Environment and Natural Resources Trust Fund
2015 Request for Proposals (RFP)

Project Title: **ENRTF ID: 131-F**

Building Ecologically-Sound Landscapes in Our Communities

Category: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat

Total Project Budget: $ 241,828

Proposed Project Time Period for the Funding Requested: 3 years, July 2015 - June 2018

Summary:

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.

Name: John Erwin

Sponsoring Organization: U of MN

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St. Paul MN 55108

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Web Address

Location

Region: Statewide

County Name: Statewide

City / Township:

Alternate Text for Visual:

Conceptual graphic of those participating in project and expected outcomes.

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage		_____ TOTAL

PROJECT TITLE: Building Ecologically-Sound Landscapes in Our Communities

I. PROJECT STATEMENT

WHY: We will engage >80% of Minnesotans whose yards and parks are their primary contact with nature on a daily basis to:

1) Recommend non-invasive landscape plants appropriate for different sites to insure survival and develop techniques to evaluate new landscape plants for different uses,
2) Provide design templates that residents can use in their yards with ecological benefits, and
3) Provide legally-vetted planning and zoning codes, and non-invasive plant lists, and ordinance templates for local governments to tailor/adopt to promote ecologically sound practices.

Why do this? First, this proposal allows the vast majority of Minnesotans to positively impact the environment using their yards, towns and cities to reduce runoff, support pollinators, increase canopy, etc. Second, in many cases law/ordinances are not enacted because lawmakers do not have expertise in an area - we provide legally vetted templates of laws/ordinances to accelerate the adoption process.

Invasive species, storm damage due to poor tree selection, and pollinator decline cost MN residents money, and negatively impact the environment. For instance, buckthorn removal costs Minneapolis residents $175,000-$375,000/year, and recent storm events cost >$2 million dollars. Currently, planning and zoning codes allow, and garden centers and nurseries sell plants that are invasive, have negative impacts on the environment, and/or will not survive after planting. Locust trees are planted in parking lots because the leaves wash into the storm sewer (no maintenance). Invasive plants are planted because they survive. Sterile trees are planted because flower life is long, but they don't support pollinators. This proposal offers ways to address these issues.

The GOALS and OUTCOMES: The goal of this project is to increase plantings and planting survival statewide in yards, towns and cities to have a positive impact on our environment. Plant selection will offer species with environmental benefits as well as benefits to native plants and wildlife. Aside from ecological benefits, updated laws/codes and ordinances will reduce maintenance costs to the public and government.

HOW: We will 1) develop plant lists for different purposes collaborating with regional local greenhouses, nurseries and local governments, 2) develop assessment techniques (heat/cold/drought, pest and disease tolerance) for landscape plants to insure long-term survival, 3) create template designs for different environmentally beneficial gardens/landscapes, and will 4) develop planning and zoning code templates from existing ordinances, codes and legislation, as well as, develop new, innovative examples with a legal firm experienced with park/environment related issues. All materials will be delivered to the public, industry and local governments with extension tools including fact sheets, iBooks, presentations, and a website.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1: Non-invasive landscape plants will be grouped for stress tolerance (cold, heat, drought) and pest and disease resistance for each of 5 regions in MN. Street tree alternatives resistant to storm damage and/or emerald ash, and have ecological benefits will be identified. Dynamic planting lists will be available for integration into planning/zoning codes online. **Budget: $114,033**

Outcome	Completion Date
1. Consumers, landscapers and local government will know what plant materials are appropriate for different sites with different stresses to insure survival.	March 2016 and 2017
2. Street tree recommendations for ash trees will be available for different sites.	March 2016
3. Online planting lists will be available to be integrated into planning and zoning codes listings to insure planting success for local governments.	March 2016, and 2017

Activity 2: *Design templates for rain gardens, prairie gardens, butterfly gardens, and other ecologically beneficial landscapes will be developed with plant lists.* **Budget: $51,398**

Outcome	Completion Date
2. Ecological benefits will be realized in yards, towns, cities and streetscapes through new landscapes with ecological benefits.	March 2017

Activity 3: Legally vetted code/ordinance templates, and planting lists with positive ecological impacts that can be easily adopted by local government units to promote ecologically sound practices will collected and placed online. New ordinances (emerald ash, pollinators, phosphorus runoff, etc.) to deal with current issues will be written. **Budget: $76,397**

Outcome	Completion Date
1. Residents will be able to directly impact their environments by getting ecologically sound information from fact sheets, iBooks, and planting designs for general distribution online and in printed form will increase plant survival, and ecological benefits of landscapes.	March 2017
2. MDA and DNR will have online plant list access to insure invasive species are not recom.	March 2017
3. Locally tailored (legally vetted) ordinances, and planning and zoning codes will be adopted statewide to reduce invasives, enhance landscapes, improve water quality, reduce runoff, etc., in yards, towns, and cities that will have ecological benefits and reduce maintenance costs.	March 2016

III. PROJECT STRATEGY

Project Team/Partners

John Erwin Professor (Co-leader) - Floriculture, Nursery and Greenhouse Vegetable Ext. Specialist – Dept. of Hort. Sci., U of MN, Project Lead- Oversee data collection, graduate student supervision.

Gary Johnson Professor (Co-leader) - Urban and Community Forestry Ext., Dept of Forest Res., U of MN

Vera Krischik Associate Professor, Center for Urban Ecology and Sustainability, Dept of Entomology, U of MN

Marla Spivak Professor (Co-leader) – Apiculture Ext. Specialist, Dept. of Entomology, U of MN, OR New Asst Professor of Pollinator Habitat Ecology

Monica Chandler - Invasive Species Specialist, MN Dept of Agriculture

Grad Students Joint - Depts. of Horticultural Science, Entomology Forestry, U of MN, Collect data, write results.

Industry Minnesota Nursery and Landscape Assoc. (MNLA) and Minnesota Recreation and Parks Assoc. (MRPA), Minneapolis Park and Recreation Board

B. Project Impact and Long-Term Strategy

This project will allow all Minnesotans to get involved in supporting sound ecological practices by changing landscapes in their yards, towns, cities, and along roadways to save resources and benefit the environment. Templates, and planting lists developed will facilitate local governments in adopting reasonable legislation/ codes/ordinances in a timely fashion to insure landscapes/street trees that are planted survive, and increase the ecological benefits of those landscapes in yards, towns and cities. Templates for current, relevant issues such as Emerald Ash Borer, drought and P runoff issues, pollinator support, etc. will be provided to allow local government to address significant issues quickly. Extension resources online will be able to be tailored by the MDA to insure newly identified invasive species are not being recommended.

C. Timeline Requirements

This project represents a 2 ½ year project requiring two growing seasons.

2015 Detailed Project Budget

Project Title: Building Ecologically-Sound Landscapes in Our Communities

IV. TOTAL ENRTF REQUEST BUDGET: 2.5 years

BUDGET ITEM	AMOUNT
Personnel: 2 Graduate Assistants @ 50% each for 2.5 years from 8/31/15 - 8/28/17 with salary, fringe benefits, and full tuition. 8/29/17 - 2/28/18 with salary, fringe benefits, and reduced tuition.The fringe rates are calculated at the current University of Minnesota negotiated rates of 15.7% for the academic year & 23.1 % for the summer months Year 1: Salary @ $23,660 x 2 = $47,320; fringe benefits @ $4,192 x 2 = $8,384; tuition @ $15,015 x 2 - $30,030; Total = $85,734 Year 2: salary @ $24,134 x 2 = 48,268; fringe benefits @ $4,275 x 2 = $8,550; tuition @ $15,916 x 2 = $31,832; Total = $88,650 Year 3 (6 months): salary @ $11,944 x 2 = 23,888; fringe benefits (15.7%) $1,875 x 2 = 3,750; tuition @ $1,784 x 2 = $3,568; Total = $31,206	$ 205,590
Contracts: Organization/Law firm experienced in environmental and municipal law will be identified and contracted with, to vet proposed codes/ordinances.	$ 20,000
Equipment/Tools/Supplies: Supplies are associated with lab experiments, growth chamber rental, and water/temperature sensors associated with developing environmental stress assessment	$7,500
Travel: Travel will occur to public gardens, Agriculture Experiment Stations, and commercial garden centers and nurseries throughout all 5 regions of MN (SE, SW, NW, NE, and metro). Travel locations will include Duluth, Grand Rapids, Detroit Lakes, Morris, Mankato, Marshall, Waseca, Austin, Winona, Rochester, Minneapolis/St Paul Area. Distance = 1113 miles @ $.56/mile x 2 times a year ($1,247) + 5 days partial day meals ($194) and 4 nights lodging ($428) = $1,869 x 2 years = $2,738	$ 3,738
Additional Budget Items: Website Design @ $5,000 - contracted web site design firm estimate. Content will be loaded by graduate students, faculty, and research fellow.	$ 5,000
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND $ REQUEST =	$ 241,828

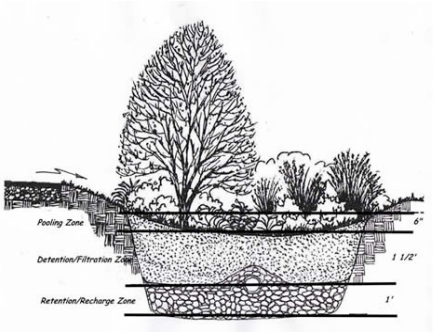
V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other State $ To Be Applied To Project During Project Period: Existing trial gardens in the state Agricultural Experiment Station System (Waseca, Morris, Grand Rapids, etc.) will be used as evaluation sites, city owned parks, gardens, and street trees will be used as evaluation plants/sites, existing commercial nurseries will be used for test sites and information collection.	Unknown	Already Public
In-kind Services To Be Applied To Project During Project Period: John Erwin effort @ 3.0% per year, salary @ $2,592/yr plus fringe @ 33.6% or $871/yr = $3,463 x 2.5 years = $8,658. Also, unrecovered indirect costs $241,828 - $80,104 (graduate student academic year fringe & tuition) = $161,724 x 52.0% MTDC rate = $84,096	$84,096	Secured:Erwin Pending: unrecovered IDC

Residents Plant Plants that Benefit the Environment

New Planning/Zoning Ordinance Code Adoption

Landscape Designs - Promote Ecologically Sound Practices



Support Pollinators

Support Native Plant Communities and Wildlife

Long-Term Environment Benefits

Organization Description – University of Minnesota:
The University of Minnesota is the Land Grant College which serves the resident of Minnesota and the greater region through teaching, research and extension. The Department of Horticultural Science serves the public as well as the commercial horticulture industries which include the greenhouse flower, florists, nursery crop, vegetable, fruit, turf, potato, and mushroom producers.

Project Lead - John Erwin
BS – Delaware Valley College of Science and Agriculture – Ornamental Horticulture
MS – Michigan State University – Horticulture
PhD – Michigan State University - Horticulture

Professor
Greenhouse Crop and Nursery Extension Specialist
Department of Horticultural Science, University of Minnesota
(Assistant Professor 1989-1996; Associate Professor 1997-2004; Professor 2005-Current); Former Vice Chair of Ornamentals of the International Society of Horticulture Sciences; Former Chair – Ornamentals, American Society of Horticultural Sciences.
Responsible for extension related to commercial production of ornamental plants and greenhouse fruit and vegetable production statewide. Recent responsibility change includes a new responsibility for the Minnesota Nursery industry. Past accomplishments focus developing new non-chemical production practices that to control plant growth, production procedures for NASA, protocols to force flowering of poinsettias, Easter lilies, and many garden annuals, protocols for lighting and shading to save energy. Also, identified new best management practices to increase pest/disease control while decrease chemical use.

Current Citywide Minneapolis Park and Recreation Board Commissioner (elected 3 times 2001, 2010, 2014), Former Vice President – 2 years, and President 4 years of the Minneapolis Park and Recreation Board.
Led the Minneapolis Park and Recreation Board when it was identified as the #1 Park System in the United States by the Trust for Public Land (2013), initiated the largest riverfront redesign and restoration project in recent memory in Minneapolis (RiverFirst), initiated an reinvestment in neighborhood recreation centers, and developed a management plan to restore Minneapolis's tree canopy that includes planting 10,000 trees/year, while 'holding the line' on tax increases (less than any Board in 40 years).

Consultant
Small Business Owner:
Consults with greenhouse ornamentals/vegetable production industries in CA, FL, TX, OR, WA, and CO. Essentially help produce product that is sold through big box chains along west coast.