Presentation Follow-up Questions and Responses

Presentation Date	Project ID and Title	Responder Name/Organization	Question	Response
7/27	2021-266: Sustainable Irrigation Management: Expanding A Statewide Web Application	Bryan Runck/ U of MN, College of Food, Agricultural and Natural Resource Sciences	You were asked about timing of irrigation in the current version of the irrigation app. Could you explain whether there are recommendations about times of day that are best for irrigation in the current app or if this is only a feature of the app in development?	The IMA tool currently tells a farmer whether or not to irrigate on a specific day, but does not say when during the day to irrigate. Our intention is to improve the data and modeling to the point that we can provide more specific recommendations.

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7/28	2021-188: Building Knowledge And Capacity For AIS Solutions	Nicholas Phelps/ U of MN, MAISRC	You were asked MAISRC's opinion of proposal 2021-055: Protecting Minnesota's Beneficial Macroalgae: All Stoneworts Aren't Starry. The proposal was submitted by the Minnesota Department of Natural Resources and aims to develop a resource guide of native stoneworts in Minnesota […] While we know that MAISRC's research generally deals with the control of invasive Starry Stoneworts, would you please take a moment to describe how such a resource could align and support MAISRC's work and where you believe the focus of the Center and this project might differ?	The purpose of proposal 2021-055: Protecting Minnesota's Beneficial Macroalgae: All Stoneworts Aren't Starry [a project proposed by non-MAISRC researchers] is to conduct a statewide survey to better understand the biodiversity and distribution of *native* stonewort species. The potential discovery of invasive starry stonewort during the course of the survey would be an added benefit of the project (i.e., Sleith et al. 2015). The alignment of this project with invasive species research is not explicitly described by the project manager, but this type of baseline information may be useful for suitability and risk modeling of starry stonewort. However, MAISRC is not identified as a project partner and it is unclear how the data (raw survey data, not only summary descriptions) would be available to other researchers. Although MAISRC has extensive past and ongoing research related to starry stonewort, I do not see this project being redundant to our work - we are primarily focused on the prevention, control, and management of the *invasive* species.

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7/28	2021-042: Increasing Outdoor Learning For Young Minnesotans	Peter Smerud/ Wolf Ridge Environmental Learning Center	What are your plans for addressing social distancing and COVID-19? Would you please speak to how you are planning to provide an authentic environmental experience without in-person meetings, or if you are providing in-person meetings, what precautions you will be taking to ensure participant safety?	As this request is for funding to enable programming to begin the fall of 2021, I hope we are past social distancing and WRELC is able once again gather schools and children at our center by that time. Current social distancing protocols are not achievable at a gathering place such as WRELC. I chose in our application to include an element of distance learning in the request, labeled as naturalist tutoring, both as a measure of support for children who may need a bit more help to prepare for an experience like WRELC, but also for the off chance we remain in a distance learning world for formal school education. Also, as WRELC has no ability to host schools on our site this fall and perhaps the entire 2020-21 school year, we will still be conducting programming that includes WRELC virtual field trips, subject specific lessons, WRELC Live events with a Naturalist, etc. all conducted online. If the 2021-22 school year remains similar to where Minnesota is at the moment, we would have two options 1) As our proposal to the LCCMR is for use over a three year period, postpone the start of the scholarshipped onsite experiences to 2022-23 school year, using the funding over a 2 year vs. 3 year period; 2) use the funding for distance learning "field trips" to WR or subject specific learning via online methods.
7/29	2021-231: Urban Pollinator And Native American Cultural Site Restoration	Betsy Daub/Friends of the Mississippi River	In follow up to Commission member McNamara's question, can you please clarify your budget. It appears as if purchasing seeds and shrubs is listed twice. If the purchasing of seed and shrubs is being done by the contractor, it should only be listed only in the contractor line. If being done by FMR, it should be listed in the ETS line. Could you please clarify ASAP?	The wording in the contractor line/expenses is inaccurate. It should say "seeding and planting" - not purchasing seeds and plants. All the plants and seed purchasing is done by FMR - and is accurately reflected in the ETS line and amount of $24,638. The contractors do the work of planting and seeding - but not purchasing. We have not double counted the purchase costs.

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7/30	2021-105: Native Prairie Stewardship & Prairie Bank Easement Acquisition	Judy Schulte/ MN DNR, Ecological and Water Resources Division	How many acres of oak savanna have been preserved by the DNR Prairie Bank program?	Yes, I pulled the numbers via GIS right after I finished presenting. According to the MBS Plant Community Mapping, there is 123 acres of savanna "officially" mapped on Native Prairie Banks, however from my experience being on these sites a lot over the last 9 years, I know that is a significant under estimate. Unfortunately, I feel Oak Savannah is often lumped with other prairie and woodland plant community types during the mapping process or the grade of determination is so close to other plant community types it is labeled as a different prairie type leaving it difficult to tease out. We also still have several Native Prairie Banks that need official mapping (missed by MBS during the survey but our staff later found the sites), we are working to get these areas better mapped and projected for future data analysis. My apologies for not having a more clear answer. The only other way to know would be to have our staff go through a GIS exercise themselves and map the areas they know are savanna.

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7/30	2021-329: Voyageur National Park Crane Lake Visitors Center Project	Jim Janssen/ Town of Crane Lake	• What was the proposal for in the 2020 appropriations? Parking lot, campground? • If the 2021 proposal is just for the building that is stated to be $3.2 million, then why is the proposal for $2.6 million? • What is the bonding proposal for, and, if it is granted, will that reduce the money requested from LCCMR? • Is there a feasibility study that estimates visitors to the proposed visitors center? • How many visitors do Crane Lake and/or Voyageur National Park receive each year? • What plans are being made to achieve a net-zero building for the visitors center?	Pending

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7/30	2021-154: Precision Acquisition For Restoration, Groundwater Recharge And Habitat	Courtney Phillips/ Shell Rock River Watershed District	How many linear feet of shoreline are involved in this project?	There is approximately 2,049 linear feet of shoreline on this property.
7/30	2021-380: Accessible Fishing Piers And Shore Fishing Areas	Nancy Stewart/ MN DNR, State Parks and Trails Division (question referred to Jason Tidemann, DNR Grants)	Are the critical habitat funds raised by license plate sales also available for aquatic habitats, or are they limited to terrestrial areas? And as a follow up, could accessible fishing piers be considered under this funding program?	Pending
8/3	2021-308: Creating Cost-Effective Forage And Management Actions For Pollinators	Daniel Cariveau/ U of MN, College of Food, Agricultural and Natural Resource Sciences	What is the number of prairie species native to Minnesota, and what percentage of these species are covered in this project?	*See supplemental material on page 8—answer did not fit in table*

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Additional Mesabi Trail Information	Agenda Item 1 from Thursday, July 30		What is the cost per mile of LCCMR funds expended on completed or in development trails for the Mesabi Trail from 2014-2019 funds? What was the cost per mile of other funds expended?	Members of the LCCMR asked for the cost per mile of LCCMR funds expended on completed or in development trails for the Mesabi Trail from 2014-2019 funds. Total Miles; 31.1 LCCMR Funds $6,097,515 Other Matching Funds $5,409,950 Cost per mile LCCMR Funds $196,061 Cost per mile other Funds $176,558 Cost per mile all Funds $372,619 Please note: This summary includes the extraordinary cost of building a 4,760' floating dock and a bridge over the Embarrass River, due to the inability to obtain the environmental permits to place the trail on an abandoned gravel road bed in the Darwin Meyers WMA. In Total from 1993-on, 153.5 miles of trail have been completed or under development at a total cost of $28,236,000 for an average cost of $183,950. Of this, the LCCMR kindly granted $12,899,000 and the Mesabi Trail received Federal and other funds in the amount of $15,337,000.

Response for 2021-308: Creating Cost-Effective Forage And Management Actions For Pollinators:

Thank you for the question and we appreciate being able to follow-up. We consulted plant ecologists at the Minnesota Board of Water and Soil Resources, MN Department of Natural Resources, the Bell Museum as well as peer-reviewed research. At present there is no accepted definition of a prairie species as most plants found in prairies can also be found in other habitats. Tim Whitfield (Collections Manager for the Bell Museum) noted that 484 wildflowers could be found in prairies. This would include weedy plants as well as native species used in seed mixes. As such as our study (39 wildflower species) comprises approximately 8% of these species.

For our study, what is most relevant is the number of flowering plants found in ***seed mixes that are good forage plants for pollinators*.** Only a fraction of those plant species are commercially available as seed in quantities needed for a study design like ours. Compared to most other studies on seed mixes and given the constrains of what plants are available, our study contains more wildflower species than is typical. For example, the seed mixes designed by the MN Board of Water and Soil Resources use approximately 17 wildflower species for their suggested upland prairie seed mixes compared to 39 species that we planted in our study. The "premium" seed mix for Shooting Star Plant Nursery pollinator mix, through the CP42 program (a United States Department of Agriculture program that funds pollinator habitat) contains 30 wildflower species. Our seed mix contains most of the species in these mixes or closely related, native congeners (species in the same genus).

Our study has more species (39) than then renowned Cedar Creek biodiversity experiment (32). Our project builds on their work by extending the research to address practical questions and challenges raised by prairie restoration ecologists such as providing high quality resources to pollinators. Our aim is to optimize seed mixes so that practitioners can design highly diverse, native habitats at a lower cost. Our results will enable practitioners to conserve more habitat more effectively.

Finally, it would not be possible for any study to test every wildflower species found in prairies. Our project will provide incredibly valuable information for the majority of wildflowers available on the market including their germination success in different mixtures, and their ability to attract and provide high quality forage to pollinators. Further, the seed mix tool is highly flexible and will incorporate new and other existing data from native prairie plants from across Minnesota. For example, the seed mix tool uses data from flower visits. Our lab group has over 20,000 data points on flower visitation from nearly 150 wildflower species in Minnesota prairies.