



The Nebraska Environmental Trust

preserving NATURAL NEBRASKA™ for future generations

2021 ***PRELIMINARY SUMMARY OF APPLICATIONS***

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The Nebraska Environmental Trust entered the 2021 grant cycle receiving 123 applications. Applications were submitted via the web portal by September 8th to meet the deadline. Requests in this twenty-eighth year of grants totaled \$62,646,315.00. The Trust will announce recommendations for funding these applications in February, 2021 and will award grants in April, 2021.

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 2020 the Trust issued statements of intent to 72 projects, indicating continued funding for these projects on the basis of the 2019 and 2020 applications. Those projects are included in these descriptions. The project numbers of these applications begin "19" or "20" and end with a dash 2 (20-101-2) or dash 3 (19-101-3) 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: Alliance for the Future of Agriculture in Nebraska (AFAN)**Nearest Town:** Lincoln**Project Name:** Leopold Conservation Award Video Project**Project No:** 19-169-3**Amount Requested:** \$15,000 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Angels on Wheels, Inc dba Cross Training Center**Nearest Town:** Omaha**Project Name:** Electronic Recycling**Project No:** 21-214**Amount Requested:** \$172,066 **Term of Request:** 1 **Review Group:** Waste Management

Funds from this grant will be used to manage 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 located in Omaha and Lincoln metro areas and surrounding rural areas. We collect all out-of-service electronics including computers, consumer electronics, large appliances, household appliances and other equipment. Computers, appliance and other items that still have useful life are repaired or refurbished for continued use. Items that do not have any useful life are dismantled by hand and the materials are fully recycled. We ensure that all toxic materials such as mercury, lead, copper and other hazardous substances are disposed of in environmentally sound ways and nothing goes into landfills or our ground water supply. We operate Cross Training Center (CTC) where we provide work experience and vocational training for disadvantaged and under-educated youth and adults. Our clients receive work experience and training by recycling, refurbishing and repairing the electronics. The repaired items go back into the community to those who need them. This extends the life of the electronics and provides needed items to others in the process.

Sponsor Name: Angels on Wheels, Inc dba Cross Training Center**Nearest Town:** Omaha**Project Name:** Recycling Facility Addition**Project No:** 21-221**Amount Requested:** \$480,000 **Term of Request:** 1 **Review Group:** Waste Management

Funds from this grant will be used to construct an additional 10,000 square feet onto our existing electronic recycling facility. This will increase our capacity to collect, recycle and refurbish out-of-service electronics and to process the collected items in a manner that conforms to our zero landfill policy. We collect out-of-service electronics including computers, consumer electronics, large appliances, household appliances and other equipment. Computers, appliance and other items that still have useful life are repaired or refurbished for continued use. Items that do not have any useful life are dismantled by hand and the materials are fully recycled. We only work with certified downstream vendors to ensure that all toxic materials such as mercury, lead, copper and other hazardous substances are disposed of in environmentally sound ways and nothing goes into landfills or our ground water supply. Cross Training Center provides work experience and vocational training for disadvantaged and under-educated youth and adults. Our clients gain work experience by recycling, refurbishing and repairing the electronics. The repaired items go back into the community to those who need them. This extends the life of the electronics and provides needed items to others in the process.

Sponsor Name: Ataak LLC**Nearest Town:** Statewide**Project Name:** Eco Trash Bin**Project No:** 21-101**Amount Requested:** \$120,764 **Term of Request:** 1 **Review Group:** Waste Management

Ataak LLC, a start-up company focused on environmental sustainability, is seeking funding for the beta model fabrication and tool & die set up of its Eco Trash Bin. The Eco Trash Bin - an innovative multi-patented technology - is designed to curb the plastic and plastic bag pollution in the environment and increase recycling of recyclable items among the public.

Sponsor Name: Audubon Nebraska**Nearest Town:** Kearney**Project Name:** Building an Ecologically Sound Platte River**Project No:** 21-195**Amount Requested:** \$199,807 **Term of Request:** 3 **Review Group:** Rural Habitat

The Platte River and its watershed is unique in its ecological importance on the Great Plains to millions of migrating waterbirds. It is also inextricably linked to Nebraska's economic, cultural and natural heritage. Audubon Nebraska is committed to a future where the Platte River functions ecologically, and water for people and wildlife is valued. The Platte River is in need of a coordinated and practical approach to its significant and complex conservation challenges. Audubon seeks funds to implement a broad Platte River Initiative. Over three years, Audubon will lead and engage new stakeholders, bring new resources to address challenges and facilitate actions delivered among partners. Audubon will also connect Nebraskans with the importance and benefits of a healthy Platte River, and how to be a part of ecosystem solutions. Finally, Audubon will partner with the US Fish and Wildlife Service to deliver resilient Platte River riparian and associated habitats from the Wyoming border to the Lower Platte River. This effort will bring together varied stakeholders to create and carry out a broad and inclusive approach to conserving wildlife and other interests far into the future while also honoring the important, current work taking place in this conservation dependent watershed.

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:** 19-146-3**Amount Requested:** \$209,500 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Bennet, Village of**Nearest Town:** Bennet**Project Name:** Bennet Refuse and Recycling Center**Project No:** 21-138**Amount Requested:** \$38,338 **Term of Request:** 3 **Review Group:** Waste Management

The Village of Bennet is seeking financing to continue our Recycling Center. The Recycling Center has been supported by the City of Lincoln, NE for many years; unfortunately, they will be discontinuing their service to us as of September 2020. The Village of Bennet, rural residents and residents from the surrounding communities have grown accustomed to this service and take pride in doing what they can to protect the environment by diverting materials such as cardboard, newspaper, tin, aluminum & plastics from the landfill. We are requesting funds to assist with the pulling and material disposal fees for the recycled material so the service can continue to be offered to the residents and surrounding communities while the village funds the salaries, utilities and insurance necessary to keep the gates open.

Sponsor Name: Beyond School Bells, a program of
Nebraska Children and Families Foundation**Nearest Town:** Lincoln**Project Name:** Nebraska Youth Conservation Initiative**Project No:** 20-174-2**Amount Requested:** \$33,330 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$33,340 IN 2020 WITH THE INTENT TO FUND UP TO \$33,330 IN YEAR TWO AND \$33,330 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Blue Lincoln Recycling**Nearest Town:** Lincoln**Project Name:** C&D Material Processing Facility Equipment**Project No:** 21-163**Amount Requested:** \$285,000 **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 Lincolns 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 Lincolns recyclable construction and demolition materials out of the city landfill in year 2021, and 5% annually thereafter conservatively, provide quality recycled materials, benefit local companies by decreasing the cost of material disposal, and provide local employment. BLR is Lincolns 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 all inclusive step at eliminating the construction and demolition waste.

Sponsor Name: Bluestem Energy Solutions, LLC**Nearest Town:** Tekamah**Project Name:** Burt County Solar Energy Generation and Battery Storage Project**Project No:** 21-111**Amount Requested:** \$999,533 **Term of Request:** 1 **Review Group:** Air Quality

Partnering with Burt County Public Power District, Bluestem Energy Solutions will develop one of Nebraska's first projects combining solar energy generation and a battery storage system to provide locally generated and consumed renewable energy. The development will be in two locations; one in Burt County and another in Dodge County. Every megawatt of renewable energy generated replaces one megawatt of fossil fuel generated energy, resulting in improved air quality, while reducing the reliance on fossil fuel generated energy. The 6 MWh battery storage system will enable the interconnected renewable energy generation facility to become dispatch-able during peak electricity load requirements, thus reducing the need for fossil fuel generated energy during peak load hours. In addition, 14 acres of land will be populated with plants native to Nebraska, enhancing the natural habitat for pollinators which help us sustain our ecosystem. The total cost of the project is estimated at \$5 million. This request from Bluestem Energy Solutions to the Nebraska Environmental Trust is for 50% of the cost to purchase the battery storage (\$981,349) and the addition of the pollinator habitat (\$18,184), total \$999,533. The grant will help provide long-term environmental and economic benefits to all Nebraskans.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln

Nearest Town: Norfolk

Project Name: Towards improved floodplain management in the Elkhorn River basin

Project No: 21-207

Amount Requested: \$314,773 **Term of Request:** 3 **Review Group:** Water

We propose to design effective management strategies for reducing the immediate and lingering impacts of flooding in the Elkhorn River basin (Figure-A1), Nebraska, by developing and utilizing a coupled modeling system (Figure-A2) that can simulate surface water and groundwater flow and contaminant transport in a coupled manner, considering the impacts of compound events. The system will be run with a wide range of management options to identify effective strategies and explore mitigation alternatives, considering both water quantity and quality. We will collect field data and also use data from the ongoing NET-funded “Know Your Well” project and past studies. One of the key strengths of the proposed study is its investigator team, which brings diversified experiences that include surface water and groundwater hydrology, water quality, public health, citizen science, and outreach. The findings will be disseminated through multiple platforms (workshops, extension articles, peer-reviewed articles, conference presentations, and educational modules). A better understanding of compound flooding and its associated risks and impacts will significantly benefit the local water managers, while outreach events organized under the umbrella of the project will be beneficial to increase public awareness. Success in the Elkhorn River basin will guide future applications of similar developments across Nebraska.

Sponsor Name: Board of Regents-University of Nebraska-Omaha

Nearest Town: Omaha

Project Name: Developing the State's First Environmental DNA Core: Protecting Environments and Biodiversity within Nebraska

Project No: 21-199

Amount Requested: \$345,549 **Term of Request:** 3 **Review Group:** Education

Recently developed procedures, technically referred to as environmental DNA (eDNA) based high-throughput sequencing, provide the capability needed to measure environmental conditions and assess the presence of resident species. The lack of an eDNA research core hinders much of Nebraska's environmental research and management decisions since no facility focus on developing eDNA-related sampling and analysis protocols. The University of Nebraska at Omaha (UNO) has acquired a next-generation sequencing system, awarded by the National Science Foundation. This proposal seeks funding from the Nebraska Environmental Trust (NET) to establish a core research facility at UNO that would be dedicated to environmental DNA sequencing and research in Nebraska. Specific activities of the Core include: 1) developing sampling and analysis protocols for eDNA-based environmental and biodiversity studies, and 2) training an eDNA workforce supporting the State's environmental programs. Along with UNO's long-term commitments, investigators in organizations such as the Nebraska Game and Parks Commission and the Universities of Nebraska-Lincoln and Kearney have expressed strong research collaboration interests. The establishment of the State's first eDNA Sequencing and Research Core Facility will increase Nebraska's research capability in environmental sciences and allow better protection of environments and biodiversity.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Cover Crops for Beneficial Arthropods and Soil Health**Project No:** 21-192**Amount Requested:** \$215,271 **Term of Request:** 3 **Review Group:** Soil Management

As monoculture cropping systems have replaced diverse natural and agricultural systems, habitat for arthropods (insects, spiders, millipedes, centipedes, and others) has been lost. As a result, arthropods provide fewer of their important services, in particular crop pollination, pest control, residue breakdown, and being a food source for wildlife and birds. Croplands are characterized by fallow periods, for example in early spring before the planting of corn or soybean, or in late summer after winter wheat harvest. Establishing annual flowering cover crops during otherwise fallow periods could provide food and shelter to beneficial arthropods on potentially hundreds of thousands of acres while also improving soil health. We propose to carry out field experiments across Nebraska testing a variety of broadleaf cover crops planted during different times of the year. We will assess the cover crops' ability to support pollinating insects and other beneficial arthropods by measuring their abundance and diversity. Soil health benefits will be estimated by the cover crops' potential to reduce nitrate leaching, reduce soil erosion, and increase soil organic carbon. This project will provide important information to stakeholders on cost-effective, easy to implement, large-scale strategies to improve habitat for beneficial arthropods in the state of Nebraska.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** NE Master Naturalist - Engaging Nebraska's Youth as Naturalists **Project No:** 21-211**Amount Requested:** \$142,630 **Term of Request:** 2 **Review Group:** Education

Nebraska Master Naturalist Program provides citizens an opportunity to contribute to natural resource conservation through meaningful, science-based volunteer experiences. This program began in 2009 through a partnership that recognized Nebraska's conservation agencies and organizations as having limited resources. The program has 530 volunteers, or Certified Master Naturalists, actively contribute to at-risk species conservation, restore native habitats, prevent degradation of waterways, and improve waste management. Master Naturalists have contributed 87,500 hours on over 8,000 projects in Nebraska translating a value of \$2,225,125 in salary savings to natural resource agencies and organizations. The program reached over 800,000 individuals in Nebraska. The Master Naturalist Program's workforce is growing and evolving to meet the increasing requests for their service. Goal of this proposal are to continue growth, AND establishing a Naturalist Program for youth to enhance the future of conservation in Nebraska. The Nebraska Junior Master Naturalist Program will provide youth, ages 9-12 an understanding of Nebraska's unique habitats, ecosystems, at risk species, and hydrology by engaging students in hands-on environmental education lessons. The program will bring together natural resource specialists, Master Naturalists, and educators foster an environmentally focused community through natural resource curriculum, supplemental, and partner resources to promote conservation action.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** High Resolution Geospatial Agricultural Weather Data for Nebraska **Project No:** 21-219**Amount Requested:** \$372,397 **Term of Request:** 3 **Review Group:** Education

There is an urgent and growing need for gridded high-resolution meteorological datasets to foster advances in agricultural, ecological, and environmental systems. Yet, high resolution, high quality, gridded agricultural weather datasets do not exist for Nebraska. Many environmental and hydrologic models require gridded weather, precipitation and potential evapotranspiration data to function. Currently, users of those models produce their own gridded weather datasets that are sufficiently different to cause inconsistencies, error and confusion. National gridded datasets are available, but they include artifacts of aridity and use relatively coarse grids. The goal is to create 2 km (1.2 mile) spatial grids of refined agricultural weather data for Nebraska that include wind-corrected precipitation and extensive quality-controlled (QA/QC) weather parameters following American Society of Civil Engineers (ASCE 2005) protocol. The gridded set named GridNeb will be based on 100 High Plains Regional Climate Center (HPRCC) agricultural weather stations in Nebraska plus others from surrounding states back to year 1981. Beneficiaries of GridNeb include operators of environmental, ecological, agricultural and hydrologic models and GIS systems. The Army Corps of Engineers uses gridded data with their GeoHEC-HMS model for improved runoff prediction. Other uses include COVID-19 infection prediction that incorporate hourly temperature and humidity data.

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:** 20-165-2**Amount Requested:** \$81,949 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$59,813 IN 2020 WITH THE INTENT TO FUND UP TO \$81,949 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Kearney**Nearest Town:** Kearney**Project Name:** Eco-friendly Remediation of Landfilled Fly Ash Using Carbon Quantum Dots**Project No:** 21-136**Amount Requested:** \$198,938 **Term of Request:** 2 **Review Group:** Waste Management

About 63% of Nebraska’s electric power is generated by burning coal, which produces a large amount of coal combustion residuals that are disposed into landfills. As of 2019, the seven active coal ash disposal areas in Nebraska reported carrying more than 36 million cubic yards of coal ash. Coal ash typically contains heavy metals including arsenic, lead, mercury, and cadmium. These toxic constituents can leach out of the ash and contaminate the soil, rivers, wetlands, and underground water supplies. Despite the potential reuse of landfilled coal ash in the construction industry, the current recycling processes are cost-prohibitive for many concrete suppliers. Carbon quantum dots (CQDs) are a new generation of cost-effective nanomaterials that can be produced from agricultural wastes and offer potential solutions to optimize coal ash beneficiation and removal of toxic heavy metals. In this project, we will produce CQDs from corn stover, which can be found in large amounts in Nebraska, to remove toxic heavy metals from landfilled ash and investigate if CQD-treated ash is suitable for use in concrete. With this information, Nebraska landfills, electric power companies, and corn growers can develop a coordinated effort to reduce the environmental impacts of burning coal while increasing whole-field profitability.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Real-time Irrigation Scheduling on Farmers Smartphones with Satellite Imagery**Project No:** 21-149**Amount Requested:** \$585,732 **Term of Request:** 3 **Review Group:** Water

We propose to implement a novel and much-needed tool that substantially increases access to and utility of satellite data for on-the-ground management of irrigation water application and water consumption. We will do this by placing satellite observations of vegetation and water consumption into the hands of every farmer in Nebraska, painlessly and rapidly. The primary objective is to support on-the-fly decision-making for scheduling. An additional objective is to give rapid, on-the-fly access to near-real-time satellite imagery for growers' fields. The proposed Evapotranspiration Management (ETM) app is designed to be simple and readily sustainable. The recent special edition of the UNL Water Current magazine indicates that less than 25% of farmers use an irrigation scheduling tool such as soil moisture monitoring because of inconvenient requirements. Our proposed ETM app is basically an "ET Replacement" approach that lessens irrigators need to measure soil moisture and having to provide crop identification, crop growth stage, and histories of past irrigations. The ETM app will interface with ongoing water conservation and irrigation water management programs already in place in Nebraska and benefits the environment through reduced groundwater consumption, reduced energy consumption for pumping and reduced fluxes of nitrogen and other chemicals into groundwater.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Milkweed in the Classroom**Project No:** 19-202-3**Amount Requested:** \$19,259 **Term of Request:** 3 **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 habit 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 THIRD 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:** 19-162-3**Amount Requested:** \$21,884 **Term of Request:** 3 **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 (TCP) 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 TCP is a team of experienced biologists and students implementing our management and monitoring efforts. The TCP 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 TCP 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 TCP 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 THIRD YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Ogallala**Project Name:** Student Integrated Forest & Prairie Management at Cedar Point Biological Station**Project No:** 19-101-3**Amount Requested:** \$14,794 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln

Nearest Town: Hastings

Project Name: Water Use and Soil-Water Storage Effect of Individual & Mixed Cover Species and Impacts on Soil Quality Variables

Project No: 19-186-3

Amount Requested: \$87,884 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln

Nearest Town: Oshkosh

Project Name: An artificial Intelligence-based flow meter monitoring network for groundwater wells in North Platte NRD

Project No: 21-167

Amount Requested: \$368,180 **Term of Request:** 2 **Review Group:** Water

Groundwater is vital to the well-being of Nebraskans and the economic prosperity of the state. According to the 2018 Nebraska Groundwater Quality Monitoring Report, Nebraska has 96,593 active irrigation wells and 30,932 active domestic wells. Dynamic information on water quantity drawn from these wells is essential to make sure groundwater is sustainably used. Out of 23 Natural Resources Districts (NRDs) in Nebraska, 18 NRDs have mandatory requirements on the installation of flow meters on all wells or at least on newly installed wells in their districts in order to monitor water pumped from such wells. Most of these flowmeters require NRDs staff to visit in person to record the numbers. Due to the large footprint, an NRD can cover, reading these flowmeters can be extremely time and labor-consuming. Therefore, in this proposal, we propose to develop an artificial intelligence-based camera system – AI-FlowCAM, that can be mounted on various kinds of flow meters, together with the next-generation low-cost telemetry, to provide North Platte NRD (NPRND) near real-time flow meter reading remotely for its 50 flowmeters in Garden County. Our proposed system will be significantly cheaper than the current telemetry system that NPNRD operates.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln

Nearest Town: Lincoln

Project Name: Solar-Assisted Resource Recovery from Yellow Waters and Wastes **Project No:** 21-168

Amount Requested: \$160,544 **Term of Request:** 3 **Review Group:** Water

Water recovery from impaired resources is among the most attractive approaches to meet the need for potable water. Processes that allow for the recovery of nutrients, in addition to water recovery, can provide even a more attractive solution and offer sustainable approaches to overcoming challenges at the water-food nexus. In this project, we aim to develop solar-assisted separation modules and design a process for extracting valuable nutrients from wastes such as yellow waters and those separated from concentrated animal farming practices. This approach to managing wastes are desirable for the prosperity of Nebraskans, as it: a) reduces the environmental impact associated with these wastes, b) improves soil management by promoting a path to avoid over-applications of manure, c) improves the quality of life of Nebraskans by providing valuable resources for farming and potable water in the remote area, and d) limits the load placed on the ground and surface water sources. Along these lines, our group will use its recently developed materials and modules, conduct first principle modeling to estimate energy and efficiency of a designed system based on advanced materials, and will fabricate a separation module and a prototype, powered by solar energy.

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: 21-180

Amount Requested: \$300,632 **Term of Request:** 3 **Review Group:** Water

Algal blooms and unwanted weed growth in waterbodies caused by excessive nutrient loading have lasting health implications in both agricultural and urban ecosystems. Land requirements often constrain the implementation of on-site nutrient management practices. A promising and innovative solution for removing nutrients is the installation of floating treatment wetlands (FTWs). Previous research at UNL with FTWs in the laboratory, greenhouse, and field have shown substantial nutrient removal; therefore, we propose to conduct four full-scale FTWs demonstrations to further promote this remedial nutrient management practice. 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 and habitat. 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 \$300,632.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Flaming Alfalfa to Preserve Soil Health and Prevent Surface and Ground Water Degradation**Project No:** 21-212**Amount Requested:** \$373,081 **Term of Request:** 3 **Review Group:** Water

We propose to develop innovative flaming technology to control pests and weeds in alfalfa production. Alfalfa, a critical component of dairy rations, is the fourth most planted crop in the US (17 million acres). There are 830,000 acres of alfalfa in Nebraska. We have successfully developed flaming technologies for corn, soybeans and sunflower. Research that we conducted at UNL was commercialized through a new propane flaming company. We are now ready to replicate in alfalfa production our prior success. The main alfalfa pest (weevil) lays its eggs inside the alfalfa stems. To destroy the eggs effectively, while maintaining reasonable tractor speeds, higher temperatures are required. Vaporizer/torch units and shields need to be redesigned and then used to obtain propane doses and flaming recipes for pest and weed control in alfalfa. We will develop the technology, conduct the pest and weed control studies, and within three years provide alfalfa farmers with recipes and with safe, energy-efficient and easy-to-use flammers. The benefits to the environment, the farmers and the public would be significant: costly chemicals typically sprayed for pest and weed control in alfalfa production, would be eliminated; soil health will be preserved and surface and ground water degradation will be prevented.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Omaha**Project Name:** Treatment of Per- and Poly-fluoroalkyl Substances (PFAS) in Landfill Leachate and Groundwater with Corn Cob Biochar**Project No:** 21-186**Amount Requested:** \$141,455 **Term of Request:** 2 **Review Group:** Water

Per- and polyfluoroalkyl substances (PFAS) that are a group of human-made risky chemicals are readily mobile and ubiquitous-presence in the environment. The compounds have recently been the focus of regulatory attention. According to the early investigation of PFAS in NE, however, the samplings were limited or omitted in urban landfills and fire fighting training areas. Meanwhile, recently, the biochar amendment, which is a carbonaceous material, has gained widespread attention as a more sustainable, climate-friendly, and cost-effective alternative sorbent amendment material when the biochar is made from organic materials. Corn cob produced in Nebraska can be a good material of promising biochar treatment for PFAS contaminated soils. Therefore, the goal of this project is: (1) to evaluate PFAS in leachate and groundwater at landfills and fire fighting training sites and (2) to provide potential remediation method of PFAS using corn cob biochar. This study will elevate determining the levels of PFAS contamination in groundwater and leachate in landfills and fire fighting training sites. Furthermore, a new technique developed from this study using corn cob biochar can be implemented for ex-situ and in-situ water treatment applications. Moreover, the regional economy will be beneficial by using corn cob.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Novel Nutrient Management Approaches for Reducing Nitrate Leaching Below Crop Rootzone in Nebraska**Project No:** 21-188**Amount Requested:** \$251,162 **Term of Request:** 3 **Review Group:** Water

Nitrate is the most common contaminant affecting drinking groundwater quality in Nebraska and the United States. Though many efforts have been focused on soil nitrogen management, there are few direct assessments of nitrate leaching below the crop rootzone during the corn growing season. In this project, we will utilize laboratory and field approaches to evaluate and compare nitrate fate and transport in agricultural soils under treatments of surface-applied manure, injected manure, and commercial nitrogen fertilizer with and without nitrification inhibitors. The overall goal is to identify the best nutrient management practices for limiting nitrate leaching and protecting groundwater quality during corn production on representative Nebraska soils. Extension and outreach efforts toward stakeholders will be directed to increase awareness about the adaption of the manure as an alternate nutrient source for reducing nitrate leaching. High school students will be engaged in the on-farm demonstration, and provided education material for protecting groundwater resource in Nebraska. An up-to-date cost-benefit analysis of nitrogen management strategies to reduce nitrate leaching will be included in these materials.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Hickman**Project Name:** Direct removal of groundwater nitrate coupling water treatment and algae growth**Project No:** 20-168-2**Amount Requested:** \$216,775 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$240,187 IN 2020 WITH THE INTENT TO FUND UP TO \$216,775 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:** Eastern Redcedar Design-Build Microdwelling**Project No:** 20-182-2**Amount Requested:** \$6,500 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$28,412 IN 2020 WITH THE INTENT TO FUND UP TO \$6,500 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:** Scottsbluff**Project Name:** StreamNet: Building capacity to improve water quality**Project No:** 20-183-2**Amount Requested:** \$172,794 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$307,730 IN 2020 WITH THE INTENT TO FUND UP TO \$172,794 IN YEAR TWO AND \$11,202 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 Statewide Community Tree Canopy Map in Nebraska**Project No:** 20-188-2**Amount Requested:** \$44,218 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$51,057 IN 2020 WITH THE INTENT TO FUND UP TO \$44,218 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:** Nebraska Farmers and Farmland Owners Attitudes of Targeted Conservation**Project No:** 20-189-2**Amount Requested:** \$109,999 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$104,971 IN 2020 WITH THE INTENT TO FUND UP TO \$109,999 IN YEAR TWO AND \$42,448 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:** 19-173-3**Amount Requested:** \$78,601 **Term of Request:** 3 **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 Natural Resources District (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 THIRD 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:** 19-138-3**Amount Requested:** \$41,180 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** A Summary of Soil Health and Water Quality in Nebraska**Project No:** 21-189**Amount Requested:** \$90,000 **Term of Request:** 1 **Review Group:** Soil Management

Nebraska's success in meeting the challenges facing agriculture is, in part, linked to our soils and the ecosystem services they provide. Recognition of the value and function of soil beyond a medium for plant growth has led to the concept of soil health. Tools for evaluating the effects of management practices on soil health are continuously being developed, but a standard suite of metrics has yet to be agreed upon. Nebraska has an opportunity to become a leader in soil health and water quality management, but this will require a comprehensive understanding of soil health research and current best management recommendations coupled with effective communication strategies. Objectives for this project are 1) Compose a comprehensive summary of information that focuses on the influence of soil health practices on water quality in Nebraska; 2) Create awareness of intersecting soil health and water quality best practices; 3) Develop a pilot program using the Bow Creek HUB to identify soil health & water quality gaps and effective solutions using peer-based collaborative processes. Meeting these objectives will provide accessible soil health and water quality information that will be used to identify critical gaps and effective solutions benefiting a broad group of soil health stakeholders.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Exploring the Benefits of Cover Crops to Improve Subsoil Health and Water Quality**Project No:** 21-164**Amount Requested:** \$268,391 **Term of Request:** 3 **Review Group:** Soil Management

Improving soil health due to increased carbon storage, microbial activity, and nutrient availability while reducing nitrate losses is key to prevent soil degradation, to enhance water quality, and to improve resource efficiency in agroecosystems. However, soil management options that are suitable to improve these characteristics for the topsoil and the subsoil are in critical need. This project will clarify under which soil environmental conditions cover cropping will increase the retention and plant availability of nitrate and other nutrients while enhancing soil carbon storage and microbial activity in the topsoil and the subsoil. Ten study sites across Nebraska differing in soil texture and climate (i.e. agro-ecoregions) with cover crop and no cover crop systems will be sampled down to a depth of 1 m. The samples will be analyzed for organic carbon, microbial activity and abundance, nutrient availability and nitrate retention. The overall goal of this project is to define soil environmental conditions that are most beneficial in improving topsoil as well as subsoil health and decrease nitrate losses from soil by incorporating cover crops into rotations. Extension and outreach efforts will be directed towards an increasing adoption of this management option to strengthen sustainable productivity of agro-ecosystems in Nebraska.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Hastings**Project Name:** Development of thermally and chemically modified amendments blends for improving agricultural productivity for irrigated and rainfed cropping systems**Project No:** 21-181**Amount Requested:** \$254,111 **Term of Request:** 3 **Review Group:** Soil Management

Soil amendments produced from sustainable agricultural byproducts and biochar can positively impact soil health and improve agricultural productivity and efficiency and can make substantial contributions to Nebraska's economy. The magnitude of positive impact(s) of soil amendments on soil health variables as well as agricultural productivity under irrigated and rainfed conditions for different cropping systems and under different irrigation methods simultaneously in the same environment have not been quantified. This project will quantify the impact of thermally and chemically treated soil amendments blends, including biochar, corn gluten meal and biomass, on soil health parameters, soil moisture, soil evaporation, soil temperature and soil-water holding capacity under subsurface drip irrigation, center pivot irrigation and rainfed conditions for maize and soybean. The amendments blends will be applied at different amounts to quantify application rate vs. soil health and crop productivity relationships. In addition, the impact of different amendments on the plant emergence rate, weed pressure, plant health (leaf area index, plant height, leaf temperature), grain yield, irrigation efficiency, crop water use efficiency and nitrogen use efficiency will be quantified.

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:** 20-121-2**Amount Requested:** \$75,000 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$75,000 IN 2020 WITH THE INTENT TO FUND UP TO \$75,000 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:** Improving Soil Health Using Heat-Treated Manure**Project No:** 20-123-2**Amount Requested:** \$90,314 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$105,552 IN 2020 WITH THE INTENT TO FUND UP TO \$90,314 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: Improving statewide performance of conservation investments on Eastern redcedar invasions

Project No: 20-139-2

Amount Requested: \$79,310 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$77,000 IN 2020 WITH THE INTENT TO FUND UP TO \$79,310 IN YEAR TWO AND \$81,690 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: Detecting Atrazine Dissipation and Evaluating Herbicide Programs without Atrazine for Weed Control in Corn and their Environmental Impact Quotient: Research and Extension

Project No: 20-157-2

Amount Requested: \$49,041 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$49,979 IN 2020 WITH THE INTENT TO FUND UP TO \$49,041 IN YEAR TWO AND \$47,154 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:** Pierce**Project Name:** TAPS Northeast: Reducing Nitrate Leaching through Competition **Project No:** 21-179**Amount Requested:** \$687,899 **Term of Request:** 3 **Review Group:** Education

Elevated nitrate concentrations in drinking water have been linked to public health effects (1). In Nebraska, the cause of the elevated nitrate concentrations is due to excessive nitrogen fertilizer and supplemental irrigation applied to corn and leaching beyond the root zone (2, 3). Improving the efficiency of nitrogen (N) and irrigation (W) management is critical to reduce nitrate leaching. However, grower adoption of N x W technologies and management techniques that are effective at reducing leaching remains limited. We propose the expansion of a successful program known as Testing Ag Performance Solutions (TAPS) to an area of Nebraska critically affected by nitrate in the groundwater, the Northeast. TAPS is a grower competition conducted at a single location, which incorporates a peer-group adult learning model. Participants in the program make a variety of decisions that affect N x W management. The TAPS team manages the site and implements participant decisions. This environment allows participants to engage their curiosity and take risks. According to participant surveys and interviews, the experience has overwhelmingly resulted in adopting improved N x W management on their own farm, which has a direct benefit to the environment and grower financially.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Ogallala**Project Name:** Leveraging collaborations and experiential learning to generate public knowledge of aerial insect resources**Project No:** 21-141**Amount Requested:** \$86,134 **Term of Request:** 3 **Review Group:** Education

We request funds to initiate an aerial insect monitoring program at UNL's Cedar Point Biological Station (CPBS), to support six or more student intern stipends (insect monitoring internships) over 3 summer seasons and purchase associated equipment / supplies. NET funding allows CPBS to join an insect sampling network that has little coverage in the Great Plains and no coverage in western Nebraska. The gap in coverage means that there is both a crucial need for monitoring aerial insects in this region and an opportunity to increase and share local environmental knowledge, provide student training, and build environmental resource infrastructure. We are seeking funds to support students in a summer-long internship managing the insect sampling program. These students will gain experience with sampling procedures, arthropod identification, database management, science communication, and large-scale science networks. The sampling program will generate a data stream on crucial insect resources and agricultural pests that will be available to CPBS users, local and regional farmers, and any researcher interested in the North Platte River ecosystem. The collaborative program will build regional environmental knowledge that will foster increased connectivity among managers, public users, students, and researchers of the Platte River Basin.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Valentine**Project Name:** Niobrara River Ecology and Education**Project No:** 21-216**Amount Requested:** \$27,637 **Term of Request:** 2 **Review Group:** Education

Thousands of tourists travel to the Niobrara River each summer to partake in recreational activities ranging from camping to hunting to fishing to leisurely floating down the river. Even during the current global pandemic, the Niobrara River offers a safe place to recreate. The river also cuts through portions of rangeland and row crop agriculture, land uses that support an important proportion of the Nebraska economy. Finally, the river hosts plant and animal communities from both the eastern and western forests of the US. For these reasons and others, the Niobrara River is designated a National Scenic River. To understand the ecology of the Niobrara River and how well it is being managed, we have been studying the organisms that live in the waters and the water quality within its reaches since 2019. With funding from the Nebraska Environmental Trust, we will create and provide new, engaging artwork and pamphlets to educate visitors about the Niobrara River and the exciting discoveries that we have made. These materials will help inform and teach the public about Nebraska's most precious waterway and foster continued best management practices in the region.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Ogallala**Project Name:** Assessment of Greenhouse Gas Sequestration Resources in Districts 5, 6 and 7 to Improve Carbon Management Opportunities in Nebraska **Project No:** 21-162**Amount Requested:** \$196,467 **Term of Request:** 2 **Review Group:** Air Quality

Carbon capture and storage (CCS) has gained considerable recognition as a promising option to reduce greenhouse gas emissions to the atmosphere. In Nebraska, most electricity comes from burning fossil fuels, which is estimated to emit 15 million tons of CO₂ per year. Additionally, ethanol plants in Nebraska are estimated to emit 4 million tons of CO₂ annually. CCS enables those industries to continually operate whilst emitting far fewer greenhouse gases. The study area of this project covers the part of Districts 5, 6, and 7, an area that DOE's CCS projects have not fully evaluated to date. The project objective is to assess CO₂ storage resources opportunities in the study area and in the vicinity of NPPD's Gerald Gentleman Station, at levels deeper than the current Permian geologic units. From this project, the areal extent, the thickness of possible storage formations, and structural closures as an input to the volumetric approach 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 partnership with NPPD, who is evaluating potential CCS options to sequester CO₂ emissions, will further support the success of the proposed tasks.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Generating Clean Energy and Recovering Soil from Scrapings of Open Cattle Feedlots**Project No:** 21-194**Amount Requested:** \$202,194 **Term of Request:** 2 **Review Group:** Air Quality

Open feedlots in Nebraska generate annually 5-8 million tons of pen floor scrapings that contain both manure and soil. Stockpiling is the common management practice for the scrapings. However, during stockpiling greenhouse gas methane is generated and emitted from stockpiles due to anaerobic microbial activities. Besides, the soil in scrapings cannot be recovered during stockpiling, resulting in the need of continually finding new soil to re-surface pen floor after each cleaning. To reduce environmental footprint and save operation costs, we propose to develop a novel manure management practice that can generate hydrogen gas and recover soil from open feedlot scrapings. The proposed system consists of an anaerobic digester (AD) followed by a microbial electrolytic converter (MEC). In AD the organics in manure will be converted to simple molecules through fermentation, while the soil will be separated from manure and precipitated out for recovery. The simple molecules will be transferred to MEC to be converted to hydrogen gas, a cleaner form of energy than methane and a profitable feedstock for industry applications. Additionally, calculations will be made to quantify the environmental and economic benefits of the novel process and project findings will be disseminated to stakeholders through presentations, demonstrations, and reports.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Rose**Project Name:** Adaptive Management of Sandhills Grasslands**Project No:** 21-209**Amount Requested:** \$546,011 **Term of Request:** 3 **Review Group:** Rural Habitat

Sandhills grasslands are used for beef cattle production and vegetation cover is managed with grazing strategies and manual and chemical invasive plant control. Prescribed fire is viewed as a tool, especially for control of eastern redcedar; however, relatively few acres are burned annually. Grassland managers use combinations of these approaches. We are establishing a collaborative adaptive management (CAM) group at Barta Brothers Ranch (BBR) to narrow these management options within a CAM framework. Tradeoffs occur among competing ecosystem services (e.g., soil health, cattle weight gain, economic return, wildlife diversity) and disservices (e.g., invasive species, bare ground, compromised soils). Through a process of learning-by-management, the CAM group will develop and refine a results framework, which managers can use to assess tradeoffs on their properties. Ecosystem services and disservices will be monitored by documenting variables such as aboveground plant composition and production, bird abundance and composition, soil properties, and beef cattle performance. Conventional grassland research has a rigid design that does not support evaluation of the interplay between grassland dynamics and manager decisions relative to environmental and economic changes at the production scale. Alternatively, CAM embraces the flexibility of managers in learning about responses and tradeoffs and adjusting management accordingly.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Crawford**Project Name:** Habitat selection, movement ecology, and social organization of bighorn sheep in Nebraska**Project No:** 21-151**Amount Requested:** \$59,000 **Term of Request:** 1 **Review Group:** Rural Habitat

Bighorn sheep in Nebraska currently face significant challenges from respiratory disease, predation, and habitat fragmentation. University of Nebraska-Lincoln (UNL) and Nebraska Game and Parks Commission (NGPC) began collaborating in 2018 to study the spatial ecology of bighorn sheep in Nebraska. Our current goal is to improve understanding of habitat relationships, movement ecology, and social structure of bighorn sheep to inform sound management for this Tier 1 at-risk species. We will use extensive, existing GPS telemetry data collected from adult female bighorn sheep in the two existing subpopulations in Nebraska (2018-2020) to: 1) quantify habitat selection and fine-scale movement decisions relative to forage, predation risk, and potential sources of disease transmission, and 2) evaluate social organization of ewes. Elucidating seasonal habitat relationships and movements relative to natural and anthropogenic landscape features are key to understanding behavioral mechanisms underlying their susceptibility to disease from domestic livestock and predation risk from mountain lions and other predators. Additionally, investigating sociality in female bighorn sheep, who form nursery groups while rearing lambs, is important to clarify pathways of disease transmission within herds. Thus, our research will fill key knowledge gaps and contribute to developing a sound conservation strategy for this iconic, native Nebraska species.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Genetic studies of Chronic Wasting Disease in Nebraska Deer: Forewarned is forearmed**Project No:** 21-112**Amount Requested:** \$161,278 **Term of Request:** 2 **Review Group:** Education

Chronic Wasting Disease (CWD) threatens Nebraska's elk, white-tailed and mule deer. The threat has two concerns. Can CWD cause disease in people, as the similar mad-cow disease does in people (variant Creutzfeldt-Jakob disease)? Second, severe reduction of deer herds entails a major economic impact. CWD is transferred among deer via direct contact, bodily fluids, contaminated soil and feed, and reproduction. The disease is fatal to these species with no known cure. One factor in managing outbreaks is an understanding of the genes that influence CWD. Some deer are genetically more resistant to CWD than others. UNL has published research on the distribution of resistance genes for roughly half of Nebraska finding they are widespread but in low frequency. The proposed project has four objectives. Objective 1: What is the statewide distribution of resistance alleles for CWD, including near game farms? Objective 2: produce a model based on frequencies of resistance genes that will predict the future of the Nebraska deer herd. Objective 3: are deer across Nebraska genetically similar or are there restrictions to movement? Objective 4: inform the deer hunting public about the occurrence and consequences of CWD.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Johnstown**Project Name:** Effects of redcedar on the diversity and ecosystem services of Nebraska's forests**Project No:** 21-152**Amount Requested:** \$99,226 **Term of Request:** 2 **Review Group:** Rural Habitat

Redcedar (*Juniperus virginiana*) is a dramatically expanding tree species that is threatening Nebraska's prairie and forest ecosystems. There have been large expenditures on manual removal of redcedar, but the effects of removal are poorly understood. The goal of this project is to quantify how removal of redcedar the south-side of the Niobrara River affects plant biodiversity in these forests and adjacent prairie. This project will leverage two substantial existing resources: a 51-acre forest inventory plot spanning the prairie forest-boundary and airborne remote sensing (see Attachment). In the Niobrara plot, 8,293 trees (26 species) at least 1 centimeter (0.4 inches) in diameter have been mapped, tagged, identified, and measured. Using portions of the Niobrara plot where redcedar has and has not been removed, we will compare tree growth and survival, seedling regeneration, and forb and grass diversity to quantify local-scale effects of redcedar. We will use remote sensing to estimate large-scale effects of redcedar on performance of trees based on differences in leaf hyperspectral reflectance in areas of high versus low redcedar density. This project will contribute a comprehensive understanding of the influence of redcedar removal on trees, forbs, and grasses that will guide redcedar management and community forestry in Nebraska.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Promoting environmental education through digital learning and natural history exhibits**Project No:** 21-170**Amount Requested:** \$97,935 **Term of Request:** 2 **Review Group:** Education

The University of Nebraska State Museum (UNSM) proposes to promote environmental education about conservation of natural habitats and surface/ground water. The Museum will accomplish this education by: 1. using a combination of live, interactive virtual programs about prairies, surface and ground water to reach rural and urban students and families throughout the state, 2. creating a portable natural history exhibit Square Meter to be temporarily installed at Ashfall Fossil Beds State Historical Park (Royal, NE) and Trailside Museum of Natural History (Crawford, NE), and 3. creating an online, digital educational guide for PK-12 educators based upon the exhibit in partnership with Chris Helzer (The Nature Conservancy). After funding is complete, two copies of the portable natural history exhibit and accompanying educational activities will tour libraries, community centers, nature centers and other museums throughout Nebraska. This request builds upon our past funding for Cherish Nebraska, the major renovation devoted to Nebraska's current and past natural environments, and our award-winning, nationally distributed Virtual Field Trip program. Two years of support is requested for portable exhibit construction, creation of the virtual learning programs on prairies, surface and ground water, and an online educator's guide with educational materials to accompany the traveling exhibit.

Sponsor Name: Board of Regents-University of Nebraska-Lincoln**Nearest Town:** Lincoln**Project Name:** Impact and Causes of the March 2019 Nebraska Flood**Project No:** 21-185**Amount Requested:** \$230,987 **Term of Request:** 3 **Review Group:** Water

The March 2019 flooding in Nebraska was a catastrophe. It caused millions of dollars in economic loss and record flooding across much of our state. Given future climate projections, this type of flood is likely to happen again. Yet, there are many unanswered questions concerning the flood event. Why did damage from flooding (e.g., erosion, bank loss) vary across different regions? How large were the floods relative to historic flood events? How much soil and nutrients were washed downstream from our rivers to the Missouri River? What were the main factors that caused the floods? Our objectives include the following: (1) Calculate the return interval for each stream with a USGS gauge to determine the magnitude of the flood, (2) Measure streambank erosion and sample streambanks for total nitrogen and phosphorus from the ten streams with the largest intervals to determine the loss of nutrients to the Missouri River, (3) Create a model to test the variables (soil temperature, air temperature, stream flow, precipitation, cumulative snowfall, dam infrastructure and watershed characteristics) to determine the main causes of the flooding, and (4) develop a plan of action to help prevent such immense flooding in the future based on our modeling results.

Sponsor Name: Chadron State College**Nearest Town:** Chadron**Project Name:** Math Science Building Initiative**Project No:** 21-169**Amount Requested:** \$483,500 **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 16,926 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 for the purchase of environmentally friendly and sustainable landscaping which impacts the surface and ground water and soil management. Funding will ensure the ability to purchase environmentally friendly HVAC, lighting, lab ventilation and more that will reduce water and energy usage and better protect the environment.

Sponsor Name: Conservation Blueprint**Nearest Town:** St. Paul**Project Name:** Pollinator and Wildlife Habitat Education**Project No:** 20-176-2**Amount Requested:** \$9,800 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$9,800 IN 2020 WITH THE INTENT TO FUND UP TO \$9,800 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Conservation Nebraska**Nearest Town:** Lincoln**Project Name:** Common Ground Education Program**Project No:** 21-213**Amount Requested:** \$65,000 **Term of Request:** 1 **Review Group:** Education

Conservation Nebraska requests \$65,000 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 education to the public about local habitats, surface and groundwater quality, 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 programming in 27 communities across Nebraska. Each dollar of NET funding will be matched by more than \$7 of funding from public and private sources. Support from the NET in 2021 will result in at least 250 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 88% of respondents reporting increased knowledge about conservation issues facing Nebraska and 84% 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: Dr. Susan LaFlesche Picotte Center**Nearest Town:** Walthill**Project Name:** Dr. Susan La Flesche Picotte Hospital Restoration**Project No:** 21-161**Amount Requested:** \$109,120 **Term of Request:** 1 **Review Group:** Urban Habitat

The Dr. Susan La Flesche Picotte Hospital is situated in the town of Walthill (population 870) on the Omaha Indian Reservation. Built in 1913, it was designated a National Historic Landmark in 1992. Dr. Susan La Flesche Picotte is one of the most extraordinary yet little-known figures in U.S. history. Not only was she the first Native American licensed to practice medicine, but she constructed the first hospital on a reservation without a penny of federal funding. Led by the non-profit Picotte Center Board and an Advisory Committee co-chaired by First Lady Susanne Shore, a broad based effort is underway to restore the hospital and transform the site into a vibrant center for the Walthill community and northeast Nebraska. This group has received two USDA Rural Development grants, funds from the Shopokee Nation and private donors to provide emergency stabilization and undertake exterior restoration. A grant from the Trust will enable further progress with planning and implementation. Project activities include: Community Engagement process; research for building and site energy, water and soil conservation treatments; and the design/implementation of the first phase of water conservation, site stabilization and soil/vegetation management concepts.

Sponsor Name: Ducks Unlimited, Inc.**Nearest Town:** Lincoln**Project Name:** Eastern Saline Wetland Restorations**Project No:** 21-154**Amount Requested:** \$160,787 **Term of Request:** 1 **Review Group:** Rural Habitat

The Eastern Saline Wetland Restorations proposal seeks to enhance habitat features on the Frank Shoemaker Marsh and repair existing structures at Jack Sinn Wildlife Management Area in both Lancaster and Saunders Counties, Nebraska. At both sites, past restoration activities have created positive responses by native wetland species and saline vegetation. It is important to continue enhancing the saline wetlands as they are considered imperiled in the State of Nebraska. The saline wetland system is very sensitive to hydrological alterations, therefore, the restorations within this proposal to the wetlands and associated stream habitats are critical to the federally and state endangered Salt Creek tiger beetle. Continued restorations of the Eastern saline wetlands will help to avoid additional listings of saline wetland dependent species under the Endangered Species Act, aid in reversing the downward trend of many shorebird populations and provide for increased management and enhancement options to help adapt to climate change. The saline wetlands play an important role in ecosystem management by providing functions which improve water quality, reduce flooding and soil erosion, and supplying water. These functions are very important as the saline wetlands are located within the highest populations of the state.

Sponsor Name: Ducks Unlimited, Inc.**Nearest Town:** Lewellen**Project Name:** Improving Wildlife Habitat and Public Recreation**Project No:** 21-196**Amount Requested:** \$148,000 **Term of Request:** 1 **Review Group:** Rural Habitat

This proposal seeks to restore and enhance wildlife habitat at 3 locations open to the public. One located just west of Lake McConaughy, Clear Creek Wildlife Management Area (WMA), is arguably the most important WMA on the North Platte River from a waterfowl hunting recreational use standpoint. Additional restoration efforts will focus on a private parcel located near Oshkosh, open to the public via a cooperative agreement with Nebraska Game and Parks Commission, and at Platte WMA near North Platte, Nebraska. This proposal will address water conveyance and management needs on all sites, expanding both the functionality and footprint of wetland habitats. Work will include installing new water diversion and control structures at Clear Creek WMA. Water conveyance will be restored at the Oshkosh site by removing sections of a gravel access road and installing rocked low water crossings to allow hydrology to be better connected across a pristine native wet meadow. Lastly, rock checks will be installed at Platte WMA to improve hydrology and allow for better access for managers to control invasive species. Habitat improvements will not only benefit wetland health, water quality, and wildlife but also improve recreational opportunity associated with all sites.

Sponsor Name: Ducks Unlimited, Inc.**Nearest Town:** Scottsbluff**Project Name:** Restoring Western Alkali and Riparian Wetlands**Project No:** 21-193**Amount Requested:** \$219,046 **Term of Request:** 2 **Review Group:** Rural Habitat

The Restoring Western Alkali and Riparian Wetlands proposal seeks to restore and enhance wetlands, other wildlife habitats, and grazing lands in this regionally and continentally important landscape. This proposal looks to restore wetland and grassland habitats within the North Platte River Biologically Unique Landscape (BUL) and directly address conservation concerns and needs within this BUL. The conservation partnership involved in this proposal looks to restore two of the most important publicly owned wetlands in western Nebraska at the Nebraska Game and Parks Commission's (NGPC) Kiowa Wildlife Management Area (WMA), and the Chet and Jane Fleisbach WMA. In addition to restoring these critical wetlands, the partnership will also complete a backwater slough and shallow water wetland restoration project on one additional tract along the North Platte River. Our conservation effort follows the best science available and recommended strategies in the Strategic Plan's for NGPC, U.S. Fish and Wildlife Service, Playa Lakes Joint Venture, and Ducks Unlimited. 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 and forage production.

Sponsor Name: Ducks Unlimited, Inc.**Nearest Town:** Grand Island**Project Name:** Working Land Wetlands**Project No:** 21-157**Amount Requested:** \$397,844 **Term of Request:** 2 **Review Group:** Rural Habitat

Ducks Unlimited works on private lands to find a balance between restoring wetlands and being able to derive an income by working the land either via farming or ranching. Wetlands can benefit greatly from agriculture, whether it be grazing or haying wetlands to set back plant succession, which produces seed-producing plants that are crucial for migrating birds or even cropping of playa wetlands during dry years. Wetlands occur throughout this working landscape, and no matter where they are located, these wetlands provide crucial ecosystem services such as flood abatement, water purification, aquifer recharge, and recreational areas that have positive impacts to all Nebraskans while also providing habitat for thousands of species. The work in this proposal will restore or enhance wetlands on at least 10 and up to 15 properties with willing landowners throughout the state associated with these wetland complexes and located on working lands. Ducks Unlimited has impacted over 168,000 acres in Nebraska and have brought in over \$30 million in funding from out-of-state sources to support Nebraska's environment and economy. This proposal will be a continuation of those efforts statewide since loss of wetlands is high and restoring those in agricultural landscapes is crucial to our environment.

Sponsor Name: Five Rivers Resource, Conservation, & Development, Inc. **Nearest Town:** Tecumseh**Project Name:** Native Grassland Protection Against Invasive Species**Project No:** 21-191**Amount Requested:** \$88,429 **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 & funding associated with control has resulted in many grasslands being converted to row crop production. This leaves our native species highly vulnerable to disturbances as well as weed & cedar tree invasion. With the increase of invasive species present in the area we see its negative impacts on remaining landscapes & losses to grazing lands & 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 & partnering entities on the benefits of proper & responsible management through educational workshops, weed walks/pasture tours, and with a cost-share program to help with overwhelming costs associated with weed & cedar tree control. The combination of education & cost share will help to reduce the incidence & spread of invasives to ensure a viable ecosystem that is both useful and profitable.

Sponsor Name: Five Rivers Resource, Conservation, & Development, Inc. **Nearest Town:** Tecumseh

Project Name: SE Nebraska Household Hazardous Waste Collections **Project No:** 21-223

Amount Requested: \$76,369 **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: Four Corners Health Department

Nearest Town: York

Project Name: Household Hazardous Waste Events

Project No: 19-175-3

Amount Requested: \$29,250 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Friends of Heron Haven, Inc.**Nearest Town:** Omaha**Project Name:** Nature Education and Capital Improvements at Heron Haven**Project No:** 19-145-3**Amount Requested:** \$7,800**Term of Request:** 3**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 THIRD YEAR REQUEST.

Sponsor Name: Girl Scouts Spirit of Nebraska**Nearest Town:** Nickerson**Project Name:** Spirit of Nebraska Camp Woodland Restoration**Project No:** 21-173**Amount Requested:** \$51,100**Term of Request:** 1**Review Group:** Rural Habitat

The Spirit of Nebraska Camp Woodland Restoration Project will enhance 200 acres of oak and cottonwood forest and tall grass prairie as well as enrich habitats for tier 1 and tier 2 species through the strategic removal of cedar and other invasive trees. Improved year-round access will allow for additional safety for camp visitors and facilitation of programs for girls keeping the protection of flora and fauna in mind. Girl Scouts will be completing this project on two camp properties: Camp Crossed Arrows located in Washington and Dodge Counties and Camp Maha, a Biologically Unique Landscape designated by the Nebraska Natural Legacy Project located in Sarpy County. In partnership with Oak Woodlands Alliance, Game and Parks, and Fontenelle Forest, we will be sure to follow best practice land management during the restoration process. Moving forward, we will work to prevent the woodland from overgrowth moving forward producing long term benefits. Girl Scouts Spirit of Nebraska requests \$51,100 from NET to assist in the purchase of new and used equipment to remove invasive cedar, autumn olive, and rough leaf dogwood species from two council owned properties over three years. To date, we have secured \$25,000 in funding for this project.

Sponsor Name: Grand Island Area Clean Community System**Nearest Town:** Grand Island**Project Name:** Regional Household Hazardous Waste Facility**Project No:** 20-129-2**Amount Requested:** \$172,035 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$168,900 IN 2020 WITH THE INTENT TO FUND UP TO \$172,035 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

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:** 20-137-2**Amount Requested:** \$1,514,386 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$1,465,408 IN 2020 WITH THE INTENT TO FUND UP TO \$1,514,386 IN YEAR TWO AND \$20,206 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Green Recycling Enterprises, LLC DBA Second Nature

Nearest Town: Omaha

Project Name: Recycling on the Go!

Project No: 20-122-2

Amount Requested: \$140,000 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$143,000 IN 2020 WITH THE INTENT TO FUND UP TO \$140,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Gretna, City of

Nearest Town: Gretna

Project Name: Gretna Crossing Park - Nature Area & Pollinator Habitat

Project No: 21-135

Amount Requested: \$293,000 **Term of Request:** 1 **Review Group:** Urban Habitat

Summary of Key Activities Request for financial support from the NET combined with local monies, will provide the necessary funding to fully develop a Nature Area and Pollinator Habitat in the northeast corner of the soon-to-be built 157.59± acre, \$53.63± million Gretna Crossing Park. This 13.30± acre area/habitat will be developed with a 2,920 Linear Foot (LF) concrete walking trail, two pedestrian boardwalks/bridge structures over small drainage swale, installation of four seating benches, an interpretive kiosk with exhibits, plant identification signage, landscaping improvements including 300 native canopy trees, 80 ornamental trees, 50 coniferous trees, pollinator habitat with miscellaneous native shrubs and perennial beds, 15 stall concrete parking lot with appropriate appurtenances, contingencies, mobilization/bonding/insurance, and engineering. Outcomes This Nature Area will allow patrons to put away their cell phones, spend meaningful time disconnecting from distractions of their busy lives, and reconnecting to the simplicity of nature. Studies have shown that taking in the sounds and sights of nature can reduce stress and improve a person's physical, mental, and emotional health. Furthermore, the creation of a habitat for pollinator species in the Park's Nature Area will promote pollinator protection and increase the ecological resiliency of the City.

Sponsor Name: Habitat for Humanity of Lincoln ReStore**Nearest Town:** Lincoln**Project Name:** Scrub Day: Spring Cleaning Donation Drive**Project No:** 19-200-3**Amount Requested:** \$6,450 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Habitat for Humanity of Omaha**Nearest Town:** Omaha**Project Name:** Habitat Omaha ReStore Deconstruction Project**Project No:** 21-144**Amount Requested:** \$500,000 **Term of Request:** 2 **Review Group:** Waste Management

Habitat Omaha's Deconstruction Project will reduce unnecessary waste and preserve natural resources by salvaging and reselling usable home materials. Habitat Omaha is requesting NET funding to support 15 whole-house deconstruction projects and 110 partial or "soft-strip" deconstruction projects annually for two years. Habitat Omaha will provide a 100% match of these funds to support program and administrative costs. The deconstruction process involves the careful dismantling of a house or space by trained sub-contracts for reuse, recycling, or upcycling the materials. Through Habitat's Deconstruction Program, these materials can be recycled or repurposed. Not only does this project reduce waste, it reduces the need for new raw material consumption. Materials saved from the landfill are made available for sale to the general public through two Habitat ReStores in Omaha and through online bids. Proceeds from these sales are used to support the important work of Habitat Omaha in providing affordable housing opportunities to low-income families in our community.

Sponsor Name: Habitat for Humanity of Omaha**Nearest Town:** Omaha**Project Name:** Deconstruction Project**Project No:** 19-150-3**Amount Requested:** \$231,000 **Term of Request:** 3 **Review Group:** Statement of Intent

Habitat Omaha's Deconstruction Program helps to reduce waste and preserve natural resources by salvaging materials from blighted homes slated for demolition and from home renovation projects. Habitat Omaha is requesting NET funding to support 3 whole-house deconstruction projects and 150 partial or "softstrip" deconstruction projects annually for three years. As match, Habitat ReStore revenues and city funding will support the operations of the project and the cost of the demolitions of homes after deconstruction work has concluded. Deconstruction includes carefully dismantling a house and reusing, recycling, or upcycling the materials. Typically, 60% of a demolition house's materials can be salvaged, representing over 6,000 cubic feet of debris that would otherwise go to local landfills. With smaller softstrip projects, reuse is closer to 100%. Through the Deconstruction Program, these materials can be recycled or repurposed. Examples of materials salvaged through deconstruction include the following: plywood, dimensional lumber, hardwood flooring, bricks, fixtures, doors, hinges, paneling, stairs and railings, trim, lathe, cabinets and countertops. Not only does this project reduce waste, it reduces the need for new raw material consumption. Materials saved from the landfill are made available to the general public through two Habitat ReStores in Omaha and through online bids. THIS PROJECT WAS FUNDED \$462,000 IN 2019 WITH THE INTENT TO FUND UP TO \$231,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE THIRD YEAR REQUEST.

Sponsor Name: Habitat Lincoln ReStore**Nearest Town:** Lincoln**Project Name:** ReStore Store #2**Project No:** 21-109**Amount Requested:** \$254,360 **Term of Request:** 1 **Review Group:** Waste Management

Habitat for Humanity of Lincoln opened its first ReStore in August 2014. Since inception, ReStore has seen stable and steady growth averaging 15% per year and diverting more than 1,000 tons of waste from the landfill. Habitat ReStore Lincoln is the only business in the community offering building materials and home furnishings at affordable prices to the public. Profits generated from sales at ReStore sustain Habitat for Humanity of Lincoln's mission to build and repair affordable homes. Due to the growth and success of the current store, there is limited room for donations and sales, therefore, a second store is needed. A second store will enable ReStore to accept bulk items and larger donated items, as well as, process donations more quickly, divert more waste from the landfill and increase sales to support Habitat Lincoln.

Sponsor Name: High Plains Weed Management Association**Nearest Town:** Scottsbluff**Project Name:** North Platte River Invasive Species Control Project Phase 5**Project No:** 20-142-2**Amount Requested:** \$189,000 **Term of Request:** 2 **Review Group:** Statement of Intent

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 at this time. THIS PROJECT WAS FUNDED \$311,000 IN 2020 WITH THE INTENT TO FUND UP TO \$189,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

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:** 20-194-2

Amount Requested: \$82,975 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$69,890 IN 2020 WITH THE INTENT TO FUND UP TO \$82,975 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Joslyn Institute for Sustainable Communities

Nearest Town: Lincoln

Project Name: LINCOLN CONSERVATION CENTER: A Model Pilot Plan for Community Local Food Systems

Project No: 21-142

Amount Requested: \$160,890 **Term of Request:** 1 **Review Group:** Education

This conservation center will be a focus of two markets and related public services for interdependent ecological systems: One market will be planned for public purchase of local/regionally produced food; the second market will be planned for a reopening of the Lincoln EcoStore, specializing in reusable building materials. Allied services of the Center will focus on regenerative agriculture, foods/ag education, pollution prevention, waste reduction and waste avoidance, energy efficiencies, economics of food chains, economic development, resiliency planning, and urban design to mitigate flooding and climate change. The pilot center will promote sustainable ecosystems methodologies and local community actions designed to create a sustainable culture and practices of conservation. Plans for the center will define transformative operational systems for production, marketing, consumption, and waste management of local food and material resources for statewide application. Plans, recommendations and proposed policies emanating from this one-year local food systems proposal will be addressed to the NETF priorities of habitat, surface and ground water, waste management, air quality and soil management. The plans for conservation of materials, energy and allied services will be addressed to the Nebraska Department of Environment and Energy and will conform to the criteria of the NDEE Waste Reduction Grant program.

Sponsor Name: Kearney, City of**Nearest Town:** Kearney**Project Name:** The Gardens at Yanney Park**Project No:** 21-113**Amount Requested:** \$200,000 **Term of Request:** 1 **Review Group:** Urban Habitat

The Gardens at Yanney Park is a 15-acre project providing a unique landscape designed to beautify Yanney Park, provide educational, environmental, social, and public health benefits for the residents and visitors of Kearney, Nebraska, and the surrounding area. The project is a dream of Michael Yanney, whose family is the namesake of Yanney Park and provided 80-acres of farm ground to develop into a municipal park in 1998. In the initial phase of development, a pollinator garden and Nebraska Native plant garden will serve as two of the first three garden “circles” developed. These two gardens and associated plant selections serve as a connection to our geography, native history, and have Nebraska ties to our name or heritage. Several of the plants will also tie to our appreciation of the native prairie with grasses, forbs, sedges, and other species. The City of Kearney is requesting a one-year commitment of \$200,000 to assist in the development of the pollinator and Nebraska Native gardens. A major benefit of locating a garden within a municipal park is its admission-free location, which will be provided to the general public for year-round enjoyment.

Sponsor Name: Keep Alliance Beautiful**Nearest Town:** Alliance**Project Name:** 2021-2022 Recycling Center Operations and Education Program **Project No:** 21-115**Amount Requested:** \$84,965 **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 recyclable commodities to Western Resources Group in Ogallala, Nebraska, diverting 665,300 lbs. of waste from the local landfill in 2019 and 425,171 lbs. in the first six months of 2020. KAB will continue school programs in 2021-2022 such as KAB Black OPS 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:** 21-176**Amount Requested:** \$68,415 **Term of Request:** 1 **Review Group:** Education

Keep Keith County Beautiful seeks funding for environmental educational development in Western Nebraska. We are asking to fund educators, program management and mileage for travel. KKCB utilizes 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. The service area of this request covers the area our MRF collects materials from. By educating the students to recycle right and introducing them to new programs, such as the Hefty Energy Bag program. KKCB will utilize our expertise in working with existing environmental agencies, such as the NRD's and community organizers. Educating communities allows the MRF's to become more efficient since we are the ones assisting in collection and recycling right. We have created a social media package, coordinated the collection of recycling materials with our MRF, and provided quality education for students. The schools have become a part of the very successful PepsiCo Recycle Rally, which offers prizes and swag as a part of the program. We have outfitted all of our school with recycling bins and classroom baskets.

Sponsor Name: Keep Nebraska Beautiful**Nearest Town:** Lincoln**Project Name:** School Chemical Cleanout**Project No:** 21-119**Amount Requested:** \$179,250 **Term of Request:** 3 **Review Group:** Waste Management

For the past 15 years Keep Nebraska Beautiful has led a statewide effort to clean out chemicals from Nebraska schools that are outdated, unknown, highly hazardous, explosive, or radioactive. Many of these chemicals are old having been purchased as early as the 1950s, when the federal government provided substantial funds to enhance science curriculum. KNB continues to work with schools to remove the legacy chemicals that remain. Through partnerships with ESUs and schools, KNB has helped 80% of Nebraska's high schools clean out dangerous chemicals, including: -900 lbs. of mercury -12,500 lbs. of highly hazardous chemicals -45 lbs. of radioactive materials, and -400 lbs. of potentially explosive materials. In addition to cleanout, KNB has a need to update and modernize our website, NebraskaSC3.org. For new science teachers coming into a school for the first time, the updated website will walk them through the steps to evaluate the chemicals onsite and properly manage chemical storage on an ongoing basis. The updated site will provide training to schools to develop a long-term, responsible chemical management plan to prevent future accumulation of dangerous and improperly stored chemicals. This program meets all project eligibility criteria and falls within the Waste Management Funding Category.

Sponsor Name: Keep North Platte and Lincoln County Beautiful

Nearest Town: North Platte

Project Name: Bottle Saver Mobile Application

Project No: 21-198

Amount Requested: \$61,166 **Term of Request:** 2 **Review Group:** Waste Management

As our world is ever changing - we are seeking funds to create a mobile application that will encourage reduce single use plastic bottles and incentivize refillable water bottles. This creative and original idea is the perfect compliment to providing environmental education without having face to face contact. With the current COVID-19 pandemic, we realize that technology will be the best outlet to continue this programming. The mobile app will be a bottle saver application that is easily downloaded. Upon download, users can begin to count each time that they refill their reusable water bottle and refrain from using single use plastic bottles. All users will need to do is open the app, and press "I saved a plastic bottle" each time they fill their reusable water bottle. They will receive push notifications as they count - such as, "You saved enough petroleum from not buying single use plastics, that you can fill your car up with fuel". Demographic information can be processed and usage can be reviewed. The application is initially targeted for the Western Nebraska Region for the first year, and will be opened up for promotion in the entire state in year two.

Sponsor Name: Lewis and Clark Natural Resources District

Nearest Town: Hartington

Project Name: Bow Creek Watershed Project

Project No: 20-175-2

Amount Requested: \$85,195 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$132,425 IN 2020 WITH THE INTENT TO FUND UP TO \$85,195 IN YEAR TWO AND \$44,345 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Lewiston Consolidated Schools**Nearest Town:** Lewiston**Project Name:** Community Environmental Vision for Future Generations**Project No:** 21-140**Amount Requested:** \$636,140 **Term of Request:** 3 **Review Group:** Education

An outstanding characteristic of the Lewiston School District is constantly striving to do what is best for students and community. This characteristic is not only evident in the administration, staff and students of the school, but it continues through the alumni and community as well. Alumni donations in the past have helped revamp the science and art departments, begin and maintain a preschool, and are in place to construct a sports complex and community-based agricultural center with funding secured for the basics of these last two projects. We are seeking funds from NET to incorporate environmental education ideas beyond the basic plan. With help from grant monies and project partners, student and community members will become knowledgeable about environmental principles in the Trust areas of habitat, water quality, soil management, recycling, and air quality utilizing actions to promote and implement clean air strategies by reducing energy needs. We believe that direct experience outdoors creates a personal bond with nature, leading one to want to learn more about it, and ultimately to do something to protect it. Environmentalists tend to think big which is good, but there's another scale of environmentalism that's just as important-beginning in our own backyard.

Sponsor Name: Lied Lodge & Conference Center - Arbor Day Farm**Nearest Town:** Nebraska City**Project Name:** Praire, Restoration & Conservation Trail**Project No:** 20-167-2**Amount Requested:** \$35,000 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$22,000 IN 2020 WITH THE INTENT TO FUND UP TO \$35,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Lincoln, City of**Nearest Town:** Lincoln**Project Name:** Maximizing Lincoln's Hazardous Waste Center Through Material Reuse Program Planning and Digital Marketing**Project No:** 21-146**Amount Requested:** \$129,501 **Term of Request:** 1 **Review Group:** Waste Management

The Lincoln-Lancaster County Health Department (LLCHD), in cooperation with private and public partners, is seeking \$129,501 to expand HazToGo Lincoln's Hazardous Waste Center (LHWC) operations through material reuse program planning and digital marketing. Last year, LHWC and LLCHD Toxics Reduction Program (TRP) diverted over 106,000 pounds of hazardous waste from area landfills, while serving nearly 2,600 households and over 100 small businesses. The amount and type of waste received at LHWC capable of being reused by the public is currently unknown and requires characterization. The feasibility of a reuse program has been evidenced by similar facilities in Grand Island and Omaha, Nebraska. From a waste disposal hierarchy and disposal cost perspective, specific materials received at LHWC and made available for reuse pose great benefit. Planning for a reuse program during this grant period will allow for an informed and cost-effective approach to implementation. Grant funding will assist in expanding LHWC operations, expenses associated with a waste characterization study, household material reuse program planning and contractual for architecture and digital marketing. With approximately 115,000 households and 4,500 small businesses throughout Lancaster County, increasing LHWC awareness and recognition through strategic digital marketing will ensure increased collection, diversion and reuse of hazardous materials.

Sponsor Name: Lincoln, City of - Parks & Recreation Department**Nearest Town:** Lincoln**Project Name:** Prairie Corridor on Haines Branch - Phase III**Project No:** 19-139-3**Amount Requested:** \$100,000 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Lincoln Public Schools**Nearest Town:** Lincoln**Project Name:** School Campus as a Teaching Tool - LPS New High Schools**Project No:** 21-102**Amount Requested:** \$1,264,312 **Term of Request:** 3 **Review Group:** Education

Lincoln Public Schools (LPS) is constructing two \$60 million high schools to accommodate student growth. LPS has a strong history of constructing innovative, energy-efficient buildings that reduce environmental impacts and long-term operational costs. The new facilities present a unique opportunity to further that commitment, while educating students, staff, visitors, and other school districts on the viability and cost-effectiveness of sustainability features. LPS proposes developing our new high school campuses as teaching tools for visitors to engage with the many sustainability features being incorporated into the building and site designs. The project will: (1) design and construct two innovative, environmentally sustainable campuses; and, (2) develop displays, online dashboards, and lesson plans, ensuring students, staff, and visitors can understand and interact with campus sustainability features. Highlights include renewable energy installations, geothermal heating and cooling, vegetative roof, educational greenhouse, bioretention cells, LED lighting, and an online building performance dashboard. Support is requested to help fund sustainable design features, delta costs for upgrades, and educational components. The project will encourage local residents to adopt sustainability features in their homes and businesses, while encouraging school districts across Nebraska and the nation to do the same.

Sponsor Name: Loess Canyon Rangeland Alliance**Nearest Town:** Curtis**Project Name:** Loess Canyon Grassland Stewardship**Project No:** 21-177**Amount Requested:** \$480,000 **Term of Request:** 3 **Review Group:** Rural Habitat

The Loess Canyons is a 338,000-acre mosaic of unfragmented mixed-grass prairie and wooded canyons. Due to its fertile soils, this landscape is a valuable forage resource. The land supports family-owned ranches and a strong stewardship ethic. In return, 29 rare species thrive here. The Canyons are a NGPC “Biologically Unique Landscape” and focus area for the USFWS. Cedar invasion in Nebraska’s grasslands are well-documented and alarming. This tree, which is easily killed by fire, thrives in the deep soil and semi-arid environment of the Loess Canyons. Some properties are over 70% covered by cedars. The “Loess Canyons Grassland Stewardship” project plans to build on the success of stakeholders to restore ecological resiliency and rangeland productivity in the Canyons. The plan is to empower landowners with the knowledge, funds, and technical assistance to remove cedars, create firebreaks, defer grazing, and return fire to the ecosystem. Timing is critical to maintain the current synergy between landowners and conservation partners as they aspire to burn 33,000 acres per year. The LCRA seeks to match \$480,000.00 in funds to accomplish \$1,200,000.00 worth of restoration activities. Expected results are 4,000 acres of invasive trees removed and to facilitate 30,000 acres of prescribed fire.

Sponsor Name: Lower Big Blue Natural Resources District**Nearest Town:** Wilber**Project Name:** Turkey Creek Watershed and Source Water Protection Project**Project No:** 20-162-2**Amount Requested:** \$75,000 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$50,000 IN 2020 WITH THE INTENT TO FUND UP TO \$75,000 IN YEAR TWO AND \$75,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Lower Big Blue Natural Resources District**Nearest Town:** Beatrice**Project Name:** Improving Nitrogen and Irrigation Best Management Practices in the Beatrice and Dewitt Wellhead Protection Areas**Project No:** 20-186-2**Amount Requested:** \$93,900 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$98,900 IN 2020 WITH THE INTENT TO FUND UP TO \$93,900 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Name: Lower Big Blue Natural Resources District**Nearest Town:** Diller**Project Name:** Improving Irrigation Best Management Practices in the Odell and Diller Wellhead Protection Areas**Project No:** 20-187-2**Amount Requested:** \$88,900 **Term of Request:** 3 **Review Group:** Statement of Intent

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 unmetered 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. THIS PROJECT WAS FUNDED \$122,500 IN 2020 WITH THE INTENT TO FUND UP TO \$88,900 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Lower Elkhorn Natural Resources District**Nearest Town:** Norfolk**Project Name:** LENRD Establishment of Baseline Vadose Zone Sampling in Pierce County**Project No:** 20-134-2**Amount Requested:** \$8,750 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$8,750 IN 2020 WITH THE INTENT TO FUND UP TO \$8,750 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Lower Loup Natural Resources District**Nearest Town:** Fullerton**Project Name:** Cover Crop Utilization and Nutrient Management Program**Project No:** 20-111-2**Amount Requested:** \$45,000 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$45,000 IN 2020 WITH THE INTENT TO FUND UP TO \$45,000 IN YEAR TWO AND \$35,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Lower Loup Natural Resources District**Nearest Town:** Ord**Project Name:** Ulrich Wildlife and Recreation Area**Project No:** 21-200**Amount Requested:** \$650,000 **Term of Request:** 1 **Review Group:** Rural Habitat

The Loup River Valley is a hidden gem in the heart of Central Nebraska. The North and Middle Loup Rivers have nearly constant flows from groundwater seepage out of the Sandhills. Summer irrigation diversions significantly decrease flows causing water temperatures to increase and stress native fish. Fortunately, groundwater influenced sandpits and backwaters connected to the rivers provide thermal refuge for priority species including Plains Top Minnow, Plains Minnow, and Western Silvery Minnow. These off-stream habitats also provide important roosting sites for millions of waterfowl and nesting habitat for the federally listed Least Tern and Piping Plover. Lower Loup Natural Resources District (LLNRD) is submitting this grant application to purchase an abandoned sandpit that will be managed as a public use area as well as a waterfowl and fisheries refuge. This 184 acre site is roughly three miles from the City of Ord and connected to the North Loup River. With limited public lands, this site will provide fishing, hiking, camping, bird watching, kayaking and other outdoor recreational activities. It is estimated that once established, LLNRD Recreational Area will receive over 13,700 use-days and over 900 multiple-day use trips annually, for over 60% of the residents within 50 miles.

Sponsor Name: Lower Loup Natural Resources District**Nearest Town:** Ord**Project Name:** Integrated Management Data Acquisition Program**Project No:** 19-115-3**Amount Requested:** \$25,000 **Term of Request:** 3 **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 unmetered 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 THIRD YEAR REQUEST.

Sponsor Name: Lower Niobrara Natural Resources District**Nearest Town:** Butte**Project Name:** Lower Niobrara Observation Well Network**Project No:** 19-151-3**Amount Requested:** \$50,500 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Lower Platte North Natural Resources District**Nearest Town:** Schuyler**Project Name:** Aquifer Vulnerability Phase II: Best Management Practices Implementation**Project No:** 21-129**Amount Requested:** \$481,500 **Term of Request:** 2 **Review Group:** Education

During phase one of the Aquifer Mapping and Vulnerability project, soil condition has appeared as the main cause of the nitrate problems in these areas. The soils in these areas are sandy and basic in their pH structure. Sandy soils allow for rapid movement of water and dissolved chemical through the root zone to the aquifer. This is compounded by these areas having a high natural water table. Soybeans do not perform well in basic soils which has led to continuous corn in 70% of these fields. With fertilizer applied yearly, these soils never have a chance to recover. LPNRRD is seeking to ameliorate these issues via a multi-pronged attack: Cover crops to consume excess fertilizer; Soil treatments to encourage a corn/bean rotation; Tissue sampling to showing how much, and when, fertilizer should be applied; Field level soil mapping allowing producers to better understand their unique situations; Soil moisture sensors with telemetry to better inform when irrigation is required; Flow meters so producers can track water usage; and installing monitoring wells with remote read to monitor the areas in near real time. These best management practices will lead to a reduction in nitrates in these areas.

Sponsor Name: Mastercraft, LLC**Nearest Town:** Omaha**Project Name:** The Green Space at Millwork Commons**Project No:** 21-128**Amount Requested:** \$498,750 **Term of Request:** 1 **Review Group:** Urban Habitat

The Green Space at Millwork Commons is an innovative project in an underserved part of north Omaha. It bridges north Omaha to the rest of downtown Omaha and provides an opportunity for a natural setting in an urban environment. Although the space is owned privately, it is open to the public and an emphasis will be placed on programming events inviting all metropolitan residents to enjoy and participate in the special events and other amenities this green space will offer. The funding categories met by this project include habitat, surface and ground water, air quality and soil management. Stormwater runoff will be minimized, urban heat island effects will be reduced, air quality will be improved and earth friendly approaches to maintenance will be achieved. NET grant funds are being requested to help fund soil amendments, tree soil cells, native plant communities, including specimen, overstory and understory trees, deciduous and evergreen shrubs, native mix perennials; compost materials; a stormwater separator; educational signage, planning for a solar panel study on the Mastercraft Building (an iconic building in the district) and lastly to install solar panels on a shade structure within the park area.

Sponsor Name: McCook, City of**Nearest Town:** McCook**Project Name:** McCook Sludge Press**Project No:** 21-114**Amount Requested:** \$284,989 **Term of Request:** 1 **Review Group:** Waste Management

The City of McCook, Nebraska is in need of a sludge press to reduce budgetary constraints, prevent environmental damage from liquid sludge spills, and to protect the City from liabilities related to environmental damage. A sludge press would also allow for easier land application for farmers. The City's sludge injection truck is defunct and beyond repair, further reinforcing the need for the sludge press. The City is requesting \$284,989 in funds from the Nebraska Environmental Trust and will be matching \$298,100 to cover installation costs. All 7,850 residents of McCook will benefit from the project.

Sponsor Name: Metropolitan Utilities District**Nearest Town:** Omaha**Project Name:** Fill It Up: Upgrading Water Refill Stations to Reduce Waste**Project No:** 21-150**Amount Requested:** \$76,001 **Term of Request:** 2 **Review Group:** Waste Management

The goal of the "Fill It Up" project is to provide the necessary infrastructure to encourage waste reduction activities among the approximately two million annual visitors at Omaha's Henry Doorly Zoo and Aquarium. This project falls into the Nebraska Environmental Trust's funding category of waste management. According to the Container Recycling Institute, Americans purchased more than 70 billion plastic water bottles in 2018, and 75 percent of those ended up in a landfill, while hundreds of millions of bottles were found as litter. Providing the appropriate means to allow individuals to refill a reusable water bottle will in turn reduce the overall amount of plastic water bottle waste. The Zoo currently houses 57 drinking fountains throughout the park and facilities. Less than one-quarter of these fountains provide a bottle refill option. In addition to money set aside by Metropolitan Utilities District, grant funds will be used to replace 35 water fountains at the Zoo. The upgrades will include a water bottle refill feature, offering visitors the opportunity to fill reusable bottles. Promotional materials will be created to educate visitors about the importance of waste reduction and its impact on the environment, as well as the benefits of tap water.

Sponsor Name: Metropolitan Utilities District**Nearest Town:** Omaha**Project Name:** Get the Lead Out**Project No:** 21-190**Amount Requested:** \$1,000,000**Term of Request:** 3 **Review Group:** Water

Since 2017, during the process of updating our water mains, Metropolitan Utilities District has been replacing the customer-owned water service lines made of lead all the way up to the meter at no charge to the customer. On average, about 100 lead service lines are replaced per year during this process at an average cost of \$5000 per line. We are working on doubling that in the coming years. We are estimating there are around 17,000 lead service lines that still need to be replaced in the greater Omaha area. At this pace, it will take about 85 years to get the lead service lines out of the ground. Our goal is to cut that time in half and replace at least 300-400 private lead service lines per year. We want to develop a program which focuses on homes where children and pregnant women reside in low income areas. Lead service lines, if disrupted, can leach into the water going into the home. Studies have shown that unborn fetuses and children are most at risk for developmental problems if exposed. As a public utility company, we want to exhaust all resources to ensure the safety of the children of tomorrow.

Sponsor Name: Middle Niobrara Natural Resource District**Nearest Town:** Valentine**Project Name:** Sandhills Interactive Natural Resources Education Complex (SINREC) **Project No:** 20-150-2**Amount Requested:** \$154,000 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$288,015 IN 2020 WITH THE INTENT TO FUND UP TO \$154,000 IN YEAR TWO AND \$158,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Middle Niobrara Natural Resources District**Nearest Town:** Valentine**Project Name:** Living Barns: A Necessity for the Sandhills**Project No:** 21-206**Amount Requested:** \$1,250,022**Term of Request:** 3 **Review Group:** Rural Habitat

The Middle Niobrara Natural Resources District (MNNRD) has experienced above average precipitation since 2015 resulting in an average 5.73-foot increase in ground water levels (GWL) district wide. Increases in GWL's are responsible for drowning out windbreaks and causing extensive tree mortality throughout the northern sandhills. It is estimated that 20-30% of established windbreaks are experiencing some sort of mortality due to current water levels. The value and importance of windbreaks to protect wildlife, agricultural lands, homesteads, and livestock is well documented. Producers have relied on windbreaks or "Living Barns" for years to protect their investments and livestock. Recently, local producers have begun expressing concerns over the loss of livestock protection and the associated costs and detriments a dead windbreak will have to their operations. MNNRD is seeking funding to assist landowners across the district with windbreak loss while incorporating in a new era of forest education and management. Education of wildlife and pollinator benefits, windbreak species diversification, and grassland stewardship along with windbreak design and establishment will be outcomes for this project. Through the promotion of "Living Barns" for all wildlife species and livestock, the MNNRD hopes to offset the mortality our sandhills windbreaks are experiencing.

Sponsor Name: Middle Niobrara Natural Resources District**Nearest Town:** Valentine**Project Name:** No-Till Drill**Project No:** 21-107**Amount Requested:** \$47,500**Term of Request:** 1 **Review Group:** Equipment

The demand for the use of a no-till drill far exceeds the availability of drills to inter-seed perennial grasses and legumes. The cost of a large no-till drill is over \$47,000 which makes it cost prohibitive for an operation to own a drill and seed a limited number of acres in any given year. If funded, the no-till drill will be used in Cherry, Brown, Keya Paha, and Rock counties (North Central Nebraska). The drill will be headquartered out of the Middle Niobrara Natural Resources District office in Valentine. Having no-till drills available to the public has proven successful. Historically 5 no-till drills were available and used across the district. Currently, 3 drills are publicly available: 2 in Ainsworth and 1 in Valentine. By having a 2nd and larger drill for the Valentine area, producers will be able to seed larger tracts more efficiently. Access to two drills will allow multiple producers to seed at the same time avoiding wait times during the spring and fall seeding seasons.

Sponsor Name: Middle Niobrara Natural Resources District**Nearest Town:** Valentine**Project Name:** Forest and Grassland Utilization: Green Diamond**Project No:** 21-108**Amount Requested:** \$366,351 **Term of Request:** 1 **Review Group:** Equipment

The Middle Niobrara NRD (MNNRD) is one of three Natural Resource Districts (NRDs) based within the Niobrara River Basin of Nebraska. Over the last several years, the MNNRD has invested in equipment utilizing woody biomass forest waste products in the form of woodchips. This effort promotes options like mixing woodchips with manure for composting, landscaping, and erosion control. While chipping trees is an excellent utilization of what would otherwise be a waste product, the MNNRD and the Nebraska Forest Service (NFS) recognize additional options for the best use of these trees. The MNNRD wishes to showcase the zero-waste land management aspect through the full utilization of area trees. Landowners will be educated on healthy forest and grassland management. Showcasing opportunities to make use of an entire tree will create economic opportunities, usable products, and reduce wood waste. A portable hydraulic sawmill, log skidder tractor winch, skid steer, mini excavator with attachments, and equipment trailer will prove invaluable in promoting the full use of these trees while also enhancing true resource improvements like healthy diverse forests, rangelands, wildlife habitats, fuel load reductions, and education opportunities. Therefore, the MNNRD is seeking funding for needed forestry equipment.

Sponsor Name: Middle Niobrara Natural Resources District**Nearest Town:** Ainsworth**Project Name:** LPCW Restoration Phase 4**Project No:** 21-133**Amount Requested:** \$1,320,000 **Term of Request:** 2 **Review Group:** Rural Habitat

This project takes a stakeholder driven, watershed-wide approach to improving surface and groundwater pollution, stabilizing streams, and restoring aquatic habitat. Nebraska Environmental Trust (NET) funds, combined with in-kind NRCS, NDEE 319, and project sponsors labor, will be used to implement stream restoration projects at Old Highway 7 (OHWY7), 1 mile upstream and downstream on Sand Draw Creek. The specific activities that will be implemented as part of this project will include: stream assessment, pre-liminary and final design plans, permitting, construction, and construction oversight of stream restoration projects addressing 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) and a technician to assist the watershed coordinator who will continue working closely with the landowners in the LPCW with project implementation, education, and outreach.

Sponsor Name: National Wild Turkey Federation**Nearest Town:** Chadron**Project Name:** Forest Stand Restoration on Pine Ridge Wildlife Management Areas **Project No:** 20-219-2**Amount Requested:** \$75,643 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$75,643 IN 2020 WITH THE INTENT TO FUND UP TO \$75,643 IN YEAR TWO AND \$75,643 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Academy of Sciences, Inc.**Nearest Town:** Lincoln**Project Name:** Nebraska Environmental Public Information and Education Minigrant Program**Project No:** 20-103-2**Amount Requested:** \$60,580 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$60,580 IN 2020 WITH THE INTENT TO FUND UP TO \$60,580 IN YEAR TWO AND \$60,580 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Academy of Sciences, INC.**Nearest Town:** Lincoln**Project Name:** Conservation Connectors: Sharing the science behind practical conservation management practices and its benefits**Project No:** 21-156**Amount Requested:** \$16,391 **Term of Request:** 2 **Review Group:** Education

The Nebraska Academy of Sciences proposes to foster public awareness on conservation management practices through a series of virtual web-based presentations on Nebraska-relevant environmental topics. A special focus will be put on the dissemination of science-based, practical conservation management techniques for Nebraska's diverse natural ecosystems, agroecosystems, and suburban environments. We will invite rotating expert guest speakers to share their knowledge on conservation strategies and land and resource management with the public. We will place a special emphasis on inviting homeowners, resident farmers, ranchers, land managers, and academic scientists as the target audience of these presentations. These virtual presentations will also have an emphasis on connecting our audiences to more in-depth resources on the presentation topics and content founded in science-based information. A social media engagement component will also be supported to extend the contact with audience members beyond the presentations and will connect them to more information on conservation management and the presenters' organizations. Our goal is to reach 400 unique businesses/farms/and ranch workers/owners to improve conservation practices and over 400 unique non-business owners with at least 33% of these individuals reporting that they will likely employ conservation strategies learned from presentations.

Sponsor Name: Nebraska Community Energy Alliance**Nearest Town:** Lincoln**Project Name:** Connecting Nebraska Communities Driving America's Fuel, Phase VI **Project No:** 21-145**Amount Requested:** \$868,181 **Term of Request:** 1 **Review Group:** Air Quality

The Nebraska Community Energy Alliance (NCEA) is an inter-local cooperative agency, comprised of 37 members, primarily municipalities, utilities, higher education and planning agencies. Partners includes: City of Lincoln - \$49,977; City of Kearney - \$32,000; City of Norfolk - \$24,330; City of South Sioux City - \$15,000; Omaha Public Power District - \$228,400; Nebraska Public Power District - \$381,974 University of Nebraska Lincoln - \$67,502; Electric Transportation Partners – \$79,000. The grant request continues to add electric vehicle refueling infrastructure, electric vehicles and utility-run pilots for residential charging study as well as small, related pilot projects that remove harmful emissions.

Sponsor Name: Nebraska Community Foundation
fbo Rainwater Basin Joint Venture

Nearest Town: Clay Center

Project Name: Enhancing Groundwater Recharge and
Habitat through Rainwater Basin Wetland Conservation

Project No: 21-147

Amount Requested: \$517,500 **Term of Request:** 3 **Review Group:** Rural Habitat

This proposal will leverage grant and partner funds to impact 300 acres of wetlands and associated uplands. Grant (\$517,500) and match funds (\$1.3 million) will be used to modify pivot irrigation systems and establish grazing infrastructure to ensure these tracts remain part of the producers operation. Annually, NRCS requests Wetland Reserve Enhancement Partnership (WREP) proposals. These partnerships focus on solutions to ensure acres enrolled the Wetlands Reserve Easement “fit” in agriculture operations. RWBJV submitted a WREP for 300 acres. This WREP focuses on programmatic flexibility to allow producers to pass pivot irrigation systems over enrolled acres and maintain enrolled acres as part of the operations. In the past, landowners did not enroll because they could not pass the pivot over enrolled acres and did not have flotation solutions to cross the wetlands and effectively irrigate adjacent cropland. This grant will address these issues programmatically and through pivot modification (i.e. moving the pivot point, track systems, etc.). Pivot manufacturers Lindsay, Reinke, and Valmont are partners, providing technical and financial assistance for the pivot modifications. Grazing infrastructure (i.e. perimeter fence, livestock water) will also be established. Grazing will ensure enrolled tracts remain private working lands and are managed for desired habitat conditions.

Sponsor Name: Nebraska Community Foundation
FBO Rainwater Basin Joint Venture

Nearest Town: Clay Center

Project Name: Partnering for Wetlands - Helping address flooding,
water quality, water quantity, and habitat in the Rainwater Basin Landscape

Project No: 20-128-2

Amount Requested: \$333,332 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$333,333 IN 2020 WITH THE INTENT TO FUND UP TO \$333,332 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Community Foundation
FBO Rainwater Basin Joint Venture

Nearest Town: Clay Center

Project Name: Happy Cows; Happy Wetlands

Project No: 19-136-3

Amount Requested: \$25,620 **Term of Request:** 3 **Review Group:** Statement of Intent

If funded, this grant will provide financial assistance to continue the Rainwater Basin Joint Venture (RWBJV) 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, waterbirds, 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 THIRD YEAR REQUEST.

Sponsor Name: Nebraska Cooperative Republican Platte Enhancement Project **Nearest Town:** Dickens

Project Name: NCORPE Re-seeding Project

Project No: 19-189-3

Amount Requested: \$9,783 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Nebraska Department of Environment and Energy**Nearest Town:** Lincoln**Project Name:** Clean Water Act Section 404 Program Assumption**Project No:** 21-132**Amount Requested:** \$2,309,716**Term of Request:** 3 **Review Group:** Urban Habitat

The Nebraska legislature passed LB302 in 2019 giving the Nebraska Department of Environment and Energy (Department) the ability to assume the Clean Water Act (CWA) Section 404 program from the U.S. Army Corps of Engineers. CWA Section 404 is the regulatory program that permits the discharge of dredged or fill material into waters of the United States. LB302 does not require the state to assume the 404 program nor does it provide funding to accomplish this task. Section 404 regulates activities from infrastructure development such as highways and airports to local water resource projects like levees and dams. After LB302 passed, the Department created a 404 Section and funded 2.5 full time staff members to investigate 404 assumption. Two states have assumed the 404 program, however many states have permitting programs for state waters which Nebraska does not. To date, the state has lost more than 1 million acres of wetlands including the ecosystem services they provide such as flood reduction and natural pollution filtration. NET grant funds would be used to help complete the development of a state 404 program which will be transparent, efficient, and tailored to meet the needs of Nebraskans while protecting our natural resources.

Sponsor Name: Nebraska Department of Environment and Energy**Nearest Town:** Hastings, Grand Island, Ogallala, Columbus**Project Name:** Superfund Cost Share and State Operation and Maintenance Costs for Superfund Cleanup Activities**Project No:** 21-127**Amount Requested:** \$1,165,000**Term of Request:** 2 **Review Group:** Water

Superfund is a federal cleanup program to address environmental contamination sites on the National Priorities List (NPL) that pose the highest risk to human health and the environment. State cost obligations occur when the polluter lacks financial resources so federal funds are used to pay for the cleanup. Nebraska has ten NPL sites where cleanup activities are currently federally funded or will be in the near future. EPA provides 90% while NDEE provides 10% of the funds to construct and temporarily operate the cleanup systems. After a 10-year operational period, NDEE is required to provide 100% of the funds to operate the systems. The cost share process is accomplished through Superfund State Contracts between NDEE and EPA. Cleanup of the contamination will eliminate adverse health effects from potential exposure to the contamination and restore groundwater to previous drinking water uses. NDEE uses the Superfund Cash Fund and Petroleum Remedial Action Cash Fund to meet its cost obligations. Due to COVID-19 impacts to the Petroleum Cash Fund from decreased gas tax revenue and new remedial action starts at two additional NPL sites, NDEE will not be able to meet its cost obligations for fiscal year 2022 and 2023 without grant funds.

Sponsor Name: Nebraska Department of Environment and Energy**Nearest Town:** Lincoln**Project Name:** Cleaner School Buses for Healthier Children**Project No:** 21-182**Amount Requested:** \$2,947,860**Term of Request:** 3 **Review Group:** Air Quality

The Cleaner School Buses for Healthier Children Program will improve the state's air quality and the health of school children by replacing older diesel school buses with new, less-polluting buses. Exhaust from older diesel buses contains harmful pollutants including nitrogen oxides (NOx) and fine particulate matter, which can aggravate or contribute to the development of respiratory diseases such as asthma, especially in children, who are at higher risk for these conditions. New school buses have more effective emissions controls that greatly reduce the concentrations of these pollutants. The requested funds will assist school districts in the purchase of approximately 66 new diesel and propane-fueled buses to replace older diesel buses. Replaced buses and their engines will be scrapped to completely eliminate their emissions from the environment. The program will provide a 50% reimbursement (maximum \$42,000) for the purchase of each new diesel bus and a 60% reimbursement (maximum \$57,000) for the purchase of each new propane-fueled bus meeting stricter emission standards. Each rebate recipients will be responsible for the remaining costs of their bus purchase.

Sponsor Name: Nebraska Department of Environment and Energy**Nearest Town:** Lincoln**Project Name:** Onsite Wastewater Education, Online System Registration, Certification Renewal and Education Tracking**Project No:** 21-153**Amount Requested:** \$215,000 **Term of Request:** 2 **Review Group:** Education

Rural Nebraskans rely on onsite systems to treat domestic wastewater. Properly designed, operated and maintained systems are crucial to protect Nebraska's groundwater as ~80 percent of our population consumes drinking water from groundwater sources. The Nebraska Department of Environment and Energy (NDEE) estimates that ~85 percent of the 150,000+ systems in the state are older than 15 years. The average life of a system is 25 years, so NDEE sees increased need for well-trained certified professionals. The NDEE is seeking funding to educate professionals in the onsite industry, expand an online system to register systems, track continuing education hours, and license certified professionals. Funding for education is needed to ensure that certified professionals receive up to date information on new technologies and changes in the onsite industry. Professionals must obtain 12 hours of continuing education to renew their certificate every two years. The NDEE plans to build an electronic system to track continuing education hours and certificate holders, and expand our online system to register new onsite wastewater systems. The NDEE annually registers approximately 1,500 new or modified systems. Funding is needed to expand an initial version of the online registration tool to add modules for different types of systems.

Sponsor Name: Nebraska Department of Natural Resources**Nearest Town:** Lincoln**Project Name:** Integrated Water Management Action Initiative**Project No:** 21-158**Amount Requested:** \$9,900,000 **Term of Request:** 3 **Review Group:** Water

The project's three year's allocation of funding for the Water Resources Cash Fund (WRCF) pursuant to the legislative mandate of LB 229, 2011, and as required by Neb. Rev. Stat. § 61-218(7)(a). 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)(b). The WRCF was established to fund the State's contingent water resources remediation needs in fully and overappropriated river basins. The WRCF has funded various projects since its inception in 2007. The "The Integrated Water Management Action Initiative" (Initiative) described below is an evolution of the Department and Natural Resources Districts (NRDs) efforts to support implementation of integrated management planning efforts. The purpose of the Initiative is to plan, implement, and monitor activities that result in more effective water management and remediation for current ground water and stream depletions caused by past actions. The Initiative will assist the Department and the NRDs, in cooperation with other partners, to provide clear and direct benefits to habitat and surface and groundwater resources by: (1) optimizing timing and efficiency of water uses; (2) enhancing streamflows, reducing water consumption; and (3) enhancing wildlife habitat in fully and overappropriated areas.

Sponsor Name: Nebraska Department of Transportation**Nearest Town:** Lincoln**Project Name:** Statewide StreamStats Web Tool for Estimating Streamflow Statistics **Project No:** 21-187**Amount Requested:** \$74,600 **Term of Request:** 3 **Review Group:** Water

Knowledge and understanding of streamflow paths, expected flows and predicted extreme flows during droughts and floods for drainageways in our state is fundamental to habitat and wildlife preservation, and water supply and wastewater discharge. Nebraska's water resources are crucial to the livelihood and survival of its citizens and wildlife, therefore combined efforts of Nebraska's residents, agricultural community, private enterprise and local, state and federal government agencies are essential to the preservation and protection of these water resources. This project focuses on the implementation of StreamStats, a nationwide effort by USGS to use stream gauge data, topography and regression equations to provide flow data to the general public for user-selected drainageways. The web-based platform will delineate drainage basins and compute watershed characteristics at user-selected gauged or ungauged stream locations. This web tool will be used by local, state and federal government agencies and private consultants for floodplain management, wetland restoration and mitigation projects, and in the analysis and design of culverts, bridges, stormwater treatment facilities, detention ponds, aquatic organism passage structures and other water resources projects. To implement StreamStats in Nebraska, the geographic information system framework for the web-implementation needs to be built and gauge information will be analyzed.

Sponsor Name: Nebraska Game and Parks Commission**Nearest Town:** Lincoln**Project Name:** Nebraska's Natural Legacy Project: New Approaches to Biodiversity Conservation**Project No:** 19-191-3**Amount Requested:** \$200,000 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Nebraska Game and Parks Commission**Nearest Town:** Hickman**Project Name:** Wagon Train Reservoir Wetland and Water Quality Enhancement Project**Project No:** 21-201**Amount Requested:** \$150,000 **Term of Request:** 2 **Review Group:** Lake Rehabilitation

The goal of this project is to enhance the wetland community function and water quality at Wagon Train Reservoir. A sediment retention basin was included as part of the Aquatic Habitat Rehabilitation project completed in 2001 with NET support. Using retention basins to manage watershed borne sediment and nutrients in reservoirs was in its infancy and the original configuration of the structure was envisioned to address watershed inputs of sediment including nutrients. However, bathymetric surveys indicated those early estimates were optimistic, and this year the basins were found to have 77,200 cubic yards of sediment. We have seen an increase in the number of issued health alerts for harmful algal blooms (HAB's) in both 2019 and 2020. Our objectives are to build on lessons learned, improve the efficiency of the existing sediment retention basins and enhance wetland function. Simultaneously, improving water quality within the reservoir and providing educational opportunities for the public. The sediments to be removed will restore as-built capacity. The basin configuration can be improved and will increase wetland plant densities and nutrient uptake. Interpretive signing will placed to explain the role of the complex. Requested grant funds will be used for the enhancements and educational expenses only.

Sponsor Name: Nebraska Game and Parks Commission**Nearest Town:** Louisville**Project Name:** Treehouse Classroom and Interactive Stream:
Engaging Nebraskans in Conservation Education**Project No:** 20-191-2**Amount Requested:** \$1,325,000**Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$300,000 IN 2020 WITH THE INTENT TO FUND UP TO \$1,325,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Game and Parks Commission**Nearest Town:** Grand Island**Project Name:** Rainwater Basin Wetland Management**Project No:** 20-171-2**Amount Requested:** \$75,000**Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$75,000 IN 2020 WITH THE INTENT TO FUND UP TO \$75,000 IN YEAR TWO AND \$75,000 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:** Connecting Students to their Water Resources in Nebraska**Project No:** 21-197**Amount Requested:** \$35,300 **Term of Request:** 2 **Review Group:** Education

Nebraska Trout in the Classroom (TIC) is an education program designed to engage Nebraska students and teachers in science-based curriculum focusing on water quality, water quantity and natural resources. Aligned with Nebraska State Science Standards, lessons provided by this unique program cover interdisciplinary topics for second - twelfth grade students. Beginning in November, teachers attend a training focusing on equipment set-up, curriculum lessons and incorporating the lesson plans into their established curricula. In December, teachers and students assemble a cold water tank in their classroom where they raise trout from eggs to young fish throughout the spring semester. While raising their trout, students learn about a range of topics from life cycles to water quality to habitats and adaptations with a specific focus being as it relates to Nebraska's Natural Legacy and water resources. This grant will provide equipment and resources for classrooms, quality annual training for educators, spring field trips for students and mailing of trout eggs to schools across the state. The Nebraska Game and Parks Commission is committed to this program through dedicated funds for a state coordinator. Additionally, a long-term partnership has been developed with the Nebraska Trout Unlimited Chapter 710 which provides additional matching funds.

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:** 19-107-3**Amount Requested:** \$109,000 **Term of Request:** 3 **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 with 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 THIRD YEAR REQUEST.

Sponsor Name: Nebraska Grazing Lands Coalition**Nearest Town:** Chadron**Project Name:** Generational Transition for Nebraska Farm
and Ranch Families for Long Term Participation in Conservation Practices**Project No:** 21-160**Amount Requested:** \$394,090 **Term of Request:** 3 **Review Group:** Education

Long term participation in natural resource conservation practices is more likely if agricultural land resources remain in private hands. Over the next 10-15 years, significant portions of Nebraska's farm and ranch lands will change hands. Without private land ownership, conservation practice application will likely decrease resulting in natural resource degradation over time. Inadequate estate planning prevents the next generation from transitioning to ownership. Since 2019, Nebraska Grazing Lands Coalition (NGLC) held eight Generational Transition (GT) workshops statewide with over 200 participants. Participants followed up with significant estate planning efforts. This grant builds on that success for continued assistance for farm and ranch families. Participants will embark on a three-phase program, including informational workshops, individual counseling specific to their operation, as well as strengthening the "people" side of the business through seminars. Steps include: Participation in GT workshops where ranchers will share their personal transition stories along with an experienced estate planning attorney covering helpful legal tools. Families will receive unique advice for their GT through one-on-one legal/financial aid clinics, as well as accountability and continual follow-up from the GT task manager. One-day culmination forum will bring generations together to learn improved business practices, human resource skills, and communication/conflict techniques.

Sponsor Name: Nebraska Pharmacists Association**Nearest Town:** Lincoln**Project Name:** Preventing Poisoning, Pollution and Prescription
Drug Overdose for a Healthier Nebraska!**Project No:** 19-104-3**Amount Requested:** \$100,000 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Nebraska Public Power District

Nearest Town: Norfolk

Project Name: Heat Pump Water Heater Rental Pilot Program

Project No: 21-137

Amount Requested: \$90,000 **Term of Request:** 1 **Review Group:** Air Quality

Nebraska Public Power District (NPPD) has a primary goal to reduce carbon emissions through the development of a rental pilot program for 80-gallon heat pump water heaters (HPWHs). (See attachment slides 1 & 2) This rental program will be designed to increase customers, plumbing and building contractors acceptance and reduce apprehension associated with HPWH initial high investment costs which range from \$1800 - \$2500 per installation. Since 2017, NPPD has provided an EnergyWise incentive to retail and wholesale customers that install a HPWH. Even with the incentive, only 120 installations have resulted from 134,000 customers. Therefore, more education is needed. Rental program benefits include energy savings and carbon reduction from fossil fuel and conventional electric water heater conversions to HPWHs. NPPD will document energy usage of individual pilot program HPWHs over a 12-month period. Program energy cost savings and CO2 reductions will be compared to fossil fuel and conventional electric water heaters. This program also becomes a viable option for low-income individuals and families, a secondary goal of the rental program. Considering the monthly cost to rent and operate an HPWH would be lower, NPPD and our wholesale customers will be able to extend an energy-efficient program to low-income families.

Sponsor Name: Nebraska Recycling Council

Nearest Town: Lincoln

Project Name: Recycling Equipment Grants and Consultation

Project No: 20-145-2

Amount Requested: \$290,016 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$290,016 IN 2020 WITH THE INTENT TO FUND UP TO \$290,016 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:** Grain Bag Recycling Project**Project No:** 21-210**Amount Requested:** \$342,950 **Term of Request:** 3 **Review Group:** Waste Management

This project will establish the United State's first year-round statewide grain bag recycling collection system. Grain bags are an increasingly popular alternative for grain storage with the largest farms generating more than 26,000 pounds annually of these single-use plastic bags. Currently, disposal options for Nebraska farmers are limited to primarily landfilling, burning, or burying the bags. However, a viable solution for recycling grain bags exists. This project will collaborate with ag plastics recycler, Revolution Plastics, to establish a hub and spoke system of public grain bag collection sites throughout Nebraska and assist with private collection arrangements for the state's largest farmers. Revolution arranges the freight to collect the material at no cost to farmers. However, the market has strict specifications for how grain bags are prepared for recycling. This project uses a stakeholder-informed approach to 1. establish collection sites, 2. reduce barriers to and promote benefits of grain bag recycling, and 3. educate on and promote participation to ensure compliance with end-market specifications. With funding support from the Nebraska Environmental Trust, the Nebraska Grain Bag Recycling Project will establish a permanent, statewide collection system and recycle over 2 million pounds of grain bags by 2024.

Sponsor Name: Nebraska Recycling Council**Nearest Town:** Lincoln**Project Name:** Glass Recycling in Nebraska**Project No:** 21-208**Amount Requested:** \$112,643 **Term of Request:** 2 **Review Group:** Waste Management

The Nebraska Recycling Council (NRC) and Ripple Glass, a private glass processor based in Kansas City, Missouri, will partner to remove barriers in beginning and maintaining a glass recycling program for participating municipalities. Through this grant, NRC and Ripple Glass will work with communities in funding and purchasing equipment for glass recycling, including a container and machinery to unload it. Ripple Glass will provide labor, freight, and processing of the recycled glass which will be used for beverage containers and fiberglass. NRC will work with communities in providing communication strategies and materials to prevent contamination in single stream recycling programs so as to create a robust and sustainable glass recycling program. In the 2009 Waste Characterization Study for the State of Nebraska, conducted by Engineering Solutions & Design, Inc., their research determined that glass made up 4.91% of incoming landfill waste by weight. For a community of 10,000 residents, 35,000 pounds of glass can be diverted in the first year up to 140,000 pounds by the 5th year. Depending on the size of communities, this project will divert an estimated 131,250 pounds of glass in the first full year of implementation up to 525,000 pounds in its fifth year.

Sponsor Name: Nebraska State Irrigation Association**Nearest Town:** Lincoln**Project Name:** Water Leaders Academy in Nebraska**Project No:** 20-101-2**Amount Requested:** \$94,459 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$93,223 IN 2020 WITH THE INTENT TO FUND UP TO \$94,459 IN YEAR TWO AND \$56,854 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Nebraska Statewide Arboretum, Inc.**Nearest Town:** Lincoln**Project Name:** Trees for Nebraska: More Biodiverse & Resilient Communities **Project No:** 21-183**Amount Requested:** \$582,575 **Term of Request:** 2 **Review Group:** Urban Habitat

Planting trees and properly caring for them is one of the easiest, most fulfilling and most cost-effective ways for all citizens to be involved in environmental stewardship, while also helping to make their communities more livable and economically viable. The canopy of Nebraska's community forests continues to decline and many emerging threats including insects, disease and weather events will cause more gaps in the coming years. The Nebraska Statewide Arboretum requests \$582,575 from NET to implement the Trees for Nebraska: More Biodiverse & Resilient Communities. This initiative will directly engage at least 4,000 Nebraska citizens in the planting of more than 8,000 canopy-forming trees in at least 50 Nebraska communities. An emphasis will be placed on the planting of underutilized, climate-adapted species to strengthen species diversity and help make community forests more resilient. Most importantly, the initiative will bring a wide variety of Nebraskans from across socio-economic lines into a common-cause, positive effort that is sorely needed in this time of the COVID pandemic.

Sponsor Name: Nebraska Statewide Arboretum, Inc.**Nearest Town:** Lincoln**Project Name:** Greener Nebraska Towns**Project No:** 21-171**Amount Requested:** \$509,932 **Term of Request:** 2 **Review Group:** Urban Habitat

Since 2015, the Greener Nebraska Towns (GNT) program has helped make more than 100 Nebraska communities greener and more resilient through the implementation of sustainable landscape projects and by educating local citizens about ecological stewardship. The Nebraska Statewide Arboretum (NSA) requests \$509,932 from NET to continue this highly successful initiative to work with citizens and community organizations across the state in the implementation of 500 landscape projects in over 50 Nebraska towns, each illustrating waterwise practices, native plants, biodiversity and resource conservation. The environmental outcomes of these projects will be significant, including the conservation of over 100 million gallons of water; significantly increased biodiversity via the planting of 40,000 native plants; and the reduced use of pesticides and fertilizers, further reducing nonpoint source pollution. The initiative will also include a significant outreach effort to engage, educate and inspire citizens in adopting sustainable landscape practices, reaching at least 5,000 Nebraskans, including at least 1,800 people involved as project volunteers. Nebraskans interact with nature most commonly right in their yards and within the communities they live. GNT will bring environmental stewardship to the neighborhoods of people across the state leading to healthier and more viable communities.

Sponsor Name: Nebraskensis**Nearest Town:** Kearney**Project Name:** Fort Farm Island - Habitat Realignment
by Integrated Ag Management**Project No:** 21-174**Amount Requested:** \$46,020 **Term of Request:** 2 **Review Group:** Rural Habitat

Nebraskensis' mission is to uphold and promote values of superior achievement, unparalleled leadership, and selfless service utilizing integrity, discrete confidence, and respect for traditions. The scope of this project will initiate a statewide pulse for Habitat Realignment leading to direct experiences and comprehensive first-hand knowledge for every school-aged child to retain and value throughout life after visiting Nature at the newly created State Gardens at Fort Farm Island. The historic tract of land was once leased by early settlers for the common good to grow gardens of subsistence and small amounts of corn under direct supervision of the military. Together with funds from the Nebraska Environmental Trust, land currently owned by the National Audubon Society, the Platte River Recovery Implementation Program, and private entities, will be rejuvenated with abundance and diversity creating a cornucopia of capital, a community of deer and fox lands peppered by quail, pheasant, and rabbit rushing through rising prairie Switchgrass, marbled by Mallards and mighty mice feeding birds of sight and might, the owl flying for freedom, eagles feasting with flight. Stage One: Hire 3-person consultant team: Native American elder Alan Salazar; co-founder of Hancock Wildlife Foundation Dr. David Bird; and National Geographic Photographer Joel Sartore.

Sponsor Name: Nebraskensis**Nearest Town:** Kearney**Project Name:** Art Installation - Bone Bridge**Project No:** 21-166**Amount Requested:** \$100,000 **Term of Request:** 1 **Review Group:** Education

Cattle outnumber Nebraskans by a factor of 4 to 1. National rankings list Nebraska as #1 in Commercial Cattle Slaughter with 7.6 million head killed. According to the Nebraska Beef Council, the importance of cattle feeding to Nebraska's economy runs deeper than in other state with 24-million acres of rangeland and pasture grazed and 40% of all in-state corn production being fed to livestock. The ancient Greeks, Romans, and Egyptians all saw cattle as the most important domesticated animal serving a dual purpose of labor/meat/milk provider, while at the same time receiving spiritual adoration. Today, the cow has lost its luster and is often times taken for granted. Animal activists, bureaucracy, and mechanization have hidden the animal from public view. In order to educate all Americans of the importance of Bos Taurus, money from the grant will be used to purchase femur bones, 1.9 million total (1 for each Nebraska resident) to be used as building material for an interactive educational structure called the Bone Bridge built by designer Dan Phillips. Instead of being ground into bone meal or dumped into a landfill, the bones will live a lasting legacy supporting humans as they walk over the Platte River.

Sponsor Name: Nebraskensis**Nearest Town:** Lincoln**Project Name:** The Paul Harvey Superior Farmer Award**Project No:** 21-175**Amount Requested:** \$45,000 **Term of Request:** 3 **Review Group:** Education

The great ambassador of agriculture Paul Harvey professed, "And on the 8th day, God looked down on his planned paradise and said, "I need a caretaker." So God made a farmer. God said, "I need somebody willing to get up before dawn, milk cows, work all day in the fields, milk cows again, eat supper and then go to town and stay past midnight at a meeting of the school board." So God made a farmer." There are many different strata and strains of farmers working statewide. Salt-of-the-Earth men and women partnering with growing seasons and time, not asking for much and not making more than a couple dimes. These are the farmers who go through life unrecognized, unappreciated, and undervalued, the true caretakers of Nebraska's noble name. By creating a multilevel dividend return system that accepts statewide nominations of exemplars, the Paul Harvey Superior Farmer Award would redistribute \$5,000 annually to three different farmers to be spent on boosting community pride, rallying traditions, and making mutual improvement as seen through nominee eyes. Each first-year recipient will be asked to nominate two farmers for the following year's award cycle and all completed projects will be documented by Nebraskensis.

Sponsor Name: Nebraskensis**Nearest Town:** Heartwell**Project Name:** Whooping Crane Habitat - Jensen Lagoon
National Wildlife Management Area**Project No:** 21-165**Amount Requested:** \$1 **Term of Request:** 1 **Review Group:** Rural Habitat

Four Whooping Cranes, the rarest birds in North America, were spotted at Jensen Lagoon National Wildlife Management Area from April 8 - April 12 and no one cared. The current policy for the forgotten tract of land managed by the Department of the Interior is a hands-off approach choosing to destroy habitat in the name of receiving a minuscule cattle grazing payment from a local rancher. What was once a thriving ecosystem for a bountiful population of pheasants, quail, ducks and migratory birds including Whooping Cranes during the 80's-2000's is now overgrazed and trampled by cows. The purpose of the Nebraska Environmental Trust, is to "conserve, enhance and restore the natural environments of Nebraska" and this natural wetland deserves attention and financial support.

Sponsor Name: No More Empty Pots**Nearest Town:** Omaha**Project Name:** Zero Waste & Renewable Energy Initiatives at a Food Hub**Project No:** 21-220**Amount Requested:** \$46,800 **Term of Request:** 1 **Review Group:** Air Quality

Sustainability is a core value of No More Empty Pots (NMEP). NMEP addresses sustainability through two initiatives: zero waste and solar energy. The average American produces 4.4 pounds of waste per day (<https://www.cnbc.com/2018/07/13/how-san-franciscobecame-a-global-leader-in-waste-management.html>), only 34% of that is composted or recycled. Incorporating a Zero Waste Initiative by employing a three step process, reuse/repurpose, recycle, and rethink, individuals utilizing the Food Hub will learn and practice environmentally consciously waste disposal. Training staff, program participants and volunteers on reuse and repurpose involves creativity and innovation. NMEP incorporates community stakeholder feedback and shares closed loop processes. To recycle effectively, the building has waste bins clearly labeled for recycling, composting, orange energy bags, and landfill. Hillside Solutions, which consults with organizations on sustainable waste management, provides management services. A team of staff championed the rollout. Reports and stakeholder feedback helped to determine what has worked well and where challenges lie, for continuous improvement. Solar energy capture to power equipment and HVAC, lowering operations cost should further improve sustainability practices at the hub. In collaboration with Creighton University's Energy Program, electricity consumption is monitored at the food hub to determine patterns and opportunities for energy use reduction.

Sponsor Name: North Platte, City of**Nearest Town:** North Platte**Project Name:** Drop Off Recycling Program**Project No:** 21-155**Amount Requested:** \$80,650 **Term of Request:** 1 **Review Group:** Waste Management

In this ever changing recycling world, we are seeking to provide roll-offs for expanded drop-off recycling services. With the major shift in recycling and reduction in markets, there is no doubt that the City of North Platte requires increased, streamlined recycling drop-off trailers. The current process isn't effective or efficient. This is a long term solution for the regions recycling needs. Through a year of programming and community planning, increased drop off points with user friendly roll off trailers and consistent messaging were deemed to be the best solutions to our recycling issues.

Sponsor Name: Northeast Nebraska RC&D**Nearest Town:** Ponca**Project Name:** Early Detection and Integrated Management of Invasive Plants **Project No:** 20-115-2**Amount Requested:** \$38,740 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$38,740 IN 2020 WITH THE INTENT TO FUND UP TO \$38,740 IN YEAR TWO AND \$39,040 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Northeast Nebraska Resource Conservation & Development Council Inc.

Nearest Town: Plainview

Project Name: Household Hazardous Waste Collections

Project No: 19-110-3

Amount Requested: \$14,142 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Northern Prairies Land Trust

Nearest Town: Beatrice

Project Name: Extending the Tallgrass Prairie Partnership

Project No: 20-153-2

Amount Requested: \$170,000 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$275,000 IN 2020 WITH THE INTENT TO FUND UP TO \$170,000 IN YEAR TWO AND \$50,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Northern Prairies Land Trust**Nearest Town:** Beatrice**Project Name:** Enhancing Nebraska's Oak Woodlands**Project No:** 21-148**Amount Requested:** \$390,000 **Term of Request:** 3 **Review Group:** Rural Habitat

Eastern Nebraska's oak woodlands are a threatened ecosystem that supports numerous at-risk species. Without active management, the future of these woodlands and the flora and fauna they support are in doubt. In 2014, the Northern Prairies Land Trust (NPLT) and its conservation partners formed the Nebraska Oak Woodland Alliance (NOWA) to enhance oak woods. They have since conducted prescribed fire, invasive tree thinning, and weed control on over 15,000 acres of oak woods. Through this NET grant, NPLT and its NOWA partners will continue and expand our oak woodland management efforts on ranches, farms, and conservation lands primarily within ten Nebraska Biologically Unique Landscapes (BULs). The project also includes educational and evaluation components. We are requesting \$390,000 in NET dollars for this three-year project. The project partners and participating landowners will provide \$460,000 in cash match. The requested NET funds will be used primarily to implement prescribed fire and tree thinning on private lands to enhance oak woods and savannas. The primary benefit of this project will be the enhancement and conservation of Nebraska's biodiversity-rich oak woodlands. This project will also reduce soil erosion, enhance groundwater quantity, improve recreational opportunities in oak woods, stimulate local economies, and improve grazing resources.

Sponsor Name: Omaha, City of**Nearest Town:** Omaha**Project Name:** Thomas Creek Improvements - Phase I**Project No:** 20-192-2**Amount Requested:** \$280,000 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$20,000 IN 2020 WITH THE INTENT TO FUND UP TO \$280,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Omaha Public Power District**Nearest Town:** Louisville**Project Name:** OPPD BRIGHT (Battery Research Innovation Guided by High-Potential Technologies)**Project No:** 20-130-2**Amount Requested:** \$75,000 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$525,000 IN 2020 WITH THE INTENT TO FUND UP TO \$75,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Papio-Missouri River Natural Resources District**Nearest Town:** Bellevue**Project Name:** Southeastern Sarpy County Habitat/Economic Development Partnership**Project No:** 21-103**Amount Requested:** \$3,009,195 **Term of Request:** 3 **Review Group:** Rural Habitat

The desire of the P-MRNRD is to assist the City of Bellevue, Sarpy County and unnamed private developer(s) with this \$11.56 million, 863 acre public/private partnership in a win-win scenario. The P-MRNRD, from a single owner, would acquire 540 acres of non-developable yet highly desirable habitat, recreation and flood prone land for \$4.06 million – with cost-share grant funds from the NET. The remaining 323 acres would be acquired by the City of Bellevue and/or Sarpy County and private developer(s) at an estimated \$7.5 million and once acquired, provide a sizeable tract for critically needed economic development of the area. A potential, multiparty purchase agreement, contingent upon NET funding, would be crafted to allow this transaction.

Sponsor Name: Papio-Missouri River Natural Resources District**Nearest Town:** Bellevue**Project Name:** Platte/Missouri River Flood Buyout/Habitat Restoration Project **Project No:** 21-117**Amount Requested:** \$856,150 **Term of Request:** 3 **Review Group:** Urban Habitat

The P-MRNRD would assist property owners that have historically experienced multiple flooding events within the Platte/Missouri River floodplain by purchasing their properties at fair market value. Once acquired, these sites would be cleared of structures (if any) and restored to native habitat. Low impact public access (hiking, fishing, biking, bird watching, etc.) would be offered where practical. Sites proposed to be acquired are identified as willing sellers adjacent to the Platte River and/or the Missouri River and its tributaries in Sarpy County, Nebraska.

Sponsor Name: Papio-Missouri River Natural Resources District**Nearest Town:** Omaha**Project Name:** Know Your Well III - Educating Nebraska
Youth about Well Water Science**Project No:** 21-143**Amount Requested:** \$656,737 **Term of Request:** 3 **Review Group:** Water

Groundwater is the primary source of drinking water for most Nebraskans, especially from domestic wells in rural areas. Over 20% of Nebraskans rely on drinking water from private wells[1]. Nebraska's abundant groundwater is vulnerable to contamination by agricultural and natural contaminants that may impact well water quality and affect human health[2]. Few of these domestic wells are tested on a regular basis. Increased collection and analysis of water quality data from domestic wells is a promising way to monitor groundwater quality. The KYW-III project will continue the success of past Know Your Well (KYW) programs and expand education to nearly 50 high schools in over 12 Natural Resource Districts (NRDs) statewide. Goals for the statewide program include groundwater quality testing for over 1,000 domestic wells and educating approximately 500 teachers and students about well water science. School and student recruitment will be enhanced by promoting scholarships made available by UNL and several participating NRDs. Educating youth about domestic well vulnerability and solutions through hands-on interactive data collection and learning provides an opportunity to inform all Nebraskans about the value of our groundwater. Outreach for this project will also be supported by the Nebraska Well Drillers' Association and the Groundwater Foundation.

Sponsor Name: Pheasants Forever, Inc.**Nearest Town:** Nelson**Project Name:** Habitat Share**Project No:** 21-124**Amount Requested:** \$96,000 **Term of Request:** 1 **Review Group:** Rural Habitat

Habitat Share is a highly efficient partnership that enhances public benefit and use opportunities on state-owned lands when resources are limited. Projects are completed by having contractors do critical habitat projects on Wildlife Management Areas (WMAs). More acres are managed resulting in an increase of public hunting, bird watching, and recreational opportunities; benefiting local communities across the state. Each project in this partnership is in addition to what NGPC staff are able to complete on an annual basis. NGPC manages 289 WMAs totaling 190,844 acres. Thirty-four full time staff are tasked with management and many other daily activities. By contracting certain activities such as disking, seeding, burning, and brush management, more habitat is benefited and more maintenance can be done. This partnership is a high priority within the NGPC Berggren Plan and will also help deliver two National Pollinator Goals: enhance 3.5 million acres of pollinator habitat on public lands, and plant 1.4 billion milkweed stems to increase monarch population. Since 2010, Habitat Share has impacted 36,039.6 acres on 150 WMAs. The Request for Proposal is sent to over 100 contractors for bid requests. This is a great utilization of non-federal funds to match federal funds to accomplish more.

Sponsor Name: Pheasants Forever, Inc.**Nearest Town:** Nelson**Project Name:** Pathway For Wildlife, Ranchers, Farmers, and Communities**Project No:** 21-122**Amount Requested:** \$473,400 **Term of Request:** 2 **Review Group:** Rural Habitat

Proposal seeks funding over two years to continue and expand an innovative program previously piloted through the Conservation Ag, Urban, and Working Lands (CAUWL) grant awards from the Nebraska Environmental Trust (NET) and National Fish and Wildlife Foundation (NFWF). CAUWL has evolved to be named Pathway For Wildlife (PFW) designed to bridge gaps between ag, urban, working lands and wildlife. PFW offers incentives to enhance habitat on cropland, working lands, and within local communities through 3 options: 1) wildlife and pollinator enhancement on working lands 2) diverse cover crops and 3) habitat projects within local communities for public benefit. PFW includes cost-share of 75% and 1-3 year contracts with free seed available to communities, allows for grassland restoration practices like brush removal, smooth brome control, and prescribed fire, and is in partnership with PF, QF, NGPC, USDA, and NFWF. Other collaborative partners include UNL and Nebraska Master Naturalists. The pilot had a goal of 7,000 acres impacting several communities over two years. In 20 months, 16,024 acres are enrolled across 35 counties with 108 active or pending contracts. Program vision is to continue to expand and grow to 40,000 acres, bring in additional partners, and continue to enhance monitoring app.

Sponsor Name: Pheasants Forever, Inc.

Nearest Town: Nelson

Project Name: Corners For Wildlife

Project No: 20-131-2

Amount Requested: \$293,800 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$293,800 IN 2020 WITH THE INTENT TO FUND UP TO \$293,800 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: Grassland Improvement Program

Project No: 20-132-2

Amount Requested: \$130,000 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$130,000 IN 2020 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: Platte River Basin Environments, Inc**Nearest Town:** Scottsbluff**Project Name:** Kiowa Creek Ranch**Project No:** 21-203**Amount Requested:** \$1,200,000**Term of Request:** 2 **Review Group:** Rural Habitat

Kiowa Creek Ranch sits atop the Western Wildcat Range in Scotts Bluff County. The ranch is contiguous to the Wildcat Hills Western Conservation Complex, which is managed by Platte River Basin Environments, Inc. (PRBE) and Nebraska Game and Parks. The acquisition of Kiowa Creek Ranch will add 2,600 pristine acres to that Conservation Complex and bring the total public access acres to nearly 20,000, all contiguous. Historic Kiowa Creek originates on the ranch and provides an excellent water source for wildlife and cattle. This region of the Biologically Unique Wildcat Hills is well known for the wildlife that routinely utilize these lands: Big Horn sheep, elk, mule and whitetail deer, pronghorn, occasional moose, lions, sharp-tailed grouse, turkey, and numerous songbirds. The native range and wildflower resources are exceptional. This ranch, in keeping with all of PRBE's lands, will remain a working ranch. It will pay the same taxes as our neighbors, fight the same invasives, and keep its fences in neighborly repair. This acquisition opens significantly more lands to recreation, science, and education, and insures PRBE's ability to apply our grazing stewardship practices and keep fresh grass under the cattle's' hooves at all times.

Sponsor Name: Platte River Basin Environments, Inc**Nearest Town:** Scottsbluff**Project Name:** North Platte River Valley Habitat Restoration and Enhancement Partnership III**Project No:** 21-204**Amount Requested:** \$269,000**Term of Request:** 3 **Review Group:** Rural Habitat

The objective of this grant is to continue the highly successful North Platte River Valley Habitat Restoration and Enhancement Partnership within the North Platte River and Platte Confluence Biologically Unique Landscapes. Leveraging the success of the last 10 years, the partnership looks to greatly expand the geographic scope and quantity of wetland, riparian, and associated upland acres impacted. Platte River Basin Environments, Inc., Ducks Unlimited, Inc, the Nebraska Game and Parks Commission, and the U.S. Fish and Wildlife Service's Nebraska Partners for Fish and Wildlife Program, will work on habitat projects along the North Platte River and will focus on achieving win-win solutions for integrating wildlife habitat into ranching and farming operations. This will be achieved by: (1) providing financial assistance for restoring, enhancing, and managing wetland, riparian, and associated upland habitats on private lands; (2) providing education and high quality technical assistance to private landowners in the restoration, long-term management, and integration of habitat into their land management operations; and (3) using demonstration sites to exhibit the numerous environmental, wildlife, and economic benefits of wetland, riparian, and upland habitats.

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: 20-148-2

Amount Requested: \$1,675 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$342,675 IN 2020 WITH THE INTENT TO FUND UP TO \$1,675 IN YEAR TWO AND \$1,675 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Platte Valley Weed Management Area

Nearest Town: Kearney

Project Name: Platte River Management and Enhancement

Project No: 19-142-3

Amount Requested: \$174,500 **Term of Request:** 3 **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 River 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 THIRD YEAR REQUEST.

Sponsor Name: Prairie Plains Resource Institute**Nearest Town:** Aurora**Project Name:** A Partnership to Restore Eastern Nebraska Native Prairie**Project No:** 21-131**Amount Requested:** \$290,000 **Term of Request:** 3 **Review Group:** Rural Habitat

Grassland are among the most threatened ecosystems in North America. Less than one percent of eastern Nebraska tallgrass prairie remains, and many remnant prairies are invaded by exotic plants and lack floral diversity. Where these prairies remain, they are often fragmented from other parcels, limiting the ability of native plants and animals to disperse and connect to other populations. There is a great need in Nebraska for prairie restoration and enhancement. Prairie Plains Resource Institute (PPRI) and its partners, including the Nebraska Game and Parks Commission (NGPC), the United States Fish and Wildlife Service (USFWS), the Lower Platte South Natural Resource District (LPSNRD), the Platte River Whooping Crane Trust (PRWCT) and the Center for Rural Affairs (CFRA), are requesting \$290,000 from the Nebraska Environmental Trust Fund (NETF) for a three-year project to restore native prairies in eastern Nebraska on private and conservation lands. PPRI will administer the grant. The partners will provide \$115,000 in cash match and \$57,000 in in-kind match. Landowners will provide \$24,000 in cash match. Restorations will be completed primarily within ten eastern Nebraska Biologically Unique Landscapes (BULs) as designated by the Nebraska Natural Legacy Project (map attached) and will help fulfill Legacy Project goals and objectives.

Sponsor Name: Quail Forever**Nearest Town:** Nelson**Project Name:** Mobile Prescribed Burn Unit and Education Outreach**Project No:** 21-123**Amount Requested:** \$103,400 **Term of Request:** 1 **Review Group:** Education

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 state plan, Nebraska Natural Legacy Project (NNLP), to implement goals and employs 27 biologists that work directly with landowners. The creation of Mobile Prescribed Burn Units and expanding outreach creates 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 with a primary objective to decrease eastern red cedar spread. The funds will be matched by partners to purchase and maintain burn units 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: Rocky Mountain Bird Observatory
dba Bird Conservancy of the Rockies

Nearest Town: Scottsbluff

Project Name: Connecting Youth and Families to the
Natural World in the Nebraska Panhandle

Project No: 21-205

Amount Requested: \$81,451 **Term of Request:** 2 **Review Group:** Education

2020 has proven the need for nature. This year especially, Nebraskans are flocking to the beauty of our many state parks and recreational areas. Despite challenges in organizing group events, Bird Conservancy of the Rockies requests \$81,451 from the Nebraska Environmental Trust to reach more than 3,000 Nebraskans with quality environmental education opportunities over the next two years. Your support will allow us to safely connect Nebraskans with nature both physically and virtually. Specifically, your funding will allow us to create new and exciting programs in the Nebraska Panhandle and continue proven programs that meet unmet environmental education needs. New Family Nature Clubs will create opportunities for family units to immerse and connect with the nature around them in the Scottsbluff area. In and after school programs will engage school students in hands-on environmental education while bird banding and Bioblitzes will attract all ages to participate in the discovery of science and biodiversity in the Nebraska Panhandle. Your investment in Bird Conservancy is leveraged by longstanding partnerships with NGPC and Chadron State College. Together we are empowering communities to learn, appreciate and conserve their local natural resources through the lens of bird conservation.

Sponsor Name: Sandhills Task Force

Nearest Town: Broken Bow

Project Name: Sandhills Working Ranch Conservation Partnership

Project No: 21-215

Amount Requested: \$398,000 **Term of Request:** 3 **Review Group:** Rural Habitat

The Sandhills Task Force (STF) is a grassroots nonprofit organization that has a 27-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 are invasive species, overgrazing, and impaired wetlands, streams, and lakes. This grant will help the STF implement projects on private lands to address these concerns. Also, events will be held to educate the public and landowners about innovative conservation tools and preventative management plans that can help them improve their land resource. During the grant, an estimated 25 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 and Federal and State agencies. Projects will have at least a 10-year agreement with the landowner and other participating partners.

Sponsor Name: Sandhills Task Force**Nearest Town:** Broken Bow**Project Name:** Sandhills Conservation Partnerships on Grasslands and Wetlands **Project No:** 20-204-2**Amount Requested:** \$66,000 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$330,000 IN 2020 WITH THE INTENT TO FUND UP TO \$66,000 IN YEAR TWO AND \$24,000 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Snake River Preservation Group**Nearest Town:** Valentine**Project Name:** Foot Bridge Reach Riparian Project -Snake River**Project No:** 21-118**Amount Requested:** \$36,706 **Term of Request:** 1 **Review Group:** Rural Habitat

The Snake River Preservation Group (SRPG) is a corporation whose 50 shareholders are dedicated to the conservation and improvement of the habitat of Snake River canyon and the associated uplands on the Snake Falls Ranch, which it purchased in 2012. The Snake Falls Ranch is home to beautiful scenery, wonderful habitat for many species of wildlife, as well as one of the best trout fisheries in the state. It is a working ranch, leasing pastures for grazing according to a scientific grazing schedule. The SRPG purchased 160 acres of river, riparian woodlands, and uplands adjacent to its present property in 2018. Prior to our purchase, cattle were grazed on the property using the river for water, causing significant impacts to the riparian region. Marked erosion from cattle trails and grazing have caused increased sedimentation and decreased plant diversity in the riparian area. The uplands are overgrown with eastern red cedar, reducing forage production, plant diversity and increasing wildfire risk. SRPG is seeking funding for removing cedar, changing fencing, and providing alternate water sources. This will result in decreased erosion, improved upland and riparian plant production and diversity, stabilized stream banks, decreased sedimentation, decreased wildfire risk, and improved water quality.

Sponsor Name: Southeast Community College**Nearest Town:** Beatrice**Project Name:** SCC Beatrice - Bio-retention**Project No:** 21-110**Amount Requested:** \$48,685 **Term of Request:** 2 **Review Group:** Water

This project seeks to install a bio-retention facility on the Southeast Community College (SCC) Beatrice campus. SCC has identified a site on this campus that will provide environmental and educational benefits through the construction of a bio-retention basin that includes native landscaping. The basin will have amended soils that will facilitate water quality improvements and promote groundwater recharge. Native plants will be incorporated into the basin, providing the SCC Horticulture Department an opportunity to include the propagation, planting, and long-term maintenance of the plants into their educational programming. In addition, the native landscape will provide habitat for wildlife on campus. The location of the basin, at the center of the campus, will enhance its use as an educational tool for the public at large, with signage placed to inform on the purpose and function of the basin, landscape, and habitat.

Sponsor Name: Southeast NE Pheasants Forever**Nearest Town:** Beatrice**Project Name:** No-Till Drill Southeast NE Pheasants Forever**Project No:** 21-126**Amount Requested:** \$30,000 **Term of Request:** 1 **Review Group:** Equipment

This application seeks funding to purchase a no-till grass drill to be used by landowners to establish CRP and wildlife habitat. Currently, there are few no-till drills available in the area and those that are available, are owned and rented out by private businesses. A no-till grass drill would increase both the quantity and quality of habitat established. Significant increases in habitat plantings in the area through programs like: Conservation Reserve Program, Conservation Reserve Enhancement Program, Continuous Conservation Reserve Program, Corners For Wildlife, Environmental Quality Incentives Program, have greatly increased the need for this type of specialized equipment. Matching funds will come from the Southeast NE PF chapter to purchase the drill. The purchase price is approximately \$40,000. Joe Thimm of Beatrice will oversee the operation, maintenance and rentals. An account will be set up to pay for future maintenance and repairs. The drill will be available for any landowner for a nominal fee. A no-till drill is needed to handle the fluffy seed associated with warm-season grasses, wildflowers and legumes. These fluffy seeds are not effectively planted with conventional drills. By increasing the amount of habitat and enhancing the quality of seed mixtures, wildlife will benefit.

Sponsor Name: Southwest Weed Management**Nearest Town:** McCook**Project Name:** Western Republican River Basin Riparian Habitat Project**Project No:** 21-139**Amount Requested:** \$97,000 **Term of Request:** 1 **Review Group:** Rural Habitat

Native habitat throughout Nebraska is increasingly being challenged by invasive and non-desirable vegetation. Riparian zones and adjacent areas which traditionally have been host to native species of woody vegetation (cottonwood, ash, hackberry, etc.) and grasses (big blue stem, little bluestem, and aquatic species) are increasingly being replaced by invasive and non-desirable vegetation. The detrimental impacts of these invasive species is well documented resulting in reduced water flow, decreased water quality, and the displacement of native habitat. With a basin/watershed approach we can address issues at the source, utilizing best management practices for each site. The principal areas to perform this work will be along the Republican River, Medicine Creek, Frenchman Creek, Red Willow Creek and other tributaries in the western Republican River watershed. Landowner input will be incorporated in the management practices to develop the best methods of control. The Western Republican River Basin Riparian Habitat Project intends to initiate control measures of these invasive plants resulting in improved water conveyance, increased water quality and providing an opportunity for native vegetation to re-establish. Additionally, increased water flow within the Republican River basin will assist the State of Nebraska to maintain compliance with the Republican River Compact.

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:** 20-179-2**Amount Requested:** \$117,421 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$337,121 IN 2020 WITH THE INTENT TO FUND UP TO \$117,421 IN YEAR TWO AND \$112,171 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Spring Creek Prairie Audubon Center**Nearest Town:** Denton**Project Name:** Working Lands Strategy and Tallgrass Prairie Conservation**Project No:** 21-172**Amount Requested:** \$91,893 **Term of Request:** 1 **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. Grassland bird populations have drastically declined as intact grassland habitat has been converted or degraded. The vast majority of grasslands across the U.S. are privately owned working lands, so effective grassland conservation for declining birds and other species must be in collaboration with private landowners. Despite the importance of private lands in conservation, working land management is often misunderstood by Nebraskans as we become increasingly urban. Landowners who seek to use restorative grazing or ecologically sustainable ranching are faced with thin profit margins and increased scrutiny of the food production process. If prairie conservation is to be sustainable for generations, we must cultivate a deeper societal understanding and appreciation for the management required to steward grasslands and address the economic viability of healthy working grassland systems. In partnership with Nebraska Cattlemen, this proposal will use a two-pronged approach under Audubon's Working Lands strategy to restore grasslands by launching Audubon's Conservation Ranching Program and building support and understanding of ecologically sustainable grassland management.

Sponsor Name: St. Augustine Indian Mission**Nearest Town:** Winnebago**Project Name:** Mission Solar Project**Project No:** 21-202**Amount Requested:** \$400,000 **Term of Request:** 1 **Review Group:** Air Quality

St. Augustine Indian Mission is seeking \$400,666 in funding from the Nebraska Environmental Trust for a 130 kW, ground mounted solar array to be installed on the campus during the construction of a new K-8 school building. The solar panel system will provide energy resources for the new school, rectory, convent and church buildings. The building project provided a unique opportunity for the director, building committee, architects and general contractor to explore various ways to reduce the Mission's carbon footprint, reduce operating costs, and to protect the Mission from increasing energy costs.

Sponsor Name: Stapleton, Village of**Nearest Town:** Stapleton**Project Name:** Recycling Building 100 X 60**Project No:** 21-106**Amount Requested:** \$293,500 **Term of Request:** 1 **Review Group:** Waste Management

The Village of Stapleton is a small community of 300 however we serve 900+ customers for their recycling needs. To promote waste reduction in our rural area we are in serious need of a recycling building. This facility would house our cardboard baler as well as our vehicles required to maintain the gathering and disposal of the recycling materials. Currently we are only able to bale a small amount of bales before halting production to transport the bales to a separate storage facility due to our lack of storage space. A new facility would allow us to store bales on site until markets end. We are requesting funds in the amount of \$293,500.00 to expand our current recycling efforts, and to assist us in our desire to see our surrounding communities have the ability to properly dispose of their waste and meet their recycling needs. This recycling building would be constructed on village owned property and provide enough room for the baler and ample storage capacity to store the bales until transport to end market, as well as the additional equipment needed in the recycling services we offer to the surrounding public.

Sponsor Name: Tekamah, City of**Nearest Town:** Tekamah**Project Name:** Municipal Well Seal Augmentation for Groundwater Protection **Project No:** 21-116**Amount Requested:** \$173,480 **Term of Request:** 2 **Review Group:** Water

The City of Tekamah is experiencing high nitrate levels in its existing municipal wells. A NET grant in 2018 allowed for the installation of a primary aquifer seal outside the casing of one of these municipal wells and fully decommission four older capped wells near the City's fire station. Drinking water tests following this effort have shown a drop in nitrate levels from 9.4 down to 2.4 ppm. Given this success, the purpose of this project will be to protect the groundwater source of the four remaining active municipal wells by puncturing their casing and installing a primary aquifer seal at a known semi-impervious geologic layer. Three older capped wells will also be fully decommissioned with grout pumped outside of their well casings. Project success will be based on water quality monitoring at each municipal well, and at new monitoring wells installed adjacent to each municipal well site. Decreasing nitrate levels in all of Tekamah's municipal wells will allow the City to not have to rotate their drinking water supply pumping, increasing overall City pumping capacity, allowing for additional maintenance, and providing safer drinking water. The Papio-Missouri River NRD has agreed to provide financial and technical support for this project.

Sponsor Name: The Bee & Butterfly Habitat Fund**Nearest Town:** St. Paul**Project Name:** The Seed A Legacy Program**Project No:** 21-217**Amount Requested:** \$320,000 **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 monarch butterflies, native bees other pollinator species 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, agriculture industry partners, non-profit partners and local beekeepers. This project has a waiting list of applicants wanting to enroll in 2021. 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 a wide range of wildlife including butterflies, native bees, grassland songbirds, pheasants and quail.

Sponsor Name: The Groundwater Foundation**Nearest Town:** Lincoln**Project Name:** GREAT: Groundwater Education and Training**Project No:** 20-114-2**Amount Requested:** \$43,500 **Term of Request:** 2 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$113,640 IN 2020 WITH THE INTENT TO FUND UP TO \$43,500 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: The Nature Conservancy

Nearest Town: Johnstown

Project Name: Increasing Fire Capacity and Rangeland Impact in the Sandhills **Project No:** 20-127-2

Amount Requested: \$60,388 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$60,388 IN 2020 WITH THE INTENT TO FUND UP TO \$60,388 IN YEAR TWO AND \$60,388 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: The Nature Conservancy

Nearest Town: York

Project Name: Upper Big Blue Soil Health Project

Project No: 20-135-2

Amount Requested: \$137,064 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$69,603 IN 2020 WITH THE INTENT TO FUND UP TO \$137,064 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: The Nature Conservancy**Nearest Town:** Johnstown**Project Name:** Fire Training Exchange in Nebraska**Project No:** 19-123-3**Amount Requested:** \$41,000 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: The Nature Conservancy**Nearest Town:** Johnstown**Project Name:** Sumac Control for Grassland Health Demonstration Project**Project No:** 21-184**Amount Requested:** \$123,000 **Term of Request:** 3 **Review Group:** Rural Habitat

Smooth sumac is a native shrub, typically found in ravines and along highways. Many Nebraskans enjoy its brilliant red color during fall travel. However, as climate change drives more severe droughts and wildfires, this meant-to-be-minor prairie actor has become a major threat to rangeland health. Without intervention, grasslands may transform into dense shrublands of smooth sumac, facilitating re-invasion of another destructive species - Eastern red cedar. This results in poor outcomes for wildlife, and for ranchers' bottom lines. The Nature Conservancy will test and demonstrate sumac control techniques at the Niobrara Valley Preserve. Smaller test plots (sited close to the Training Center for easy accessibility) will demonstrate the effects of varying herbicide treatments and mowing on a small scale. Larger scale control demonstrations will be implemented in Sandhills prairie and river valley ridges. Field days will be held at the Niobrara Valley Preserve, designed for landowners, managers, and those who advise them. We will share effective strategies that protect land against forage and habitat loss from this encroaching shrub. This project will complement other outreach initiatives already underway at the Preserve, such as fire training, plant identification, grazing management, and wildlife research.

Sponsor Name: The Nature Conservancy**Nearest Town:** Johnstown, Wood River**Project Name:** Connecting Nebraskans to Nature: Trails
Development and Enhancements**Project No:** 21-218**Amount Requested:** \$240,751 **Term of Request:** 3 **Review Group:** Education

Now more than ever, Nebraskans want to get outside. The Nature Conservancy aims to enhance recreational opportunities at the Niobrara Valley Preserve and the Platte River Prairies nature trails. With grant support from the Nebraska Environmental Trust Fund, the Conservancy will improve the public visitor experience at each site, adding infrastructure, interpretive materials, restrooms, and directional signage, as well as promoting these hiking trails to more Nebraskans. The better acquainted people become with these iconic grasslands and the wildlife that depends on them, the more invested they become in protecting it. The trails will be open year-round at no cost to visitors. The Platte River Prairies and the Niobrara Valley Preserve are two of the most biologically rich places in the state, and with this proposal, we aim to invite more Nebraskans to enjoy them.

Sponsor Name: The Xerces Society**Nearest Town:** Lincoln**Project Name:** Building a Bumble Bee Habitat and
Conservation Network Across Nebraska**Project No:** 21-121**Amount Requested:** \$276,708 **Term of Request:** 3 **Review Group:** Education

Bumble bees are essential pollinators that help sustain the health of Nebraska's environment and agriculture, yet one fifth of the state's fauna species face extinction risk. Building on information gathered by the NET-funded Nebraska Bumble Bee Atlas, we propose to restore native habitats to bring back the most endangered bumble bees and provide food and shelter for a diverse suite of native pollinators throughout the state. In collaboration with a native plant nursery, the University of Nebraska-Lincoln, Audubon Nebraska, land managers and youth organizations, we will design and install kits comprised of native plants attractive to Nebraska's at-risk bumble bees at 30 locations across the state. We will deliver workshops to share best practices on habitat installation and maintenance with partners and land managers, and enact a program to monitor the bumble bees that utilize these restored habitats. Lastly, we will develop curriculum to teach more than 200 students about pollinators and how to conserve them, and engage them in the Nebraska Bumble Bee Atlas community science project and in habitat restoration for Nebraska's at-risk pollinators.

Sponsor Name: The Xerces Society**Nearest Town:** Lincoln**Project Name:** Nebraska Bumble Bee Atlas**Project No:** 19-132-3**Amount Requested:** \$34,581 **Term of Request:** 3 **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 THIRD YEAR REQUEST.

Sponsor Name: Trailblazer RC&D**Nearest Town:** Red Cloud**Project Name:** Household Hazardous Waste Collection and Recycling Events **Project No:** 20-143-2**Amount Requested:** \$38,050 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$35,950 IN 2020 WITH THE INTENT TO FUND UP TO \$38,050 IN YEAR TWO AND \$40,350 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Trailblazer RC&D**Nearest Town:** Hebron**Project Name:** Electronics Recycling Events**Project No:** 20-116-2**Amount Requested:** \$40,750 **Term of Request:** 3 **Review Group:** Statement of Intent

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. THIS PROJECT WAS FUNDED \$5,950 IN 2020 WITH THE INTENT TO FUND UP TO \$40,750 IN YEAR TWO AND \$43,150 IN YEAR THREE PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Transit Authority of the City of Omaha, dba Metro**Nearest Town:** Omaha**Project Name:** Metro Zero Emission Sustainability Project**Project No:** 21-104**Amount Requested:** \$1,012,000 **Term of Request:** 1 **Review Group:** Air Quality

Metro will partner with New Flyer bus manufacturer to start the process of creating sustainable rollingstock, infrastructure and maintenance practices for transit in Omaha, NE. This project will retire 3 model year 2010 Gillig 40' high sulfur diesel buses with 3 40' zero emission New Flyer buses. This project will also include the engineering and installation of 3 charging stations within the maintenance facility. Additionally, this project includes needed and necessary tools and training to cohesively manage and maintain the new fleet and to allow for zero emission fleet growth in the future.

Sponsor Name: Twin Platte Natural Resources District**Nearest Town:** North Platte**Project Name:** TPNRD Educational Video Documentary – Leveraging Innovation **Project No:** 21-178**Amount Requested:** \$68,000 **Term of Request:** 1 **Review Group:** Education

The Twin Platte Natural Resources District (TPNRD) will be working with Nebraska Educational Telecommunications (NET) to produce a documentary to educate the public about the TPNRD's Water Data Program, a new way of tracking groundwater use. TPNRD sits on top of the world's largest groundwater reserve known as the Ogallala Aquifer. Until now, there has been no accurate and efficient way for growers and managing agencies to track how much groundwater is used to irrigate crops and the effects that irrigation has on the aquifer. The most common way of tracking groundwater use in Nebraska is with flowmeters. The current use of mechanical flowmeters is expensive, and flowmeters become inaccurate as the flowmeter parts wear. The TPNRD is using a new approach that is cost-effective for tracking groundwater use, allows the grower to know the daily amount of water used, and provides water use data that the TPNRD can use in groundwater models. Telling the story of how integrating various technologies like electrical usage smart meters, LoRaWAN, and cloud computing can save water is extremely important in sustaining our groundwater resources in Nebraska and around the world.

Sponsor Name: Twin Valley Weed Management Area**Nearest Town:** Red Cloud**Project Name:** Eastern Republican and Little Blue Watershed Improvement Project**Project No:** 21-120**Amount Requested:** \$186,000 **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 last year, TVWMA focused all their attention on the riparian area. Last years grant included 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: U.S.A. Education Foundation**Nearest Town:** Valentine**Project Name:** Great Plains National Park**Project No:** 21-222**Amount Requested:** \$208,600 **Term of Request:** 1 **Review Group:** Education

This proposal is to educate all Nebraskans about the ecstastic and Economics of a State National Park. This will be accompanist by direct fellow Nebraskans and through educational of State Senators, County state governments. Utilization of or Narrative information by in person, printed material and video. This proposal fully funded will provide us the ability to do the above. Continuations of this effort will be through solutions of private foundations, to continue efforts to make The National Park a reality. In addition to the information provided in the narrative it, is intended at this National Park within its boundaries the largest herd public owed bison in the world. As an intentional point of interest in attracting tourist visitors from all over the world. If the Legislation to create the public park is written correctly all non local sales tax spend by all tourist will be dedicated to property tax relief for all property owners in Nebraskans. We anticipate and hope for a favorable response by all Nebraskans to to this proposal and anyone associated with Nebraskan Trust Fund.

Sponsor Name: University of Nebraska Medical Center**Nearest Town:** Omaha**Project Name:** Healing Local Landscapes: Turf Conversion
Utilizing Native Prairie Plantings**Project No:** 20-193-2**Amount Requested:** \$7,000 **Term of Request:** 2 **Review Group:** Statement of Intent

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 prarie 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. THIS PROJECT WAS FUNDED \$13,700 IN 2020 WITH THE INTENT TO FUND UP TO \$7,000 IN YEAR TWO PENDING AVAILABLE FUNDS AND SATISFACTORY PROGRESS. THIS IS THE SECOND YEAR REQUEST.

Sponsor Name: Upper Loup Natural Resources District**Nearest Town:** Arnold**Project Name:** Assessing the drought resilience of the South Loup River**Project No:** 19-147-3**Amount Requested:** \$42,000 **Term of Request:** 3 **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 stream gauge 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 THIRD YEAR REQUEST.

Sponsor Name: Upper Loup Natural Resources District**Nearest Town:** Thedford**Project Name:** No-till drill**Project No:** 21-130**Amount Requested:** \$49,200 **Term of Request:** 1 **Review Group:** Equipment

Funding is being sought from the Environmental Trust to help provide a portion, approximately 60%, of the monies needed to purchase a large no-till drill. There are many benefits of using a no-till technique such as the reduction of soil erosion, soil moisture and organic matter retention, protection of groundwater quality, reduction of chemical runoff, and reduction of soil compaction. Since 2007 the NRD has had a drill available for producers in all eight of our counties to use and to date have serviced more than 15,000 acres. A larger drill would provide a couple of advantages. One, it would cut down on the amount of time each producer needed to have the drill allowing it to be used by more producers during peak planting times. Two, it would reduce the number of rounds it would take to drill making the process more conservation friendly (reducing fuel usage and emissions).

Sponsor Name: Uribe Refuse Services, Inc.**Nearest Town:** Lincoln**Project Name:** Building a CNG Refuse Fleet**Project No:** 21-134**Amount Requested:** \$129,314 **Term of Request:** 1 **Review Group:** Equipment

Uribe Refuse Services, Inc is a 3rd generation family-owned and operated company providing quality solid waste management services to Lincoln and the surrounding communities since 1976. Uribe's 100 plus employees serve over 20,000 residential customers and more than 5,000 commercial customers in Lincoln and the surrounding communities. In 2015, Uribe formed Waste to Energy Lincoln (WTEL) to create a food waste collection route with Lincoln Public Schools. In 2019, WTEL diverted 500 tons of organics from the landfill to composting. In the next 12 months, we expect to increase to 700 tons/year with a projection of 12,249 tons/year in 2022. To handle the unique need of processing this material, WTEL is developing Nebraska's first stand-alone food waste anaerobic digester (AD), which will create a renewable fuel equivalent to CNG. Coupled with the AD, Uribe set a goal to transition to cleaner fuel and became the first Nebraskan owner of a dedicated CNG refuse truck. Uribe now owns four CNG trucks and is pursuing an all CNG fleet that will eventually be fueled by the AD outputs, creating a lower emission closed-loop hauling system. Uribe is seeking assistance funding two additional CNG trucks.

Sponsor Name: Wachiska Audubon Society, Southeast Nebraska Chapter of the National Audubon Society**Nearest Town:** Lincoln**Project Name:** WAS Professional Prairie Habitat Management Program**Project No:** 21-105**Amount Requested:** \$183,450 **Term of Request:** 3 **Review Group:** Rural Habitat

For Wachiska Audubon Society prairies to continue providing valuable habitat, professional management is required. For 30 years, Wachiska Audubon Society (WAS) has worked to sustain endangered tallgrass prairies in 20 Nebraska counties, preserving crucial habitat for rare plant species, threatened birds, butterflies, bees and insects, and provide important nesting and migration habitat. However, with increasing pressures on the prairie, we realize it is crucial we enhance our management process. Over the past year, WAS developed a plan to professionalize our prairie management. This plan addresses how to fight the increasingly problematic impacts of invasive species and chemical drift, how to improve the overall quality and habitat of our prairies, how to build stronger partnerships and cooperative efforts with prairie tenants, landowners, and neighboring property owners. Historically, WAS prairies have been managed solely by volunteers. However, several of our most knowledgeable, longtime volunteers are retiring. These individuals, each with high-levels of grassland management expertise, are now in their 70s, 80s and 90s and can no longer provide the hands-on expertise needed. In order successfully implement our professional prairie management plan, WAS has determined it is imperative to hire a professional Prairie Habitat Manager or we risk severely degrading our Prairie Habitat Management Program.

Sponsor Name: Webster County Pheasants Forever**Nearest Town:** Red Cloud**Project Name:** No-Till Drill Webster County Pheasants Forever**Project No:** 21-125**Amount Requested:** \$25,000 **Term of Request:** 1 **Review Group:** Equipment

This application seeks funding to purchase a no-till grass drill to be used by landowners to establish wildlife habitat. Currently, there are few no-till drills available in the area and those that are available, are owned and rented out by private businesses. A no-till grass drill would increase both the quantity and quality of habitat established. Significant increases in habitat plantings in the area through programs like: Conservation Reserve Program, Conservation Reserve Enhancement Program, Continuous Conservation Reserve Program, Corners For Wildlife, Environmental Quality Incentives Program, etc., have greatly increased the need for this type of specialized equipment. Matching funds will come from the Webster County PF chapter to purchase the drill. The purchase price is approximately \$35,000. Lynetta Snelling of Red Cloud will oversee the operation, maintenance and rentals. An account will be set up to pay for future maintenance and repairs. The drill will be available for any landowner for a nominal fee. A no-till drill is needed to handle the fluffy seeds associated with many warm-season grasses, wildflowers and legumes. These fluffy seeds are not effectively planted with conventional drills. By increasing the amount of habitat and enhancing the quality of seed mixtures, wildlife will benefit.

Sponsor Name: Wood River Vision 2020 Inc. dba Stick Creek Kids Child Development Center**Nearest Town:** Wood River**Project Name:** Stick Creek Kids Child Development Center Natural Community Playground**Project No:** 21-159**Amount Requested:** \$24,740 **Term of Request:** 1 **Review Group:** Education

A generous donation from the Nebraska Environmental Trust would support the development of environmentally friendly landscaping and natural play spaces at the non-profit Stick Creek Kids Child Development Center (SCK). Research suggests that installing natural materials and landscape elements to children's outdoor play spaces can challenge and increase children's spatial cognitive awareness, and physical competence and skills; and can lead to improvements in children's socialization through fantasy play which lasted for longer durations (Herrington & Studmann, 1998). Herrington & Studmann also suggest that providing large, varied play spaces gives children the opportunity to use their whole body to explore and engage in imaginative play with fewer limitations than indoor activities and traditional playgrounds (1998). As a community-driven project, SCK is also improving the community's native habitat through the installation of natural elements using materials that support groundwater conservation. By avoiding the installation of petroleum-based plastics that leach toxins which can harm the surrounding soil and waterways, choosing building materials and design elements that help to mitigate carbon emissions, and installing native plants that support a suite of wildlife such as pollinators and birds; the natural elements will contribute to long-term environmental sustainability for the community and surrounding areas (Smith, 2017).