Shoreline Stabilization Application – Lake Poinsett Water Project District

THE FOLLOWING INFORMATION WILL BE USED TO CALCULATE QUALIFYING INCENTIVE PAYMENT AND TO WHOM THE PAYMENT IS TO BE MADE. ***PLEASE PRINT LEGIBLY***

Name(s): _____

Lake site address: _____

Preferred Mailing Address (if different from above): _____

Contact telephone number(s): _____

Email address: _____

Length of shoreline stabilized: _____

Complete the following to the best of your knowledge:

- **Y / N** Was rock added without completely reconstructing rip rap?
- **Y / N** Was the entire rip rap or wall built with new fabric or footings?
- **Y / N** Was Recyclex "root mat" installed 1-2 inches below the dirt surface?
    - If yes, how many feet have Recyclex installed? _____ ft
- **Y / N** Was a native grass seeding used for stabilization?
    - If yes, how many feet? _____ ft
- **Y / N** Were shrubs or shrubs with trees planted to form a barrier?
    - If yes, how many feet? _____ ft

Additional Information:

Potted shrubs can be planted throughout the non-winter months if available. When choosing a shoreline shrub or tree, use the Hardiness Zones of 3 or 4 as a guide. Choose Zone 3 if the shrub will be fully exposed to north or west winds. $5/ft incentive.

Qualifying shrubs must be planted close enough together for the species to form a solid root base when mature. A minimum of 75% coverage (i.e., 75 ft of a 100 ft lot) is required for the shrub stabilization incentive. The shrub incentive will be based on the actual length of the shrub row planted, NOT lot width.

Because the incentive payment is limited by either 33% of the total cost of hard practice or a fixed rate per foot of $30-55 for those specified practices (whichever is less), **INCLUDE ANY INVOICES, sales receipts, or labor bills.** In-kind 'do it yourself' labor is also a qualifying expense to consider.

Invoices and sales receipts are only used to verify purchase.

Return this page to: LPWaterDistrict@gmail.com with **LPWPD INCENTIVE REQUEST** in the subject line.

Because of the extreme fluctuations in water lever of Lake Poinsett, stabilization work requires that historic level (1655.5 ft msl) of water and at lest 3 ft additional wave protection height is necessary to be considered stable. Even this height does not guarantee that in extreme cases damage will not occur, but it has proven to minimize even the worst conditions when constructed properly. When a project is completed to this height (1658.5 ft) it may qualify for payment.

Projects where finished hard practice (rock or concrete) are at or above 1659.5 ft are not required to have any additional protection to lawn areas above, but are encouraged to use some of the options available for additional incentive payments.

Projects where finished hard practice (rock or concrete) are at 1658.5, are required to have at least one additional practice utilized in the vegetative area to provide stabilization. Practices which are acceptable are:

1. Recyclex TRM "root mat" installed under turf grass
2. Native grass
3. Row of shrubs or shrubs with trees

The incentive payment for rock or wall work is based on the type and extent of the work done, total cost, completed elevation and a maximum incentive schedule. Please answer all questions on page 1. Prior to beginning your project and submit to schedule a prework site visit to establish a minimum elevation for proposed work.

More info:

"Recyclex TRM" with hold down pins is available in 8"x90' rolls from Millborn Seeds, Brookings SD 888-498-7333

Some local contractors are also carrying Recyclex and will sell partial rolls. Eligible $4ft / one 8' pass.

A native grass mix for Lake Poinsett has been packaged to cover 1000 sq ft at Millborn Seeds. In addition, a slow-release fertilizer to establish new grass is available along with the "Curlex" shredded aspen blanket that is used to prevent seed from being washed out by rain during establishment. Our project recommends all these products as being helpful in getting a grassed area started. $5/ft

Turf grasses do not qualify for incentive payment, but we do recommend if using turf grasses to include Tall Fescue as a major component to any seed mix being used for mowed lawns. Tall Fescue has a deeper root system than many of the other turf grasses. No incentive.

Optional considerations for shoreline stabilization:

1. 2011 peak elevation so far was 1657.5, nearly everything below 1658.5 was flooded at some time. Areas with 10:1slopes above the full level of 1650.5 to 1658.5 prior to the peak level had no loss of shoreline to actually gaining material along shoreline. Areas without established protection to the 1658.5 level suffered soil erosion or had man-made structures (decks, stair, landscape block walls, patio pavers, terraces) torn apart. Areas previously protected to the standard 1657.5 had damage that ranged from very minor if the protection held to quite extensive if the protection measure failed. Given these results, it would seem prudent that if stabilization structures are to be installed that the minimum top height be 1658.5 to minimize erosion, but that 1660.5 be a desired level if erosion cannot be tolerated by the lot owner.

2. The majority of field rock rip rap structures held and are still in place. Those that failed had at least one of the following deficiencies (listed in order of importance):

a. fabric was not used under rock

b. fabric was placed in vertical position rather than horizontal position

c. fabric was not overlapped the minimum 3 ft or had been torn from other activity

d. rock was sloped less than the minimum 3:1 – or more preferred 4:1 slope

e. the base or first rock layer used was less than the 14 inch minimum diameter or approximate 50#

The only difference or advantage with fractured, quartzite or granite rock is that the minimum slope could be 2:1 slope as all other requirements are exactly the same. Some sites survived having the deficiencies (labeled a-d above) by overkill with rock in excess of 4 ft thick, but unless the rock still has the minimum weight, they still fall apart.

A good rip rap job that doesn't cut corners is still a good solid design but needs to accommodate the highest elevations of water.

3. Vertical walls as stabilization (poured concrete, steel or concrete block) must be built with sufficient footings and are only good if at least one of the following is also included:

a. The down splash area is stabilized by rock (not sand) with fabric, poured concrete or cement joined block

b. The down splash area is grassed with sufficient built in surface inlet drains

c. Sloped rock are placed in front of the wall to break the forces of the waves.

4. Monster concrete block is currently being used but are only acting as wave breakers and not stabilization components. There are some designs and installations where blocks are erected by offsetting and creating something like a 28% back slope or 6" back for every 18-24" up, but while making the wall slightly more stable it will result in great water splashing up and over and require the protected down splash area. These may be advantageous in high bank areas near deep water but would not be the solution where homes are close to the water to begin with although they may be promoted just for those sites.

NOTE: Down splash area is the area in front or behind a vertical wall.

Information for Vegetation Practices

Root mats: This refers to a product made of non-biodegradable material that is covered completely with 1-2 inches of soil and seeded. The purpose of the product is to allow the individual grass plants and roots to grow through and become one large, connected unit of deeply anchored protection.

A trade name product "Recyclex TRM" is an example. Recyclex is made from shredded plastic pop bottles sewn into a plastic grid. For more information on 'Recyclex', click on the following link: **https://americanexcelsior.com/erosion-control/**

Native South Dakota grasses: Grasses which have survived here for 1000s of years without care of man. Acclimated to our temperatures and moisture conditions. Basically all common native prairie grasses have roots 5 ft or more deep regardless of leaf height versus the 2-3 inch roots of turf type grasses.

Short native grasses: Buffalo Grass, Blue Grama – these grasses only reach 4-6 inches leaf height but have 5 ft or deeper roots. Blue Grama establishes the easier of the two from seed, but the Buffalo Grass will fill in and mat the fastest after started. Buffalo Grass plugs are often used because of this. A combination planting of these two species is acceptable. Once established, extremely low maintenance.

Medium height native grasses: Side Oats Grama, Little Bluestem, Green Needle Grass – reach a height of 8-15 inches leaf height. These SD natives are commonly easy to establish. Side Oats' unique seed head produces subtle color of miniature flowers in June, while Little Bluestem turns red for winter color. Green Needle Grass is a

cool season grass and will bring green earlier than most native grasses. All three grasses are favorites of seed eating small birds.

Tall height native grasses: Big Bluestem, Indian Grass, Switch Grass – These three grasses were the anchor grasses of the Tallgrass Prairie which surrounded Lake Poinsett. With a leaf height of 3 feet and roots of 8-10 feet deep, these grasses prevented the prairie from erosion of any kind. Soft leaves turn from light green to reds and tans followed by sturdy seed stems and intricate seed heads at eye level in September and October.

Shrubs: Shrubs capable of Zone 3-4 winter hardiness are acceptable for shoreline stabilization. Trees can also be included within shrub rows. Lot owners should decide the qualities they would prefer when selecting shrubs. Mature height, color and texture of foliage, flowering or fruiting habits, deciduous or coniferous, suckering or non-spreading all need to be understood before purchasing. Conservation Districts carry several dozen varieties as bare root plantings, but normally these are only available for April or May planting, then Districts shut down their operations. Ordering these shrubs takes place in the fall for the following year planting. Retail nurseries generally have potted shrubs available for late Spring, Summer and early Fall planting. Quality nurseries specialize in fewer varieties of improved cultivars at high prices. Make certain of the winter hardiness from either retail or online sources of improved varieties. A good reference for hardy shrubs and trees for this area can be found at: https://www.ag.ndsu.edu/trees/handbook/ndhand-1.htm

Guidelines and Incentive Rates for Shoreline Stabilization and Restoration (per Linear Foot of Shoreline)

Definition of Shoreline Repairs Performed

- **Stabilization:** Reshaping and minor dirt work performed to achieve an elevation of 1658.5 ft or more. May require additional anti-erosion fabric and rock "Rip Rap" or other hard stabilization practices to reach an elevation of 1658.5 ft or greater.
- **Restoration/Rebuild:** Work performed to repair major shoreline erosion requiring significant additional material to establish a shoreline elevation of 1658.5 ft or greater. Will require additional anti-erosion fabric and rock "Rip Rap" or other hard stabilization practices to an elevation of 1658.5 ft or more.

Notes

- **Qualification for Incentives:** Requires the use of erosion control fabric underlayment and rock "Rip Rap" or other hard stabilization practices below 1658.5 ft of elevation, and Recyclex or similar root mat material in conjunction with a suitable deep-rooted grass for a minimum of 8 ft width beyond finished hard stabilization practice (above 1658.5 ft of elevation).
- **Buffer Zone:** For lots without adequate elevations above 1658.5 ft for a buffer zone, it is recommended to use shrubs to create a shrub row buffer at the edge of the hard practice to buffer wave action during periods of high water.
- **Omission of Recyclex and Grass:** The use of Recyclex root mat material and deep-rooted grass may be omitted if anti-erosion fabric and rock "Rip Rap" or other hard stabilization practices are to an elevation of 1661.5 ft or greater.
- **Reimbursement:** Shall not exceed 33% of the total cost of combined per linear foot rate from the chart below.
- **Permits:** May be required from SDGFP for shoreline work. For more information, contact the Watertown Regional office at 605-882-5200 or 400 West Kemp, Watertown, SD 57201. Current contact name is Rhett Russell.
- **Wooden Structures:** Any and all wooden structures or materials must be removed from 1658.5 ft elevation and below to qualify for reimbursement. This includes buildings, railroad ties, landscape timbers, etc.
- **Rock "Rip Rap" Installation:** Must be graded to a slope of 3:1 or greater to minimize future damage during "Ice Out."
- **2011 Maximum Static Flood Level:** 1657.5 ft.

Incentive Rates

Type of Repair	Applicable Incentive Rates per Foot of Shoreline	Additional Incentive for Recovery of Erosion Material from Adjoining Lakebed to Achieve Required Elevation of 1658.5 ft	Additional Incentive for Raising Elevation of Hardscape to 1659.5 ft	Additional Incentive for Raising Elevation of Hardscape to 1660.5 ft	Additional Incentive for Installation of Shrub Row at the Upper Edge of Anti-Erosion Fabric	Additional Incentive for Installation of Recyclex and Buffalo Grass/Native Grass Mix at the Upper Edge of Anti-Erosion Fabric
Stabilization Repairs	33% of total cost not to exceed $30/linear foot	N/A	$10/linear foot	$15/linear foot	$5/linear foot	$5/linear foot
Restoration Repairs	33% of total cost not to exceed $45/linear foot	$5/linear foot	$10/linear foot	$15/linear foot	$5/linear foot	$5/linear foot

Revised: 8/12/2019 - Added incentives for increased elevation and Buffalo grass

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