Projects Committee Meeting
Thursday, March 31, 2022 7:30 AM
Lower Platte North NRD Office
P.O. Box 126
Wahoo, NE 68066

1. UNFINISHED BUSINESS
   None
2. SWCP
   We currently have $54,540.06 of state allocated SWCP funds remaining for FY22 of the original $85,024.81 allotment. We have until 7/31/22 to disburse them or they will be rolled over to next year's allocation.

   Attached is the 2022 SWCP policy for official approval. Bob Heimann will be present to discuss a proposed change to our Tree Cost-Share program to allow cost share in some instances when trees are planted by the cooperator. Attached is the proposed tree cost share list. The first 4 will be planted by the District. Chromy is doing his own with our rental tree planter. Bob thought maybe cost share on hand plants 600 or greater at 50%.
   Ex: 600 x $2= 1,200 if we plant them, their cost 25% = $300. If they hand plant, 600 x $1 =600 at 50% = $300. So it's no more or less.
   The only other update to the policy is our 2022 Lands For Conservation program.

   2.A. SWCP Application Approvals
   Heimann submitted the applications he's received for this year's tree plantings. They are listed below:

2.B. **NAME**	2.C. **COUNTY**	2.D. **TREE #**	2.E. **TOTAL COST**	2.F. **NRD COST-SHARE**
2.G. MIKE REZAC	2.H. SAUNDERS	2.I. 250	2.J. $ 500.00	2.K. $ 375.00
2.L. AARON BARTEK	2.M. SAUNDERS	2.N. 225	2.O. $ 450.00	2.P. $ 337.50
2.Q. LEE SEEMAN	2.R. SAUNDERS	2.S. 570	2.T. $ 1,140.00	2.U. $ 855.00
2.V. SETH MCGINN	2.W. DODGE	2.X. 1335	2.Y. $ 2,670.00	2.Z. $ 2,002.50

2.AA. BILL Y CHRO MY	2.BB. BUTL ER	2.CC. 1 325	2.DD. $ 1,325. 00	2.EE. $ 662.50
2.FF.	2.GG.	2.HH.	2.II.	2.JJ.
2.KK. TOT AL	2.LL.	2.MM. 705	2.NN. $ 6,085. 00	2.OO. $ 4, 232.50

2.PP.
Waiting for our summer applications from NRCS.

2.QQ. SWCP Payments
None

2.RR. SWCP Cancellations
None

2.SS. Wahoo Creek Cost Share Approvals
None

3. WATERSHEDS

3.A. Shell Creek

3.A.1. Shell Creek Environmental Enhancement Plan Implementation

The earth work on South Shell Creek Channel Improvement/Benching Project has been completed. Colfax County is working with the contractor and will invoice us for the completed work. We will be reimbursed for the majority of this expense from approved grant funds. The county is also working on a couple of smaller channel stabilization projects that might be completed by July 1, 2022. Bill Bos continues to work on landowner conservation projects and septic system upgrades.

3.A.1.a. Tom Sprunk Bank Stabilization/Wetlands Project

Tom Sprunk continues to work with NRCS and a local contractor on preliminary design and costs for one or two additional stabilization projects on his property on Shell Creek tributaries. These proposals are anticipated soon.

3.A.1.b. Shell Creek Grant Funding Update

We will be using up to approximately $290,000 of grant funding to help complete various Shell Creek projects by July 1, 2022. We also have budgeted $100,000 of local LPNNRD funds to assist as well. Mountford met with Bill Bos, our Shell Creek Watershed Technician, to estimate the various projects that could occur:
Completion of the Shell Creek Channel Improvement/Benching Project ($150,000 - $200,000); Tom Sprunk Grade Stabilization Project $50,000, Various landowner projects ($50,000). Colfax County Stabilization projects ($100,000). While these are rough estimates, it appears we would have enough total funding to participate in these projects if everything falls into place.

3.A.1.c. Shell Creek Septic System upgrade application

We received an application for a septic system upgrade within the Shell Creek Environmental Enhancement plan watershed, estimated 60% cost-share rate:

3.A.1.d. KE
VIN VEEDER

3.A.1.e. $6,00
0.00

3.B. Wahoo Creek Watershed

3.B.1. Wahoo Creek Dam Site Planning Update & FYRA Invoices

We are still awaiting final NRCS approval of our Wahoo Creek Watershed Plan, but anticipate that approval soon. The final draft plan can be viewed at: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ne/technical/engineering/?cid=nrcseprd1492259

We have received a $3,870 invoice from FYRA for their work with NRCS and involvement with our public meeting. During this invoice period, they reviewed agency comments and developed reply letters, updated the Plan-EA with information from those comments, attended the projects committee meeting, and reviewed comments from Headquarters. After this payment, $2,187.75 will remain unpaid on the $740,763 FYRA contract.

We will report on the outcome of the Wahoo Creek Public information meeting held Monday, March 28th (Agenda attached). There was a good turnout for the meeting with approximately fifty people in attendance, the majority being landowners and tenants affected by the dam sites.

3.B.2. Olsson Design Update and Invoice

Attached is the March 22, 2022, progress report and invoice from Olsson totaling $75,985.19. This invoice is for geo-tech activities at Wahoo Creek dam sites 55, 66, 77, 82, 84, 85 and 86. After this payment, $1,482,124.02 will remain under contract.

As mentioned under the Wahoo Creek Planning agenda item above, an update was given about the outcome of our March 28th public meeting on LPNNRD moving forward with the process to complete our ten watershed reduction dams by December, 2026. Andrew Phillips, Olsson, said that hydraulics and hydrology have been started on sites 26a, 26b & 27. Olsson has also had an initial meeting with the USACE on 404 permitting for the dams.

3.B.3. Wahoo Creek Watershed Water Quality Plan Phase II

3.B.4. Wahoo Creek Addtional Watershed Assistance Discussion

As we start looking ahead to completing 10 dams by the end of 2026, there will be an accelerated workload that will require additional internal or external assistance. Besides coordination with our engineer firm and the construction contractor, there will be a lot of involvement with landowners, particularly securing project land rights. We anticipate over 70 landowners who we will be negotiating easements and this could be a very time-consuming process. Besides adding an additional staff member, there would be an

opportunity to hire outside land rights assistance during the appraisal process. The committee started this discussion which will continue at future meetings.

4. JOINT WATER MANAGEMENT ADVISORY BOARD

4.A. Elkhorn Township/Fremont East Project Meeting

A report will be given on the outcome of a March 28th partner meeting with JEO to review project options for drainage improvement east of Fremont. Attached is the Agenda along with options that were discussed at that meeting. While everything is still in the very early planning phase, it appears the best path going forward will be to combine alternatives as presented on Agenda No. 6. showing flood reduction within Fremont and on agricultural land east of the city (refer to Working Alterative - 5 Year Storm Map).

4.B. Rawhide Creek Work Plan-Environmental Assessment Update

An update will be given on the Rawhide Creek Planning effort. Attached is the agenda and the first three chapters of the draft Rawhide Creek Watershed Plan sections for your review.

5. EROSION AND SEDIMENT RULES AND REGULATIONS

No new information to discuss.

6. OTHER

None

7. ADJOURNMENT

The Projects Committee Adjourned at 8:33 a.m.

Lower Platte North
Natural Resources District

Soil & Water Conservation Program (SWCP)

LPNNRD Board Approval 4/11/22

Table of Contents

LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT POLICY
2021 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. <u>Establishment of warm and cool season grass on crop land</u>
B. **<u>Small conservation project (terraces, basins, diversion, grass waterways and/or underground outlets) applications.</u>** 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 cooperator uses our tree planning machine. It is further recommended that final approved payments will be subject to LPNNRD inspection. (4/2022)
J. **Windbreak Renovation** (Attachment D)
K. Supplementing EQIP 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. <u>Summer Construction Applications (For June through September 15):</u>

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. **<u>Fall Construction Applications (September through December project completion):</u>**

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. <u>Grass, Tree Planting, Windbreak Renovation Applications:</u>

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. <u>Small Dam Application (Attachment C):</u>

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. <u>LPNNRD Signatures on Approved Applications & Related Documents:</u>

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. 2022 PRIORITY AREAS & ELIGIBLE COST-SHARE PERCENTAGES

Priority areas for 2022 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.

LPNNRD Cost-Share Amounts	Average (%) and Actual
FALL Work (District Wide) max $ limit: $12,500.00	75
FALL Work (Targeted Areas) max $ limit: $12,500.00	75
SUMMER Work (District Wide) max $ limit: $10,000.00	75
SUMMER Work (Targeted Areas) max $ limit: $12,500.00	75

	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 $12,500 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. 2022 Summer Conservation Practices in Non-Priority Areas:

For 2022, the maximum limit for approved conservation practices in non-priority areas will be $10,000 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 2022 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.

Xl. 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 recommendation s 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
2022 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 2022: Payment is $195 per acre*.

*Payment Rate will be reviewed annually. Payment rate is based on 2021 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.

14. Separate fund pool allotted in 2022 for the remainder of the LPNNRD outside of 319/NWQI watersheds.

FYRA Engineering, LLC
12702 Westport Parkway, Suite 300
Omaha, NE 68138
402-502-7131

Lower Platte North NRD
Tom Mountford
511 Commercial Park Road
Wahoo, NE 68066

Invoice number: 022-074
Date: 03/30/2022

Project: 022-17-02 WAHOO CREEK WATERSHED PLAN/EA

For Services Through March 25, 2022

ADDITIONAL SERVICES WATERSHED PLAN EA

	Hours	Rate	Billed
Project Scientist			
Jessie Winter	2.00	$135.00	$270.00
Senior Environmental Engineer			
Janel Kaufman	8.50	$160.00	$1,360.00
Phase subtotal			**$1,630.00**

ADDITIONAL SERVICES-ECONOMIC-PROJECT MANAGEMENT

	Hours	Rate	Billed
Senior Environmental Engineer			
Janel Kaufman	14.00	$160.00	$2,240.00
Phase subtotal			**$2,240.00**

Invoice total	**$3,870.00**

Make all checks payable to:
FYRA Engineering, LLC
12702 Westport Parkway, Suite 300
Omaha, NE 68138

FYRA ENGINEERING

INVOICE SUMMARY

Description	Contracted Fee	Previously Billed	This Invoice	Total To Date	% Complete
Coord Meetings w/LPNNRD	$5,724.00	$16,175.49	$0.00	$16,175.49	282.59
Coord Meetings w/NRCS	$8,904.00	$11,366.25	$0.00	$11,366.25	127.65
Project Meetings	$49,372.00	$23,605.04	$0.00	$23,605.04	47.81
Monthly Invoicing/Schedule	$7,875.00	$13,550.50	$0.00	$13,550.50	172.07
Project Scoping	$7,170.00	$7,068.75	$0.00	$7,068.75	98.59
Plan Review	$6,740.00	$24,541.09	$0.00	$24,541.09	364.11
Develop, Write & Summarize Plan	$60,100.00	$83,011.48	$0.00	$83,011.48	138.12
Maintain Admin Record	$3,560.00	$914.25	$0.00	$914.25	25.68
Develop and Describe Purpose & Need	$2,320.00	$1,820.00	$0.00	$1,820.00	78.45
19239.2Formulate, Describe & Compare Alternatives	$27,270.00	$19,239.25	$0.00	$19,239.25	70.55
Collect & Analyze Social/Demographic Data	$1,435.00	$1,562.50	$0.00	$1,562.50	108.89
Historic & Cultural Resources	$675.00	$9,869.00	$0.00	$9,869.00	1,462.07
Prime & Unique Farmland	$675.00	$2,404.75	$0.00	$2,404.75	356.26
Identify Wetlands & Other Water Bodies	$117,145.00	$102,862.36	$0.00	$102,862.36	87.81
Collect Soils Data	$810.00	$0.00	$0.00	$0.00	0.00
Identify and Anlyze Soil Erosion	$810.00	$1,952.75	$0.00	$1,952.75	241.08
Collect & Analyze Floodplain Data	$3,900.00	$6,521.00	$0.00	$6,521.00	167.21
Collect & Analyze Data on Critical Areas	$6,300.00	$3,071.00	$0.00	$3,071.00	48.75
Identify Land Use and Crop Inventory	$810.00	$1,125.00	$0.00	$1,125.00	138.89
T&E Species & Migratory Birds	$11,500.00	$12,192.50	$0.00	$12,192.50	106.02
Consumptive Use Data	$1,840.00	$1,366.50	$0.00	$1,366.50	74.27
Effects on Public Health & Safety	$4,440.00	$1,936.00	$0.00	$1,936.00	43.60
Effects to Homes/Bus/Ag	$4,440.00	$4,124.75	$0.00	$4,124.75	92.90
Cummulative Impacts	$11,080.00	$2,821.25	$0.00	$2,821.25	25.46
Federal, State & Local Permits	$1,790.00	$1,775.00	$0.00	$1,775.00	99.16
38Relationship/Conflicts w/Other Plans	$4,460.00	$3,822.50	$0.00	$3,822.50	85.71
Interagency & Public Involvement	$2,940.00	$5,197.02	$0.00	$5,197.02	176.77
Risk & Uncertainty	$4,880.00	$4,292.00	$0.00	$4,292.00	87.95
Preferred Alternatives Discussion	$11,840.00	$14,006.00	$0.00	$14,006.00	118.29
Mitigation Features	$6,760.00	$4,486.00	$0.00	$4,486.00	66.36
Hydrologic Investigation	$26,460.00	$33,403.25	$0.00	$33,403.25	126.24
Economic Data & Discussion	$14,640.00	$51,211.00	$0.00	$51,211.00	349.80
Installation & Financing	$2,600.00	$775.00	$0.00	$775.00	29.81
Operations, Maintenance & Replacment	$3,240.00	$740.00	$0.00	$740.00	22.84
Project Maps	$24,850.00	$28,438.25	$0.00	$28,438.25	114.44
Utility Investigations	$5,200.00	$1,940.00	$0.00	$1,940.00	37.31
Recreation Site 77 Planning	$7,350.00	$0.00	$0.00	$0.00	0.00
Interagency Scoping Mtg	$10,720.00	$6,396.50	$0.00	$6,396.50	59.67

FYRA ENGINEERING

INVOICE SUMMARY

Description	Contracted Fee	Previously Billed	This Invoice	Total To Date	% Complete
Agency Coord	$7,680.00	$6,181.00	$0.00	$6,181.00	80.48
Breach Analysis	$26,343.00	$36,054.50	$0.00	$36,054.50	136.87
Hydraulics/Structure Sizing	$19,244.00	$30,321.25	$0.00	$30,321.25	157.56
Develop Land Rights & Structure Costs	$29,784.00	$29,048.25	$0.00	$29,048.25	97.53
Land Rights Assessment	$4,534.00	$1,496.25	$0.00	$1,496.25	33.00
Site Survey	$14,779.00	$5,080.00	$0.00	$5,080.00	34.37
Additional Services Watershed Plan EA	$48,000.00	$15,244.27	$1,630.00	$16,874.27	35.15
Additional Services-Economic-Project Management	$8,329.00	$5,570.00	$2,240.00	$7,810.00	93.77
Additional Services-Econcomics-Flood Damage Reduction Economics	$64,690.00	$66,770.50	$0.00	$66,770.50	103.22
Additional Services-Economics-Revised Plan Economics	$22,450.00	$10,187.75	$0.00	$10,187.75	45.38
Site 83 Removal	$22,305.00	$19,167.50	$0.00	$19,167.50	85.93
Total	**$740,763.00**	**$734,705.25**	**$3,870.00**	**$738,575.25**	**99.70**

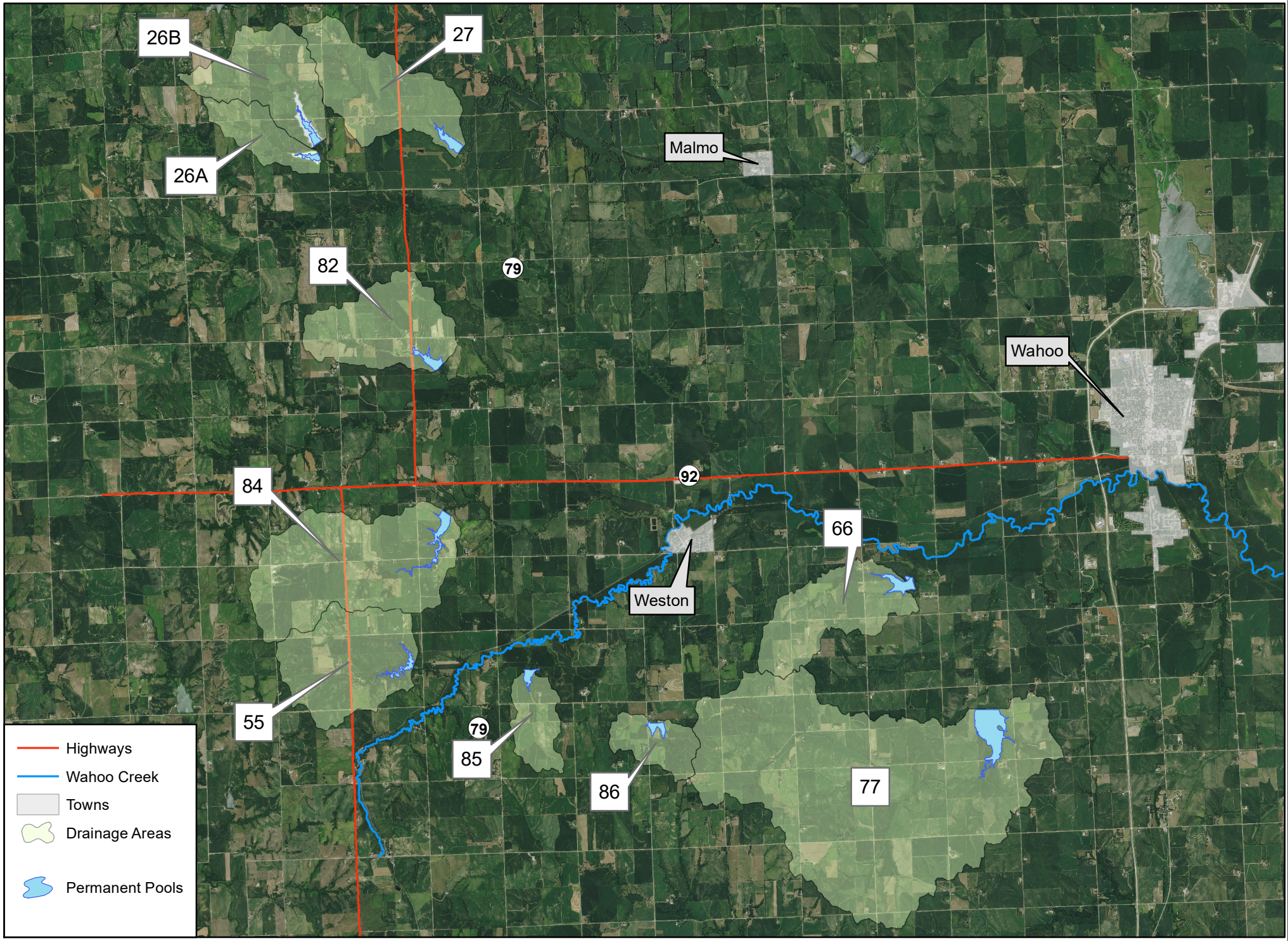
Aging Summary

Invoice Number	Invoice Date	Outstanding	Current	Over 30	Over 60	Over 90	Over 120
022-074	03/30/2022	3,870.00	3,870.00				
	Total	3,870.00	3,870.00	0.00	0.00	0.00	0.00

Wahoo Creek Watershed Public Information Meeting
Clint Johannes Education Building, Lake Wanahoo
Monday, March 28, 2022
6:00 p.m. – 8:00 p.m.

Agenda

- Welcome/Introductions (Eric Gottschalk, LPNNRD)
  - Funding
- Watershed Plan (Janel Kaufman, FYRA)
  - Planning and background
- Design (Andrew Phillips, Olsson)
  - Overall Site Map
  - Environmental
  - Geotechnical
  - Hydrology and Hydraulics
  - Landowner, County, and Utilities Coordination
  - Individual Sites
  - Schedule
    - Sites 26a, 26b, and 27
    - Sites 55, 66, 77, 82, 84, 85, & 86
    - Land Acquisition
- Group Questions
- Individual Station Questions
- Adjourn - 8:00 p.m.



Wahoo Creek Proposed Dam Sites

Progress Report for Wahoo Creek Watershed Dams Sites

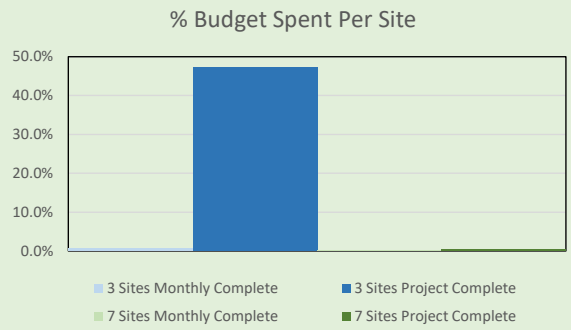
Lower Platte North NRD

For Work Compled During The Month Of : February, 2022
(through 3/12/22)

Project # 018-3423 Dam Site 26A, 26B, &27 Project Phase	Phase Budget	Billings for Month Current Earned/Billings	 % Completed This Month	Project Total Billings to Date JTD Earned/Billings	 % Completed Overall
010 - Project Management/Meetings	$ 21,840		0.0%	$ 6,654.79	30.5%
020 - Geotechnical Engineering	$ 222,485		0.0%	$ 204,239.50	91.8%
030 - Dam Design	$ 173,160		0.0%	$ 44,845.67	25.9%
040 - Permitting	$ 79,960		0.0%	$ 9,093.44	11.4%
050 - Survey and Legal Descriptions	$ 10,780		0.0%	$ 11,360.33	105.4%
060 - Community/Public Participation	$ -			$ -	
070 - Construction Services	$ 75,600			$ -	
				$ -	
3 Sites Totals	$ 583,825	$ -	0.0%	$ 276,193.73	47.3%

Project # A18-3423 (separate invoice) Sites 55, 66, 77, 82, 84, 85, &86 Project Phase	Phase Totals	Billings for Month Current Earned/Billings	 % Completed This Month	Project Total Billings to Date JTD Earned/Billings	 % Completed Overall
100 - Project Management/Meetings	$ 62,400	$ 2,240.47	3.6%	$ 6,952.15	11.1%
110 - Geotechnical Engineering	$ 607,460	$ 55,434.17	9.1%	$ 198,923.33	32.7%
120 - Dam Design	$ 436,278	$ 12,713.22	2.9%	$ 26,035.00	6.0%
130 - Permitting	$ 251,140	$ 1,243.19	0.5%	$ 3,122.72	1.2%
140 - Survey and Legal Descriptions	$ 28,875	$ 4,354.14	15.1%	$ 6,198.03	21.5%
150 - Community/Public Participation	$ 30,000		0.0%	$ 429.02	1.4%
160 - Other	$ -			$ -	
7 Sites Totals	$ 1,416,153	$ 75,985.19	5.4%	$ 241,660.25	17.1%

Billings For Month	**$ 75,985.19**
Total Billings To Date	$ 517,853.98
Project Budget	$ 1,999,978
Budget Remaining	$ 1,482,124.02



Summary Of Work Completed This Month	
Sites 26A, 26B, & 27	Sites 55,66,77,82,84,85, & 86
-No work completed this month	-Field operations including soil test borings and surveying. - Review of field data and call out of laboratory testing. - Review of dam alignments and spillway locations from Watershed plan. -Laboratory testing on recovered soil samples -NRCS coordination meeting

Planned Work For Next Month	
Site 26A, 26B, & 27	Sites 55, 66, 77, 82, 84, 85, & 86
-Design has been approved for these structures. Will begin design in March.	-Field operations including surveying. -Laboratory testing on soils samples collected during drilling -Continue wokring with USACE to get initial meeting -Finalize initial layout of dams

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

Invoice

olsson

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

March 22, 2022
Invoice No: 414533

Invoice Total $75,985.19

Tom Mountford
Assistant Manager
Lower Platte North NRD
PO Box 126
Wahoo, NE 68066-0126

Olsson Project # A18-34230 Lower Platte North NRD Wahoo Creek Watershed & 7 Dam Sites Phase II

Professional services rendered February 6, 2022 through March 12, 2022 for work completed in accordance with agreement.

Phase 100 Sites 55 66 77 82 83 84 85 86 Project Management

Labor

	Hours	Amount	
Principal	9.25	2,189.57	
Totals	9.25	2,189.57	
Total Labor			**2,189.57**

Unit Billing

Automobile 1189	87.0 Miles @ 0.585	50.90	
Total Units		**50.90**	**50.90**

Billing Limits	**Current**	**Prior**	**To-Date**	
Total Billings	2,240.47	4,711.68	6,952.15	
Limit			62,400.00	
Balance Remaining			55,447.85	
		Total this Phase		**$2,240.47**

Phase 110 Geotechnical Engineering

Labor

	Hours	Amount
Team Leader	12.00	1,797.60
Assistant Engineer	28.75	2,601.01
Technician	4.25	301.58
Senior Driller	161.50	11,584.39
Associate Driller	156.75	9,126.47
Assistant Driller	163.50	8,440.87
Principal	1.00	166.86
Project Professional	53.75	6,895.59

Assistant Professional	1.00	136.45	
Totals	582.50	41,050.82	
Total Labor			**41,050.82**
Reimbursable Expenses			
Meals		21.74	
Auto		17.94	
Total Reimbursables		**39.68**	**39.68**
Unit Billing			
Field Vehicle 1147	412.0 Miles @ 0.75	309.00	
Field Vehicle 1315	89.0 Miles @ 1.25	111.25	
Drill Rig Truck Mileage	41.0 Miles @ 2.25	92.25	
Field Vehicle 1022	91.0 Miles @ 0.75	68.25	
Field Vehicle 1429	88.0 Miles @ 0.75	66.00	
Field Vehicle 1193	1,128.0 Miles @ 0.75	846.00	
Cone Penetration Test			
450 Ft Cone Penetration Test	450.0 Feet @ 4.00	1,800.00	
Drilling Misc			
1 Cone Penetration Test Setup		100.00	
Dry Density Test			
3 Tests @ $30/Test		90.00	
Explor Drill Flight Augers 0-25			
510 Ft Explor Drill Flight Augers 0-25	510.0 Feet @ 5.35	2,728.50	
170 Ft Explor Drill Flight Augers 0-25	170.0 Feet @ 5.35	909.50	
Explor Drill Flight Augers 26-50			
181.5 Ft Explor Drill Flight Augers 26-5	181.5 Feet @ 4.80	871.20	
60 Ft Explor Drill Flight Augers 26-50	60.0 Feet @ 4.80	288.00	
Explor Drill HSA 0-25			
100 Ft Explor Drill HSA 0-25	100.0 Feet @ 5.35	535.00	
200 Ft Explor Drill HSA 0-25	200.0 Feet @ 5.35	1,070.00	
Explor Drill HSA 26-50			
100 Ft Explor Drill HAS 26-50	100.0 Feet @ 6.05	605.00	
200 Ft Explor Drill HAS 26-50	200.0 Feet @ 6.05	1,210.00	
Explor Drill HSA 51-75			
10 Ft Explor Drill HSA 51-75	10.0 Feet @ 4.70	47.00	
70 Ft Explor Drill HSA 51-75	70.0 Feet @ 4.70	329.00	
Shelby Tube Sampling 0-25			
60 Shelby Tube Sampling 0-25	60.0 Samples @ 9.64	578.40	
38 Shelby Tube Sampling 0-25	38.0 Samples @ 9.64	366.32	
Shelby Tube Sampling 26-50			
10 Shelby Tube Sampling 26-50	10.0 Samples @ 6.56	65.60	
14 Shelby Tube Sampling 26-50	14.0 Samples @ 6.56	91.84	
Standard Penetration Test 0-25			
64 Standard Penetration Test 0-25	64.0 Tests @ 5.00	320.00	
38 Standard Penetration Test 0-25	38.0 Tests @ 5.00	190.00	
Standard Penetration Test 26-50			
46 Standard Penetration Test 26-50	46.0 Tests @ 5.20	239.20	
39 Standard Penetration Test 26-50	39.0 Tests @ 5.20	202.80	

Standard Penetration Test 51-75		
2 Standard Penetration Test 51-75	2.0 Tests @ 4.91	9.82
14 Standard Penetration Test 51-75	14.0 Tests @ 4.91	68.74
Unconfined Compression Test		
3 Tests @ $45/Test		135.00
Total Units		**14,343.67** **14,343.67**

Billing Limits	**Current**	**Prior**	**To-Date**
Total Billings	55,434.17	143,489.16	198,923.33
Limit			607,460.00
Balance Remaining			408,536.67

Total this Phase **$55,434.17**

Phase 120 Dam Design

Labor

	Hours	**Amount**	
Assistant Professional	16.50	2,196.98	
Designer	89.00	10,516.24	
Totals	105.50	12,713.22	
Total Labor			**12,713.22**

Billing Limits	**Current**	**Prior**	**To-Date**
Total Billings	12,713.22	13,321.78	26,035.00
Limit			436,278.00
Balance Remaining			410,243.00

Total this Phase **$12,713.22**

Phase 130 Permitting

Labor

	Hours	**Amount**	
Assistant Professional	11.50	1,243.19	
Totals	11.50	1,243.19	
Total Labor			**1,243.19**

Billing Limits	**Current**	**Prior**	**To-Date**
Total Billings	1,243.19	1,879.53	3,122.72
Limit			251,140.00
Balance Remaining			248,017.28

Total this Phase **$1,243.19**

Phase 140 Survey & Legal Descriptions

Labor

	Hours	**Amount**	
Principal	2.25	386.84	
Survey	52.00	3,608.05	
Totals	54.25	3,994.89	
Total Labor			**3,994.89**

Project	A18-34230	Lower Platte North NRD Wahoo Creek Water	Invoice	414533

Unit Billing

Field Vehicle 1010	479.0 Miles @ 0.75	359.25	
Total Units		**359.25**	**359.25**

Billing Limits	**Current**	**Prior**	**To-Date**
Total Billings	4,354.14	1,843.89	6,198.03
Limit			28,875.00
Balance Remaining			22,676.97

Total this Phase	**$4,354.14**
AMOUNT DUE THIS INVOICE	**$75,985.19**

Outstanding Invoices

Number	**Date**	**Balance**
411745	2/16/2022	89,978.40
Total		**89,978.40**

Email Invoice to: tmountford@lpnnrd.org

Authorized By: Andrew Phillips

INVOICE PAYMENT IS REQUESTED WITHIN 30 DAYS

Wahoo Creek Watershed Public Information Meeting
Clint Johannes Education Building, Lake Wanahoo
Monday, March 28, 2022
6:00 p.m. – 8:00 p.m.

Agenda

- Welcome/Introductions (Eric Gottschalk, LPNNRD)
  - Funding
- Watershed Plan (Janel Kaufman, FYRA)
  - Planning and background
- Design (Andrew Phillips, Olsson)
  - Overall Site Map
  - Environmental
  - Geotechnical
  - Hydrology and Hydraulics
  - Landowner, County, and Utilities Coordination
  - Individual Sites
  - Schedule
    - Sites 26a, 26b, and 27
    - Sites 55, 66, 77, 82, 84, 85, & 86
    - Land Acquisition
- Group Questions
- Individual Station Questions
- Adjourn - 8:00 p.m.

Meeting Agenda

DATE AND TIME | March 28, 2022 @ 1:00
PROJECT | Dodge County – Elkhorn Township Drainage Improvement
JEO Project #181941.00
MEETING | Alternate Project Review
LOCATION | Dodge County Emergency Management Office

1. Review of Dodge County – Elkhorn Township Drainage Improvement (From HMGP Application)
   a. "A project study will be completed to assess Fremont's internal drainage needs and examine the out-letting drainage ditch system in the Elkhorn Township area east of Fremont. This project will assess the holistic situation and propose project alternatives to be pursued."
      i. Project goal – Improve stormwater conveyance out of Fremont safely and effectively to reduce potential for damages within Fremont and agricultural areas east of Fremont.

2. Goal of today's meeting
   i. **Review areas of flooding within Fremont and areas east of town**
   ii. **Review alternates that have been preliminarily evaluated to date**
      1. **Review effectiveness of alternatives**
      2. **Eliminate alternatives that do not significantly reduce risk or are otherwise not practical**
   iii. **Identify alternatives to move forward for further evaluation and screening**

3. Review of existing conditions
   i. 5-year flood results (see attached "Existing Conditions – 5 Year Storm")
      1. 2-year, 10-year, 25-year scenarios have also been run and will be needed for eventual BCA but for simplicity, 5-year results are included in this discussion.
      2. Assumption that Rawhide Creek upstream of town is/will be addressed.
      3. Focus on how stormwater generated within Fremont is conveyed to Elkhorn River
   ii. Project Goals – Flood Risk Reduction
      1. Urban Areas In Fremont
         a. Northeast Fremont
         b. Southeast Fremont
      2. Rural Dodge Co. East of Highway 275

4. Process to Select Preferred Alternative
   a. Identify alternatives
   b. Evaluate effectiveness of alternatives in achieving project goal
      i. In the event that one singular alternative does not by itself achieve goal – develop a package of improvements that do.
   c. Optimize improvement for FEMA BCA
   d. Identify potential funding options for non-FEMA eligible or other projects

5. Flood Risk Reduction Alternatives (See attached packet)
   a. Regional De-watering System (groundwater pumping)
      i. Groundwater depths in areas of east Fremont (areas of concern) are 8' – 10' deep (existing well log information)

ii. Groundwater depth is generally at or below the level of existing ditches west of Highway 275
iii. Groundwater de-watering would require pumping with numerous high-capacity wells. This would require a constant discharge to open ditch or new pipeline – without significant improvements to conveyance system alternative would make flooding conditions in eastern Dodge Co. worse.
iv. Groundwater de-watering is not a permanent solution. Groundwater levels would respond almost immediately if there is an interruption in service of the wells/pumps
v. **Recommend not continuing with this alternative**

b. Gravity Flow Diversion to Platte River
i. Looked at potentially diverting flow with a new ditch beginning at roughly 1st & Luther Rd. southerly to Platte River.
ii. Flowline Elevation of existing ditch and contributing storm sewer is approximately 5' lower than the Platte River.
iii. Any alignment going southerly to the Platte would be going uphill making gravity flow impossible.
iv. **Recommend not continuing with this alternative**

c. Regional Detention
i. See attached "Detention Working Alternatives"
ii. Review publicly owned property within and adjacent to Fremont City Limits
iii. No appreciable difference in flood extents or depths
iv. Additional detention further upstream (west) in Rawhide Creek watershed is a separate alternative currently being reviewed as part of the Rawhide Creek WFPO
v. **Recommend not continuing with this evaluation**

d. Re-alignment of Power Plant cooling water
i. See attached "Power Plant Discharge Working Alternatives" and "**Proposed Removal Power Plant Discharge (D2) – 5 Year Storm"**
ii. Currently cooling water is pumped/dumped into the Sewer Ditch along 1st St. northwest of railroad crossing
iii. Information from EPA records indicate a maximum pumping rate of 45 cfs and historical information indicates that a similar rate is common
    1. Downstream railroad culvert has ~ 80 cfs capacity
    2. Cooling water is a significant portion of this capacity
iv. Three potential options
    1. Re-route to ditch 2A to relive Sewer Ditch
    2. Enclosed forcemain south to Platte River
        a. Completely remove from Rawhide/Elkhorn Township system
    3. Extend forcemain parallel to Sewer Ditch outlet just east of Highway 275
        a. Flows remain in Sewer Ditch/Rawhide system

e. 1997 Proposed Improvements
i. See attached **"1997 Study Recommendations" and "1997 Improvements – 5 Year Storm"**
ii. Ditch improvements focused East of Highway 275 no improvements to urban areas within Fremont
iii. Improvements are very extensive and include some widening to nearly every ditch
iv. New cutoffs/outlets to Elkhorn River also included
v. Scope/Scale of improvements interpreted from previous model output provided by LPN NRD
vi. Does show benefit to rural eastern areas but little improvement to urban areas within Fremont
vii. Some improvements may be challenging with recent development and some of the proposed ditch improvements likely are unnecessary

f. Improvement to western ditches/culverts
i. See attached **"Ditch Working Alternatives"**

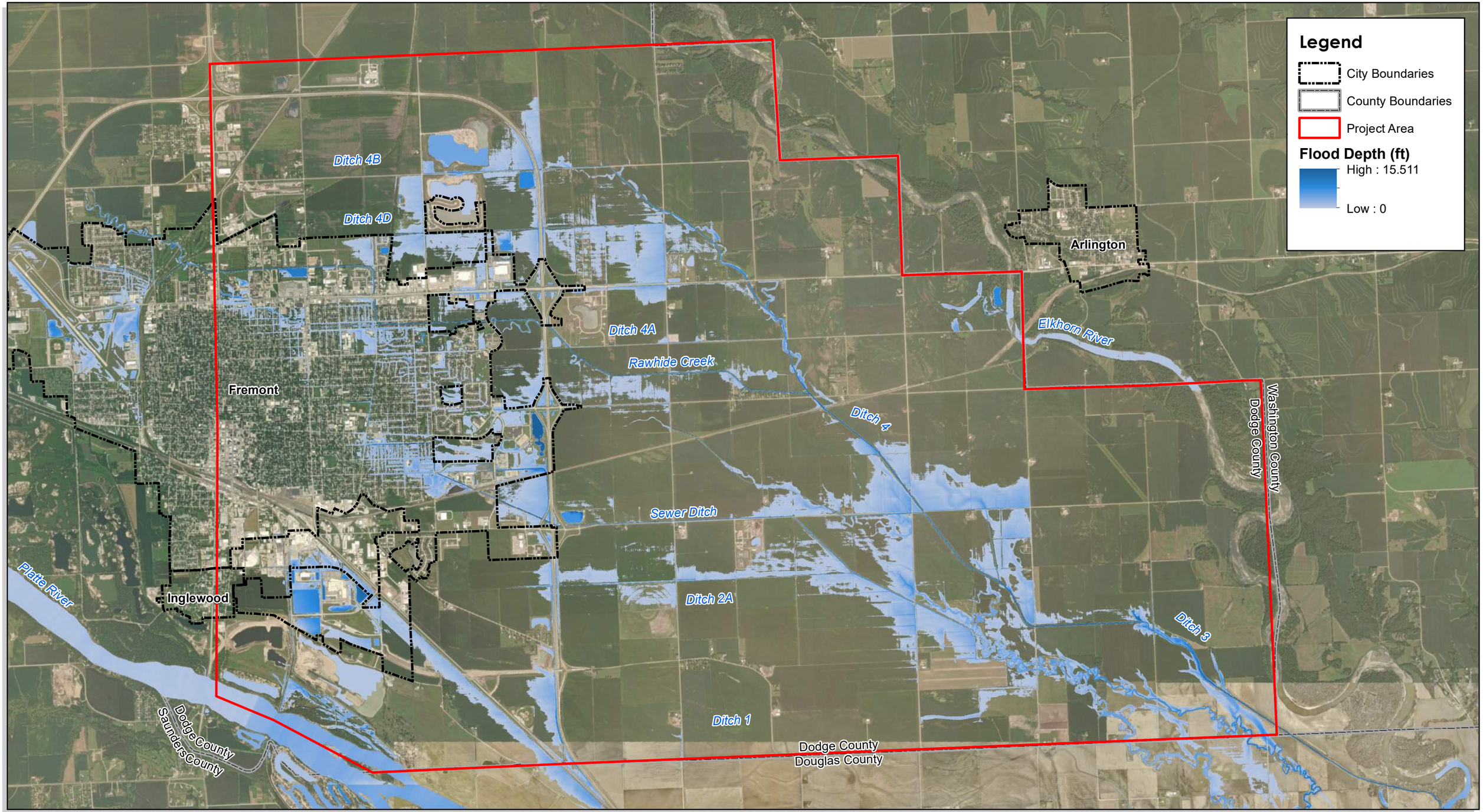
ii. Improved conveyance thru Highway 275 and railroad
iii. Some improvement within urban areas of Fremont
iv. Remaining flooding primarily caused by backwater impacts in rural ditch network
v. Without carrying improvements to the Elkhorn River, increases flows/ponding in rural ditch network

g. Storm Sewer Improvements to North and South System
   i. See attached Storm **"Sewer Working Alternatives"**
   ii. Five separate scenarios reviewed
      1. Remove/Replace with bigger trunk line
      2. Remove/Replace Existing culverts
      3. New parallel trunk storm sewer
   iii. As a standalone project(s) very little improvement
   iv. Urban flooding/ponding is being driven by backwater

6. Flood Risk Reduction Package (Combination of Alternatives)
   a. Most impactful project is likely a combination of the above alternatives
   b. See attached **"Working Alternatives"**
      i. Re-alignment of Power Plant cooling water
      ii. Modified 1997 Improvements
      iii. North/South urban ditches west of Highway 275
   c. Potential Future Phases
      i. Internal Storm Sewer System Improvements

7. Next Steps – Elkhorn Township specific
   a. Optimize selected alternative
   b. Phased implementation plan
      i. Review benefits at completion of each phase
   c. Detailed Cost Opinion
   d. Review regulatory impacts
   e. Review ROW/Easement needs
   f. Benefit Cost Analysis

8. Rawhide WFPO Items
   a. Story Map Review/RAS Results
   b. 30% Progress Meeting on Wednesday March 30 @ 1:00
   c. JWMAB Meeting April 13
   d. Rawhide Creek Open House April 14



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Existing Conditions - 5 Year Storm

Elkhorn Township Drainage Improvements

0 0.75 1.5 Miles

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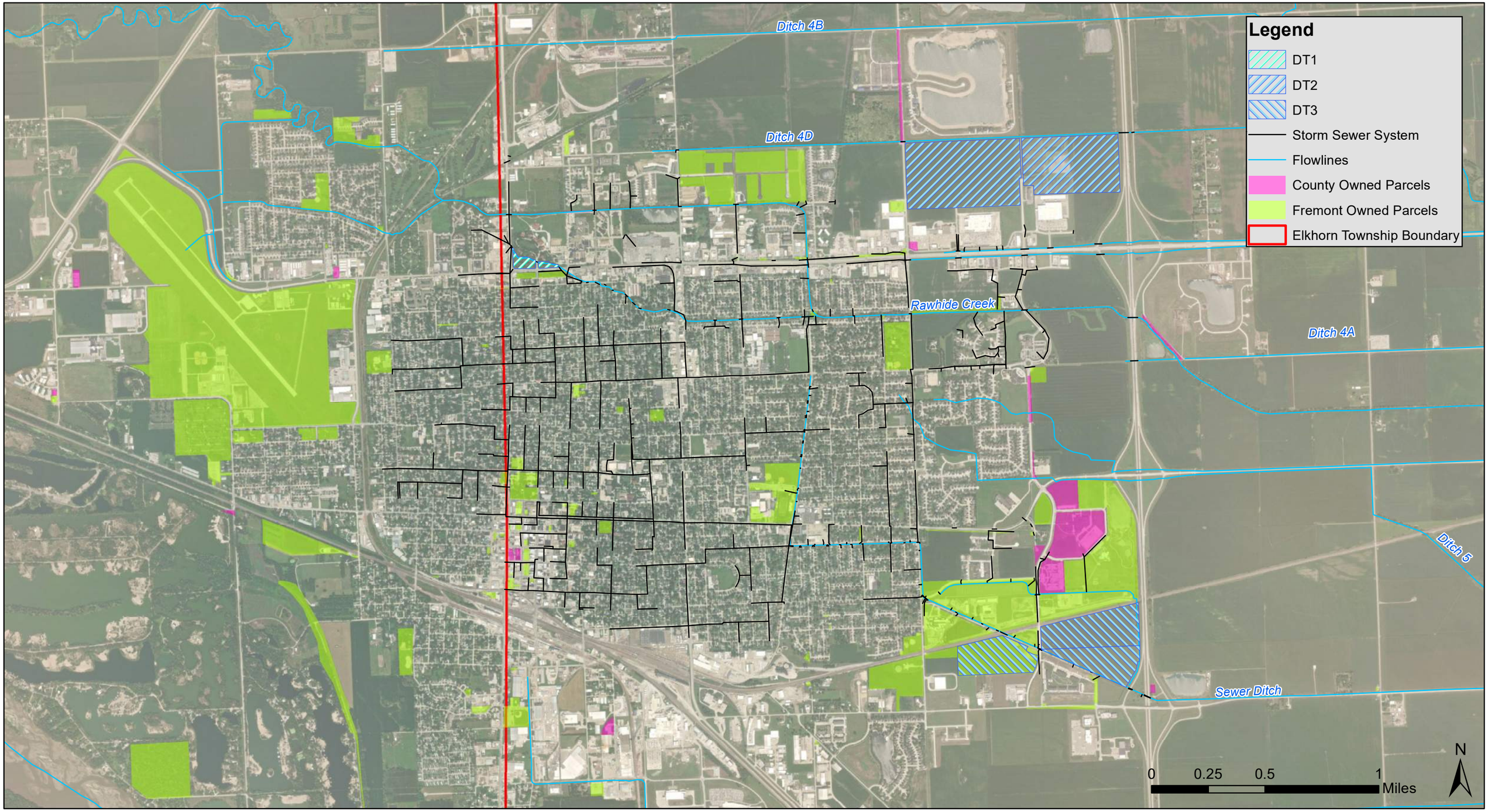

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Detention Working Alternatives

Elkhorn Township Drainage Improvements

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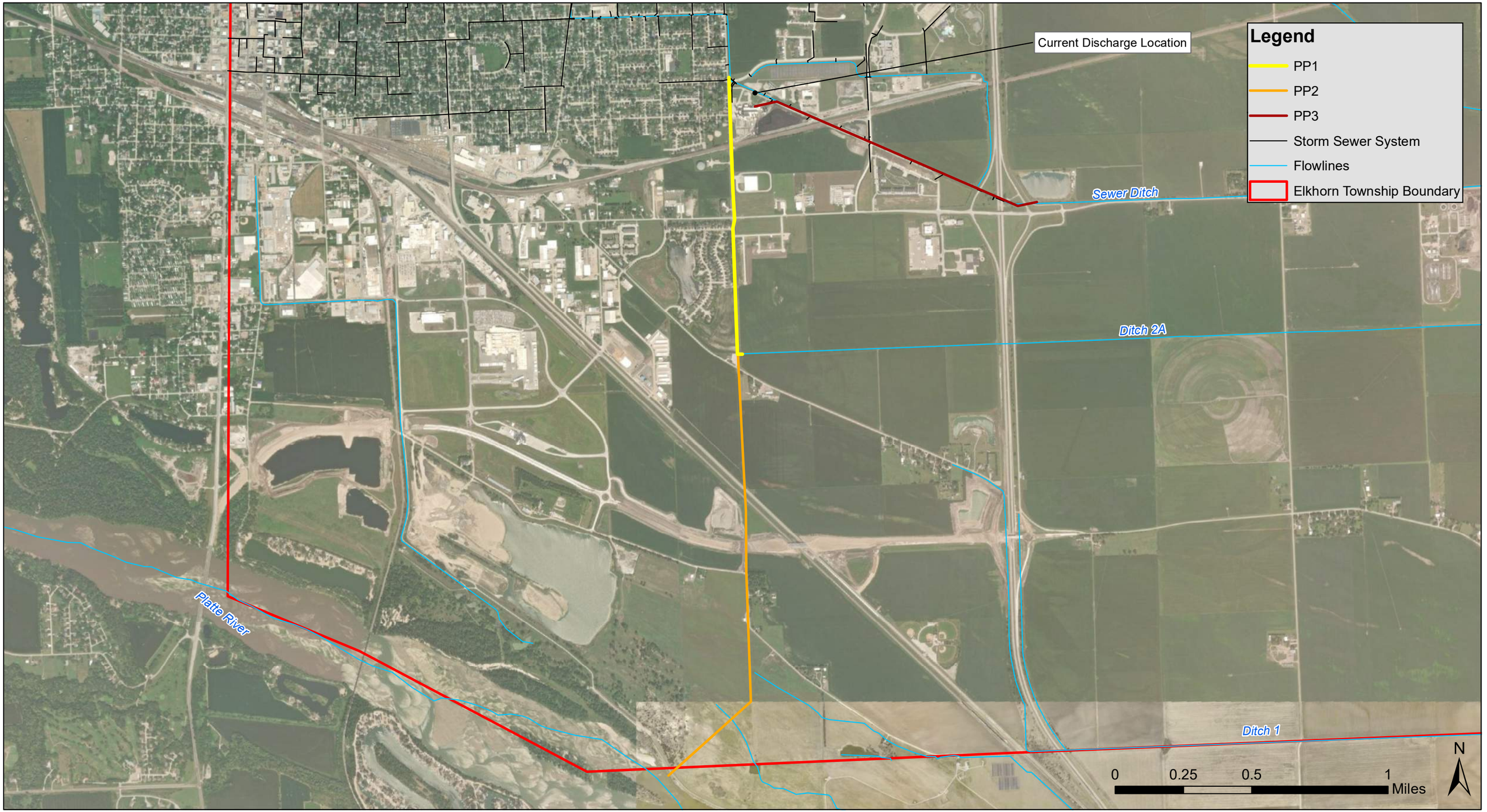

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Power Plant Discharge Working Alternatives

Elkhorn Township Drainage Improvements

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Updated: 3/27/22
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Proposed Remove Power Plant Discharge (D2) - 5 Year Storm

Elkhorn Township Drainage Improvements

0 0.25 0.5 Miles

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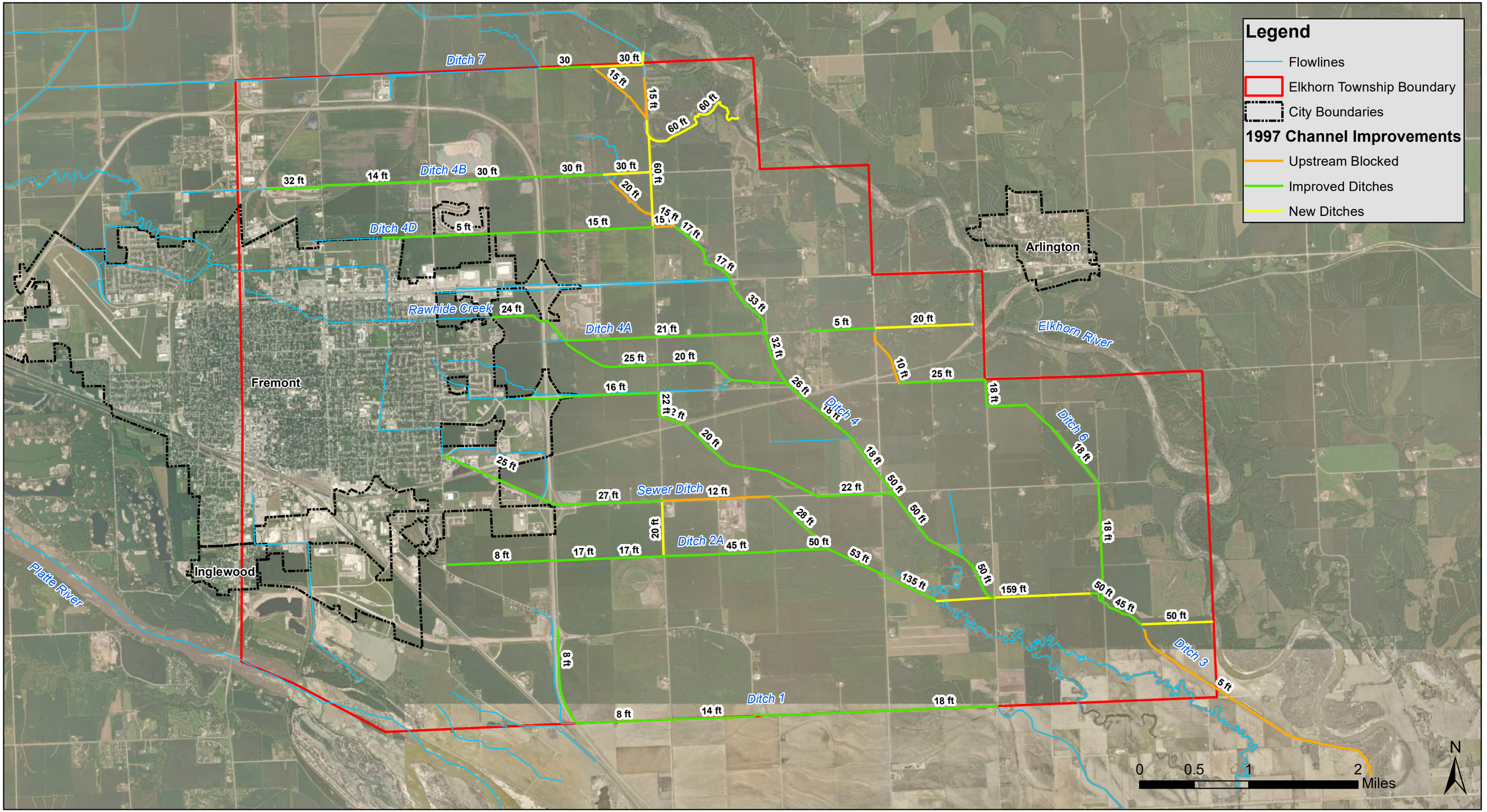

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1997 Study Recommendations

Elkhorn Township Drainage Improvements

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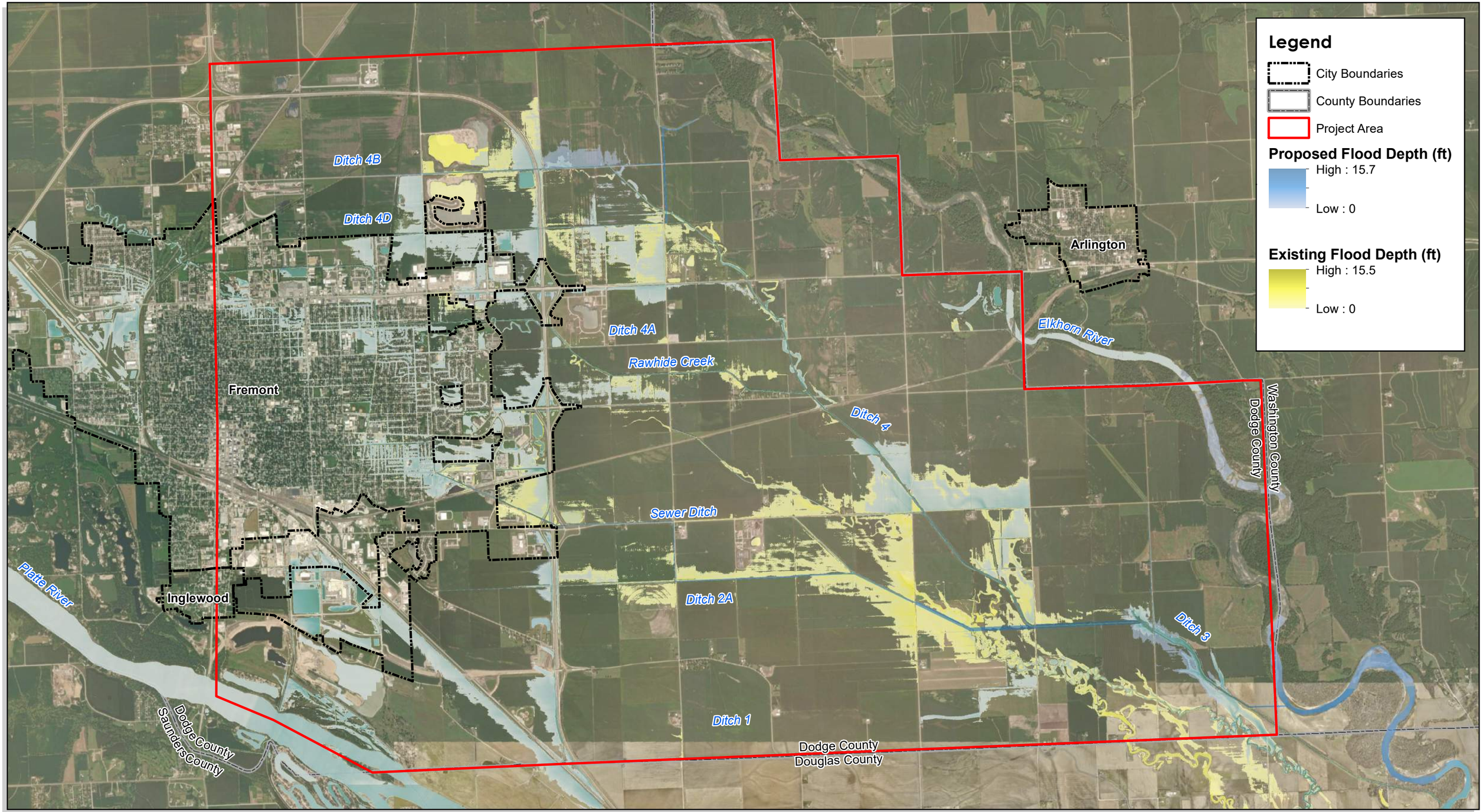

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1997 Improvements - 5 Year Storm

Elkhorn Township Drainage Improvements

0 0.75 1.5 Miles

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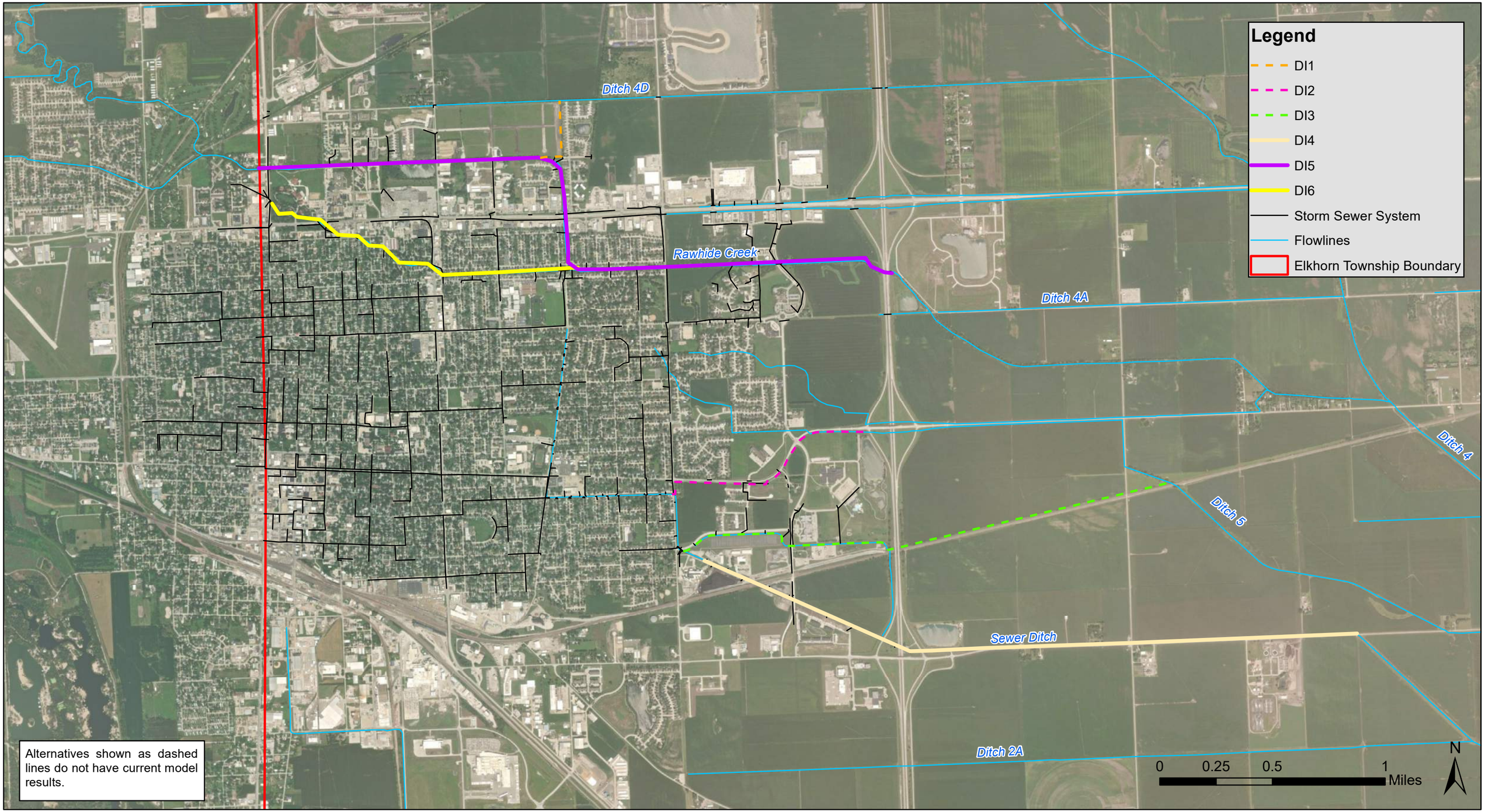

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Ditch Working Alternatives

Elkhorn Township Drainage Improvements

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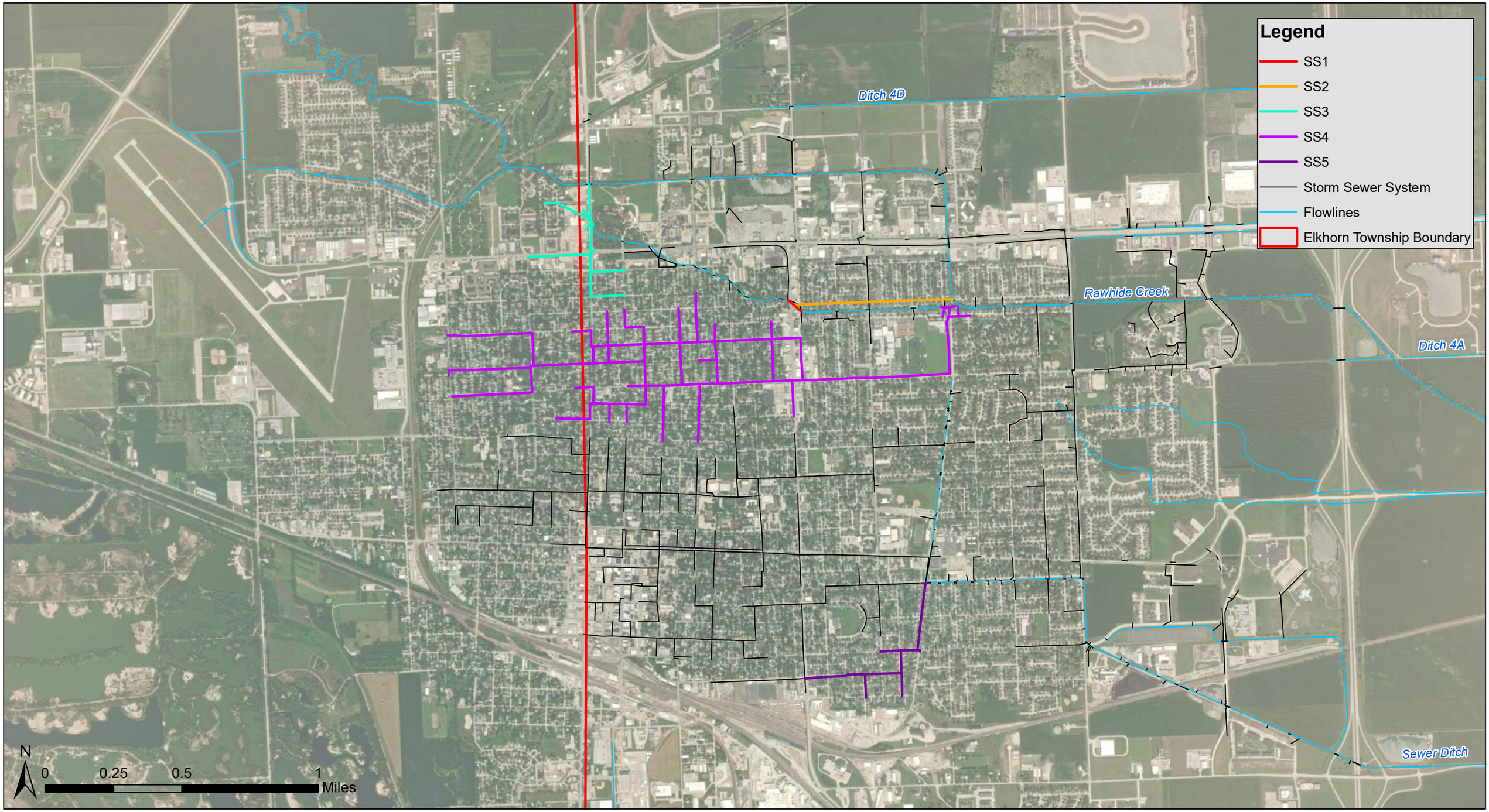

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Storm Sewer Working Alternatives

Elkhorn Township Drainage Improvements

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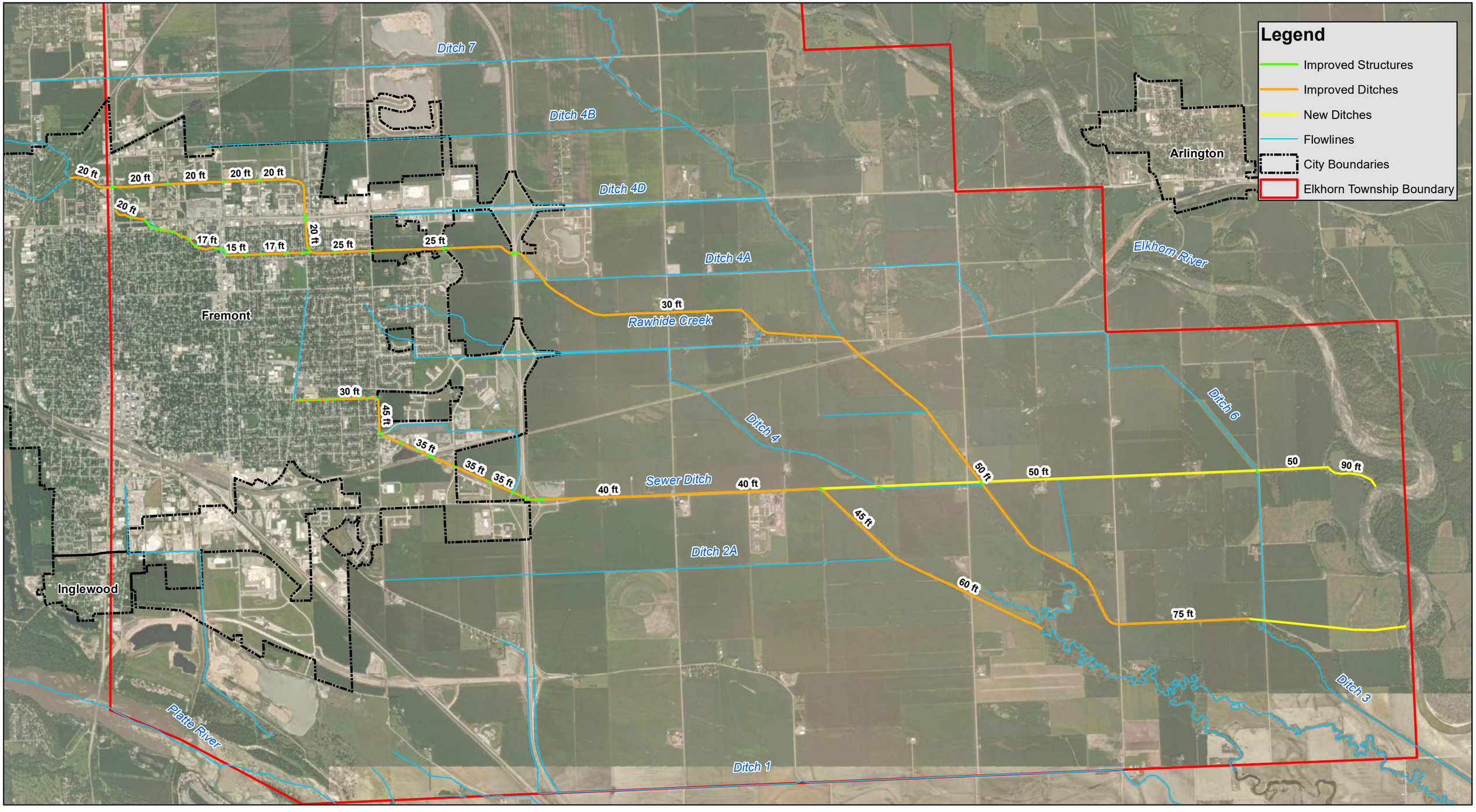

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Working Alternative (DI4, DI5,DI6 & 1997 Modified)

Elkhorn Township Drainage Improvements

0 0.5 1 2 Miles

N

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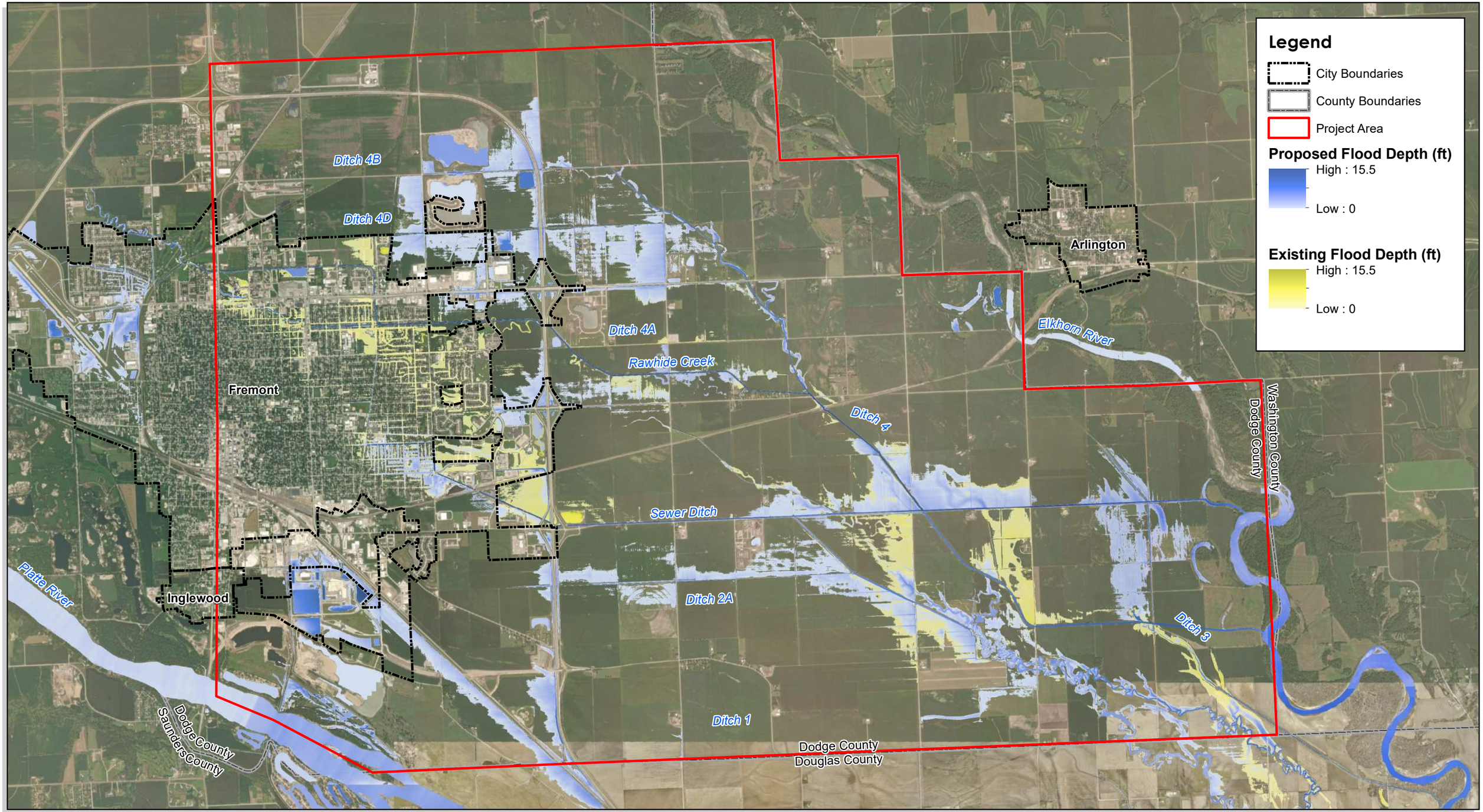

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Working Alternative - 5 Year Storm

Elkhorn Township Drainage Improvements

0 0.75 1.5 Miles

JEO CONSULTING GROUP INC

Rawhide Creek WFPO Plan-EA
30% Progress Meeting - Agenda

DATE AND TIME | March 30, 2022; 1:00 p.m. – 2:00 p.m.
PROJECT | Rawhide Creek WFPO Plan-EA
JEO PROJECT NO. | 200881.00
LOCATION | **Virtual via Teams**

Attendees:

JEO: John Petersen, Lalit Jha, John Callen, Adam Rupe, Colleen Ocken, Ann Nissen, Zach Cunningham, Arlis Plummer
NRD, County, Etc: Tom Smith, Tom Mountford, Sean Elliott, Pat Tawney, Dave Goedeken
NRCS: Rich Vaughn, Allen Gehring, Ted Huscher, Bob Sullivan, Missy Baier, Elisha Mackling, Doug Christiansen, Nicole Smith
USACE: Matt Wray

1. **Project Background**
2. **Project Milestones and Schedule Overview**

Milestone	Meeting Name	Focus	Schedule
~~Kick-off Meeting~~	~~Kickoff Meeting~~	~~Project Overview & Planning Process~~	~~September 22, 2021~~
~~Public & Agency Scoping Meetings~~	~~Scoping Meetings #1~~	~~Scoping~~	~~November 18, 2021~~
~~Post-Discussion of Scoping~~ ~~Review Data Collection Needs~~ ~~Alternatives Discussion~~	~~Post-Scoping~~	~~Hydrology & Hydraulics~~ ~~Purpose & Need Refinement~~ ~~Alternatives Identification~~	~~*Tentative:*~~ ~~*Early January 2022*~~
Plan-EA Development Phase 30%	30%	Hydrology & Hydraulics, existing conditions	*March 30, 2022* *1:00 PM, Teams*
Review Conceptual Design Alternatives *Cost/logistics/technology* *Avoid/minimize/mitigate*	Alternatives Review	Wetland/Aquatic Impacts 404(b)(1) analysis	*Tentative:* *May 2022*
Plan-EA Development Phase 60%	60%	Alternatives Evaluation Economic Analysis	*Tentative:* *June 2022*
Review Clean Water Act (CWA) *Requirements [including 404(b)(1)]*	Clean Water Act Review	Wetland/Aquatic Impacts 404(b)(1) analysis	*Tentative:* *August 2022*
Plan-Development Phase 90%	90%	Alternative Selection Mitigation and other issues Next Steps in Process	*Tentative:* *September 2022*
Prepare Draft Plan-EA for NRCS submittal to NWMC	n/a	n/a	*Tentative:* *October 2022*
Public & Agency Scoping Meetings	Scoping Meetings #2	Presenting preferred alternative	*Tentative:* *December 2022*
Addressing NWMC review comments	Comment Review Meeting	Developing responses to comments from NWMC	
Public & interagency review Finalization of Plan-EA Prepare Final Plan-EA for NRCS submittal for Authorization	n/a	n/a	*March 2023*

Rawhide Creek WFPO Plan-EA
30% Progress Meeting - Agenda

3. **Existing Conditions**
   a. Existing conditions H&H models
   b. Review of modeling results for existing conditions
      i. StoryMap: https://arcg.is/0zDWCL
   c. Discussion of target areas and potential goals
      i. Leads to development of Purpose and Need Statement

4. **Upcoming Public Involvement**
   a. Community meetings, Round 1 (of 2)
      i. Fremont: update to JWMAB, local officials – April 13
      ii. North Bend: open to public – April 14
   b. One-on-one property owner meetings
      i. Begin notifying at around the Alternatives Review meeting stage (May)

5. **Alternative Identification & Analysis**
   a. Will begin to outline alternatives after this meeting
      i. Want to use Round 1 community meetings to help get local support for anything we propose

6. **Plan-EA Document**
   a. Chapters 1-3, for initial review

7. **Questions/Needs/Next Steps**
   a. Next Progress Meeting
      i. Alternatives Review – late May
   b. Comments on draft Chapters 1, 2, and 3
      i. Requested by end of April
   c. Summarize Action Items from today's meeting
      i.
      ii.

CHAPTER 1. TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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CHAPTER 1. PURPOSE AND NEED FOR ACTION

1.01 PURPOSE AND NEED STATEMENT

Note to Reviewers: The purpose and need, and supporting information, will be updated as the project progresses, and input is received from reviewers.

The primary project purpose is flood prevention (flood damage reduction) within the communities of the Rawhide Creek Watershed, including Ames, Fremont, North Bend and Rogers. The NRCS National Watershed Program Manual defines this purpose as flood prevention (or flood damage reduction) as measures installed to prevent or reduce damages caused by floodwater. Flood damage reduction is further defined as the control and disposal of surface water caused by abnormally high direct precipitation, stream overflow, or floods aggravated or caused by wind or tidal effects. Flood damage reduction and mitigation measures reduce or prevent floodwater damages by reducing runoff, erosion, and sediment; modifying the susceptibility of improvements in the floodplain to damage; removing damageable property from the floodplain; or reducing the frequency, depth, or velocity of flooding. Measures may also include actions that prevent encroachment into the floodplain. The project is needed because areas in the watershed have experienced repetitive flood damages. **To reduce flooding damages in the watershed, the project needs to reduce the 100-year peak flow rate in the stream from approximately XXXX cubic feet per second (cfs) to XXXX cfs.**

The U.S. Army Corps of Engineers (USACE) is a cooperating agency for this NEPA document and will use the analysis to assist in project review for meeting requirements for Section 404 of the Clean Water Act. For this analysis the primary purpose of flood damage reduction will be the focus. NEPA requires the lead federal agency (NRCS) to exercise independent judgment in defining the purpose and need in light of the Applicant's stated objectives. The purpose and need statement serves as the basis for developing and evaluating alternatives.

The 404(b)(1) Guidelines require USACE first identify the basic purpose, which is examined by USACE to determine if the project is water dependent. A project is water dependent if it requires access to, or siting within, a special aquatic site in order to fulfill its basic project purpose. **The USACE determined the DRAFT basic project purpose to be flood damage reduction.** Because flood prevention does not fundamentally require access to, or siting within, a special aquatic site, the 404(b)(1) Guidelines stipulate practicable alternatives that are less environmentally damaging are presumed to exist.

The USACE's overall project purpose is defined in light of the applicant's stated objectives, as well as the public's input through the scoping process. The overall project purpose is used to help frame the development of and provide a basis to evaluate and compare alternatives. Additionally, the 404(b)(1) Guidelines require the overall project purpose be used by USACE to evaluate whether practical alternatives are available that minimize environmental damage to aid in

decision-making with regard to issuing or denying a Section 404 permit. **In light of these factors, the USACE's DRAFT overall project purpose is flood damage reduction within the Rawhide Creek Watershed.**

1.02 PROJECT OVERVIEW

WATERSHED AND FLOOD PREVENTION OPERATIONS (WFPO) PROGRAM

In July 2020, the Dodge County Board of Supervisors requested funding from the NRCS WFPO program. The NRCS and Dodge County established an agreement on DATE, starting a 24-month planning/study process to evaluate options, or alternatives, to reduce flood risk in the Rawhide Creek Watershed.

The Watershed Plan and Environmental Assessment (Plan-EA) for the Rawhide Creek Watershed is focused on establishing a strategy to address flooding issues for the community of Fremont, reducing impacts to agriculture, and protecting roads, bridges, and property. Located across Dodge and Colfax County (Figure 1), the watershed has experienced repetitive flood damages both in agricultural and urban areas. Much of the project area outside of Fremont is rural and dependent upon on agriculture, making the impacts of flooding even more devastating.

The Plan-EA was prepared under the authority of WFPO (Public Law 83-566, Stat. 666 as amended) and in accordance with the National Environmental Policy Act (NEPA) (40 CRF parts 1500-1508) and following the guidelines of NRCS Title 390 – *National Watershed Program Manual* and *Principles, Requirements, and Guidance for Water and Land Related Resources Implementation Studies* (PR&G) of the Water Resources Planning Act of 1965 (PL 89-80).

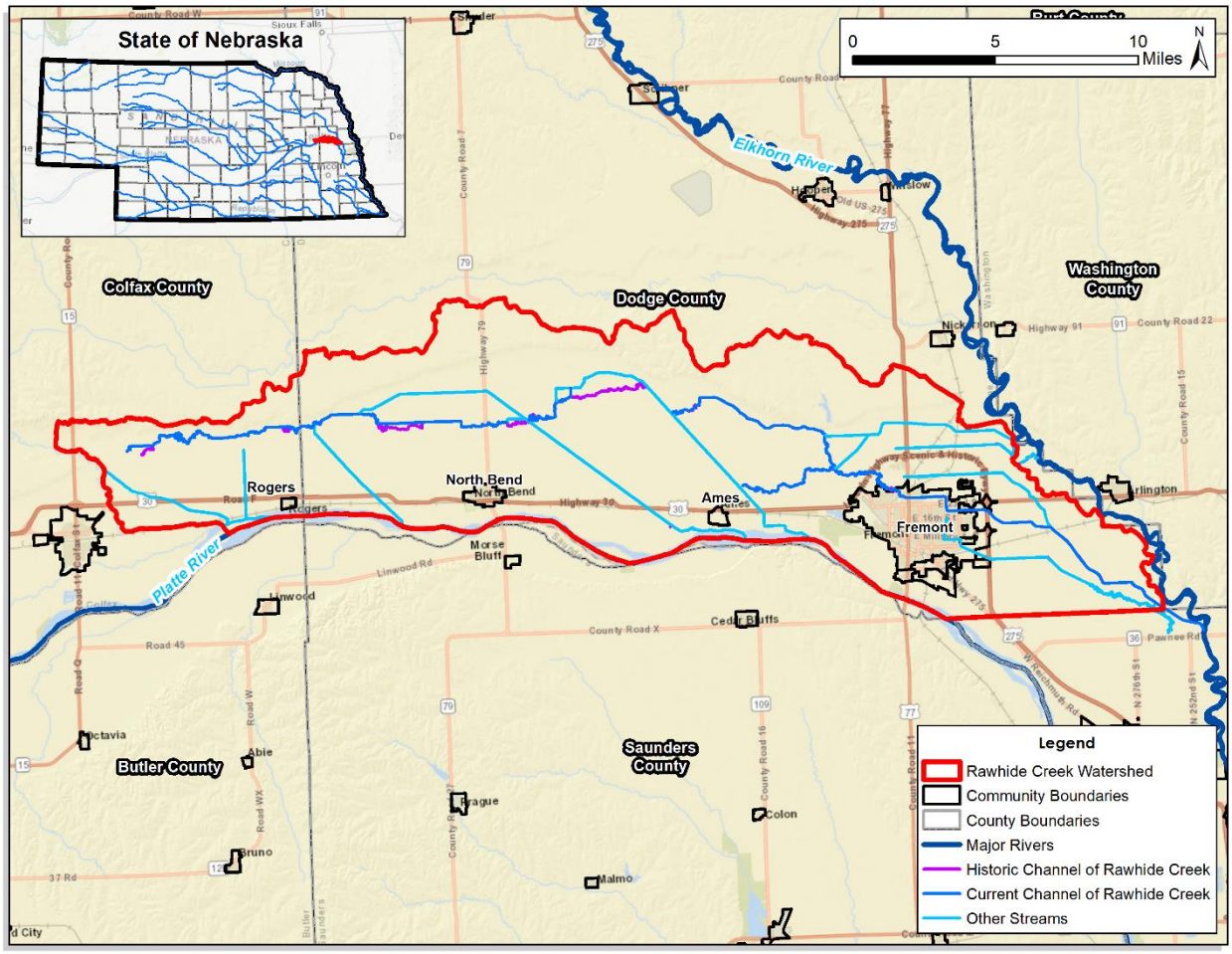

Figure 1: Rawhide Creek Watershed

1.03 PROBLEMS AND OPPORTUNITIES

FLOOD DAMAGES

The damage caused by flooding is a considerable concern within the Rawhide Creek Watershed. The area is threatened by regional heavy rainfall events, snowmelt, ice jams on the Platte and Elkhorn Rivers, and overflows from Shell Creek to the west. Flooding damages have been recorded in the region since the 19th century. On March 31st, 1881, the *Fremont Herald* published an account of the extent of flooding in Fremont, stating:

> "Military Avenue was a solid sheet of water from one end to the other clear through the city. Sixth Street was a foot under water at Broad Street. Third Steet ran a stream the whole length of it, and the west end of Fourth was fairly afloat. In fact, from Military Avenue south to the river, it was a wild waste of water, and to the bluffs north was almost as dreary

> a prospect. North of town, the Rawhide flooded, and to the northeast, so did the Elkhorn, so that the water was reported to be eight miles across."

The watershed contains a series of drainage ditches constructed in the early 1900s, and a system of levees and embankments. In June 1990, flooding caused an estimated $27,000,000 in damages (Fremont Tribune, 1990). In March 2019, a bomb cyclone dropped heavy precipitation of frozen, saturated ground. Rapid snowmelt caused by the precipitation caused an extreme amount of runoff throughout the region. The undersized and inadequate systems currently in place were exposed as overland flows combined with flows from the Platte and Elkhorn Rivers, resulting in breaches and overtopping. Flooding experienced by the communities within the watershed was catastrophic, resulting in approximately $34,000,000 in damages. Outside of the watershed's communities, most land is used for agriculture. During flood events, cropland and pasture are impacted by inundation, sediment depositions, scour, and erosion. Affecting all areas of the watershed, floods can inundate or damages roads and bridges, impeding residents' access to emergency services.

NOTE TO REVIEWERS: Economic and flood damage data will be updated/finalized as hydrology & hydrologic modeling, HAZUS modeling, and economic assessments are refined and finalized.

To quantify the impact of flooding, the project team calculated the estimated annualized flood damages, based on modeled flood risk of existing hydrologic conditions. Damages to buildings and agriculture within the watershed were calculated using depth-damage considerations based on return periods, or percent annual chance, of flood risk. Hydrologic and hydraulic modeling results were assessed using the Federal Emergency Management Agency's (FEMA) HAZUS program. For buildings in the watershed, the annualized flood damages are $XXXXXX (Table 1). The estimated annualized flood damages to agricultural lands are $XXXXXX (Table 1). Without a watershed project, future conditions are not anticipated to improve.

Table 1: Summary of Estimated Annualized Flood Damages in the Rawhide Creek Watershed

Damage Type	Annualized Damage
Buildings	$XXXXXX
Agriculture	$XXXXXX

FLOOD DAMAGE REDUCTION OPPORTUNITIES

There have been a variety of previous flood reduction efforts within the watershed. The series of ditches currently existing in the watershed were planned and completed in the 1920s by the now defunct Elkhorn River Drainage District. The ditches control a drainage area of over 40,000 acres west of Fremont.

In 1976 a diversion study of Rawhide Creek was conducted by Hoskins-Western-Sonderegger. This study concluded that there was no good route to divert Rawhide Creek to the Platte River. However, the study proposed constructing a dam on Trouble Creek, and constructing a diversion from Rawhide Creek to the Elkhorn River (Hoskins-Western-Sonderegger, 1976). Between 1977-1978, these suggestions were implemented. This consisted of construction of the Trouble Creek Dam north of Fremont, widening seven miles of existing ditches, and excavation of three miles of Rawhide Creek diversion channels.

In 2004 the USACE conducted a flood hazard mitigation plan for the city of North Bend. A variety of structural and nonstructural actions were analyzed, including nonstructural flood mitigation, acquisition and removal of flood-prone buildings, flood proofing, flood warning systems, flood preparedness planning, flood awareness education, floodplain regulation, flood insurance, and participation in the community rating system. The recommended actions following analysis were acquisition of flood-prone buildings, flood proofing of existing buildings in the floodplain, implementation of a flood warning system, flood preparedness planning, flood awareness education, floodplain regulations, participation in the National Flood Insurance Program, and completion of future flood mitigation studies (USACE, 2004).

While some previous studies came to fruition as fully constructed projects, opportunities for improvement still exist within the watershed. New opportunities, along with updates to previously implemented actions, will be analyzed in this plan.

1.04 REFERENCES

Note: References will be moved to their own chapter, once all plan chapters are compiled into a single document

Fremont Tribune (Fremont, Nebraska). “Estimated flood losses.” Published Thursday, June 21, 1990.

Hoskins-Western-Sonderegger, Inc., 1976. Diversion Study Rawhide Creek North of Fremont, Nebraska For Lower Platte North Natural Resources District. Published June 1976.

United State Army Corps of Engineers (USACE), 2004. Flood Hazard Mitigation Plan for North Bend, Nebraska. Published April 2004.

1.05 ABBREVIATIONS AND ACRONYMS

Note: This list will be compiled into a master list for the plan once all plan chapters are completed

CFS	Cubic feet per second
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
Plan-EA	Watershed Plan and Environmental Assessment
PR&G	Principles, Requirement, and Guidance for Water and Land Related Resources Implementation Studies
USACE	United States Army Corps of Engineers
WFPO	Watershed and Flood Prevention Operations

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CHAPTER 2. SCOPE OF THE ENVIRONMENTAL ASSESSMENT

NOTE FOR REVIEWERS: This chapter will be reviewed for any updates as the project progresses.

This chapter contains a summary of issues and resources identified through the project scoping process. Issues that were considered but were found not to require detailed discussion in the plan are also identified in this chapter, and eliminated from further discussion within the Plan-EA. Issues and resources that were not eliminated are further discussed in Chapter 3 and Chapter 5.

The Natural Resources Conservation Service (NRCS), citizens of the watershed, and other project partners discussed resource concerns during scoping meetings. These meetings are held as part of the overall scoping process, which helps to identify what resources or issues need to be analyzed during the project. After the initial scoping meetings, the project team began developing the Scope of the Environmental Assessment (EA). This chapter provides a summary of the resource concerns that were raised during scoping meetings, as well as other concerns that were judged not to be relevant to this EA. Additional information on scoping meetings is provided in Chapter 6.

AGENCY MEETING – NOVEMBER 18, 2021

An agency scoping meeting was held with representatives from Fremont, North Bend, Ames, Lower Platte North Natural Resources District (LPNNRD), United States Army Corp of Engineers (USACE), Nebraska Department of Transportation (NDOT), NRCS, Nebraska Game and Parks Commission (NGPC), Nebraska Department of Environment and Energy (NDEE), United States Environmental Protection Agency (USEPA), Nebraska Department of Natural Resources (NeDNR), and other project partners. Discussion at this meeting centered on an overview of the WFPO program, the watershed area, potential alternatives, and the project schedule.

PUBLIC MEETING – NOVEMBER 18, 2021

Following the agency scoping meeting, citizens within the watershed gathered to share input at a public scoping meeting. A presentation was given to provide an overview of the project, watershed areas, potential alternatives, and the project schedule. The public provided feedback both during and after the meeting. Public input was utilized to determine which resources were of greatest concern to this EA, which are summarized below in Table 1.

NOTE FOR REVIEWERS: Future scoping meeting summaries to be included here.

Table 1: Summary of Scoping for the Rawhide Creek Watershed

Resource Concern	Relevant?	Reasoning
Soils		
Erosion (upland & streambank)	Yes	Degraded drainage systems may contribute to flooding severity
Sedimentation	Yes	Sediment buildup may reduce channel and floodplain capacity
Prime & Unique Farmland	Yes	Prime farmland in the watershed may be impacted by flooding or alternatives (NRCS, 2020)
Water		
Surface Water Quality	Yes	No impaired streams in the watershed, 15 impaired lakes (NDEE, 2020)
Surface Water Quantity	Yes	Surface water quantity may be affected by alternatives.
Groundwater Quantity	Yes	Water table elevations may be affected by alternatives.
Clean Water Act	Yes	Alternatives will likely require either an Individual Permit or Nationwide Permit from the USACE
Regional Water Management Plans	Yes	Watershed is located within the planning areas of the Lower Platte River Basin Coalition Basin Water Management Plan (LPRBC, 2017), and the LPNNRD Voluntary Integrated Management Plan (LPNNRD, 2018)
Coastal Zone Management Areas	No	Watershed is not located near any coastal zones
Floodplain Management	Yes	Developed and agricultural areas of the watershed are located in the floodplain (FEMA, 2019)
Federally Authorized Levee System (Section 408)	No	There are no federally authorized levee systems in the watershed.
Wetlands	Yes	Alternatives will likely require either an Individual Permit or Nationwide Permit from the USACE
Wild & Scenic Rivers	No	No Wild & Scenic Rivers in the watershed (WSR, 2020)
Platte River Depletions	Yes	Potential depletions of instream flows will be addressed in compliance with the Platte River Recovery Implementation Program (PRRIP, 2006)
Air		
Air Quality	No	No changes to air quality are anticipated (USEPA, 2020)
Clean Air Act	No	No changes to air quality are anticipated (USEPA, 2020)
Plants		
Threatened & Endangered (T&E) Species	Yes	Watershed is within the range of T&E species

Essential Fish Habitat	No	No designated essential fish habitat is within the watershed (NOAA, 2020)
Invasive Species	No	It is not anticipated that any invasive species will be introduced/spread by alternatives
Natural Areas	Yes	Watershed contains the Fremont Lakes State Recreation Area.
Riparian Areas	Yes	Riparian areas may be affected by alternatives
Animals		
Fish & Wildlife Habitat	Yes	Habitat may be impacted by alternatives
Coral Reefs	No	There are no coral reefs in the watershed
T&E Species	Yes	Watershed is within the range of T&E species
Invasive Species	No	It is not anticipated that any invasive species will be introduced or spread by alternatives
Migratory Birds/Bald & Golden Eagles	Yes	Migratory birds and eagles may be impacted by alternatives.
Humans		
Flood Damages	Yes	Flood damages are the primary concern within the watershed
Costs	Yes	Costs are a required criterion of the Principles and Guidelines
Historic Properties	Yes	Buildings that are eligible for the National Register of Historic Places, and other cultural resources, may be affected by alternatives. Impacts to potential historic properties will be investigated for each alternative.
Environmental Justice	Yes	Environmental impacts to minority or low-income residents of the watershed will be investigated for each alternative
Local & Regional Economy	Yes	Flooding may inhibit economic growth
Potable Water Supply	No	No lack of potable water in the watershed
Public Health & Safety	Yes	Flooding poses a threat to public health and safety
Recreation	No	Alternatives will not impact recreation opportunities
Scenic Beauty & Parklands	Yes	Watershed contains the Fremont Lakes State Recreation Area.

2.01 REFERENCES

Note: References will be moved to their own chapter, once all plan chapters are compiled into a single document

Federal Emergency Management Agency (FEMA). National Flood Hazard Layer, retrieved from FEMA Flood Map Service Center, 2019. https://msc.fema.gov/portal/home

Lower Platte North Natural Resources District (LPNNRD). "Voluntary Integrated Management Plan." *Nebraska Department of Natural Resources*, 2018.

Lower Platte River Basin Coalition (LPRBC). "Basin Water Management Plan." 2017. https://lprbc.nebraska.gov/

National Oceanic and Atmospheric Administration (NOAA). *Essential Fish Habitat Mapper – National Marine Fisheries Service*, 2020. https://www.habitat.noaa.gov/application/efhmapper/index.html

Natural Resources Conservation Service (NRCS). "Web Soil Survey." 2020. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

National Wild and Scenic Rivers (WSR) System, 2020. "Nebraska Rivers Inventory." 2020. https://www.rivers.gov/index.php

Nebraska Department of Environment and Energy (NDEE). "2020 Surface Water Quality Integrated Report." *Nebraska Department of Environment and Energy Water Quality Division*, 2020. http://dee.ne.gov/Publica.nsf/Pages/WAT352

Platte River Recovery Implementation Program (PRRIP), 2006. *Water Management Plan.* Published August 2006. Retrieved from: https://platteriverprogram.org/about/water-plan

US Environmental Protection Agency (USEPA). "Nebraska Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants." 2020. https://www3.epa.gov/airquality/greenbook/anayo_ne.html

2.02 ABBREVIATIONS AND ACRONYMS

Note: This list will be compiled into a master list for the plan once all plan chapters are completed

EA	Environmental Assessment
FEMA	Federal Emergency Management Agency
LPNNRD	Lower Platte North Natural Resources District
LPRBC	Lower Platte River Basin Coalition
NDEE	Nebraska Department of Environment and Energy
NDOT	Nebraska Department of Transportation
NeDNR	Nebraska Department of Natural Resources
NGPC	Nebraska Game and Parks Commission
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
T&E	Threatened & Endangered Species
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
WSR	Wild and Scenic Rivers

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CHAPTER 3. AFFECTED ENVIRONMENT

NOTE FOR REVIEWERS: NRCS FORM CPA-52 WILL BE COMPLETED SEPARATELY

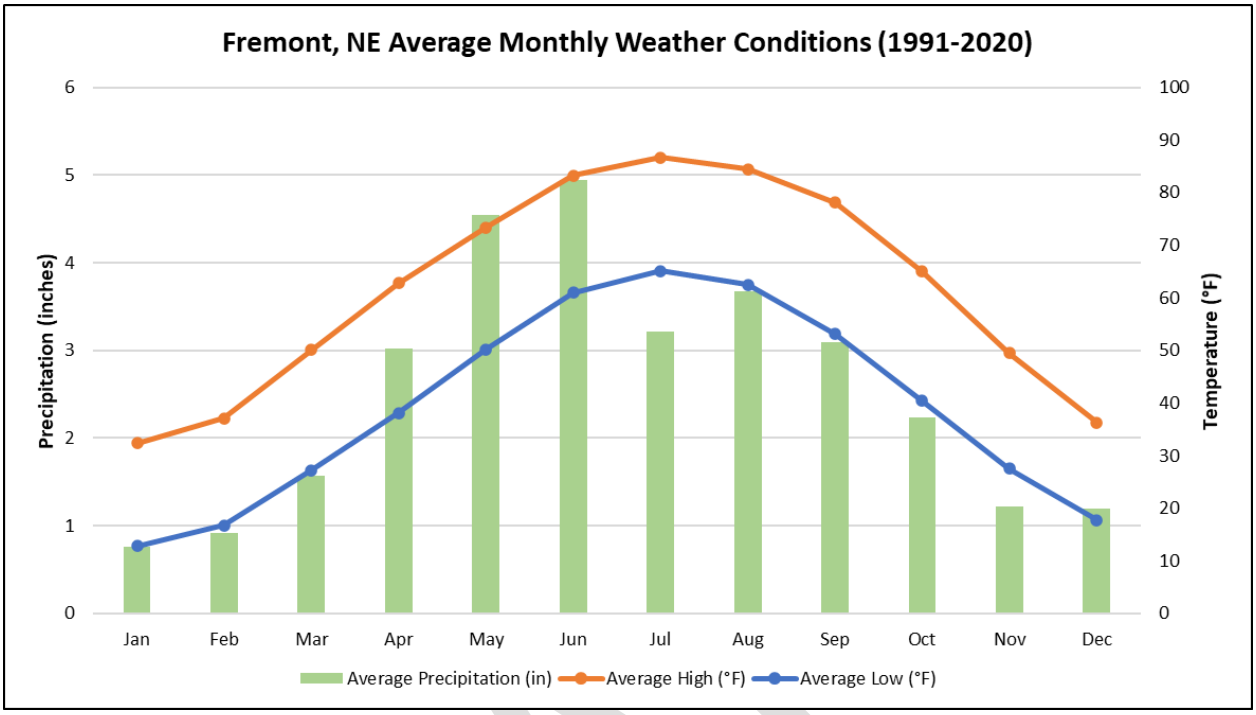
This chapter contains a synopsis of the relevant resource concerns identified through project scoping and shown in Chapter 2.

3.01 WATERSHED CONDITIONS

CLIMATE

The climate of the Rawhide Creek Watershed is considered “Humid Continental” on the Köppen-Geiger Climate Classification System (Kottek et al., 2006). This climate is characterized by large seasonal temperature differences with hot, humid summers, and cold winters. Precipitation is distributed throughout the year and amounts to approximately 31 inches annually on average.

Long term climate data for the City of Fremont, as a representation of the entire watershed, is shown below in Figure 1.This data is based on monthly climate information average over 30 years by the National Centers for Environmental Information. According to this data, June has the highest average monthly precipitation (4.95 inches), while January has the lowest (0.76 inches). Temperatures range from an average high of 86.7°F in July to an average low of 12.8°F in January.



Source: National Centers for Environmental Information, 2021

Figure 1: Average Monthly Weather Conditions for Fremont, Nebraska

GEOLOGY

The geologic history of eastern Nebraska, where the Rawhide Creek Watershed lies, is complex in contrast to the rest of the state. While the majority of Nebraska lies over the High Plain Aquifer, much of eastern Nebraska's topography, geology, and water resources were modified by the most recent ice age. During the Pleistocene epoch (from about two million to 10,000 years ago), continental glaciers invaded the northern Great Plains multiple times. Glacial ice repeatedly blocked rivers, formed lakes, filled valleys with sediment, and diverted rivers. Rivers carried melt water from glaciers that contained heavy amounts of sand and silt, which was then deposited along floodplains. Wind eroded these deposits, creating fields of dunes and depositing a layer of loess on the uplands. The maximum extents of these glaciers extended across eastern Nebraska, where they left behind deposits of till consisting of clay, silt, sand, and gravel (Wayne, 2011).

TOPOGRAPHY

The Rawhide Creek Watershed drains primarily in an eastern direction towards the Elkhorn River, with some off-shoots draining south to the Platte River (Figure 2). An appreciable elevation range exists across the watershed, from a high of 1,588.9 feet in the west to a low of 1,134.2 feet in the east. The majority of the watershed is located in the flat valley separating the Platte and Elkhorn

Rivers. The northern edge of the watershed is higher in elevation than the rest, and transitions to plains and rolling hills (CSD, 2001). Valleys are flat-lying lands with low slopes along major streams consisting of stream-deposited silt, clay, sand, and gravel. Plains are flat-lying lands with low slopes that lie above valleys and generally consist of stream-deposited silt, clay, sand, and gravel overlain by wind-deposited silt.

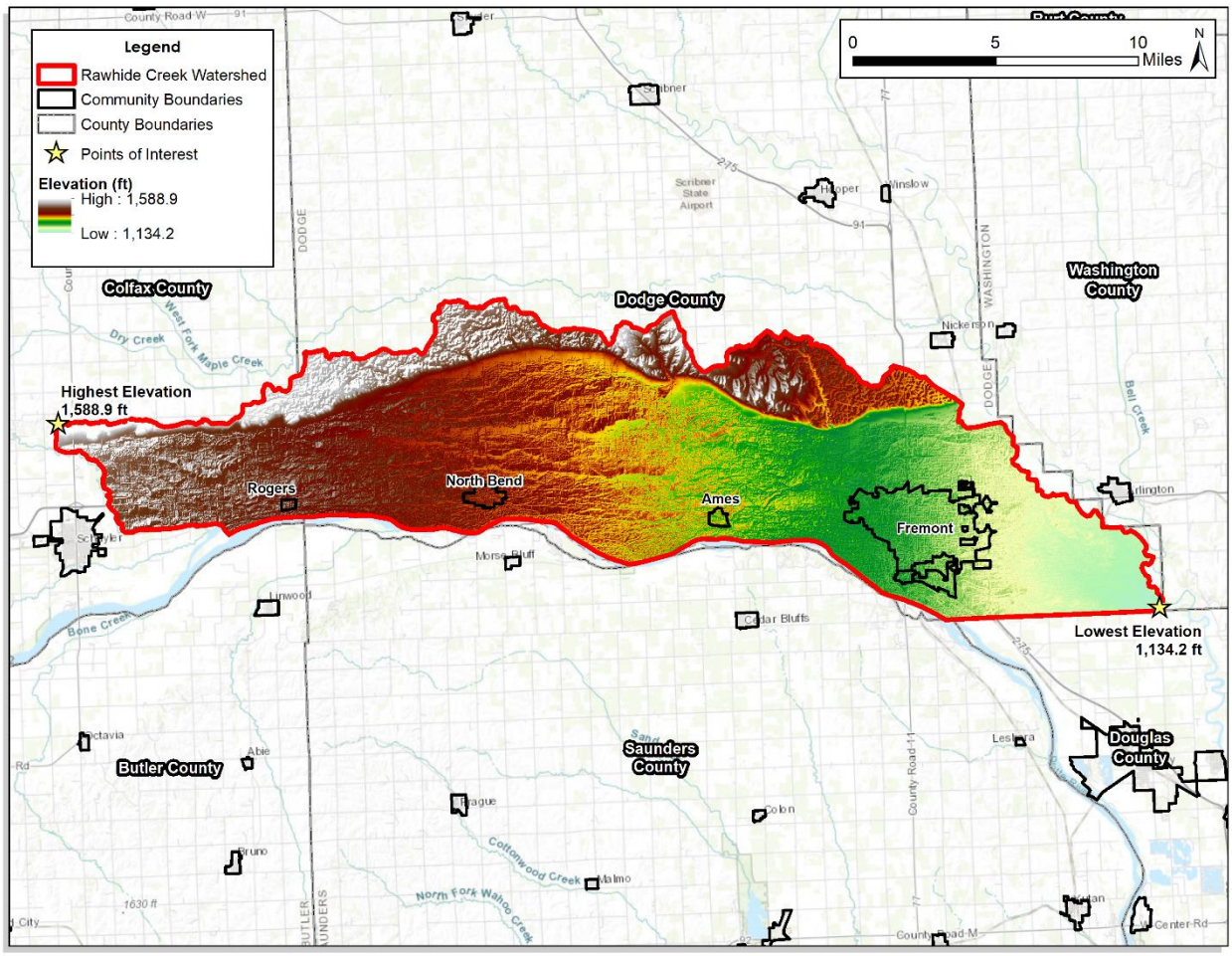


Figure 2: Topographic Map of the Rawhide Creek Watershed

3.02 SOILS

OVERVIEW

Soil characteristics such as surface texture, infiltration rates, and slope directly influence the amount of water that infiltrates to groundwater or runs off the landscape, as well as the suitability of a region for land uses such as agriculture. Soil texture is defined by the United States Department of Agriculture (USDA) according to certain percentages of sand, silt, and clay present within the overlying soil. Soils in the watershed are made up of silty clay loam (33%), silty clay (22%), loam (18%), silt loam (17%), and small amounts of various other sandy loams (NRCS, 2019).

The capacity of soils to generate run off, or conversely, allow infiltration, is determined based on Hydrologic Soil Groups (HSG). Soils are grouped into four major HSG categories: A, B, C, and D. Soils within each HSG have similar potentials for runoff and infiltration under similar storm and vegetative conditions. Soils in HSG A have very high rates of infiltration and very low rates of runoff, while soils in HSG D have very low rates of infiltration and very high rates of runoff, with HSG B and C falling in between. Soils in split categories have the attributes of one category when dry, and the other category when saturated. Soils in the watershed are made up of HSG C (47%), HSG D (26%), HSG B (13%), HSG C/D (10%), HSG A (3%), and small amounts of HSG A/D and B/D (NRCS, 2019). Overall, precipitation is more likely to run off the landscape than it is to infiltrate into soils in the watershed.

SOIL EROSION

This section will be completed once erosion estimates are complete.

SEDIMENTATION

This section will be completed once erosion estimates are complete.

PRIME AND UNIQUE FARMLAND

The Farmland Protection Policy Act (FPPA) was passed by Congress as part of the Agriculture and Food Act of 1981. The FPPA is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purposes of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance (NRCS, 2012).

Prime farmland is land that has the best combination of physical and chemical characteristics for producing agricultural crops and livestock with minimum uses of fuel, chemicals, labor, and tolerable rates of soil erosion. Unique farmland is non-prime farmland that is used for production of specific high-value crops such as citrus, tree nuts, olives, etc. Farmland that is of statewide or local importance other than prime or unique farmland is used for the production of food, feed, fiber, forage, or oilseed crops, as determined by the appropriate State or unit of local government agency, with the approval of the Secretary of Agriculture (NRCS, 2012).

There are approximately 39,895.6 acres of prime farmland, 43,930.0 acres which would be prime farmland if drained, and 3,137.4 acres of farmland of statewide importance within the watershed. Prime farmland makes up approximately 28% of the watershed, prime farmland if drained 31%, and farmland of statewide importance 2%. These areas are described in detail in Table 1, along with the soil map units as provided by the Natural Resources Conservation Service (NRCS). Farmland classifications within the watershed are shown in Figure 3.

Table 1: Prime and Unique Farmland in the Rawhide Creek Watershed

Map Unit Symbol	Map Unit Name	Farmland Rating	Area (acres)
2288	Wann loam, occasionally flooded	Prime farmland if drained	1262.7
3521	Cass fine sandy loam, occasionally flooded	All areas are prime farmland	1.1
3529	Gibbon loam, 0 to 2 percent slopes, occasionally flooded	Prime farmland if drained	9915.6
3537	Gibbon silty clay loam, occasionally flooded	Prime farmland if drained	9216.8
3710	Cass fine sandy loam, rarely flooded	All areas are prime farmland	851.5
4241	Ord fine sandy loam, occasionally flooded	Prime farmland if drained	5.8
6324	Coleridge silty clay loam, 0 to 2 percent slopes, occasionally flooded	Prime farmland if drained	550.4
6385	Shell silt loam, occasionally flooded	All areas are prime farmland	3739.8
6386	Shell silt loam, clayey substratum, occasionally flooded	All areas are prime farmland	2102.5
6508	Blendon fine sandy loam, 0 to 2 percent slopes	All areas are prime farmland	7.7
6526	Janude loam, rarely flooded	All areas are prime farmland	1663.6
6528	Janude loam, clayey substratum, rarely flooded	All areas are prime farmland	7376.2
6545	Moody silty clay loam, terrace, 0 to 2 percent slopes	All areas are prime farmland	13008.2
6603	Alcester silty clay loam, 2 to 6 percent slopes	All areas are prime farmland	2044.9
6754	Nora silt loam, 2 to 6 percent slopes, eroded	All areas are prime farmland	90.2
6767	Nora silty clay loam, 6 to 11 percent slopes	Farmland of statewide importance	28.7
6768	Nora silty clay loam, 6 to 11 percent slopes, eroded	Farmland of statewide importance	2024.5
6811	Moody silty clay loam, 2 to 6 percent slopes	All areas are prime farmland	6275.3
6812	Moody silty clay loam, 2 to 6 percent slopes, eroded	All areas are prime farmland	1159.2
6813	Moody silty clay loam, 6 to 11 percent slopes	Farmland of statewide importance	234.8
6814	Moody silty clay loam, 6 to 11 percent slopes, eroded	Farmland of statewide importance	849.4
7010	Calco silty clay loam, frequently flooded	Prime farmland if drained	183.6
7099	Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded	Prime farmland if drained	6045.6
7891	Zook silt loam, overwash, 0 to 2 percent slopes, occasionally flooded	Prime farmland if drained	7544.5
7901	Monona silt loam, terrace, 0 to 2 percent slopes	All areas are prime farmland	52.9
8401	Alda fine sandy loam, occasionally flooded	Prime farmland if drained	1268.1
8403	Alda loam, occasionally flooded	Prime farmland if drained	781.9

Map Unit Symbol	Map Unit Name	Farmland Rating	Area (acres)
8433	Cass fine sandy loam, clayey substratum, rarely flooded	All areas are prime farmland	609.6
8435	Cass loam, rarely flooded	All areas are prime farmland	549.3
8436	Cass loam, occasionally flooded	All areas are prime farmland	109.3
8438	Cass loam, clayey substratum, rarely flooded	All areas are prime farmland	169.6
8480	Gibbon-Wann complex, occasionally flooded	Prime farmland if drained	5538.1
8485	Gilliam-Eudora silt loams, occasionally flooded	All areas are prime farmland	84.7
8580	Wann fine sandy loam, occasionally flooded	Prime farmland if drained	1616.9

Source: NRCS, 2019

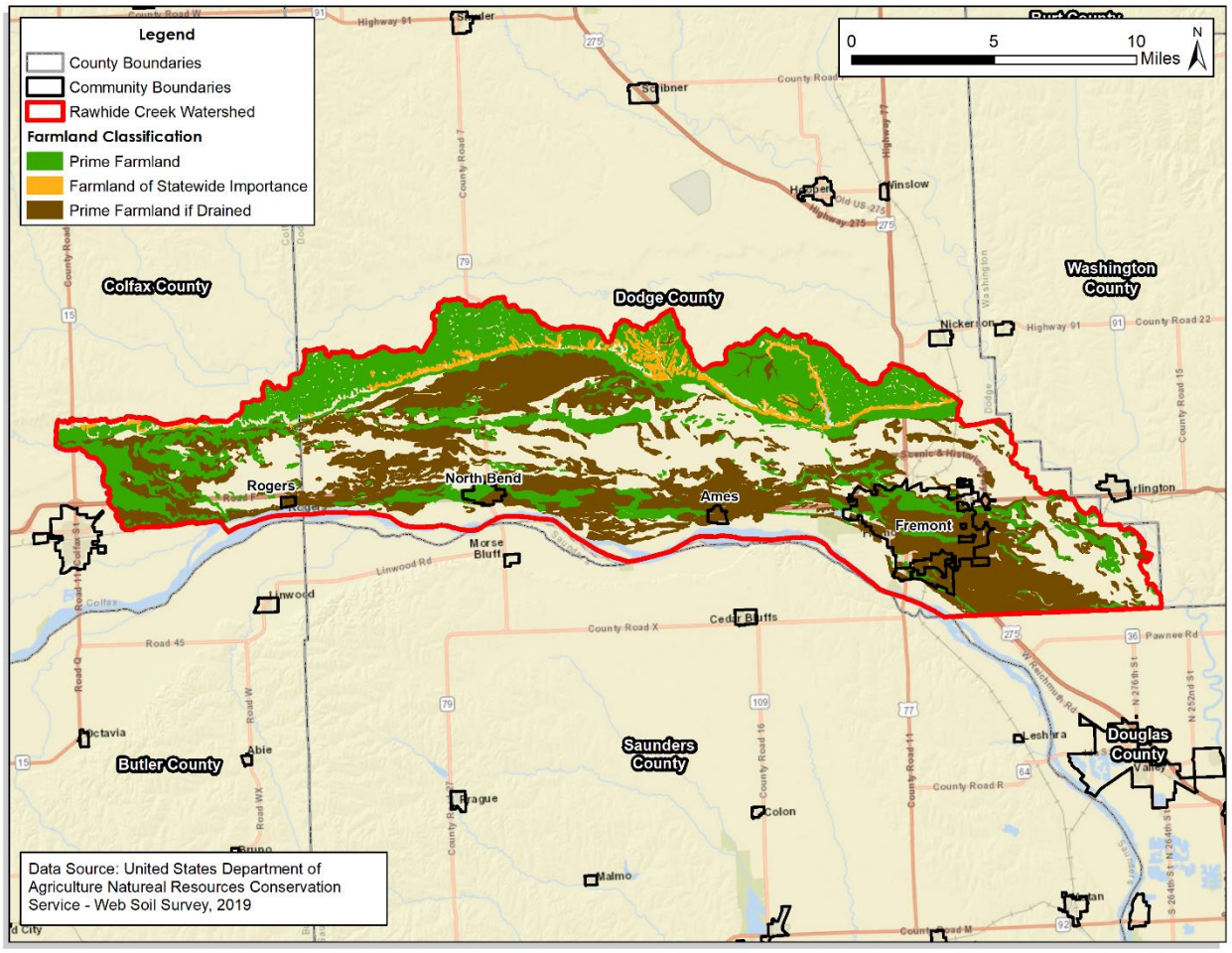


Figure 3: Prime and Unique Farmland in the Rawhide Creek Watershed

3.03 WATER

SURFACE WATER QUALITY

The United States Clean Water Act (CWA) of 1972 establishes the basic structure for regulating discharge of pollutants into the waters of the United States and regulates the quality standards for surface waters. These standards are the basis of water quality enforcement in Nebraska. Due to the nature of project and the requirements set out by the CWA, alternatives will likely require this project to obtain a 404 permit.

The Nebraska Department of Environment and Energy (NDEE) (formerly the Nebraska Department of Environmental Quality (NDEQ)) is responsible for implementing the CWA Section 319 Program for the State of Nebraska. This program focuses on the control of nonpoint sources of water pollution for waterbodies to meet the water quality standards laid out in Nebraska Administrative Code Title 117, which provides numerical water quality standards for all surface waters within Nebraska. NDEE assigns one or more beneficial uses to all designated surface waters within or bordering the State. These beneficial uses are based on the location and characteristics of each stream or lake and fall into four categories: Primary Contact Recreation, Aquatic Life, Water Supply, and Aesthetics. In 2018 there were 1,558 designated stream segment and 539 lakes in Nebraska with beneficial uses (NDEQ, 2018). Water quality criteria are assigned to each waterbody based on their beneficial use, with some uses requiring higher quality water than others. Standards for several common pollutants are outlined in Table 2. When a waterbody fails to meet its assigned beneficial use, it can be considered impaired and placed on the 303(d) List of Impaired Waters.

Table 2: Select Nebraska Surface Water Quality Standards

Parameter	Beneficial Use	Chronic Standard
Ammonia	Aquatic Life	Water temperature and pH specific
Atrazine	Aquatic Life	12.00 ug/L
E. coli Bacteria	Primary Contact Recreation	Geometric Mean – 126 col./100mls
pH	Aquatic Life	Acceptable Range = 6.5 – 9.0
Lakes Only (Eastern)		
Chlorophyll-a	Aquatic Life	10 mg/m^3
Sedimentation	Aesthetics	Total Conservation Pool Volume Loss > 25% Conservation Pool Volume Loss <0.75%/year
Total Nitrogen	Aquatic Life	1000 ug/L
Total Phosphorus	Aquatic Life	50 ug/L

Source: (NDEQ, 2019)

There are no impaired streams within the watershed, however 15 lakes carry water quality impairments, as outlined in Table 3.

Table 3: Impaired Waterbodies in the Rawhide Creek Watershed

Name	Waterbody ID	Impairment Cause
Fremont Lake No 1_SRA	LP1-L0290	Aquatic Life – mercury, chlorophyll a, pH, nitrogen, phosphorus
Fremont Lake No 2_SRA	LP1-L0300	Aquatic Life – chlorophyll a, pH, nitrogen, phosphorus
Fremont Lake No 3 SRA	LP1-L0310	Aquatic Life – chlorophyll a, dissolved oxygen, nitrogen, phosphorus
Fremont Lake No 4_SRA	LP1-L0330	Aquatic Life – chlorophyll a, pH, nitrogen, phosphorus
Fremont Lake No 5_SRA	LP1-L0320	Aquatic Life – chlorophyll a, pH, nitrogen, phosphorus
Fremont Lake No 7 and 8_SRA	LP1-L0350	Aquatic Life – chlorophyll a, pH, nitrogen, phosphorus
Fremont Lake No 9_SRA	LP1-L0280	Aquatic Life – chlorophyll a, nitrogen, phosphorus
Fremont Lake No 10_SRA	LP1-L0240	Aquatic Life – chlorophyll a, nitrogen, phosphorus
Fremont Lake No 11_SRA	LP1-L0210	Aquatic Life – mercury
Fremont Lake No 12_SRA	LP1-L0180	Aquatic Life – chlorophyll a, nitrogen, phosphorus
Fremont Lake No 15_Victory_SRA	LP1-L0200	Aquatic Life – chlorophyll a, nitrogen, phosphorus
Fremont Lake No 16_SRA	LP1-L0270	Aquatic Life – chlorophyll a, pH, nitrogen, phosphorus
Fremont Lake No 17_SRA	LP1-L0230	Aquatic Life – chlorophyll a, pH, nitrogen, phosphorus
Fremont Lake No 18E_SRA	LP1-L0220	Aquatic Life – chlorophyll a, nitrogen, phosphorus
Fremont Lake No 20_SRA	LP1-L0250	Aquatic Life – mercury, chlorophyll a, nitrogen, phosphorus

Source: (NDEE, 2020)

STREAMS

According to the United States Geological Survey (USGS) there are approximately 341 cumulative miles of streams in the watershed. Perennial streams account for 20 miles and include portions of Rawhide Creek, and several small unnamed tributaries. The remainder of streams in the watershed flow intermittently, or are classified as canals or ditches (USGS, 2018). However, through modern remote sensing data and in-field verification, it has been determined that the USGS reported stream statistics in the Rawhide Creek Watershed are no longer accurate. The construction of various ditches and re-alignment of streams throughout the 20th century has

changed the hydrologic characteristic of the watershed. The streams and canals/ditches shown in Figure 4 show the best available information and reflect existing stream channels to the greatest possible extent. Based on this information there are approximately 65 miles of intermittent streams, 29 miles of ditches / canals, and 18 miles of perennial streams in the Rawhide Creek Watershed.

According to the USGS there are 243 waterbodies in the watershed. Of these waterbodies, 47% have a pool area of less than one acre,13% between one and two acres, 23% between two and ten acres, and 17% greater than ten acres (USGS, 2018). Potential differences between the waterbodies reported by the USGS and current existing conditions in the watershed have not been investigated.

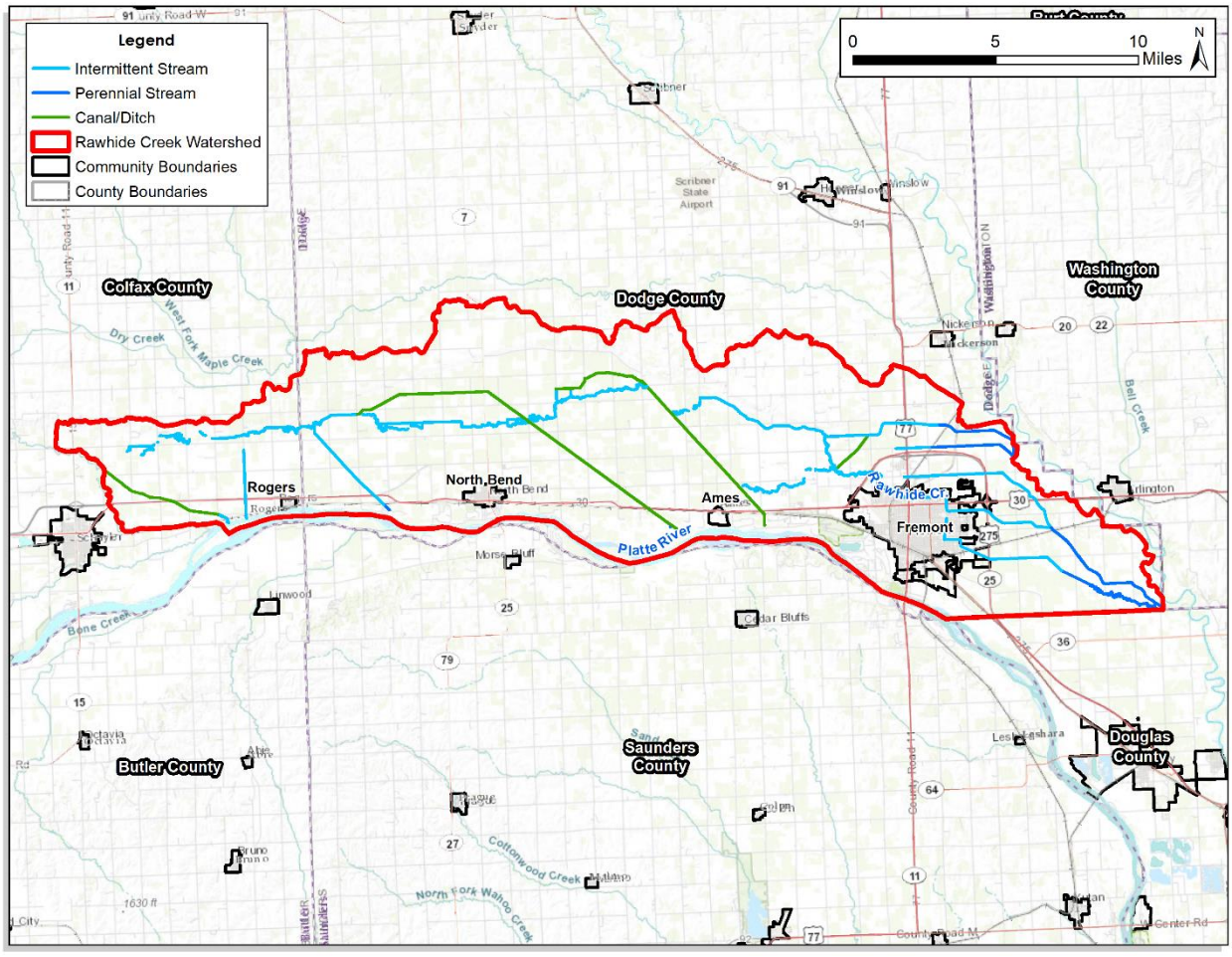


Figure 4: Streams in the Rawhide Creek Watershed

PLATTE RIVER DEPLETIONS

Rawhide Creek is a tributary of the Elkhorn River, which is a tributary of the Platte River. Additionally, some drainages within the Rawhide Creek Watershed are direct tributaries of the Platte River. Therefore, altering the hydrology within the Rawhide Creek Watershed could impact the hydrology of the Platte River. Due to the cumulative effects of many water depletion projects in the Platte River basin, the Nebraska Game and Parks Commission (NGPC) considers any depletion of flows, direct or indirect, from the Platte River system to be significant.

The NRCS developed a water consumptive use model for Nebraska that refines the amount of potential Platte River water that practices such as water impoundments and grade stabilization structures would either accrete or deplete. In a July 12, 2001 consultation letter the USFWS concurred that on-farm conservation programs that result in annual depletions of flows to the Platte River that are 25 acre-feet or less in Nebraska have “no adverse effect” on flows in the Platte River and associated federally listed species and designated critical habitat. NRCS will consult individually on projects that result in site-specific annual changes of consumptive water use of greater than 25 acre-feet.

The NRCS water consumptive use model will be utilized on the final preferred alternative to determine any potential depletions to flows in the Platte River. As alternative analysis continues, both the USFWS and NGPC will be sought for consultation to ensure no adverse impacts occur to any threatened or endangered species due to Platte River depletions within an area targeted for a project.

GROUNDWATER QUANTITY

There is no shortage of groundwater in the region, and the water tables has experienced very little change. Between predevelopment and the spring of 2019, the water table had experienced minor fluctuations of +/- five feet in small portions of the watershed (UNL-CSD, 2020). Predevelopment is generally identified as the early 1950s, prior to the widespread use of irrigation wells in Nebraska.

REGIONAL WATER MANAGEMENT PLANS

The Rawhide Creek Watershed is located within the influence of the Lower Platte River Basin Coalition Basin Water Management Plan (LPRBC, 2017) which is a combined effort of seven NRDs to manage groundwater and surface water consumption within the Lower Platte River. The watershed is also within the influence of the LPNNRD Voluntary Integrated Management Plan (LPNNRD, 2018), which recognizes and works to mitigate potential damages from natural disasters and human-caused hazards.

FLOODPLAIN MANAGEMENT

This Plan-EA is prepared in accordance with Executive Order 11988 – Floodplain Management, which directs agencies to take floodplain management into account when formulating water or

land use plans. The regulatory floodplain is a geographic area delineated by the Federal Emergency Management Agency (FEMA) to determine levels of flood risk and administrate the National Flood Insurance Program (NFIP). The regulatory floodplain is based on the 100-year floodplain, which encompasses the area that has a 1% annual chance of flooding. The current extents of the 100-year floodplain for the Rawhide Creek Watershed, delineated by FEMA, are displayed in Figure 5. The 100-year floodplain contains approximately 78,444 acres of the watershed, or 55% of the total area. Of this floodplain area, 4,417 acres are composed of floodway. The floodway is the river channel and adjacent land area that is reserved to convey the volume of a flood without increasing the water surface elevation above the regulatory height. The majority of the floodplain area in the watershed encompasses land used for agricultural production, but approximately 2,333 acres of floodplain falls within the corporate limits of watershed communities.

The Nebraska Department of Natural Resources (NeDNR) has issued a Flood Awareness Area for the Elkhorn River Watershed, which includes the Rawhide Creek Watershed. Flood Awareness Areas contain updated floodplain boundaries produced by NeDNR which are considered the best available data for communities involved in current mapping projects, or those with outdated floodplain information. Flood Awareness Areas are not considered regulatory in nature until reviewed and approved by FEMA. Current Flood Awareness Areas are planned to be considered effective floodplain maps by 2024 (NeDNR, 2019).

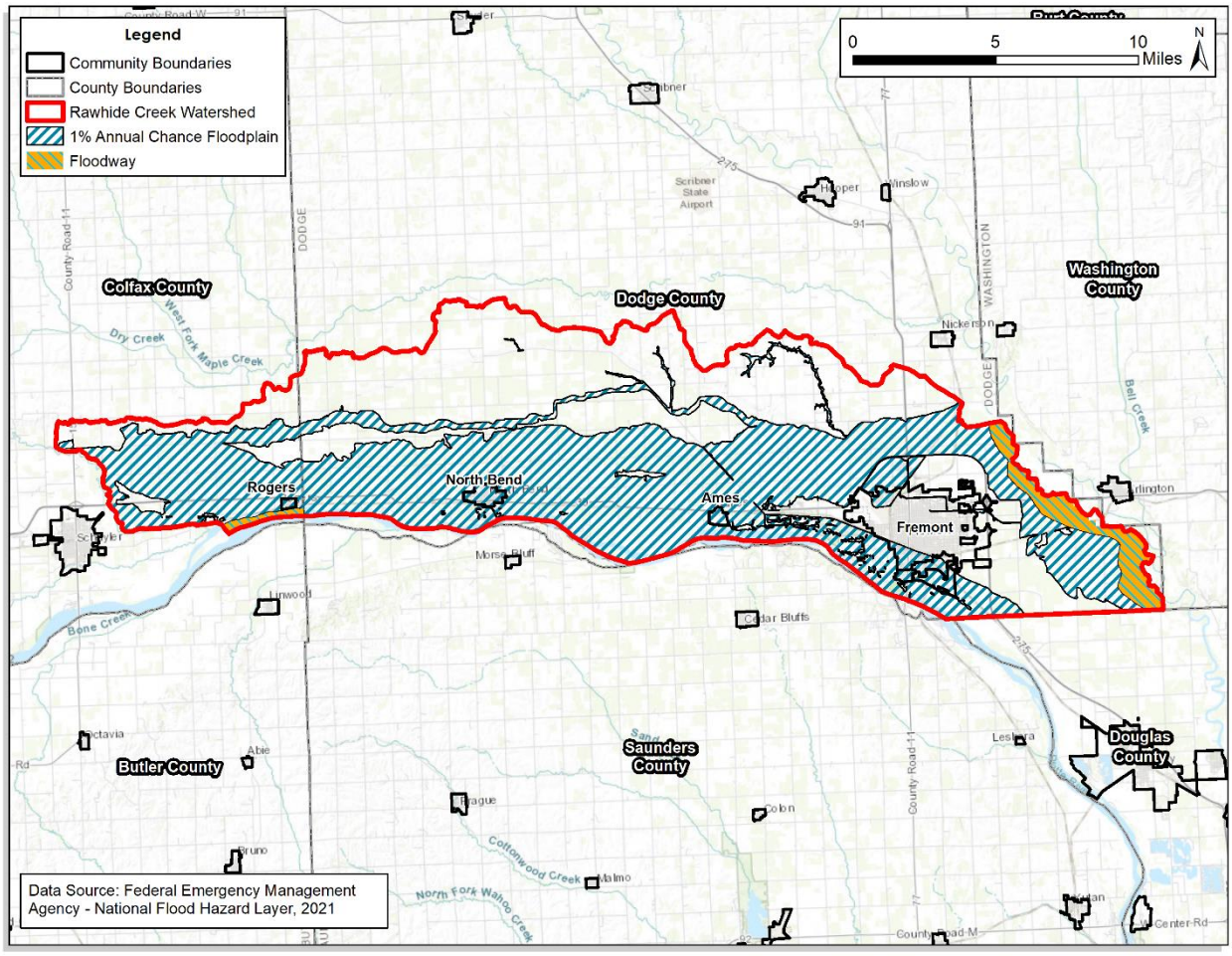


Figure 5: 100-Year Floodplain in the Rawhide Creek Watershed

WETLANDS

The United States Fish and Wildlife Service (USFWS) has established the National Wetlands Inventory (NWI) to provide an estimate of all wetlands in the United States. The watershed contains over 6,070 acres of NWI wetlands, which accounts for approximately 4.26% of the watershed's total area. The largest wetland type by area are riverine wetlands (39.90%), followed by freshwater forested/shrub wetlands (20.95%), lake wetlands (16.62%), freshwater emergent wetlands (15.46%), and freshwater pond wetlands (7.07%). These wetland areas are summarized in Table 4 and shown in Figure 6.

Table 4: Wetlands in the Rawhide Creek Watershed

Type	Cowardin Classification	Area (acres)
Freshwater Emergent	Palustrine emergent, persistent, seasonally flooded	341.51
	Palustrine emergent, persistent, seasonally flooded, diked/impounded	14.81
	Palustrine emergent, persistent, seasonally flooded, excavated	321.41
	Palustrine emergent, persistent, semi permanently flooded	7.04
	Palustrine emergent, persistent, semi permanently flooded, excavated	3.33
	Palustrine emergent, persistent, temporary flooded	219.41
	Palustrine emergent, persistent, temporary flooded, diked/impounded	4.31
	Palustrine emergent, persistent, temporary flooded, excavated	21.45
	Palustrine emergent, persistent, temporary flooded, partially drained/ditched	5.32
Freshwater Forested / Shrub	Palustrine forested, temporary flooded	778.93
	Palustrine forested, temporary flooded, diked/impounded	0.95
	Palustrine forested, temporary flooded, excavated	0.49
	Palustrine scrub-shrub, seasonally flooded	0.23
	Palustrine scrub-shrub, temporary flooded	483.38
	Palustrine scrub-shrub, temporary flooded, diked/impounded	0.91
	Palustrine scrub-shrub, temporary flooded, excavated	6.98
Freshwater Pond	Palustrine aquatic bed, intermittently exposed, excavated	26.25
	Palustrine aquatic bed, semi permanently flooded	43.04
	Palustrine aquatic bed, semi permanently flooded, diked/impounded	8.82
	Palustrine aquatic bed, semi permanently flooded, excavated	11.90
	Palustrine unconsolidated bottom, intermittently exposed, excavated	223.68
	Palustrine unconsolidated bottom, semi permanently flooded	9.93
	Palustrine unconsolidated bottom, semi permanently flooded, diked/impounded	26.92
	Palustrine unconsolidated bottom, semi permanently flooded, excavated	75.55
	Palustrine unconsolidated shore, seasonally flooded, excavated	0.61
	Palustrine unconsolidated shore, temporary flooded	1.37
	Palustrine unconsolidated shore, temporary flooded, diked/impounded	0.52
	Palustrine unconsolidated shore, temporary flooded, excavated	0.62
Lake	Lacustrine limnetic, unconsolidated bottom, permanently flooded, excavated	1,008.54
Riverine	Riverine intermittent, streambed, seasonally flooded	338.38
	Riverine intermittent, streambed, seasonally flooded, excavated	50.94
	Riverine lower perennial, unconsolidated bottom, intermittently exposed	0.94
	Riverine lower perennial, unconsolidated bottom, permanently flooded	587.54
	Riverine lower perennial, unconsolidated bottom, semi permanently flooded	284.74
	Riverine lower perennial, unconsolidated shore, seasonally flooded	952.49
	Riverine lower perennial, unconsolidated shore, temporary flooded	177.53
	Riverine unknown perennial, unconsolidated bottom, permanently flooded	14.50
	Riverine unknown perennial, unconsolidated bottom, semi permanently flooded, excavated	14.75
	Total	6,070.01

Source: NWI, 2020

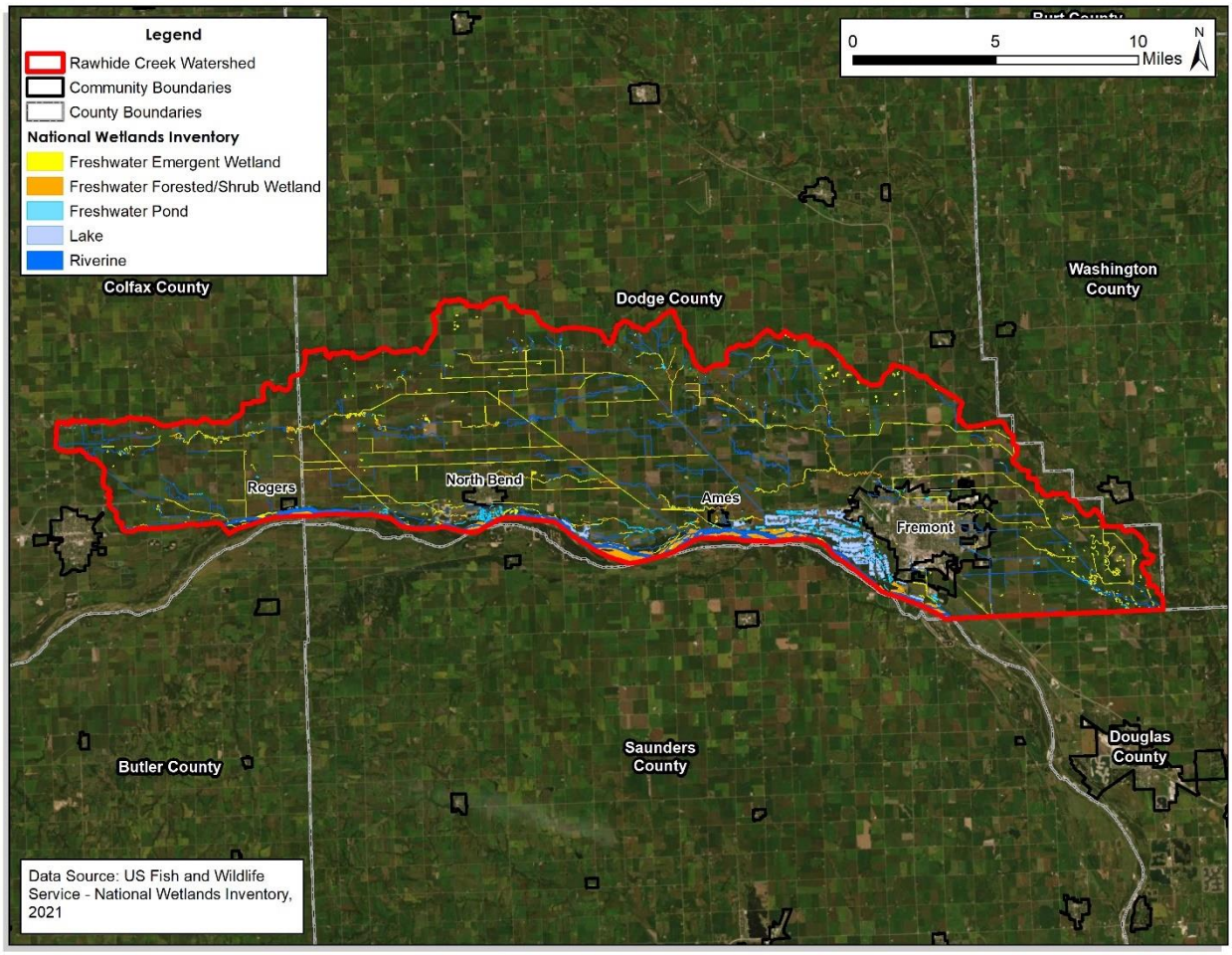


Figure 6: Wetlands in the Rawhide Creek Watershed

GRASSLANDS

As shown in Figure 7, grasslands made up approximately 6% of the watershed's total area in 2019 (USDA, 2020). This includes areas of perennial vegetation used for pasture and hay production. Historically, this region was part of the Tallgrass Prairie Ecoregion which was dominated by big bluestem, Indian grass, switchgrass, and Canada wild-rye. Once characterized as a sea of grass extending for hundreds of miles, approximately two percent of Nebraska's tallgrass prairie remains (Schneider et al., 2011).

WOODLANDS

As shown in Figure 7, forested areas made up approximately 1.5% of the watershed's total area in 2019 (USDA, 2020). Though historically prairie grasses were the dominant plant community in this region, eastern Nebraska is home to a diverse mix of woodland species. Native woodlands

are found mainly in the fire-protected stream valleys and bluffs. Cottonwoods, willows, boxelders, and American elm dominate the wetter floodplain areas. The drier river bluffs support oaks, hickories, basswood, black walnut, and other deciduous trees (Schneider et al., 2011). Those woodland areas not found along stream channels in this region are commonly found in manmade rows planted to act as windbreaks.

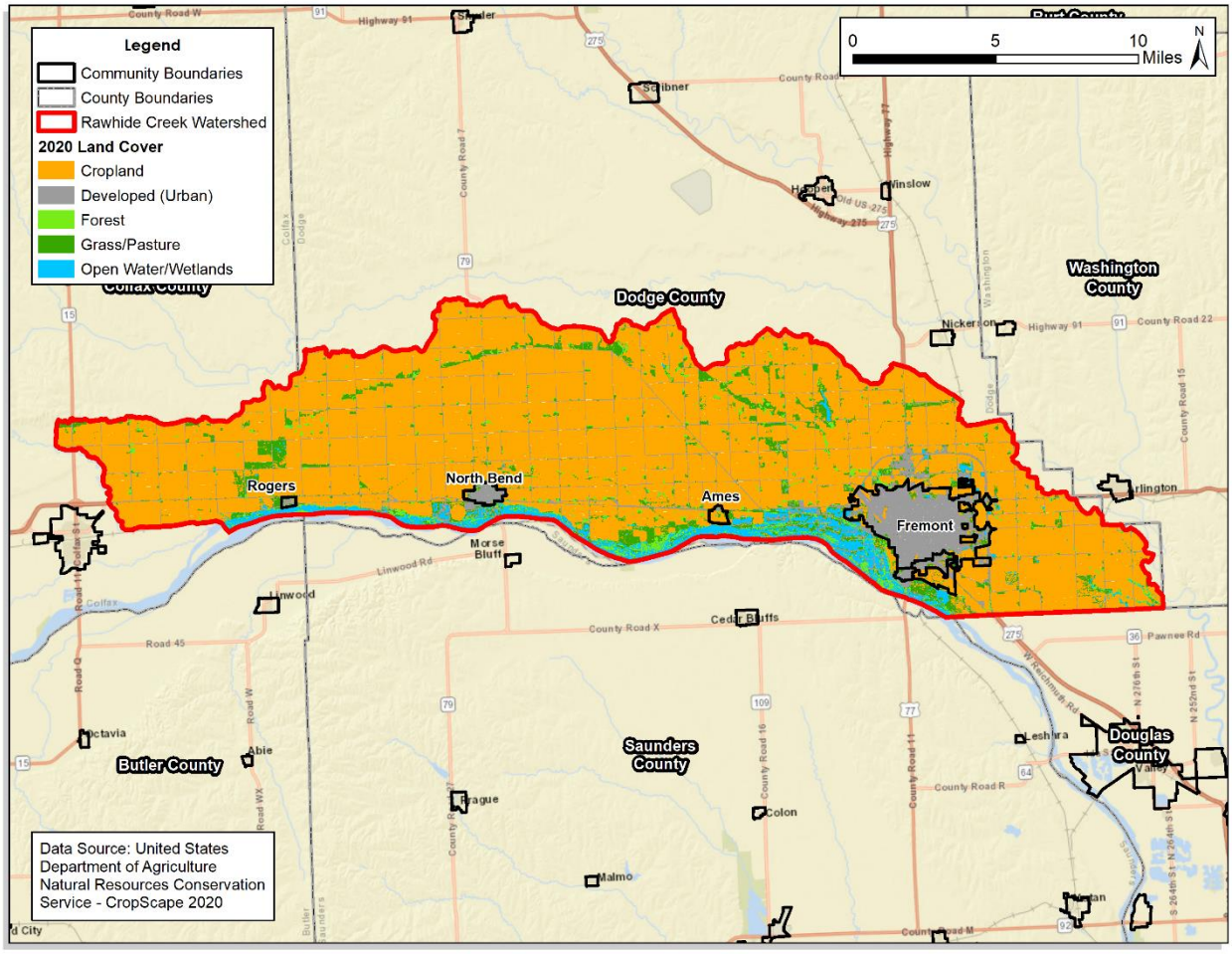


Figure 7: Land Cover in the Rawhide Creek Watershed

3.04 PLANTS AND ANIMALS

THREATENED AND ENDANGERED SPECIES

The Endangered Species Act of 1973 provides a framework to conserve and protect threatened and endangered species, and their habitats. The USFWS maintains and enforces the national list of threatened and endangered species and assists states in developing conservation programs. In Nebraska, the NGPC, maintains the state list of threatened and endangered species.

State and federally listed endangered, threatened, proposed, and candidate species that may be within the planning area are described below, along with their habitat requirements. The species included here are based on those reported in the NGPC Conservation and Environmental Review Tool (CERT), accessed on January 28, 2022 (NGPC, 2022). The CERT report is included in Appendix XX. The species listed below are described based on information available from NGPC and USFWS.

Interior Least Tern (*Sternula antillarum athalassos*) – Federally and State Endangered

The interior least tern is the smallest North American tern. Adults average between 8 and 10 inches in length, with a 20-inch wingspan. Adults are gray above and white below, with a black cap, black nape and eye stripe, white forehead, yellow bill with a black or grown trip, and yellow to orange legs. They have narrow, pointed wings and a forked tail. Nesting habitat is typically bare or sparsely vegetated sand, sandbars, and islands. The birds prefer open habitat and tend to avoid thick vegetation.

Lake Sturgeon (*Acipenser fulvescens*) – State Threatened

The lake sturgeon is a temperate, freshwater fish found only in North America. Their habitat is typically on the bottom of a clean lake or riverbed with a sand or gravel substrate. They have slender bodies covered with rows of bony plates, a single dorsal fin, a projecting snout, and a small toothless mouth surrounded by four barbels. Larger than other sturgeon, the lake sturgeon commonly weighs 100 pounds or more. The long-living fish are slow growing, reaching reproductive age after approximately 20 years.

Northern Long-eared Bat (*Myotis septentrionalis*) – Federally and State Threatened

The northern long-eared bat is a medium-sized bat about 3 to 3.7 inches in length with a wingspan of 9 to 10 inches. The species range includes 37 states and much of Canada. The bats spend winter hibernating in caves and mines with constant temperatures, high humidity, and little air movement. During the summer, the bats roost singly or in colonies underneath bark, in cavities or in crevices of trees. The greatest threat to northern long-eared bats is white-nose syndrome, a fungal infection which affects them during hibernation.

Pallid Sturgeon (*Scaphirhynchus albus*) – Federally and State Endangered

Pallid sturgeons are bottom dwelling, slow growing fish that feed primarily on small fish and immature aquatic insects. They have a flattened snout, long slender tail, and are armored with rows of bony plates. While seldom seen, the fish can reach lengths of 6 feet and weights of 80 pounds. Pallid sturgeons are adapted to the bottoms of large, silty rivers, and prefer a diversity of depths and velocities provided by braided channels and sandbars. The long-living fish are slow growing, with females reaching reproductive age between 7 and 15 years, with up to 10-year intervals between spawning.

Piping Plover (*Charadrius melodus*) – Federally and State Threatened

Piping plover are small shorebirds with a sand-colored upper body, white underside, and orange legs. During breeding season, adults have a black forehead, black breast band, and orange bill. They are migratory birds, breeding in the Northern Great Plains, Atlantic Coast, and shorelines of the Great Lakes in the spring and summer, and wintering in the Gulf of Mexico. The birds prefer wide, flat, sandy beaches with little vegetation. Nesting territories often include small creeks or wetlands.

Sturgeon Chub (*Macrhybopsis gelida*) – State Endangered

The sturgeon chub is a small minnow species reaching up to 4 inches in length, however most individuals range between 1.5 and 2.5 inches. It is recognized by its long, flat snout with a barbell at the corner of its mouth. They are brown to olive colored on their back and white or silver on their belly with relatively large clear fins. The fish prefer fast, free flowing rivers with high turbidity and low visibility.

Western Massasauga (*Sistrurus tergeminus)* – State Threatened

The western massasauga is a small species of rattlesnake primarily found in grassland areas, on the edge of open woodland, or on rocky hillsides. These snakes are lightly colored with dark brown blotches along the back that contrast with the lightly colored soil and plants of the prairie. Its underbelly is lightly colored with some dark spots, and the head has a dark broad lateral stripe along each side. In Nebraska, they generally require crayfish burrows in wetland areas to use as hibernacula.

RIPARIAN AREAS

Riparian areas are the narrow regions separating waterways and uplands. They are present throughout the watershed along Rawhide Creek, the Platte River, and their various tributaries. Many riparian areas are found adjacent to crop fields and livestock pastures and have been altered and degraded over time to better suit agricultural purposes.

FISH AND WILDLIFE HABITAT

This region is home to over 300 species of resident and migratory birds, 55 mammal species, 53 amphibian and reptile species, and uncounted insects. Vegetation is diverse and includes hundreds of species ranging from deciduous woodlands to saline wetlands. Streams in the region were historically meandering and braided with wide, shallow channels and floodplains composed of wet meadows and freshwater marshes (Schneider et al., 2011).

Land use within the watershed is predominately agricultural with small amounts of perennial vegetation and woodlands. Wildlife habitat is primarily limited to fringe areas not being utilized for row crop and livestock production. There are no public areas dedicated to wildlife habitat in the

watershed. Waterbodies of varying size can be found scattered throughout the watershed. Perennially flowing streams include portions of Rawhide Creek and several unnamed tributaries. The majority of streams flow intermittently (USGS, 2018).

MIGRATORY BIRDS AND EAGLES

The Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act of 1940, both of which have been amended multiple times since their inception, prohibit the taking of protected migratory bird species, bald eagles, and golden eagles without special permission. Under these two acts, 'taking' includes the birds themselves as well as any parts, such as eggs, feathers, nests, etc. Migratory birds are essentially all wild birds found in the United States, with the exception of the house sparrow, starling, feral pigeon, and resident game birds (turkey, quail, etc.).

Multiple species of migratory birds are likely present within the watershed. In Nebraska it's widely accepted that the nesting season for migratory birds occurs between April 1st – July 15th. There are exceptions to this range. For example, raptors can be expected to nest in woodland habitats from February 1st – July 15th, whereas sedge wrens, which occur in some wetland habitats, normally nest from July 15th – September 10th (NGPC, 2022). Golden eagles can be found in the Nebraska panhandle and commonly range into the central portion of the state during spring and fall but are not typically found as far east as the Rawhide Creek Watershed. Bald eagles can be found throughout the entire state year-round, especially near water in the winter and spring.

3.05 HUMANS

FLOOD DAMAGES

The damage caused by flooding is a considerable concern within the Rawhide Creek Watershed. The area is threatened by regional heavy rainfall events, snowmelt, ice jams on the Platte and Elkhorn Rivers, and overflows from Shell Creek to the west. Flooding damages have been recorded in the region since the 19th century. The watershed contains a series of drainage ditches constructed in the 1920s, and a system of levees and embankments. In June 1990, flooding caused an estimated $27,000,000 in damages (Fremont Tribune, 1990). In March 2019, a bomb cyclone dropped heavy precipitation of frozen, saturated ground. Rapid snowmelt caused by the precipitation caused an extreme amount of runoff throughout the region. The undersized and inadequate systems currently in place were exposed as overland flows combined with flows from the Platte and Elkhorn Rivers, resulting in breaches and overtopping. Flooding experienced by the communities within the watershed was catastrophic, resulting in approximately $34,000,000 in public damages. Outside of the watershed's communities, most land is used for agriculture. During flood events, cropland and pasture are impacted by inundation, sediment depositions, scour, and erosion. Affecting all areas of the watershed, floods can inundate or damages roads and bridges, impeding residents' access to emergency services.

COSTS

NOTE TO REVIEWERS: Economic and flood damage data (in-text and in the following table) will be updated/finalized as hydrology & hydrologic modeling, HAZUS modeling, and economic assessments are refined and finalized.

To quantify the impact of flooding, the project team calculated the estimated annualized flood damages, based on modeled flood risk of existing hydrologic conditions. Damages to buildings and agriculture within the watershed were calculated using depth-damage considerations based on return periods, or percent annual chance, of flood risk. Hydrologic and hydraulic modeling results were assessed using the FEMA HAZUS program. For buildings in the watershed, the annualized flood damages are $XXXXXX (Table 5). The estimated annualized flood damages to agricultural lands are $XXXXXX (Table 5). Without a watershed project, future conditions are not anticipated to improve.

Table 5: Summary of Estimated Annualized Existing Flood Damages

Damage Type	Annualized Damage
Buildings & Income Losses	$XXXXXXX
Agriculture	$XXXXXXX

HISTORIC PROPERTIES AND CULTURAL RESOURCES

Cultural resources are physical or other expressions of human activity or occupation and include archeological sites, buildings, bridges, business districts, culturally significant landscapes, isolated artifacts or features, culturally sacred places, and objects of cultural and historic significance. In order for a cultural resource to be eligible for the National Register of Historic Places (NRHP), it must be associated with events significant to the broad patterns of history; associated with the lives of persons significant in the past; embody distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic value, or represent a significant and distinguishable entity; and/or must yield or be likely to yield, information important to history or prehistory. If an undertaking will alter, damage, or destroy a historic property, the agency has a responsibility to avoid, minimize, or mitigate the adverse effect.

There are thirteen historic buildings in the watershed included in the NRHP, which are listed below:

- Fremont; Charles T. Durkee House
- Fremont; Dodge County Courthouse
- Fremont; Fremont Municipal Auditorium
- Fremont; Municipal Power Plant and Pumping Station
- Fremont; George and Nancy Turner House

- Fremont; J.D. McDonald House
- Fremont; Love-Larson Opera House
- Fremont; Nye House
- Fremont; Old Fremont Post Office
- Fremont; Osterman and Tremaine Building
- Fremont; R.B. Schneider House
- Fremont; Samuel Bullock House
- North Bend; North Bend Carnegie Library

ENVIRONMENTAL JUSTICE

Executive Order 12898, issued in 1994, directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations. Conforming to that directive, this project must ensure that any negative environmental or human health consequences do not disproportionately impact minority or low-income residents of the watershed.

Minorities in America are those persons who are a member of any of the following population groups: Native American, Alaskan Native, Asian American, Native Hawaiian, Pacific Islander, and Black or African American. Table 6 shows the percentage of the population considered to be a minority within the watershed's communities, Dodge County, the State of Nebraska, and the United States. Minority populations are an appreciable portion of the watershed's total population and will be considered during this project.

Poverty in America is dependent on the number of people in a household. The baseline for a single person household is an income of $12,140 or less (in 2018). For each additional person in the household, the income level increases by $4,320 (ASPE, 2018). Assuming an average household size of four people, the poverty line is an income of $25,100 or less. The percentage of households with an income of $25,000 or less in the watershed, Dodge County, the State of Nebraska, and the United States is shown in Table 6. The calculated percentage of households living in poverty in the watershed is greater than Dodge County, Nebraska, and the United States.

The US Environmental Protection Agency's Environmental Justice Screening and Mapping Tool (EJ Screen) compiles statistics related to environmental justice for a given area. The EJ Screen reports that approximately 36% of watershed residents fall within the 'Low Income Population', which are those that have an income less than double the poverty level. People of Color populations reported by the EJ Screen make up 17% of the watershed. The demographic index in the watershed, which is a combination of the low income and minority populations, is reported at 27% (USEPA, 2020).

Table 6: 2018 Census Demographic Statistics

Category	Watershed	Dodge County	Nebraska	United States

Minority Population	6.5%	5.8%	12.5%	27.8%
Households with income of $25,000 or less	21.6%	20.7%	18.7%	19.6%

Source: US Census Bureau

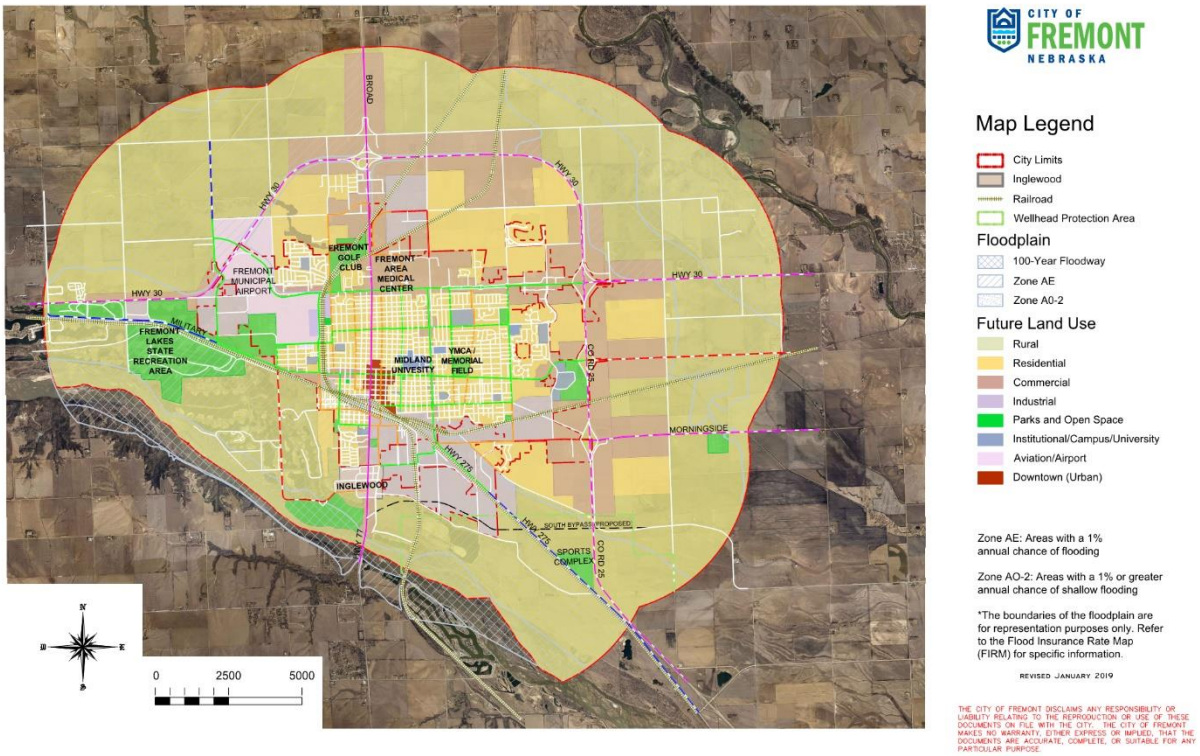
LOCAL AND REGIONAL ECONOMY

As shown in Figure 8, land use within the watershed is dominated by agriculture, with 78% of the area being used for row crops and 6% for pasture in 2020 (USDA, 2020). The LPNNRD certifies all irrigated acres to track and manage agricultural water usage (Figure 8). In total there are XXXX certified irrigated acres within the watershed, or approximately XX% of the watershed's total area. The future land use maps for the City of Fremont (Figure 9) and City of North Bend (Figure 10) indicate that agriculture will remain a dominant land use in the region.

The 2017 Census of Agriculture reported 676 farming operations in Dodge County covering more than 337,000 acres and being operated by 1,135 producers. Of these, 707 producers resided on their operations, and 505 worked solely on farm. The average producer was 56 years old and had been working on agricultural operations for 27 years. The total market value of agricultural products sold totaled over $364,000,000, and the net cash income per operation was more than $123,000. Additional information from the Census of Agriculture is included in Appendix XX.

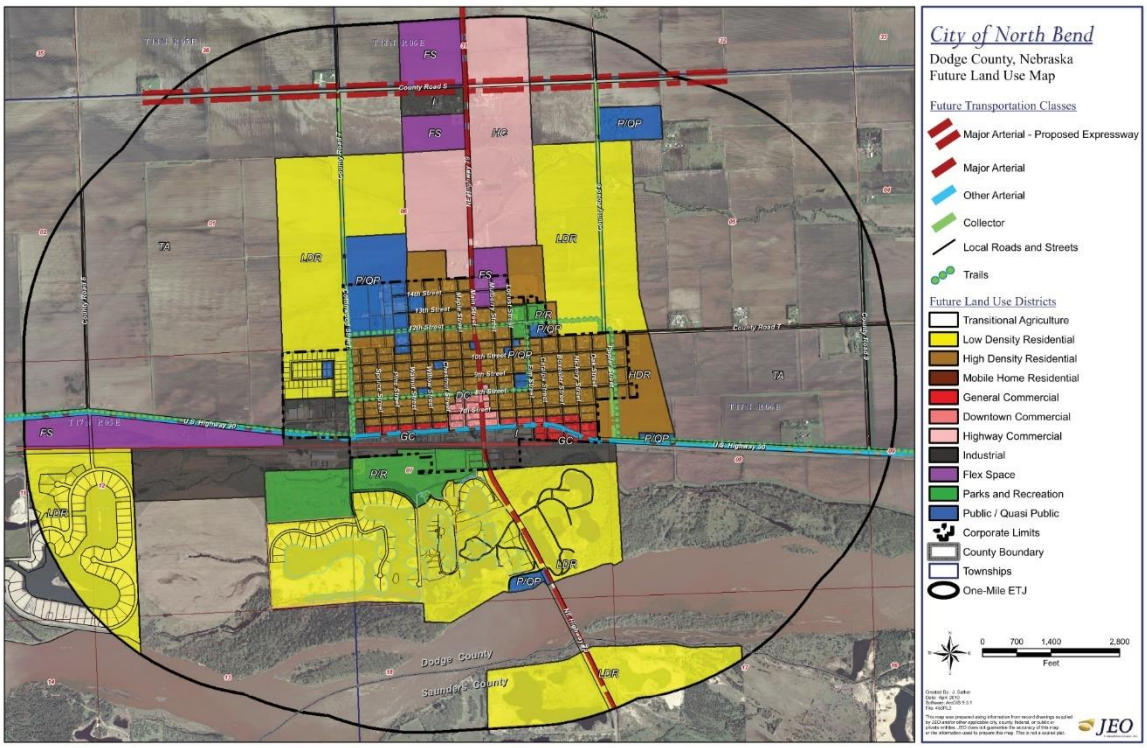
Land cover / irrigated acres map to be inserted here.

Figure 8: Land Cover and Irrigated Acres in the Rawhide Creek Watershed



Source: City of Fremont, 2019

Figure 9: Future Land Use Map for Fremont, Nebraska



Source: JEO, 2010

Figure 10: Future Land Use Map for North Bend, Nebraska

ECONOMIC AND SOCIAL CONDITIONS

According to the US Census Bureau, 2.2% of the watershed's approximate employed population of 13,953 worked in the agriculture industry in 2018, lower than Dodge County at 3.9% (Table 7). The watershed's largest employment sector is educational services and the healthcare industry at 24.6%, followed by manufacturing at 16.9%.

Table 7: 2018 Census Economic Statistics

Employment Industry	Watershed	Dodge County
Educational services and health care	24.6%	23.8%
Manufacturing	16.9%	17.0%
Retail trade	14.9%	14.4%
Arts, entertainment, recreation, accommodation, and food service	7.8%	7.3%
Construction	6.2%	7.4%

Professional, scientific, and management services	6.2%	5.6%
Finance insurance, and real estate	5.8%	5.5%
Transportation and utilities	5.0%	5.0%
Other services	4.1%	4.0%
Public administration	2.7%	2.8%
Agriculture, forestry, and mining	2.2%	3.9%
Wholesale trade	2.0%	2.0%
Information	1.6%	1.4%

Source: US Census Bureau

PUBLIC HEALTH AND SAFETY

The watershed contains portions of Highways 15, 30, 77, 79, and 275. These represent major commuting corridors between area communities. The majority of roads outside of the watershed's communities are unpaved, making them especially vulnerable to flooding damage. Damaged roads may impede watershed resident's access to emergency services. Most roads in the watershed are the responsibility of Dodge County to maintain and repair.

RECREATION

The watershed falls within the Metro Region of the NGPC Statewide Comprehensive Outdoor Recreation Plan (SCORP), which includes seven counties in eastern Nebraska. In total, the Metro Region contains 48,201 acres of public access recreation land and water. These recreation areas include 583 parks, 435 playgrounds, 353 ballfields, 132 soccer fields, 198 camping sites, 2,356 lakes/ponds, and 382.34 miles of trails (NGPC, 2020).

SCENIC BEAUTY AND PARKLANDS

The watershed includes the Fremont Lakes State Recreation Area, composed of 40 acres of parkland and 300 acres of water spread across 20 sandpit lakes. Located approximately three miles west of Fremont, this area is a popular destination for campers, picnickers, fishermen, and water sports enthusiasts.

3.06 REFERENCES

Note: References will be moved to their own chapter, once all plan chapters are compiled into a single document

Conservation and Survey Division (CSD), 2001. Topographic Regions Map of Nebraska: Center for Applied Rural Innovation, p. 62.

Fremont Tribune (Fremont, Nebraska). "Estimated flood losses." Published Thursday, June 21, 1990.

JEO Consulting Group, Inc., 2010. City of North Bend Nebraska Comprehensive Development Plan 2010.

Kottek, M., J. Grieser, C. Beck, B. Rudolf, and F. Rubel, 2006, World Map of Köppen-Greiger Climate Classification updated: Meteorol. Z., 15, p. 259-263. (available at http://koeppen-geiger.vu-wien.ac.at/).

Lower Platte North Natural Resources District (LPNNRD). "Voluntary Integrated Management Plan." *Nebraska Department of Natural Resources*, 2018.

Lower Platte River Basin Coalition (LPRBC). "Basin Water Management Plan." 2017. https://lprbc.nebraska.gov/

Natural Resources Conservation Service (NRCS), 2012. *Prime and Unique Farmlands.* United States Department of Agriculture Special Environmental Resource Concerns. Published March 2012. Retrieved from: https://efotg.sc.egov.usda.gov/references/public/VA/PrimeandUniqueFarmlands.pdf.

Natural Resources Conservation Service (NRCS), 2019. Web Soil Survey. Retrieved from: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

Nebraska Department of Environment and Energy (NDEE). "2020 Surface Water Quality Integrated Report." *Nebraska Department of Environment and Energy Water Quality Division*, 2020. http://dee.ne.gov/Publica.nsf/Pages/WAT352

Nebraska Department of Environmental Quality (NDEQ), 2018. *2018 Water Quality Integrated Report.* NDEQ Water Quality Division. Published April 1, 2018. Retrieved from: http://deq.ne.gov/Publica.nsf/Pages/WAT251.

Nebraska Department of Environmental Quality (NDEQ), 2019. *Nebraska Administrative Code Title 117 – Nebraska Surface Water Quality Standards.* Revised Effective Date: June 24, 2019. Retrieved from: http://deq.ne.gov/RuleAndR.nsf/Title_117.xsp.

Nebraska Department of Natural Resources (NeDNR), 2019. *State of Nebraska CTP Business Plan. FY 2019 Update.* Published May 2019.

Nebraska Game and Parks Commission (NGPC), 2022. Environmental Review Report – Dodge County Rawhide Creek WFPO. Generated January 28, 2022.

Schneider, R., K. Stoner, G. Steinauer, M. Panella, and M. Humpert (Eds.). 2011. The Nebraska Natural Legacy Project: State Wildlife Action Plan. 2nd ed. The Nebraska Game and Parks Commission, Lincoln, NE.

United States Department of Agriculture (USDA), 2020. CropScape and Cropland Data Layer. Retrieved from: https://www.nass.usda.gov/Research_and_Science/Cropland/SARS1a.php.

United States Environmental Protection Agency (USEPA), 2020. Environmental Justice Screening and Mapping Tool (Version 2020). Accessed January 2022. Available at: https://ejscreen.epa.gov/mapper/.

United States Geological Survey (USGS), 2018. National Hydrography Dataset. Retrieved from: https://www.usgs.gov/core-science-systems/ngp/national-hydrography/national-hydrography-dataset.

University of Nebraska-Lincoln Conservation and Survey Division (UNL-CSD), 2020. *Groundwater-Level Changes in Nebraska – Predevelopment to Spring 2019*. Published March 2020. http://snr.unl.edu/data/water/groundwater/gwlevelchangemaps.aspx

Wayne, W.J., 2011, Glaciation: Encyclopedia of the Great Plains: University of Nebraska-Lincoln. (retrieved from: http://plainshumanities.unl.edu/encyclopedia/doc/egp.pe.029).

3.07 ABBREVIATIONS AND ACRONYMS

Note: This list will be compiled into a master list for the plan once all plan chapters are completed

CERT	Conservation and Environmental Review Tool
CWA	Clean Water Act
EJ Screen	Environmental Justice Screening and Mapping Tool
FEMA	Federal Emergency Management Agency
FPPA	Farmland Protection Policy Act
HSG	Hydrologic Soil Group
NDEE	Nebraska Department of Environment and Energy
NDEQ	Nebraska Department of Environmental Quality
NeDNR	Nebraska Department of Natural Resources
NFIP	National Flood Insurance Program
NGPC	Nebraska Game and Parks Commission
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
SCORP	Statewide Comprehensive Outdoor Recreation Plan
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey