaced Civil Disorder and added Cyber Attack to Terrorism