

## **OHF FINAL REPORT – EXECUTIVE SUMMARY**

Project Number: 010-114

Recipient: Valley City State University

Award Amount: \$10,000

Total Project Costs: \$29,021.36

Total OHF Funds Received: \$10,000



### **Goal of Project:**

The goals of this project are many and target a variety of individuals and groups. Our major goals include providing opportunities for education and community engagement, improving the aesthetic value of our city, and providing wildlife habitat in an urban environment. These goals tie directly to the objectives of the North Dakota Outdoor Heritage Fund Program, primarily meeting Directive D: Conserving natural areas and creating other areas for recreation through the establishment and development of parks and other recreation areas; and secondarily through Directive C: Developing, enhancing, conserving and restoring wildlife and fish habitat on private and public lands.

The City of Valley City and Valley City State University have a proven record of working together to improve our community and to provide for educational opportunities of students and citizens. The Hi-Line Gardens and Orchard is a prime example of community collaboration. This project supports the education of the value of native plants as ornamental plants and as components of the natural diversity of North Dakota. The project area is within walking distance of two elementary schools, Valley City Junior-Senior High School, and Valley City State University, allowing for quick field trips to promote plant identification skills, plant dynamics, and diversity of plants found in the Great Plains. In order to promote this education goal, appropriate educational signage will be in place permanently and VCSU will promote educational opportunities to local schools.

The Hi-Line Gardens and Orchard will also provide numerous opportunities for community engagement. In addition to providing help with planting and maintenance, community members will also be called on to help with local fundraising, educational and marketing efforts. During 2016, community members worked 154 hours for site preparation and tree planting including Boy Scouts, VCSU students, Public Works and Valley City Fire Department Employees and the Valley City Beautification Committee. A local graphic designer donated the design for our new logo. Successful orchard fruit production would promote community support through opportunities for free fruit and berry picking for personal use. These efforts continued in 2017 with over 200 hours of volunteer service by community members, VCSU students, Boy Scouts, and Valley City Public Works and Fire Department Employees.

This project will greatly improve the aesthetic value of Valley City. The site is located on the east and west side of 5th avenue in Valley City, the main route to the well-known High-Line Bridge and to Lake Ashtabula. Phase One of the project, the planting of the ornamental tree screening of the water detention pond and the fruit and nut orchard trees have already been planted in order to not lose out on previously awarded grant funding. Planting of the 69 ornamental and fruit trees has greatly increased the beauty of the area. Community members were also able to partake in fresh fruit from the

orchard this year, promoting more support of this project. We would now like to continue improving the area by additional native plantings and to install walking paths to promote enjoyment of the area and to maximize handicap accessibility.

Last but not least, our goal is to improve wildlife habitat in an urban environment. Specifically, we seek to improve habitat for native butterflies, bees, birds, and other pollinator species. Plant species chosen for the garden include native species that are beneficial to pollinators. Numerous fruit species that are beneficial to birds have been planted to support birds seasonally.

### **Work Accomplished:**

A contract was signed on June 1, 2018 with KLJ Engineers for the layouts and staking for grade work to be completed and gardens to be installed. They would not be donating their labor for this project, so more grants and cash match needed to be raised. We were successful in obtaining a \$3,250 grant from the Blue Cross Blue Shield North Dakota Caring Foundation to cover most of the cost of engineering for the pathways.

An on-site review with KLJ Engineers was completed on June 19. The engineers notified us that the two pathways coming from the east and west off of the 9th Street NE sidewalk would not make grade for handicap accessibility. It was suggested that the pathway could be rerouted through the planting area between the Juneberry and Gooseberry plantings. The engineers checked that route and found that it would meet ADA requirements for grade so that change was made. Removing one pathway and altering the location of the other changed the location of the secondary pathway and severely decreased the size of Pollinator Garden #5. The location of the smaller, secondary pathway to the north of garden #5 was thought to make little sense after the design change so it was removed, allowing for more space for garden #5. After review, other changes were also made to the design of the pathways and gardens for safety and other reasons. A short portion of the pathway that followed the south side of Pollinator Garden #2 out to the 5th Avenue NE sidewalk was removed. All of these changes caused the mapping and materials estimates to be changed which took some time. Only a few hours had been logged by volunteers at this time.

A contractor was contacted about the pathways, but we had to wait for it to fit into his busy construction season as he is a major contractor providing concrete sidewalk, curb and gutter work for the city as well as numerous other projects. As the pathways have to be completed first before the rain garden can be constructed, this pushed our estimated construction date back somewhat. We had hoped to have the pathways constructed by the middle of September in order to make use of VCSU students in the construction of the gardens before freeze-up.

As the contractor remained busy doing concrete work for the city until just before Christmas we were unable to get the rain garden constructed. We did order the tree and shrub labels. We have also ordered some plants for the rain garden and the biology classes at VCSU tended to them in their greenhouse for planting in the spring. Because of the setbacks beyond our control, we had to ask for an extension which was granted until June 30, 2019 for the reimbursement of funds for this project.

Early this spring, we contacted the contractors who had agreed to complete the pathways for us. The existing retaining wall had to be extended in order to provide for the end of the pathway below the hill which was completed by Pine Country Nursery. Lynn Johnson Construction excavated the pathways and the Rain Garden site. Pine Country Nursery then installed the Class 13 gravel for the pathways and did the compaction. The class 13 gravel was supplied by Star Enterprises. Lynn Johnson Construction also built up the area adjacent to the driveway and installed the longer culvert which was needed to provide

for the pathway next to the driveway. We were able to obtain a culvert and extensions from the Barnes County Highway Department. We had planned for the City of Valley City to provide the clay to build up that area as they are removing some temporary levees as part of a flood mitigation project but they were not working on that part of the project this year as they would have been if we had been able to do the construction last year. As a result, we had to pay Star Enterprises for the clay instead. The cost of the retaining wall extension ended up being way over estimated as well, but luckily, Lynn Johnson really believes in the project and donated a large part of his services to try to help us out. Volunteers also provided 143 hours of volunteer labor as part of this phase of the project, quite a bit more than had been planned, which helped keep our costs down. As planned, students from Valley City State University helped with the construction and planting of the Rain Garden and site clean-up. They were a big help. The City of Valley City did provide the mulch and its delivery for the Rain Garden as planned.

### **Project Results:**

This project has converted approximately 4 acres of unused property in northwest Valley City into an easily accessible outdoor recreation and educational area. Phase One of the proposed plan included planting 20 ornamental trees and 49 fruit and nut trees (apples, plums, cherries, etc.). Phase Two included the planting of 121 fruiting shrubs (juneberry, honeyberry, bush cherry, etc.), approximately 3,000 square feet of native flowering plants, and a required hillslope retaining wall. Phase Three included the remaining site grading, construction of gravel pathways around and through the gardens and orchard, planting of a 1,300 square foot rain garden, and educational signage including tree and plant labels.

This project will now serve several functions. First, the gardens and orchard has greatly improved the aesthetic value of the area and provides opportunities for outdoor activities for community members, including fruit picking, planting, and just enjoying the plant life on a daily basis. This project now also provides valuable habitat and resources for native pollinator species.

The educational component of this project is a major focus and immeasurable. At a small scale, plant identification signage and descriptions will increase community knowledge of North Dakota native plant species. Available information will focus on all age groups, from elementary students to senior citizens and the location and proximity to local schools will allow for short field trips and outdoor learning experiences. On a much larger scale, this project can be used to demonstrate eco-friendly and sustainable landscape methods. For instance, native plants are adapted for our varying climate and able to resist drought, heat and cold. These species are self-sustaining and useful for low maintenance urban landscaping while maintaining beauty and native plant diversity of the Great Plains.

We have already conducted tours for garden clubs, kindergarten classes, VCSU Biology classes, and used the site for an ND Forest Service shrub and tree pruning seminar. We have had informational booths at city events such as Community Days and Farmer's Markets which have raised awareness and brought in some donations towards the project. David Brady is a seasonal US FISH and Wildlife employee living in a VCSU dorm while conducting surveys on pollinator plants, insects, birds, soil, and water quality. He graduated from Iowa State in Ecology and will be looking to start a career as a science teacher. David staffed a recent informational booth at this year's Community Days excellently, inviting people to try the honeyberries picked fresh from the orchard and giving them information on the Hi-Line Prairie Gardens and Orchard, then worked to weed garden our largest pollinator garden and some of the fruit trees. He is planning to continue helping with the project while he is in the area.

The North Dakota Game and Fish Department sponsored a “Pollinators in the Classroom” workshop June 25-26 on the VCSU campus. The two-day workshop for teachers, environmental educators and others who work with youth was held in the VCSU Student Center. Participants received the new Urban Pollinator Curriculum and the sessions included field trips to local pollinator gardens, including those at the Hi-Line Prairie Gardens and Orchard.

**Value to North Dakota:**

Pollinators play a crucial role in flowering plant reproduction and in the production of most fruits and vegetables. Apples, tomatoes, berries, and much more would not be available without pollination. Fruits and seeds of flowering plants are an important food source for both people and wildlife. The seeds that are utilized by people or wildlife will eventually produce new plants that will help maintain the plant population. Over 75% of all flowering plants are pollinated by animals. In 2010 in the US, pollination by honey bees contributed to over \$19 billion of crops. Pollination by other insect pollinators contributed to nearly \$10 billion of crops in 2010 (Pollinators, U.S. Fish and Wildlife Service 2015). In 2013 honey bees in North Dakota produced 33,120,000 pounds of honey valued at \$67,565,000 (National Agricultural Statistics Service, U.S. Department of Agriculture 2014).

A recent study of the status of pollinators in North America by the National Academy of Sciences found that the populations of honey bees and some wild pollinators are declining. These declines in wild pollinators may be a result of habitat loss and degradation. The population declines of managed bees are linked to introduced parasites and pathogens. (Pollinators, U.S. Fish and Wildlife Service 2015). This project is designed to educate the community on the importance of maintaining habitat for pollinators as well as providing examples of ways to naturally decrease chemical and water use in residential and commercial landscaping.

In regard to benefits that the community can experience, research has shown that children who spend time outdoors are healthier, have better grades, have longer attention spans, and are less likely to have depression than those who spend most of their time indoors (Wells, 2000).

Health professionals have found that green urban spaces and gardens increase physical activity and health of the members in that community. Urban gardens also help patients with dementia and attention-deficit-hypersensitivity disorder (Simpson, Western New England College 2011).