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5	2023-051	Statewide Environmental Education via PBS Outdoor Series	Pioneer PBS will produce 26 new episodes of a statewide television series designed to inspire Minnesotans to connect with the outdoors and to restore and protect our valuable natural resources.	C. Environmental Education	Pioneer PBS	Cindy Dorn	$391,000	79			16 out of 17	**94**		Yes
6	2023-185	LCCMR Stories: Sharing Minnesota's Biggest Environmental Investment	The Science Museum of Minnesota will relay the results of LCCMR-funded research to public audiences; dissemination will include a free online interactive map, in-depth videos, and public events.	C. Environmental Education	Science Museum of Minnesota	Joy Hobbs	$628,000	75	Resubmit of project that was in both house/senate in 2022 but did not make final bill. Suggest changing the project title to clarify the focus would be on ENRTF accomplishments rather than on LCCMR. Could be synergistic and complementary to any effort the LCCMR may decide to undertake in the next years to share success stories and/or evaluate outcomes of ENRTF funding. SMM is interested in having coordination with LCCMR be part of the project.		14 out of 17	**82**		Yes
7	2023-028	SNA Stewardship, Outreach, and Biodiversity Protection	Scientific and Natural Area (SNA) habitat restoration/enhancement (500+ acres), increased public involvement, and strategic acquisition (50+ acres) will conserve Minnesota's most unique places and rare species for everyone's benefit.	G. Land Acquisition, Habitat, and Recreation	MN DNR, Ecological and Water Resources Division	Molly Roske	$1,955,000	85			13 out of 17	**76**		Yes
8	2023-039	Local Parks, Trails and Natural Areas Grant Programs	Provide approximately 19 matching grants for local parks, trail, acquisition of natural areas and trails to connect people safety to desirable community locations and regional or state facilities.	G. Land Acquisition, Habitat, and Recreation	MN DNR, Grants Unit	Audrey Mularie	$4,000,000	89			13 out of 17	**76**		Yes
9	2023-250	Phelps Mill Wetland and Prairie Restoration	Restoration of 28 acres of prairie and 20 acres of wetland along 3/4 miles of the Otter Tail River.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Otter Tail County	Nicholas Leonard	$974,000	75			13 out of 17	**76**		Yes
10	2023-004	Ditching Delinquent Ditches: Optimizing Wetland Restoration	Can we maximize native wetland restoration while minimizing impact on human land use? Evaluating the water-resources impact of targeted agricultural ditch removal on ecosystem restoration.	H. Small Projects Sub: B. Water Resources	U of MN, College of Science and Engineering	Andrew Wickert	$199,000	80			12 out of 17	**71**		Yes
11	2023-013	Community Forestry AmeriCorps	Over three years, we will train, deploy, and support 150 members to build more resilient ecosystems in communities statewide. Members will focus on planting trees and conducting tree inventories.	E. Air Quality, Climate Change, and Renewable Energy	ServeMinnesota	Sharon Delcambre	$1,500,000	80			12 out of 17	**71**		Yes
12	2023-060	Restoring Mussels in Streams and Lakes Continuation	Restoring native mussel assemblages can improve water quality and ecological health of rivers. Mussel filter water, purifying and improving water clarity by removing particles and contaminants like E. coli bacteria.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	MN DNR, Ecological and Water Resources Division	Madeline Pletta	$825,000	85			12 out of 17	**71**		Yes
13	2023-061	Minnesota Million: Seedlings for Reforestation and CO2 Sequestration	A grower network will raise tree seedlings so that we have enough to conduct widespread reforestation in Minnesota to improve carbon sequestration, wildlife habitat, watershed resilience, and create economic opportunity.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, Duluth	Julie Etterson	$1,012,000	79			12 out of 17	**71**		Yes
14	2023-063	Finding, Capturing, and Destroying PFAS in Minnesota Waters	Novel methods for the detection, sequestration, and degradation of poly- and perfluoroalkyl substances (PFAS) will be developed to address a pressing contamination issue in Minnesota's lakes and rivers.	B. Water Resources	U of MN, College of Science and Engineering	William Arnold	$500,000	91			12 out of 17	**71**		Yes
15	2023-064	Native Prairie Outreach and Stewardship through Native Prairie	Prairie outreach and technical assistance will be provided to landowners, practitioners, and the public. Native prairie enhancement and monitoring activities will be implemented on existing Native Prairie Bank Easements.	G. Land Acquisition, Habitat, and Recreation	MN DNR, Ecological and Water Resources Division	Judy Schulte	$650,000	81			12 out of 17	**71**		Yes
16	2023-176	Developing Research-Based Solutions to Minnesota's AIS Problems	MAISRC will launch 18-24 high-priority projects aimed at solving Minnesota's AIS problems using a rigorous, prioritized, and collaborative process. Results will be delivered to end-users through strategic communication and outreach.	D. Aquatic and Terrestrial Invasive Species	U of MN, MAISRC	Nicholas Phelps	$5,500,000	88			12 out of 17	**71**		Yes
17	2023-189	Addressing Erosion Along High Use River Loops	Rehabilitate and renew popular river loops of the Trail for a more resilient future to withstand high visitor use and serve Minnesotans for years to come.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Superior Hiking Trail Association	Lisa Luokkala	$379,000	84			12 out of 17	**71**		Yes
18	2023-209	Modernizing Minnesota's Wildlife (and Plant!) Action Plan	Updating the Species in Greatest Conservation Need list through surveys, standardized assessments, and including rare plants for the first time to create v.3.0 of Minnesota's Wildlife Action Plan	A. Foundational Natural Resource Data and Information	MN DNR, Ecological and Water Resources Division	Kristin Hall	$889,000	81			12 out of 17	**71**		Yes

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19	2023-211	Pollinator Habitat Creation at Minnesota Closed Landfills	Create the maximum acres of pollinator habitat at five Closed Landfill Program sites. These sites will act as pilot projects to inform future pollinator habitat reconstruction projects in the program.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Minnesota Pollution Control Agency	Eric Pederson	$1,581,000	80	Resubmit of project that was in both house/senate in 2022 but did not make final bill		12 out of 17	**71**		Yes
20	2023-218	Old Growth Forest Monitoring	We will develop a method to monitor approximately 93,000 acres of protected old growth forest in Minnesota to ensure that these rare and important forest resources are properly protected.	A. Foundational Natural Resource Data and Information	MN DNR, Ecological and Water Resources Division	Emily Peters	$441,000	76			12 out of 17	**71**	How is this different from what they are doing. How is this different from what they are doing.	Yes
21	2023-148	Acquisition of State Parks and Trails In-holdings	Acquire top priority in-holdings within legislatively established boundaries of Minnesota's 75 State Parks and State Recreation Areas and 26 State Trails from willing sellers.	G. Land Acquisition, Habitat, and Recreation	MN DNR, State Parks and Trails Division	Shelby Kok	$6,211,000	82		JP	11 out of 16	**69**		Yes
22	2023-022	Regional Assessment of Project Outcomes in the RRB	Carry out multi-resource monitoring at flood damage reduction and natural resource enhancement projects across the Red River Basin to evaluate outcomes and improve design of future projects at regional scale.	B. Water Resources	Red River Basin Flood Damage Reduction Work Group	Andrew Graham	$954,000	80			11 out of 17	**65**		Yes
23	2023-025	Root River Habitat Restoration	The Root River Restoration project is 3,300 linear feet of stream bank and instream habitat restoration located within Eagle Bluff and state owned land north of Lanesboro, Minnesota.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Eagle Bluff Environmental Learning Center	Colleen Foehrenbacher	$866,000	75	Resubmit of project that was in both house/senate in 2022 but did not make final bill		11 out of 17	**65**		Yes
24	2023-032	Wannigan Regional Park Land Acquisition	Acquire 174.55 acres for river corridor conservation and future development of Wannigan Regional Park, where the Heartland State, North Country National, and Otter Tail River Water Trails will meet.	G. Land Acquisition, Habitat, and Recreation	Frazee Community Development Corporation, Wannigan Regional Park Land Acquisition FCDC	Denise Anderson	$727,000	90	Appears as if proposers are planning to pay more than fair market value (FMV) of land. Staff's score is valid only if total payment (ENRTF + other funds) to landowner will not exceed 10% over FMV of land with LCCMR permission per ENRTF/DNR acquisition procedures. Would need to confirm this with proposers to ensure project would still be viable.		11 out of 17	**65**		Yes
25	2023-100	Planting for the Future	This project integrates specific cultural customs among American Indian groups with environmental education on native prairie plants.	H. Small Projects Sub: C. Environmental Education	Morrison Soil and Water Conservation District	Shannon Wettstein	$82,000	75			11 out of 17	**65**		Yes
26	2023-215	Removing CECs from Stormwater with Biofiltration	This project will optimize a treatment practice design for removing contaminants of emerging concern (CECs) from stormwater runoff using biofiltration media. Guidance will be developed for stormwater managers statewide.	B. Water Resources	U of MN, St. Anthony Falls Laboratory	Andy Erickson	$650,000	79	Resubmit of project that was in both house/senate in 2022 but did not make final bill		11 out of 17	**65**		Yes
27	2023-249	Maplewood State Park Trail Segment	Construction of the Maplewood State Park Segment (4.2 miles) of the 32-mile Perham to Pelican Rapids Regional Trail that will connect the City of Pelican Rapids to Maplewood State.	G. Land Acquisition, Habitat, and Recreation	Otter Tail County	Nicholas Leonard	$2,514,000	71			11 out of 17	**65**		Yes
28	2023-081	Minnesota State Trails Development	This project proposes to expand recreational opportunities on Minnesota State Trails through the rehabilitation and enhancement of existing state trails and replacement or repair of existing state trail bridges.	G. Land Acquisition, Habitat, and Recreation	MN DNR, State Parks and Trails Division	Kent Skaar	$5,925,000	71		JP	10 out of 16	**62**		Yes
29	2023-101	Completing Installment of the Minnesota Ecological Monitoring Network	The Ecological Monitoring Network will install the final 250 plots. Data are needed to understand how climate change is impacting Mnnesota and identify resilient natural lands for conservation or enhancement.	E. Air Quality, Climate Change, and Renewable Energy	MN DNR, Ecological and Water Resources Division	Erika Rowe	$1,160,000	75			10 out of 17	**59**		Yes
30	2023-167	Reducing Biophobia & Fostering Environmental Stewardship in Underserved Schools	The Raptor Center proposes to foster long-lasting environmental stewardship and literacy in Minnesota youth in underserved schools through providing engaging, multi-unit, standards-based environmental curriculum programming featuring positive interactions with raptors.	H. Small Projects Sub: C. Environmental Education	U of MN, Raptor Center	Victoria Hall	$180,000	64			10 out of 17	**59**		Yes
31	2023-177	Quantifying Environmental Benefits of Peatland Restoration in Minnesota	We will quantify the capacity of restored peatlands to store and accumulate atmospheric carbon and their capacity to prevent release of accumulated mercury into streams, rivers and lakes.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, College of Food, Agricultural and Natural Resource Sciences	John Nieber	$766,000	75			10 out of 17	**59**		Yes
32	2023-237	Didymo II – The North Shore Threat Continues	Didymo or rock snot has invaded our North Shore streams. We must prevent its further spread and adapt our management approaches to this new invader.	B. Water Resources	Science Museum of Minnesota, St. Croix Watershed Research Station	Mark Edlund	$394,000	86	The proposed activities are not on MAISRC's list of list of high priorty research needs so would not be eligible for funding from MAISRC.		10 out of 17	**59**		Yes
33	2023-238	Leveraging Innovations in Data Analytics for Project Implementation	Integrating local and statewide datasets into a 21st-century planning tool, widely called for by our communities, that forecasts the impacts of changing precipitation patterns and quantitatively compares cost-effective solutions.	B. Water Resources	Minnehaha Creek Watershed District	Brian Beck	$738,000	88	Resubmit of project that was in both house/senate in 2022 but did not make final bill		10 out of 17	**59**		Yes

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34	2023-008	Fostering Conservation by Connecting Students to the BWCA	Friends of the Boundary Water Wilderness will connect over 10,000 Minnesota youth to the Boundary Waters through state standards-aligned environmental education, experiential learning, and multi-day wilderness canoe trips.	C. Environmental Education	Friends of the Boundary Waters Wilderness	Alison Nyenhuis	$1,148,000	67			9 out of 17	**53**		Yes
35	2023-044	Assessing Restorations for Rusty-Patched and Other Bumblebee Habitat	Using two prairie restorations, we will investigate how common restoration variables affect bumblebee habitat suitability by conducting bumblebee surveys and assessing nesting and foraging habitat in restored and remnant prairies.	H. Small Projects Sub: A. Foundational Natural Resource Data and Information	Friends of the Mississippi River	Alex Roth	$75,000	50			9 out of 17	**53**		Yes
36	2023-062	Increasing Diversity in Environmental Careers	This collaborative project creates a college to workforce pathway for underrepresented students interested in pursuing Natural Resources careers by reducing barriers that inhibit successful educational attainment.	C. Environmental Education	MN DNR, Operational Services Division (OSD)	Mimi Daniel	$787,000	71			9 out of 17	**53**		Yes
37	2023-092	Statewide Forest Carbon Inventory and Change Mapping	Accurate inventories are needed to facilitate carbon market entry for forestland owners. An estimated 1,000 plot-based inventories will be collected from private forestland to expand all-lands lidar forest inventory statewide.	A. Foundational Natural Resource Data and Information	MN DNR, Forestry Division	David Wilson	$1,538,000	91			9 out of 17	**53**		Yes
38	2023-186	Maximizing Lowland Conifer Ecosystem Services: Phase 2	Continue monitoring forested peatland network for hydrology and wildlife including a new species, bog lemming. Add measures to quantify above and below ground carbon by age and forest type.	A. Foundational Natural Resource Data and Information	U of MN, College of Food, Agricultural and Natural Resource Sciences	Marcella Windmuller-Campione	$500,000	78	Resubmit of project that was in both house/senate in 2022 but did not make final bill		9 out of 17	**53**		Yes
39	2023-217	Linking Breeding and Migratory Bird Populations in Minnesota	Understand seasonal movements, population connectivity, and contaminant exposure of Minnesota's breeding and migrating birds to inform long-term conservation efforts.	H. Small Projects Sub: A. Foundational Natural Resource Data and Information	Hawk Ridge Bird Observatory	Emily Pavlovic	$199,000	56	Project manager is a master's student		9 out of 17	**53**		Yes
40	2023-219	Statewide Diversion of Furniture and Mattress Waste Pilots	Divert the growing problem of furniture disposal and implement test methods in collaboration with local governments to expand mattress and furniture recycling efforts. Reduce demand for new landfills. Create jobs.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	EMERGE Community Development	Shawn Dolan	$3,000,000	50			9 out of 17	**53**		Yes
41	2023-229	Bioblitz Urban Parks: Engaging Communities in Scientific Efforts	MPRB will work strategically with allies and volunteers to collect baseline biodiversity data for urban parks to inspire stewardship and inform habitat restoration work.	H. Small Projects Sub: C. Environmental Education	Minneapolis Park and Recreation Board	MaryLynn Pulscher	$198,000	80			9 out of 17	**53**		Yes
42	2023-247	Protecting Minnesota's Headwaters of the Mississippi/Pineland Sands	Enormous growth in irrigated agriculture in Minnesota's Mississippi Headwaters/Central Sands has occurred without assessment of water resource impacts. This project will assess aggregate irrigation water quality and quantity impacts.	B. Water Resources	Anishinaabe Agriculture Institute	Jamie Konopacky	$1,769,000	64	Capacity concern		9 out of 17	**53**		Yes
43	2023-248	Minnesota Biodiversity Atlas - Phase 3	We propose to expand the Minnesota Biodiversity Atlas, an online natural resource management tool, to include 2.5 million records by integrating expert observations and specimen records from multiple organizations	A. Foundational Natural Resource Data and Information	U of MN, Bell Museum of Natural History	George Weiblen	$801,000	79	Resubmit of project that was in both house/senate in 2022 but did not make final bill		9 out of 17	**53**		Yes
44	2023-169	Efficacy of Urban Archery Hunting to Manage Deer	Several municipalities across Minnesota conduct special deer hunts within city-limits, but the efficacy is unknown. An analysis of deer survival and habitat use will improve management practices in these regions.	A. Foundational Natural Resource Data and Information	Minnesota State Colleges and Universities, Bemidji State University	Jacob Haus	$393,000	50	Resubmit of project that was in both house/senate in 2022 but did not make final bill	RA	8 out of 16	**50**		Yes
45	2023-006	Minnesota Bee and Beneficial Species Habitat Enhancement II	This proposal seeks to enhance grassland habitats to benefit pollinators and other species on permanently protected lands. Research on enhanced sites will be conducted by the UofM.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Pheasants Forever Inc	Sabin Adams	$948,000	78			8 out of 17	**47**		Yes
46	2023-066	Removing Barriers to Carbon Market Entry	Carbon markets incentivize carbon sequestration, but significant cost-barriers exist for landowner participation. Leveraging remotely sensed data, cost-effective fieldwork, and robust modeling will enable climate-smart activities that benefit all Minnesotans.	A. Foundational Natural Resource Data and Information	U of MN, College of Food, Agricultural and Natural Resource Sciences	John Zobel	$590,000	85			8 out of 17	**47**		Yes
47	2023-074	Sinking and Suspended Microplastic Particles in Lake Superior	Microplastics suspended in and sinking within Lake Superior waters will be compared to help determine source and fate. The flux of microplastics from water to sediment will be determined.	B. Water Resources	U of MN, Duluth - Large Lakes Observatory	ELIZABETH MINOR	$440,000	67	Would be eligible for Great Lakes Protection Account that LCCMR needs to make recommendation for this year. Balance in account =$189,631.82.		8 out of 17	**47**	How does the Great Lakes account funding impact their requested funding.	Yes
48	2023-129	Brightsdale Dam Channel Restoration	Restore the channel of the North Branch Root River at the site of a former hydro power dam that failed and was removed in 2003.	B. Water Resources	Fillmore County Soil and Water Conservation District	Anne Koliha	$1,020,000	70			8 out of 17	**47**		Yes
49	2023-135	Minnesota Community Schoolyards	Minnesota Community Schoolyards will create at least 24 nature-focused habitat improvement projects at schoolyards across the state; engage students and the community in environmental stewardship; and encourage outdoor learning.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	The Trust for Public Land	Eric Weiss	$1,630,000	78			8 out of 17	**47**		Yes

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50	2023-136	Pollinator Enhancement and Mississippi River Shoreline Restoration	This restoration project will restore native prairie, support pollinator plantings, and stabilize a large section of streambank along the Mississippi River.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Department of Military Affairs	Josh Pennington	$187,000	69			8 out of 17	**47**		Yes
51	2023-142	Conservation Cooperative for Working Lands	Increasing federal conservation dollars coming to Minnesota by expanding technical expertise for working lands programs available to landowners. This project enhances our natural resources providing public benefits for every Minnesotan.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Pheasants Forever Inc	Tanner Bruse	$3,174,000	72			8 out of 17	**47**	Scale-able. Is this supplementing or supplanting? Important, but needs to be covered by fed dollars Scale-able. Is this supplementing or supplanting? Important, but needs to be covered by fed dollars	Yes
52	2023-181	Renewing Access to an Iconic North Shore Vista	We seek to renew access to one of Minnesota's most iconic vistas, the Bean and Bear Lakes section of the Superior Hiking Trail, using national trail design best practices.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Superior Hiking Trail Association	Lisa Luokkala	$197,000	67			8 out of 17	**47**	The campsite and boardwalk seem expensive and taking away from some of the other resource opportunities.	Yes
53	2023-183	Mapping the Ecology of Urban and Rural Canids	We will determine how disease prevalence, diet, habitat use, and inter-species interactions of coyote and red fox populations change from urban to rural areas along the Mississippi River corridor.	A. Foundational Natural Resource Data and Information	U of MN, College of Food, Agricultural and Natural Resource Sciences	James Forester	$624,000	61			8 out of 17	**47**		Yes
54	2023-210	Silver Bay Multimodal Trailhead Project	Development of a Multi-Modal Trailhead Center that provides ample parking, safe access to non-motorized and motorized trails, a multi-use building with lavatories/showers, picnic/playgrounds, and conveniently located.	G. Land Acquisition, Habitat, and Recreation	City of Silver Bay	Lana Fralich	$3,000,000	45			8 out of 17	**47**		Yes
55	2023-231	Redhead Mountain Bike Park	The Redhead Mountain Bike Park will add an additional 14 miles of trail and accommodations to Redhead Mountain Bike Trail System at the Minnesota Discovery Center in Chisholm, Minnesota.	G. Land Acquisition, Habitat, and Recreation	Minnesota Discovery Center	Donna Johnson	$1,977,000	75	Resubmit of project that was in both house/senate in 2022 but did not make final bill		8 out of 17	**47**		Yes
56	2023-232	Community Response Monitoring for Adaptive Management	Project goal is to monitor species response at a community level, in order to determine if management actions increase biodiversity and build ecosystem resiliency as intended.	A. Foundational Natural Resource Data and Information	The Nature Conservancy	David Ruff	$498,000	80			8 out of 17	**47**		Yes
57	2023-010	Karner Blue Butterfly Insurance Population Establishment in Minnesota	To establish a breeding insurance population of Karner Blue Butterflies for climate mitigation in a restored prairie/savanna at Crow-Hassan Park and assess the quality of habitat on butterfly populations.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Three Rivers Park District	John Moriarty	$422,000	60			7 out of 17	**41**		Yes
58	2023-043	Biochar Implementation in Habitat Restoration: Pilot	Great River Greening will pilot the Implementation of portable biochar kilns in natural resource management and restoration as a reduced carbon-emitting, biologically beneficial alternative to open pile burning when managing invasive tree and shrub species.	H. Small Projects Sub: E. Air Quality, Climate Change, and Renewable Energy	Great River Greening	Todd Rexine	$185,000	78			7 out of 17	**41**		Yes
59	2023-072	Mapping Migratory Pitstops in Minnesota	Identifying Avian Migratory Stopover Sites to provide foundational information necessary for the conservation of migratory birds.	A. Foundational Natural Resource Data and Information	Audubon Minnesota	Dale Gentry	$341,000	69			7 out of 17	**41**		Yes
60	2023-086	Enhancing Knowledge of Minnesota River Fish Ecology	Collect baseline information about lower trophic fish diets, the distribution and status of rare benthic fishes, and the movement patterns of large river fishes in the Minnesota River.	H. Small Projects Sub: A. Foundational Natural Resource Data and Information	MN DNR, Fish and Wildlife Division	Anthony Sindt	$199,000	70			7 out of 17	**41**		Yes
61	2023-120	Predicting the Future by Understanding the Past	We will predict the ranges of native aquatic species in Minnesota using recently available high quality datasets and information on past and present ranges coupled with powerful statistical techniques.	H. Small Projects Sub: A. Foundational Natural Resource Data and Information	U of MN, College of Food, Agricultural and Natural Resource Sciences	Lynn Waterhouse	$170,000	73			7 out of 17	**41**		Yes
62	2023-139	Assessing Status of Common Tern Populations in Minnesota	Common Tern populations across inland North America are significantly declining. Information on the status of breeding colonies in Minnesota is necessary to prioritize conservation and restoration actions.	H. Small Projects Sub: A. Foundational Natural Resource Data and Information	U of MN, Duluth - NRRI	Annie Bracey	$199,000	70			7 out of 17	**41**		Yes
63	2023-146	Salvaged Wildlife to Inform Environmental Health, Ecology, Education	Establish a statewide network to collect, analyze, and archive salvaged dead wildlife and build a foundation of biodiversity resources to track ecosystem-wide changes, monitor environmental health, and promote public education.	A. Foundational Natural Resource Data and Information	U of MN, Bell Museum of Natural History	Sushma Reddy	$486,000	71			7 out of 17	**41**		Yes
64	2023-152	Lichens as Low-Cost Air Quality Monitors in Minnesota	The proposed project aims to develop protocols for using lichens as indicators of air quality data across Minnesota and through time.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Biological Sciences	Natalia Mossmann Koch	$344,000	68			7 out of 17	**41**		Yes

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65	2023-212	Enhancing Habitat Connectivity within the Urban Mississippi Flyway	A pilot project that will enhance connectivity within the Mississippi Flyway by linking urban neighborhood parks to the Mississippi River through restoration and implementation of identified habitat corridors.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Minneapolis Park and Recreation Board	Adam Arvidson	$190,000	75			7 out of 17	**41**	No match and it seems like there isn't a specific site identified. This seems like something that should be funded more locally. No match and it seems like there isn't a specific site identified. This seems like something that should be funded more locally.	Yes
66	2023-240	Economic Analysis Guide for Minnesota Climate Investments	Develop an economic analysis guide of the best practices, tools, and methodologies to include climate economics, including the incorporation of costs and benefits, into Minnesota climate policy decisions	H. Small Projects Sub: E. Air Quality, Climate Change, and Renewable Energy	Minnesota Pollution Control Agency	David Bael	$54,000	70			7 out of 17	**41**		Yes
67	2023-026	Wind Wave and Boating Impacts on Inland Lakes	Field study to measure the impacts of boat propeller wash and boat wakes on lake water quality, and compare them to the impacts of wind-waves.	B. Water Resources	U of MN, St. Anthony Falls Laboratory	Jeffrey Marr	$440,000	74			6 out of 17	**35**		Yes
68	2023-080	Panoway on Wayzata Bay Shoreline Restoration Project	This project will feature an underwater wave break to create a buffer that will restore, enhance and protect Lake Minnetonka shoreline, using innovative and replicable technologies to improve the ecosystem.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	City of Wayzata	Nick Kieser	$200,000	25			6 out of 17	**35**		Yes
69	2023-091	East Park	Complete the first phase of East Park along the Sauk River in St. Joseph, including a canoe/kayak access, floating dock, paved and mowed trails, and parking/entrance enhancements.	G. Land Acquisition, Habitat, and Recreation	City of St. Joseph	Nate Keller	$700,000	70			6 out of 17	**35**		Yes
70	2023-105	Pollinator Central III: Habitat Improvement with Community Monitoring	Small phase promoting the restoration and enhancement of 29 acres of pollinator habitat on 4 new sites, with community engagement and education through public planting and pollinator monitoring events.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Great River Greening	Rebecca Tucker	$190,000	73			6 out of 17	**35**		Yes
71	2023-117	Restoring Forests and Savannas Using Silvopasture - Phase2	Demonstrate, evaluate, and increase adoption of silvopasture - the combined use of tree, forage, and grazing management - as a method to restore and manage forests and savannas across Minnesota	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Great River Greening	Brad Gordon	$674,000	69	Resubmit of project that was in both house/senate in 2022 but did not make final bill		6 out of 17	**35**		Yes
72	2023-134	Mapping Aquifer Recharge Potential	We develop a practical tool for mapping aquifer recharge potential; demonstrate it with laboratory and field tests; and use it to evaluate the recharge potential of several aquifers in Minnesota.	B. Water Resources	U of MN, St. Anthony Falls Laboratory	Peter Kang	$417,000	78			6 out of 17	**35**		Yes
73	2023-147	Grand Marais Mountain Bike Trail Rehabilitation: Phase II	Rehabilitate existing mountain bike trail to increase environmental sustainability through best trail building practices and to provide better user access through modifications allowing adaptive cycling opportunities.	H. Small Projects Sub: G. Land Acquisition, Habitat, and Recreation	Superior Cycling Association	Paul Nordlund	$200,000	62			6 out of 17	**35**	Connected to federal lands but no match listed.	Yes
74	2023-153	Northward Expansion of Ecologically-Damaging Amphibians and Reptiles	American bullfrogs and Red-eared sliders are non-native predators and competitors in Minnesota's native fish communities.This research will assess the distribution and potential for expansion of these species in Minnesota.	H. Small Projects Sub: D. Aquatic and Terrestrial Invasive Species	U of MN, College of Food, Agricultural and Natural Resource Sciences	Kenneth Kozak	$163,000	59	Species are not on MITPCC or MAISRC priority lists so project would not be eligible to receive funding through the Centers.		6 out of 17	**35**		Yes
75	2023-154	Developing Conservation Priorities for Rare and Specialist Bees	We will collect data on occupancy and range of rare pollen specialized bees and their habitat preference to determine status and conservation strategies	A. Foundational Natural Resource Data and Information	U of MN, College of Food, Agricultural and Natural Resource Sciences	Ian Lane	$668,000	68			6 out of 17	**35**		Yes
76	2023-171	Environment-Friendly Decarbonizing of Steel Production with Hydrogen Plasma	Conventional ironmaking requires massive amounts of fossil fuels and generates significant waste and CO2 emissions. Our microwave hydrogen plasma ironmaking eliminates fossil fuel use and CO2 emissions while reducing waste.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Science and Engineering	Uwe Kortshagen	$769,000	61			6 out of 17	**35**		Yes
77	2023-172	St. Louis River Re-Connect Phase II	Acquire, preserve and enhance strategic quality natural resources and expand outdoor recreational access to the St. Louis River through additions and connections to state, regional, and local parks and trails.	G. Land Acquisition, Habitat, and Recreation	City of Duluth	Cliff Knettel	$1,469,000	70	Should the sculptures be eligible expenses?		6 out of 17	**35**		Yes
78	2023-201	North Shore Private Forestry Outreach and Implementation	The North Shore Forest Collaborative (via Sugarloaf) seeks to contract foresters to perform a concerted private land forestry outreach to restore ecological health to Minnesota's North Shore forest landscape.	C. Environmental Education	Sugarloaf The North Shore Stewardship Association	Molly Thompson	$375,000	71			6 out of 17	**35**		Yes
79	2023-207	City of Biwabik Recreation	Reconstruction & renovation of amenities and multi-modal pathways to, and within, the Biwabik Recreation Area which consists of the city campground, beach, boat access, fishing pier, and walking/biking trails.	G. Land Acquisition, Habitat, and Recreation	City of Biwabik	Jeff Jacobson	$1,414,000	42			6 out of 17	**35**		Yes

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80	2023-213	Above the Falls Regional Park Acquisition and Restoration	This project would acquire industrial acreage from willing sellers along the Mississippi River within the Above the Falls Regional Park.	G. Land Acquisition, Habitat, and Recreation	Minneapolis Park and Recreation Board	Adam Arvidson	$2,000,000	76			6 out of 17	**35**		Yes
81	2023-222	Integrating Remotely Sensed Data with Traditional Forest Inventory	We will evaluate state-of-the-art lidar technology's ability to provide stand-level summary statistics of forest resource measurements and how these data can be used to estimate ecosystem services	H. Small Projects Sub: A. Foundational Natural Resource Data and Information	U of MN, Duluth - NRRI	John Du Plissis	$191,000	64			6 out of 17	**35**		Yes
82	2023-223	Teaching Students about Watersheds through Outdoor Science	Hands-on learning outdoors will focus on water quality, groundwater, aquatic life and students' role as watershed stewards. Angling and volunteer opportunities for students and families will foster a conservation ethic.	C. Environmental Education	Minnesota Trout Unlimited	John Lenczewski	$298,000	60	Resubmit of project that was in both house/senate in 2022 but did not make final bill		6 out of 17	**35**		Yes
83	2023-073	ML 2023 Contract Agreement Reimbursement	Provide contract management to ENRTF pass-through appropriation recipients for approximately 115 open grants. Ensure funds are expended in compliance with appropriation law, state statute, grants policies, and approved work plans.	I. Administration	MN DNR, Grants Unit	Katherine Sherman-Hoehn	$224,000	100	This proposal is at LCCMR's request and will automatically be advanced.		n/a	**n/a**		Yes
84	2023-001	LCCMR Administrative Budget Place Holder	LCCMR Admin Budget Place Holder	I. Administration	Legislative-Citizen Commission on Minnesota Resources	LCCMR Universal Account	TBD	100	Will automatically advance; no need to score or select		n/a	**n/a**		Yes
85	2023-002	Emerging Issues Or Buffer Place Holder	2023 Emerging Issues	I. Administration	Legislative-Citizen Commission on Minnesota Resources	LCCMR Universal Account	$0	100	Will automatically advance; no need to score or select		n/a	**n/a**		Yes
86	2023-253	2023 Transfer Placeholder	2023 Unallocated (Legislative Discretion)	I. Administration	Legislative-Citizen Commission on Minnesota Resources	LCCMR Universal Account	$0	100	Will automatically advance; no need to score or select		n/a	**n/a**		Yes
87	2023-023	Sandy Point Park	Install a modern bathroom, hook up to local rural water provider, improve and remodel current shelter house, and add additional recreational opportunities at Sandy Point Park for the public.	H. Small Projects Sub: G. Land Acquisition, Habitat, and Recreation	Jackson County, Jackson County Public Works Department- Parks & Trails Division	Jeremy Bartosh	$198,000	62			5 out of 17	**29**	Only connected to local resources with a limited extent for impacts. Great local resource commitment.	
88	2023-045	MN River Valley State Trail, Appleton/Marsh Lake	This project will complete a critical Minnesota River State Trail connection to the recently redeveloped Marsh Lake Recreation area.	G. Land Acquisition, Habitat, and Recreation	Swift County	Dawn Hegland	$3,808,000	33			5 out of 17	**29**		
89	2023-052	Sportsmen's and Women's Training and Development Learning Center	The Minnesota Forest Zone Trappers Association (MFZTA) is requesting a $7,500,000 grant to acquire additional property and develop a Sportsmen's & Sportswomen's Outdoor Training and Development Center.	G. Land Acquisition, Habitat, and Recreation	Minnesota Forest Zone Trappers Association	Ray Sogard	$7,500,000	19	Concern: What is evidence of need or capacity to operate a center of this magnitude. What happens to the $6m building and land if funds are not secured for future operations & programming? Without additional policy, there are currently no requirements for these investments to be available or open to the public. Answers to acquisition/restorations questions do not meet minimum requirements. Need letter from Hibbing as fiscal agent.		5 out of 17	**29**		
90	2023-087	Integrating Environmental Education into Classroom Curriculum	Our project integrates a research-based environmental science curriculum into classrooms at Heritage Environmental STEM Magnet School in West Saint Paul to delivery world-class learning for ~750 students annually.	H. Small Projects Sub: C. Environmental Education	U of MN, College of Biological Sciences	Seth Thompson	$64,000	61			5 out of 17	**29**		
91	2023-090	Changing Distribution of Flying Squirrel Species in Minnesota	We will determine the current distribution and habitat associations of northern and southern flying squirrels to fill key knowledge gaps in flying squirrel status in Minnesota.	H. Small Projects Sub: A. Foundational Natural Resource Data and Information	U of MN, Duluth - NRRI	Michael Joyce	$186,000	54			5 out of 17	**29**		
92	2023-103	Wildfire Impacts on Minnesota's Pristine Lakes	Wildfires are increasing in Minnesota and threaten our iconic wilderness lakes. We will develop decision support tools to protect our lakes and the vital ecosystem services they provide.	H. Small Projects Sub: B. Water Resources	U of MN, Duluth - NRRI	Christopher Filstrup	$197,000	68			5 out of 17	**29**		
93	2023-106	Providing Critical Water Temperature Data for Minnesota Lakes	Create an automated system to acquire, process, and deliver new satellite-derived lake temperatures for all Minnesota lakes ~biweekly and make it available in the Minnesota LakeBrowser in near-real-time.	A. Foundational Natural Resource Data and Information	U of MN, College of Food, Agricultural and Natural Resource Sciences	Leif Olmanson	$297,000	66			5 out of 17	**29**	Discussion on whether this is just surface water temperatures and how useful in this in understanding the entire water column	

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94	2023-107	Ecotoxicological Impacts of Quinone Outside Inhibitor (QoI) Fungicides	This work will provide a more comprehensive assessment of the ecological hazards associated with quinone outside inhibitor (QoI) fungicides and their major environmental transformation products	B. Water Resources	University of St. Thomas	Kristine Wammer	$282,000	67			5 out of 17	**29**		
95	2023-110	Scandia Gateway Trail to William O'Brien State Park	Complete construction-ready Gateway State Trail segment between Scandia Village Center and William O'Brien State Park with highway tunnel and trailhead parking lot on ROW already acquired by DNR.	G. Land Acquisition, Habitat, and Recreation	City of Scandia	Kenneth Cammilleri	$3,070,000	57			5 out of 17	**29**		
96	2023-137	ALASD's Chloride Source Reduction Pilot Program	The project reduces salt pollution in three impaired lakes in the Alexandria area via an innovative source reduction strategy that protects water quality and could serve as a replicable model.	B. Water Resources	Alexandria Lake Area Sanitary District (ALASD)	Scott Gilbertson	$765,000	49			5 out of 17	**29**	Very good and Innovative program	
97	2023-151	Carbon-Free Green Ammonia to Power Minnesota Farms	This proposal aims to demonstrate a heavy-duty agricultural equipment engine fueled solely by green ammonia, employing a novel and inexpensive plasma-based ignition technology that minimizes nitrous oxide production.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Science and Engineering	Sayan Biswas	$250,000	67			5 out of 17	**29**		
98	2023-175	Water Treatment Technology for a PFAS-Free Minnesota	The project aims to create a disruptive technology that can efficiently treat a broad spectrum of PFAS contaminated water, a growing health and environmental concern in Minnesota.	H. Small Projects Sub: B. Water Resources	U of MN, College of Science and Engineering	Peter Bruggeman	$199,000	63	Is proposer aware of similar project 2022-265 funded in ML 2022?		5 out of 17	**29**	How does this compare / relate to the 2022 project.	
99	2023-179	Elm Creek Restoration Biological Monitoring	Habitat restoration been completed in five phases on Elm Creek. Our project will evaluate fish and invertebrate populations to determine the success and effectiveness of these restoration efforts.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	City of Champlin	Heather Nelson	$106,000	52			5 out of 17	**29**		
100	2023-182	Cover Crops: Rooting for Sustainable Cropping in Minnesota	Synthesis of existing and new research coupled to modeling, will be used to develop decision-making information on cover crop carbon sequestration, nitrogen and water use, and environmental benefits in MN.	A. Foundational Natural Resource Data and Information	U of MN, College of Food, Agricultural and Natural Resource Sciences	Axel Garcia y Garcia	$365,000	58			5 out of 17	**29**		
101	2023-190	Managing Lakes for Our Future	Minnesota Lakes are a major source of greenhouse gases, but the amounts of these gases coming from them is unknown. We will fill this gap and determine the causes.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Biological Sciences	James Cotner	$545,000	68			5 out of 17	**29**		
102	2023-204	City of Moose Lake - Campground Improvements	Expansion of Moose Lake Campground adding 21 campsites to accommodate recreational vehicles and tent campers. New campground office/garage will be constructed and both existing bathhouses will be upgraded.	G. Land Acquisition, Habitat, and Recreation	City of Moose Lake	Ellissa Owens	$3,563,000	20			5 out of 17	**29**		
103	2023-227	Ranier Safe Harbor/Transient Dock Phase 3	The City of Ranier will be constructing a safe harbor/transient dock on Rainey Lake to accommodate watercraft of all sizes.	G. Land Acquisition, Habitat, and Recreation	City of Ranier	Sherril Gautreaux	$1,238,000	39			5 out of 17	**29**		
104	2023-234	Modernizing Minnesota's Materials and Waste Data for Climate	The MPCA will modernize statewide measurement through waste composition sorts, economic data, and life cycle coefficients to develop an environmental impact calculator for products/materials consumed and wasted in Minnesota.	E. Air Quality, Climate Change, and Renewable Energy	Minnesota Pollution Control Agency	Colleen Hetzel	$1,732,000	72			5 out of 17	**29**		
105	2023-241	Two Harbors Lake Superior Waterfront Planning	The City of Two Harbors is requesting a $142,000 grant to complete a site evaluation and a master plan for the Two Harbors Waterfront.	H. Small Projects Sub: G. Land Acquisition, Habitat, and Recreation	City of Two Harbors	Miranda Pietila	$142,000	58	For natural resources & outdoor recreation planning only		5 out of 17	**29**	Good match, only local impact	
106	2023-246	Partnering for Pollinator Protection	The Monarch Joint Venture will increase the efficiency and scale of pollinator conservation across the state by fostering an organized network of stakeholders in a multi-sector conservation consortium.	H. Small Projects Sub: C. Environmental Education	Monarch Joint Venture	Wendy Caldwell	$125,000	70	Resubmit of project that was in both house/senate in 2022 but did not make final bill		5 out of 17	**29**		
107	2023-156	Multi-Level Monitoring and Control Toward Smart Pasture Management	This project will develop new pasture management strategies using multi-level robotic monitoring and precision agricultural techniques to remove weeds in pastures and determine optimal time and location for grazing rotation.	A. Foundational Natural Resource Data and Information	U of MN, College of Food, Agricultural and Natural Resource Sciences	Ce Yang	$1,027,000	39	Connection to constitutional purpose of funds is unclear	MR	4 out of 16	**25**		
108	2023-003	Keeping American Ginseng Around for Future Generations	American ginseng, a rare native plant prized and harvested, is in danger of disappearing across its range, including Minnesota. We need to assess its current status, monitor, and bank seed.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, Landscape Arboretum	David Remucal	$159,000	62			4 out of 17	**24**		
109	2023-005	Wildfire Resilience and Carbon Reductions Through Forest Management	This work supports greenhouse gas emission (GHG) reductions by promoting healthy and wildfire-resilient forests in Minnesota through improved management and removal of low-value and small-diameter balsam fir ladder fuels.	H. Small Projects Sub: E. Air Quality, Climate Change, and Renewable Energy	U of MN, Duluth - NRRI	Matthew Aro	$120,000	69			4 out of 17	**24**		
110	2023-068	Source Tracking of Bacterial Contamination in Minnesota Waters	This project will identify the sources of fecal contamination in Minnesota's watersheds to improve surface water quality	B. Water Resources	U of MN, College of Biological Sciences	Satoshi Ishii	$488,000	70			4 out of 17	**24**		

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111	2023-071	Transforming Equity in Outdoor Spaces	Our goals are to engage 100,870 underserved youth and families statewide in environmental earning for conservation and preservation of Minnesota wilderness through immersive and interactive experiences.	C. Environmental Education	YMCA of the North	Beth Becker	$1,491,000	40			4 out of 17	**24**		
112	2023-108	From Science to Stewardship for Students	From Science to Stewardship equips 500 6th-12th grade students with the knowledge to become the next generation of environmental stewards through water quality monitoring and student-led stewardship projects.	H. Small Projects Sub: C. Environmental Education	Wild Rivers Conservancy	Monica Zachay	$188,000	65			4 out of 17	**24**		
113	2023-122	Biological Methods for Nitrogen Removal from Contaminated Waters	Our project will construct demonstration scale bioreactors using native microbes to remove nitrates accumulating in rural water systems.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, College of Food, Agricultural and Natural Resource Sciences	Brett Barney	$269,000	61			4 out of 17	**24**		
114	2023-127	35th Street North Trail Connection	Construction of a 10-foot wide, paved, multi-use trail along 35th Street North between existing trails at Blackberry Circle and 12th Avenue North. Trail connection length would be 3,600 feet.	G. Land Acquisition, Habitat, and Recreation	City of Sartell	Anna Gruber	$840,000	28			4 out of 17	**24**		
115	2023-132	Minimizing Wildlife Collisions with Wind Turbines Using LiDAR	Design improved deterrent technologies to minimize wildlife fatalities at wind facilities by applying a novel sensing technique – LiDAR, enabling a better understanding of bat/bird behavior near wind turbines.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, College of Science and Engineering	Sayan Biswas	$500,000	67			4 out of 17	**24**		
116	2023-138	Novel Nutrient Recovery Process from Wastewater Treatment Plants	We request funding to extend an existing grant project, phosphorus recovery and anaerobic digestion at wastewater treatment plants, and include recovery of other nutrients as well as reduce sludge odor.	B. Water Resources	U of MN, College of Food, Agricultural and Natural Resource Sciences	Bo Hu	$482,000	70			4 out of 17	**24**		
117	2023-141	Hull Rust Mine View Park	The Hull Rust Mine View located within Hibbing, MN City limits, is an overlook park residing on top of a stockpile overlooking the massive Hull Rust Mine.	G. Land Acquisition, Habitat, and Recreation	City of Hibbing	Nick Arola	$1,416,000	45	Connection to constitutional purpose of funds is unclear.		4 out of 17	**24**		
118	2023-164	Restoring Wildlife Habitat with Perennial Grain Agriculture	Compare the wildlife benefits of Kernza® perennial grain to traditional annual crops and natural perennial cover, and create new modules for outreach and education focused on agriculture-wildlife dynamics.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, College of Food, Agricultural and Natural Resource Sciences	John Berini	$575,000	64			4 out of 17	**24**		
119	2023-165	Predicting and Preventing Microplastic Pollution in Minnesota Waters	We will study and model the generation of nano/microplastic from photoweathered bulk plastic of different types and offer strategies preventing fragmentation, enabling collection, and reducing plastic pollution in Minnesota's waterways	B. Water Resources	U of MN, St. Anthony Falls Laboratory	Boya Xiong	$497,000	67			4 out of 17	**24**		
120	2023-216	West Central Young Citizen Scientists Project	West Central Initiative seeks to engage families in exploring, understanding, and protecting the region's ecology through regionally-based activities at home, through child care, and in partnership with existing enrichment centers.	H. Small Projects Sub: C. Environmental Education	West Central Initiative	Jill Amundson	$187,000	53			4 out of 17	**24**		
121	2023-228	Vertical Axis Wind Turbine for Greater Minnesota	Using origami design methods and modern experimental fluid dynamics, we will design a high efficiency vertical axis wind turbine for power generation in urban, suburban, exurban and rural Minnesota	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Science and Engineering	Richard James	$720,000	63			4 out of 17	**24**		
122	2023-009	Bluebird Creek Trail	Improvement and expansion of walking/biking trail to create connectivity, increase public access to conservation areas, and increase recreational opportunities in our community.	G. Land Acquisition, Habitat, and Recreation	City of Ghent	Dawn Vlaminck	$10,906,000	28	Capacity concern. Readiness/don't have site control. Cost/benefit?		3 out of 17	**18**		
123	2023-012	The Missing Link: Fairview Township Trail Part 2	To complete construction of northern 3.7-mile "missing link" segment of Fairview Township's portion of Gull Lake Trail. (Part 2)	G. Land Acquisition, Habitat, and Recreation	Fairview Township	Marla Yoho	$1,443,000	70			3 out of 17	**18**		
124	2023-020	Outdoor Classroom	Saint John's Preparatory School seeks funding to build an outdoor classroom to connect nature and learning in an immersive environment for students in grades 6-12 and the surrounding community.	C. Environmental Education	Order of Saint Benedict, Saint John's Preparatory School	Sarah Pasela	$210,000	35			3 out of 17	**18**		
125	2023-024	Littlefork Public RV Campground	This project consists of the design and construction of a new campground with necessary amenities in the City of Littlefork.	G. Land Acquisition, Habitat, and Recreation	City of Littlefork	Sonja Pelland	$4,500,000	42	Capacity concern		3 out of 17	**18**		
126	2023-029	Nature's Benefits to People in Minnesota	We will develop a decision tool for stakeholders and resource managers to assess tradeoffs among ecosystem service benefits that result from different land use policy and management options.	A. Foundational Natural Resource Data and Information	U of MN, Duluth - NRRI	Saleh Mamun	$624,000	73			3 out of 17	**18**		

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127	2023-034	Cool It! Reducing Refrigerant Emissions in Retail Refrigeration	Expand technical and financial assistance to reduce high global warming potential (GWP) refrigerant emissions at small retailers. Promote adoption of low-GWP refrigerants and educate on system best management practices (BMPs).	E. Air Quality, Climate Change, and Renewable Energy	Minnesota Pollution Control Agency	Jennifer Theodore	$471,000	62			3 out of 17	**18**		
128	2023-065	Quantifying and Creating Fire Resilience in Northern Minnesota	Fire is a natural ecosystem process, but communities are threatened by wildfire. This project increases our understanding of fire in northern Minnesota and effective treatments to protect lives and property.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, College of Food, Agricultural and Natural Resource Sciences	Marcella Windmuller-Campione	$174,000	70			3 out of 17	**18**		
129	2023-076	Converting Post-Combustion CO2 to Green Butanol Fuel	To mitigate greenhouse gas (GHG) emissions in Minnesota, we propose to convert post-combustion CO2 to green butanol fuel via a novel CuP2/3D graphene catalyst	E. Air Quality, Climate Change, and Renewable Energy	U of MN, Duluth	Sam Toan	$421,000	65			3 out of 17	**18**		
130	2023-082	Turn Down the Mercury: Outreach and Capture Campaign	MPCA proposes an innovative mercury outreach, incentive, and collection campaign to prevent mercury releases, eliminate mercury, and meet statewide water quality goals so that all fish are safe to eat.	B. Water Resources	Minnesota Pollution Control Agency	John Gilkeson	$1,223,000	62			3 out of 17	**18**		
131	2023-089	Voyageurs Wildlife Atlas	We will create the Voyageurs Wildlife Atlas to summarize nearly a half-century history of wildlife research and monitoring in Voyageurs National Park in accessible digital and hardcopy formats.	H. Small Projects Sub: A. Foundational Natural Resource Data and Information	Voyageurs Conservancy	Christina Hausman Rhode	$195,000	67			3 out of 17	**18**		
132	2023-095	Preventing AIS Spread Through Hay Creek Watershed	The Buffalo-Red River Watershed District will contain AIS from spreading using civic engagement and lake outlet modifications that prevent the spread of zebra mussels downstream of Turtle and Long Lakes.	D. Aquatic and Terrestrial Invasive Species	Buffalo-Red River Watershed District	Kristine Altrichter	$1,987,000	54	Not research, therefore not eligible for MAISRC funding.		3 out of 17	**18**		
133	2023-099	Using Local Forestry By-Products to Remediate Aquatic Sediments	Developing cost effective, locally sourced biochar from Minnesota forestry by-products to remediate contaminated aquatic sediment in the St. Louis River estuary.	B. Water Resources	Minnesota Pollution Control Agency	Dan Breneman	$271,000	65			3 out of 17	**18**		
134	2023-102	Zumbro River Biological Monitoring Pre/Post Habitat Improvement	This project will evaluate benefits and effectiveness of current restoration efforts on the Zumbro River in addition to future restoration efforts at confluences of cold water and warm water streams.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Wabasha County Soil and Water Conservation District	Terri Peters	$154,000	47			3 out of 17	**18**		
135	2023-111	Accelerating Biogas Production in Cold Climates	This project will demonstrate that energy-rich biogas production from wastewater at cold temperatures could be possible using small solar-powered devices that directly aid microbial growth	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Biological Sciences	Daniel Bond	$399,000	49			3 out of 17	**18**		
136	2023-116	Complete Municipal Solid Waste Valorization Towards Carbon Neutrality	The proposed technology converts municipal solid waste into aromatics, green hydrogen, and biochar via a catalytic microwave-assisted pyrolysis process coupled with a porous calcium oxide based chemical looping process.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Food, Agricultural and Natural Resource Sciences	Roger Ruan	$499,000	55			3 out of 17	**18**		
137	2023-124	Sensors for Monitoring PFAS and DBP in Water	This project is to develop an electrochemical sensor for monitoring water pollutants including PFAS and DBP in Minnesota, which is small, simple, cheap, efficient, and accurate.	H. Small Projects Sub: B. Water Resources	U of MN, College of Science and Engineering	Tianhong Cui	$200,000	63			3 out of 17	**18**		
138	2023-133	Lino Lakes Water Stewardship Project-Phase 1	The City of Lino Lakes is proposing to implement a system that will empower users and the City to proactively manage groundwater use; addressing concerns surrounding groundwater conservation.	H. Small Projects Sub: B. Water Resources	City of Lino Lakes	Tony Havranek	$200,000	70			3 out of 17	**18**		
139	2023-157	Pierz Gravel Pit Restoration - Park Development	Purchase land adjacent to city owned park and campground for the purpose of restoration and expansion. Create a master park plan to enhance the regional park, trail, and campground.	H. Small Projects Sub: G. Land Acquisition, Habitat, and Recreation	City of Pierz	Bob Otremba	$200,000	55			3 out of 17	**18**	Doesn't seem connect to state amenity.	
140	2023-162	Intelliget Drainage Systems Embedded with Miniature Nutrient Sensors	We propose to develop an intelligent drainage system with embedded miniature sensors for precise monitoring and managing agricultural drainage water to reduce nitrogen and phosphorus pollution of surface waters.	B. Water Resources	U of MN, Southwest Research and Outreach Center	Jeffrey Strock	$951,000	60			3 out of 17	**18**		
141	2023-188	Environmental Learning by Bicycle for Ages 8-80	This program will teach 4,000 children and adults about natural resources while also teaching them to safely explore trails, parks, wetlands, lakes, and rivers and their communities by bicycle.	H. Small Projects Sub: C. Environmental Education	Bicycle Alliance of Minnesota	Dorian Grilley	$197,000	48			3 out of 17	**18**	This should be across all of MN.	
142	2023-191	Understanding Plastic Pollution Beyond Microplastic in Minnesota Waters	We will study how ubiquitous microplastic form potentially toxic chemicals during wastewater treatment or in Minnesota's waterways. The study will inform us to prevent toxic compounds from generating from microplastics.	B. Water Resources	U of MN, College of Science and Engineering	Boya Xiong	$424,000	65			3 out of 17	**18**		

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143	2023-194	Making Prescribed-Fire Safer and Wildfires Easier to Predict	To make wildfires easier to predict and prescribed-fires safer to conduct, we will develop a modeling tool that learns from drone-measured in-situ data, providing fast, accurate predictions of fire spread.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, St. Anthony Falls Laboratory	Lian Shen	$489,000	70			3 out of 17	**18**		
144	2023-208	Pollinator Habitat, Investments, and Community Science in Minnesota	We will support Minnesota pollinator conservation by working with the Conservation Corps to evaluate habitat, share research findings, engage the public in community science, and develop Minnesota-centric education resources.	A. Foundational Natural Resource Data and Information	Monarch Joint Venture	Wendy Caldwell	$295,000	49			3 out of 17	**18**		
145	2023-235	Wildfire Air Quality Mapping Using Real-Time Drone-Based Diagnostics	Our aim is to develop a novel drone-based tool for autonomously measuring wildfire smoke aerosols, tracing them from the emission source, with the goal of improving air quality management capabilities.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Science and Engineering	Jiarong Hong	$304,000	65			3 out of 17	**18**		
146	2023-239	Otter and Campbell Lake Restoration Project	The Otter and Campbell Lakes Restoration Project will restore and improve habitat within the lakes and provide additional public access and opportunities for lake recreation activities.	G. Land Acquisition, Habitat, and Recreation	City of Hutchinson	John Paulson	$5,050,000	60			3 out of 17	**18**		
147	2023-011	Facilitating Community Conservation Via Urban Agriculture	Scenarios of current and possible urban agriculture help connect conservation programs with community agricultural sites. Outreach and information tools enable growers' and landholders' conservation investments, benefiting ecosystem health.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Twin Cities Community Agricultural Land Trust	Kara Komoto	$199,000	61			2 out of 17	**12**		
148	2023-037	East Side River District	The East Side River District project will reconnect Saint Paul to the river, restoring compromised ecosystems and biodiversity while protecting water quality and linking underserved communities to a long-neglected area.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Great River Passage Conservancy	Mary deLaittre	$2,300,000	60	Capacity concern		2 out of 17	**12**		
149	2023-042	Dry State Biofiltration to Cleanup Animal Farming Emissions	This work develops novel bioactive filters which can be managed as regular air filters, but can absorb and digest airborne VOCs to fight in-situ air pollution generated in animal farming.	H. Small Projects Sub: E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Food, Agricultural and Natural Resource Sciences	Ping Wang	$200,000	49			2 out of 17	**12**		
150	2023-083	Maintaining Connectivity at Road-Stream Crossings: Floodplains and Fish	Road-stream crossings affect roadway safety, fish movement and access to habitat, and water quality. We will investigate the benefits and design of culverts for connectivity, fish passage, and infrastructure resiliency.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, St. Anthony Falls Laboratory	Jessica Kozarek	$199,000	57			2 out of 17	**12**		
151	2023-104	Understanding Native "Rough Fish" in the Bowfishing Era	Quantify age, size and reproductive status of four fishes, classified as "rough fish" with minimal or no harvest limits in Minnesota, which now experience increasing, significant exploitation by recreational bowfishing.	A. Foundational Natural Resource Data and Information	U of MN, Duluth	Mark Clark	$382,000	64			2 out of 17	**12**		
152	2023-126	Establishing the Center for Renewable Energy Storage Technology	The focus of this project is to establish the University of Minnesota Center for Renewable Energy Storage Technology in Morris, Minnesota (CREST) and to hire its first coordinator and interns.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, Morris	Bryan Herrmann	$472,000	46		MR	2 out of 16	**12**		
153	2023-150	Production and Utilization of Fuels from Landfill Waste	This proposal aims to demonstrate a) production of low-carbon fuels from single-use plastics and organic wastes, and b) utilization of waste-derived fuels sustainably and efficiently to power engines.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Science and Engineering	Sayan Biswas	$205,000	61			2 out of 17	**12**		
154	2023-196	Produce Green Nitrogen Fertilizer from Air and Water	Locally produced high-concentration nitrogen fertilizers from renewable and extremely low cost natural resources.	B. Water Resources	U of MN, College of Food, Agricultural and Natural Resource Sciences	Roger Ruan	$499,000	68			2 out of 17	**12**		
155	2023-198	Science Based Soil Health Examination and Execution	Examine the benefits of soil health implementation to both operators and natural resources, and support practical implementation approaches to encourage and elevate success.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Washington Conservation District	Jennifer Hahn	$199,000	52			2 out of 17	**12**	Not clear what this would add. Obstacles and benefits are well understood, action is needed more than information.	
156	2023-199	Innovative Utilization of Waste CO2	Ammonia-based CO2 capture and utilization for valuable bioproducts production by ammonia-tolerant microalgae integrated with two-stage cultivation and pH-stat feeding strategy	H. Small Projects Sub: E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Food, Agricultural and Natural Resource Sciences	Roger Ruan	$200,000	60			2 out of 17	**12**		
157	2023-205	Norpine Trail Association - Thomas Dambo	To protect the natural resource of the North Shore of MN and beyond, and expose more people to the sport Cross Country skiing through the Arts and Cultural Heritage.	G. Land Acquisition, Habitat, and Recreation	Norpine Trail Association, Cook County Trail system	Patrick Kindler	$325,000	26	Check capacity		2 out of 17	**12**		

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158	2023-236	Understanding and Improving Minnesota's Future Lake Water Quality	We will characterize how warming lakes across Minnesota might intensify or alter harmful algal blooms and share results and management strategies with the public using innovative tools and engagement strategies.	B. Water Resources	U of MN, College of Food, Agricultural and Natural Resource Sciences	Heidi Roop	$492,000	53			2 out of 17	**12**		
159	2023-048	Creating Carbon Sequestration Markets for Minnesota Wood Products	The biochar industry is poised to bring carbon sequestration and forest health to Minnesota but it will require large-scale deployment demonstrations in order to become a reality.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, Duluth - NRRI	Brian Barry	$408,000	61			1 out of 17	**6**		
160	2023-079	Groundwater Pollution of Surface Waters: Chloride and Phosphate	We propose identifying two hot spots of groundwater to surface water pollution: chloride which is a long term source increasing impairment and phosphate pollution from groundwater is a substantial unknown.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, College of Science and Engineering	John Gulliver	$602,000	48			1 out of 17	**6**		
161	2023-093	Lake Biodiversity Conservation: Connecting Data to Action	Supporting lake and shoreline conservation through data collection and targeted outreach to lake and shoreline stakeholders	A. Foundational Natural Resource Data and Information	MN DNR, Ecological and Water Resources Division	Holly Bernardo	$394,000	70			1 out of 17	**6**		
162	2023-121	Innovative High Temperature Anaerobic Digestion of Organic Wastes	Evaluate the effectiveness of high temperature acid hydrolysis as pretreatment for efficient anaerobic digestion of organic wastes and downstream acidophilic microalgae cultivation.	H. Small Projects Sub: B. Water Resources	U of MN, College of Food, Agricultural and Natural Resource Sciences	Roger Ruan	$200,000	50			1 out of 17	**6**		
163	2023-123	Small Cheap Portable COVID-19 Monitoring Device in Wastewater	This project is to develop a low-cost device for continuous monitoring of COVID-19 in wastewater, providing a comprehensive snapshot of community transmission to form an outbreak early warning system.	H. Small Projects Sub: B. Water Resources	U of MN, College of Science and Engineering	Tianhong Cui	$200,000	45			1 out of 17	**6**		
164	2023-130	Capturing Carbon Dioxide as Simple Sugars	Our project seeks to incentivize the capture of carbon dioxide from industrial or atmospheric sources by converting it into simple sugars that will be transformed into a new crop.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Food, Agricultural and Natural Resource Sciences	Brett Barney	$240,000	36			1 out of 17	**6**		
165	2023-193	The Distributed Energy Resource Innovation Initiative	A research-informed collaborative technology accelerator where iterative piloting, researching, and learning feeds into the decarbonization, electrification, and distributed energy goals of Great River Energy's 28 member utilities.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, Humphrey School of Public Affairs	Gabriel Chan	$408,000	53			1 out of 17	**6**		
166	2023-197	Remove Chemical and Biological Contaminants from Minnesota Soils	Develop and examine the feasibility of using a continuous low-cost microwave-assisted treatment system for destruction of organic contaminants in Minnesota soils.	H. Small Projects Sub: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, College of Food, Agricultural and Natural Resource Sciences	Roger Ruan	$200,000	58			1 out of 17	**6**	It would be nice to have more to go on for these ideas. As it stands, other projects seem a better fit for limited resources. Would like match and more firm effectiveness and targeting.	
167	2023-202	Virus, Bacteria and Odorous Air Pollutant Control	Development and demonstration of the feasibility of using low temperature microwave and nonthermal plasma (NTP) with catalysis enhancement for effective air sanitation for livestock and poultry facilities.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Food, Agricultural and Natural Resource Sciences	Roger Ruan	$499,000	55			1 out of 17	**6**		
168	2023-225	Adult Learn to Ride	Adult Learn to Ride will teach 1,500 adults to safely bicycle in their Greater Minnesota communities and will include learning about the environmental, health, and community benefits of bicycling.	H. Small Projects Sub: C. Environmental Education	Bicycle Alliance of Minnesota	Dorian Grilley	$199,000	55			1 out of 17	**6**		
169	2023-233	Reducing Beach Closures through Improved Microbiological Monitoring	The goal of this research will be to develop better, faster, and more reliable methods for determining whether Minnesota's lakes are unsafe for swimming, hopefully limiting unnecessary beach closures.	B. Water Resources	U of MN, College of Science and Engineering	Raymond Hozalski	$726,000	56			1 out of 17	**6**		
170	2023-244	Energy and Water Reduction in Greenhouse Production Systems	The team will develop a comprehensive model for MN-based greenhouses that uses photovoltaics for more efficient energy and water utilization.	E. Air Quality, Climate Change, and Renewable Energy	U of MN, College of Science and Engineering	Vivian Ferry	$363,000	52			1 out of 17	**6**		
171	2023-027	Landowner Networking for More Resilient Woodlands in Minnesota	We will increase management, resilience, and carbon storage on private woodlands by fostering peer exchange about land management practices and informing landowners about new payment systems for conservation services.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, College of Food, Agricultural and Natural Resource Sciences	Dean Current	$610,000	55			0 out of 17	**0**		
172	2023-030	Identification and Analysis of Contaminants in Fire Wastewater	The waste-water from extinguishing structural fires will be analyzed to identify and characterize chemicals present and better understand potential toxicity to humans and water systems.	B. Water Resources	U of MN, College of Food, Agricultural and Natural Resource Sciences	Grace Wilson	$345,000	44			0 out of 17	**0**		

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173	2023-040	IWLA Green Crew Education, Service and Leadership Program	Expand the Green Crew's existing youth environmental education, service, and leadership program to reach and serve traditionally underrepresented communities by partnering and supplementing existing youth programs.	H. Small Projects Sub: C. Environmental Education	Izaak Walton League of America, Minnesota Division	Joseph Barisonzi	$200,000	48			0 out of 17	**0**		
174	2023-078	Reducing Woodsmoke Emissions Exposure From Recreational Fires	This project will identify, test, and implement a public engagement effort with a high likelihood of reducing health impacts from recreational fire smoke while enabling ongoing enjoyment of backyard recreation.	H. Small Projects Sub: E. Air Quality, Climate Change, and Renewable Energy	American Lung Association in Minnesota	Jon Hunter	$197,000	35			0 out of 17	**0**		
175	2023-159	Water Protection Geomatic and Geospatial Intensive Data Capture	The goal is to establish a data foundation, with intensive data collection and educate the new and current workforce with modern tools that preserve, conserve and to protect Minnesota waters .	A. Foundational Natural Resource Data and Information	Minnesota Geospatial & Geomatics Institute	Bradford Folta	$2,478,000	3	Private company. Capacity concern.		0 out of 17	**0**		
176	2023-160	Rural-Urban Partnerships to Advance Conservation Farming With Technology	We seek to broaden participation in conservation agriculture statewide by applying high-tech assessment tools, building farmer-scientist-student collaborations across rural and urban communities, and expanding farmer-farmer knowledge exchange networks.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	University of St. Thomas	Eric Chapman	$530,000	46			0 out of 17	**0**		
177	2023-173	Survey, Protection and Application of Rare Minnesota Fungi	Survey, characterization and assessment of rare and endangered fungal species found in old growth forests and protected habitats in Scientific and Natural Areas (SNAs) throughout Minnesota	A. Foundational Natural Resource Data and Information	U of MN, College of Pharmacy	Christine Salomon	$647,000	63	Connection of Activity 2 to constitutional purpose of funds is unclear. Remainder of proposal has strong connection.		0 out of 17	**0**		
178	2023-174	Innovative Sensing and Modeling for Improving Water Quality	Integrated soil nutrient management for improving Minnesotan water quality through a novel sensing and hybrid model data assimilation system	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	U of MN, College of Food, Agricultural and Natural Resource Sciences	Zhenong Jin	$841,000	60			0 out of 17	**0**		
179	2023-214	Mississippi River Learning Center	The Mississippi River Learning Center will be a place of restoration, reconnecting Saint Paul to the river and protecting and enhancing this vital area's landscape, water, and habitat.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Great River Passage Conservancy	Mary deLaittre	$1,818,000	39	Capacity concern		0 out of 17	**0**		
180	2023-251	Training the Trainers: Expanding Regenerative Agriculture Mentor Networks	We will expand regenerative agriculture education capacity by recruiting and training farmer and agricultural landlord mentors passionate about conservation using a series of strategically designed workshops and conferences.	F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat	Izaak Walton League of America, Minnesota Division	Dave Zentner	$383,000	58			0 out of 17	**0**		

Total **$163,804,000**

* (score = # member selected divided by # members w/o COI multiplied by 100 and rounded to the nearest whole number)

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