

**Environment and Natural Resources Trust Fund  
2019 Request for Proposals (RFP)**

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**Project Title:**

**ENRTF ID: 152-CH**

Owatonna ESTEM Middle School: Makoce Ohoda Outdoor Classroom

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**Category:** H. Proposals seeking \$200,000 or less in funding

**Sub-Category:** C. Environmental Education

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**Total Project Budget: \$** 26,475

**Proposed Project Time Period for the Funding Requested:** June 30, 2021 (2 yrs)

**Summary:**

The funding requested is to support the creation of an interactive, outdoor classroom for over 1,100 students in grades 6-8 at Owatonna ESTEM Middle School.

**Name:** Thomas Meagher

**Sponsoring Organization:** Owatonna Public Schools

**Title:** District STEM Education Coordinator

**Department:** \_\_\_\_\_

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Owatonna MN 55060

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**Location**

**Region:** Southeast

**County Name:** Steele

**City / Township:** Owatonna

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**Alternate Text for Visual:**

The conceptual design map shows the new 6th grade addition outlined in yellow and transforms 1 acre of school lawn on the NE side of the building into the "Makoce Ohoda" (Respect the Earth) Outdoor Classroom .

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ TOTAL	_____ %
_____ If under \$200,000, waive presentation?			



**PROJECT TITLE: Owatonna ESTEM Middle School: *Makoce' Ohoda* Outdoor Classroom (Dakota language: "Respect the Earth" Outdoor Classroom)**

**I. PROJECT STATEMENT**

**Overall goal:**

Owatonna Middle School ESTEM program is in its initial year involved in learning about Environment, Science, Technology, Engineering and Math or "**ESTEM**" with more than 1,100 students and 80 faculty. In order to bring outdoor, environmental-based teaching and learning to OMS, we are building an interactive outdoor classroom that will accommodate multiple classes of students at any time during the school year. The creation of the **Owatonna ESTEM Middle School *Makoce' Ohoda* Outdoor Classroom (MOOC)** will transform one acre of school grounds into multiple Minnesota native habitats to provide outdoor learning opportunities for students in grades 6-8. This public, interactive, outdoor-learning space will restore lost native habitats, provide remediation of water runoff and reduce annual school grounds maintenance costs.

**How this project will be achieved:**

The MOOC, designed by teachers and students, will be the central hub for environmental education and outdoor learning for all grades and subject areas at Owatonna ESTEM Middle School. This outdoor classroom will be composed of several areas representing native habitats found in Minnesota including: tall-grass prairie, short-grass prairie, wetlands, mixed hardwood forest, and conifer forest. Each area, meeting space and path will be designed and built in cooperation with students, teachers, community volunteers and school grounds employees. The materials, resources and labor to create the MOOC will depend on support from internal/external sources and organizations, plus the ingenuity of OMS teachers and students to collect native plants/seeds and conduct successful fundraising campaigns.

**Why this project needs to be done:**

The current location of Owatonna ESTEM Middle School has limited natural landscape for outdoor-learning. By creating the outdoor classroom on school grounds, teachers can easily and effectively engage students in outdoor/environmental learning. Each section within the MOOC will also provide specific environmental benefits, such as storm water remediation, ground water protection, replacement of lost native habitats, and wildlife/pollinator ecosystem support.

Most importantly for our students, current educational research, available through the Minnesota Environmental Education Association & National Child and Nature Network, identify the following benefits for students from outdoor learning (Taylor and Kuo, 2006; Orr, 2004; Onge & Eitel, 2016):

- Positive effects for physical, social, interpersonal, and aesthetic development in children.
- Alleviate symptoms of ADHD and ADD through access to outdoors.
- Help ELL students learn new vocabulary through direct experience with the outdoors.
- Improve children's physical, mental and emotional health.
- Learn skills in stewardship, thereby developing appreciation, ownership, and responsibility.

Over the long-term, the OMS MOOC has the potential to positively impact thousands of students, who will carry the memories of curiosity, fascination, and stewardship for natural lands into their adulthood. We believe our alumni will become tomorrow's leaders to steward Minnesota's natural resources, based on their experiences first planted from outdoor-learning at the ***OMS Makoce' Ohoda* Outdoor Classroom**.



**II. PROJECT ACTIVITIES AND OUTCOMES**

**Activity 1: Rain garden and storm water wetland habitat construction**

**Description:** Initial construction & grading of grounds for water retention, funded by ISD761 Foundation Grant  
**ISD761 Foundation BUDGET: \$5,000.00**

<b>Outcome</b>	<b>Completion Date</b>
1. Construction of storm water remediation and drainage	<i>Nov, 2018</i>
2. Construction of retention pond and water filtration system	<i>Nov, 2018</i>
3. Construction of wetland rain garden habitat	<i>Aug, 2019</i>

**Activity 2: Habitat design, site landscape preparation & outdoor classroom meeting spaces construction**

**Description:** Student/teacher lead design and creation of individual habitat & learning areas within MOOC.  
**ENRTF BUDGET: \$6,175.00**

<b>Outcome</b>	<b>Completion Date</b>
1. Landscape preparation & path construction	<i>June, 2019</i>
2. Preparation of section habitats for water drainage and wetland planting	<i>Aug, 2019</i>
3. Construction of outdoor classroom meeting spaces and student seating	<i>Nov, 2019</i>

**Activity 3: Arboretum, Tall-grass prairie, short-grass prairie and pollinator habitat planting**

**Description:** Students, teachers, & volunteers plant native plants and trees in over 15,000 sqft of MOOC.  
**ENRTF BUDGET: \$26,300.00**

<b>Outcome</b>	<b>Completion Date</b>
1. Construction of arboretum and planting of native Minnesota trees	<i>Nov, 2019</i>
2. Construction of tall-grass and short-grass prairie habitats	<i>June, 2020</i>
3. Construction of pollinator/native wildflower and wetland habitats	<i>June, 2020</i>

**III. PROJECT PARTNERS:**

**A. Partners receiving ENRTF funding : NA**

**B. Partners NOT receiving ENRTF funding**

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>	<b>Role</b>
<b>ISD 761 Foundation</b>	<b>N/A</b>	Financial resources from community members supporting innovative education in Owatonna public schools.	Provide \$5,000 for development of MOOC site preparation, wetland habitat & rain garden construction.

**IV. LONG-TERM- IMPLEMENTATION AND FUNDING:**

This MOOC will be an integral component of ESTEM teaching and learning at Owatonna Middle School and will be implemented and maintained for a minimum of 10 years, the duration of current educational curriculum cycle. As natural habitats grow and develop over time, it is anticipated that this MOOC will be a significant and central component of this school’s learning culture and community. Student groups and organizations will implement fundraising plans to provide long-term financial support for maintenance and upkeep.

**V. TIME LINE REQUIREMENTS:**

Initial construction is anticipated to begin spring 2018 and preliminary construction completed by beginning of school year 2019-20. Planting of collected seeds and trees will begin spring/summer 2019 and be completed by November 2020. Fall of 2020 will see completion of interpretive areas, small and large-scale outdoor learning spaces, and all plantings of native grasses and forbs. Complete construction of perimeter fencing, outdoor learning spaces for individual student seating, and trail maintenance will be completed November 2020.

## 2019 Proposal Budget Spreadsheet

**Project Title: Owatonna ESTEM Middle School: Makoce' Awaâyake Outdoor Classroom**

**IV. TOTAL ENRTF REQUEST BUDGET: 2 years**

BUDGET ITEM (See "Guidance on Allowable Expenses")	AMOUNT
<b>Personnel:</b> Owatonna School district employees, students, teachers & volunteers.	\$ -
<b>Professional/Technical/Service Contracts:</b> Services provided by Owatonna school district facilities & grounds crew, students, teachers & volunteers.	\$ -
<b>Equipment/Tools/Supplies:</b> Equipment needs provided by Owatonna school district facilities.	\$ -
<b>Acquisition (Fee Title or Permanent Easements):</b> N/A	\$ -
<b>Travel:</b> N/A	\$ -
<b>Additional Budget Items:</b> Landscape and habitat construction materials including: Sand, rock, boulders, mulch, edging, landscape fabric, 20 species of native trees, prairie seeding/seedlings (6,300 sqft), pollinator/wildflowers seedlings (3,000 sqft), wetland seedlings (3,200 sqft) and paving materials for 20 ft diameter outdoor meeting circle with student seating.	\$ 26,475
<b>TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =</b>	<b>\$ 26,475</b>

**V. OTHER FUNDS** (This entire section must be filled out. Do not delete rows. Indicate "N/A" if row is not applicable.)

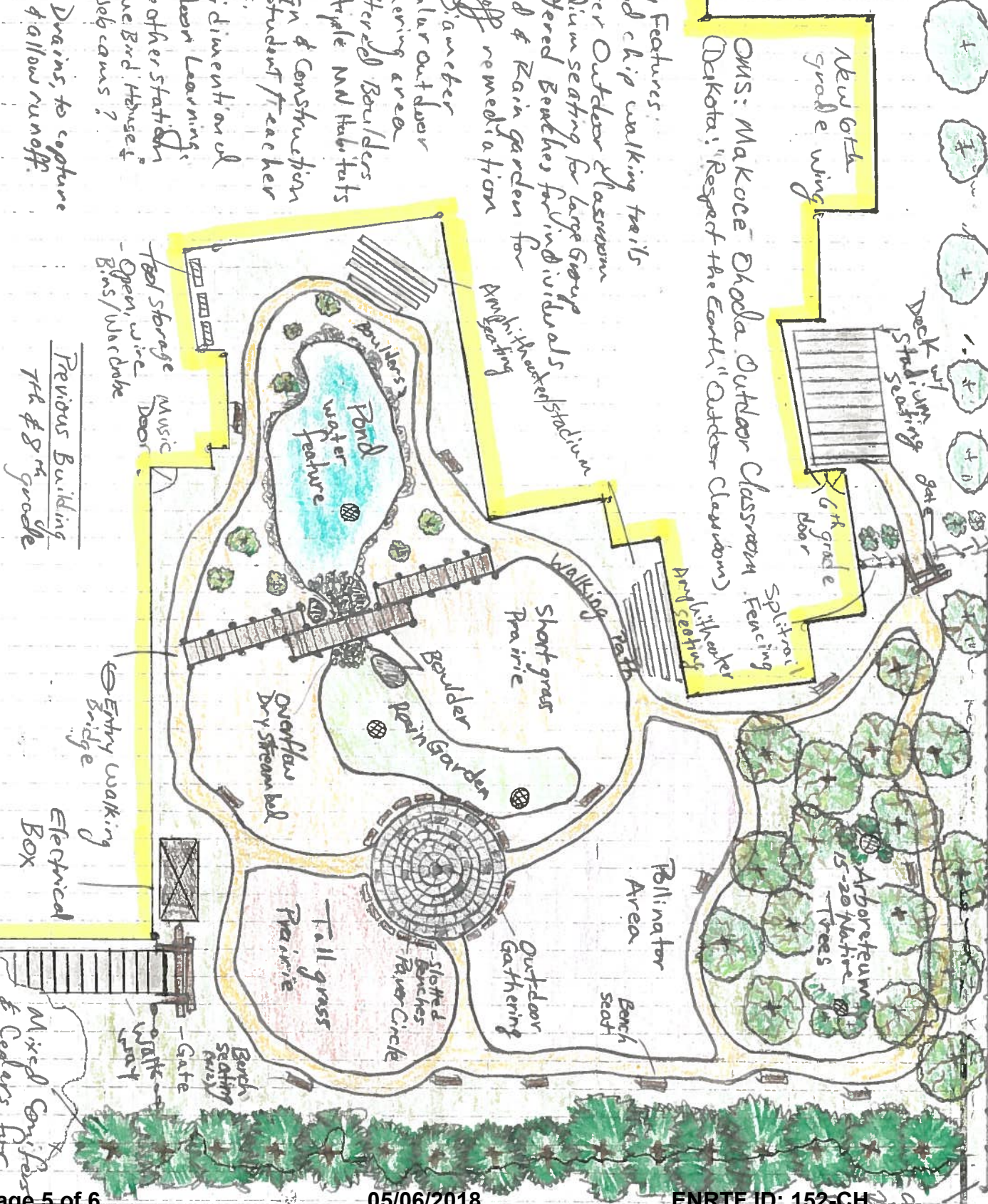
SOURCE OF FUNDS	AMOUNT	Status
<b>Other Non-State \$ To Be Applied To Project During Project Period:</b> ISD761 Foundation Grant	\$ 5,000	<i>Received</i>
<b>Other State \$ To Be Applied To Project During Project Period:</b> N/A	\$ -	
<b>In-kind Services To Be Applied To Project During Project Period:</b> N/A	\$ -	
<b>Past and Current ENRTF Appropriation:</b> N/A	\$ -	
<b>Other Funding History:</b> New project with no previous funding history.	\$ -	





- Key Features:
  - Wood chip walking trails
  - River Outdoor Classroom
  - Stadium seating for large group
  - Scattered Benches for individuals
  - Pond & Rain garden for runoff remediation
  - 30' Diameter Circular outdoor gathering area
  - Scattered Boulders
  - Multiple NW habitats
  - Design & Construction by Students/Teacher input.
  - Multidimensional Outdoor Learning:
    - Weather Station
    - Blue Bird House
    - Webcams?
- Raised Drains, to capture water & allow runoff.

Scale: 1sq = 2m  
 1sq = 7ft<sup>2</sup>  
 Total Area of NE Campus ~ 35,000m<sup>2</sup>  
 ~ 42,000 ft<sup>2</sup> } ~ 0.89acres



Revised Building  
 7th & 8th grade

Mixed Conifers  
 & Cedars for  
 Privacy

W. Weeber 11/7

**Thomas Meagher, PhD**  
**District STEM Education Coordinator**  
**Owatonna Public Schools**  
**Owatonna, MN 55060**  
[tmeagher@owatonna.k12.mn.us](mailto:tmeagher@owatonna.k12.mn.us)  
**507-444-8707**

**Project Manager Qualifications:**

- **Dr. Meagher holds a PhD in Science Education with over 30 years of experience teaching in K-12 and post secondary institutions.**
- **Dr. Meagher is a current member of Minnesota Department of Education District Science Education Leaders Committee and Associate with University of Minnesota STEM Education Center.**
- **Current position is ISD761 STEM Education Coordinator and Instructional coach. Provides academic and professional development for over 350 educators grades K-12.**
- **Supervisor for McKinley STEAM School outdoor classroom and native habitats learning space. Designed and coordinated student, teacher and volunteer construction of 0.25 acre outdoor learning space on school grounds 2015-2018.**
- **Holds teacher certification in Life Science and Environmental Education for grades 7-12 with over 20 years experience teaching outdoor and field biology courses.**