

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

Project Title:

ENRTF ID: 116-E

Reduce Greenhouse Gas Emissions and Solid Waste

Category: E. Air Quality, Climate Change, and Renewable Energy

Total Project Budget: \$ 1,178,625

Proposed Project Time Period for the Funding Requested: 2 years, July 2015 - June 2017

Summary:

This project will establish deconstruction as an alternative to demolition and develop techniques for reducing greenhouse gas emissions and the amount of reusable building materials buried in landfills.

Name: Steve Thomas

Sponsoring Organization: The NetWork for Better Futures d/b/a Better Futures Minnesota

Address: 1017 Olson Memorial Hwy
Minneapolis MN 55405

Telephone Number: (612) 455-6133

Email sthomas@betterfutures.net

Web Address betterfuturesminnesota.com

Location

Region: Statewide

County Name: Statewide

City / Township:

Alternate Text for Visual:

The graphic depicts the disposition of materials (50% reuse, 30% recycling, 20% landfill) and environmental impacts (2,496 tons diverted from landfill and 720 tons CO2 averted)

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



I. PROJECT STATEMENT

This project will establish deconstruction as an alternative to demolition and develop viable techniques for reducing greenhouse gas emissions and the amount of reusable building materials buried in landfills. The U.S. EPA estimates that construction and demolition debris is the second largest component of our waste, just behind municipal solid waste. Only 20-30 percent of this waste is recycled. One goal for this project is to deconstruct at least 30 buildings over a two year period. We estimate that the environmental impact of this effort is projected to reduce greenhouse gas emissions by 720 metric tons and divert 2,500 tons of building material from landfills.

As summarized by The Institute for Local Self-Reliance, deconstruction is the systematic disassembly of a building, with the purpose of recovering valuable materials for reuse or manufacturing into new products. By reducing waste, deconstruction also reduces greenhouse gas emissions and abates the need for new landfills and incinerators. It helps to steer the construction and demolition industry towards sustainability and reuse. It reduces the industry’s consumption of virgin materials, helps preserve natural resources, and protects the environment from pollution related to extraction, processing, and disposal of raw materials.

The goals for this project are to: (1) Test and fully develop effective techniques and incentives for deconstructing residential buildings; (2) Develop and build value-added products and sustainable markets for the range of reusable materials recovered; and, (3) Document the environmental, social, and economic benefits of deconstruction, including reduced greenhouse gas emissions, reduced landfill use, and the reuse of natural resources. These goals will be achieved by: (1) Developing efficient techniques for deconstructing buildings; (2) Marketing deconstruction and establishing a marketplace for selling materials; (3) Creating, manufacturing, and marketing products made from reclaimed materials.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1: Develop efficient techniques for deconstructing buildings safely

Budget: \$257,360

Test and refine efficient techniques for taking apart buildings; implement protocols to maximize the amount of material recovered and diverted from landfills; develop a training regimen; create operating and safety manuals; hire and train supervisors and workers

Outcome	Completion
1. A safe and efficient technique for deconstructing a typical residential property in five days is tested and refined	June 30, 2016
2. At least 40 different at-risk adults and two supervisors are hired and trained for deconstruction work	June 30, 2017
3. Deconstruction techniques, safety protocols, and processes for maximizing the amount of materials diverted during deconstruction is produced	June 30, 2017
4. The environmental benefits of deconstruction, including reduced greenhouse gas emissions, reduced landfill use, and the reuse of natural resources is documented.	June 30, 2017

Activity 2: Promote deconstruction and establish a marketplace for selling materials

Budget: \$771,265

Implement a sales strategy targeting homeowners, architects, contractors and government agencies; develop expertise for valuing and selling materials using on-line stores and auctions; promote deconstruction services and materials for sale through relations with trade groups, trade shows, social media, and web pages; work with government agencies to develop policies and practices that promote deconstruction

Outcome	Completion
1. A sales strategy for North Central Minnesota and the Twin Cities is fully implemented.	Dec. 31, 2015
2. An internet sales function is in operation; earned revenue for year one projected at	June 30, 2017



Environment and Natural Resources Trust Fund (ENRTF)
2015 Main Proposal
Project Title: Reduce Greenhouse Gas Emissions and Solid Waste

\$90,000 and \$150,000 for year two	
3. Model policies and incentive strategies are adopted by at least two counties	June 30, 2017
4. At least 30 residential properties are deconstructed in North Central Minnesota and the Twin Cities	June 30, 2017

Activity 3: Create, manufacture, and market products made from reclaimed materials **Budget: \$150,000**
 Work with the University of Minnesota Duluth's Natural Resources Research Institute to create value-added products and production processes for these reclaimed materials.

Outcome	Completion
1. At least five products manufactured from reclaimed materials are developed and tested	June 30, 2016
2. At least three products are being jointly manufactured and sold by the Northwest Indian OIC and Better Futures Minnesota	June 30, 2017

III. PROJECT STRATEGY

A. Project Team/Partners

This endeavor is a partnership between Better Futures Minnesota (Minneapolis) and the Northwest Indian OIC (Bemidji). Better Futures will serve as the project manager. Both agencies are committed to supporting at risk adults who are committed to changing their lives and lifestyles. Job creation and employment are core activities for both. For the past four years, Better Futures has been working with counties, contractors, and the MPCA to promote the practice of building deconstruction and develop markets and alternative uses for construction waste diverted from landfills. Their experience informs the proposal outlined in this proposal. Better Futures is partnering with the Northwest OIC to help build their capacity to provide this service in North Central Minnesota. The University of Minnesota Duluth's Natural Resources Research Institute (NRRRI) recently began working with Better Futures to identify, prototype and assess uses for reclaimed materials. This grant will enable NRRRI to increase their level of research and assistance for both Better Futures and the Northwest Indian OIC.

Partners Receiving ENRTF Funds: Better Futures Minnesota— *Steven G. Thomas, President and CEO* – will provide serve as project manager and coordinate deconstruction activities in the Twin Cities; Northwest Indian OIC – *Tuleah Palmer, Executive Director* – will provide executive leadership and coordination of North-Central deconstruction operations; Natural Resources Research Institute, University of Minnesota Duluth – *Brian Brashaw, Program Director* – will lead efforts to develop value-added products and production processes for reclaimed materials. **Partners Not Receiving ENRTF Funds:** Minnesota Pollution Control Agency; Hennepin County Environmental Services.

B. Project Impact and Long-Term Strategy

By adopting deconstruction on a broad-scale, Minnesota can achieve significant reductions in greenhouse gas emissions, reduce the amount of waste buried in landfills, and increase the amount of materials reused. Long term, deconstruction is a financially sustainable line of business once the level of work generates adequate revenue from dismantling buildings, selling used materials, and selling products manufactured from reclaimed materials.

C. Timeline Requirements

The first 12 months of this project includes: refining cost effective deconstruction techniques, recruiting, training and credentialing staff, developing products, and establishing sales platforms for reclaimed materials, and beginning to deconstruct properties. The second is focused on full implementation of all activities, including the production and sale of products from reclaimed materials.

2015 Detailed Project Budget

Project Title: Reduce Greenhouse Gas Emissions and Solid Waste

IV. TOTAL ENRTF REQUEST BUDGET 2 years

BUDGET ITEM:	AMOUNT
Personnel:	
Project Manager, A Better Futures employee, 1 FTE, base wage \$60,000/yr, FICA 7.65%, retirement 2.75%, health insurance \$5,940/yr, 2 years; Coordinates the training, marketing; oversees the development of a building pipeline and sales of materials	\$ 144,360
Crew Chief, A NW Indian OIC employee, 1 FTE, base wage \$39,910/yr, FICA 7.65%, retirement 2.75%, health insurance \$5,940/yr, 2 years; Prepares bids for projects, prepares work plan for each project, assists with training, supervises crew on job site, oversees processing of materials, assists with sales of materials	\$ 100,001
Work Crew, NW Indian OIC employees, 4 FTE, base wage \$13.00/hr, FICA 7.65%, retirement 2.75%, health insurance \$5,940/yr, 2 years; workers will be trained and OSHA certified to perform total deconstruction; process materials for sale or reuse; produce new products from reclaimed materials	\$ 286,337
Work Crew, Better Futures employees, 3 FTE, base wage \$13.00/hr, FICA 7.65%, retirement 2.75%, health insurance \$5,940/yr, 2 years; workers will be trained and OSHA certified to perform total deconstruction; process materials for sale or reuse; produce new products from reclaimed materials	\$ 214,753
Training Crew, NW Indian OIC employees, 2 FTE, base wage \$9.50/hr, FICA 7.65%, 2 years; new workers employed part time; begin training and become eligible for full time work status; assist with processing	\$ 85,087
Training Crew, Better Futures employees, 2 FTE, base wage \$9.50/hr, FICA 7.65%, 2 years; new workers employed part time; begin training and become eligible for full time work status; assist with processing	\$ 85,087
Contracts:	
Consultant to develop template and formula for cost estimating and estimates of revenue from sales of materials; document the environmental, social and economic impact of project	\$ 30,000
Natural Resources Research Institute, University of Minnesota Duluth to identify outlets and alternative uses for the materials harvested from buildings, with a focus on identifying markets and developing alternative and new uses for untreated lumber, porcelain, and household appliance parts	\$ 150,000
Equipment/Tools/Supplies:	
For the NW Indian OIC, a crew cab pickup truck and box trailer for transporting work crew and tools to work sites. Also purchase of basic tools such as crow bars, sawzalls, hammers, and safety equipment. Tools and equipment will be stored in a locked room and an inventory of all the equipment and tools will be completed at the beginning and end of each work day. All equipment purchased will be used for this project through its useful life. If the use should change, we agree to pay back to the ENTRF a residual value approved by the director of the LCCMR if the equipment is not sold.	\$ 63,000
Additional Budget Items:	
OSHA and deconstruction certification training for workers at both agencies	\$ 20,000
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =	\$ 1,178,625

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ To Be Applied To Project During Project Period:		
Revenue from customers and from sale of materials: earned income paid to agency for performing deconstruction services plus revenue from the sale of goods and materials harvested during deconstruction and diverted from landfills	\$ 240,000	Pending
Hennepin County Environmental Services	\$ 900,000	Pending
Anonymous Donor	\$ 125,000	Pending
Other State \$ To Be Applied To Project During Project Period:		
n/a		
In-kind Services To Be Applied To Project During Project Period:		
n/a		
Funding History:		
MN Pollution Control Agency; grant to cover the portion of Better Futures costs related to deconstruction work in 2013-2014	\$ 18,833	Secured
Remaining \$ From Current ENRTF Appropriation:		
n/a		

Pilot Sources:

Government

Private Residential

15 Homes

15 Homes

Material Disposition:

50%

30%

20%

**Warehouse Processing
for Reuse and Upcycling**

**Sort Facility
for Recycling**

Landfill

Cabinets
Flooring
Framing Lumber
Appliances
Windows
Doors

Concrete
Glass
Shingles
Metal
Brick
Plastic

Drywall
Plaster
Insulation
Mixed Debris

Environmental Impacts:

**30 Homes x 104 MT building weight ea. x .80 recovery rate
= 2,496 Metric Tons of C&D waste diverted from landfill.**

**30 Homes x 24 MT of CO2 averted ea.
= 720 Metric Tons of CO2 averted OR...
= the equivalent of 80,717 gallons of gasoline saved OR
= 590 acres of forest to sequester this CO2 OR
= 1,674 barrels of oil OR
= powering 108 homes for a year¹**

EPA <http://epa.gov/epawaste/conservation/tools/warm/index.html>

Organization Description and Project Manager Qualifications

Organization Description

Better Futures was established as a 501(c) 3 not-for-profit corporation in February 2007 by a team of Minnesota's leading health care, housing, workforce, community corrections, and human service practitioners. In our first five years, we served more than 700 men and employed 400 of them. During this period, our business activities (focused primarily on waste recycling and reuse) generated more than \$2.5 million in earned income.

Better Futures has been testing and providing deconstruction services since 2010 and has developed the capacity and expertise required for harvesting building materials in an environmentally sound manner. We also lease a warehouse for processing and selling or reusing these materials. We own four pickups, two panel trucks, a forklift, a trailer, and the tools and safety equipment needed for deconstruction.

In 2010, we deconstructed four houses owned by the City of St Paul, Macalester College and Project for Pride and Living. About 320 tons of material was harvested from these sites and 92% of the material was reused or recycled. In 2011, we were hired by Ramsey County to harvest and reuse materials from their new office building in downtown St Paul. We have bids pending to deconstruct homes for two private developers and two County agencies.

We also provide a growing service related to salvaging building materials and household goods. Contractors, homeowners and transfer sites are the primary customers. Salvaging provides revenue and short-term work for our deconstruction crew, provides materials to build our sales platform, and it serves as a vehicle for marketing our deconstruction services.

Better Futures experience and capacity includes:

- ✓ the capacity to assess the viability and value of projects;
- ✓ trained and experienced team of workers;
- ✓ tools and equipment necessary to support deconstruction;
- ✓ partnerships with customers and researchers for the sale or reclamation of materials;
- ✓ Established the infrastructure needed to support the processing and sale or recycling of materials.

Project Manager Qualifications: Steven G. Thomas, President and CEO

Steve Thomas is a social entrepreneur with 35 years of success in designing, launching and operating innovative public service ventures in communities across the country. Under his leadership, Better Futures Minnesota was developed and launched in 2007. Thomas held several senior executive positions at the Corporation for Supportive Housing (CSH) and he held several appointive positions in New York City government. As Assistant Commissioner in the Department of Correction, he managed all of the medical and mental health services and drug treatment programs for inmates in the City's jail system. He also served as director of New York's emergency housing and financial assistance programs for homeless families and as a budget analyst for the City's Office of Management and Budget.

In developing Better Futures Minnesota, Thomas visited and studied high performing social enterprises that employ at risk workers, including prominent and successful building deconstruction companies nationwide. Through his relationships with these companies, he and Better Futures staff have been able to develop building deconstruction into a promising and potentially viable line of business in Minnesota. In addition, Thomas has raised significant amounts of startup capital from private foundations to help build Better Futures into a sustainable enterprise that generates environmental benefits and creates jobs.