



Lake Region Takes Root
Gardening. Growing. Giving.

LAKE REGION TAKES ROOT COMMUNITY GARDEN

Maximizing Sustainable Food Production

Final Report
February 17th, 2015



Regional Sustainable
Development Partnerships
UNIVERSITY OF MINNESOTA
EXTENSION



COLLEGE of
DESIGN
UNIVERSITY OF MINNESOTA

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Project Core Partners



Lake Region Takes Root

To achieve optimal health, people in our region need access to affordable fresh produce. This project is exploring a means of achieving a healthier community.

Access: Lake Region Healthcare along with other community partners is growing foods to improve access to fruits and vegetables for families having the greatest difficulty with access.

Education: It is a place where people of all ages can learn the value of foods, importance of nutrient dense foods and experience a variety of growing methodologies aimed at inspiring residents to grow a portion of their own foods.

Social cohesion: The initiative works to solve an identified community need by bringing people together through collective partnerships.

Community Health: Eating healthy foods such as fruits & vegetables is one of the most important things people can do to protect their health.

<http://www.lrhc.org/health-wellness-community-garden.aspx>



Lake Region Healthcare and Lake Region Healthcare Foundation

Lake Region Hospital Foundation's mission is to develop partnerships and resources for improving health and wellness in our region for generations. With the work of over a century gone by, Lake Region Healthcare continues its rich legacy of caring and planning for the future; focusing on providing the best possible access and scope of services for patients; clinical and service excellence; and maintaining a highly qualified and dedicated workforce.

<http://www.lrhc.org/foundation-overview.aspx> ; <http://www.lrhc.org/>



PartnerSHIP 4 Health

PartnerSHIP 4 Health is a collaboration of community and public health partners in Becker, Clay, Otter Tail and Wilkin Counties working to prevent chronic disease through sustainable changes that increase physical activity, healthy eating and reduce tobacco use and exposure. PartnerSHIP 4 Health works with schools, worksites, communities, health care, child care and human service organizations.

<http://www.partnership4health.org/>

Regional Sustainable
Development Partnerships

UNIVERSITY OF MINNESOTA
EXTENSION

Northwest and Central Regional Sustainable Development Partnerships

The Regional Sustainable Development Partnerships (RSDP) connect greater Minnesota communities to the University of Minnesota in order to help solve problems and take advantage of new opportunities. As a part of University of Minnesota Extension, RSDP brings together local talent and resources with University of Minnesota knowledge and seed funding to drive sustainability in four areas: agriculture and food systems, tourism and resilient communities, natural resources, and clean energy.

<http://www.extension.umn.edu/rsdp/northwest/> ; <http://www.extension.umn.edu/rsdp/central/>



Design for Community Resilience program, Center for Sustainable Building Research

Design for Community Resilience (DCR) is a program/service within the Center for Sustainable Building Research that transforms civic challenges into sustainable opportunities through design. DCR works with communities across Minnesota to solve pressing problems (issues that encompass social, equity and environmental factors) through sustainable place-based solutions.

Working with communities, local governments, non-profits and other organizations research staff from CSBR and students from the College of Design work to address pressing problems while turning them into opportunities to make sustainable decisions for the community/organization's and the planet's future.

Our guiding principles for this work are:

- Integrated solutions that address a variety of issues and scales based in the state-of-the art sustainability research
- Holistic and dynamic problem solving
- Broad-based definition of sustainability that includes economic, social and environmental dimensions
- Grassroots, user-focused approach
- Working within our clients economic constraints
- An approach that goes from big picture to carefully addressing the details

<http://www.csbr.umn.edu/research/dcr.html>

The Center for Sustainable Building Research (CSBR) is a research and outreach center in the College of Design, University of Minnesota-Twin Cities campus. CSBR's work and researches focuses on the following six areas:

Energy and Climate Change: provide tools, expertise and research to support energy independence, security and climate neutrality for the state, nation and planet.

The Water Cycle: understand the water cycle and its relationship to the built environment in the provision, capture, use, reuse and recharging of water in local and regional watersheds and global water cycle.

Sustainable Materials for a healthy built environment: A regenerative built environment will need a renewable source of materials that create healthy long-lasting environments.

Value and Benefits of regenerative designs: develop metrics to track the full range of value created by sustainable and regenerative designs.

Equitable Designs to provide sustainability for all: Investigate building solutions to provide sustainability to all communities.

Creating Regenerative and Resilient Communities: Our communities must become regenerative and resilient not only to be sustainable, but also to respond and adapt to stress and change in a dynamic global environment.

<http://www.csbr.umn.edu/>

Additional Partners include:

- Anderson Land Surveying
- Bluebird Gardens
- Butler Cat
- City of Fergus Falls
- Country Store
- Cullens Home Center
- Dakota Storage Bldgs
- Delzer Construction
- Elizabeth Lions Club
- Feel Good Gardens
- Fergus Falls Community Food Shelf
- Fergus Falls School District
- Fergus Falls Fish & Game Club
- Forget Me Not
- Gardening Matters
- Hanson's Plumbing
- Harold Stanislawski
- Home Depot
- Hutchins Tree Service
- Jeff & Renee Legge
- Kiwanis Club of Otter Risers
- Larry & Diane Krog
- Larry & Mary Jo Schulz
- Otter Electric
- Otter Tail Power
- Outdoor Renovations
- Pat Melkert
- Pedogenesis
- RDO Equipment
- Richard & Brooke Barsness
- Sertoma Club
- Signworks
- Swedberg Nursery
- The National Gardening Association and Mantis Tiller 2014 donor
- Volden Construction
- West Otter Tail County Master Gardener Association
- West Otter Tail Soil & Water Conservation District
- WOTC Master Gardeners
- Otter Tail County Women Infants and Children's Program
- Battle Lake Food Shelf
- Fergus Falls Area Food Shelf
- Underwood 4-H Club
- Underwood Boy Scout Troop
- Girl Scout Troop 306547 Fergus Falls
- Ag Country Farm Credit Service
- Lake Region Healthcare Operations Council
- Bethlehem Church Fergus Falls
- Grace United Methodist Youth Group
- Boy Scout Troop 304 Fergus Falls
- Hillcrest Lutheran Academy Mission Class

Planning Team

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Project Highlights

- LRTR is a **1.5 acre** community garden located in Fergus Falls, Minnesota.
- The garden was founded in May 2013 by Lake Region Healthcare as a way to get the community access to fresh produce. By providing fresh produce, overall community health is expected to increase.
- In 2013, **313 families** in need were helped with the efforts of the garden.
- In 2014 **4,500 pounds** of food have been produced so far and have all gone to families in need of fresh and nutritious produce. Additionally 3313 individuals were affected by the produce of the garden.
- **21 types** of vegetables were grown and **9 types** of fruit were grown in 2014.
- LRTR is a volunteer-based organization and is always looking for excited community members and partners to help with the efforts.

Partners and Design Team

Funded by **NW** and **Central Regional Sustainable Development Partnerships** through January 2015.

- CSBR's Design for Community Resilience program working on a Master Plan for LRTR, including future phases and ongoing infrastructure projects such as a packing and receiving shed and handicapped accessible gardening spaces.
- Sustainable practices considered are:

-High Yield Sustainable Practices	-Vertical Gardening
-Composting	-Solar Energy
-Raised Planter Gardening	-Packing Shed Construction
-Rainwater Harvesting	
-Irrigation Systems	
-Volunteer Programs	
- The goal has to provide Lake Region Takes Root community garden with a sustainable plan to help keep LRTR successful for many years to come.

LRTR Background

Lake Region Takes Root (LRTR) community garden was started in 2013 to help people in need in Fergus Falls achieve optimum health through access to affordable fresh produce. The idea behind the community garden is spearheaded by Lake Region Healthcare in an effort to provide quality and nutritious food to those that have limited access, limited resources or who can not afford it. Through the first year of operation, Lake Region Takes Root supplied 313 families with fresh produce. Working with other community organizations like, Women and Infants and Children's program, Fergus Falls Community Food Shelf, Matthew House and A Place to Belong; the garden was able to reach a broader range of people in need.

Project Focus and Approach

This project focused on strategies for the most efficient way to garden in the form of maximizing garden space and layout, rainwater harvesting, storage and distribution systems, composting strategies and creating an overall master plan of the garden. Future phases and ongoing infrastructure projects such as a packing and receiving shed and handicapped accessible gardening spaces were considered as were strategies such as square foot gardening, composting, raised planter garden, rainwater harvesting, irrigation systems, volunteer programs.

The project used a participatory approach. A Planning Team was established with members from the community and funders that met weekly by conference call for feedback and decision-making as the project's research and design evolved. A site visit was conducted in September 22nd 2014 with a focus group session with volunteers. An interim presentation of research and design ideas was held on November 6th that involved work in small groups. A final presentation of the final design and recommendations was made on December 18th to the community with additional community input gathered.

Research

Research topics included existing urban gardening operations and the techniques that they utilize to maximize their yield. Square foot gardening, vertical gardening and cold frames were a few of the techniques looked at to help LRTR increase yield in the garden. Inter-cropping and crop rotation were also part of the urban gardening research to identify how to plant particular species. Other areas of research included composting basics and how to achieve healthy compost, rainwater harvesting for irrigation purposes and rain garden creation and composition. Additional areas of non-gardening research included alternative energy sources such as solar energy, finding a connection to local artists and natural playgrounds for visiting children.

Community Input

Community members were engaged throughout the entire process of the project, indicating what they thought would work and offering suggestions for improving the design. Community feedback sessions were held on November 6th and December 18th. These sessions were integral in the process of the project to engage community members and help develop the vision together.

Design Implementation

Design elements for the garden included the following: Fields, Raised Bed Gardens, Sensory Garden, Distribution Shed, Perennial Garden, Natural Playground, Compost Zone, Tool Shed, Traditional Orchard and a High Tunnel.

Below are recommendations for the project based on research, design and community input. Priority levels are suggested with Level 1 being of highest priority.

Priority Level 1

1. Create four fields in the garden to allow for better crop rotation, cover planting and better garden management.
2. Increase compost zone in current location by constructing 4 10'x10' bins with maximum depth of 3' to allow manual turning of the units.
3. Construct a packing shed (10'x22') that will meet the needs for produce handling, washing and storage before distribution.
4. Introduce canvas roof for pergola, lattice walls and an information board to the south and east walls of the pergola. Install a grill that could be used in cooking demonstration and educational events.
5. Install a rainwater collection system and large storage to collect rainwater from identified zones of adjacent condominium roofs for use to irrigate crops.
6. Introduce Square Foot gardening plots for maximized production and use some of plots for season extension with low tunnels.
7. Introduce a nature-based playground north of the pergola that uses natural materials to engage children in play.
8. Plant a "pizza" style garden that is utilized for growing of pizza and salsa ingredients.
9. Create a sensory garden that includes textures and smells by using herbs and perennial flowers.
10. Implement "Back to Eden" technique of using wood chips as cover crop for planting and observe and document the results to inform future action.
11. Implement a crop rotation schedule that helps to remediate soil conditions.
12. Make recruiting and training of garden workers an ongoing priority. Contact youth groups, churches and other after school programs in an effort to get children interested in volunteering at the garden.
13. Establish regular communication, in-person and online, between key garden volunteers and commit time for ongoing garden management.
14. Draw planting plans for each year, communicate them visibly to volunteers in display areas on the pergola structure and proposed packing shed. Observe, document and share the results of each year to inform future action.

Priority Level 2

15. Install a refrigeration trailer used for refrigerating produce and distribution.
16. Introduce rain barrels for rainwater collection from the proposed packing shed and pergola roof.
17. Install drip irrigation to better manage water quantities being used on crops.
18. Enhance existing perennial garden around the entry sign in southeast corner.
19. Increase amount of raised bed gardens to help with maximizing production and increased accessibility for all.
20. Host taste-testing events to get the community members of all ages involved with the garden.
21. Organize garden events around holidays such as Arbor Day and Memorial Day.

Priority Level 3

22. Host an educational series on how to garden at home, promoting healthy eating and food production within the community.
23. Implement a solar field that generates electricity with solar panels that can be used to power the refrigeration trailer and other garden systems.

