



Natural Resources Building Sustainable Plant Production and Pilot Prairie Garden

APPLICATION INFORMATION

Project Lead Contact Information

Name: Gary Miller

Phone: 217-333-8942

E-mail: gdmiller@illinois.edu

Address: 607 East Peabody Drive, MC -700

Title: Associate Executive Director

Organization/Department: Institute of
Natural Resource Sustainability

Secondary Contact Information

Name:

Phone:

E-mail:

Address:

Title:

Organization/Department:

Unit Financial Officer Contact Information:

Name: Gary Miller

Phone:

E-mail:

Address:

Title:

Organization/Department:

I. Detailed Project Description:

The Institute of Natural Resource Sustainability proposes to use its greenhouses adjacent to the Natural Resources Building (NRB) near the intersection of Pennsylvania and 6th Street, to begin growing sustainable, native plants for use on campus. Students from Landscape Architecture will be involved as a Learning Laboratory. INRS will design and plant a prairie landscape on the south side of the Natural Resource Building. It is our intent to gain approval to expand it in the future. We will also work with Facilities and Services to design and gain approval for a sustainable shade-tolerant woodland landscape plan for the north side of the Natural Resources Building. This would serve as a demonstration of this type of planting on campus. The possible types of plants to be included, depending on design approval, are native species of blue bells, May apple, bloodroot, wild geranium, celandine poppy, wild ginger and Solomon's seal.

Sustainable plants are those that will thrive in a given microclimate and require minimal maintenance. In this case, minimal maintenance means no mowing which reduces the consumption of fuel and reduces labor costs, does not require chemicals such as fertilizers and herbicides, and requires no supplemental watering. These plants should be disease resistant and must be aesthetically pleasing since they will be part of the campus landscape. Native plants are preferred but non-native plants are also acceptable if they meet the above criteria.

This effort would be undertaken by staff in INRS with extensive expertise, including some recent retirees, and with the assistance of students enrolled in Landscape Architecture. Besides expertise and labor, INRS has adequate greenhouse space available at the intersection of Pennsylvania and 6th Street. This is near to the Landscape Architecture program making it accessible for faculty and students in that program to assist and use the greenhouse as an extension of their classrooms.

It is anticipated that the landscape established by this project will be a permanent planting. It will be maintained as a permanent exhibit for the public and featured during our annual open house, Naturally Illinois. The plants grown in the greenhouse will be used to complete and maintain existing plantings at VetMed and Orchard Downs as well as supply new sustainable landscape areas on campus. Without this supply of plant materials the existing plantings will be incomplete and difficult to maintain.

In addition, INRS staff will work with students, Facilities and Services and other interested parties to develop a second stage plan that extends the proposed restoration around the remainder of the Natural Resources Building. This plan will extend to other nearby buildings. This task will include securing campus approvals to implement this plan. External funding efforts will include submitting proposals for various foundations as well as the Student Sustainability Committee. Effort will be made to secure outside funding from private donors as well as public agencies.

A significant barrier to acceptance and sustainability of native plant gardens on campus is lack of documentation of their maintenance requirements and value in terms of both aesthetics and reduction in greenhouse gases. A written and video instructional manual will be produced as a learning tool as an important element of this project. This manual will be for use of students in Landscape Architecture, staff in Facilities and Services, and volunteers in INRS.

The project will be led by Dr. Gary Miller, Associate Executive Director of INRS, and a core team consisting of Dr. Jamie Ellis and Dr. John Marlin. Drs. Ellis and Marlin are noted sustainable landscape experts having been directly involved in many such projects on campus and in the community.

INRS personnel met with representatives of Facilities & Services personnel about this proposed project. The landscape of the Natural Resources Building is not in an area in the campus plan designated for sustainable landscaping. They encouraged that we focus our efforts on supporting existing sustainable landscaping projects rather than converting the NRB landscaping. The proposed project does support existing and other planned sustainable landscaping projects by growing plants in our greenhouses that can be supplied at a lower cost than if they are purchased locally. With this funding we are proposing to begin a small sustainable prairie plot on the lawn on the south side of the Natural Resources Building along Pennsylvania Avenue. This is an area that will be dug up for a simulated archeological dig as part of our Expo this coming March. After the Expo, rather than converting that area back to lawn, we propose starting a sustainable prairie complete with educational signage. This signage will be valuable year round to the general public as well as for educational tours during future Open Houses.

This proposed project is different from the other sustainable, natural landscaping projects on campus in two main ways. First, the goal is to primarily serve as a source of sustainable plant material. Students from Landscape Architecture will be involved in plant selection as well as gain hands-on experience growing these plants from seeds all the way through several years of growth to maturity. They will also help design the sustainable prairie and woodland habitats

adjacent to the Natural Resources Building. The second main difference is in documentation and measurement of environmental parameters. A “how to” video and written (with pictures) manual will be produced as a leaning tool and to help with maintenance questions. The students will also help document long-term performance of the different plants in different setting and identify their needs for maintenance such as pruning. This information is lacking from most sustainable landscaping projects. Good metrics of the environmental benefits of sustainable landscape projects applicable to this campus are also lacking. This will help add documentation to the Illinois Climate Action Plan.

Staff involved in this project are experienced with successful prairie restoration efforts in the community and across Illinois. The video/manual documentation will be expanded to also include instructions on how to restore prairie ecosystems so that other University departments that do not have INRS’s resources will be able to carry out similar projects.

II. Budget & Fundraising:

<u>Item</u>	<u>Cost</u>
Prairie plant material (400 plants @\$2 ea.)	\$ 800
Seeds (40 species @ \$2/packet)	80
Greenhouse charges (\$0.30/ft ² /week for 200 ft ² for 12 weeks)	720
Plastic flats and pots	175
Potting soil	200
Shade-tolerant woodland plants	4,000
Mulch (2 cubic yards @\$20/yd)	80
Herbicide application (if needed)	100
Auger for planting	45
Drill rental (for auger)	100
Rakes and shovels (for mulch)	100
Refreshments for student volunteers	75
Educational Signs	1,275
Staff time to document and prepare signage	6,000
Photo and video documentation	5,500
 Total Costs	 \$ 20,000

Fundraising

The salaries of core team INRS staff involved will be contributed. This is expected to more than double the amount of funds requested. As noted above, outside funding sources will be actively approached to support the second phase of this project.

III. Timeline

- Task 1 – Select types of plants for growing in greenhouse (in cooperation with F&S and students in Landscape Architecture) – Month 1
- Task 2 – Purchase seeds and other materials for greenhouse – month 1
- Task 3 – Begin greenhouse operations – Spring 2011 and on-going
- Task 4 – Documentation - on-going from beginning of project
- Task 5 - Supply plant materials to existing projects as needed - beginning in late Spring 2011
- Task 6 – Install sustainable prairie landscaping at NRB – September and October 2011

Task 7 – Install signage for educational exhibit and include in Naturally Illinois open house – Spring 2012

Task 8 – Produce manual (to be updated at least annually) – May 2012

Task 9 – Develop long-term plan for conversion of NRB landscape – Spring 2012

Task 9 – Determine on-going budget and sustainability of greenhouse operations – May 2012

IV. Energy, Environmental, Social and Economic Impact

As noted above, this project is expected to have several positive environmental impacts on gasoline used for mowing, water, and chemicals. Deep-rooted prairie plants have been shown to sequester carbon. This small space will likely contribute negligibly small amounts of carbon sequestration but the opportunity to demonstrate this to students and the public is valuable. It is also expected to lower the cost of sustainable landscapes on campus thus accelerating their implementation. It will also increase the aesthetic appearance of landscape. Socially, it is the goal of this project to increase knowledge, understand and acceptance of sustainable landscapes to campus administrators, students and the public through the outreach efforts described below.

V. Outreach and Education

This proposal also includes installation of native plantings around the Natural Resources Building. Specifically, a pilot prairie garden (approximately 200 feet by 100 feet) will be planted along Pennsylvania Avenue. This garden will be highly visible to visitors to the Campus Bike Project, visitors to football games, students, staff and the general public.

Educational signage will also be made for a permanent display within these plantings. SSC funding will be acknowledged in the signage and in all publicity including the manual and on the INRS web page where information about this project will be posted and updated regularly. The purpose of the signage will be for a permanent exhibit. The signs will identify the plants and explain their value and care. This permanent exhibit will be maintained by INRS staff and will be used during our annual Naturally Illinois Expo. There are about 2,000 visitors to the Expo each year. This will also be available to faculty in their teaching and research as well as to school groups. Staff will offer to make appearances on local television to raise local awareness of this project.