Selected to Present	ENRTF ID #	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
				on (32 Proposals / Subtotal \$19,712,7		Organization	y nequesteu
Х	001-A	Setterholm	Dale	MGS Geologic Atlases to Support Natural Resource Management [Continuation]	Accelerates a long-term effort to provide Part A County Geologic Atlases statewide. These atlases provide maps and data essential to wise use and protection of water resources.	U of MN - MN Geological Survey	\$2,040,000
Х	002-A	Converse	Carmen	Minnesota Biological Survey [Continuation]	Minnesota Biological Survey provides a foundation for conserving biodiversity by systematically collecting, interpreting, monitoring, and delivering data on plant and animal distribution and ecology, native plant communities and functional landscapes.	MN DNR	\$3,500,000
Х	003-A	Kloiber	Steve	Completing the National Wetland Inventory Update for Minnesota [Continuation]	This project will update and field verify wetland inventory maps for all 34 remaining counties in central and northwestern Minnesota (39,800 mi2), thereby completing the wetland inventory update for Minnesota.	MN DNR	\$2,772,610
Х	004-A	Baker	Richard	Endangered Bats, White-Nose Syndrome, and Forest Habitat	The DNR, University of Minnesota, and Forest Service will survey and radio-track endangered bats to define poorly understood summer forest breeding habitat and mitigate disease impacts.	MN DNR	\$1,269,546
Х	005-A	Barker	Keith	Integrating Minnesotas Biodiversity Data: a Comprehensive, Dynamic Atlas	The Minnesota Biodiversity Atlas, integrating over 600,000 biodiversity records and 300,000 specimen photographs, will serve critical agency needs ranging from guiding field surveys to enabling conservation planning.	U of MN - Bell Museum of Natural History	\$339,750
Х	006-A	Falteisek	Jan	County Geologic Atlas Continuation for Water Resource Sustainability [Continuation]	Continue to produce County Geologic Atlases, Part B, for groundwater protection, wise use, and long-term resource sustainability.	MN DNR	\$2,542,389
Х	007-A	Henderson	Carrol	Contaminants in Minnesotas Loons and Pelicans-Phase 3	This project will allow for continuing analysis of blood, feather, and tissue samples of loons for contaminants and for recapture of loons outfitted with geolocators to allow downloading of data.	MN DNR	\$141,000
Х	008-A	Quinn	Edward	Reintroduction/Interpretation of Bison in Minnesota State Parks	Preserve American bison by reintroducing to Minneopa state park, provide more/better interpretive opportunities to learn about bison and prairie ecosystems at Blue Mounds and Minneopa and improve prairie quality.	MN DNR	\$797,718
Х	009-A	Oberhauser	Karen	Effects of Grazing Versus Fire for Prairie Management	This proposal is the first study to compare effects of grazing and fire on tallgrass prairie plants and pollinators in Minnesota. The outcome will be a better-informed land management community.	U of MN	\$414,064

Selected to Present	ENRTF ID#	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
Х	010-A	Boe	Kathleen	St. Anthony Falls Lock Closure: Assessing Ecological Impact	The Lock closure provides a unique opportunity to study the impact of altering flow patterns on Mississippi River ecology. Study results will help guide restoration decisions during riverfront revitalization.	Minneapolis Riverfront Partnership	\$148,093
Х	011-A	Blair	Robert	Minnesota Native Bee Atlas: A Citizen Science Project	Engages citizens in documenting distribution and phenology of wild Minnesota bees. Complements other pollinator surveys by sampling extensively throughout Minnesota; focusing on specific bees that citizen scientists can sample accurately.	U of MN	\$790,000
	012-A	Kapfer	Paul	Restoring Minnesota's Apex Weasel, the Fisher	Fishers-a weasel the size of a large housecat-have declined by 40% since the early 2000s, and this project will develop forest management guidelines to restore fisher numbers.	Leech Lake Band of Ojibwe	\$316,086
Х	013-A	Moen	Ron	Genetic and Camera Techniques to Estimate Carnivore Populations	We will use genetic sampling and remote cameras to estimate population size of carnivore species. A new method to estimate wolf population size is an immediate practical application of products.	U of MN - Duluth NRRI	\$236,326
Х	014-A	Martell	Mark	Creating a Statewide Wetland Bird Survey	Develop a statewide wetland bird survey utilizing volunteer citizen scientists to establish long-term monitoring of the status of these birds and the health of their wetland habitats.	Audubon Minnesota	\$146,520
	015-A	Venturelli	Paul	Using Angler Smartphone Data to Benefit Aquatic Resources	We will distribute a popular angler app and show that subsequent data are a cost-effective way to obtain state-wide fishing and movement information that benefits aquatic resource management and protection.	U of MN	\$322,633
Х	016-A	McGuire	Jennifer	Turtle Population Dynamics in an Urban Lake	Analyze the aquatic and terrestrial habitat parameters that affect the use of urban lakes by a three species turtle community and make specific recommendations to protect and enhance their populations.	University of St. Thomas	\$258,603
Х	017-A	D'Angelo	Gino	Movement and Seasonal Habitat Use of Minnesota Elk	The proposed project would provide some of the first biological data collected about Minnesota elk, including movements and habitat use. This information is essential to their long-term, sustainable management.	MN DNR	\$250,242
Х	018-A	Henderson	Bobby	Goblin Fern: Habitat Mitigation for Species Conservation	Examining Goblin fern populations in response to habitat degradation resulting from invasive earthworms; for development of long term habitat mitigation and species conservation strategies.	Leech Lake Band of Ojibwe	\$61,040
	019-A	Casper	Gary	Amphibian and Reptile Conservation in Lake Superior Basin	We will identify high priority conservation actions for rare frogs, salamanders, turtles and snakes in the Lake Superior Basin and begin implementing conservation planning and actions with agencies and landowners.	Great Lakes Ecological Services, LLC	\$199,204

Selected							
to							
Present	ENRTF ID #	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
Х	020-A	Falkowski	Michael	A Foundational Dataset Characterizing Historic Forest Disturbance Impacts	Quantify forest disturbance impacts over the past 40 years for applications in natural resource management, and demonstrate dataset utility by relating patterns with water quality, wildlife demographics, and woodfiber supply.	U of MN	\$323,161
	021-A	Heinicke	Matthew	Conservation Genetics of Minnesotas Rare Lizards and Snakes	Populations of Minnesota lizard and snake SGCN species will be field sampled and genetically characterized to analyze genetic distinctiveness, diversity, and population connectivity to provide foundational data for conservation planning.	University of Michigan (UM-Dearborn)	\$224,341
	022-A	Travis	Dominic	Unique Partnership Approach for Protecting Minnesotas Threatened Ecosystems	Unique Universty-Tribal partnership to build scientific capacity to protect Minnesota's natural resources in the face of growing environmental threats.	U of MN	\$260,147
	023-A	Russell	Matthew	A Web-Based Portal for Forest Ecosystem Health	How can we apply the vast amount of information collected across Minnesotas forests? We will extend our capabilities for accessing and analyzing forest health data by creating a data portal.	U of MN	\$130,018
Х	024-A	Karwan	Diana	Hydrologic Effects of Contemporary Forest Practices in Minnesota	Hydrologic monitoring stations will be installed and used to collect water quantity and quality data from lands managed for timber production. Hydrologic effect of timber harvest will be evaluated.	U of MN	\$201,296
	025-A	Ferrington	Leonard	Evaluation of Thermal Regimes For Optimizing Trout Habitats	We will develop thermal models, quantify food resources, and incorporate a new citizen monitoring program approach to optimize planning for enhancing habitat and trout production in streams of SE Minnesota.	U of MN	\$450,489
	026-A	LaRue	Michelle	Cougars in Minnesota: Management Strategies for Changing Ecosystems	We provide recommendations for scientific decision-making regarding the potential for cougar recolonization of Minnesota using population modeling, geospatial techniques, and human dimensions surveys.	U of MN	\$263,230
Х	027-A	Moen	Ron	LiDAR for Wildlife in Northeastern Minnesota	We will create a LiDAR-based coverage of vegetation structure from raw LiDAR data that was flown in 2011. Our work will improve research and management on most forest wildlife species.	U of MN - Duluth NRRI	\$99,717
	028-A	Snell-Rood	Emilie	The Effect of Salt on Roadside Habitats	This research seeks to improve the conservation value of roadside habitats by understanding how road salt runoff impacts the nutrition and foraging behavior of herbivores (deer and butterflies).	U of MN	\$109,000

Selected							
to							
Present	ENRTF ID#	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
	029-A	Johnson	Renee	Cooperative Public Land Survey/Cadastral Spatial Data Management	The Cooperative Public Land Survey/Cadastral Spatial Data Management Project facilitates useful public ownership maps by building a collaborative Public Land Survey GIS for Cook, Lake and St. Louis Counties.	MN DNR	\$500,000
	030-A	ONeil	Thomas	Wildlife-Habitat Relationships in Minnesota	Our project will develop a detailed wildlife-habitat relationship database for the state and conduct the Combined Habitat Assessment Protocols tool on two sub-basins to demonstrate its explicit accounting methodology.	Northwest Habitat Institute	\$397,124
Х	031-A	Montgomery	Kent	Enhancing Future Forest Conservation Using Gullions Historic Research	This project will preserve the Gullion ruffed grouse data sets in a series of 2 to 3 phases over the next 4 to 6 years as permanent digital data files.	Central Lakes College	\$75,885
	032-A	Wilmot	Neil	Silica Sand Mining and the Minnesota Economy	Assess the economic impacts of silica sand mining on Minnesota. Examine the benefits of the formation of a natural resource sovereign wealth fund, to be funded via a severance tax.	U of MN - Duluth	\$132,543
					A. Foundational Natural Resource Data	and Information Subtotal:	\$19,712,775
3. Water F	Resources (30	Proposals / Sub	total \$13.497.8	894)			
Х	033-В	Keeler	Bonnie	Informed Water Management: Mapping Scarcity,Threats, and Values	A land-surface model to map statewide water scarcity and abundance, assess water-related risks to industry, municipalities, and ecosystems. Quantify the economic values of water quality and quantity changes.	U of MN	\$234,936
Х	034-B	Hu	Во	A Novel Biofilm Technology for Water Nutrient Removal	This project will develop a novel simulated lichen biofilm system to remove pollutants and possibly recycle nutrients from storm water runoff as well as polluted lakes, ponds, and lagoons.	U of MN	\$281,270
Х	035-В	Valentas	Kenneth	Preventing Phosphorous from Entering Water Resources Through Draintiles	Draintile runoff discharges phosphorous and nitrogen into water resources. A new nanocomposite material made from biomass can adsorb this excess fertilizer for recycling back to agricultural lands.	U of MN	\$355,000
Х	036-B	Schoenfuss	Heiko	Biological Consequences of Septic Pollution in Minnesota Lakes	Septic systems are likely sources of Contaminants of Emerging Concern (CEC) to Minnesota lakes. Their potential contribution as CEC sources and subsequent effects on lake fish health will be assessed.	St. Cloud State University	\$364,427
Х	037-B	Smith	Erik	Subsurface Drainage Impacts on Groundwater Recharge: Southeast Minnesota	Groundwater recharge characterization in southeast Minnesota for fields with agricultural drainage. Field-scale results will be upscaled to similar landscape features across the region to quantify drainage impact on groundwater sustainability.	U.S. Geological Survey	\$488,394

Selected							
to							
Present	ENRTF ID #	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
	038-B	Wammer	Kristine	Toxicity of Fragrances to Native Fish and Mussels	Fragrances from household products are common contaminants in wastewater. This project will determine how UV disinfection can be used to remove endocrine disrupting activity and toxicity attributable to these fragrances.	University of St. Thomas	\$219,572
	039-В	Barney	Brett	Expanding Biofertilizers for Responsible Nitrogen Application	This project aims to develop a broad-application biofertilizer to accomplish in crops like corn and wheat a relationship similar to what nature evolved in soybeans to fix atmospheric-nitrogen.	U of MN	\$568,000
	040-B	Sadowsky	Michael	Woodchip Bioreactors Controling Sulfate, Nitrate, and Phosphorus Runoff	This project aims to enhance the efficiency of field-level woodchip bioreactors for reduction of nitrogen, phosphorus, and sulfate in agricultural drainage and sulfate in mine drainage by using optimal microorganisms.	U of MN	\$638,000
	041-B	Hobbie	Sarah	Determining Stormwater Pollution Sources to Improve Urban Waters	Urban lakes are highly polluted by excess nutrients. Determining the major sources of nutrients to stormwater will lead to cost-effective strategies for improving urban water quality, to benefit all Minnesotans.	U of MN	\$538,000
Х	042-B	Sheaffer	Craig	Reducing Nitrogen Pollution in Groundwater with Perennial Grasses	Measuring the environmental benefits and economic viability of perennial grass crops: quantifying reductions in nitrogen leaching to groundwater, seed/grain yield, and biomass of switchgrass, native prairies, and perennial wheat.	U of MN	\$482,186
	043-B	Hondzo	Miki	Enhanced Microbial Nitrate Removal in Minnesota Waters	We will measure and predict physical and chemical field conditions that enhance microbiological nitrate removal (denitrification hot spots) with minimal nitrous oxide emission in streams, flood plains, and wetlands.	U of MN	\$333,763
	044-B	Wackett	Lawrence	Solving Problems From Pesticides and Spills in Minnesota	This proposal will scale up and make practical the use of helpful bacteria in specially-prepared mats to adsorb and eat pesticides and spilled chemicals thereby protecting Minnesota resources.	U of MN	\$440,000
Х	045-B	Ellison	Christopher	Using Hydroacoustics to Monitor Sediment in Minnesotas Rivers	Hydroacoustic equipment will be installed on the lower Minnesota and Mississippi Rivers to accurately measure suspended-sediment, replacing antiquated methods and directly supporting the MPCAs Sediment Reduction Strategy.	U.S. Geological Survey	\$455,663
	046-B	Abbas	Abdennour	Autonomous Chemical Sensor for Water Toxicants Monitoring	We propose the development and testing of a portable/autonomous sensor for on-site and cost-effective monitoring of organic toxicants in Minnesota lakes, which will empower different programs of the State agencies.	U of MN	\$320,000

Selected to Present	ENRTF ID #	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
Х	047-B	Drewitz	Matt	Southeastern Minnesota Cover Crop and Soil Health Initiatives	This project will help promote cover crops in Southeastern Minnesota by providing training and education to local practitioners, analyzing the economics of implementation, and providing funding for on-farm demonstration sites.	Board of Water and Soil Resources	\$253,000
X	048-B	Maciej	Gerry	Achieving Minnesotas Groundwater Sustainability Through Irrigation Efficiencies	This project restores a trout stream and provides the tools and a system to restore and protect existing and emerging environmental issues related to groundwater use statewide.	Benton Soil and Water Conservation District	\$431,100
	049-B	Wang	Ping	Wireless Biosensing for Monitoring of Aquatic Ecosystems	Specifically we propose to develop a microchip device that produces wireless signal using the nutrient content from the targeted system. The signal is generated with a microbial system whose growth	U of MN	\$981,249
	050-B	Zhang	Kechun	Integrated Algae Process for Value- Added Fuels and Chemicals	This project is to develop an integrated process that will treat wastewater, generate starch-rich algal biomass and ferment value-added fuels and chemicals. The project will improve water quality, reducing carbon.	U of MN	\$919,662
	051-B	Clark	Ryan	Conservation Reference Watersheds within the Minnesota River Basin	This project comparing channelized vs. natural streams will provide valuable information and tools for the future management of agricultural watersheds and the protection of water quality in Central Minnesota.	Renville County SWCD	\$699,820
	052-B	Garono	Ralph	Mapping and Classifying North Shore Vernal Pools	We propose a novel approach to map >100,000 vernal pools along Minnesota's North Shore. With maps, resource managers can better protect vernal pools, which provide important habitat and hydrologic functions.	U of MN - Duluth NRRI	\$525,846
	053-B	Meschke	Linda	Tile Outlet Treatment Trains to Improve Water Quality	Reduction of water quality and quantity impacts from agricultural drainage systems using an innovative treatment train approach that treats water traveling through the drainage system from farm field to shore.	Rural Advantage	\$514,394
	054-B	Small	Gaston	Removing Excess Phosphorus in Urban Lakes through Hydroponics	Develop and implement an innovative technology to remove excess nutrients from urban lakes while producing locally grown food and creating a unique platform for education and public participation.	University of St. Thomas	\$174,046
	055-B	Garono	Ralph	Nutrient Dead-Zone Interactions in the St. Louis Estuary	Stakeholders need to know the nutrient-absorbing capacity of the St. Louis River to prevent establishment of dead zones and resulting further mobilization of contaminants due to changes in oxygen levels.	U of MN - Duluth Large Lakes Observatory	\$550,200
	056-B	Kluckhohn	Rebecca	Lake Management Guidance, Strategies to Reduce Internal Loads	Guidance document/ screening process to help lake managers determine if and how to cost- effectively manage internal nutrient loads. Provide design guidance for use of hypolimnetic withdrawal in Minnesota.	Clearwater River Watershed District	\$233,900

Selected to							
Present	ENRTF ID #	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
	057-B	Julius	Matt	Reducing Dairy Plant Impact on Water Quality	Cheese whey disposed of by land application leads to water contamination by run-off. This project demonstrates how simultaneously treating the waste can simultaneously produce clean water and valuable food ingredients.	St. Cloud State University	\$499,733
	058-В	Montgomery	Kent	Developing and Implementing Watershed-level Protection Strategies for Lakes	This proposal seeks to enable faculty and students at Central Lakes College to identify watershed-lake relationships using remote imagery and flow sampling and develop watershed-level strategies for protection and restoration.	Central Lakes College	\$192,863
	059-В	Anglo	Kathleen	Improving Water Quality, Daylighting Trout Brook	The City of Saint Paul requests \$400,000 to install a pump to daylight 3000 channel of the Trout Brook which acts like a "Brita Filtration" system for water resource protection.	City of St. Paul	\$400,000
Х	060-В	Schaum	Jessica	Shoreview Water Consumption and Groundwater Awareness Project	Provide biweekly water consumption data to 400 residential households for a two year period to determine if additional groundwater can be conserved due to a greater awareness of consumption data.	City of Shoreview	\$54,470
	061-B	Innes	Alister	Replace Chemical Hazards in Products; Reduce Emerging Contaminants	Studies show chemical hazards in products are released to become environmental contaminants. Grants to Minnesota product developers will accelerate safer alternatives in products that market forces are slow to address.	Minnesota Pollution Control Agency	\$1,039,600
	062-B	Johnson	Margaret	Crow River Erosion Analysis and Targeted Implementation Project	This vital project will quantify erosion using innovative technology in river reaches providing guidance for implementation designs to benefit local and regional surface waters for future.	Middle Fork Crow River Watershed District	\$308,800
					B.	Water Resources Subtotal:	\$13,497,894
C. Environ	mental Educa	tion (18 Propos	als / Subtotal \$	8,384,448)			
	063-C	Luce	Don	Inspiring Citizen Action to Control Aquatic Invasive Species	Create a statewide touring exhibit and activities using interactive media, real objects and personal stories from volunteers, resource managers and scientists to inspire citizen action to control Aquatic Invasive Species.	•	\$239,215
	064-C	Hamilton	Patrick	MNwatch: A Major New Exhibit About Minnesotas Environment	MNwatch will be a major new exhibit that informs 400,000 people annually about Minnesota's environmental trends and encourages citizens to assist with environmental monitoring. \$449,000 in match has been raised.	Science Museum of Minnesota	\$1,085,000
Х	065-C	Ponder	Julia	Hunter's Choice: Alternative Ammunition	We will provide hunters with information on alternative hunting ammunition options and promote voluntary choice to use nontoxic ammunition and protect Minnesota's wildlife.	U of MN	\$132,557

Selected							
to							
Present	ENRTF ID#	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
Х	066-C	Lenczewski	John	Connecting Students with Watersheds through Hands-On Learning	Students will get outdoors for hands-on learning focused on water quality, groundwater, aquatic life, watershed health and their role as watershed stewards. Opportunities for angling and conservation will be offered.	Minnesota Trout Unlimited	\$437,195
X	067-C	Svien	Lawrence	Building 8 Zumbro Watershed Recreational Learning Stewardship Sites	To achive increased civic engagement the project provides increased recreational opportunities in the watershed along with educational materials designed to connect the recreational experience with water quality of the Zumbro.	Zumbro Watershed Partnership	\$356,920
	068-C	Кау	Adam	Stewardship Science: Enhancing education in Underserved Urban Communities	Make environmental science tangible for urban high school students through collaborations with university students on agroecology and native wildflower biodiversity projects.  Attractive local projects expose underserved communities to environmental research.	University of St. Thomas	\$111,887
	069-C	Anderson	Neil	Reed Canary Grass Threat to the Tension Zone	The research will determine sources, uses, and spread in the Tension Zone of native/invasive reed canarygrass by Native- and Euro-Americans to solve critical management issues, using environmental education-driven science.	U of MN	\$538,968
	070-C	Vlasak	Raymond	Tamarac National Wildlife Refuge Outdoor Youth Learning Program	This project will expand an existing youth experiential, outdoor, conservation, stewardship and environmental education program at the Tamarac National Wildlife Refuge from 3000 to 6000 student visits per year.	Friends of Tamarac National Wildlife Refuge, Inc.	\$118,600
	071-C	Nerbonne	Julia	Be The Spark: Experiential Youth Development	We will educate and engage >450 youth from faith communities in experiential workshops and river trips. Youth will then return to activate their communities to take action.	Minnesota Interfaith Power & Light	\$576,377
	072-C	Thommes	Judy	Youth Energy Education: Making Energy Conservation Fun!	A statewide energy conservation education resource that will educate and motivate 20,000 elementary aged youth throughout Minnesota and provide them with tools to bring energy awareness home to their families.	Center for Energy and Environment	\$162,000
Х	073-C	Freese	Joan	Splash Screen: SciGirls Exploring Watersheds Using Mobile Technologies	TPT's Splash Screen: SciGirls Exploring Watersheds Using Mobile Technologies will empower 200 Minnesota 4-H middle school students to become stewards of local water resources.	Twin Cities Public Television	\$187,400
Х	074-C	Mercer-Taylor	Beth	Water Journey Camps	"Water Journey Camps" get children outdoors exploring the natural environment, doing service plantings, and teaching the public how to conserve water and improve water quality to help protect natural areas.	U of MN	\$25,138

Selected to Present	ENRTF ID #	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
	075-C	Martinez	Cecilia	Zenteotl-Community Empowerment Through Urban Agriculture	This will realize a community vision of a Green Zone centered around an agricultural coop that will operate under indigenous traditional Mexica cultural values, spirituality and methods.	Center for Earth, Energy and Democracy	\$382,887
	076-C	Hall	Patricia	Race to Reduce: Replicating Success!	Educate students and communities about the necessity to reduce water consumption in communities relying on the Prairie-du-Chien water aquifer and cut consumption by 144 million gallons per year.	H2O for Life, Inc	\$82,500
	077-C	Eldred	Craig	City of Waconia Fountain Park Storm Water Education	The impetus for this funding is storm water education and protection of Lake Waconia. Target audience includes the residents, elementary and high school aged children who make up our future.	City of Waconia	\$52,415
	078-C Kaminski		Assistance for Reducing Wolf-Cattle	Providing reliable and confidential assistance for carcass removal to farmers in Minnesota wolf territory will be evaluated as one means of reducing wolf-livestock conflicts that losses to farmers.	Howling For Wolves	\$72,000	
	079-C	Bodette	Dan	Community and Field-Based Environmental Learning Model	The School of Environmental Studies (SES) will enhance authentic, real-world, curricular experiences in environmental education for 12th grade students at SES and with surrounding metropolitan 12th grade students.	School of Environmental Studies	\$388,274
	080-C	Homan	Ed	Regional Mattress Recycling: Reducing Landfill Use, Recovering Resources	The Regional Mattress Recycling Progam will provide the infrastructure to educate, collect, transport, process, and recover resources while researching environmentally viable cotton markets and reducing regional use of landfill space.	McLeod County	\$3,435,115
					C. Environn	nental Education Subtotal:	\$8,384,448
D. Aquatio	and Terrestri	ial Invasive Spec	cies (15 Propos	als / Subtotal \$24,347,412)			
Х	081-D	Buhr	Brian	Minnesota Terrestrial Invasive Species Research Center	Conduct research to prevent new establishment of terrestrial invasive species and mitigation of existing invasives. Diagram shows stages of invasion, control or prevention actions, costs and example images with departments.	U of MN	\$14,937,920
Х	082-D	D'Amato	Anthony	Emerald Ash Borer Ecological/Hydrological Impacts – Phase 2	Project assesses impacts of emerald ash borer on ecology and hydrology of black ash forests and develops recommendations for increasing resilience of Minnesota's 10 billion ash trees to this threat.	U of MN	\$420,408

Selected							
to							
Present	ENRTF ID #	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
Х	083-D	Becker	Roger	Biological Control of Canada Thistle	Develop biological control for Canada thistle, Minnesota's most prevalent noxious weed. Will reduce herbicide application, mowing and tillage which harm desirable plants, interfere with wildlife management, and impact water quality.	U of MN	\$300,000
Х	084-D	Blanchette	Robert	Preventing a New Disease of Pines in Minnesota	An emerging tree disease is present in Wisconsin and threatens pines and other conifers in Minnesota. This work establishes early detection and prepares an effective defense to reduce its impact.	U of MN	\$371,840
Х	085-D	Aukema	Brian	Minnesotas Newest Invasion: European Gypsy Moth is Here	Last year, the MDA trapped more gypsy moths than all previous years combined. This collaborative MDA-UMN project conducts additional surveys and characterizes the threat to Minnesota's oak and aspen trees.	U of MN	\$350,000
Х	086-D	Henquinet	Jeffrey	Mobile Ballast Water Treatment System for Great Lakes	Project will deploy two mobile ballast treatment systems in Minnesota to prevent invasive species introductions from high risk ships. Project outcomes include three shipboard efficacy trials, system optimization, and deployment.	Izaak Walton League of America	\$1,006,200
Х	087-D	Phelps	Nicholas	Small Fish, Big Problem: Understanding Minnesotas Baitfish Industry	Movement of AIS and disease with baitfish is a major concern for mangers. In response, we will describe the movement network and implement a modeling tool for evidence-based decision making.	U of MN	\$236,526
Х	088-D	Hicks	Randall	Forecasting Microbial Invasions: Muskie Pox and VHS Virus	We will determine the prevalence of "muskie pox" bacteria, VHS virus, and other invasive microbes in St. Louis River Estuary muskellunge, water, and sediment to forecast risk to recreational fisheries.	U of MN	\$467,589
	089-D	Sadowsky	Michael	Biocontrol of Eurasian Water Milfoil Based on DNA Sequencing	Invasive plant species pose a threat to aquatic ecosystems. In this proposal we will develop microbiological control agents for invasive Eurasian Water Milfoil by using DNA sequencing and cultures-based approaches.	U of MN	\$574,000
	090-D	Cotner	James	Using CO2 to Control Fish in Shallow Lakes	We will develop techniques for controlling nuisance and invasive fish species. Adding CO2 under ice is effective and inexpensive with great potential to improve water quality and habitat.	U of MN	\$505,000
	091-D	Frohnauer	Nick	Minnesota Invasive Carp Action Plan Implementation	This project would help inform and implement multiple actions to limit the impact of silver, grass, black, and bighead carp on waters within Minnesota.	MN DNR	\$4,359,517

Selected to Present	ENRTF ID#	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
	092-D	Hibbard	Calder	Minnesotas Forest Health Threats: Terrestrial Invasive Species	This project will assess and prioritize threats from invasive species to our forests, identify critical actions and information needs, and develop effective policy which will minimize cost and maximize outomes.	Minnesota Forest Resources Council	\$308,322
	093-D	Matthews	Thomas	Treatment of Emerald Ash Borer- infested Ash Trees	Emerald ash borer is a threat to Minnesotas ash trees and treatment options are limited. Aerial application of boreGONE! provides an environmentally-sound and economic alternative treatment for controlling this pest.	Phyllom BioProducts Corporation	\$120,000
	094-D	Larson	Chris	Ash Tree Preservation: Environmental Education & Stewardship	Promoting environmental stewardship by preserving Oakdales Ash resource and positively changing the public mindset regarding green infrastructures role in public services is a primary goal of this project.	City of Oakdale	\$85,590
	095-D	Shneider	Joseph	Prepackaged AIS Thermal Decontamination Program for Water- Related Equipment	This project will develop a prepackaged AIS thermal decontamination program for water-related equipment, enabling organizations to implement effective, repeatable, and verifiable decontamination.	MN Coalition of Lake Associations	\$304,500
					D. Aquatic and Terrestrial	Invasive Species Subtotal:	\$24,347,412
E. Air Qua		1	1	(21 Proposals / Subtotal \$12,985,267			
Х	096-E	Levenson-Falk	Annie	Ending Minnesota Greenhouse Gas Emissions from Fossil Fuels	Ending Minnesota's contribution to greenhouse gases from burning fossil fuels. An analytical study, grounded in Minnesotans' priorities, is a necessary tool for action by a statewide network of institutional leaders.	Legislative Energy Commission	\$1,500,000
	097-Е		_	El			
		Hu	Во	Electrochemical Micro-Aeration for Hydrogen Sulfide Removal from Biogas	The project will develop a novel electrochemical micro-aeration process for removal of hydrogen sulfide from biogas to decrease its environmental impact and increase the techno-economic feasibility of anaerobic digestions.	U of MN	\$316,754
	098-E	Montgomery	Rebecca	Hydrogen Sulfide Removal from Biogas	process for removal of hydrogen sulfide from biogas to decrease its environmental impact and increase the techno-economic	U of MN	\$316,754 \$241,568
	098-E 099-E			Hydrogen Sulfide Removal from Biogas  Tree Productivity and Health Depend	process for removal of hydrogen sulfide from biogas to decrease its environmental impact and increase the techno-economic feasibility of anaerobic digestions.  Cold temperatures are critical to tree life cycles. We will test the hypothesis that warmer winters may disrupt spring phenology, delaying budburst. Results will inform management strategies for climate change.		

Selected							
to							
Present	ENRTF ID#	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
Х	101-E	McCormick	Alon	Renewable and Sustainable Fertilizers Produced Locally	New technologies in Minnesota will enable renewable and sustainable, zero-carbon-footprint ammonia for fertilizers to be produced at the local level close to farms - in Minnesota and around the world.	U of MN	\$1,620,000
	102-E	Nagel	Linda	Making Minnesota Forests More Resilient to Climate Change	This large-scale project assesses vegetation, forest health, and sustainability of three novel adaptive forest management approaches aimed at making Minnesota forests more resilient to climate change.	U of MN	\$396,872
	103-E	Goldberg	Louise	Housing Clusters Consuming Less Electricity Than They Generate	Housing clusters use renewable energy (solar photovoltaic/thermal, ground source heat, waste cooking oil and sewage effluent) to provide space heating and cooling and generate more electricity than they consume.	U of MN	\$195,000
	104-E	Dutcher	Cari	Lake and River Spray Impacts on Minnesota Climate	Breaking water waves emit chemically complex ultrafine droplets, which grow into atmospheric aerosol particles. Studying regional implications of particles on cloud formation will improve Minnesotas air quality and climate models.	U of MN	\$516,000
	105-E	Hemmingsen	Richard	Optimizing Environmental and Economic Value of Harvested Cattails	Cleaning water and creating green fuels and fertilizers utilizing two novel technologies which recycle nutrients and create green products from high-moisture cattails harvested in Red River basin flood retention structures.	U of MN	\$1,545,750
	106-E	Davy	Ray	Reducing Land Applied Agricultural Waste in SE Minnesota	Using proven technology, project will process organic waste from Whitewater/Root River region in a regional anaerobic digester. Most of these materials are currently land applied and threaten water quality.	Agri-Waste Energy Operations	\$504,385
	107-E	Gerard	Gena	Reducing Wood Smoke: Protecting Our Health and Environment	The purpose of this project is to reduce harmful wood smoke pollution by raising public awareness about associated health risks and replacing high-polluting wood stoves and fireplaces with lowemissions technologies.	Environmental Initiative	\$1,116,570
Х	108-E	Hong	Jiarong	Assessing Environmental Impact of Wind Turbines in Minnesota	Using cutting-edge experimental and computational tools, we will assess how the turbulent air flows induced by wind turbines affect bird migration, crop productivity and lake ecology in Minnesota.	U of MN	\$528,000
	109-E	Current	Dean	Zero-Waste Aquaponic System for Fish and Vegetable Production	We will develop and demonstrate a sustainable fish and vegetable production system utilizing food and other organic wastes to clean water by reducing landfill and sequester CO2 by growing vegetables.	U of MN	\$906,400

Selected				Sunc 17, 10, 13, 20, and 20. Shook to			
to							
Present	ENRTF ID #	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
	110-E	Northrop	William	Reducing Emissions from Open	Open burning of wood waste in Minnesota results in unnecessary	U of MN	\$268,188
Х				Burning through Biomass	harmful emissions. This project will characterize and promote		
^				Gasification	clean and efficient distributed biomass gasification of wood waste		
					for rural energy.		
	111-E	Slesak	Robert	Soil Frost and Sustainable Forestry	Quantify factors that control soil frost with historic data and	U of MN	\$305,000
				Under Varying Climate	experimental manipulations. Develop strategies to minimize soil		
					and water impacts during winter forest harvesting now and under		
					a warming climate.		
	112-E	Becker	Dennis	In-Woods Biomass Drying to	Evaluating impacts of in-woods biomass drying techniques to	U of MN	\$194,550
				Increase Energy Value	reduce moisture content, which increases energy value, decreases		
Χ					air emissions and biomass requirements, and increases		
					competitiveness with fossil fuel heating and electricity.		
			_				
	113-E	Current	Dean	BMP Portfolio for Non-forest	We will construct a new comprehensive, holistic, and science	U of MN	\$213,250
				Biomass for Bioenergy	based Minnesota BMP portfolio for sustainable planting,		
					managing and harvesting of non-forest biomass for bioenergy.		
	114-E	Green	Jim	Duluth Steam Energy Efficiency	Duluth Steam seeks to transform the community's energy system	City of Duluth	\$153,360
				Project	to higher efficiency hot water distribution, creating opportunity		
					for local, renewable fuels, reuse of waste heat, and improved		
					local water quality.		
	115-E	Oskoui	Kazem	Restorative Integrated Resource	Develop water/energy recovery and production facility for cities,	Clark Engineering	\$499,440
				Management at Prospect	reducing the need for landfills, dedicated centralized wastewater	Corporation	
					treatment plants, sourced conventional fossil fuel based power		
					plants and fresh water supply.		
	116-E	Thomas	Steve	Reduce Greenhouse Gas Emissions	This project will establish deconstruction as an alternative to	The NetWork for Better	\$1,178,625
V				and Solid Waste	demolition and develop techniques for reducing greenhouse gas	Futures d/b/a Better	
X					emissions and the amount of reusable building materials buried in	Futures Minnesota	
					landfills.		
					E. Air Quality, Climate Change, and Re	newable Energy Subtotal:	\$12,985,267
F. Method	s to Protect, F	Restore, and Enl	nance Land, Wa	ater, and Habitat (19 Proposals / Sub	total \$7,211,764)		
	117-F	Johnson	Lucinda	Prioritizing Future Management of	Identify those key areas in North Shore streams that supply the	U of MN - Duluth NRRI	\$416,411
Х				North Shore Trout Streams	cold groundwater essential to sustaining trout fisheries into the		
^					next century, to strategically focus habitat restoration and		
					protection efforts.		

Selected							
to							4
Present	ENRTF ID#	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
Х	118-F	Perrine	Rich	Thirteen Counties Propagating Native Plants, Restoring Diverse Habitats	A thirteen county educational outreach effort across four regions of the state, will propagate local ecotype native plants, replace invasive species and restore habitat for "species in greatest conservation need."	Martin SWCD	\$495,000
Х	119-F	Remucal	David	Preserving and Protecting Minnesota's 48 Native Orchid Species	Many of Minnesota's 48 native orchids are at risk. This new program's initial phase will contribute to the long-term conservation of 15 selected species in need of research and propagation.	U of MN - Landscape Arboretum	\$167,700
	120-F	Griffis	Timothy	Forecasting the Intensity and Spread of Minnesotas Wildfires	Wildfire spread is difficult to forecast because fires create their own weather. This project advances a weather and fire forecast model to safeguard Minnesota's natural resources from wildfires.	U of MN	\$184,080
Х	121-F	Buck	Wiley	MeCC VIII: Restoration for Climate Resilience, Pollinators, Working Lands	In a compelling partnership, we evaluate oak viability, and effects of prairie haying on plants and pollinators; evaluate metro grazing/burning; gather pollinator data at restorations; and engage 770 citizens.	Great River Greening	\$459,000
Х	122-F	Hoek	Tabor	Conservation Assistance Acceleration Project	This project is a transition of current funding from LCCMR to other long-term funding sources. This project will enable MN to maiximize conservation benefits of the 2014 Federal Farm Bill.	Board of Water and Soil Resources	\$1,500,000
Х	123-F	Wisenden	Brian	MSU Moorhead Science Center Restoration & Monitoring	Minnesota State University Moorhead's Science Center will restore and monitor 160 acres of prairie and riparian habitat resulting in development and dissemination of monitoring protocols for understanding long-term ecological recovery.	Moorhead State University	\$527,760
Х	124-F	Herb	William	Prioritizing Walleye Spawning Habitat Restoration in Minnesota Lakes	This project will create easily accessible information on wave energy and near-shore habitat, to enable successful lake habitat restoration projects and increase natural fish reproduction in Minnesota lakes.	U of MN - St. Anthony Fall Lab	\$277,235
Х	125-F	Erwin	John	Building "Pollinator Friendly" Landscapes	Statewide pollinator populations will be increased by planting 'pollinator-friendly' landscapes in yards, towns and cities, and developing best management practices with the greenhouse, nursery, landscape and parks industries.	U of MN	\$225,714
Х	126-F	Lewanski	Tom	MeCC VIII: FMR Restoring Prairie and Forest Habitat	FMR will conduct restoration activities on 100 acres of forest/savanna and 160 acres of prairie in the Twin Cities area to preserve and increase wildlife habitat.	Friends of the Mississippi River	\$276,482
х	127-F	Rudolf	Sarah	Empowered Citizens Improve 5 Urban Forests: Statewide Model	Mobilize citizen volunteers to meet escalating urban forestry needs in Duluth, Mankato, Rochester, Saint Cloud and Saint Paul, ready 40 additional communities and prepare for statewide expansion.	Minnesota Pollution Control Agency	\$835,342

Selected							
to					_		
Present	ENRTF ID#	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
Х	128-F	Kleist	Christopher	Flood Recovery on Sargent Creek Duluth Habitat Restoration	We propose to re-establish stable and natural streambanks with riparian and aquatic habitat restoration on 5400 linear feet of Sargent Creek in Duluth that was destroyed in the 2012 flood.	City of Duluth	\$398,000
Х	129-F	Ryun	Debra	Shoreland Protection for the Lower St. Croix River	Shoreland Protection for the Lower St. Croix River will help landowners, local governments, and realtors/developers do their part to protect Minnesota's nationally-designated river's clean water and Wild and Scenic character.	St. Croix River Association	\$190,300
	130-F	Hoganson	Howard	Transitioning Pine Plantations to Multi-Aged, Mixed-Species Pine Stands	Project helps design, test and demonstrate stand-level management for transitioning red pine plantations to multi-aged, mixed-species pine stands. Project includes deer control research and enhances educational site in central location.	U of MN	\$260,222
	131-F	Erwin	John	Building Ecologically-Sound Landscapes in Our Communities	Over 80% of MN residents will participate in building yard, town, and city landscapes that thrive, have ecological benefits, and reduce long-term maintenance costs.	U of MN	\$241,828
	132-F	Singer	Alan	Integrating Agriculture with Water Quality and Wildlife Habitat	This project will develop profitable, resource management practices that protects and improves water quality and wildlife habitat while enhancing the local agricultural community in a 14,300-acre area in Greenvale Township.	Dakota County	\$300,000
	133-F	Hoganson	Howard	Recognizing Full Value of Pine Restoration	Attracting substantial dollars for long-term reforestation investments is difficult. Project will integrate economic and ecological benefits from objective statewide perspective to develop strong case for restoring pines on the landscape.	U of MN	\$177,278
	134-F	Arvidson	Adam	Ecological Management Plans for Vegetation and Water	Ecologically based management plans for vegetation and water, which will establish policies and procedures for natural resource protection, restoration, and enhancement in Minneapolis and the Mississippi River watershed.	Minneapolis Park and Recreation Board	\$204,412
х	135-F	Erickson	Mark	Redwood/Renville County Outdoor Recreation and Conservation Master Plan	Development of a Redwood/Renville County shared and managed outdoor recreation and conservation master plan to guide future development, while protecting cultural, historical, and natural resources, in the Minnesota River Valley.	Redwood County and Renville County	\$75,000
					F. Methods to Protect, Restore, and Enhance Land, W	ater, and Habitat Subtotal:	\$7,211,764
G. Land Ad	quisition for	Habitat and Rec	reation (16 Pro	posals / Subtotal \$40,057,901)			
Х	136-G	Stefferud	Arne	Metropolitan Regional Park System Land Acquisition Phase 4	Finance 45% of costs to acquire 425 acres of high quality natural resource lands for Regional Parks and Trails in the Twin Cities Metropolitan Regional Park System	Metropolitan Council	\$3,000,000

Selected							
to							
Present X	137-G	Booth	Peggy	Proposal Title SNA Acquisition, Restoration, Enhancement and Public Engagement	Sites of biodiversity significance will be permanently protected as state designated Scientific and Natural Areas, their quality improved, and public support for and involvement in their conservation will be increased.	Organization  MN DNR	\$ Requested \$6,315,700
Х	138-G	Garms	Jason	Native Prairie Stewardship & Prairie Bank Easement Acquisition	This project will enroll 1350-acres in Native Prairie Bank easements, apply management to 1000-acres of prairie, encourage landowner stewardship through workshops, technical assistance and planning, and conduct conservation grazing	MN DNR	\$6,450,162
Х	139-G	Christie	Jennifer	State Parks and State Trails Land Acquisitions	Acquire the states highest priority parcels of land within State Parks and State Trails that contain critical habitat and natural resources to protect, preserve and enhance outdoor recreation in Minnesota.	MN DNR	\$2,000,000
	140-G	Peterson	Richard	Protecting the Pineland Sands Aquifer	Reduce impacts to forest and aquatic habitats and ground water aquifer from conversion of forests to irrigated agriculture through fee acquisition of 1,000 acres of priority parcels in west-central Minnesota.	MN DNR	\$2,006,856
Х	141-G	Loon	Deborah	MeCC VIII: Priority Expansion Minnesota Valley NWRefuge	The Minnesota Valley Trust will protect through fee title acquisition 100 acres of priority habitat for the Minnesota Valley National Wildlife Refuge, providing multiple ecologic and hydrologic benefits.	Minnesota Valley National Wildlife Refuge Trust, Inc.	\$500,000
Х	142-G	Manzoline	Robert	Mesabi Trail Development Soudan to Ely Phase 2	This project consists of right-of-way acquisition, design and construction of Phase 2 of a segment of the Mesabi Trail from Soudan to Ely.	St. Louis & Lake Counties Regional Railroad Authority	\$1,000,000
Х	143-G	Rivers	Patrick	MeCC VIII: MN DNR Metro Conservation Corridors 8, Ecological Landscapes	This project includes one 82-acre acquisition of high-quality habitat along the lower reaches of the Vemillion River in Dakota County. The parcel is an inholding of Gores Pool WMA.	MN DNR	\$530,000
Х	144-G	Salus	Danielle	MeCC VIII: TPLs Strategic Land Protection Program	The Trust for Public Land will protect strategic lands in the Metro Area, in order to benefit wildlife corridors, provide close to home access to nature, and improve water quality.	The Trust for Public Land	\$1,000,000
Х	145-G	Curry	John	MeCC VIII: Ecological Landscapes - Overall, Mapping and Coordination	Metro Corridors partners will protect at least 692 acres and restore at least 360 acres of strategic ecological landscapes in the metro area. Research, mapping and coordination are also proposed.	Minnesota Land Trust	\$40,000
Х	146-G	Singer	Alan	MeCC VIII: Dakota County Riparian and Lakeshore Protection	This project will acquire an estimated twelve conservation easements totaling 140 acres along Dakota County's rivers, tributaries, creeks, and undeveloped lakeshore and restore a mininimum of 100 acres.	Dakota County	\$600,000

Selected							
to							
Present	ENRTF ID#	Last Name	First Name	Proposal Title	Summary	Organization	\$ Requested
Х	147-G	West	Paula	Multi-benefit Watershed Scale Conservation on North Central Lakes	Project demonstrates RIM Reserve easements can be used in a forested watershed context in conjunction with other land conservation efforts to permanently protect high quality watersheds with multiple benefits.	Leech Lake Area Watershed Foundation	\$1,225,750
Х	148-G	Curry	John	MeCC VIII: Metro Conservation Corridors 8 Ecological Landscapes	The Minnesota Land Trust will protect critical habitat within the mapped Metro Corridors priority areas by acquiring permanent conservation easements on over 220 acres of strategic ecological landscapes.	Minnesota Land Trust	\$882,500
х	149-G	Damon	Susan	Enhanced Access to Isolated State Lands	Enhancement of natural resources, habitat, ecological and/or recreational values associated with isolated state lands through strategic acquisition of adjacent land or easements.	MN DNR	\$1,017,397
	150-G	Johnson	Mark	Lincoln Pipestone Rural Water Supply Protection Project	Securing Lincoln Pipestone Rural Water ownership to the lands surrounding its wellfields empower it with proven controls needed to eliminate adverse human activities thereon and protect its drinking water supplies.	Lincoln Pipestone Rural Water System	\$11,460,000
	151-G	Vandelinde	Aaron	Preserving Old-Growth Forests on School Lands	Designated old-growth stands provide an ecologically significant piece to Minnesota's landscape. Minnesota law requires that the State compensate for policies or designations that prohibit revenue generation on school trust lands.	MN DNR	\$2,029,536
					G. Land Acquisition for Habita	t and Recreation Subtotal:	\$40,057,901
H. Pass-thi	ru Contract M	lanagement (1 P	roposals / Sub	total \$135,000)			
Х	152-H	Graeber	Amanda	Contract Management	Provide continued project management and customer service to ENRTF pass-through appropriation recipients. Ensure funds are expended in compliance with appropriation law, state statutes, grants policies, and approved work plans.	MN DNR	\$135,000
						H. Other Subtotal:	\$135,000
						GRAND TOTAL	\$126,332,461