



The Nebraska Environmental Trust

preserving NATURAL NEBRASKA™ for future generations

2020

PRELIMINARY SUMMARY OF APPLICATIONS

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The Nebraska Environmental Trust entered the 2020 grant cycle receiving 120 applications. Applications were submitted via the web portal by September 3rd to meet the deadline. Requests in this twenty-seventh year of grants totaled \$38,847,624. The Trust will announce recommendations for funding these applications in February, 2020 and will award grants in April, 2020.

A summary overview of each proposal, as composed by the applicant, is provided for you. Very few editorial changes were made in this information, which was submitted in the application form in response to the question, "Provide an overview of the project for which you seek funding." Project names were assigned by the applicants. Project numbers are assigned by the Trust to facilitate record keeping.

The summaries are presented in alphabetical order by project sponsor name. The nearest town is also shown to indicate the approximate location of each project in the state or the location of the applicant.

The amount requested and the proposed term of each project is also noted in each summary. The Trust is authorized to fund a project for up to three years under one application review. The review group to which the application has been assigned is also noted in each summary.

In 2019 the Trust issued statements of intent to 45 projects, indicating continued funding for these projects on the basis of the 2018 and 2019 applications. Those projects are included in these descriptions. The project numbers of these applications begin "18" or "19" and end with a dash 2 (19-101-2) or dash 3 (18-101-3) to indicate the second or third year request.

An index of applications by project number is also included with the materials presented in this booklet.

Sponsor Name: All Business & Commercial Recycling, LLC**Nearest Town:** North Platte**Project Name:** Sustaining Residential Recycling Throughout Western Nebraska**Project No:** 20-217**Amount Requested:** \$275,000.00**Term of Request:** 1**Review Group:** Waste Management

This project is designed to sustain city, town and village (municipalities) residential recycling initiatives in Western Nebraska by providing a major "hub & spoke" location and building sufficient to handle this project. Presently municipalities are struggling to sustain their existing residential recycling programs independently. The residential recyclables being accepted are cardboard, paper/newspaper/magazines, #1 & #2 plastics, tin cans and aluminum cans. #3-#7 plastics will be accepted if they are collected separately from #1s & #2s. The new facility site will be located in North Platte which is centrally located within Western Nebraska with excellent access to major highways and interstates. This project will ensure that residential recycling is processed, sorted and consolidated more cost-effectively and that residential recycling continues to be sustainable and feasible in Western Nebraska. This project will reduce landfill usage and save municipalities transfer station/landfill fees. It is designed to be an ongoing part of our operation. The City of North Platte and KNPLCB, are partnering on this project for the City of North Platte's residential recycling initiative. Their support includes servicing, promoting and on-going education for residential recycling in North Platte. ABC Recycling will sustain residential recycling initiatives by overseeing management and development of this project.

Sponsor Name: Alliance for the Future of Agriculture in Nebraska (AFAN)**Nearest Town:** Lincoln**Project Name:** Leopold Conservation Award Video Project**Project No:** 19-169-2**Amount Requested:** \$15,000.00**Term of Request:** 2**Review Group:** Statement of Intent

In his book, A Sand County Almanac, Aldo Leopold called for an ethical relationship between people and the land they own and manage. Since 2006, the Nebraska Leopold Conservation Award (LCA) has been presented to families who internalize this land ethic and are dedicated to leaving their land better than they found it. The LCA Video Project captures the landowners' ethic in their own words, giving recipients an opportunity to share their story. With online media becoming the primary source from which most Americans receive information, visual media are essential for not only archival purposes, but for educating the general public on conservation practices occurring every day in Nebraska. Aside from actually setting foot on these operations, these videos are the next best way to experience the exceptional efforts of these agricultural families. The project involves a full day of crew time interviewing the landowner and filming their conservation practices. The video will be professionally produced first as a stand-alone piece shown during speaking engagements, conventions, the Nebraska State Fair's Grain Bin Theater (shown year-round) and trade shows, and second to be placed on the Foundation's YouTube channel, award partner and sponsor websites, and other online video outlets. THIS PROJECT WAS FUNDED \$15,000 IN 2019 WITH THE INTENT TO FUND UP TO \$15,000 IN YEAR TWO AND \$15,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Angels on Wheels Inc (Cross Training Center)**Nearest Town:** Omaha**Project Name:** Electronic Recycling**Project No:** 20-212**Amount Requested:** \$159,452.00**Term of Request:** 1**Review Group:** Waste Management

The funds from this grant will be used towards the cost of managing 33 electronic collection events and to process the collected items in a manner that conforms to our zero landfill policy. The collection events will be open to the public and will be strategically placed in the Omaha metro area and the surrounding areas. We collect out-of-service electronics including computers, consumer electronics, large appliances and other out-of-service equipment. Personal computers and other items that have useful life are refurbished for continued use. Items that do not have any useful life are dismantled by hand and the materials are sorted into like commodities and sold. Our program assures that these items do not reach landfills and toxic materials such as mercury, lead, copper and other hazardous substances do not contaminate our ground. Angels on Wheels is a non-profit corporation that operates the Cross Training Center (CTC) where we provide work experience and vocational training for disadvantaged and under educated youth and adults. Our recycling and refurbishing program provides direct hands-on work experience for our clients and any proceeds from commodities or products are used to support the mission.

Sponsor Name: Bazile Groundwater Management Area**Nearest Town:** Norfolk**Project Name:** Development of Research and Demonstration Sites in the BGMA for Groundwater Nitrate Reduction**Project No:** 19-146-2**Amount Requested:** \$209,500.00**Term of Request:** 2**Review Group:** Statement of Intent

Located in northeastern Nebraska, the Bazile Groundwater Management Area (BGMA) was formed collaboratively between the Lower Elkhorn Natural Resources District (NRD), Upper Elkhorn NRD, Lower Niobrara NRD, Lewis and Clark NRD, and Department of Environmental Quality to address high nitrate levels in the area. Since its formation in 2013, the BGMA has been dedicated to increasing education of agricultural producers and increasing the implementation of best management practices. To further this effort, the BGMA has partnered with the University of Nebraska – Lincoln Extension and the Nebraska Water Center, part of the Daugherty Water for Food Global Institute at the University of Nebraska to design the proposed project. This project will develop three advanced nitrogen and water management research and demonstration sites, conduct annual field days and educational meetings, and provide an analysis of the success of various water and nitrogen application methods utilized. Through innovative education and demonstration, this project will encourage widespread adoption of improved practices, positively impacting ground and surface water quality and soil management. This project is a vital step forward in stabilizing, and eventually reducing, nitrate levels within the BGMA as experts in natural resource management, with the help of NET, target this serious issue. THIS PROJECT WAS FUNDED \$228,500 IN 2019 WITH THE INTENT TO FUND UP TO \$209,500 IN YEAR TWO AND \$209,500 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Benson Plant Rescue / Community Produce Rescue**Nearest Town:** Omaha**Project Name:** Building Our National Outreach**Project No:** 20-211**Amount Requested:** \$167,500.00**Term of Request:** 1**Review Group:** Waste Management

BPR-CPR seeks \$167,500 ET funding to purchase real estate developed over 7 years. BPR-CPR founded 1999—offshoot of Benson Garden Walk. Our all-volunteer neighborhood project functioned first 14 years on part-time, seasonal basis from 3 adjoining back yards. Customer clientele primarily minority and low income, reflecting the diverse neighborhood. Obtained 7224-7230 Maple street location in 2012, renting from Centering Corporation and operating year-round. Developed extensive landscaping and 2 major mural projects on site, beautifying entire neighborhood. Purchased north adjoining lot in 2014. Developing it as rescue nursery with plans to design and build a LEED certified “Green House” when funds allow. BPR-CPR has evolved a proven environmental model for turning “trash” into treasure, using proceeds from rescue plant sales to fund FREE distribution of produce to other nonprofits, refugee families, and food pantries while donating over \$70,000 to Omaha Public library. BPR-CPR currently numbers 2,119 Members, 2,785 Newsletter Friends, 4,901 Facebook Friends, and 1313 Instagram followers. BRR motto, “Growing Community, Not Just Plants.” CPR motto, “Waste Not, Want Not.” Recipient of 2 national, 1 state, and 3 local awards. Securing this home base will allow BPR-CPR to engage with a national audience.

Sponsor Name: Best Buy Signs & The Omaha Bus Bench Program**Nearest Town:** Omaha**Project Name:** Environmental Public Awareness Campaigns**Project No:** 20-152**Amount Requested:** \$110,485.00**Term of Request:** 3**Review Group:** Education

The goal of this project is to elevate the public’s awareness of issues that affect our environment and increase bus ridership. This project will further encourage the public - bus riders, pedestrians, and motorists - to do what they can to help our environment through a series of environmental awareness campaigns across the City of Omaha. For this project, 40 bus benches would be secured and placed across Omaha where bus benches are needed. Adding a bench at a bus stop significantly increases the use of public transportation helping to reduce our carbon footprint. Adding public messages to these benches speaks important messages to an average of 40,000 passersby daily per bench. The messages will include “Don’t Litter”, “Water Runoff”, “Public Transportation”, “Recycle”, “Invasive Species, and “Water Conservation”. These messages will further encourage and educate the public about the environment in addition to the public transit system. So, this project will reinforce that message and others while reaching more people than just those riding the bus system. People walking by and driving by will also see the messages and be reminded of what impact we as humans have on the environment and what we can do to help the environment.

Sponsor Name: Beyond School Bells**Nearest Town:** Lincoln**Project Name:** Nebraska Youth Conservation Initiative**Project No:** 20-174**Amount Requested:** \$100,000.00**Term of Request:** 3**Review Group:** Education

Beyond School Bells (BSB) is Nebraska's statewide afterschool and summer learning network. We believe that learning does not end after the school bell rings. Our network is made up of afterschool providers across the state serving tens of thousands of Nebraska's K-12 youth with quality educational experiences, preparing them for school, careers, community and life. Over the past three years, BSB has built partnerships with key conservation, environmental, education and agricultural organizations and businesses to design, prototype and field test a series of hands-on and work-based environment and conservation learning experiences, which: introduce youth to the diverse ecosystems that make up our great state; engage youth in helping to solve real world environmental challenges in their own backyard; expose youth to future careers in conservation, agricultural, water management and renewable energy; and bridge the urban rural divide through statewide student exchange and virtual learning opportunities. Building on these experiences, BSB is expanding our initiative to reach more youth, have a positive impact on more native habitat, design additional conservation experiences and engage new business, nonprofit and postsecondary partners. Our ultimate goal is to help build the next generation of conservationists and community leaders as climate and ecology become increasingly vital for our wellbeing.

Sponsor Name: Bird Conservancy of the Rockies**Nearest Town:** Scottsbluff**Project Name:** Expanding Environmental Literacy and Stewardship through Outreach and Education in the Nebraska Panhandle**Project No:** 19-133-2**Amount Requested:** \$38,206.00**Term of Request:** 1**Review Group:** Statement of Intent

Bird Conservancy of the Rockies' mission is to conserve birds and their habitats through science, education and land stewardship. In Nebraska, we fulfill this mission through conservation education programs in partnership with Nebraska Game and Parks Commission (NGPC). With your support we will continue to increase environmental literacy and promote stewardship, reaching 1,550 Nebraska residents. Bird banding stations and Bioblitzes reach school children and families, and take place in two Biologically Unique Landscapes. Environmental Service Learning Programs reach students in elementary and middle school. Our request to the Nebraska Environmental Trust is \$79,712 over two years, less than half of the project's \$218,487 total cost. Your support will fund direct project expenses, and an education assistant to help meet the need of our growing programs. Bird Conservancy and NGPC will provide funds for salaries, benefits and operating costs. Program costs are low thanks to collaboration and support from our local partners: Chadron State College, North Platte Natural Resources District and the NGPC. Our free programming fulfills an unmet need for environmental education programs and services in Western Nebraska by empowering communities to care for local natural resources, and by inspiring the next generation of Nebraska conservation stewards. THIS PROJECT WAS FUNDED \$41,506 IN 2019 WITH THE INTENT TO FUND UP TO \$38,206 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Blue Lincoln Recycling**Nearest Town:** Lincoln**Project Name:** Material Processing Facility Equipment**Project No:** 20-158**Amount Requested:** \$295,100.00**Term of Request:** 1**Review Group:** Waste Management

Blue Lincoln Recycling, LLC, is seeking funding support for construction and demolition material processing facility equipment. Our recycling targets construction and demolition debris; specifically asphalt shingles, asphalt pavement, plastics, woods, concrete, metals, and cardboard. The Lincoln Landfills are accepting in excess of 70,000 tons of construction and demolition waste annually, approximately 30% of Lincoln's total solid waste. It is our initiative to keep these recyclables out of the landfill. To effectively operate our site, BLR will utilize funding for the purchase of an industrial drive-on platform scale, material processors, and heavy equipment. It is our objective to aid in land conservation by keeping 33% (23,500 tons) of Lincoln's recyclable construction and demolition materials out of the city landfill in our first year, and 5% annually thereafter conservatively, provide quality recycled materials, benefit local companies by decreasing the cost of material disposal, and provide local employment. BLR will be Lincoln's first construction and demolition only disposal recycling site. Our site allows contractors and waste haulers the opportunity to dump their unsorted, construction and demolition waste for recycling at one site. Assuming all construction and demolition material is recyclable, this will be Lincoln's first step at eliminating the construction and demolition waste.

Sponsor Name: Board of Regents-University of Nebraska-Omaha**Nearest Town:** Omaha**Project Name:** Maverick Solar Pavilion and Virtual Classroom**Project No:** 20-199**Amount Requested:** \$524,542.00**Term of Request:** 1**Review Group:** Air Quality

This project will initiate a solar energy demonstration in a highly visible and accessible UNO campus location consisting of comparative solar panel arrays, associated sustainable landscape elements, interactive educational exhibits, and an innovative, people-friendly outdoor plaza partially shaded by solar panels. Addressed NET funding categories include air quality (greenhouse gas reduction), habitat, and surface water. The demonstration will facilitate applied solar energy research and analyses for faculty- and teacher-supervised UNO and K-12 students. Additionally, it will enhance public awareness and knowledge of solar energy equipment and technologies; sustainable pollinator habitat integrated under and adjacent to panels; and conservation of stormwater runoff from plaza paving, solar panels and landscape areas. Anticipated audiences include K-12 teachers; STEM and science teachers-in-training; UNO students from a variety of disciplines (engineering, physics, environmental studies, geography, etc.); regional K-12 students, campus faculty and staff, and community members interested in solar energy. Evaluation metrics for the project will include documented educational outcomes through workshops, seminars, and guided tours for teacher and student audiences; outcomes from student-led research projects assessing solar data, environmental conditions, etc.; and evaluation/documentation of increased public awareness of solar energy technology and benefits through social media connections accessed in a virtual classroom setting.

Sponsor Name: Board of Regents-University of Nebraska-Omaha**Nearest Town:** Omaha**Project Name:** Development of Nebraska Environmental DNA Center: Protecting Statewide Biodiversity and Environment**Project No:** 20-213**Amount Requested:** \$463,622.00**Term of Request:** 3**Review Group:** Rural Habitat

Biodiversity loss is an issue that affects many aspects of human life; yet knowing which species occur in an environment is difficult. Current environmental DNA (eDNA) based technology gives us the ability both to detect endangered or invasive species and to assess functions of aquatic and terrestrial ecosystems. The lack of an eDNA sequencing facility has hindered much of the environmental research and management practice within Nebraska. The goal of this proposal is to develop an Environmental DNA Center at the University of Nebraska at Omaha (UNO) that will help protect Nebraska's natural resources. Specific activities include 1) providing DNA sequencing and bioinformatics services to facilitate environmental studies, 2) creating a baseline genomic resource to document plant and animal species within the state, and 3) training a workforce with eDNA technology to support the state's research and conservation efforts. Funding to date includes an award from the National Science Foundation for a next-generation sequencing instrument. Researchers from statewide universities and governmental agencies provide support to use services of such a Center. UNO is committed to long-term operation of the Center, which will allow significant cost savings in eDNA analyses and ultimately benefit the state's environmental protection and biodiversity conservation programs.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Student Integrated Forest & Prairie Management at Cedar Point Biological Station**Project No:** 19-101-2**Amount Requested:** \$13,842.00**Term of Request:** 2**Review Group:** Statement of Intent

We request up to \$49,954 to supplement the habitat and natural resource management program at UNL's Cedar Point Biological Station (CPBS); to support 10 or more student intern stipends (habitat management internships) over 3 years and 4 summer seasons and purchase associated equipment / supplies. NET funding allows CPBS to push boundaries and try new approaches to habitat and resource management. Over the past several years with help from NET we have had great success removing and processing redcedar trees into a wide variety of products that are immediately useful for the facility. We currently demonstrate that redcedar is a resource and far more than an invasive plant that needs to be removed. 20% of this funding will allow the purchase of additional equipment and supplies; including a used sawmill, repairs and parts for existing equipment used to manage redcedar removal and processing, as well as assorted gloves, protective equipment and hand tools. These supplies are used by the student interns, staff and many volunteers; and facilitate hundreds of hours of volunteer time removing redcedar trees, improving trails, and using resources generated for various sustainable projects around the CPBS facility. Visit <http://cedarpoint.unl.edu/redcedar> to learn more. THIS PROJECT WAS FUNDED \$21,318 IN 2019 WITH THE INTENT TO FUND UP TO \$13,842 IN YEAR TWO AND \$14,794 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Developing a decision-support tool for the successful incorporation of cover crops into Nebraska cropping systems**Project No:** 19-138-2**Amount Requested:** \$41,530.00**Term of Request:** 2**Review Group:** Statement of Intent

Increasing cover crop acreage on annual croplands in Nebraska represents a significant opportunity to ensure soil and water sustainability with a more variable climate. Less than 2% of the 19-million cropland acres in the state are utilizing the practice, and producers cite barriers associated with timing of establishment as well as a need for more regionally specific information on a variety of cover crop species. The goals of this project are to cost effectively synthesize existing data on cover crops to create a decision-support platform, through the formation of an expert cover crop producer network, representing a novel educational model to share information. The producer network will ensure that the tool addresses the most pertinent producer needs and will be designed to support a range of locations, climates and soil types across the state in evaluating tradeoffs associated with crop yields and cover crop biomass. The tool will also quantify potential forage production and forage quality, as well as environmental improvements associated with reduced erosion, decreased nitrate loss, increased carbon and enhanced water storage. This project will benefit crop and livestock producers across the state and ultimately lead to greater environmental outcomes for the general public of Nebraska. THIS PROJECT WAS FUNDED \$34,900 IN 2019 WITH THE INTENT TO FUND UP TO \$41,530 IN YEAR TWO AND \$41,180 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Low-cost Biological Odor Treatment Using an Adsorption/ Desorption Concentrator Unit for Reducing Sulfur Emission in Nebraska**Project No:** 19-159-2**Amount Requested:** \$97,662.00**Term of Request:** 1**Review Group:** Statement of Intent

The State of Nebraska has an ambient air quality standard for total reduced sulfur (TRS), which consists primarily of hydrogen sulfide (H₂S). This application proposes to design and test an economical odor treatment system that will contribute to lower ambient H₂S and other gas phase pollutants. The novel concept of the concentrator has the potential for new patents and a broad implementation. Using adsorption/desorption processes, concentrated H₂S will result in a smaller reactor volume for reduced direct and operational costs in a bio-trickling filter (BTF). The concentrator will consist of three-adsorption-beds for (1) adsorbing the contaminant, (2) desorbing the loaded bed, and (3) drying the adsorbing bed. Tripling the H₂S concentration will result in reducing about 40% of the cost in the biological treatment. The project consists of laboratory experiments and field demonstrations at the Loup Central Landfill to test efficacy. The laboratory experiments will examine the cyclic adsorption and desorption rates of H₂S by evaluating raw zeolite and activated carbon manufactured from bituminous and coconut sources in granular, powder, and fibrous forms. Regeneration of H₂S will be tested by water and air; water will be introduced at different temperatures, pHs, and flowrates. THIS PROJECT WAS FUNDED \$97,662 IN 2019 WITH THE INTENT TO FUND UP TO \$97,662 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Protecting the terns and plovers of Nebraska and mentoring the next generation**Project No:** 19-162-2**Amount Requested:** \$21,355.00**Term of Request:** 2 **Review Group:** Statement of Intent

Management of Piping Plovers and Interior Least Terns happens in areas used by people for jobs, housing, and recreation. Balancing the needs of private citizens, property owners, industry, and these birds is a challenge. Bridging the gap between birds and people is what the Tern and Plover Conservation Partnership (TPCP) does best. We work at sand and gravel mines, lakeshore housing developments, and sandbars along the lower Platte, Loup, and Elkhorn rivers. The recovery and delisting of these birds largely depends on the productivity of birds nesting at these sites. The TPCP is a team of experienced biologists and students implementing our management and monitoring efforts. The TPCP immerses students in the conservation situations they will experience in their careers and teach them how to work cooperatively for the benefit of species and people. The TPCP helps ensure the survival of these two species and the economic success of the people who share their landscape. We ask NET help us continue our work by supporting our students for three years. There is a continuing need for the TPCP in protecting people, terns, and plovers, as well as in training the next generation of conservation professionals. THIS PROJECT WAS FUNDED \$20,841 IN 2019 WITH THE INTENT TO FUND UP TO \$21,355 IN YEAR TWO AND \$21,884 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Delivery of Watershed Science Education to Decision Makers - A Multi-Agency Collaboration**Project No:** 19-173-2**Amount Requested:** \$71,751.00**Term of Request:** 2 **Review Group:** Statement of Intent

A watershed science training program will be delivered to water resources decision makers in Nebraska. Programming will be delivered collaboratively, leveraging the strengths and educational missions of partner agencies. The program will provide environmental benefits through strengthened natural and water resources management, delivering approximately \$112,500 in savings to Nebraskans conservative estimate, details below). The initial audience is NRD board members, building on a robust needs assessment and pilot materials delivered via www.NebraskaWatershedScience.org. We envision a much broader audience developing over time. The project consists of (1) assessing existing water resources education efforts from water resources entities in Nebraska to find synergies between programs (2) development of a watershed science training program for NRD board members and related adult stakeholders (e.g. elected officials, water users) which utilizes online module development and facilitated education with UNL Extension Educators and NRD staff, and (3) robust evaluation of learning outcomes and impact of the training program. The collaborative program involves the Nebraska Association of Resources Districts, individual NRDs, Nebraska Department of Environmental Quality, Nebraska Department of Natural Resources, and the University of Nebraska. Collectively, in-kind contributions account for >50% of the project budget. THIS PROJECT WAS FUNDED \$74,852 IN 2019 WITH THE INTENT TO FUND UP TO \$71,751 IN YEAR TWO AND \$78,601 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Master Naturalist Program: Expanding Conservation Capacity**Project No:** 19-184-2**Amount Requested:** \$49,179.00**Term of Request:** 1**Review Group:** Statement of Intent

The Nebraska Master Naturalist (MN) Program provides citizens an opportunity to contribute to natural resource conservation through meaningful, science-based volunteer experiences. The MN Program began in 2009 through a partnership that recognized Nebraska's conservation agencies and organizations have limited resources. Today, the MN Program has 415 volunteers, or Certified Master Naturalists, which actively contribute to at-risk species conservation, restore native habitats, prevent degradation of waterways, and improve waste management. Master Naturalists have contributed 63,141 hours on over 6,000 projects in Nebraska which translates to a value of \$1,558,951 in salary savings to natural resource agencies and organizations. The program has reached over 500,000 individuals in Nebraska. The Master Naturalist Program's workforce is growing and evolving to meet the increasing requests for their service. The goals of this proposal are to continue growth while moving toward a sustainable future. This proposal will increase the number of new Certified Master Naturalists by 60; support the established MN Community through continuing education on advanced topics; conserve Nebraska's natural resources by providing at least 3,500 hours of volunteer service that support at least 25 conservation organizations or agencies, and reach over 10,000 individuals by informing and educating citizens about natural resource conservation. THIS PROJECT WAS FUNDED \$48,321 IN 2019 WITH THE INTENT TO FUND UP TO \$49,179 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Water Use and Soil-Water Storage Effect of Individual & Mixed Cover Species and Impacts on Soil Quality Variables**Project No:** 19-186-2**Amount Requested:** \$153,026.00**Term of Request:** 2**Review Group:** Statement of Intent

Cover cropping in row crops has been suggested as a favorable conservation practice in improving soil chemical and physical characteristics. However, the magnitude of the impacts of cover crops on soil-water dynamics (i.e., soil-water storage) and soil quality can exhibit significant variation between the counties, cover crop species, soil textural, chemical, and physical properties; management practices, and climatic conditions. Furthermore, these impacts can vary when the cover crops are planted with individual species vs. in mixed forms. In Nebraska, there is a significant lack of information and scientific and research-based data on the aforementioned questions that can be an impediment for cover crop adoption and also for accurately determining the impacts of individual and mixed cover crops species on soil-water and soil quality. Quantification of cover crop water use can also aid in local and regional water balance analyses, projections, planning, and allocations that can result in more robust water balance determinations on a statewide and regional basis, but these kinds of data and information do not currently exist. This project will quantify and demonstrate the water use (in all 93 counties) and impact of individual and mixed cover crops species on soil quality parameters in corn-cover crop/soybean-cover crop rotations. THIS PROJECT WAS FUNDED \$150,846 IN 2019 WITH THE INTENT TO FUND UP TO \$153,026 IN YEAR TWO AND \$87,884 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Scottsbluff**Project Name:** Beneficial impact of injected air into a subsurface drip irrigation system on plant growth and uptake of emerging antibiotics using runoff from a feedlot**Project No:** 19-192-2**Amount Requested:** \$104,847.00**Term of Request:** 1**Review Group:** Statement of Intent

Feedlot runoff occurs from open feedlot operations during heavy rainfall or snow melts. Runoff from feedlots contains pollutants that can degrade surface and groundwater quality. In this proposal, we will collect and utilize runoff from feedlot as irrigation water source of a subsurface drip irrigation (SDI) system for crop production in western Nebraska. In addition, we will inject air into the SDI to evaluate improvements on quality of the recycled runoff, uptake of antibiotics into food crops, and crop yields. Field investigations will be conducted at the Panhandle Research and Extension Center in Scottsbluff. Corn and sugar beet will be grown with and without injected air using feedlot runoff. Crop growth, yield data, water quality, sorption, leaching and uptake of antibiotics will be monitored throughout the study. The outcome of this study may provide a best management practice to treat feedlot runoff and increase crop yield for corn and sugar beets grown in western Nebraska. THIS PROJECT WAS FUNDED \$182,758 IN 2019 WITH THE INTENT TO FUND UP TO \$104,847 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Milkweed in the Classroom**Project No:** 19-202-2**Amount Requested:** \$18,069.00**Term of Request:** 2**Review Group:** Statement of Intent

This proposal outlines a plan to develop a pilot program that will engage a minimum of 45 schools throughout Nebraska in growing milkweed plants in the classroom, educate a minimum of 1,125 students about the importance of pollinators and pollinator habitat, and establish a minimum of 2,000 milkweed stems throughout the state. More importantly, this proposal aims to motivate participants to play an active role in the development of pollinator habitat and the advocacy of sound conservation practices that impact soil, water, air, and wildlife. Pheasants Forever (PF), the University of Nebraska (UNL) and the Prairie Plains Resource Institute (PPRI) will accomplish these objectives by recruiting schools throughout NE to participate in the Milkweed in the Classroom program. Classrooms will be given a kit that will include everything needed to grow milkweed plants in the classroom. PF, UNL and PPRI will provide training to participating schools on how to grow milkweed plants from seed. In addition, teachers will be provided curriculum that will be created at UNL that can be used in conjunction with the interactive activity of growing milkweed plants. Lastly, students will plant milkweed plants in their local communities and monitor milkweed plots to evaluate success. THIS PROJECT WAS FUNDED \$17,835 IN 2019 WITH THE INTENT TO FUND UP TO \$18,069 IN YEAR TWO AND \$19,259 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Citizen Science: A valuable approach for monitoring groundwater quality in the Bazile Groundwater Management Area**Project No:** 19-205-2**Amount Requested:** \$86,939.00**Term of Request:** 1**Review Group:** Statement of Intent

The Bazile Groundwater Management Area (BGMA) represents the first groundwater-focused management plan in the nation to address nonpoint source pollution. Collection of shallow domestic well-water quality data is a promising management practice for identifying water quality problems and protecting ground water quality, especially for domestic self-supplied households' drinking water needs, in areas at risk for nitrate contamination. We propose to involve high school students and their teacher advisors to conduct a two-year monitoring project focusing on groundwater quality. The current study will increase groundwater awareness among high school students and their families in the BGMA, and train teachers and students to effectively conduct groundwater quality data collection. Five high schools, Wausa, Orchard, Creighton, Plainview, and Osmond, located within the BGMA will participate in the study. FFA chapters and science clubs will participate in the study. Approximately 30 rural wells per school will be identified by the students in collaboration with the four Natural Resources Districts. Basic water quality parameters (i.e., pH, electrical conductivity), major anions/cations (i.e., nitrate, nitrite, phosphate, calcium), metals (i.e. uranium, iron, arsenic), pesticides, and bacteria will be tested using field test kits and laboratory methods. THIS PROJECT WAS FUNDED \$86,038 IN 2019 WITH THE INTENT TO FUND UP TO \$86,939 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Increasing soil nutrient and water retention due to application of iron coated biochar**Project No:** 20-120**Amount Requested:** \$267,131.00**Term of Request:** 3**Review Group:** Soil Management

Increasing water, nitrate, phosphate, and carbon retention in soil is key to prevent soil degradation, to enhance water quality, and to improve resource efficiency in agroecosystems. However, soil management options that target the long-term improvements of these soil characteristics are still missing. This project will demonstrate how the application of biochar from encroached redcedar that is coated with iron will increase the retention and plant availability of phosphate, nitrate, and water while also enhancing soil carbon storage and the economic value of this surplus biomass. Field demonstration over a period of three years will be conducted to quantify the retention effects of designer biochar for corn systems amended with inorganic and organic nitrogen fertilizer and to clarify the effect of fertilization reduction on crop productivity and nitrate loss. The data gained will allow for a cost-benefit analysis to assess the economically most efficient way to use designer biochar for agricultural soil. The overall goal is to design a soil management strategy that sustains productivity while increasing resource efficiency and environmental quality for fertilized cropland in Nebraska. Extension and outreach efforts will be directed toward increasing adoption of this management practices to prevent soil degradation and to strengthen sustainable productivity.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Improving Water Quality and Surveying Fish populations using eDNA in Nebraska**Project No:** 20-121**Amount Requested:** \$312,964.00**Term of Request:** 3**Review Group:** Water

The long-term implications to water quality and habitat availability in rivers following extreme flood conditions are not well understood. Particularly unknown are the threats to human and animal health due to changes in microbial communities, pathogens and the extent to which invasive species expand into new systems. We aim to better understand the relationship between physical and chemical aspects of water quality and the corresponding biological response across Nebraska following extensive flooding in 2019. Specifically, UNL has partnered with the Nebraska Department of Environment and Energy (NDEE) and Nebraska Game and Parks Commission (NGPC) to assess the microbial community and pathogen load as well as assess the current extent of bighead and silver carp, and zebra/quagga mussels across Nebraska. We will utilize water samples collected from NDEE's monthly, statewide sampling regimen at 101 sites to gather information on the microbial community and invasive species through a technique that relies on cells and/or DNA found in the water column. This project will provide one of the first state-wide assessments of both the microbial community and invasive species in the country. Similarly, this project will provide valuable information for microbes and invasive species as a critical component of maintaining good water quality.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Improving Soil Health Using Heat-Treated Manure**Project No:** 20-123**Amount Requested:** \$195,866.00**Term of Request:** 2**Review Group:** Soil Management

Maintaining and improving soil health is crucial to sustainable agricultural production. Organic fertilizers can add nutrients to soil and improve soil structure. Our overall objective is to develop and demonstrate a heat-based technology using slabs made of conductive concrete (CC) to produce quality organic fertilizer using cattle manure. The heat generated from CC slabs is expected to raise the temperature and lower the moisture content of manure piles, effectively inactivating pathogens and holding nutrients in their less soluble forms to prevent loss to runoff. The low moisture content can also reduce the cost of transportation of treated manure from livestock facilities to croplands. Three specific objectives include: (1) Quantify the effects of heat from conductive concrete slabs on pathogenic bacteria and soluble/insoluble phosphorus concentrations in cattle manure piles; (2) Characterize the impacts of heat-treated cattle manure on the physical, chemical, and microbiological properties of soil following land application; (3) Demonstrate this technology to producers and extension educators by collaborating with USDA Natural Resource Conservation Services (NRCS). The agricultural, environmental, and economical benefits of the proposed technology will be appealing to producers, and the simple and low-cost attributes of the proposed technology will make it easy to be adopted by producers.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Blooms for Habitat (Flores Para El Habitat): Nebraskans transforming landscapes to help pollinators and to improve community landscapes**Project No:** 20-138**Amount Requested:** \$313,285.00 **Term of Request:** 2 **Review Group:** Education

This project is a two-year initiative with the primary goal of increasing the diversity and abundance of insect pollinators in Nebraska communities. The ecological health of community landscapes will be improved via greater use of native plants, promotion and planting of pollinator-friendly habitat, and sustainable management techniques, and through extensive outreach and education programming with a special emphasis on Spanish speakers. Specific outcomes: Development and distribution of 30,000 plants through an innovative Bloom Box and community habitat programs. Implementation of over 400 publicly-accessible pollinator-friendly landscape projects in partner communities at schools, parks, schools, and other public places. Increased public awareness about the benefits of biodiverse and healthy environments including sound resource management practices. Implementation of projects in at least 20 communities. Partner communities will achieve designation as “Greener Nebraska Towns” requiring ongoing outreach and activities related to ecologically-sound community greening. 8,000 of people of all ages will be reached via education and outreach efforts. Evaluation activities will gauge effectiveness of the work and to inform others about how best to conduct future endeavors. Pollinator-oriented education and outreach partnership will be established with at least 10 key nurseries and landscape professionals across the state.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Improving statewide performance of conservation investments on Eastern redcedar invasions**Project No:** 20-139**Amount Requested:** \$238,000.00 **Term of Request:** 3 **Review Group:** Education

Recent partnerships among scientists, agencies, and large landowner coalitions have resulted in a growing interest for a statewide plan to the woody encroachment problem. A sense of urgency has led to calls for coordination of a statewide planning initiative that strategically protects the last remaining large intact grassland regions in the central Great Plains and halts the continued expansion of woody encroachment at scales necessary for sustaining grassland wildlife. We are seeking funds to hire a coordinator that will lead the development of a statewide plan that builds resilience in grassland landscapes and improves the performance of conservation expenditures targeting Eastern redcedar invasions. The coordinator will build upon the combined efforts of NGPC and the University of Nebraska, which have resulted in increased awareness of the scope of this problem, its implications for the profitability, productivity and diversity of working lands in the state, and new ways to strategically target and manage Eastern redcedar invasions. As a result, we are poised to co-produce – across a statewide network of private and public partners – the first statewide management plan on Eastern redcedar that recognizes regional trends and challenges while catering to local management contexts.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Water Reuse for Agriculture and Industry in Rural Western Nebraska**Project No:** 20-140**Amount Requested:** \$254,677.00**Term of Request:** 2**Review Group:** Water

Year to year fluctuations in supply, increasing pressure to release more water to rivers, and aging canal infrastructures are decreasing the water available even in areas where surface water is available. The need for alternative sources of water is dramatically increasing especially in western Nebraska where the amount of precipitation drops drastically. Where irrigation water is needed for crop production, wastewater (industrial, human, animal) treatment and reuse represent a viable alternative. We propose to 1) conduct an assessment of wastewater quantity, quality, and safety from human, animal, and related industries in the seven western natural resource districts, NRDs - the three Republican, South and North Platte, Upper Niobrara-White, and Middle Niobrara, 2) evaluate economical options for water treatment that can be deployed to use water for agricultural or industrial use, and 3) conduct a field investigation at one NRD for validating the proof of concept. The project will evaluate water reuse options and advise communities, industries, and farmers about opportunities in their area. Nutrients (e.g., nitrogen and phosphorus), chemical oxygen demand, total solids, bacteria, micropollutants (e.g. antibiotics) at the different wastewater facilities as well as their removal using different sustainable and economical treatments will be analyzed throughout the study.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Developing a Comprehensive and Efficient Recycling Operation **Project No:** 20-141**Amount Requested:** \$199,962.00**Term of Request:** 1**Review Group:** Waste Management

The University of Nebraska-Lincoln (UNL) is committed to promoting sustainable lifestyles; creating a sustainable campus with smart and efficient campus operations and business practices. In our continuous pursuit of improving the quality of life for Nebraska and beyond, we have been recycling on average at 41.5 percent over the last five years. However, our goal is to meet the City of Lincoln's recycling goal of 50 percent by 2022. Our internal surveys demonstrate the need for better signage, uniform recycle bins and regular service. Through the Nebraska Environmental Trust (NET) grant, UNL aims at developing a comprehensive and efficient recycling operation by purchasing 450 recycling stations, worth a total of \$769,835. UNL is asking for 25 percent of the total project cost from NET. The goals of the project are multiple: provide a standardized set of guidelines to all personnel at UNL for recycling and solid waste management; provide a standardized set of recycling stations at pre-identified locations on campus; provide associated standardized signs, posters and messaging; and, to engage and educate university faculty, staff and students about better pro-environmental behavior like recycling. The Office of Sustainability (OS) will oversee the implementation of this project.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Surface Water Nutrient Removal in Eutrophic Ponds Using Floating Treatment Wetlands in Nebraska**Project No:** 20-144**Amount Requested:** \$301,161.00**Term of Request:** 3**Review Group:** Water

Harmful algal blooms have lasting health implications on waterbodies in both agricultural and urban aquatic ecosystems. Land requirements often constrain the implementation of on-site nutrient management practices. A promising and innovative solution, which requires no land and potentially will reduce water treatment costs, is floating treatment wetlands (FTWs) with lanthanum. We have observed substantial nutrient, which enhance harmful algal blooms, removals at the microcosm and mesocosm scales; therefore, we propose the installation of four full-scale demonstration sites. The four FTWs will be installed in various land use and nutrient loading regions with the following objectives: (1) Determine the nutrient removal efficacy of FTWs, (2) Assess the annual and seasonal impacts on the sustainability and habitat potential of FTW systems, and (3) Identify ideal placement of FTWs to reduce overall implementation costs and enhance habitat for aquatic life and pollinators. The proposed project will provide environmental benefits for surface water quality, habitat, and greenhouse gas emissions. We are partnering with Teledyne ISCO, Nebraska Games and Parks Commission, the Lower Platte NRD, and Lincoln Parks and Recreation to cover costs associated with sampling equipment, technician and faculty time, and site habitat assessments for a total cost of \$248,241.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Detecting Atrazine Dissipation and Evaluating Herbicide Programs without Atrazine for Weed Control in Corn and their Environmental Impact Quotient: Research and Extension**Project No:** 20-157**Amount Requested:** \$146,174.00**Term of Request:** 3**Review Group:** Water

Project Summary: Corn is number one crop in Nebraska grown on 9 to 10 million acres annually. Atrazine is very commonly used herbicide for weed control in corn and sorghum. Although banned in the European Union in 2004, atrazine is one of the most widely used pesticides in the USA. Due to increasing concern of surface and ground water contamination of atrazine, it is possible that US EPA may restrict atrazine use. That will require alternative herbicides for weed control in corn. This project primarily belongs to "Surface and ground water" category of the NE Environmental Trust

Objectives: To determine atrazine dissipation in corn field in silt loam soil in southcentral Nebraska. To evaluate herbicide programs without atrazine for weed control in corn in multi-year field experiments. To evaluate environmental impact quotient (EIQ) of herbicide programs without atrazine.

Extension/ Collaboration: Extension Field Days will be organized to disseminate results; Partnership has been developed with Upper Big Blue NRD, USDA-NRCS, and Nebraska Department of Agriculture.

Impact: Nebraska has 23,000 corn growers, majority of them are using atrazine based herbicides for weed control. Outcome of this project will reduce atrazine use in Nebraska.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** A buried sensor network for soil nitrate and ammonium monitoring**Project No:** 20-163**Amount Requested:** \$124,088.00**Term of Request:** 3**Review Group:** Water

There is a trend of increasing groundwater nitrate concentrations in Eastern Nebraska which decreases the groundwater quality increasing health risks for the people. Extensive fertilizer application in agricultural lands has been identified as a major cause for this nitrate contamination in the state. Though different NRDs have begun to monitor the high-risk areas and implement management plans, such efforts require costly and frequent sampling of soil and water to ensure the effectiveness. The overall goal of this project is to develop and test a novel soil sensor network which can be buried in soil to monitor NO^3 and NH^4 continuously. Firstly, the capability of optical (UV-VIS-NIR) and ion-selective electrodes will be tested to identify a reliable sensing technology for accurate NO^3 / NH^4 sensing. A sensor network based on the chosen technology will be developed which can be buried underground, communicate and upload data to the Cloud. The developed sensor network will be tested in two NRDs with higher nitrate in groundwater: Lower Niobrara and Central Platte. The data acquired from these systems can serve diverse applications such as identifying trends of contaminant movement, groundwater contamination risks, and monitoring site-specific management plans implemented by NRDs.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Transforming Manure and Cedar Mulch from “Waste” to “Worth” – Part II**Project No:** 20-165**Amount Requested:** \$141,762.00**Term of Request:** 2**Review Group:** Soil Management

Crop fertility and soil management decisions are often based upon a goal of maximizing crop yield. While achieving maximum yield is a worthwhile aspiration, increasing inputs, like fertilizer, to a system at a cost greater than the value of the incremental yield improvement, is a poor financial decision. It also can be a major contributor to nitrate leaching into groundwater and nutrient runoff to surface waters. Where soil has not received organic amendments for many years, soil health and productivity are likely to decline, making nutrient utilization by plants less efficient and soil less resilient to erosion, crusting, ponding and pests. Microbes and organic matter in carbon-based amendments are critical to maintaining good soil structure and function. Two soil amendments known to benefit plant productivity – manure and mulch – are often not utilized in crop systems due to economic, social and behavioral barriers. Demonstrating the value of manure and mulch to cropland under varying management regimes and soil conditions, telling a compelling story about profitability versus yield alone, and delivering consistent educational messages around these topics are critical to increase stakeholder confidence in identifying situations where profitability can be maximized and soil resilience improved with manure and/or mulch addition.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Nebraska extreme weather and climate information system for resilient small communities**Project No:** 20-166**Amount Requested:** \$553,697.00**Term of Request:** 3**Review Group:** Unclassified

In less than ten years Nebraska has been affected by 19 climate extremes with multi-billion losses. These losses do not count more localized extreme events but equally expensive to small communities. Both, multi-billion losses for a region or deep financial wounds for small towns, illustrate our vulnerability to unexpected events driven by interwoven weather and climate phenomena, hydrological processes, infrastructure (water, land, agriculture, energy, ecosystem services, urban) management, and socioeconomic factors. Our goal is to develop and implement an information support system that enhances the resilience of small communities by increasing preparedness and reducing the vulnerability to extreme climate events across the state. The objectives are: (1) to create the analytics of climate-extremes; (2) to expand an architecture of software --initially built to assist disaster managers on flood response— to a real-time extreme-weather and -climate information system for small-communities; (3) to identify the spatiotemporal relevance of (1) and the suitability of (2); and (4) to develop channels of communication with disaster managers and small-community leaders across Nebraska. By the end of three years, the project team will operationalize this decision support tool and provide guidelines for the tools sustained development and growth for small communities in Nebraska.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Direct removal of groundwater nitrate coupling water treatment and algae growth**Project No:** 20-168**Amount Requested:** \$682,094.00**Term of Request:** 3**Review Group:** Water

Nitrate-N (NO₃-N) in drinking water is a health risk in rural Nebraska, where agricultural leaching can lead to well water quantities much higher than EPA regulations allow. While reducing agricultural input is essential in addressing this problem for future generations, it will still take several decades of direct intervention to secure the water supply for many rural areas. We are a public-private partnership researching a biologically-based option for groundwater remediation tailored to smaller rural communities unable to afford large scale reverse osmosis systems. The photo-bioreactors (PBRs) under development are helically arranged glass tube continuous flow systems housed in greenhouses. These optimized growth systems for green microalgae couple NO₃-N removal with algae growth, remediating well water for further use by municipalities. The goal of this project is to build and operate two pilot-scale algae PBRs in order to assess the on-site removal of NO₃-N in field conditions and the re-use of the captured nutrients as a soil amendment. Partnered with the City of Hickman, a greenhouse is under construction at the site of a high NO₃-N well. The data will be mathematically modeled for life cycle economic assessment and used to further refine the PBR under field conditions.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Omaha**Project Name:** Improvement of Recycled Concrete Aggregates (RCA) Properties with CO₂ Treatment for Reusing Construction and Demolition (C&D) Wastes in Nebraska**Project No:** 20-172**Amount Requested:** \$248,733.00 **Term of Request:** 2 **Review Group:** Waste Management

Recycled concrete aggregates (RCA) is a popular replacement for natural stone aggregates. However, the mechanical properties of RCA are known to be inferior to natural aggregates. More importantly, there is an environmental concern due to potential contamination by the RCA-leachate. The goal of this project is to prove the feasibility & marketability of our novel method – utilization of carbon dioxide (CO₂) treatment to improve mechanical and environmental properties of RCA – for strengthening its application to real constructions and thus reducing construction concrete wastes. This project has four objectives: (1) Identify the impact of key parameters on the effective carbonation (CO₂ treatment) of RCA, (2) Quantify the environmental gain of using CO₂-treated RCA, (3) Evaluate the improvement in mechanical properties of CO₂-treated RCA, and (4) Evaluate the field applicability of CO₂-treatment. The project will contribute not only to reducing the cost of demolition waste management but also to reducing the budget to acquire raw materials for new constructions. Therefore, everyone in Nebraska will benefit because the project aims to achieve better construction and demolition (C&D) waste management, preservation of surface and groundwater, and greenhouse gas reduction, which will lead to a better quality of life environmentally and economically.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Omaha**Project Name:** Assessment of Greenhouse Gas Sequestration Resources in the Nebraska Panhandle to Improve Carbon Management Opportunities in Nebraska**Project No:** 20-173**Amount Requested:** \$171,614.00 **Term of Request:** 2 **Review Group:** Air Quality

Carbon capture and storage (CCS), which denotes the separation of carbon dioxide (CO₂) from the emissions of industrial processes and storage of the CO₂ in deep geologic formations, has gained considerable recognition as a promising option to reduce greenhouse gas emissions. And, most electricity in Nebraska comes from burning fossil fuels. Estimates show that CO₂ emission from power and ethanol plants in Nebraska is about 20 million tons per year. Among them, Gerald Gentleman Station (GGS) is scheduled to be equipped with a carbon capture system first, followed by ethanol plants. The project objective is to ascertain CO₂ storage resources in the Nebraska Panhandle, which potential storage capacity has been ignored by most federal-led research efforts. In this project, areal extent, the thickness of possible storage formations, and structural closures as an input to the volumetric calculation will be identified. Moreover, physical and mechanical parameters, such as porosity, permeability, strength, and storage coefficient, will be determined via well-designed laboratory tests and simulations. The goal is to identify 50 million tons of previously unrecognized CO₂ storage capacity in western Nebraska. This project contributes to the “Air Quality” topic by identifying carbon storage resources in the Nebraska Panhandle and near GGS.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Eastern Redcedar Design-Build Microdwelling**Project No:** 20-182**Amount Requested:** \$34,912.00**Term of Request:** 2**Review Group:** Rural Habitat

Eastern Redcedar Design-Build Microdwelling proposal for the NET 2019 grant explores the potential use of eastern redcedar as local, “mass-timber” construction system. We seek funding to develop a demonstration building that resolves concerns about the environmental impact of eastern redcedar in Nebraska. The project aims to accomplish the following: Demonstrate benefits to the economy for local agricultural, construction and forestry industry. Establish a model for harvesting and deployment of ER “in the field” that will resolve the current problem of large distances and harvesting. Demonstrate ER construction can reduce embodied energy in building material cost through season growth, harvesting, milling and charring cycles. Explore its potential as a “mass-timber” product. Explore ER’s potential for new building typologies i.e. new ag buildings, vacation homes and for Microdwelling design. Explore shou-suig-ban charred surface as a sustainable solution to weathering problems and insect infestation. Demonstrate the benefits for architectural education and graduate students at UNL’s CoA Develop as well as CPBS’s mission for field studies.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** StreamNet: Building capacity to improve water quality**Project No:** 20-183**Amount Requested:** \$491,726.00**Term of Request:** 3**Review Group:** Water

Nebraska is an agricultural state rich with water resources. Unfortunately, fertilizer use to promote agricultural yields has increased nutrients in those waters. While the resultant increases in nitrates are recognized, nitrogen is not the only nutrient in fertilizer. Fertilizer also contains phosphorus. When nitrogen and phosphorus accumulate in water, they stimulate the growth of algae and cyanobacteria. This growth can turn waters pea-soup green, conditions that are unattractive for recreation, at best, or toxic to animals and humans, at worst. Hence, understanding how, when, and where nutrients enter streams and lakes is critical to successfully managing Nebraska’s surface waters. To meet this challenge, we request funding to build "StreamNet": a novel network of high-frequency aquatic nutrient sensors with an easily accessible web application. We will pilot StreamNet in the Scottsbluff/Terrytown/Gering region, where we can place sensors in streams flowing through cropped, ranched, and urban areas. Further, we will work with regional stakeholders to iteratively design the web application. By combining innovative sensing technology with a user-driven web application, our work will provide novel information on nutrient conditions in Nebraska lakes and streams, lead to improved nutrient management techniques, and, ultimately, improve water quality in our state.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Developing a Statewide Community Tree Canopy Map in Nebraska**Project No:** 20-188**Amount Requested:** \$95,275.00**Term of Request:** 2 **Review Group:** Urban Habitat

Community trees offer important environmental benefits such as improving air and water quality, reducing storm water run-off, and providing wildlife habitat. Community tree canopy maps are essential to estimate the magnitude and location of environmental benefits provided by community trees, and the potential negative impact of invasive pests, like the emerald ash borer. The lack of tree canopy maps for communities in Nebraska limits efficient decision-making by municipalities and state agencies to prevent degradation of water resources and air quality, and loss of habitat due to reductions in tree canopy from invasive pests and development practices. Existing techniques for producing canopy maps are expensive (\$30K-\$55K per community) and generally not replicable. There is a critical need to develop a low cost and repeatable method to map tree canopy for Nebraska communities. We will use free USDA NAIP aerial photography to develop canopy classification methods and canopy maps for the cities of Lincoln, South Sioux City, and Waverly as pilot communities. The tree canopy maps from different years will be compared to track tree canopy changes over time. Our work will produce canopy maps for the pilot communities and develop repeatable cost-effective mapping methods, useable by any community in Nebraska.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Nebraska Farmers and Farmland Owners Attitudes of Targeted Conservation**Project No:** 20-189**Amount Requested:** \$257,418.00**Term of Request:** 3 **Review Group:** Education

Agricultural production in Nebraska has trended towards increased field sizes, removal of non-crop habitat, and a reduction in crop diversity (e.g., corn and soybean rotations) with the goal of increasing yield and associated farm revenue. Despite increased farm productivity, rural and urban residents are increasingly affected by multiple emerging challenges including environmental concerns (e.g., water pollution and soil erosion) and economic uncertainties. New precision technologies and conservation planning frameworks offer potential solutions to optimize agricultural production and natural resource conservation by strategically targeting low yielding acres for conservation program enrollment while farming highly profitable acres. This approach helps farmers and farmland owners increase whole-field profitability while reducing environmental impacts. To understand Nebraska farmers and farmland owners' willingness to participate in such targeting schemes, we will identify the key factors that facilitate or constrain their participation through socio-economic and behavioral surveys, and focus groups. Additionally, we will conduct phone interviews with farmland owners (or absentee landowners), which is a critical demographic in Nebraska that may affect adoption of conservation programs. With this information, Nebraska conservation agencies and/or organizations can develop a coordinated effort to work with farmers and farmland owners to reduce environmental impacts while increasing whole-field profitability.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Co-gasification of waste tires and biomass for hydrogen-rich gas production**Project No:** 20-198**Amount Requested:** \$208,621.00**Term of Request:** 3**Review Group:** Waste Management

Waste tires are important parts of the urban waste stream that account about 2% of the global solid waste. Tires are extremely resistant to physical, biological and chemical degradation. Waste tires store a large amount of energy, which can be released by suitable conversion processes into liquid and gas fuels. However, the conversion processes (e.g pyrolysis, conventional gasification and liquefaction) require high-energy input to break down tire structure into the fuels. The present project proposal is designed to gasify waste tires and lignocellulosic biomass (Eastern redcedar biomass) by catalytic supercritical water gasification technology for hydrogen-rich gas production. Co-gasification of tires with biomass could increase the reactivity of tires. The nonpolar nature of supercritical water will allow dissolution of tires and biomass facilitating the conversion process. Waste tires and biomass will be catalytically gasified in supercritical water conditions using Raney nickel catalyst. Temperature, reaction time, and tire/biomass ratio will be optimized to maximize hydrogen yield. Utilization of waste tires by gasification will result in positive impacts on the environment, increase the value of the waste tires and contribute to economy at the same time. The hydrogen-rich gas produced in this project can be beneficial for many industrial uses and fuel cells.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Nebraska Agricultural Water Management Network (NAWMN) **Project No:** 20-201**Amount Requested:** \$254,863.00**Term of Request:** 3**Review Group:** Water

In 2005, NAWMN was formed in partnership between NRDs, NRCS, growers and crop consultants to transfer high quality research information to Nebraskans through unprecedented series of demonstration projects in growers' fields and implement newer tools/technologies to enhance irrigation efficiency, water conservation, reduce nitrogen leaching, and energy conservation. The NAWMN was formed with only 15 grower collaborators in only 1 NRD. In 2017, the number of collaborators increased to 1400 in 18 NRDs and 70 counties. Since 2005, an average of 2.2 inch of reduction in water withdrawal for irrigation per acre every year has been achieved consistently on approximately 2 million acres. About \$90 million economic benefit was achieved due to reduction in fuel use alone. Since 2005, over 1.7 million acre-ft of reduction in water withdrawal was achieved. Over 16,000 citizens have been educated at 600 educational programs. This proposal is seeking funding to continue NAWMN's efforts to expand to the rest of the counties and NRDs and implement a youth educational curriculum to educate/train future water managers and irrigators/growers about new technologies. Funds will also be used to demonstrate the reduction in nitrogen leaching to ground and surface water resources due to adoption of NAWMN technologies and strategies.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Omaha**Project Name:** Evaluation of Per- and Poly-fluoroalkyl Substances (PFAS) in Leachate and Groundwater of Nebraska Landfills**Project No:** 20-205**Amount Requested:** \$131,409.00**Term of Request:** 2**Review Group:** Water

Per- and polyfluoroalkyl substance (PFAS) are a group of compounds that are man-made and are commonly used in industrial processes and consumer products of non-stick substances. The widespread use and extreme resistance to degradation of PFAS resulted in the ubiquitous presence of these compounds in the environment. Urban landfills can be an important source to emit PFAS through leachate. Thus, the goal of this project is to evaluate PFAS in four operating landfills located in urban areas in Nebraska and to provide the PFAS inventory. The proposed study has four objectives is to (1) Review PFAS potentially found in landfill leachate from literature and existing data. (2) Conduct leachate sampling from four operating landfills located in the urban area in Nebraska to evaluate the amount of PFAS. (3) Conduct groundwater sampling near several landfills located in the urban area to evaluate the amount of PFAS. (4) Provide illustrative maps to present PFAS existence and the inventory in the landfills. Determining the levels of PFAS contamination in groundwater and leachate in operating landfills, and understanding processes governing their fate and transport is therefore vital to developing contaminant management and remediation strategies that protect human and ecological health in Nebraska.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Omaha**Project Name:** Assessing Landfill Gas Dispersion through Innovative Cover System in Urban and Rural Areas in Nebraska**Project No:** 20-206**Amount Requested:** \$184,288.00**Term of Request:** 2**Review Group:** Air Quality

The applicability of co-extruded Ethylene Vinyl-alcohol (EVOH) geomembranes is well verified through the field pilot tests. However, it is very important to investigate how LFG is dispersed and how it affects the community at the regional scale. To enhance generality and expand programmatic applicability of the proposed approach, there is also a strong need to apply to an additional site with different conditions and locations. Thus, the goal of this study to convince practical demonstration of the full suite of benefits and multi-ranging value of co-extruded EVOH cover based on air dispersion study near the different landfills. The objectives of the study are to: 1) Evaluate accurate LFG production from the waste by using the advanced in situ technique. 2) Establish an accurate LFG dispersion modeling techniques near the landfill when the covers are installed in the entire landfill. 3) Validate the LFG dispersion modeling with odor evaluation obtained from an unmanned aerial vehicle (UAV) with gas sensors. 4) Conduct environmental, social and economic impact assessment, and compare the current and newly proposed approaches. The successful outcome will reduce adverse impacts on the community such as a reduced level of gas emission, and a reduced number of neighboring community's complaints.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Omaha**Project Name:** Quantifying water quality in rural Nebraska counties with elevated incidence of pediatric cancers**Project No:** 20-210**Amount Requested:** \$361,561.00**Term of Request:** 3**Review Group:** Water

This project will collect water quality data from rural areas of Nebraska with elevated pediatric cancer incidence relative to the statewide average, and areas of Nebraska with lower pediatric cancer incidence relative to the statewide average. In rural areas, individuals are exposed to a number of different agrichemicals in water or soil. These agrichemicals can include insecticides and herbicides, such as atrazine and glyphosate, and nutrients, such as nitrates. In rural areas, these chemicals are applied to agricultural fields during land application of manure, chemical fertilizers and/or pesticides. After precipitation events, these chemicals can be transported in runoff and enter surface water or groundwater. The results could lead to development of statewide monitoring networks for waterborne environmental contaminants in areas where elevated pediatric cancer incidence has been noted. We expect these results to lay a foundation for diminishing environmental causes of pediatric cancer in Nebraska.

Sponsor Name: Boy Scouts of America - Mid-America Council**Nearest Town:** Omaha**Project Name:** Camping Green & Clean**Project No:** 20-118**Amount Requested:** \$64,944.00**Term of Request:** 1**Review Group:** Air Quality

Boys Scouts of America, Mid-America Council (BSA) requests funds for our Green & Clean initiatives. This request installs solar charging stations at Camp Cedars and Camp Eagle in Saunders County, along with funds for an electric utility vehicle with flatbed (also referenced as a "hauler") and 5 four-person golf carts to improve air quality, reduce usage of gas-powered vehicles and promote energy conservation. The project features an educational component, wherein scouts will participate in solar energy education and development activities, using the Nebraska Environmental Trust-funded solar energy kits made available through Nebraskans for Solar.

Sponsor Name: C.C. Global Inc.**Nearest Town:** Lincoln**Project Name:** Nebraska Urban Wood**Project No:** 20-197**Amount Requested:** \$191,060.00**Term of Request:** 3**Review Group:** Education

With the recent range expansion of the invasive Emerald Ash Borer, Nebraska communities must be able to effectively manage the influx of urban wood being generated from felled or removed ash trees, in addition to the already-occurring removal of other tree species due to death, storm damage, or other circumstances. Complete supply chain research and analyses to determine strengths, weaknesses, opportunities, and threats of the urban wood market in Lincoln, Nebraska is needed to develop a robust community network of people and thus divert urban wood from Nebraska landfills. The development and launch of a Nebraska Urban Wood network will subsequently make resources for urban wood utilization in Nebraska readily accessible to community members who interface with the Nebraska wood supply chain - including primary processors, secondary processors, institutional/commercial buyers, custom manufacturers/artisans, and local businesses. This will be catalyzed by completing supply chain tool research and recommendations and piloting an urban wood network in Lincoln, Nebraska, through digital and stakeholder engagement. A thriving urban wood market would mean more holistic management of urban trees, where every part of the tree, from seed to sawdust, can be put to its highest, best, and most carbon-sequestering use instead of being wasted.

Sponsor Name: Center for Rural Affairs**Nearest Town:** Lyons**Project Name:** Highlighting Conservation Practices on Wetlands, Prairie, and Working lands**Project No:** 20-155**Amount Requested:** \$236,674.00**Term of Request:** 3**Review Group:** Education

This project will enable landowners to learn about and apply conservation practices to their land to repair and prevent flood-related damage to wildlife habitat, wetland/riparian zones, and cropland. The unprecedented extent of rapid snowmelt, heavy precipitation runoff, and flooding in 2019 exposed lands vulnerable to runoff and flooding. Conservation practices and assistance programs are or will be available, but some affected landowners are unfamiliar with how to navigate these programs or how to select beneficial practices. Now, while landowners and farm/ranch operators are reassessing how to manage their vulnerable lands, targeted and timely information can help them make informed decisions and apply conservation practices. This project will provide information and examples of conservation practices and how to access or apply them, through a private-public partnership led by Center for Rural Affairs. Project partners are experienced at advising on these conservation practices and at reaching the target audiences. We expect 200 landowners to access information through project activities, 50 landowners to request individualized assistance with management options, and 20 landowners to enroll in conservation programs over three years. Educational materials, publications and videos will provide resources for participants and other technical advisors during and after the project.

Sponsor Name: Central Platte NRD**Nearest Town:** Grand Island**Project Name:** Richard Plautz Crane Viewing Site Restoration Project **Project No:** 20-146**Amount Requested:** \$50,000.00 **Term of Request:** 1 **Review Group:** Rural Habitat

The Central Platte Natural Resources District (CPNRD) is requesting \$50,000 in NET funds to cost-share specific, non-trail related improvements associated with the Richard Plautz Crane Viewing Site Restoration Project. NET funds will be used exclusively for 0.6-acres of clearing and grubbing, removal of two (2) large trees, installation of 2,700 linear feet (LF) of erosion control silt fencing during the project's construction phase, placement of 803 ton of Quartzite riprap on the southeast side of Lowell Road bridge, installation of 600 willow stakes (live pole plantings) for a natural, ecologically-friendly bank stabilization, and 0.6 acres of seeding and mulching once the new nature trail has been reconstructed. The CPNRD is requesting \$249,500 from the Nebraska Recreational Trails (RTP) Program for restoration of the Site's nature trail and other site improvements. More specifically, the CPNRD will remove the nearly 1,660 LF deteriorated asphalt nature trail and replace it with an 8-foot wide, 6-inch thick concrete trail and paving of the site's 1,033 square yard gravel parking lot with 8-inch thick concrete. To enhance the viewing experience, CPNRD will replace of wooden planks on the site's two elevated Crane Viewing platforms. NET funds will not be used for any trail improvements.

Sponsor Name: Chadron State College**Nearest Town:** Chadron**Project Name:** Math Science Building Initiative**Project No:** 20-107**Amount Requested:** \$75,000.00 **Term of Request:** 1 **Review Group:** Air Quality

Chadron State's Math Science Building has seen little to no renovation since its construction in the late 1960s. Chadron State College has received legislative funding for the construction and renovations to the building, including a new 14,000 square foot north wing. There is no scientific educational facility equivalent to the CSC Math Science project in rural western Nebraska. The new facility will satisfy the needs of students and professors in the 21st century and aid greatly in the recruitment and retention of students in much needed fields and professions, including teachers, physicians, nurses, medical technicians, chemists, biologists and land management experts for private business and public agencies. Because our students are typically from rural America, they return to rural America to work and raise families. As technology is integrated in high schools and professional schools the Math Science Building must be updated before the technology gap becomes too wide. The grant request will allow further design development of environmentally friendly and sustainable landscaping impacting the surface and ground water and soil management of this unique area on the High Plains. Funding will provide exploration and inclusion of environmentally conscious design plans for everything from HVAC, lighting, lab ventilation and more.

Sponsor Name: Conservation Blueprint**Nearest Town:** St. Paul**Project Name:** Pollinator and Wildlife Habitat Education**Project No:** 20-176**Amount Requested:** \$19,600.00**Term of Request:** 2 **Review Group:** Education

This grant will support the creation and distribution of Video Habitat Tips for use with the general public, land managers, resource professionals and media outlets via social media, email distribution and websites. Each Video Habitat Tip is designed with a specific message that produces a positive impact in the management, understanding, promotion and establishment of pollinator and wildlife habitat in the state. NET funding would be limited to the video production costs and equipment and the costs for Habitat Tip development, distribution, production, video equipment and travel would be covered by Conservation Blueprint. Video Habitat Tips will focus on the topics of establishing and managing pollinator habitat, the safe and effective use of prescribed fire, available conservation programs, pollinator species profiles, etc. Understanding the importance of pollinator species and their habitat needs is increasingly important as more pollinator species become considered for and designated as threatened and endangered species. Endangered species designations could produce ramifications that have significant impacts on agriculture and land management in the state. Providing more tools to help the public, land managers and resource professionals better understand and promote wildlife habitat will provide a key service to the wildlife, land, air and water of the state.

Sponsor Name: Conservation Nebraska**Nearest Town:** Lincoln**Project Name:** Common Ground Education Program**Project No:** 20-151**Amount Requested:** \$67,000.00**Term of Request:** 1 **Review Group:** Education

Conservation Nebraska requests \$67,000 from the Nebraska Environmental Trust to support our Common Ground Program, which conserves, enhances and restores Nebraska's natural environment. We do this by providing the public with education about habitat, surface and groundwater, waste management, soil management, and air quality. We recruit and train local volunteers to lead these efforts, and we work with them to implement locally-led conservation projects that focus on the priorities of the NET. Funding from NET will support the Program Director and the expansion of our programming in 27 communities across Nebraska. Each dollar of NET funding will be matched by more than \$6 of funding from public and private sources. Support from the NET in 2020 will result in 300 educational programs that will reach more than 4,000 Nebraskans. Survey results administered at Common Ground programs since the NET started to support our work in April 2019 demonstrate a track record of success, with 92% of respondents reporting increased knowledge about conservation issues facing Nebraska and 83% having a greater desire to improve their own conservation habits as a result of our program. Continued support from the NET will ensure that this success continues and reaches thousands more Nebraskans.

Sponsor Name: Council of Independent Nebraska Colleges Foundation**Nearest Town:** Bellevue**Project Name:** Sustainability Learning Lab**Project No:** 19-164-2**Amount Requested:** \$130,000.00**Term of Request:** 1**Review Group:** Statement of Intent

The Council of Independent Nebraska Colleges Foundation (CINCF) on behalf of project partner Bellevue University, seeks a two-year, \$330,000 NET grant for the University's \$1,001,500 Sustainability Learning Lab, a 7,000 square-foot outdoor facility on the University's campus. NET funding would be matched 2:1 by the University and its partners \$603,000 + \$68,500 (in-kind) = \$671,500, over three years. \$200,000 is requested in Year 1 to complete Phase 1, including a 1,500 square-foot greenhouse, and initiate Phase 2, including solar and wind generation stations and a biofuel algae pond. \$130,000 in Year 2 would complete Phase 2. Project partners will contribute \$124,000 to complete Phase 3, including an outdoor classroom area, in Year 3. The Lab will support and facilitate science and environmental sustainability education, research, public awareness, and workforce development. The project relates to Nebraska Surface and Ground Water, Air Quality, Soil Management, Waste Management and Habitat. It will support University courses and degrees while engaging and educating at least 2,500 students, educators, researchers, and campus visitors a year in Year 3. Partners include the University and its students, project donors, and civic organizations such as the Boy Scouts, Green Bellevue, and Quest Forward Academy. THIS PROJECT WAS FUNDED \$200,000 IN 2019 WITH THE INTENT TO FUND UP TO \$130,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Creighton University**Nearest Town:** Omaha**Project Name:** The Nebraska Sandhills: An Interdisciplinary Study of Place Through Ecology, Culture, and Film**Project No:** 19-165-2**Amount Requested:** \$95,536.00**Term of Request:** 1**Review Group:** Statement of Intent

Understanding social-ecological interaction is a central focus for environmental study particularly with respect to resilience-the capacity for any system, social and/or ecological, to endure radical variability in, for example, economic markets and climate. The Nebraska Sandhills, with its fragile, grass-stabilized sand dunes vulnerable to large scale movement, and a dominant human land use through cattle grazing that depends almost entirely on grass cover, comprise an excellent system to study social-ecological relationships. We are continuing an interdisciplinary study involving remote sensing, biodiversity surveys, ethnographic analyses, artistic representation and philosophical/theological theory to understand the processes, practices, and interactions underpinning social-ecological resilience in this region. Our approach is to bring to bear multiple perspectives on the depiction of the Sandhills from the fields of biology, culture and communication, and theology (through documentary film and photography). Our commitment is to understanding the complexity of Sandhills in order to generate descriptions of the complexity interrelation of place and people. Our ecological descriptions, cultural interpretations, documentary filmmaking, and artistic depictions will provide resources for understanding and dialogue in Nebraska, and in the region, for appreciating and protecting the Sandhills. THIS PROJECT WAS FUNDED \$102,718 IN 2019 WITH THE INTENT TO FUND UP TO \$95,536 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Ducks Unlimited, Inc.**Nearest Town:** Valentine**Project Name:** Steer Creek Habitat Improvement**Project No:** 19-126-2**Amount Requested:** \$10,000.00**Term of Request:** 1**Review Group:** Statement of Intent

The sandhills encompass roughly 19,000 square miles of rangeland in north-central Nebraska and is the largest remaining in-tact grassland in North America. Grassland habitats are one of the fastest declining habitat types in North America, as are the species guilds associated with grasslands, such as grassland birds. One of the greatest threats to the sandhills is the encroachment of Eastern Redcedar (ERC). With the help of Nebraska Environmental Trust funds, Ducks Unlimited, the USDA Forest Service, and the Rainwater Basin Joint Venture hope to address this threat within the Samuel R. McKelvie National Forest – the largest public property in the sandhills. This proposal includes the improvement of 2,600 upland and riparian acres along Steer Creek in Cherry County. Steer Creek is an important tributary of the Snake River, however, this system is at risk of being degraded as a result of encroachment by ERC. Returning this landscape to a native prairie and riparian area free of ERC, will improve migratory waterfowl and grassland bird habitat, increase plant diversity and cattle grazing opportunities, decrease water uptake, and increase the quality of public use. THIS PROJECT WAS FUNDED \$90,000 IN 2019 WITH THE INTENT TO FUND UP TO \$10,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Ducks Unlimited, Inc.**Nearest Town:** Grand Island**Project Name:** North Platte River Restoration**Project No:** 19-131-2**Amount Requested:** \$74,000.00**Term of Request:** 1**Review Group:** Statement of Intent

The North Platte River Restoration proposal represents the next phase in an on-going effort to restore and protect wetland and wildlife habitat in this continentally important landscape. Our conservation effort follows the best science available and recommended strategies in the Strategic Plan's for NGPC, USFWS, and DU. With momentum and stakeholder interest increasing in this landscape, great opportunities to expand this effort exist. Grant and Match funds will be used to restore degraded slough, marsh, and riverine habitat, remove invasive Russian olives, install water control structures/rock checks, and restore diverse native prairie on two properties. To protect the investment from NET and partners, all restoration work will be completed on protected private properties. All NET funding is going towards completion of the restoration projects. All staff time and protection efforts are being completed using Match funds. The request from NET is being matched at a ratio of greater than 5:1. The goal of this proposal is to protect the agricultural, ranching, and wildlife habitat along the North Platte River that is lifeblood of western Nebraska. THIS PROJECT WAS FUNDED \$114,000 IN 2019 WITH THE INTENT TO FUND UP TO \$74,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Ducks Unlimited, Inc.**Nearest Town:** Grand Island**Project Name:** Northeast Nebraska Wetland Restorations**Project No:** 19-172-2**Amount Requested:** \$30,000.00**Term of Request:** 1**Review Group:** Statement of Intent

The Northeast Nebraska Wetland Restorations proposal will restore and enhance wetland habitats which provide critical migration habitat for migrating birds and local wildlife along the Missouri River, Niobrara River, Elkhorn River, and other eastern Nebraska wetland complexes. Wetlands, no matter the location, serve as nature's filter improving water quality by filtering out excessive nutrients and other pollutants ensuring clean water for humans, livestock, and wildlife alike. Additionally, wetlands serve a vital function in flood abatement by holding excessive water in their basins as the terminal point of many watersheds. Additional wetlands in the northeastern portion of the state will only help with flood prevention or lessening the impact of floods. This proposal contains 6 wetland restoration and enhancement projects that are all open to the public. They receive substantial public use for recreational activities such as hunting, fishing, bird watching, and boating due to their proximity to Omaha and Lincoln. All the restoration and enhancement projects benefit the public by improving areas that can be accessed for various recreational opportunities while also providing resident and migrating wildlife with quality habitat year round. The ecosystem services (water purification, flood abatement) provided by additional wetland area and function benefits all Nebraskans. THIS PROJECT WAS FUNDED \$225,000 IN 2019 WITH THE INTENT TO FUND UP TO \$30,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Ducks Unlimited, Inc.**Nearest Town:** Scottsbluff**Project Name:** Restoring Wetlands of the North Platte River Valley**Project No:** 20-178**Amount Requested:** \$201,000.00**Term of Request:** 2**Review Group:** Rural Habitat

The Restoring Wetlands of the North Platte River Valley proposal seeks to restore and protect wetland and wildlife habitat in this continentally important landscape. Our conservation effort follows the best science available and recommended strategies in the Strategic Plan's for Nebraska Game and Parks Commission (NGPC), U.S. Fish and Wildlife Service, and Ducks Unlimited. The Partnership plans to restore one of the most important publicly owned wetlands in western Nebraska at the NGPC's Kiowa WMA. In addition to restoring this critical wetland, the Partnership will also complete a restoration project on one privately owned tract along the North Platte River. Grant and Match funds will be used for proven restoration techniques to improve environmental conditions that include sediment removal, embankment construction and rehab, installing water control structures and rock checks, Russian olive removal, and improving grazing infrastructure. To protect the investment from NET and Partners, all restoration work will be completed on permanently protected properties. One working lands conservation easement will be secured using Match funds as part of this proposal to protect the agricultural, ranching, and wildlife habitat along the North Platte River and the other property is owned by NGPC.

Sponsor Name: Ducks Unlimited, Inc.**Nearest Town:** Grand Island**Project Name:** Platte River Watershed Conservation**Project No:** 20-181**Amount Requested:** \$536,331.00**Term of Request:** 2**Review Group:** Rural Habitat

Threats to the Platte and Loup Rivers are extensive. The natural habitats along the river have been greatly altered due to lack of natural disturbance and increased human disturbance. Birds and wetlands are concentrated on fewer and fewer remaining areas, which makes conserving those areas crucial. Actions by conservation groups, including Ducks Unlimited, Inc., the Crane Trust, U.S. Fish and Wildlife Service, and Nebraska Game and Parks, focus on protecting, restoring, and enhancing wetlands within in the Platte River Watershed. This proposal contains 15 projects across 12 tracts, and 6 counties totaling over 2,000 acres of potential positive environmental impact through conservation of wetlands and associated habitats along these rivers. This proposal has a match ratio of over 2:1 with over \$1 million in match generated and utilizes proven conservation techniques for improving and protecting habitat along one of the most important migratory habitats in the world. This proposal has a mix of conservation on public and private lands. Without conservation on private lands, there would be much fewer wildlife and ecosystem services for people to benefit from throughout Nebraska and from elsewhere. The Platte River Watershed Conservation proposal is a monumental effort that will build toward future environmental gain.

Sponsor Name: Ducks Unlimited, Inc.**Nearest Town:** Grand Island**Project Name:** Eastern Rainwater Basins Environmental and Habitat Improvement**Project No:** 20-214**Amount Requested:** \$97,050.00**Term of Request:** 2**Review Group:** Rural Habitat

The Rainwater Basin (RWB) has been recognized at the continental scale for the migratory bird use it receives. Approximately 10-20% of the historic playa wetland footprints remain on this relatively small landscape. The work in this proposal will occur on 2 eastern Rainwater Basin areas. The Polk County project will include restoration of a large portion of a playa wetland via pit fills, ditch plugs, water delivery, and removal of old berms. Once completed, the wetland will more often provide the ecosystem services of improved water quality and groundwater recharge compared to its current state. The second project will occur on a property in Fillmore County adjacent to and on Real Waterfowl Production Area. Asbestos-containing, environmentally hazardous structures and also invasive trees will be removed from the site. Once all is removed, the viewscape, habitat, and environment in this area will be improved. This project is being matched at a ratio of 1.68 to 1, the longevity of benefits are permanent, and the areas are open to the public during Wetlands America Trust, Inc.'s (DU's) ownership. Real Waterfowl Production Area will remain open to the public permanently. Overall, this project results in environmental and habitat improvement to the RWB.

Sponsor Name: Firststar Fiber, Inc.**Nearest Town:** Omaha**Project Name:** Instate market for plastics**Project No:** 20-102**Amount Requested:** \$650,000.00**Term of Request:** 2**Review Group:** Waste Management

Our first year NET \$550,000 grant request helps build a pyrolysis plant to convert 7,000 tons per year (tpy) of non-recycled plastics into diesel and naphtha, the hydrocarbon from which plastics are produced. These plastics, e.g., straws, bags, fast food containers, numerous consumer packaging and ag films, are either littered, burned or landfilled, but seldom recycled. Without an instate pre-processing system and an end market the environmental damage they cause will continue. The total cost of our project is roughly \$7 million and includes the means to turn 20,000 tpy of no-and-low valued plastics into a suitable feedstock for the needs of the pyrolysis plant and a variety of other end markets, including other regional pyrolysis plants and manufacturers of fence posts and railroad ties. Three innovative collection strategies make it possible to recover these no-to-low valued plastics from households, farms and ranches from the entire state. The Hefty® EnergyBag® program captures the plastics most likely to be littered. Strategy 2 targets small towns' seldom recycled food containers. Our third and most challenging strategy, hence supported by a second year \$100,000 NET grant, establishes the collection from farms and ranches of agricultural films that otherwise pollute waterways, land and air.

Sponsor Name: Five Rivers RC&D**Nearest Town:** Tecumseh**Project Name:** Saving our Native Grasslands from Invasive Species**Project No:** 20-195**Amount Requested:** \$104,222.00**Term of Request:** 1**Review Group:** Rural Habitat

Southeast Nebraska's native grasslands were originally a large component of the Nebraska Plains. However, the lack of education and lack of funding associated with control has resulted in many of our native grasslands being converted to row crop production. This leaves our native species highly vulnerable to disturbances and weed invasion. With the increase of invasive species present in the area we see its negative impacts on these remaining landscapes and losses to our other grazing lands and native habitat. Smooth brome, Kentucky bluegrass, reed canary grass, purple loosestrife, Eurasian phragmites, Sericea lespedeza, garlic mustard, Caucasian bluestem, and other species have competitively excluded native plants and degraded habitat for fish and wildlife. The introduction of carp, zebra mussels, emerald ash borer, and other species have altered habitats and increased competition for native species. The WMA seeks funding to educate landowners and partnering entities on the benefits of proper and responsible weed management through educational workshops, weed walks/pasture tours, and with a cost-share program to help with overwhelming costs associated with weed control. The combination of education and cost share will help to reduce the incidence and spread of weeds to ensure a viable ecosystem that is both useful and profitable.

Sponsor Name: Five Rivers RC&D**Nearest Town:** Tecumseh**Project Name:** 2020 Southeast Nebraska Household Hazardous Waste Collections**Project No:** 20-220**Amount Requested:** \$75,512.00**Term of Request:** 1 **Review Group:** Waste Management

According to the EPA, each person in the United States produces an average of 4 pounds of household hazardous waste each year for a total of about 530,000 tons/year. The average U.S. household generates more than 20 pounds of household hazardous waste per year. As much as 100 pounds can accumulate in the home, often remaining there until the residents move out or do an extensive cleanout. Reduction and recycling of HHW conserves resources and energy that would be expended in the production of more products. Proper disposal prevents pollution that could endanger human health and the environment (EPA, 2014). Five Rivers proposes household hazardous waste collections in eight counties, eleven communities, in Southeast Nebraska. These events will give all citizens an opportunity to help protect the environment and their own families from possible exposure to toxic materials. Past events have yielded more than 16 tons of hazardous materials from entering our water systems, soils, and air. Not only will our events provide citizens with a safe disposal site, but we will also educate residents on the hazards of improper disposal and the negative effects of the waste that does enter our ecosystem.

Sponsor Name: Food Bank of Lincoln, Inc.**Nearest Town:** Lincoln**Project Name:** Food Rescue and Distribution**Project No:** 20-147**Amount Requested:** \$158,720.00**Term of Request:** 1 **Review Group:** Waste Management

The Food Bank of Lincoln and Food Bank for the Heartland are seeking \$158,720 in funds in support of our on-going efforts to rescue and distribute foods that would otherwise be taken to the landfill. Our efforts daily to pick up food from area retailers and get it out to food insecure individuals in Nebraska saves space in area landfills. Partners in this effort include area grocery stores and other retailers who provide still usable food to the Food Bank because of our ability to get it out in a timely manner to folks who can use it; thus saving it from being hauled to landfills. We are seeking funding for the logistics of this operation including funds for fuel for our trucks, wages for drivers who pick up the food, this will free up funds for refrigeration, freezing and storage of food if needed prior to distribution.

Sponsor Name: Four Corners Health Department

Nearest Town: York

Project Name: Household Hazardous Waste Events

Project No: 19-175-2

Amount Requested: \$29,250.00

Term of Request: 2

Review Group: Statement of Intent

Four Corners Health Department wishes to host two Household Hazardous Waste (HHW) events in Polk and Butler Counties in the spring of 2019, two events in York and Seward Counties in 2020, two events in Polk and Butler Counties in 2021. Our rural communities have no way to dispose of household hazardous waste without these events. This HHW waste will end up in the landfills or in our ground water. We have had these events for the last 6 years, our community response and involvement has been tremendous. THIS PROJECT WAS FUNDED \$29,250 IN 2019 WITH THE INTENT TO FUND UP TO \$29,250 IN YEAR TWO AND \$29,250 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Friends of Heron Haven, Inc.

Nearest Town: Boys Town

Project Name: Nature Education and Capital Improvements at Heron Haven

Project No: 19-145-2

Amount Requested: \$7,430.00

Term of Request: 2

Review Group: Statement of Intent

Friends of Heron Haven requests three years of support for its nature education programs and for several capital improvements that will facilitate the management, maintenance and security of the property. The cost of the capital improvements will be matched at 25% by the Papio-Missouri River NRD. Three nature education programs are offered by an all-volunteer staff of Nebraska Master Naturalists. First, the Second Saturday Program, which is open to everyone on the second Saturday of each month, creates a variety of planned hands-on indoor and outdoor experiences, as specifically afforded by the season. Second, a similarly-designed program, is offered six times a year to Title 1 Omaha Public School groups. Both take advantage of a classroom, woodland trails, wetland boardwalk, and photography blind, which offer many opportunities for discovery and learning. The third program consists of the Wetland Festival, 1-day September event that provides a range of nature learning experiences, including a butterfly tent, shows by Raptor Recovery and Wildlife Encounters, and various Nature Hunt games, to name only a few. The proposed capital improvements, including an automated entrance gate, upgraded security system, riding tractor-mower and shed would greatly facilitate the management of the property by a volunteer staff. THIS PROJECT WAS FUNDED \$27,415 IN 2019 WITH THE INTENT TO FUND UP TO \$7,430 IN YEAR TWO AND \$7,800 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Girl Scouts Spirit of Nebraska**Nearest Town:** Lincoln**Project Name:** Walnut Creek Bank Restoration at Camp Catron**Project No:** 20-184**Amount Requested:** \$45,000.00**Term of Request:** 1 **Review Group:** Bank Stabilization

Girl Scouts Spirit of Nebraska will stabilize and restore the banks at Walnut Creek located at Camp Catron near Nebraska City. Heavy rainfall in the area has caused damaging erosion, preventing access to the banks of the creek. Erosion has created dangerous cliffs, preventing the council from offering programming. The biggest impact is the threat to the structural integrity of the 150-foot bridge that spans the length of the creek. The bridge, a critical connection between two sides of camp, has been rendered impassable. We are unable to move equipment to manage the oak woodlands on the property. This project will reestablish a safe route and restore our ability to offer educational programming. Girl Scouts will partner with JEO Consulting Group. Engineering includes the design of a construction access route and the shoring of streambanks that serve as bridge abutments for the existing structure. Concrete rip rap will be added to the bridge piling to protect it from future failure.

Sponsor Name: Grand Island Area Clean Community System**Nearest Town:** Grand Island**Project Name:** Regional Household Hazardous Waste Facility**Project No:** 20-129**Amount Requested:** \$512,960.00**Term of Request:** 3 **Review Group:** Waste Management

CCS is seeking a multiple year grant for the operation of Grand Island Area Clean Community System and the Betty Curtis Household Hazardous Waste facility. As a regional waste facility we serve over 150,000 in population; however we never turn anyone away. According to numerous studies, permanent facilities tend to collect more hazardous waste than other collection methods. Since 2015 we have taken in over 600,000 pounds of waste. Of this amount accepted, we will recycle the good products and incorporate those items for our Swap Shop area for reuse. We have seen usage go from minimal to the reuse of 31,680 pounds in 2016 and 55,765 pounds in 2018. Associated with this grant application is the request to conduct no less than 1 electronic recycling event/year to include older TV's. The final commitment to the environment is overseeing litter clean-up in Grand Island and neighboring communities and public education which addresses "Reduce, Reuse, and Recycle". This grant application will be matched with grant funds from NDEQ as well as community funding from our partners and donations.

Sponsor Name: Grant Lions Club**Nearest Town:** Grant**Project Name:** Electronic Waste recycling**Project No:** 20-156**Amount Requested:** \$4,950.00 **Term of Request:** 1 **Review Group:** Waste Management

Grant Lions E-Waste pickup project E-commerce development and implementation has created a large quantity of electronic products that became obsolete with new technology or breaks down. The products included are old television sets, printers, laptop and desktop computers, monitors, radios, MP players, video games and other electronic devices and consoles. Some of the electronic equipment contains enough heavy metals, such as lead to be considered hazardous waste. Fortunately some of the products can be recycled rather than to dispose them in landfills. The Grant Lions is proposing a one day E-Waste collection pickup by a certified recycler.

Sponsor Name: Green Plains Inc., and Nebraska Department of Environment and Energy**Nearest Town:** Lincoln**Project Name:** Nebraska Renewable Fuels & Air Quality Program (NRFAQ)**Project No:** 20-137**Amount Requested:** \$3,000,000.00 **Term of Request:** 3 **Review Group:** Air Quality

NRFAQ, over the next 36 months, seeks to fund the purchase and installation of sixty (60) advanced biofuel blender pumps and storage tanks throughout the state of Nebraska in areas that have very limited access to advanced biofuels. The objective is to increase the availability of cleaner burning advanced ethanol fuels to the traveling public in these locations of the state. NRFAQ is seeking fifty (50) percent funding for purchase of the blender pump dispenser units to be matched by the retailer.

Sponsor Name: Green Recycling Enterprises, LLC (Second Nature)**Nearest Town:** Omaha**Project Name:** Recycling on the Go!**Project No:** 20-122**Amount Requested:** \$283,000.00**Term of Request:** 2**Review Group:** Waste Management

Second Nature provides recycling containers at public events. During the previous nine years, SN has been providing recycling for events, municipalities and other locations. These entities haven't had recycling or can't recycle for a number of different reasons. There is a strong demand for public recycling containers as we will conduct over 135 events in 2019. Our challenge is that the model of the program has not created enough advertising/sponsorship dollars to continue without the help of Nebraska Environmental Trust. Our new model involves incorporating small fees for setup and delivery at events where we don't acquire sales related to sponsorship/advertising. We also want to establish a joint sale and partnership program with our event partners. This will allow an increased motivation for them to jointly promote and sell advertising packages with us. Because of the marketing we do for the Nebraska Environmental Trust and lack of monies from event hosts, we need to continue our relationship with the Trust for another 2 years to keep all the recycling materials from these events from being placed in the landfill. Additionally, we reach over 2 million people a year to promote recycling and the NET's message.

Sponsor Name: Habitat for Humanity of Lincoln ReStore**Nearest Town:** Lincoln**Project Name:** Scrub Day: Spring Cleaning Donation Drive**Project No:** 19-200-2**Amount Requested:** \$6,400.00**Term of Request:** 2**Review Group:** Statement of Intent

Habitat for Humanity of Lincoln ReStore respectfully requests three years of funding from the Nebraska Environmental Trust for support of its city-wide project Scrub Day: a spring cleaning donation drive. Habitat ReStore Lincoln has been serving Lancaster county for four years, as a nonprofit home improvement store and donation center that sells new and gently used furniture, appliances, home accessories, building materials and more to the public at a fraction of the retail price. Habitat ReStore Lincoln diverted more than 234 tons of waste from the landfill last year, accepting hard-to-dispose-of items including new and used furniture, appliances, latex paint and building materials. Proceeds from the sales of these items help Habitat's work in our community and around the world. ReStore Lincoln is requesting funds to assist in executing its annual Scrub Day: Spring Cleaning Donation Drive. Scrub Day is held on/around Earth Day weekend providing individuals and businesses a convenient way to donate accepted new and gently used items, that would otherwise be thrown away. Scrub Day was created in 2017 and diverted more than 1 ton of waste from the landfill. The following year, donations doubled, showing a need for the project and ReStore, on a continuous basis. THIS PROJECT WAS FUNDED \$6,375 IN 2019 WITH THE INTENT TO FUND UP TO \$6,400 IN YEAR TWO AND \$6,450 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Habitat for Humanity of Sarpy County

Nearest Town: Bellevue

Project Name: Habitat Truck

Project No: 20-126

Amount Requested: \$30,000.00

Term of Request: 1

Review Group: Waste Management

Habitat for Humanity of Sarpy County requests support for a truck to keep up with growing demand for donation pick-ups for our Habitat Home Store. The Habitat Home Store is Habitat for Humanity of Sarpy County's nonprofit home improvement store/donation center that sells new and gently used furniture, home accessories, building materials, and appliances to the public at a fraction of the retail price. Donations picked up by the truck will help divert millions of pounds of excessive dumping from Sarpy County landfills. Proceeds from sale of picked up items directly support Sarpy County Habitat's homeownership programs and services.

Sponsor Name: Heartland Bike Share

Nearest Town: Omaha

Project Name: B-cycle to ORBT: Connecting Bike Share to Bus Rapid Transit

Project No: 20-154

Amount Requested: \$289,446.00

Term of Request: 1

Review Group: Air Quality

We are seeking funding to add bike share facilities along the soon to be completed Omaha Rapid Bus Transit (ORBT) Line. Using new technology from our vendor, BCycle, we plan to install four to five bike share docks at each Omaha Bus Rapid Transit Line station to better connect bike share to transit. This will further Heartland Bike Share's mission to combat climate change as users can more easily link their bike share and bus trips, making it more viable than ever to leave their cars at home. By utilizing the new BCycle 3.0 stations, we can install four to five docks at each ORBT station without the need for a station kiosk. The lack of kiosk will save space, pair perfectly with the ORBT stations, and ultimately streamline commutes that use both systems. Along with this expansion, we will pilot a Bike+Bus pass that users can purchase to access both systems seamlessly. These stations will allow us to get more of the Omaha Metro commuting without utilizing polluting methods. Each commute with Heartland B-cycle+Bus instead of a personal car trip will decrease the amount of pollutants in the air and make the air quality better for the entire community.

Sponsor Name: High Plains Weed Management Association**Nearest Town:** Scottsbluff**Project Name:** North Platte River Invasive Species Control Project**Project No:** 20-142**Amount Requested:** \$500,000.00**Term of Request:** 2**Review Group:** Rural Habitat

The High Plains Weed Management Association is requesting \$500,000 for two years towards future projects to restore the waterways of the North Platte and South Platte Rivers and its tributaries. For the last six years, over 4,648 acres of Russian Olives, Salt Cedar and Phragmites have been removed in watersheds. Over the last 50 years, invasive species have invaded riparian areas of the Platte Rivers. At the present time, the High Plains Weed Management Association has more than \$69,660 in existing projects covering 432 acres to be completed. In this grant, our invasive species eradication and control projects target 123 miles along the North Platte River, and nine miles along the South Platte River, During the last six years, the High Plains Weed Management Association in partnership with the USDA, NRCS, NE Game and Parks, Ducks Unlimited, and the eight weed management superintendents in the project counties have been working to restore the habitat along the Platte Rivers and its tributaries. With the help of the Nebraska Environmental Trust and our partners, we hope to continue this important work. No match has been confirmed at this time from NGPC and DU.

Sponsor Name: Iain Nicolson Audubon Center at Rowe Sanctuary**Nearest Town:** Gibbon**Project Name:** Embarking on another 50 years of conservation at Rowe Sanctuary**Project No:** 20-194**Amount Requested:** \$152,865.00**Term of Request:** 2**Review Group:** Rural Habitat

Audubon's Rowe Sanctuary focuses on conservation of the Platte River ecosystem and the birds that rely on it. Rowe Sanctuary seeks funds to launch a new phase of conservation, restoring essential interconnectedness of habitats both across the Sanctuary and across property boundaries. The project will take place at the core of the protected prairie-river complex at Rowe Sanctuary with a focus on expanding our conservation footprint through innovative partnerships and creating a stronghold for vulnerable species in the face of existing and emerging threats. Components of the project will improve and connect important riparian habitats within the Sanctuary, remove obstacles associated with property boundaries as well as enhance large tracts of grassland habitat, and protect new habitat through private/public partnership. These activities are critical to our ability to adequately ensure protection of important bird species which currently, or will potentially, use the Sanctuary. We intend to make our work replicable and to assess impacts and successes. We currently have additional, confirmed funding to support the project, and will work within the scope of cooperative efforts to restore and enhance habitat on the Platte River.

Sponsor Name: Keep Alliance Beautiful**Nearest Town:** Alliance**Project Name:** 2020-2021 Recycling Center Operations and Education Program **Project No:** 20-117**Amount Requested:** \$83,828.00**Term of Request:** 1**Review Group:** Waste Management

Keep Alliance Beautiful (KAB) Board of Directors and Staff wish to continue our recycling and education programs in Box Butte County, Nebraska. Grant funding from NET is essential in sustaining the recycling center operations and in furthering KAB's mission to educate, empower, and inspire Box Butte County residents to take greater responsibility for enhancing their community and the environment. KAB operates a recycling center, provides curbside recycling pickup, offers an innovative seniors/shut-ins recycling program, and maintains ten recycling trailers stationed in Alliance and Hemingford, Nebraska. KAB sends the bulk of the recycling commodities to Western Resources Group in Ogallala, Nebraska and has diverted 353,794 lbs. of waste from the local landfill during the first six months of 2019. KAB will continue school programs in 2020-2021 such as KAB Black OPS, KAB Black Belts, and the KAB Club at the Alliance Middle School. In addition KAB will encourage citizens to reduce, reuse, and recycle through school presentations, community programs, and projects. Keep Alliance Beautiful is a Keep America Beautiful affiliate in good standing. KAB is able to accomplish our mission with the continued financial support of the City of Alliance, Box Butte County, private donations, and grant funds.

Sponsor Name: Keep Keith County Beautiful, Inc.**Nearest Town:** Ogallala**Project Name:** Western Nebraska Regional Education Program**Project No:** 20-170**Amount Requested:** \$66,845.00**Term of Request:** 1**Review Group:** Education

Keep Keith County Beautiful (KKCB) seeks funding for environmental educational development in Western Nebraska. We are asking to fund educators, program management and mileage for travel. KKCB will utilize proven behavior modification strategies to create meaningful curriculum for students and help them develop a habit of recycling, litter reduction, source reduction, food waste elimination and general environmental and waste management knowledge. The educational programs are user-friendly for all grade levels from elementary school through high school, and address the National STEM initiative, provide results and ultimately modify behavior. KKCB will utilize our expertise in working with existing STEM development, current curriculum and student leadership. KKCB will utilize proven behavior modification strategies to create meaningful curriculum for students and help them develop a habit of recycling, litter reduction, source reduction, food waste elimination and general environmental and waste management knowledge. The term 'Waste Management' carries many meanings, but to us, it is about understanding the available options for proper disposal of waste, what can and cannot be recycled, what to avoid, how to reduce food waste and what can be made from recycled materials. Our program will bring the competitive PepsiCo Recycle Rally to the schools included and continue for years.

Sponsor Name: Keep Nebraska Beautiful**Nearest Town:** Lincoln**Project Name:** Food Waste Reduction Program**Project No:** 20-196**Amount Requested:** \$40,450.00**Term of Request:** 1**Review Group:** Waste Management

The Food Waste Reduction Program focuses on educating Nebraskans on why food waste is a huge issue and how to take action. The EPA and UN have goals to reduce food waste by 50% by 2030, and Nebraska needs a statewide food waste awareness campaign to empower our citizens with the knowledge and resources necessary to change their food waste behaviors. We are seeking funding for a statewide awareness campaign and for the development of educational materials.

Sponsor Name: Keep North Platte and Lincoln County Beautiful**Nearest Town:** North Platte**Project Name:** Alternative Recycling Project**Project No:** 20-180**Amount Requested:** \$33,622.00**Term of Request:** 1**Review Group:** Waste Management

This project will provide a community collection point for materials that aren't typically considered main stream recycled products. As the markets for recyclables tighten, we must find innovative ways to keep materials out of our landfills. Seeking out alternative markets, building relationships, and public education is key to keeping recycling viable in our current economy. We are seeking to assist in this project with ABC Recycling and The City of North Platte. The City of North Platte did apply to the Nebraska Department of Environment and Energy for 2 roll-off units for collection.

Sponsor Name: Lewis and Clark NRD**Nearest Town:** Hartington**Project Name:** Investigation of Groundwater for the Lewis and Clark NRD and Cedar Knox Rural Water Project**Project No:** 19-122-2**Amount Requested:** \$40,000.00**Term of Request:** 1**Review Group:** Statement of Intent

Lewis and Clark NRD (LCNRD) plans to investigate groundwater quality and quantity of discrete aquifers in northern Cedar and Knox Counties. The sites are of interest to LCNRD because of their local importance for domestic, stock, and/or irrigation use and their potential to provide a groundwater source for the Cedar Knox Rural Water Project (CKRWP). The current water source for CKRWP is Lewis and Clark Lake. The CKRWP serves 889 rural hookups and 4 communities in northern Cedar and Knox Counties. CKRWP is investigating alternative water sources in response to sediment originating upstream which is encroaching on and will cover the CKRWP Lake intake in less than 25 years. In 2017, six areas underlain by aquifers that could potentially serve as a source for the CKRWP were identified. Airborne electro-magnetic (AEM) surveys were performed over these areas to define aquifer boundaries and target optimum locations that could provide a sustainable source for the CKRWP. This project will provide direct access to each aquifer to define water chemistry and saturated thickness. Test-hole drilling, borehole logging, observation well installation, and monitoring of water level and chemistry will be conducted and the completions incorporated into the LCNRD well network providing long-term groundwater data. THIS PROJECT WAS FUNDED \$75,100 IN 2019 WITH THE INTENT TO FUND UP TO \$40,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Lewis and Clark NRD**Nearest Town:** Hartington**Project Name:** Bow Creek Watershed Project**Project No:** 20-175**Amount Requested:** \$261,965.00**Term of Request:** 3**Review Group:** Rural Habitat

Lewis and Clark Natural Resources District, and partners are implementing a Water Quality Management Plan to protect and improve water resources in the Bow Creek Watershed. Four stream segments of Bow Creek are presently on Nebraska's impaired waterbodies list - three for E. coli bacteria and one for both E. coli and Aquatic Life Use. The primary contaminant sources include cattle operations, manure application and land treatment. Best Management Practice (BMP) implementation will be promoted through incentive payments to producers establishing conservation practices on agricultural and urban land, and within stream corridors. A Watershed Coordinator will educate stakeholders about stream impairments, the importance of protecting water resources, and programs available to address impairments. Interviews to evaluate agricultural and economic perceptions of producers in the watershed will be conducted to better understand how cropping decisions are made and applied. A producer-based and mentor-led learning network will be created to share experiences, both "good and not-so-good", to enhance agronomic, environmental and social impacts of crop production while increasing potential profitability and long-term success of cropping and conservation practices. Field-scale demonstration sites will employ the Soil Health Management Systems approach (diverse crop rotations vs. corn/soybean rotation) and will be supported by soil/water analysis.

Sponsor Name: Lied Lodge & Conference Center - Arbor Day Farm**Nearest Town:** Lincoln**Project Name:** Prairie, Restoration & Conservation Trail**Project No:** 20-167**Amount Requested:** \$300,000.00**Term of Request:** 2**Review Group:** Urban Habitat

The Conservation Trail and Prairie Restoration project is an integral piece of our larger landscape investment of at Arbor Day Farm, the Nature Connection Project. Total project costs are estimated at \$2,550,000. We are requesting funding from Nebraska Environmental Trust for a portion of this project totaling \$300,000. This project encompasses four objectives: 1. Prairie Restoration – High diversity prairie restoration of 8-acres using local ecotype native seed. 2. Interpretive Wayfinding Corridor - Installation of 3 environmental education and interpretive stations along our newly constructed one-mile Conservation Trail. 3. Lied Lodge Arboretum Restoration – The Lied Lodge parking entry and surrounding landscape is an Affiliated Arboretum site with the Nebraska Statewide Arboretum. We plan to partner with Nebraska State Arboretum to enhance this important green infrastructure feature of our property through a renovated design, planting plan, and interpretative signage. These important updates to the Lied Lodge Arboretum will enhance the beginning and end to the Conservation Trail, while also improving ecological value for wild life, pollinators, water quality. 4. Hazelnut Education Path & Council Rings – Connect newly constructed Conservation Trail to existing hazelnut agroforestry demonstration through the installation of educational hazelnut pathway and stationary Council Rings.

Sponsor Name: Lincoln**Nearest Town:** Lincoln**Project Name:** Eastern Saline Wetlands Project - 2020**Project No:** 20-112**Amount Requested:** \$900,000.00**Term of Request:** 3**Review Group:** Rural Habitat

The City of Lincoln, with the Lower Platte South Natural Resources District, Nebraska Game and Parks Commission, and Pheasants Forever continues to implement wetland habitat conservation through the Saline Wetlands Conservation Partnership. This application will advance the Comprehensive Strategies of Nebraska's Eastern Saline Wetlands Conservation Plan 2018. Saline wetland projects identified in master plans will be implemented through projects including instream grade controls to decrease stream bed incision and subsequent decline of the wetland water table, sediment removal and retention structures to improve water quality, and channel realignment. In addition, saline wetland conservation will be afforded through other restoration and management work (invasive species control, grazing, haying, and prescribed burning), land purchase and conservation easements from willing sellers, increasing public understanding and natural resource appreciation, employing a Coordinator focused on the project, and providing educational resources and research opportunities. Project accomplishments include over 1,830 acres conserved, including saline wetlands, native prairie, and native plantings, completion of nine restoration projects, and construction of nearly nine miles of boundary fence to assist cattle grazing on both private and public lands. The federally endangered Salt Creek tiger beetle, state endangered saltwort and other unique species inhabit these areas.

Sponsor Name: Lincoln**Nearest Town:** Lincoln**Project Name:** Lincoln's Hazardous Waste Center - Expanded Operations to Safeguard the Environment & Protect Public Health**Project No:** 20-159**Amount Requested:** \$150,000.00**Term of Request:** 1**Review Group:** Waste Management

The Lincoln-Lancaster County Health Department (LLCHD), in cooperation with private and public partners, is seeking \$150,000 for equipment to support Lincoln's Hazardous Waste Center (LHWC). A core element of LLCHD's Toxics Reduction Program, the LHWC has a target of 115,000 households and approximately 4,500 small businesses throughout Lancaster County. Since October 2017, the LHWC has allowed for year-round access to the safe collection, diversion and recycling of hazardous materials; resulting in over 101,000 pounds of hazardous waste diverted from area landfills while serving 1,650 area households and over 100 small businesses. Lincoln's Hazardous Waste Center is now operating weekly to better serve residents. Grant funding will assist in maintaining and expanding LHWC operations by purchasing equipment for increased energy efficiency, a higher level of facility safety and added material storage capacity. This will further LLCHD's mission to help protect the public's health and the environment. Planned equipment purchases include: a second array of solar photovoltaic panels and equipment, a pallet-rack storage system for hazardous materials, a modified fume hood/HVAC system, a sorting room wash basin and Department of Transportation (DOT) specified hazardous waste containers.

Sponsor Name: Lincoln - Parks & Recreation Department**Nearest Town:** Lincoln**Project Name:** Prairie Corridor on Haines Branch - Phase III**Project No:** 19-139-2**Amount Requested:** \$350,000.00**Term of Request:** 2**Review Group:** Statement of Intent

The Prairie Corridor on Haines Branch will be a ribbon of tallgrass prairie, with a trail that stretches from the Pioneers Park Nature Center to Spring Creek Prairie Audubon Center, including connections to Conestoga Lake State Recreation Area and Denton. The corridor is an opportunity for tallgrass prairie conservation, environmental education and outreach, economic development, and a recreational trail. Phase I has been completed. Phase II is nearing completion. Project accomplishments include over 800 acres conserved, including 90 acres of virgin prairie and 120 acres of high diversity tallgrass prairie reestablished, and more than 3.0 miles of trail completed. Phase III Activities: Conservation: Purchase of land and conservation easements from willing sellers. Habitat: Preserve and enhance tallgrass prairie, an imperiled ecosystem with less than 1% remaining in the continental U.S., and wetlands. Restore wooded riparian areas. Research: Evaluate methods for establishing and managing high-diversity native grasslands with emphasis on pollinators. Study stream ecology to inform the preservation and restoration of waterways and related habitat. Education & Outreach: Increase understanding and appreciation of tallgrass prairie and related resources. Below not part of NET request - Trail/Economic Development: Continue development of 10-mile trail. Endowment: Continue fundraising for a long-term care endowment. THIS PROJECT WAS FUNDED \$450,000 IN 2019 WITH THE INTENT TO FUND UP TO \$350,000 IN YEAR TWO AND \$100,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Lincoln - Transportation & Utilities Department - StarTran**Nearest Town:** Lincoln**Project Name:** Lincoln Electric Bus Fleet Replacement Project**Project No:** 20-215**Amount Requested:** \$387,569.00**Term of Request:** 1**Review Group:** Air Quality

StarTran will replace six diesel buses built in 2004 with six electric buses with charging stations, a transformer and opportunities for staff training, adding to four electric buses that have been delivered in August 2019, bringing our total number of electric buses to 10. Six 35-foot electric buses will be purchased, replacing six heavy duty diesel buses built in 2004 that have passed 12-year federal guidelines for usable vehicle life, have the most mechanical breakdowns, and the largest number of traveled miles. Buses will be used on routes serving primarily low-income residents. Additionally, 3 electric charging stations with 2 fueling ports each and a transformer will be purchased to recharge the buses. Costs for staff training on electric buses have been included in this proposal. StarTran's goal is to advance its commitment to increase the number of no emission buses in its fleet; thus, reducing negative environmental impacts of public transit.

Sponsor Name: Lincoln Electric System**Nearest Town:** Lincoln**Project Name:** Electric Vehicle Public Engagement and Rebate Program**Project No:** 20-108**Amount Requested:** \$120,000.00**Term of Request:** 1**Review Group:** Air Quality

Lincoln Electric System is requesting a \$120,000 grant to further our comprehensive plug-in vehicle research, education and promotional plans. Funds would be used to offer purchase or lease rebates for new all-electric (BEV) and plug-in hybrid electric (PHEV) vehicles. LES would contribute by funding, planning and promoting an innovative EV ride and drive event, the first of its kind in Nebraska. The event would bring together auto dealers, plug-in vehicle owners and environmental organizations to provide the public with an informative and engaging experience. The rebate program and ride and drive event would address two primary deterrents for plug-in vehicle adoption: customer awareness and purchase price. Increasing adoption of plug-in vehicles advances our commitment to environmental stewardship by reducing greenhouse gasses, particularly as utilities integrate more renewable generation. Incentives of \$1,500 and \$4,500 would be offered for the purchase/lease of a new PHEV or BEV respectively. Rebates would be limited to one per household for residential customers in the LES service territory. Customers receiving a BEV rebate would be required to install qualifying internet-connected Level 2 home charging stations. Access to these chargers would further LES' ongoing study of customer charging behavior and their impacts on the distribution system.

Sponsor Name: Literacy Council of Grand Island**Nearest Town:** Grand Island**Project Name:** Environmental Literacy**Project No:** 20-113**Amount Requested:** \$95,809.00**Term of Request:** 3**Review Group:** Education

The Literacy Council of Grand Island (LCofGI) requests funds to provide environmental literacy programming for three years for adult English Language Learners and the greater community. The proposed project will provide engaging environmental education regarding habitats, groundwater, soil management, waste management, and air quality. Education will be offered in three ways: --Direct instruction (one-on-one tutoring and group classes) targeted to English Language Learners; --An annual community-wide event, bringing together public and private sector organizations for an engaging and informative festival each spring;--An annual public education campaign to be disseminated throughout the region and state in both English and Spanish. LCofGI has provided effective instruction to the Central Nebraska region for 38 years, teaching more than 1,000 students in the past ten years. English literacy is a critical need here, where one out of every seven residents has Limited English proficiency. In the past several years, we expanded beyond English literacy to meet student needs for health literacy, financial literacy, digital literacy, and more; in 2019, we began environmental literacy programming for our students and the greater community. The proposed project would continue and expand this programming and would help our community improve its environmental awareness and sustainable practices.

Sponsor Name: Lower Big Blue NRD**Nearest Town:** Beatrice**Project Name:** Turkey Creek Watershed and Source Water Protection Project **Project No:** 20-162**Amount Requested:** \$200,000.00 **Term of Request:** 3 **Review Group:** Water

The LBBNRD has partnered with the NRCS, NDEE, UNL Extension, City of Wilber and Owners and Operators in the approximate 70,000 acre Turkey Creek and City of Wilber WHPA Watersheds to create a NWQI Watershed Management Plan. The plan addresses water quality concerns including e-coli and atrazine in the surface water and nitrates in the groundwater. The plan which identifies conservation practices to address water quality concerns was developed by a local stakeholders group in conjunction with partner agencies. A watershed stakeholders meeting was held in February at the Wilber Legion where approximately 100 owners and operators attended and shared ideas on how to address the water quality concerns in the project area. Traditional and nontraditional conservation practices that promote soil health, reduce erosion and lessen nutrient and pesticide runoff was discussed. In addition to the stakeholders meeting the NRD and NRCS staff have been meeting individually with stakeholders and completing a land resources survey that includes nutrient and pesticide practices that operators are willing to implement to address water quality issues in the watershed. The area also consist of the Wilber and Dewitt WHPAs and the LBBNRD Phase II water quality area.

Sponsor Name: Lower Big Blue NRD**Nearest Town:** Beatrice**Project Name:** Improving Nitrogen and Irrigation Best Management Practices in the Beatrice and Dewitt Wellhead Protection Areas **Project No:** 20-186**Amount Requested:** \$286,700.00 **Term of Request:** 3 **Review Group:** Water

The Lower Big Blue Natural Resources District (LBBNRD) is applying for financial assistance from the Nebraska Environmental Trust (NET) to install flowmeters on irrigation systems in our Phase II groundwater quality area for improved irrigation management practices. The District annually samples 40 wells for nitrate-nitrogen in a 60 mi² area northwest of Beatrice. Nitrate-nitrogen concentrations in this area have increased to above the 10 ppm MCL threatening the Wellhead Protection Areas for the towns of Dewitt and Beatrice. The City of Beatrice has been forced to drill new wells and blend with the high nitrate wells to provide water below the 10 ppm MCL. The District is proposing a cost-share program to combine NET funds with matching funds from LBBNRD and local cooperators to purchase 300 flowmeters over the next 3 years. Project funding will also purchase and install an ET weather station to provide local crop water use for irrigation scheduling. LBBNRD staff will sample irrigation wells for nitrate-nitrogen to aid farmers with nitrogen management recommendations. Most irrigation systems in the Phase II area are unmetered and will provide beneficial data, once metered, for the irrigation best management practices in the LBBNRD to reduce nitrate-nitrogen concentrations in the groundwater.

Sponsor Name: Lower Big Blue NRD**Nearest Town:** Beatrice**Project Name:** Improving Irrigation Best Management Practices in the Odell and Diller Wellhead Protection Areas**Project No:** 20-187**Amount Requested:** \$300,300.00**Term of Request:** 3**Review Group:** Water

The Lower Big Blue Natural Resources District (LBBNRD) is applying for financial assistance from the Nebraska Environmental Trust (NET) to install flowmeters on irrigation systems in Phase II areas for groundwater quantity management and water monitoring devices with telemetry for improved irrigation water management. The district annually measures static groundwater levels on 25 wells in Eastern Jefferson County. Static groundwater levels have fallen 5 feet or more or have experienced declines in saturated thickness of at least 5% since the baseline years of 1982 and 2011 threatening water supply to the wells in the Wellhead Protection Areas for the towns of Odell and Diller. The District plans to administer a cost-share program that will combine NET funds with matching funds from LBBNRD and local cooperators to install 300 irrigation flowmeters over the next 3 years. Most irrigation systems in the project area are unmetred and would provide beneficial data to the irrigated producers in the LBBNRD to improve irrigation best management practices to reduce or reverse groundwater declines in the project area. Irrigation flowmeter readings will be vital to LBBNRD staff and board to determine future controls in the project area as it moves into Phase II groundwater quantity management.

Sponsor Name: Lower Elkhorn NRD**Nearest Town:** Norfolk**Project Name:** LENRD Establishment of Baseline Vadose Zone Sampling in Pierce County**Project No:** 20-134**Amount Requested:** \$17,500.00**Term of Request:** 2**Review Group:** Water

Within the Lower Elkhorn Natural Resources District (LENRD), citizens rely on groundwater as the primary source of water for all uses. Maintaining a safe drinking water source is one of the most important priorities of the LENRD. This has been increasingly difficult within areas of Pierce County, as groundwater nitrate levels in many areas have remained above safe levels, and in some areas, continue to increase. This is supported by over 40 years of groundwater sampling by the LENRD. Through this project, the LENRD will expand its groundwater monitoring program by establishing baseline vadose zone nitrate data. Through the collection of a minimum of 11 cores spread throughout the area of Pierce County designated as the Phase 3 Groundwater Management Area, the LENRD will be able to determine the nitrate load moving through the soil profile, and will monitor the nitrate load in response to best management practices being implemented by producers. After establishing this baseline data, the LENRD intends to return to the sample location sites every 5 years for additional monitoring. The LENRD requests the Nebraska Environmental Trust to fund a portion of this project, which is being led by the LENRD.

Sponsor Name: Lower Loup NRD**Nearest Town:** Ord**Project Name:** Integrated Management Data Acquisition Program**Project No:** 19-115-2**Amount Requested:** \$25,000.00**Term of Request:** 2**Review Group:** Statement of Intent

The Lower Loup Natural Resources District (LLNRD) is applying for financial assistance from the Nebraska Environmental Trust to install flowmeters on municipal, commercial, industrial, and livestock wells, as well as additional irrigation systems. With the passing of the voluntary Integrated Management Plan (IMP) by the LLNRD and the Nebraska Department of Natural Resources (NDNR), several goals were identified and approved to help monitor and protect the water supply in the future. The first goal is to develop and maintain a comprehensive inventory of the locations and sources of the District's current and future water supplies, water uses and outflows. Flowmeters will allow the NRD to accurately quantify various water uses to acquire data for the water budget, which is a primary objective of the IMP. The District plans to administer a cost-share program that will combine Environmental Trust funds with matching funds from LLNRD to fund the purchase of 75 flowmeters over the next 3 years. These high-capacity wells are unmetred and would provide beneficial data to the LLNRD for the water budget. THIS PROJECT WAS FUNDED \$25,000 IN 2019 WITH THE INTENT TO FUND UP TO \$25,000 IN YEAR TWO AND \$25,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Lower Loup NRD**Nearest Town:** Ord**Project Name:** Cover Crop Utilization and Nutrient Management Program**Project No:** 20-111**Amount Requested:** \$125,000.00**Term of Request:** 3**Review Group:** Soil Management

The Lower Loup Natural Resources District (LLNRD) is applying for financial assistance from the Nebraska Environmental Trust to implement a cover crop cost-share program in the Water Quality Management Area 28 west of Columbus, Nebraska in Nance and Platte Counties. In 2002, Area 28 triggered the Phase III level of the LLNRD's Groundwater Management Plan (GWMP) by exceeding the 8.50 milligrams per liter threshold of nitrate concentration in groundwater across sampled wells. The GWMP increases regulation of nitrogen application in Phase III areas. However, even with the Phase III requirements, groundwater monitoring has shown increases in nitrate concentrations to an average 18.8 mg/l across Area 28. In 2012, an Area 28 Groundwater Management Study and Literature Review was performed by the LLNRD and Olson Associates Engineering suggesting the use of the best management practice (BMP) of cover crops as a nitrogen management tool since cover crops have been shown to be beneficial in limiting nitrate movement through the soil profile. The District plans to administer a cost-share program that will utilize Environmental Trust funding with matching funds from the LLNRD to encourage the use of cover crops in Area 28 over the next 3 years.

Sponsor Name: Lower Niobrara NRD**Nearest Town:** Butte**Project Name:** Lower Niobrara Observation Well Network**Project No:** 19-151-2**Amount Requested:** \$61,000.00**Term of Request:** 2**Review Group:** Statement of Intent

The Lower Niobrara NRD (LNNRD), located in north central Nebraska, is looking to the Nebraska Environmental Trust for grant funding to drill test holes, record geological data, construct observation wells, and install water-level data loggers to acquire information about aquifer composition, ground water hydrology, ground water quality, and ground water quantity. The observation wells will support a long term ground water monitoring program that will supply data to efficiently and effectively manage the ground water resources of the LNNRD. Currently, LNNRD has a very limited number of dedicated observation wells in a small area of the District. Expansion of this observation well network will allow for increased understanding of aquifer attributes, ground water flows, year around water level monitoring, and an increased level of accuracy of ground water data. The target areas have intensive, irrigated cropping systems that overlay areas located along aquifer boundaries, areas previously declared aquifer absent, and areas that have well interference issues between irrigators, livestock producers, and domestic well owners. Also included in the target areas are the Wellhead Protection Areas of the Boyd #2 Rural Water District, the West Knox Rural Water District, and the LNNRD's portion of the Bazile Groundwater Management Area. THIS PROJECT WAS FUNDED \$48,500 IN 2019 WITH THE INTENT TO FUND UP TO \$61,000 IN YEAR TWO AND \$50,500 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Lower Platte North NRD**Nearest Town:** Wahoo**Project Name:** Aquifer Vulnerability Mapping and Analysis**Project No:** 19-127-2**Amount Requested:** \$37,600.00**Term of Request:** 1**Review Group:** Statement of Intent

The Lower Platte North NRD (LPNNRD) has identified two areas of nitrate contamination, known as Phase II and Phase III areas. Phase II areas are defined as having 50% or more of wells with a nitrate concentration exceeding 8 ppm, while Phase III areas are those with 50% or more wells exceeding 10 ppm (10 ppm is the maximum safe drinking level limit). One area consists of all or parts of twenty-one Sections around Bellwood in Butler County and the other consists of sixty-five Sections around the towns of Richland and Schuyler in Colfax County. With such a large area, with diverse soil types, it is an incredibly difficult problem to solve. Instead of attempting to treat the area as a whole, which is impractical and costly, LPNNRD is proposing an intensive sampling and modeling effort to better understand how the nitrates are moving through these areas and attempt to identify those areas where aquifer infiltration is most likely. Once identified, LPNNRD can focus resources on these areas through education and working with producers on best management practices to ameliorate nitrate contamination in the Phase areas as a whole. This will result in the maximum benefit at the least cost. THIS PROJECT WAS FUNDED \$53,599 IN 2019 WITH THE INTENT TO FUND UP TO \$37,600 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Middle Niobrara NRD**Nearest Town:** Valentine**Project Name:** Expansion of Water Quality/Quantity Monitoring Sites **Project No:** 19-198-2**Amount Requested:** \$61,358.00 **Term of Request:** 1 **Review Group:** Statement of Intent

The Middle Niobrara Natural Resources District (MNNRD) in north central Nebraska covers an area of 2,983,680 acres. The MNNRD sits on top of the Ogallala Aquifer covering parts of Cherry, Brown, Keya Paha, and Rock counties along the middle stretch of the Niobrara River. The Aquifer supplies almost all the water for drinking, irrigation, and livestock production. The MNNRD is looking for funding to drill test holes, record down-hole data, construct monitoring wells, and purchase of sampling equipment to collect data about groundwater quality, quantity, and aquifer composition. Presently, the MNNRD has 40 monitoring well sites across the District. (Figure 1) With the size of the District, this still leaves vast areas where data collection can occur. The MNNRD will work with the University of Nebraska Conservation and Survey Division to drill test holes and obtain down-hole geophysical logs. This information is important in identifying aquifer properties, depth and locations to install monitoring wells. Well driller bids will be secured, and monitoring wells will be constructed. When completed, the updated aquifer information, along with quality and quantity data will assist the MNNRD with groundwater management decisions. THIS PROJECT WAS FUNDED \$49,892 IN 2019 WITH THE INTENT TO FUND UP TO \$61,358 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Middle Niobrara NRD**Nearest Town:** Valentine**Project Name:** Long Pine Creek Watershed Restoration - Phase 3 **Project No:** 20-104**Amount Requested:** \$485,000.00 **Term of Request:** 1 **Review Group:** Rural Habitat

This project takes a stakeholder driven, watershed-wide approach to improving surface and ground water pollution, stabilizing streams, and restoring aquatic habitat. Nebraska Environmental Trust (NET) funds, combined with NDEE Section 319 and project sponsors' monies and labor will be used to implement a stream rehabilitation project (site SD-4) on Sand Draw Creek, as identified in the Long Pine Creek Watershed Water Quality Management Plan (WQMP). The specific activities that will be implemented as a part of this project will include: final design plans (preliminary designs completed in Phase I), permitting and construction of a self-adjusting engineered rock riffle structure to address stream instability, head cutting, scouring, erosion, excess sedimentation, aquatic habitat loss, and streambank degradation issues. Additionally, this project will include implementation of agricultural best management practices (BMPs); tree clearing to reduce hazardous fuels to create fire breaks; and fund a watershed coordinator position whom will continue working closely with the landowners in order to provide education and outreach activities.

Sponsor Name: Middle Niobrara NRD**Nearest Town:** Valentine**Project Name:** Sandhills Interactive Natural Resources Education Complex (SINREC)**Project No:** 20-150**Amount Requested:** \$600,015.00**Term of Request:** 3**Review Group:** Education

The Middle Niobrara NRD is providing one acre of our complex to utilize a 121' fully operational center pivot irrigation system donated by Lindsay. An additional two acres will be transformed to include an advanced classroom and outdoor training resources. Utilization of this irrigation system, along with multiple monitoring wells will allow for extensive data collection and water resource training. Water use efficiency and management will be demonstrated through soil moisture probes, new pivot and weather technology, and multiple demonstrative flow meters. A full chemigation set up provides advanced education to landowners, NRDs, and agency employees. A variety of Best Management Practices located within the educational center will showcase current practices and trial concepts to be researched and promoted. This progressive training center will simulate and prepare individuals for issues they might see at any one of the nearly 100,000 registered irrigation wells in Nebraska. A modern interpretive indoor classroom will hold trainings and educational opportunities for youth groups, the general public, government agencies, and NRD's from across Nebraska. Real, hands on experience to contribute to a classroom setting will address each of the three learning styles to provide a higher quality form of education and a more complete training.

Sponsor Name: National Grazing Lands Coalition**Nearest Town:** Burwell**Project Name:** National Grazing Lands Summer Tour 2020**Project No:** 20-160**Amount Requested:** \$27,037.00**Term of Request:** 1**Review Group:** Education

The National Grazing Lands Coalition (NatGLC) in partnership with the Nebraska Grazing Lands Coalition will conduct a three day bus tour for the Nebraska Sandhills. NatGLC is a producer lead organization that supports boots on the ground/education/research activities on private grazing lands in support of grazing lands managers/owners to make the best decisions for their grazing lands. This tour is held every three years and highlights states that have an active State Grazing Lands Coalition with state-wide partnerships. Tour stops include: an Ecotourism operation, a Leopold Conservation Award winner, a University grazing research center, and cow/calf and seed-stock operations. Subjects to be covered during the tour include: the Ogallala Aquifer, NE Sandhills ecology, generational transfer of operations, and conservation activities/practices.

Sponsor Name: National Wild Turkey Federation**Nearest Town:** Chadron**Project Name:** Forest Stand Restoration on Pine Ridge WMA**Project No:** 20-219**Amount Requested:** \$226,929.00**Term of Request:** 3**Review Group:** Rural Habitat

We are proposing a continuation of their partnership for forest restoration efforts in the Pine Ridge area through FSI projects on Gilbert Baker, Peterson and Ponderosa WMAs. These projects will create a more natural, pre-settlement pine woodland and enhance biological diversity, while reducing the risk of high severity crown fires. This is especially important as over 60% of the target area was severely impacted with large-scale wildfires in 2006 and 2012. Plans are to directly treat 600 acres, while building upon and strengthening completed projects that were previously supported by NET. This project will include creation of shaded fuel-breaks thinnings along access roads and highways within the wildlife/urban interface. These locations were identified by wildland fire officials and biologists for more effective and safe wildfire suppression and prescribed burning efforts. This will impact the area at the landscape scale, allowing for increased prescribed burning efforts to reduce ponderosa pine regeneration and meadow encroachment, thus reducing overall forest management costs. The NWTF/NGPC cooperative forester will provide implementation and oversight of this grant and associated projects. We are seeking financial assistance to assist with implementation of needed forest management practices to restore the function and resiliency of this biologically unique landscape.

Sponsor Name: Nebraska Academy of Sciences, Inc.**Nearest Town:** Lincoln**Project Name:** Nebraska Environmental Public Information and Education Minigrant Program**Project No:** 20-103**Amount Requested:** \$181,740.00**Term of Request:** 3**Review Group:** Education

The Nebraska Environmental Public Information and Education Minigrant Program will award a total of \$51,000 each year for the next three years, in Minigrants of up to \$3,000 each, to support the presentation and dissemination of information and perspectives that will stimulate enhanced environmental stewardship in any category eligible for Nebraska Environmental Trust (NET) funding. These categories are habitat, surface and ground water, waste management, air quality, and soil management. The grants seek to expand dialogue on important current conservation topics and to provide information on emerging or highly useful conservation methods. All Nebraska individuals, private organizations, and public entities are eligible to apply for these funds. This program will be administered by the Nebraska Academy of Sciences.

Sponsor Name: Nebraska Big Game Society**Nearest Town:** Elkhorn**Project Name:** Solar Water Well Equipment Water Catchments**Project No:** 19-167-2**Amount Requested:** \$15,000.00**Term of Request:** 1**Review Group:** Statement of Intent

This wildlife water development project is a partnership between Nebraska Big Game Society (NBGS) and Nebraska Game & Parks Commission (NGPC). The goal of the project is to provide wildlife water sources on public and private lands in the arid regions of N. W. Nebraska panhandle. The project has three parts: (1) To replace existing well mechanical equipment (windmills or electric motors) with solar-based equipment for greater efficiency and constant use throughout the year. (2) install new water wells with solar equipment in areas that presently have no natural water source. (3) install water catchment structures, better known as "guzzlers" in remote areas with limited water sources or man-made water wells. The project total cost will be \$80,000. NBGS and NGPC are each investing \$20,000 (50%) towards the project costs, \$40,000 total, which include all equipment, materials, and labor to complete the project. Any disturbances to the installation sites will be repaired prior to leaving a site.

THIS PROJECT WAS FUNDED \$25,000 IN 2019 WITH THE INTENT TO FUND UP TO \$15,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Center for Workforce Development & Education**Nearest Town:** Omaha**Project Name:** Nebraska Green Corps**Project No:** 20-216**Amount Requested:** \$419,750.00**Term of Request:** 3**Review Group:** Education

Nebraska Green Corps is for High School students age 16-18 in the Greater Omaha Area, who are specifically interested in Building and Construction Trades or building a green economy. Members will receive on-the-job training and career shadowing while learning specific skills to create energy efficiency in older low-income homes and the basics of flood remediation, cleanup, and reconstruction. Students will be trained by area labor unions and work with approved contractors, gaining valuable work experience and job skills. In addition to on the job training, Corps members will learn about Common Sense Economics, the environmental physics of the home, flood hazards in the home, career apprenticeship programs, opportunities in the trades with community colleges and 4-year college partners. Participants will receive a 10-hour OSHA card. Corps members receive an hourly pay while they are in class and on the work site. This funding is anticipated to cover class materials, offset Corps member pay, fund instructors, and help us leverage partners to finance the improvements for residents of the OPPD 13-county service area. The goal is to save energy from older homes, train people to help in flood cleanup, and develop career interests in the trades.

Sponsor Name: Nebraska Community Energy Alliance**Nearest Town:** Lincoln**Project Name:** Connection Nebraska Communities Driving America's Fuel! V **Project No:** 20-185**Amount Requested:** \$533,604.00 **Term of Request:** 1 **Review Group:** Air Quality

The Nebraska Community Energy Alliance (NCEA) requests \$533,604 of the Nebraska Environmental Trust (NET) for a cost share of \$1,866,695 from ten NCEA members and grant partners. NCEA grant partner requests are: Omaha Public Power District - \$148,750; Nebraska Public Power District - \$115,500; Minden - \$20,310; Norfolk - \$20,310; Lincoln - \$25,860; Beatrice - \$20,310; Auburn Board of Public Works - \$4,310; Central Community College - \$81,240; South Sioux City - \$12,105; University of Nebraska (Research) - \$50,000; Electric Transportation Partners (Grant Administration and Public Education) - \$34,909. NCEA members and grant partners participate in a large, on-going data collection and analysis of charging information, initiated in 2014, and published monthly at <https://www.necommunity.energy>, to present findings of the economic and environmental benefits of electrified transportation.

Sponsor Name: Nebraska Community Energy Alliance**Nearest Town:** Lincoln**Project Name:** Connection Nebraska Communities Driving America's Fuel! Phase V Advances
Project No: 20-190**Amount Requested:** \$556,555.00 **Term of Request:** 1 **Review Group:** Air Quality

The NCEA 2020 Nebraska Environmental Trust funding request is \$556,555. The request is for a 25kW solar array for Metro Community College, DCFC stations for Auburn and Nebraska Public Power District, and Omaha Public Power District's expanded rebate program for electric vehicles and electric vehicle charging stations for public, residential and commercial customers. Aurora requests matching funds for two L2 (240v) station to be installed by its 2019-funded DCFC stations as a companion grant to NDEE's VW funding opportunity. The Nebraska Community Energy Alliance (NCEA), an interlocal cooperative agency with associate members, has 37 members statewide whose mission is to build and promote advanced technologies in buildings and transportation. Advanced technologies reduce energy consumption, reduce CO2 emissions and cut costs to the members. Advances, of the type referenced in the title, are industry advances utilized by members preparing for market advances. Those advances are solar power generation that can scale to meet the needs of the building to displace conventional fuel, direct current fast charging (DCFC) electric vehicle charging stations that can scale to meet all vehicle charging types, and market expansion in Nebraska to public, residential and commercial utility customers.

Sponsor Name: Nebraska Community Foundation FBO RBJV**Nearest Town:** Grand Island**Project Name:** Western Basin Restorations; Improving Waterfowl Habitat, Recharging the Aquifer, and Improving Water Quality**Project No:** 19-114-2**Amount Requested:** \$162,750.00 **Term of Request:** 1 **Review Group:** Statement of Intent

The Ogallala Aquifer is the lifeblood of Nebraska. This underwater ocean provides drinking water for Nebraska Residents and ensures profitable irrigated agriculture. Playa wetlands, like those in the Rainwater Basin, recharge the aquifer. If funded, partners will leverage \$782,000 in matching funds to restore 1,565 acres of playa wetlands at five Waterfowl Production Areas (Cottonwood, Funk, Johnson, Linder, Victor Lakes) in Phelps and Gosper County. The restoration activities will ensure these wetlands have sufficient storage volume for 3,000 acre/ft. of supplemental water deliveries without negatively impacting adjacent landowners. Restoration will allow Tri-Basin Natural Resources District to deliver 3,000 acre/ft. annually to these wetlands. The restored wetlands will provide habitat for millions of migrating waterfowl as well as recharge and improve water quality in the aquifer. Target delivery dates are scheduled after November 15th. Deliveries will be through newly installed infrastructure that will convey water from Central Nebraska Public Power and Irrigation District canals in a seven day period. This project is a unique win-win where multiple agencies are working together to provide habitat for migratory birds, improve drinking water for area residents, provide sustainable water for irrigation, and contribute to in-stream flow targets for the Platte River System. THIS PROJECT WAS FUNDED \$420,000 IN 2019 WITH THE INTENT TO FUND UP TO \$162,750 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Community Foundation FBO RBJV**Nearest Town:** Grand Island**Project Name:** Happy Cows; Happy Wetlands**Project No:** 19-136-2**Amount Requested:** \$39,480.00 **Term of Request:** 2 **Review Group:** Statement of Intent

If funded, this grant will provide financial assistance to continue the Rainwater Basin Joint Venture (RWB JV) Working Lands Initiative (WLI). Grant and partner funds will be leveraged with landowner contributions, to install grazing infrastructure that will allow wetlands to be incorporated into agriculture operations throughout the Rainwater Basin (RWB). As row-crop agriculture production increased, many privately owned wetlands were abandoned. With the lack of grazing the wetlands transitioned to monocultures of invasive/exotic vegetation (reed canary grass, river bulrush, and hybrid cattail). These communities provide limited habitat for waterfowl, waterbird, and shorebirds. Successful implementation will require three stages: 1) Contacting producers with abandoned wetlands about incorporating grazing in their operation, 2) Leveraging funding to construct necessary infrastructure (perimeter fence, cross fence, and livestock watering), 3) Conducting tours with landowners and natural resource professionals to ensure an open dialogue about how grazing can be economically viable and promote desired habitat for the millions of waterfowl and shorebirds that rely on this region during their bi-annual migrations. These tours will ensure natural resource professionals and producers develop better projects and understand the win-win for producers and wildlife. Developing infrastructure will also ensure cost effective long-term management of these sites through prescribed grazing. THIS PROJECT WAS FUNDED \$111,650 IN 2019 WITH THE INTENT TO FUND UP TO \$39,480 IN YEAR TWO AND \$25,620 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Community Foundation FBO RBJV**Nearest Town:** Grand Island**Project Name:** Partnering for Wetlands - Helping address flooding, water quality, water quantity, and habitat in the Rainwater Basin Landscape**Project No:** 20-128**Amount Requested:** \$1,000,000.00 **Term of Request:** 3 **Review Group:** Rural Habitat

The Rainwater Basin Joint Venture facilitates collaboration between conservation entities to leverage program options and maximize restoration outcomes. Even with this collaboration, some important activities can't be implemented, either financially or programmatically. This grant will provide the flexible funding needed to address this bottleneck. Resulting projects will improve the benefits for Nebraska citizens (flood prevention, groundwater recharge, and improved water quality) as well as migratory birds and resident wildlife. On private lands, funds will support wetland restoration and enhancement. Cost-share for grazing infrastructure will allow these tracts to be integrated into local operations for haying/grazing. In addition to being profitable, wetland grazing promotes desired habitat for the millions of migratory birds that use the Rainwater Basin (RWB). Public lands make up less than 1% of the landscape, but they can contribute to over 50% of the available habitat for migratory birds. To maximize habitat on these lands on-site actions (removing sediment, filling concentration pits, etc.) and off-site watershed restoration (i.e. filling unused irrigation reuse pits, re-contouring waterways) will be implemented. These activities will increase hydrologic function of the wetlands thereby providing more reliable habitat for wetland dependent migratory birds and increasing groundwater recharge to the underlying Ogallala Aquifer.

Sponsor Name: Nebraska Cooperative Republican Platte Enhancement **Nearest Town:** North Platte**Project Name:** NCORPE Re-seeding Project**Project No:** 19-189-2**Amount Requested:** \$159,486.00 **Term of Request:** 2 **Review Group:** Statement of Intent

NCORPE's re-seeding project is a result of nearly 14,000 acres of formerly irrigated cropland, in the Sandhills Ecoregion of Nebraska as defined by the Nebraska Game and Parks Commission, being planted to a native prairie seed mixture. Due to the magnitude of converting the largest contiguous tract of cropland to native prairie in Nebraska's history some of these acres inevitably failed to become fully established rangeland. Currently, the task for the Nebraska Cooperative Republican Platte Enhancement Project (NCORPE), an interlocal agency that is comprised of the Upper Republican, Lower Republican, Middle Republican, and Twin Platte NRDs (NCORPE), is to re-seed those acres deemed unsuccessful at becoming fully established and to potentially inter-seed forbs into the remnant corners. The portion of the project for which NCORPE is seeking an NET grant is the incorporation of native forb seeds into an all native grass mixture and the drilling costs associated with this entire seed mixture. THIS PROJECT WAS FUNDED \$37,746 IN 2019 WITH THE INTENT TO FUND UP TO \$159,486 IN YEAR TWO AND \$9,783 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Department of Natural Resources**Nearest Town:** Lincoln**Project Name:** Integrated Water Management Action Initiative**Project No:** 18-107-3**Amount Requested:** \$3,300,000.00 **Term of Request:** 2 **Review Group:** Statement of Intent

This application is submitted pursuant to LB331, 2017, codified at Neb. Rev. Stat. § 61-218(7)(c), which states: "It is the intent of the Legislature that the department apply for ... an additional three-year grant that would begin in fiscal year 2017- 18 if the criteria established in subsection (4) of section 81-15,175 are achieved." All funds obtained through the allocation will be used for the purposes of the WRCF as set out in Neb. Rev. Stat. § 61-218(7). The WRCF was established to fund the State's contingent water resources remediation needs in fully and overappropriated basins. It has funded various projects since its inception in 2007, including the Platte Basin Habitat Enhancement Project (PBHEP), also funded with NET dollars, and the "Platte Basin Water Management Action Initiative", which evolved from PBHEP, expanding on other water projects and shifting focus from easements to other projects that achieve the same goal. The purpose of this current Initiative is to plan, implement, and monitor activities that result in more effective water management and remediation for current depletions caused by past actions. The Initiative will assist the Department and the NRDs, in cooperation with other partners, in providing clear, direct benefits to habitat and surface and groundwater resources by: optimizing timing and efficiency of water uses, enhancing streamflows and groundwater recharge, reducing water consumption, and enhancing wildlife habitat in fully and overappropriated areas. THIS PROJECT WAS FUNDED \$3,300,000 IN 2018 WITH THE INTENT TO FUND UP TO \$3,300,000 IN YEAR TWO AND \$3,300,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE THIRD YEAR REQUEST.

Sponsor Name: Nebraska Game and Parks Commission**Nearest Town:** Lincoln**Project Name:** Grassland Enhancement Initiative**Project No:** 19-170-2**Amount Requested:** \$250,000.00 **Term of Request:** 1 **Review Group:** Statement of Intent

The NGPC and PF would use NET and matching funds to help landowners complete grassland habitat improvements on 45,000 acres of private lands across Nebraska. These improvements will be accomplished through the implementation of various practices including, but not limited to; Prescribed Fire, Tree Removal, Herbicide Application, Disking, Grazing, and Herbaceous Seeding. The project partners have a proven track record and recognized programs to undertake grassland management across the state on both native grasslands and Conservation Reserve Program acres. This project would provide funding to counter threats to grasslands such as the proliferation of eastern redcedar, absence of management, and conversion. With time and an absence of management, plant diversity of grasslands has decreased and many tracts have become monocultures of grass. This loss of plant diversity has decreased the amount of suitable habitat for grassland birds. Grassland management activities on these acres restore diversity and productivity for wildlife including pollinators (monarchs, native bees, etc.) and grassland birds (grasshopper sparrows, greater prairie-chicken, pheasant, etc.). The creation and improvement of grasslands will generate many direct and indirect benefits to landowners and wildlife, as well as hunters and local economies for years after the enhancements are completed. THIS PROJECT WAS FUNDED \$250,000 IN 2019 WITH THE INTENT TO FUND UP TO \$250,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Game and Parks Commission**Nearest Town:** Lincoln**Project Name:** Nebraska's Natural Legacy Project: New Approaches to Biodiversity Conservation**Project No:** 19-191-2**Amount Requested:** \$315,000.00**Term of Request:** 2**Review Group:** Statement of Intent

The Nebraska Natural Legacy Project (Legacy Project) has applied strategic conservation to restore at-risk species since it was federally approved in 2005. The habitat-based plan identifies at-risk species, threats to those species, conservation actions, and prioritizes Biologically Unique Landscapes (BUL) for effectively conserving Nebraska's biodiversity. Legacy partners have worked with hundreds of private landowners to implement conservation projects in nearly two dozen BULs that enhanced over 400,000 acres of at-risk species' habitat. The Legacy Project is a living document (updated in 2011) and will undergo a comprehensive revision in 2020-2021. The first goal of this proposal is to continue strategic habitat improvement on at least 100,000 acres. Habitat restoration, on both private and conservation lands will benefit at-risk species as well as common species. Private land projects will be delivered collaboratively with partners and use a voluntary, incentive-based approach. Another goal is to complete a comprehensive revision of the Legacy Project. This two year process will follow national guidelines, engage over 22 Nebraska stakeholder organizations, and reach hundreds of individuals. Another goal is to continue to broaden engagement and enthusiasm for at-risk species conservation, and increase the understanding of species' needs. THIS PROJECT WAS FUNDED \$55,000 IN 2019 WITH THE INTENT TO FUND UP TO \$315,000 IN YEAR TWO AND \$200,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Game and Parks Commission**Nearest Town:** Lincoln**Project Name:** Rainwater Basin Wetland Management**Project No:** 20-171**Amount Requested:** \$225,000.00**Term of Request:** 3**Review Group:** Rural Habitat

The Nebraska Game and Parks Commission (NGPC) is a partner with the Rainwater Basin Joint Venture (RWB JV) and is committed to achieving the goal of providing optimal habitat on private and public lands for migrating waterfowl in the Rainwater Basin (RWB). This will be accomplished by increasing wetland management to reduce invasive plant species and increase desirable food-producing plants. Prescribed management will be targeted to address dense stands of invasive reed canarygrass, river bulrush, cattail, trees, and common reed because they provide limited habitat for wetland dependent migratory birds and outcompete desirable plants. Contractors will be hired to disk, apply herbicide, complete prescribed burns and grazing improvements, and conduct tree removal. To build efficiency, private and public land treatments will often be bundled into a single bid package for multiple contractors to bid on. This approach will be used to implement 10,000 acres of management. The RWB provides habitat for ~8.6 million waterfowl, 500,000 shorebirds, and the federally endangered Whooping Crane. Over the last eight years improved management has increased landscape carrying capacity for waterfowl by 14% and increased recreational opportunities. When habitat values are maximized, fewer acres need to be targeted for future enrollment to achieve habitat objectives.

Sponsor Name: Nebraska Game and Parks Commission**Nearest Town:** Lincoln**Project Name:** Treehouse Classroom and Interactive Stream: Engaging Nebraskans in Conservation Education**Project No:** 20-191**Amount Requested:** \$1,625,000.00 **Term of Request:** 2 **Review Group:** Education

The Treehouse Classroom and Interactive Stream will engage Nebraskans in environmental education and promote conservation of Nebraska's natural resources, continuing the success of the new Schramm Education Center at Schramm Park State Recreation Area (SRA). This initiative is part of the Outdoor Venture Parks encompassing four eastern Nebraska parks (Mahoney and Platte River State Parks; Schramm Park and Louisville SRAs). Reaching over one million people within 60 miles, this complex is critical to cultivate knowledge and appreciation of our natural resources through science-based learning and outdoor recreation. This project will design and construct the Treehouse Classroom located on the bluffs overlooking spring-fed canyon ponds. The classroom will feature tree-top forest views, equipment for scientific investigations and a year-round location for conservation education. The site will accommodate 30-40 people, ADA accessibility, restrooms, and storage. This project will also concurrently design the Interactive Stream within the footprint of the existing canyon ponds. Two of the four current ponds will remain, supporting fish and aquatic wildlife; two ponds will be converted into a cool-water stream designed for students to get in, explore and learn. The Treehouse Classroom and Interactive Stream will provide a powerful tool in educating the next generation of conservation leaders.

Sponsor Name: Nebraska Grazing Lands Coalition**Nearest Town:** Chadron**Project Name:** Conservation of Nebraska Grazing Resource Through Control of Eastern Red Cedar and Other Invasive Species**Project No:** 19-107-2**Amount Requested:** \$109,000.00 **Term of Request:** 2 **Review Group:** Statement of Intent

The primary objective of this grant is to dramatically decrease the number of grazing acres in Nebraska infested with Eastern Red Cedar (ERC) through prescribed burning. ERC poses massive threats to Nebraska's rangelands and the people, wildlife and plants that depend on them. Grass fires historically prevented ERC from becoming abundant in rangelands. People have removed fire from rangelands, and millions of ERC have been planted in Nebraska, resulting in the rapid expansion of ERC populations. ERC invasion is often ignored because of the initially slow process of the invasion. However, once ERC is established, it quickly converts rangelands into ERC woodlands. Major negative impacts of prescribe burning ERC on society and the environment include: decrease livestock and wildlife forage, decrease ranchers profitability, increase the risk and damaging impact of wildfires, reduced upland game animals, Reduced grassland bird species, reduced small mammal diversity, reduced plant diversity, decreased streamflow, reduced taxes on Nebraska school lands due to reduced grazing leases. A significant limitation to control of ERC with prescribed fire is appropriately trained burn bosses that "take command" of the prescribed burn. This project will fund part time burn bosses to coordinate educational activities and ERC prescribed burns across Nebraska. THIS PROJECT WAS FUNDED \$155,650 IN 2019 WITH THE INTENT TO FUND UP TO \$109,000 IN YEAR TWO AND \$109,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Pharmacists Association**Nearest Town:** Lincoln**Project Name:** Preventing Poisoning, Pollution and Prescription Drug Overdose for a Healthier Nebraska!**Project No:** 19-104-2**Amount Requested:** \$200,000.00**Term of Request:** 2**Review Group:** Statement of Intent

The primary purpose of this program is to engage, activate, and empower Nebraska pharmacies to serve as safe and legal waste collection/take-back sites for unused consumer medications every day. The program seeks to address the environmental and public health concerns resulting from improper handling and disposal of unused consumer medications and is committed to informing consumers about the choices and responsibilities associated with the safe and legal disposal of unused medications. Unused medications kept in medicine cabinets, flushed down toilets, or tossed in the garbage can seriously impact Nebraska's public health and the environment. This program provides proper disposal so medications are not infiltrating the water system and landfills, and are out of the home where there is a potential for abuse/misuse. Program data tracks the number of medications collected at participating pharmacies. Additionally, this program includes consumer education and community outreach to Nebraska consumers, pharmacists, pharmacy staff, and other stakeholders on best practices for handling and disposing of consumer medications. This part of the program is funded by an Appropriation from the Nebraska Legislature. Nebraska MEDS is seeking funding from NET for the drug disposal containers that include TakeAway boxes, envelopes, MedSafes, and liners. THIS PROJECT WAS FUNDED \$400,000 IN 2019 WITH THE INTENT TO FUND UP TO \$200,000 IN YEAR TWO AND \$100,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Public Power District**Nearest Town:** York**Project Name:** Battery Energy Storage System**Project No:** 19-111-2**Amount Requested:** \$120,000.00**Term of Request:** 1**Review Group:** Statement of Intent

Battery energy storage is a versatile resource. It has the ability to adapt technologies, applications, and business models to utility needs. This first of its kind in Nebraska demonstration project is a 1 MW (Megawatt), 2 MWh (Megawatt-hour) utility scale, proven technology, Battery Energy Storage System (BESS). The BESS will be connected to a planned Norfolk Community Solar project. The BESS will be charged and discharged daily to accomplish many separate goals such as demand management, frequency regulation, voltage support, and smoothing and shifting variable renewable energy generation. With the knowledge gained from this project, it will be reproducible for other Nebraska electrical utilities, assuming future price reductions and increasing battery performance. With the BESS connected to a variable non-dispatchable renewable energy source such as wind or solar, the renewable generation now becomes dispatchable and will reduce and potentially replace fossil fuel generation in the future. This project is not currently economical for NPPD to fund in total, but with the Nebraska Environmental Trust grant sharing the battery costs, much can be learned. For each Mega-Watt-hour of renewable energy that can be dispatched from the BESS, a corresponding amount of energy is deferred from a non-renewable fossil fuel generating plant. THIS PROJECT WAS FUNDED \$370,000 IN 2019 WITH THE INTENT TO FUND UP TO \$120,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Recycling Council**Nearest Town:** Lincoln**Project Name:** Feedlot Composting Planning Project**Project No:** 19-116-2**Amount Requested:** \$145,900.00**Term of Request:** 1**Review Group:** Statement of Intent

The Nebraska Recycling Council (NRC) and the Nebraska Business Development Center at UNK propose a planning project that will test the viability of creating compost at feedlot sites for cropland use. The large quantities of organic wastes generated by animal feeding operations, when combined with yard and wood waste collected by municipalities, could provide valuable field scale fertilizer that is better for soil and water health than manure alone, while also reducing costs for municipalities and providing a value-added product for feedlots and/or compost operations. If the details of this business model were better understood, it could provide a pathway to business partnerships between feedlots, municipalities, and growers, leading to improved soil health, water quality, and lower greenhouse gas emissions in Nebraska. The purpose of this project is 1) to analyze business scenarios for feedlots, compost operators, and municipalities to create compost by combining feedlot manure, and municipal yard and wood waste at feedlot sites; 2) to gain an understanding of stakeholder behaviors, perceptions, knowledge and motivation around public/private partnerships and the use of this product on cropland; and 3) to share the findings in a written report, webinar, and web pages. THIS PROJECT WAS FUNDED \$145,900 IN 2019 WITH THE INTENT TO FUND UP TO \$145,900 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Recycling Council**Nearest Town:** Lincoln**Project Name:** Recycling Equipment Grants and Consultation**Project No:** 20-145**Amount Requested:** \$580,032.00**Term of Request:** 2**Review Group:** Waste Management

Nebraska Recycling Council (NRC) is a statewide, member-based, nonprofit organization headquartered in Lincoln. Our mission is to maximize the economic and environmental benefits of resource recovery in Nebraska. NRC requests support for a two-year renewal of the Recycling Equipment Grant program that has funded smaller grants for recycling equipment of up to \$20,000 each for 19 of the previous 22 years, through the Nebraska State Recycling Association (now the NRC). The funding request will cover equipment grant funds, salaries for grants administration and consultation, travel to verify equipment purchases and provide consultation, and a portion of NRC operating costs and supplies. Our objectives for this grant cycle are to: 1. Provide grant funding to communities and private entities across the State of Nebraska for purchasing recycling equipment that will improve recycling & composting programs and increase waste diversion from landfills. 2. Gather information from, and provide consultation to communities and service providers that will improve recycling capacity in their region through public/private partnerships. 3. Facilitate partnerships that will increase volumes collected and improve economic outcomes of rural recycling programs by pooling resources. 4. Expand NRC's geographical representation of Advisory Council to help provide perspectives on resource recovery strategies for Nebraska.

Sponsor Name: Nebraska State Historical Society Foundation**Nearest Town:** Lincoln**Project Name:** Alkali Station Historic Prairie Preservation**Project No:** 20-109**Amount Requested:** \$175,000.00**Term of Request:** 1**Review Group:** Rural Habitat

The Nebraska State Historical Society Foundation (NSHSF) requests support to purchase 208 acres of prairie known historically as the "Alkali Station" in Keith County, Nebraska for \$250,000. Alkali Station served travelers on the Oregon Trail, as a stop for the Pony Overland Express route, and a military post. The site is located one mile south of the South Platte channel and four miles south of the North Platte channel, and is now bisected by interstate 80. Alkali Station is notable for its degree of preservation; it is covered by virgin prairie and has never been modified via irrigation. The military fort and the trading post were determined via geophysical surveys. Report furnished by the state archaeological team at the Nebraska State Historical Society are attached.

Sponsor Name: Nebraska State Irrigation Association**Nearest Town:** Lincoln**Project Name:** Water Leaders Academy in Nebraska**Project No:** 20-101**Amount Requested:** \$244,536.00**Term of Request:** 3**Review Group:** Education

The Water Leaders Academy (Academy) teaches early to mid-career professionals about the complexities of managing Nebraska's water resources and develops leadership skills to address them. The curriculum draws upon experts from technical, legal, and social science disciplines and includes a strong leadership component. The Nebraska State Irrigation Association partners with the University of Nebraska-Lincoln to plan and deliver the Academy. The Academy's goal is to teach future water resources decision makers to work together to solve problems. The Academy offers six 1.5-day sessions over a 12-month period at locations across the state. Sessions include instruction in a broad range of water topics under three curricular components: leadership, policy/law, and natural resources. Field trips engage participants with regional water issues. Participants complete a hands-on group project designed to prepare them for future community education, involvement, and policy decisions in water protection and conservation. NET funding continues to be critical to the Academy's success in preparing Nebraska's future water leaders. Water leadership training is a vital component for conservation and preservation of Nebraska's most important resource, water. Considering the thousands of jobs in Nebraska that impact water, from farming to municipal utilities, the Academy is making a difference through this education endeavor.

Sponsor Name: Nebraska Statewide Arboretum**Nearest Town:** Lincoln**Project Name:** Rare Tree Conservation**Project No:** 20-169**Amount Requested:** \$267,800.00**Term of Request:** 2**Review Group:** Education

The Nebraska Statewide Arboretum (NSA) requests \$264,500 from NET to help fund the conservation of rare and endangered woody plants in Nebraska. Nebraska is home to a number of important tree and shrub species that reach their natural range limits in the state. These edge species help make Nebraska's limited forest lands more biologically diverse and are an important resource for recreation and ecotourism in the state. Unfortunately, many of these species are under threat from urbanization, invasive species, overgrazing and weather extremes exacerbated by a shifting climate. This project will: 1) identify the most imperiled native tree and shrub communities in Nebraska and implement up to 20 projects that actively assist in their preservation; 2) gather propagules of species identified and grow them for planting on conservation sites and also at up to 15 demonstration sites across the state (up to 3,000 total plants will be planted); 3) work with the green industry to make these species available to the general public to help give our planted landscapes a better "sense of place"; and 4) implement a public awareness campaign to help inform Nebraskans about the importance of conserving native trees and woodland ecosystems.

Sponsor Name: Nebraskensis**Nearest Town:** Minden**Project Name:** Integrating Healthy Biological Transformation of Avian Habitat with Human Appreciation Experience**Project No:** 20-202**Amount Requested:** \$25,000.00**Term of Request:** 1**Review Group:** Rural Habitat

Construction of Raptor Habitat Statewide Near Pliable Environmental Aqua Revenue Streams.

A site survey will be performed near 7 South Central Nebraska regions near water where the addition of intelligently crafted nesting habitat would prove beneficial for generations to come. Nesting platforms will then be constructed atop 30ft wooden poles buried 10ft in the ground in an effort to support and foster the raising of young birds of prey. Eagles often spend countless hours building nests in the limbs of older cottonwood trees which frequently break during an intense atmospheric events culminating in a nest falling to the ground and at worse a fledgling perishing. The state of Colorado currently has a similar nesting and ecologically productive programs in place with huge success in raising the interest level and enjoyment of those who frequent the outdoors.

Sponsor Name: Nebraskensis**Nearest Town:** Minden**Project Name:** Project Workbench - Saratoga Satellite Office**Project No:** 20-203**Amount Requested:** \$3,000,000.00 **Term of Request:** 3 **Review Group:** Unclassified

Purchase, Refabrication, and Designing an Environmentally Conscious Work Hub, Archive, and Distribution Center. Built in 1886 and referred to in historical documents as "the finest bank west of Lincoln", the old First National Bank is rooted in the pivotal city of Minden, home of the famed "Light of the World" Christmas pageant in the heart of great Sandhill Crane Migration situated between prairie grass, ethanol corn and the mighty Platte River. Funding would be utilized to bring the structure back to its full glory in a unilateral attempt to share the joys of the outdoors.

Sponsor Name: Nebraskensis**Nearest Town:** Minden**Project Name:** Establishment of Windmill Teams**Project No:** 20-207**Amount Requested:** \$1,000,000.00 **Term of Request:** 2 **Review Group:** Unclassified

Organization of State Windmill Association. One of our state's finest treasures are being neglected by ignorance and lack of foresight. Windmills, those iconic beacons of aqua liberty quenching parched soil and lip with moisture sweet and fresh, a gift from the wind. Additional tillable acres, barometric fluctuation, and rain falling through carbon pollutants acidifying metal, has taken a tole on the totems tied together through thought and toil by elders dependent upon wind for water. How do we respect the elders?

Sponsor Name: Nebraskensis**Nearest Town:** Minden**Project Name:** All is Good - the Jane Goodall and Clayton Anderson Documentary Series**Project No:** 20-208**Amount Requested:** \$300,000.00 **Term of Request:** 1 **Review Group:** Unclassified

Produce a broadcast quality documentary educating generations to come about preeminent conservationists Jane Goodall and Nebraska's Astronaut Clayton Anderson as they visit Nebraska for the annual Sand Hills Crane migration.

Sponsor Name: Nebraskensis**Nearest Town:** Minden**Project Name:** Project Sower - Enhancing State Identity with Wildflower Plantings and Weed Control Measures**Project No:** 20-209**Amount Requested:** \$500,000.00 **Term of Request:** 1 **Review Group:** Rural Habitat

Coordinate with the Nebraska Department of Roads and County road crews to save money and forgo mowing expenses in exchange for wild flower habitat restoration along highly visible stretches of roads. South Dakota, Colorado, California, and Texas to name a few states have all had success planting wildflower seeds and developing public appreciation programs.

Sponsor Name: Northeast Nebraska RC&D**Nearest Town:** Plainview**Project Name:** Household Hazardous Waste Collections**Project No:** 19-110-2**Amount Requested:** \$13,471.00 **Term of Request:** 2 **Review Group:** Statement of Intent

This project will properly dispose of and/or recycle approximately 12 ton of household hazardous waste (HHW) over a 3-year period and provide citizen education on how to safely manage HHW in the home through recycling, sharing, proper storage and reuse. They'll also learn what is appropriate to bring to the collections. Citizens continue to ask for help with disposal HHW materials that they or their families have accumulated over the years because they know throwing them in the trash or pouring them down the drain isn't proper. The benefits of proper disposal of HHW are many: Conserves resources and energy that would be used to produce more products, Reuse of hazardous household products saves money and reduces the need for hazardous substances to be kept around individual homes and properties, Proper disposal prevents pollution Two collection events will be held annually within the Northeast Nebraska Resource Conservation and Development (RC&D) Council's area. Monthly educational information will be on the RC&D's website, Facebook page, sent to radios and newspapers. Targeted groups are individual citizens, tribal members, and general households within the region. Communities will serve as local host sites. THIS PROJECT WAS FUNDED \$12,927 IN 2019 WITH THE INTENT TO FUND UP TO \$13,471 IN YEAR TWO AND \$14,142 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Northeast Nebraska RC&D**Nearest Town:** Ponca**Project Name:** Early Detection and Integrated Management of Invasive Plants **Project No:** 20-115**Amount Requested:** \$116,520.00 **Term of Request:** 3 **Review Group:** Rural Habitat

The Northeast Nebraska Weed Management Area (NNWMA), established in 2004 seeks to use innovative, collaborative, and effective means to reduce the ecological and economic impacts of noxious weed infestations. Through this effort, the partnership strives to increase awareness of issues in the hopes that it will lead to more effective conservation actions. NNWMA works collaboratively to conduct environmentally sound and integrated approaches to invasive and noxious weed management and protection of biological diversity across NNWMA; identifies and contains invasive and noxious weed infestations resulting from flooding early in their establishment; increases awareness and appreciation of biological diversity in the area, and increases awareness of threats that invasive species present, economically and ecologically. The objectives of this funding are to: support collaborative efforts of NNWMA to control the spread of invasive and noxious plant infestations that threaten native habitats, range, and agricultural lands; reduce herbicide use to spot treatments resulting in cost savings to landowners, agencies, and others as well as protecting non-target herbaceous species; increase NNWMA outreach effectiveness through field tours, presentations, news releases, and web page information

Sponsor Name: Northern Prairies Land Trust**Nearest Town:** Beatrice**Project Name:** Extending the Tallgrass Prairie Partnership**Project No:** 20-153**Amount Requested:** \$495,000.00 **Term of Request:** 3 **Review Group:** Rural Habitat

Prairies are among the most threatened ecosystems in North America. Most remaining prairies are privately owned, making cooperation between landowners and conservationists essential for their conservation. In 2002, Northern Prairies Land Trust (NPLT) entered into a cooperative relationship with the Nebraska Game & Parks Commission (NGPC) and other partners to implement habitat improvement projects on privately owned prairies. Our initial conservation work was focused on BULs in southeast Nebraska. We have subsequently extended our work to the Verdigris-Bazile, the Middle Niobrara, and Keya Paha BULs in northeast Nebraska. Over the past seventeen years, using primarily NET and federal funds, NPLT has worked with over 350 landowners to enhance nearly 95,000 acres of grassland, primarily through implementation of invasive tree clearing, prescribed fire, and planned grazing. We are seeking \$495,000 from NET for this three-year project. Participating landowners will provide approximately \$150,000 in match, and the project partners will provide an additional \$170,000 in cash match. The project's primary partners include NPLT, NGPC, and USFWS. NPLT will lead the project and NGPC will conduct funds management and reporting. NET funds will be used to enhance at least 15,000 acres of prairie on private lands through tree clearing, prescribed fire, etc.

Sponsor Name: Omaha**Nearest Town:** Omaha**Project Name:** Oma-Gro Compost Turner**Project No:** 20-164**Amount Requested:** \$499,000.00**Term of Request:** 1**Review Group:** Waste Management

The City of Omaha is requesting funds to purchase a compost turner for its Oma-Gro yard waste processing facility. Omaha collects yard waste from 146,000 households and makes compost that is sold locally. Oma-Gro compost has been in production for nearly 25 years and has gained a reputation as a high-quality brand name with a wide distribution network, reaching multiple states. Currently an elevated face turner that is past its usable lifespan is used to turn the compost piles and a wheel loader to stack into windrows. The new compost turner would evenly turn the piles, providing a consistent temperature and would dramatically reduce equipment and labor time. This equipment would reduce compost processing time from 10-12 months to as few as 3-4 months and allow our facility to process the projected increase in yard waste per year. The City has made numerous capital improvements to this facility including a new building and state of the art bagging equipment. An increase in processed yard waste will save Omaha money in deferred landfill fees, reduce the amount of methane produced in the landfill, save landfill space, and will be a key asset to Omaha's commitment to this facility.

Sponsor Name: Omaha**Nearest Town:** Omaha**Project Name:** Thomas Creek Improvements - Phase I**Project No:** 20-192**Amount Requested:** \$300,000.00**Term of Request:** 3**Review Group:** Bank Stabilization

The Thomas Creek watershed in Douglas and Washington Counties is becoming increasingly urbanized. As with most urbanized areas, modifications to the stream and the addition of impervious surfaces have led to an increase in runoff volume and velocities. These changes have destabilized the stream and introduced greater amounts of pollution. As a result, critical infrastructure has been threatened, and habitat and water quality have degraded. Phase I of the Thomas Creek Improvements Project is part of a larger, multi-phased plan that aims to provide multiple, long-term benefits to this stream system. Improvements planned for the Phase I project include the following: Introduction of natural meanders and floodplain benching to improve stream functionality, Implementation of low-profile rock grade control structures that will stabilize the stream bed, introduce bed variability, and allow fish passage in a cost-effective manner, Use of bioengineering techniques to help protect erosive stream banks and improve habitat, Public-private partnerships with surrounding landowners to develop stormwater best management plans to control and reduce runoff, nutrients, and pollution from their properties. With these measures, this project will provide (1) increased stream stability to protect current infrastructure, (2) improved water quality, and (3) enhanced habitat.

Sponsor Name: Omaha Children's Museum**Nearest Town:** Omaha**Project Name:** Sustainable Energy Efficient Roof Replacement**Project No:** 20-218**Amount Requested:** \$139,492.00**Term of Request:** 1**Review Group:** Air Quality

The current roof of Omaha Children's Museum was installed in 1999, and is very energy inefficient, causing us to use much more electricity to cool the building in the hot summer months, when we see approximately half of our Museum guests (approximately 165,000 people). It also is in great disrepair, causing frequent leaks resulting in damage not only to the roof itself, but also to the ceiling, exhibits, and floors below, as well as causing mold and mildew problems. We propose installing an entirely new energy efficient roof utilizing the latest Duro-Last Energy Efficient Bright White Membrane System that is rated at 87% solar emittance and will reduce our carbon footprint by decreasing our annual cooling costs by \$26,675.

Sponsor Name: Omaha Public Power District**Nearest Town:** Omaha**Project Name:** OPPD BRIGHT (Battery Research Innovation Guided by High-Potential Technologies)**Project No:** 20-130**Amount Requested:** \$750,000.00**Term of Request:** 2**Review Group:** Air Quality

The Omaha Public Power District (OPPD or the District) is seeking grant support for a 1MW battery storage project located at a substation near Louisville, NE in Cass County. The project, "OPPD BRIGHT (Battery Research Innovation Guided by High-Potential Technologies)" will provide innovative research benefitting all Nebraskans. OPPD BRIGHT will achieve results in Nebraska Environmental Trust's (NET) Air Quality Category by supporting clean air strategies and reducing greenhouse gases. The pilot will test how battery storage will integrate on OPPD's grid, providing load relief and voltage support at the substation level. This research is vital to the District's understanding of procurement, construction, and operations with a small energy storage application in learning how to scale for future applications. The District will cost share 50% of the battery equipment along with additional matching funds. OPPD is committed to sharing the results of the pilot with other utilities as it benefits all residents of Nebraska.

Sponsor Name: Oshkosh**Nearest Town:** Oshkosh**Project Name:** Deconstruction of former Midwec Building**Project No:** 20-110**Amount Requested:** \$266,660.00**Term of Request:** 1**Review Group:** Waste Management

We are seeking funding to deconstruct/demolish the former Midwec building in downtown Oshkosh, NE. This building is currently dilapidated and was constructed with materials that contain asbestos and lead. Removing this building will complete key outcomes of improving the safety and health of Oshkosh residents, increasing economic development potential in downtown Oshkosh, providing environmental benefits, and keeping mass tonnage of waste out of landfills.

Sponsor Name: Pheasants Forever, Inc.**Nearest Town:** Nelson**Project Name:** Conservation Ag, Urban and Working Lands**Project No:** 19-155-2**Amount Requested:** \$217,300.00**Term of Request:** 1**Review Group:** Statement of Intent

This proposal seeks funding over two years to help fund an innovative pilot program, the Conservation Ag, Urban and Working Lands (CAUWL) designed to bridge gaps between agriculture, urban, working lands and wildlife. CAUWL offers incentives to enhance wildlife habitat on cropland, working lands, and within local communities. The program offers 3 options: 1) wildlife and pollinator enhancements on working lands 2) diverse cover crops on cropland and 3) backyard habitat projects within local communities for public benefit. CAUWL includes cost-share of 75% and up to 3-year contract lengths with free seed available to communities and businesses. The program allows for grassland restoration practices like brush removal, smooth brome control, and prescribed fire. This effort is in partnership with PF, QF, NGPC, and USDA with a goal of enrolling 7,000 acres and impacting several communities as a pilot. The program vision is to incorporate organizations including UNL Extension, Nebraska Master Naturalists, the Nebraska Master Gardeners, FFA, and various city organizations having expressed interest in native habitat. An online app to help track, monitor, and evaluate these projects has been developed with 27 PF staff to help deliver the program. We currently have several projects waiting for funding. THIS PROJECT WAS FUNDED \$217,300 IN 2019 WITH THE INTENT TO FUND UP TO \$217,300 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Pheasants Forever, Inc.**Nearest Town:** Nelson**Project Name:** Pathway for Wildlife and Working Lands**Project No:** 20-125**Amount Requested:** \$80,200.00**Term of Request:** 1**Review Group:** Rural Habitat

This proposal seeks funding for one year and will be leveraged with a National proposal to compliment a large partnership effort focused on the North Central region of Nebraska (District 6). The Pathway for Wildlife Program will provide complementary efforts to a continued focus on Working Lands within the Nebraska Sandhills. The Pathway Program was designed one year ago to provide local funding from Pheasants Forever and Quail Forever chapters in addition to state and federal funds and has been very successful. In a short 4 months, over 60 applications were received for over 5000 acres. In 2017, Nebraska partners received specific funding for the Eastern Sandhills to help provide additional resources in the form of capacity for technical and financial assistance to Nebraska ranchers. This partnership effort has proven to fill a needed niche with over 27,000 acres under contract and almost 30,000 acres impacted. We currently have several projects waiting for funding and have employed a Working Lands Coordinator to help coordinate and deliver the partnership efforts. Pairing the Pathway delivery mechanism with an existing Working Lands Coordinator position focused in District 6, program funding will be restricted on grassland restoration and management in the Sandhills region.

Sponsor Name: Pheasants Forever, Inc.**Nearest Town:** Nelson**Project Name:** Corners For Wildlife**Project No:** 20-131**Amount Requested:** \$881,400.00**Term of Request:** 3**Review Group:** Rural Habitat

This application continues a partnership funded by the Trust from 1995 to 2019 and has resulted in 13,519 acres of permanent wildlife habitat. The program partners money from the Trust, Pheasants Forever, Inc., Pheasants Forever (PF) and Quail Forever (QF) chapters, Natural Resource Districts, Nebraska Game & Parks Commission and Landowners across Nebraska with preliminary evaluation efforts and historical review indicating over 70% of CFW projects have remained in grass cover. Landowners receive a rental payment for a five-year contract to establish high quality wildlife habitat and provide soil health benefits on center pivot field corners. Materials to establish cover are cost-shared 75% by PF and QF chapters with landowners responsible for 25%. Every year the program has been available, there has been more interest in enrollment than the program can fund. Projects are specifically designed to meet the Nebraska Natural Legacy Project, Nebraska's Berggren Plan, as well as several state and national pollinator goals. Establishment includes high quality nesting, brood-rearing and pollinator habitat for species of concern. Seeding includes native grass and wildflower species. Native shrubs are commonly used for enhanced wildlife cover and cost-share assistance is not provided for Eastern Red Cedar plantings.

Sponsor Name: Pheasants Forever, Inc.**Nearest Town:** Nelson**Project Name:** Grassland Improvement Program**Project No:** 20-132**Amount Requested:** \$260,000.00**Term of Request:** 2**Review Group:** Rural Habitat

Prescribed burning continues to be an instrumental tool to enhance and maintain Nebraska's rangeland. Fire is critical to combat Eastern Red Cedar. Many landowners recognize fire as a positive tool; however, many do not have the means to carry out a fire on their own. Four primary reasons are identified as limiting factors to accomplish prescribed burning: access to burn equipment, prescribed burn training, manpower to conduct safe burns, adequate fuel loads to conduct effective prescribed burns. This application seeks funding to continue a unique and successful program, the Grassland Improvement Program. The program is a partnership between Pheasants Forever, Quail Forever, Nebraska Game and Parks Commission, USDA, and the US Fish and Wildlife Service and is designed to offer a landowner grazing deferment payment to increase fuel levels to complete a successful prescribed burn. The Grassland Improvement Program has directly impacted 35,442 acres since 2006. The additional incentive and promotion of prescribed burning in past focus areas has directly resulted in the formation of Prescribed Burn Associations, increased positive interest from fire departments, decreased spread of Eastern Red Cedar, and enhanced health and vigor of rangeland shown through evaluation and monitoring efforts.

Sponsor Name: Platte River Whooping Crane Maintenance Trust, Inc. **Nearest Town:** Wood River

Project Name: Big Bend of the Platte River Partnership for Habitat Preservation

Project No: 20-148

Amount Requested: \$346,025.00 **Term of Request:** 3 **Review Group:** Rural Habitat

The Crane Trust, in partner with conservation organizations and local landowners, proposes the purchase of adaptable, reliable, and efficient equipment to protect and restore critical habitat throughout the Big Bend Reach of the Platte River for threatened and endangered species, Nebraska Legacy Project's tier 1 at-risk species, and residents and visitors of the central Platte River valley. The Crane Trust is requesting funds to purchase and operate a tractor and shredder to be used with existing river clearing equipment to significantly increase the number of acres to be disked and/or shredded annually. Left unattended, noxious and invasive vegetation such as Phragmites and purple loosestrife, shrub and woody species encroachment (e.g. cedar trees), island stabilization, and channel incision occurs, negatively impacting the ecological significance of the Platte River. River clearing and riverine habitat restoration efforts are further challenged by aging machines and equipment and limited numbers of trained operators. This replicable project is regional in nature and is a scientifically research-based practice throughout the Big Bend Reach of the Platte River. This practice is further studied and documented for new adaptive management strategies, publications, community, economic values and education, and continued preservation of critical habitat for conservation.

Sponsor Name: Platte Valley Weed Management Area

Nearest Town: Kearney

Project Name: Platte River Management and Enhancement

Project No: 19-142-2

Amount Requested: \$173,250.00 **Term of Request:** 2 **Review Group:** Statement of Intent

The Platte River is world famous for its diverse assemblage of flora and fauna and is home to many species of conservation concern. In addition to wildlife habitat, its braided channels convey water from upstream reservoirs to irrigation diversions and ultimately provides drinking water for several cities including Kearney, Grand Island and Lincoln. Consequently, maintenance of Platte River water supply and channel conveyance is critically important both from a conservation and civic perspective. The emergence and proliferation of invasive riparian plant species over the past decade poses a serious threat to Platte River water supply and conveyance. To date, this threat has been managed through a massive collaborative invasive vegetation control effort led by Weed Management Associations. This effort has been highly effective but is quickly becoming resource-limited. The objective of this project is to protect habitat and water supply by maintaining and further improving channel conveyance along 336 miles of the Platte rivers extending downstream from Kingsley Dam to the Loup confluence at Columbus. Mechanical removal and herbicide application by aerial and ground will be used to control new infestations and maintain existing channel conveyance. THIS PROJECT WAS FUNDED \$174,750 IN 2019 WITH THE INTENT TO FUND UP TO \$173,250 IN YEAR TWO AND \$174,500 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Quail Forever**Nearest Town:** Nelson**Project Name:** Mobile Prescribed Burn Unit and Education Outreach**Project No:** 20-124**Amount Requested:** \$104,500.00**Term of Request:** 1**Review Group:** Rural Habitat

This application seeks to continue the process of supporting prescribed burning on private lands, forming prescribed burn associations, providing prescribed burn training, conducting public outreach events, producing education materials, and promoting habitat management. Wildlife partnership and management plans call for the increased use of prescribed burns and education regarding conservation programs to reach management and partnership goals. Quail Forever is working closely with the Nebraska Natural Legacy Project (NNLP) to implement its goals and employs 27 Biologists that work directly with the plan. The creation of Mobile Prescribed Burn Units and expanding outreach is directly benefiting the NNLP by creating a set of tools and events that can be directed to Biologically Unique Landscapes. QF identified the limitations of prescribed burning and is working to overcome them. Six scenarios are outlined in this partnership that are working to expand education and increase the use of prescribed burning. The funds will be matched by partners to purchase and maintain MPBUs and education equipment, develop prescribed burn associations, and create public educational events and materials. Our focus has also shifted to growing season burn trainings to help broaden the window of when prescribed burns occur.

Sponsor Name: Sandhills Task Force**Nearest Town:** Broken Bow**Project Name:** Sandhills Conservation Partnerships on Grasslands and Wetlands**Project No:** 20-204**Amount Requested:** \$420,000.00**Term of Request:** 3**Review Group:** Rural Habitat

The Sandhills Task Force (STF) is a grassroots nonprofit organization that has a 26-year history of assisting private landowners complete conservation projects on their land that benefits wildlife, waterfowl, water quality, healthy native plant communities, functional wetlands, and more. The Sandhills of Nebraska are one of the largest in-tact native grasslands left in the world. Even though the Sandhills is still a highly functioning rangeland-wetland ecosystem, stressors are present. The main threats at the current time are invasive species, overgrazing, and impaired wetlands, streams, and lakes. This grant will help the STF implement projects on private lands to help address these concerns. Also, events will be held to educate the public and landowners about innovative conservation tools and management plans that can help them improve their land resource. During the grant, an estimated 30 conservation projects will be completed. Each project will be implemented on a willing landowner's property and it will be field inspected and evaluated according to its resource value and feasibility. Qualifying projects will be surveyed, designed, and completed using partnership funds from landowners, Federal and State agencies, and non-profit organizations. Projects will have at least a 10-year agreement with the landowner and other participating partners.

Sponsor Name: Soil Dynamics Composting Farm, Inc.**Nearest Town:** Springfield**Project Name:** Mitigating Compost Malodors Utilizing TAP Technology **Project No:** 20-161**Amount Requested:** \$87,800.00**Term of Request:** 1**Review Group:** Waste Management

Soil Dynamics Composting Farm intends to mitigate compost malodors and reduce volatile organic compounds utilizing advanced Turned Aerated Pile (TAP) technology. Malodors are the primary operational concern challenging composting operations nationwide. Soil Dynamics Composting Farm hopes that this initiative will be of interest to The Nebraska Environmental Trust (NET) and its mission to positively influence waste management practices; air quality; soil management; and surface and ground water conservation. The Company intends to upgrade its composting operations from a windrow system to a Turned Aerated Pile (TAP) system. The total cost of the TAP system is \$500,800. Partial funding is requested to purchase blowers; process controller; and data recorder totaling \$87,800. The TAP system is the most efficient way to make large amounts of compost on the smallest possible footprint. With over 50% of states and many municipalities taking regulatory action to either prohibit organic materials from being disposed of in landfills or ushering in mandatory waste recycling regulations, stakeholders like Soil Dynamics Composting Farm are earnestly seeking alternative methods to managing stench producing waste. By upgrading to the TAP system, Soil Dynamics Composting Farm accomplishes its goals without expanding its environmental footprint.

Sponsor Name: South Sioux City**Nearest Town:** South Sioux City**Project Name:** ChargePoint DC and Charger 2 Electric Vehicle Charging Stations**Project No:** 20-133**Amount Requested:** \$30,481.00**Term of Request:** 1**Review Group:** Air Quality

South Sioux City is seeking matching funds from the NE Environmental Trust fund (NET) to install two public / community electric vehicle charging stations located at the intersection of 164th Street and Hwy 77 on the south side of South Sioux City for ease of installation and public usage. The Express Plus 62.5Kw station and Charger 2 will be installed at the same location to ensure access for Electric Vehicles lacking DC charging capabilities. Costs will be split between the NET (23%) and NDEE (77%) through their 2019 Electric Vehicle Charge Rebate Program. South Sioux City has worked with Nebraska Community Energy Alliance (NCEA) since its inception to support advanced technologies for transportation efforts that saves energy, reduces CO2 pollution and cuts costs. The promotion and use of electric vehicles is an effective strategy toward improving air quality while supporting NET mission "to conserve, enhance and restore the natural environments of Nebraska." Supporting electric vehicles through the installation of smart charging stations at the community level will serve both the NCEA and the Nebraska Environmental Trust (NET) missions and offer the Hwy 77 Corridor, one of seven priority corridors in Nebraska, with charging capabilities for the general public.

Sponsor Name: Southwest Weed Management**Nearest Town:** Alma**Project Name:** Western Republican River Basin Riparian Habitat Improvement Project**Project No:** 20-105**Amount Requested:** \$141,500.00**Term of Request:** 1**Review Group:** Rural Habitat

The Western Republican River Basin Riparian Habitat Improvement Project goals are to eradicate invasive and non desirable vegetation from riparian and adjacent areas to improve water quality and native habitat. By taking a basin/watershed approach, we will be able to address issues at the source, being flexible in our management efforts to successfully address challenges. These efforts will include the Republican River, Medicine Creek, Frenchman, Red Willow and other tributaries in the western Republican River watershed. Best management practices coupled with landowner input will be evaluated to determine methods of control and eradication within the seven-county area comprising SWWM. These efforts will result in improved riparian zones, restored natural habitat, improve water quality and increase water flow, assisting Nebraska in maintaining compliance with the Republican River Compact. These efforts also benefit the Nebraska Natural Legacy Project conservation strategies for Biologically Unique Landscapes by reducing competition for native flora and fauna and increasing natural flows of creeks and rivers. Public meetings, development of a website and brochures will increase public awareness of target vegetation, assisting in early detection and landowner participation and acceptance of the programs.

Sponsor Name: Spring Creek Prairie Audubon Center**Nearest Town:** Denton**Project Name:** Launching Spring Creek Prairie as a Demonstration Site for Tallgrass Prairie Conservation across the Denton Hills Landscape**Project No:** 20-179**Amount Requested:** \$566,713.00**Term of Request:** 3**Review Group:** Rural Habitat

Prairie historically covered approximately 170 million acres of central North America creating the continent's largest continuous ecosystem, but this ecosystem has been largely converted, fragmented, and altered. Nebraska's prairies are primarily stewarded by private landowners, so conserving this important habitat will require rapid and concerted action among all the actors that value this landscape. The Denton Hills Landscape is an intact prairie system in southeast Nebraska that is approaching a tipping point as threats such as encroaching cedars increase, while highly variable management among landowners contributes to habitat decline. With a professional staff and located within this landscape, Spring Creek Prairie Audubon Center (SCP) will expand its mission to be an anchor for tallgrass prairie conservation and collaborative prairie management on private lands within the Denton Hills Landscape. SCP will serve as a key node for habitat management experimentation and demonstration, prescribed fire, collaboratively driven landowner engagement and education, and will provide an exemplary sense of ownership of these grasslands by landowners and the general public. This project will result in improved habitat quality and management practices for the at-risk species and people dependent upon the remaining tallgrass prairie.

Sponsor Name: The Bee & Butterfly Habitat Fund**Nearest Town:** St. Paul**Project Name:** The Seed A Legacy Program**Project No:** 20-177**Amount Requested:** \$180,000.00**Term of Request:** 2**Review Group:** Rural Habitat

The Seed A Legacy (SAL) program is a documented, proven, successful partnership that delivers the goals of multiple state and national conservation plans. This partnership provides important incentives to deliver pollinator habitat accomplishments for honeybees, monarch butterflies, native bees and a wide range of at-risk and common wildlife species. This flexible program offers the ability to work with a wide range of private, public and corporate landowners, hay/graze outside of pollinator season and straight-forward eligibility options. This project uses an 'all hands-on deck' approach that brings science-based habitat considerations for pollinators together with a proven ability to design, enroll, administer and manage statewide habitat programs. Projects are enrolled with a combination of The Bee & Butterfly Habitat Fund staff, local Beekeepers and agriculture industry partners. Seed mixes include a foraging mixture designed for honey bees and a mixture designed for monarchs. This project has a waiting list of applicants wanting to enroll in 2019. Applications will be ranked with established criteria to accept the highest valued projects. This partnership will deliver the Nebraska pollinator conservation goals, as well as broad resource benefits for monarch butterflies, honeybees and a wide range of wildlife including native bees, grassland songbirds, pheasants and quail.

Sponsor Name: The Groundwater Foundation**Nearest Town:** Lincoln**Project Name:** GREAT: Groundwater Education and Training**Project No:** 20-114**Amount Requested:** \$157,140.00**Term of Request:** 2**Review Group:** Education

People, businesses, and communities across Nebraska are sustained by clean groundwater. In order to ensure our state and its people continue to thrive, we must educate our next generation about groundwater and how their actions impact the quality and quantity of the resource while fostering interest in and creating pathways to careers in the water industry. To achieve this, the Groundwater Foundation (GF) has aligned partners to collaborate in the GREAT program (GRoundwater Education And Training). GREAT will achieve three primary outcomes: 1) Groundwater education delivered by educators and local experts in classrooms and communities across the state. 2) Students understand the applicability of the lessons learned through in-the-field experiences with local water industry experts. 3) A newly created and piloted educational course at a local trade school that leads to careers in the water industry school. As such, GREAT will foster a new generation of learned experts, who, through their daily activities, will protect and conserve groundwater resources.

Sponsor Name: The Nature Conservancy**Nearest Town:** Kearney**Project Name:** Fire Training Exchange in Nebraska**Project No:** 19-123-2**Amount Requested:** \$41,000.00**Term of Request:** 2**Review Group:** Statement of Intent

Demand for fire training is higher than ever, and so is the need to control the spread of woody invasion on grassland/rangeland in Nebraska. The Nature Conservancy requests three years of support for prescribed fire training exchanges to be headquartered at the Niobrara Valley Preserve. Now in its tenth year, these two-week events are collaborative, hands-on operations that build capacity for integrated fire management. We will hold three spring exchanges, training roughly 105 personnel and burning approximately 15,000 acres (weather permitting.) Fire Training Exchange participants get hands-on experience in ecological burning, develop their fireline qualifications, learn about local ecology and conservation issues, and practice communicating with the media - all in a setting that emphasizes safety, learning, and cooperation. Volunteer and municipal fire department personnel, private contractors, ranchers, and conservation land managers (such as those who work for Nebraska Game and Parks Commission, the U.S. Fish and Wildlife Service, and the National Forest Service) gain skills to work more effectively and safely (employing National Wildlife Coordinating Group standards.) The Exchanges provide landscapes with the management they need, resulting in improved habitat for wildlife, including threatened and endangered species like grassland birds. THIS PROJECT WAS FUNDED \$41,000 IN 2019 WITH THE INTENT TO FUND UP TO \$41,000 IN YEAR TWO AND \$41,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: The Nature Conservancy**Nearest Town:** Omaha**Project Name:** Increasing Fire Capacity and Rangeland Impact in the Sandhills**Project No:** 20-127**Amount Requested:** \$181,164.00**Term of Request:** 3**Review Group:** Rural Habitat

Nebraska is at a tipping point. Will we remain a grassland state, or will eastern redcedar transform our prairies and threaten our livelihoods? The good news is that more and more ranchers in the Sandhills are adopting fire as a management practice; yet with interest at an all-time high and the window of time to burn in safe conditions typically a matter of days, more capacity is needed to keep up with demand. The Nature Conservancy proposes to hire four Firefighter Type 2 seasonal crew members to help with burns over the next three years. We expect the outcome to be safer fires on more acres of public and private land. On days without suitable conditions for burning, they will assist with mechanical clearing/removal of invasive species and conduct monitoring and evaluation work to answer questions about grassland response to burning. TNC and the UNL Extension will produce materials to help answer questions landowners have about post-fire grazing, how intense a fire must be to kill certain sizes of trees, and more. Investing now in people will safeguard our legacy for future generations-and keep the Sandhills unspoiled and healthy.

Sponsor Name: The Nature Conservancy**Nearest Town:** Omaha**Project Name:** Upper Big Blue Soil Health Project**Project No:** 20-135**Amount Requested:** \$206,667.00**Term of Request:** 3**Review Group:** Soil Management

Nebraska farmers are increasingly tasked with providing food, fuel, and fiber for a growing world - all from the same pool of natural resources. Innovation and technical expertise are hallmarks of successful farmers, and The Nature Conservancy believes that Nebraska's farmers are solution providers in the quest to feed an estimated 10 billion people by 2050. We also believe that farmers shouldn't have to go it alone. To that end, we forge trusted collaborations with farmers to merge the best available environmental science with the realities of working farms to find win-wins for people and nature in agriculture. It all begins with the soil. The Nature Conservancy is teaming up with the Upper Big Blue Natural Resources District (NRD) and several farmers to reduce the risk to farmers hoping to experimentally interseed cover crops into mid-growing season cash crops. We will do this by providing technical, financial, and agronomic support to a group of 10-15 farmers over three years. We will work closely with collaborating farmers to identify their own soil health objectives and questions, and closely track the on-farm effects of cover crops in order to share what we learn with participating farmers and across the state.

Sponsor Name: The Nature Conservancy**Nearest Town:** Omaha**Project Name:** Nature's Benefits for Urban Residents**Project No:** 20-149**Amount Requested:** \$70,000.00**Term of Request:** 1**Review Group:** Urban Habitat

The Nature Conservancy is requesting a one-year grant to focus future efforts on community well-being, environmental health, and the use of natural resources in Omaha. An Urban Conservation Program Manager will first lead the development of an Eco-Urban Assessment, a decision and mapping tool to identify the spaces in Omaha where natural solutions could best solve problems. The Program Manager will then use this tool to convene a science-based planning process with stakeholders to develop programs that optimize the benefits that nature can provide, such as flood- and stormwater mitigation, air purification, shade, urban heat island mitigation, biodiversity persistence, recreation, aesthetic beauty, and opportunities to support physical and mental health – in the places where they will have the most impact. This will result in (a) an understanding of the needs of people and nature (b) identification and application of nature-based solutions; and (c) establishment of cross-sector coalitions to carry out and evaluate future work.

Sponsor Name: The Nebraska Land Trust, Inc.**Nearest Town:** Lincoln**Project Name:** Pines and Buttes Ranch Protection Project**Project No:** 20-119**Amount Requested:** \$117,510.00**Term of Request:** 1**Review Group:** Rural Habitat

West of Fort Robinson State Park, the White River seems misnamed. With clear water, a gravel bed and several species of trout in a landscape of grasslands, pines and towering buttes, this stretch of the river is the picture of a mountain stream, including nearly seven miles of public access for fly-fishing through NGPC's Open Waters Program. At the heart of this mountain-like stretch of river is the 2,892-acre ranch, which includes ~ 4.5 of the river miles that are open to public fishing. In addition, the buttes, pine forest, grasslands and riparian areas provide a level of biological diversity that is rarely found on a single Pine Ridge ranch. NGPC data shows "Documented Occurrences" of 20 at-risk species on or within three miles of the property, including three Tier 1 species -- bighorn sheep, mountain short-horned lizard and little brown Myotis bat. Unfortunately, this ranch is also threatened by subdivision and fragmentation in a region that leads the state in out-of-state and non-agricultural buyers. Roughly 87% of the funds needed to protect this unique ranch with a conservation easement have already been raised. The Nebraska Land Trust is requesting a \$117,510 NET grant to provide the remainder.

Sponsor Name: The Save Our Monarchs Foundation**Nearest Town:** Lincoln**Project Name:** OPPD 'Prairies in Progress' Pollinator Habitat Restoration**Project No:** 19-105-2**Amount Requested:** \$57,000.00**Term of Request:** 1**Review Group:** Statement of Intent

The project sponsor, The Save Our Monarchs Foundation (SOM), and the Omaha Public Power District (OPPD or the District) have created a program to convert many of the District's property holdings to Monarch and pollinator habitat. Since the spring of 2018, SOM and OPPD have begun restoring several District properties in eastern Nebraska, from Washington to Otoe Counties, reducing mowing activities, removing undesired species, and seeding and planting prepared areas. With the Nebraska Environmental Trust's approval of this proposal, SOM and OPPD will restore 600 acres of District right-of-ways (ROWS) and properties to viable pollinator habitat in five counties. SOM, with Keep Omaha Beautiful, will also provide pollinator workshops at District-area schools. These workshops instruct students on Monarchs and their migration, pollination, ecosystem health and biodiversity. Workshops include a hands-on classroom activity and conclude with the creation and planting of pollinator gardens in schoolyards. SOM is seeking funding from the Nebraska Environmental Trust to purchase seeds and plants and assistance with labor, supplies and travel costs associated with implementing this restoration and educational work. In-kind and cash assistance is provided by OPPD and SOM, Keep Omaha Beautiful, the Bee and Butterfly Habitat Fund, Conservation Blueprint, project consultants, and volunteer monitors. THIS PROJECT WAS FUNDED \$109,000 IN 2019 WITH THE INTENT TO FUND UP TO \$57,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: The Xerces Society**Nearest Town:** Lincoln**Project Name:** Nebraska Bumble Bee Atlas**Project No:** 19-132-2**Amount Requested:** \$137,279.00**Term of Request:** 2**Review Group:** Statement of Intent

Pollinators are critical to the health of our environment, yet many have undergone startling declines. More than one-quarter of North American bumble bee species face extinction risk, and several of the most endangered species live in Nebraska. To protect these pollinators and restore their native habitats, information is needed to better understand where they occur and what characteristics contribute to high-quality habitat for individual species. The Xerces Society, in partnership with the University of Nebraska-Lincoln (UNL) and the Nebraska Game and Parks Commission (NGPC), is initiating a three-year Bumble Bee Atlas project to improve knowledge of bumble bee distribution and abundance, and to better understand their habitat requirements in Nebraska. We will engage volunteers in collecting information on bumble bee distribution, host plants, and their surrounding habitat. Using this information, we will identify priority sites for habitat protection and management. The findings from the Bumble Bee Atlas project will culminate in a guide to Nebraska's bumble bees to help people recognize each species and understand their habitat needs as well as a series of trainings for NGPC, the Natural Resources Conservation Service (NRCS), and private landowners to help them restore and manage habitat for at-risk bumble bees. THIS PROJECT WAS FUNDED \$132,496 IN 2019 WITH THE INTENT TO FUND UP TO \$137,279 IN YEAR TWO AND \$34,581 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Trailblazer RC&D**Nearest Town:** Davenport**Project Name:** Electronics Recycling Events**Project No:** 20-116**Amount Requested:** \$122,350.00**Term of Request:** 3**Review Group:** Waste Management

The Trailblazer Resource Conservation and Development (RC&D), which covers Clay, Thayer, Nuckolls, Webster, Franklin, Fillmore, and Harlan counties, will facilitate one electronic collection and recycling event in each county for the years of 2020, 2021, and 2022. The RC&D is a local non-profit 501c3 which is comprised of a board of directors representing each county within the region as well as a representative from the Lower Republican NRD, Little Blue NRD, and the Upper Big Blue NRD. The RC&D has experience in facilitating two previous electronics collection events with tremendous success with 221,275 total pounds of electronics collected. Following the upward trend, Trailblazers RC&D anticipates future events will eliminate approximately 150,000 pounds of electronics waste from the region per year, therefore creating a safer environment for all residents located in the seven-county area. The RC&D also intends on benefitting the entire population of the region by increasing public awareness for the need to safely and appropriately dispose of and recycle hazardous waste products through the press releases and newspaper advertisements, social media campaigns, flyer circulation, and other information distributed at the event.

Sponsor Name: Trailblazer RC&D**Nearest Town:** Davenport**Project Name:** Household Hazardous Waste Collection and Recycling Events**Project No:** 20-143**Amount Requested:** \$114,350.00**Term of Request:** 3**Review Group:** Waste Management

The Trailblazer Resource Conservation and Development (RC&D), which covers Clay, Thayer, Nuckolls, Webster, Franklin, Fillmore, and Harlan counties, will facilitate one household hazardous waste collection and recycling event in each county for the years of 2020, 2021, and 2022. The RC&D is a local non-profit 501c3 which is comprised of a board of directors representing each county within the region as well as a representative from the Lower Republican NRD, Little Blue NRD, and the Upper Big Blue NRD. The RC&D has experience in facilitating three previous household hazardous waste collection events with tremendous success with 75,000 total pounds of waste collected. Following the upward trend, Trailblazers RC&D anticipates future events will eliminate approximately 30,000 pounds of household hazardous waste from the region per year, therefore creating a safer environment for all residents located in the seven-county area. The RC&D also intends on benefitting the entire population of the region by increasing public awareness for the need to safely and appropriately dispose of and recycle hazardous waste products through press releases and newspaper advertisements, social media campaigns, flyer circulation, and other information distributed at the event.

Sponsor Name: Twin Valley Weed Management Area**Nearest Town:** Red Cloud**Project Name:** Eastern Republican/Little Blue Watershed Improvement **Project No:** 20-136**Amount Requested:** \$205,000.00**Term of Request:** 1**Review Group:** Rural Habitat

The highly successful Eastern Republican and Little Blue Watershed Improvement Project continues ongoing efforts to eradicate invasive species, control vegetation in stream channels, and improve riparian habitat along the Republican and Little Blue Rivers and their tributaries within our nine county area. Up until this year, TVWMA focused all their attention on the riparian area. This years grant will include the entire watershed area at the request of landowners and our partners in order to include cedar tree control so desperately needed. Control efforts are conducted in a holistic manner, utilizing a full range of mechanical, biological and chemical tools. In past years, TVWMA has undertaken this project to improve stream flow along the Republican and Little Blue Rivers to help enable Nebraska to meet its water deliver obligations to Kansas, to restore and maintain into the future a healthy river system and prevent wasteful degradation of water resources, to improve riparian habitat including replanting beneficial species, as well as including pollinators, and to increase public awareness of the best practices that can be used to properly manage lands within the watershed.

Sponsor Name: University of Nebraska Medical Center**Nearest Town:** Omaha**Project Name:** Healing Local Landscapes: Turf Conversion Utilizing Native Prairie Plantings**Project No:** 20-193**Amount Requested:** \$29,500.00**Term of Request:** 2 **Review Group:** Urban Habitat

University of Nebraska Medical Center (UNMC) is a regional environmental leader, with a Sustainability Master Plan including ambitious 2030 goals such as net-zero building emissions and a neutral water footprint. The proposed project would convert three campus turf areas totaling 2.37 acres to native prairie plants. UNMC is asking for funding from the NET for seed mixes (and carrier), which have been selected to replicate mixed-grass prairies, and designed for an urban environment to increase resources for pollinating insects and birds throughout the growing season. Additionally, UNMC is asking for funding for educational signage that will highlight the prairie plantings. UNMC will pay the costs for erosion control and consultation from a local prairie landscape expert. This project aligns with institutional goals of reducing long term irrigation, fuel dependency, and increasing engagement with sustainability practices. Additional benefits include increased soil health and reduced stormwater runoff. The sites are highly visible in the central Omaha campus core, adjacent to the Field Club Trail, and adjacent to Saddle Creek Road. The ten thousand students and staff and hundreds of thousands of visitors to the Medical Center will have an opportunity to enjoy the native plantings and learn about these species.

Sponsor Name: Upper Elkhorn NRD**Nearest Town:** O'Neill**Project Name:** Development and Implementation of Residual Soil Nitrate Sampling in the Upper Elkhorn NRD for Groundwater Nitrate Reduction**Project No:** 20-106**Amount Requested:** \$23,750.00**Term of Request:** 1 **Review Group:** Water

Located in the upper reaches of the Elkhorn River, the Upper Elkhorn Natural Resources District (UENRD) has been dedicated to increasing education of agricultural producers and increasing the implementation of best management practices. To further this effort, the UENRD has initiated a deep sampling program designed to analyze soil for residual nitrate after harvest. The data from this analysis will then be shared with the producer by the staff agronomist. The UENRD will work with the producers utilizing this data to help implement more efficient and economical best management practices on their fields. With the objective of reducing residual nitrogen in the soil to minimize leaching, this project is a vital step forward in stabilizing and eventually reducing nitrate levels in UENRD groundwater.

Sponsor Name: Upper Loup NRD**Nearest Town:** Thedford**Project Name:** Assessing drought resilience of the South Loup River**Project No:** 19-147-2**Amount Requested:** \$46,000.00**Term of Request:** 2**Review Group:** Statement of Intent

Streams in the Loup River basin are sensitive to groundwater withdrawals because of the close hydrologic connection between groundwater and surface water. The Upper Loup and Lower Loup Natural Resources Districts are evaluating management strategies to mitigate low flow periods. In a recently completed study, aerial thermal imagery was used to map springs along the South Loup River. These springs are important hydrologic features that sustain the flow of the South Loup River and its tributaries and could be selected for streamflow retiming to mitigate low flow periods. The ability of these springs to maintain consistent flow over periods of prolonged drought has not yet been studied. Environmental tracer sampling with supporting geochemical data could be used to estimate the age distribution of water discharging from springs. Sampling will focus on springs within Quaternary- and Pliocene-age deposits along the South Loup, and North Fork South Loup River above the streamgage near Pressey Park. Continuous water-quality monitors will be deployed at three selected spring locations to provide additional support to the environmental tracer interpretations. Future groundwater management actions must be tied to studies such as this to conserve, maintain, and protect water supplies, natural environments, and economic vitality for future generations. THIS PROJECT WAS FUNDED \$99,000 IN 2019 WITH THE INTENT TO FUND UP TO \$46,000 IN YEAR TWO AND \$42,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Yanney Heritage Park Foundation**Nearest Town:** Kearney**Project Name:** Botanical Gardens**Project No:** 20-200**Amount Requested:** \$1,000,000.00**Term of Request:** 2**Review Group:** Urban Habitat

The Yanney Heritage Park Foundation (Foundation) is continuing the legacy of a strong public/private partnership with the City of Kearney, area schools, community organizations, and the public through the construction of seven Botanical Gardens at Yanney Heritage Park in Kearney, Nebraska. Once completed, these gardens will showcase the association of plants and plant groupings to people and our environment through education and social activities. The Gardens will be built in two phases. Phase I will construct the Native Nebraska, Pollinators, and Lilac & Hydrangea gardens. Phase II will construct the Edibles, Xeriscape, Rose, and Japanese gardens. As each phase is completed, and with our partnership with the City of Kearney, we will open a world of educational and environmental opportunities to help the public understand and appreciate the ecological value these plants provide to our health and culture. The Foundation has directed numerous development efforts which have resulted in a \$19 million public/private investment in growing the environmental, recreational, cultural, and social landscape of central Nebraska. The Foundation's request of \$1 million during the next two years will continue the strong public/private partnership legacy that has benefited thousands of central Nebraska residents.