MEMORANDUM
Comfort Lake-Forest Lake Watershed District

To: Board of Managers  
From: Mike Kinney, Administrator  
Subject: Furey Cost-Share Application  

Background / Discussion

Mike Sorensen and Tara Kline (Washington Conservation District) met with Tom Furey earlier this year to conduct an initial site visit and to make a determination if the site would be an eligible candidate for the District cost-share program. Mr. Furey owns property on the west side of Bone Lake at 23375 Lofton Ave. N., Scandia. He is interested in converting a majority of his 0.4 acre property into native plant gardens. Due to the fact that his house is built on a steep hillside, upland prairie plants would be needed to restore some of his property while water-tolerate plants would be needed for his shoreline area.

The CLFLWD cost-share subcommittee has already awarded Mr. Furey with a $500 plant grant to purchase native upland plants for the non-shoreline portion of his project. Mr. Furey has applied for a traditional cost-share grant for the shoreline portion of his project. This project will involve planting native vegetation into a biodegradable erosion control blanket. When the plants establish, they will anchor the shoreline in place. This project will improve the water quality of Bone Lake by stopping active shore erosion and by providing a native buffer along the shore to promote absorption of water and nutrients. The native plant buffer will also provide valuable wildlife habitat.

The attached project concept from the Washington Conservation District (WCD) splits Mr. Furey’s property up into a number of sections (e.g. NP 1, NP 2, etc.). This cost-share request is for sections “NP 2” and “NP 2A”, which are the shoreline sections. Also attached you will find a project cost estimate from the WCD and a quote from Prairie Restorations, a local native plant contractor. The WCD cost estimate for this project, which is based on typical costs of similar projects county-wide, is considerably more expensive than the actual quote that was given to Mr. Furey from Prairie Restorations. Please note: This request is only for the “Shoreline & Slope Area” portion of the Prairie Restorations quote, although the entire project will be completed this summer.

Mr. Furey’s shoreline project is expected to keep 0.3 pounds of phosphorus out of Bone Lake per year. Under our current program structure, this project would be eligible for 50% cost-share up to a maximum grant of $3,000. The quote from Prairie Restorations lists the total shoreline project cost as $3,000 and three years of maintenance from the contractor as $850. Thus, the total project and maintenance cost will be $3,850. This project qualifies for a $1,925 CLFLWD grant; $1,500 toward the project construction and $425 for project maintenance.

Funding is requested for a total of $1,925. Upon completion of the project, staff will conduct a final site inspection for final approval of the installation. Cost-share funding will be granted to the applicant only after the project installation has been approved, all receipts for the project have been received, and the full Board has approved payment. Only the $1,500 cost of project construction will be awarded during the year of completion; the $425 for project maintenance will be awarded in three equal parts, once each year after the maintenance has occurred and maintenance receipts have been received.
MEMORANDUM
Comfort Lake-Forest Lake Watershed District

Recommended Action

At this time staff is requesting Board approval of the Furey Residential BMP Cost-Share Incentive program application for a shoreline erosion control and water quality buffer planting project not to exceed $1,925.

Attached: Signed Application and Contract, Concept Plan, WCD Cost Estimate, Prairie Restorations Quote
MEMORANDUM
Comfort Lake-Forest Lake Watershed District

Figure 1. North side of property facing north. This area is currently being mowed nearly to the water’s edge.

Figure 2. South side of property facing north. This area is not currently being mowed, but is dominated by non-desirable plants such as reed canary grass.
Cost-Share Program Application & Contract
Comfort Lake – Forest Lake Watershed District

Shore 1

General Information (to be completed by CLFLWD)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Contract Number</th>
<th>Other federal or other state funds?</th>
<th>Amendment</th>
<th>Cancelled</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLFLWD</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

If contract amended, attach amendment form(s) to this contract.

Applicant (to be completed by landowner)

<table>
<thead>
<tr>
<th>Landowner Name</th>
<th>Address</th>
<th>City/State</th>
<th>Zip code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom Forey</td>
<td>23375 Loften Ave</td>
<td>Scandia, MN</td>
<td>55073</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:thomas.g.forey@gmail.com">thomas.g.forey@gmail.com</a></td>
<td>612-723-8551</td>
</tr>
</tbody>
</table>

If a group contract, this must be filled and signed by the group spokesperson as designated in the group agreement and the group agreement attached to this form.

Project Location (if different)

<table>
<thead>
<tr>
<th>Address</th>
<th>City/State</th>
<th>Zip code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scandia, MN</td>
<td>55073</td>
</tr>
</tbody>
</table>

If project location must be owned by landowner listed above.

Contract Information

I (we), the undersigned, do hereby request cost-share assistance to help defray the cost of installing the following practice(s) listed on the second page of this contract. For the purposes of this contract, “practice” means the installation for which cost-sharing is provided, including any pretreatment measures, as depicted on the project design (Attachment B to this contract).

It is understood that:

1. **CLFLWD's Water Quality Cost Share Program is a Reimbursement Program.** Applicants will be reimbursed for the contract amount upon successful completion of the project and submission of all required documentation.

2. The landowner is responsible for full establishment, operation, and maintenance of all practices applied under this program to ensure that the conservation objective of the practice is met for 3 years from the date the CLFLWD approves the completed installation. After the first 3 years, the landowner is no longer responsible for maintenance, but must keep all practices and upland treatment criteria applied under this program intact for an additional 2 years, resulting in a total practice lifespan of 5 years. The specific operation and maintenance requirements for the conservation practice listed are described in the operations and maintenance agreement that has been prepared for this contract by the organization technical representative and attached to this contract as Attachment A.

3. Should the landowner fail to maintain the practice for 3 years and keep the practice intact for a total of 5 years, the landowner is liable to the Comfort Lake – Forest Lake Watershed District for 100% of the amount of financial assistance received to install and establish the practice unless the CLFLWD finds that the failure was caused by reasons beyond the landowner's control, or if substitute conservation practices are applied at the landowner's expense that the CLFLWD agrees will provide equivalent protection of the soil and water resources. Should the landowner convey the underlying property within the 5-year time frame...
the CLFLWD will be notified at least 30 days before the property is conveyed and the landowner will facilitate communication between the CLFLWD and the prospective landowner regarding continued maintenance of the practice.

4. Practice(s) must be planned and installed in accordance with technical standards and specifications of the Technical Representative. The landowner must notify the technical representative at least three days before installation begins.

5. Increases in the practice units or cost must be approved by the organization board through amendment of this contract as a condition to increase the cost share payments.

6. This contract, when approved by the CLFLWD board, will remain in effect unless canceled by mutual agreement, except where installations of practices covered by this contract have not been started within 1 year following Board approval of this contract, this contract will be automatically terminated on that date. Practices will be installed by 2 years following Board approval of this contract unless this contract is amended by mutual consent to reschedule the work and funding.

7. Items of cost for which reimbursement is claimed are to be supported by invoices/receipts for payments and will be verified by the organization board as practical and reasonable. Reimbursement for volunteer labor will be determined at the rate of $20 per hour. The organization board has the authority to make adjustments to the costs submitted for reimbursement.

8. Regardless of the nature of the technical assistance or review provided, the CLFLWD and its technical advisors do not warrant the design, performance or suitability of the installation including the structural soundness thereof. The landowner should have a proposed design reviewed by its own technical advisor if such a warranty is desired. In particular, shoreline and streambank work exists in a dynamic environment and is subject to unpredictable forces such as, but not limited to, water and wave action, ice heaving and ice ridge formation. The CLFLWD will evaluate the design and suitability of a proposed installation for its environment solely so that its cost-share funds are prudently applied. It is not responsible to the landowner for the effect of such phenomena on the installation.

Applicant Signatures
The landowner's signature indicates agreement to:

1. Grant the organization's representative(s) access to the parcel where the conservation practice will be located.
2. Obtain all permits required in conjunction with the installation and establishment of the practice prior to starting construction of the practice.
3. Be responsible for the operation and maintenance of conservation practices applied under this program in accordance with an operation and maintenance plan prepared by the organization technical representative.
4. Not accept cost-share funds, from all public sources combined, that are in excess of 100% percent of the total cost to establish the conservation practice and provide copies of all forms and contracts pertinent to any other public programs that are contributing funds toward this project.

Conservation Practice (to be completed by Technical Representative)
The primary practice for which cost-share is requested is

<table>
<thead>
<tr>
<th>Practice standards or eligible component(s)</th>
<th>Engineered Practice</th>
<th>Total Project Cost Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] yes or [ ] no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[ ] yes or [ ] no</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The estimated benefits of this project are:

<table>
<thead>
<tr>
<th>Total Phosphorus Captured</th>
<th>Nitrogen Captured</th>
<th>Runoff Volume Reduction</th>
</tr>
</thead>
</table>

Technical Assessment and Cost Estimate
I have the appropriate technical expertise and have reviewed the site where the above listed practice is to be installed and find it is needed and that the estimated benefits and costs are practical and reasonable.

<table>
<thead>
<tr>
<th>Date</th>
<th>Technical Representative</th>
</tr>
</thead>
</table>

Amount Authorized for Financial Assistance (to be completed by CLFLWD)
The CLFLWD Board has authorized the following for financial assistance, total not to exceed the overall percent listed indicated in 4, above.

$ ______ from  

Enter program name and fiscal year  

$ ______ from  

Enter program name and fiscal year  

$ ______ from  

Enter program name and fiscal year  

Board Meeting Date  

Authorized Signature  

Total Amount Authorized  

$ ______

CLFLWD Contact Information

<table>
<thead>
<tr>
<th>Name, Title</th>
<th>Address</th>
<th>City/State</th>
<th>Zip code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike Kinney, District Administrator</td>
<td>44 Lake Street South, Suite A</td>
<td>Forest Lake, MN</td>
<td>55025</td>
</tr>
<tr>
<td><a href="mailto:Michael.Kinney@clflwd.org">Michael.Kinney@clflwd.org</a></td>
<td>Phone: 651-395-5855</td>
<td></td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Name, Title</th>
<th>Address</th>
<th>City/State</th>
<th>Zip code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike Sorensen, Program Assistant</td>
<td>44 Lake Street South, Suite A</td>
<td>Forest Lake, MN</td>
<td>55025</td>
</tr>
<tr>
<td><a href="mailto:Mike.Sorensen@clflwd.org">Mike.Sorensen@clflwd.org</a></td>
<td>Phone: 651-395-5857</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Project Summary:**

**NP 1:**
- 180 sq ft native planting.
- Kill turf and seed with prairie mix.

**Load Reduction:**
- TP: 0.054 lb/yr
- TSS: 4.5 lb/yr

**NP 1A:**
- 1105 sq ft native planting

**Load Reduction:**
- TP: 0.027 lb/yr
- TSS: 1.8 lb/yr

**NP 2:**
- 1741 sq ft native planting
- Stabilize shoreline by planting into biodegradable erosion control blanket.
- Install biologs along shoreline for stabilization
- Kill turf between patio and deck and convert to native plants

**Load Reduction:**
- TP: 0.26 lb/yr
- TSS: 572 lb/yr

**NP 2A:**
- 315 sq ft native planting

**Load Reduction:**
- TP: 0.04 lb/yr
- TSS: 1.8 lb/yr

**NP 3:**
- 1585 sq ft native planting
- Enhance current landscaping with additional native shrubs

**Total Non-Shoreline Load Reductions:**
- TP: 0.081 lb/yr
- TSS: 6.3 lb/yr

**Total Shoreline Load Reductions:**
- TP: 0.3 lb/yr
- TSS: 573.8 lb/yr
## Cost Estimate

**COMFORT LAKE FOREST LAKE WATERSHED DISTRICT**

**CLFLWD Shoreline 50% Cost-Share**

Landowner: Tom Furey  
Project Address: 23375 Lofton Ave N, Scandia  
Mailing Address: Same  
6/5/2017

### Job Description

| NP #2: 1741 sq ft Shoreline Restoration (2 parts, shoreline and between patio and deck) | NP #2A: 315 sq ft Shoreline Restoration (NE corner of property) |

### Cost Summary

<table>
<thead>
<tr>
<th>Job Description</th>
<th>Project Cost</th>
<th>Cost Share</th>
<th>Phosphorus Reduction (lbs/yr)</th>
<th>TP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$9,485.84</td>
<td>$3,000.00</td>
<td></td>
<td>0.30</td>
</tr>
</tbody>
</table>

### Job Estimate

#### Erosion Control Materials

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Unit Cost</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biolog (coconut coir, 12&quot;d, 10lf)</td>
<td>11.0</td>
<td>each</td>
<td>$103.25</td>
<td>$1,135.75</td>
</tr>
<tr>
<td>Fulterra Environet Erosion Control Blanket</td>
<td>228.0</td>
<td>sy</td>
<td>$0.61</td>
<td>$139.08</td>
</tr>
<tr>
<td>Biostakes (6&quot; biodegradable stake for Bionetting, 576/carton)</td>
<td>1.0</td>
<td>carton</td>
<td>$107.00</td>
<td>$107.00</td>
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</tbody>
</table>

**Erosion Control Subtotal** $1,274.83

#### Compost, Mulch, and Rock

<table>
<thead>
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<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Unit Cost</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double-Shredded Hardwood Mulch (3&quot; depth)</td>
<td>19.0</td>
<td>cy</td>
<td>$32.00</td>
<td>$608.00</td>
</tr>
</tbody>
</table>

**Compost, Mulch, and Rock Subtotal** $608.00

#### Drainage Accessories

**Drainage Subtotal** $-

#### Plants, Shrubs, and Trees

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Unit Cost</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native plug</td>
<td>925</td>
<td>each</td>
<td>$1.00</td>
<td>$925.00</td>
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</table>

**Plants Subtotal** $925.00

#### Excavation and Grading

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Unit Cost</th>
<th>Amount</th>
</tr>
</thead>
</table>
| Grading | 0 | hrs | $150.00 | $-

**Excavation and Grading Subtotal** $-

#### Misc

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Unit Cost</th>
<th>Amount</th>
</tr>
</thead>
</table>
| Soil Delivery | 0 | job | $100.00 | $-
| Rock Delivery | 0 | job | $100.00 | $-
| Mulch Delivery (14cy/load) | 1 | job | $100.00 | $100.00 |
| Plant Delivery | 1 | job | $100.00 | $100.00 |

**Misc Subtotal** $200.00

### ADDITIONAL NOTES

**PROJECT SUBTOTALS**

- Materials $1,882.83
- Plants $925.00
- Excavation/Grading $-

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### NP #2: 1741 sq ft Shoreline Restoration (2 parts, shoreline and between patio and deck)

- Phosphorus Reduction (lbs/yr)
- TP = 0.30

### NP #2A: 315 sq ft Shoreline Restoration (NE corner of property)

- Phosphorus Reduction (lbs/yr)
- TP = 0.30
## Materials Estimate
- **Misc**: $200.00
- **Materials Estimate**: $2,807.83
- **Labor Estimate**: $5,815.66
- **Contingency 10%**: $862.35
- **Project Estimate**: $9,485.84

### COST SHARE ESTIMATE
- **Cost Share**
  - **CLFLWD Shoreline 50% Cost-Share**
  - Shoreline Cost-Share 50% up to $3,000 for 0.20 > 0.50 lb TP/yr

### Summary
<table>
<thead>
<tr>
<th>Project Item</th>
<th>Project Cost</th>
<th>Phosphorus Removed</th>
<th>Cost Share Grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Item</td>
<td>$9,485.84</td>
<td>TP = 0.30</td>
<td>$3,000.00</td>
</tr>
</tbody>
</table>
Proposal to Create a Native Landscape at the Furey Residence
Scandia, MN

Prepared for:
Tom Furey
23375 Lofton Ave N.
Scandia, MN 55073
612-723-8451
thomas.g.furey@gmail.com

Prepared by:
Joe Wilberg
Project Manager
763-220-5999
jwilberg@prairieresto.com

Project Area:
Shoreline & slope: 3,300 square feet
North area: 3,000 square feet
West ditch: 1,950 square feet

Prairie Restorations, Inc.
PO Box 95
Scandia, MN
www.prairieresto.com
A. **Company Background:**  [http://www.prairieresto.com/mission.shtml](http://www.prairieresto.com/mission.shtml) (Follow the blue links to learn more)

Prairie Restorations, Inc. (PRI) has been dedicated to the restoration and management of native plant communities for over 39 years. We are fortunate to have worked with thousands of clients on a wide variety of projects in both the public and private sectors throughout the Upper Midwest.

The PRI staff currently consists of 45 full-time professionals and about an equal number of seasonal employees which operate out of six Minnesota locations. Most of the staff has B.S. degrees in natural resource related fields such as biology, forestry, horticulture or wildlife. As a full service restoration company, PRI is able to provide our clients expertise and service in all facets of native landscape restoration. Along with consulting, design, installation and land management services, we also produce our own local ecotype seed and plant materials which are used on all of our projects.

The PRI Team is committed to and passionate about protecting and enhancing our valuable natural resources. It is this dedication that is brought to each and every one of our projects. We are proud to offer the best expertise, services and products available in the industry and appreciate the opportunity to provide you with this proposal.

B. **Project Overview:**

1. Establishing a native landscape ([http://www.prairieresto.com/establish_landscape.shtml](http://www.prairieresto.com/establish_landscape.shtml)) in this area will provide a long term, ecologically sound landscape that is adapted to the existing conditions of the site. This native landscape will not require irrigation, black dirt or other soil amendments. It will add a distinctive look to the property as well as provide valuable habitat for songbirds, butterflies, bees and other pollinators.

2. To establish this planting, the site will be treated with herbicide to kill existing weeds, tilled or harrowed (if feasible) to provide a smooth seedbed, seeded with native grasses and wildflowers, and mulched with straw or covered with erosion blanket to protect the seeding and enhance germination.

3. Native wildflower and grass plugs will be planted to enhance the diversity and aesthetics of the shoreline.

4. An option is given to plant native additional wildflower and grass plugs within the project area to add diversity and color within the project area.

5. An option is given to plant several species of native shrubs within the project area.

6. An estimate for 3 years of Establishment Period Vegetation Management is included in this proposal.
C. Project Dimensions and Planting Zones:

1. For purposes of vegetation restoration, the project area is separated into three zones, the Shoreline & Slope Area, the North Area, and the West Ditch Area.

2. **The Shoreline Area is approximately 3,300 square feet.** This Area is full sun to full shade. The soil is well drained mesic, and wet. This zone will be planted with wetland & savanna native seed mixes and plants.

3. **The North Area is approximately 3,000 square feet.** This Area has morning sun and late afternoon sun. The soil is well drained to mesic. This zone will be planted with upland savanna & woodland native seed mixes and plants.

4. **The West Ditch Area is approximately 1,950 square feet.** This area has essentially full sun. The soil is well drained to mesic. This zone will be planted with upland prairie native seed mixes and plants.


1. Remove invasive woody species such as European buckthorn (Rhamnus cathartica) and Eurasian Honeysuckle (Lonicera spp.) by flush cutting and stump treating with Triclopyr herbicide (Garlon 4® or equivalent). Also remove some of the lilac clump and select trees/ brush along the shoreline.

2. In areas with actively growing vegetation, apply a glyphosate herbicide (Roundup® or equivalent) and a triclopyr herbicide (Garlon 3A® or equivalent) with appropriate surfactants, as per manufacturer’s directions. Allow a minimum of 25 days before disturbing the vegetation with other procedures. On the shoreline apply an aquatic-approved glyphosate herbicide (Rodeo® or equivalent) as per manufacturer’s directions.

3. Remove the dead vegetation by implementing a controlled burn using appropriate procedures, equipment and permits.

4. Where feasible, lightly harrow, rake, or till the soil to create an open seedbed.

5. Allow the site to green up, followed by an application of a glyphosate herbicide (Roundup® or equivalent) and if necessary a triclopyr herbicide (Garlon 3A® or equivalent) with appropriate surfactants, as per manufacturer’s directions. Allow a minimum of 25 days before disturbing the vegetation with other procedures. On the shoreline apply an aquatic-approved glyphosate herbicide (Rodeo® or equivalent) as per manufacturer’s directions.
6. On the **Shoreline & Slope** area: re-apply an aquatic-approved glyphosate herbicide (Rodeo® or equivalent) as per manufacturer’s directions. Allow a minimum of 10 days before disturbing the vegetation with other procedures.

E. **Seed and Seeding:** [http://www.prairieresto.com/installation_seeding.shtml](http://www.prairieresto.com/installation_seeding.shtml)

1. Acceptable seeding dates for native species are in the spring or summer before August 10th or in the fall between September 20th and freeze-up. This project would likely be seeded in fall of 2017, although the North Area & West Ditch areas could be seeded in July of 2017.

2. All seed will be applied by broadcasting.

3. The seed mixes will consist of the following species and amounts:

<table>
<thead>
<tr>
<th>Shoreline &amp; Slope Grass Seed</th>
<th>lbs./project area</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRI Mixed Height Mesic Grass Mix:</td>
<td></td>
</tr>
<tr>
<td>33% Big bluestem, 23% Little bluestem, 22% Indian grass, 12% Side oats grama, 5% Canada wild rye, 2% June grass, 1% Switch grass, 1% Sand dropseed, 1% Prairie dropseed, all by PLS weight</td>
<td>0.7</td>
</tr>
<tr>
<td>PRI Savanna Grass Mix:</td>
<td></td>
</tr>
<tr>
<td>29% Little bluestem, 25% Side oats grama, 12% Poverty oat grass, 6% Big bluestem, 5% Canada wild rye, 4% Bottlebrush grass, 4% Silky wild rye, 4% Indian grass, 3% Hairy wood chess, 2% Blue grama, 2% Fringed brome, 2% Kalm’s brome, 2% Prairie dropseed, all by PLS weight</td>
<td>0.5</td>
</tr>
<tr>
<td>PRI Shoreline Grass Mix:</td>
<td></td>
</tr>
<tr>
<td>18% Pointed broom sedge, 15% Green bulrush, 12% Wool grass, 10% Blue joint grass, 8% Fringed brome, 7% Soft-stemmed bulrush, 6% stalk-grain sedge, 6% Virginia wild rye, 6% Tall manna grass, 5% Fox sedge, 5% River bulrush, 2% Cord grass, all by PLS weight</td>
<td>0.1</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Shoreline &amp; Slope Wildflower Seed</th>
<th>oz./project area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tall blazing star (<em>Liatris pycnostachya</em>)</td>
<td>0.2</td>
</tr>
</tbody>
</table>

| PRI Mixed Height Mesic Wildflower Mix: | |
| 18% Purple prairie clover, 15% Black-eyed Susan, 15% Hoary vervain, 12% Leadplant, 8% Common ox-eye, 5% Golden Alexander 5% Bush clover, 4% Smooth aster |
4% Stiff goldenrod, 3% Wild bergamot, 3% Blue vervain,
3% Canada tick trefoil 2% Common milkweed,
1% White prairie clover, 1% Yarrow,
1% Northern bedstraw, all by PLS weight................................. 1

PRI Savanna Wildflower Mix:
16% Hoary vervain, 14% Purple prairie clover, 14% Black-eyed Susan,
12% Leadplant, 8% Common ox-eye, 5% Bush clover,
4% Golden Alexander, 3% Wild bergamot, 3% Stiff goldenrod,
3% Smooth aster, 3% Western spiderwort, 3% Canada tick trefoil,
3% Showy penstemon, 2% Prairie rose, 2% Common milkweed,
2% Upland goldenrod, 1% White prairie clover, 1% Yarrow,
1% Northern bedstraw, all by PLS weight................................. 0.8

PRI Shoreline Wildflower Mix:
10% Blue vervain, 10% Swamp milkweed, 9% Joe-pye weed,
8% Sweet flag, 8% Tall meadow rue, 7% Blue flag iris,
6% Giant bur-reed, 6% Golden Alexander,
5% Boneset, 5% Black-eyed Susan, 4% Tall blazing star,
4% New England aster, 4% Flat-topped aster, 4% Ironweed,
3% Sneezeweed, 3% Common ox-eye,
2% Water plantain, 2% Arrowhead, all by PLS weight.................... 0.3


North Area Grass Seed

Bottlebrush grass (*Elymus hystrix*)
or Silky wild rye (*Elymus villosus*)................................. 0.1

PRI Savanna Grass Mix:
29% Little bluestem, 25% Side oats grama,
12% Poverty oat grass, 6% Big bluestem,
5% Canada wild rye, 4% Bottlebrush grass,
4% Silky wild rye, 4% Indian grass,
3% Hairy wood chess, 2% Blue grama,
2% Fringed brome, 2% Kalm’s brome,
2% Prairie dropseed, all by PLS weight................................. 1.1


North Area Wildflower Seed

PRI Savanna Wildflower Mix:
16% Hoary vervain, 14% Purple prairie clover, 14% Black-eyed Susan,
12% Leadplant, 8% Common ox-eye, 5% Bush clover,
4% Golden Alexander, 3% Wild bergamot, 3% Stiff goldenrod,
3% Smooth aster, 3% Western spiderwort, 3% Canada tick trefoil,
3% Showy penstemon, 2% Prairie rose, 2% Common milkweed,
2% Upland goldenrod, 1% White prairie clover, 1% Yarrow,
1% Northern bedstraw, all by PLS weight................................. 1.8

**West Ditch Grass Seed**

<table>
<thead>
<tr>
<th>PRI Short Dry Grass Mix:</th>
</tr>
</thead>
<tbody>
<tr>
<td>40% Little bluestem, 35% Side oats grama,</td>
</tr>
<tr>
<td>13% Blue grama, 4% Poverty oat grass,</td>
</tr>
<tr>
<td>4% June grass, 2% Sand dropseed,</td>
</tr>
<tr>
<td>2% Prairie dropseed, all by PLS weight.</td>
</tr>
</tbody>
</table>

*Note:* A cover crop will be sown along with the native grasses at a rate of approximately 25 lbs./acre. Cover crop is an annual grass species that germinates quickly and will reduce the risk of soil erosion on the site. Oats will be used for a spring or summer seeding, and winter wheat will be used for a fall seeding.

**Wildflower Seed**

<table>
<thead>
<tr>
<th>PRI Short Dry Wildflower Mix:</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% Purple prairie clover, 18% Hoary vervain, 16% Black-eyed Susan,</td>
</tr>
<tr>
<td>14% Leadplant, 6% Showy Penstemon, 5% Bush clover,</td>
</tr>
<tr>
<td>5% Rough blazing star, 3% Stiff goldenrod,</td>
</tr>
<tr>
<td>2% Common milkweed, 2% Wild bergamot, 2% Prairie rose,</td>
</tr>
<tr>
<td>2% Western spiderwort, 2% Golden Alexander,</td>
</tr>
<tr>
<td>1% Yarrow, 1% White prairie clover,</td>
</tr>
<tr>
<td>1% Northern bedstraw, all by PLS weight.</td>
</tr>
</tbody>
</table>

**F. Erosion Control:** [http://www.prairieresto.com/installation_erosion.shtml](http://www.prairieresto.com/installation_erosion.shtml)

1. Cover crop will be sown along with the native grasses.

2. All areas not blanketed will be mulched with clean straw.

3. Erosion blanket (Anti-wash geo-jute or equivalent) will be applied as per manufacturer’s directions to the shoreline.

**G. Plants and Planting:**

1. Immediately following the implementation of any erosion control measures, the Shoreline will be further diversified with native wildflower and/or grass plants (plugs & 4 inch pots). The plants used will consist primarily of species other than those previously seeded.

2. Optionally, the planting can be further diversified with wildflower and/or grass plants (plugs or 4 inch pots). These will be planted individually in appropriate microhabitats throughout, or in designated areas of the project. The plants used will consist primarily of species other than those previously seeded.

3. From the following list a minimum of 10 species will be used.
4. Plant a total of 100 plugs and 72-4" pots on the **shoreline**.

5. Optionally, plant another 150 plugs in each of the (shoreline) slope, north area, and west ditch for an additional total of 450 plugs.

**Wildflowers**


Sweet flag (*Acorus americanus*)  
Red baneberry (*Actaea rubra*)  
Fragrant giant hyssop (*Agastache foeniculum*)  
Water plantain (*Alisma subcordatum*)  
Meadow garlic (*Allium canadense*)  
Wild leek (*Allium tricoccum*)  
Leadplant (*Amorpha canescens*)  
Canada anemone (*Anemone canadensis*)  
Thimbleweed (*Anemone cylindrica*)  
Wood anemone (*Anemone quinquefolia*)  
Pussytoes (*Antennaria neglecta*)  
Columbine (*Aquilegia canadensis*)  
Wild sarsaparilla (*Aralia nudicaulis*)  
American spikenard (*Arisaema triphyllum*)  
Jack-in-the-pulpit (*Arisaema triphyllum*)  
Prairie sage (*Asarum canadense*)  
American spikenard (*Aralia racemosa*)  
Butterfly weed (*Asclepias incarnata*)  
Swamp milkweed (*Asclepias incarnata*)  
Bottle gentian (*Bipinnularia americana*)  
Yellowish gentian (*Bipinnularia americana*)  
Northern bedstraw (*Galium boreale*)  
Wild strawberry (*Geum triflorum*)  
Woundwort (*Hydrophyllum virginianum*)  
Wild ginger (*Ilex verticillata*)  
False rue anemone (*Anemone virginiana*)  
Tall meadow rue (*Thalictrum dioicum*)  
Red baneberry (*Actaea rubra*)  
False lily of the valley (*Maianthemum canadense*)  
False Solomon’s seal (*Maianthemum racemosum*)  
Starry false Solomon’s seal (*Maianthemum stellatum*)  
Monkey flower (*Mimulus ringens*)  
Bishop’s cap (*Mitella dipthylla*)  
Downy sweet cicely (*Osmorhiza claytonii*)  
Woodland phlox (*Phlox divaricata*)  
Prairie phlox (*Phlox pilosa*)  
Obedient plant (*Physostegia virginia*)  
Jacob’s ladder (*Polemonium reptans*)  
Solomon’s seals (*Polygonatum biflorum*)  
Prairie cinquefoil (*Potentilla arguta*)  
Rattlesnake root (*Prenanthes alba*)  
Mountain mint (*Pycnanthemum virginianum*)  
Yellow coneflower (*Ratibida pinnata*)  
Prairie rose (*Rosa arvensis*)  
Meadow rose (*Rosa blanda*)  
Arrow-head (*Sagittaria latifolia*)  
Early Figwort (*Scrophularia lanceolata*)  
Zig zag goldenrod (*Solidago flexicaulis*)  
Hairy goldenrod (*Solidago hispida*)  
Gray goldenrod (*Solidago nemoralis*)  
Upland goldenrod (*Solidago ptarmicoides*)  
Stiff goldenrod (*Solidago rigida*)  
Showy goldenrod (*Solidago speciosa*)  
Bur reed (*Sparganium eurycarpum*)  
Woundwort (*Stachys alpina*)  
Rosy twisted stalk (*Streptopus roseus*)  
Lindley’s aster (*Symphyotrichum ciliolatum*)  
Heath aster (*Symphyotrichum ericoides*)  
Smooth aster (*Symphyotrichum laeve*)  
Panicled aster (*Symphyotrichum lanceolatum*)  
Calico aster (*Symphyotrichum lateriflorum*)  
New England aster (*Symphyotrichum novae-angliae*)  
Aromatic aster (*Symphyotrichum oblongifolium*)  
Azure aster (*Symphyotrichum oolentangiense*)  
Red-stalked aster (*Symphyotrichum puniceum*)  
Arrow-leaved aster (*Symphyotrichum uphyllum*)  
Tall meadow rue (*Thalictrum dasycarpum*)  
Early meadow rue (*Thalictrum dioicum*)  
Large-flowered bellwort (*Uvularia grandiflora*)  
Sessile-leaf bellwort (*Uvularia sessifolia*)  
Blue vervain (*Verbena hastata*)  
Hoary vervain (*Verbena stricta*)  
Ironweed (*Vernonia fasciculata*)
Culver's root (*Veronicastrum virginicum*)
Canada white violet (*Viola canadensis*)
Downy yellow violet (*Viola pubescens*)
Arrow leaved violet (*Viola sagittata*)
Downy blue violet (*Viola sororia*)
Heart-leaved Alexander (*Zizia aptera*)
Golden alexanders (*Zizia aurea*)

**Grasses and Sedges**

Fringed brome (*Bromus ciliatus*)
Kalm's brome (*Bromus kalmii*)
Blue joint grass (*Calamagrostis canadensis*)
Bebb's sedge (*Carex bebbii*)
Plains oval sedge (*Carex brevior*)
Bottlebrush sedge (*Carex comosa*)
Fringed sedge (*Carex crinita*)
Dewey's sedge (*Carex deweyana*)
Graceful sedge (*Carex gracillima*)
Lake sedge (*Carex lacustris*)
Hop sedge (*Carex lupulina*)
Pennsylvania sedge (*Carex pensylvanica*)
Wood sedge (*Carex rosea*)
Pointed broom sedge (*Carex scoparia*)
Sprengel's sedge (*Carex sprengelii*)
Stalk-grained sedge (*Carex stipata*)
Tussock sedge (*Carex stricta*)
Fox sedge (*Carex vulpinoidea*)
Canada wild rye (*Elymus canadensis*)
Bottlebrush grass (*Elymus hystrix*)
Rattlesnake manna grass (*Glyceria canadensis*)
Tall manna grass (*Glyceria grandis*)
Soft rush (*Juncus effuses*)
Greene's rush (*Juncus greenei*)
Path rush (*Juncus tenuis*)
Wood rush (*Luzula acuminata*)
Many-flowered wood rush (*Luzula multiflora*)
Hardstem bulrush (*Schoenoplectus acutus*)
Soft-stem bulrush (*Schoenoplectus tabernaemontani*)
Green bulrush (*Scirpus atrovirens*)
Wool grass (*Scirpus cyperinus*)
River bulrush (*Scirpus fluviatilis*)
Cord grass (*Spartina pectinata*)
Prairie dropseed (*Sporobolus heterolepis*)

H. **Trees, Shrubs and Vines:**

1. Container grown trees & shrubs will be planted in designated areas of the project.

2. The trees and shrubs will be individually mulched with shredded hardwood bark mulch at a depth of 3-4 inches.

3. Trees and shrubs will receive an initial watering at the time of planting.

4. The recommended species, sizes and quantities are listed below. Some adjustments may be required based on current availability.

5. Plant a total of 3 – 5 trees and 3 – 5 shrubs along the south border, in with existing arbor vitae.

6. Plant 3 – 5 shrubs along the shoreline.
**Possible Tree Species**

<table>
<thead>
<tr>
<th>Species</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inland serviceberry (<em>Amelanchier interior</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Alleghany serviceberry (<em>Amelanchier laevis</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Pin cherry (<em>Prunus pensylvanica</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Chokecherry (<em>Prunus virginiana</em>)</td>
<td>gal</td>
</tr>
</tbody>
</table>

**Possible Shrub Species**

<table>
<thead>
<tr>
<th>Species</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regent serviceberry (<em>Amelanchier alnifolia</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Low juneberry (<em>Amelanchier humilis</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Serviceberry (<em>Amelanchier sp.</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Black chokeberry (<em>Aronia melanocarpa</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Silky dogwood (<em>Cornus amomum</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Round-leaved dogwood (<em>Cornus rugosa</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Red osier dogwood (<em>Cornus sericea</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>American Elderberry (<em>Sambucus canadensis</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Red elderberry (<em>Sambucus pubens</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Elderberry (<em>Sambucus racemosa</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Nannyberry (<em>Viburnum lentago</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Downy arrow-wood (<em>Viburnum rafinesquianum</em>)</td>
<td>gal</td>
</tr>
<tr>
<td>Highbush cranberry (<em>Viburnum trilobum</em>)</td>
<td>gal</td>
</tr>
</tbody>
</table>

I. **Shoreline Coir log:**

1. Install a 12” diameter coir log (9# density) as per manufacturer’s directions to the shoreline (minimum 30’ below patio, up to 140’ linear feet total). The log will be anchored with wood stakes and coir twine.


1. Management (maintenance) plays a vital role in the eventual success of any native landscape installation, especially during the establishment period. Active management of your native landscape is highly recommended to give the project the best opportunity for long term success.

2. During the germination year, the project area may need to be mowed to control annual weed development. If a “closed” canopy of weed cover develops, it should be mowed to aid in the growth of the prairie seedlings by reducing competition. Mowing may also be necessary if the weeds are about to set seed. Optimum cutting height, depending on the wildflower species present, is typically 4 to 6 inches. It is important that the clippings are finely mulched in order to prevent smothering. PRI can provide the mowing services if desired. Please refer to the cost section of this proposal for a mowing quote.
3. In years following the first growing season, Integrated Plant Management (IPM) services are utilized to control annual, biennial and perennial weed species within the developing native landscape. Typical IPM services include spot herbicide spraying, spot mowing, herbicide wicking or hand weeding. These services are billed on a per trip cost agreed upon prior to the growing season. Rough estimates are provided in the cost section of this proposal for these future management activities.

4. Prescribed burning is a highly effective management tool and may be recommended for your project as it matures. Burning stimulates native species to grow more robustly and also help to deter the presence of many non-native and/or woody species. Prescribed burning, when recommended, will be provided as a separate lump sum cost.

5. In lieu of burning, or during years when the site is not burned, a Spring Dormant Mowing can be used to “clean up” previous year’s growth and set the table for the new growing season. This mowing would occur early in the spring, as soon as conditions permit. Spring Dormant Mowing, when recommended, will be provided as a separate lump sum cost.

K. Anticipated Management:

The following table conveys the anticipated management procedures for your project during the first 3 growing seasons. Estimates for these procedures are provided in the cost section of this proposal.

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Management Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Complete site mowings to control annual weed canopy (1 or 2 mowings as needed). Project monitoring</td>
</tr>
<tr>
<td>2018</td>
<td>Complete site mowing Integrated Plant Management (IPM) – includes spot spraying, spot mowing, wicking, hand weeding, and other techniques to control weeds and invasive species (3 to 4 visits are typical) Project monitoring</td>
</tr>
<tr>
<td>2019</td>
<td>Integrated Plant Management (IPM) (3 to 4 visits are typical) Project monitoring</td>
</tr>
<tr>
<td>2020</td>
<td>Spring burn to encourage native plant growth and to help deter the presence of non-native and woody species. Integrated Plant Management (IPM) – 3 to 4 visits are typical Project monitoring</td>
</tr>
</tbody>
</table>
L. Costs:

Project Installation:

The work as outlined above can be completed for the following lump sums:

**Shoreline & Slope Area** (includes site prep, seeding, erosion control, 30’ biolog* 100 plugs, and 72 – 4inch pots installed) .................. $3,000

**Slope Area; immediately above shoreline** (no plugs, assumes all work done in conjunction with shoreline, includes site prep, seeding, erosion control) ........................................ $1,750

**North Area** (no plugs; assumes all work done in conjunction with Shoreline & slope areas) ........................................ $675

**West Ditch Area** (no plugs; assumes all work done in conjunction with Shoreline & slope areas) ........................................ $525

Additional/native seedling plugs for Slope, North & Ditch areas
(450 installed @ $2.30 each) ........................................ $1,035
5 gallon trees (3 installed @ $65.00 each) ........................................... $195 plus tax
2 or 3 gallon shrubs (6 installed @ $42.00 each) ........................................... $252 plus tax

**Total** ........................................... $7,432 plus tax on tree/shrub planting

*Additional biolog (increments of 10’ installed @ $29 / linear foot).................$290

Vegetation Management:

Germination year management quote (all areas combined):
Complete site mowings as needed (1 to 2 mowings are typical) .... $250/mowing

Future Management Estimates (all areas combined):

Growing season 2018 (assumes 3 IPM visits) ........................................... $800
Growing season 2019 (assumes 3 IPM visits) ........................................... $800
Growing season 2020 (assumes 3 IPM visits) ........................................... $800
Spring burn 2020 (assumes 3 IPM visits) ........................................... $750

Please note: The Future Management Estimates are meant to convey typical management costs for
projects of similar size and characteristics. Prior to each growing season, you will receive a specified quote from your project manager detailing the recommended management strategies and associated costs for your project.

PRI will provide a follow-up consultation approximately 1 month after the completion of the project (if the project was seeded in the fall, the consultation will occur the following spring). The Restorationist (or salesperson) will meet with the project owner to assess the status of the project, answer any questions, and provide any necessary recommendations. This follow-up consultation will be provided at no additional cost.

**M. Guarantee:** Prairie Restorations, Inc. (PRI) has a great tradition of successfully installing native landscapes throughout the Upper Midwest. We feel our expertise in this industry is second to none and we stand behind every one of our projects. Because we are confident in our abilities to provide you with the best possible materials and services, we are proud to offer the following guarantee:

On projects installed by PRI crews within the specified dates, we will guarantee successful establishment within three full growing seasons, given the following conditions:

1. That PRI materials and PRI installation services are used on the project.
2. That the failure of the project is not due to the actions of others.
3. That PRI staff has been consistently involved with the maintenance of the project (consultation with the client or direct utilization of PRI management services) from the time of germination until the end of the third growing season (i.e. mowing, spot spraying, and controlled burning).

This outline provides a step-by-step plan for accomplishing the restoration of this site. If successful establishment does not occur within three full growing seasons, all necessary steps will be taken to ensure the eventual success of the project, at no additional charge. For purposes of this guarantee, successful establishment is defined as follows: That the presence of at least 75% of the original seeded or planted species can be found on site, and that the overall density of vegetation is comprised of no less than 75% native species.

We guarantee the initial quality of our installation services and materials. A shoreline project of this nature is subject to wave action, fluctuations in water level, ice push and predation, so repairs and/or replanting may be required as part of project maintenance to achieve the desired end result.
N. **Contract:**

If you accept the proposal as written and want to proceed with the project, please sign the contract below.

**Property Owner:** _______________________             **Date:** ______________

**Contractor:** Prairie Restorations, Inc. **Contract Value $** ______________

**By:** _____________________________             **Date:** ______________

A 20% down payment is required at this time. Please return a copy of the signed contract, along with payment for 20% of the total project cost. Thank you.

Joe Wilberg  
Project Manager  
Prairie Restorations, Inc.  
PO Box 95  
Scandia, MN 55073

O. **Notes:** Please note that this proposal is valid for 2 months (from the date on the proposal). If the proposal is accepted after the 2 month period, PRI reserves the right to modify the proposal based on cost fluctuations and material availability.

Restoration outline prepared by Prairie Restorations, Inc. (PRI), Princeton, Minnesota