



The Swale Enhancement Program

What is the Swale Enhancement Program?

The District is implementing a new program to improve water quality in the lake by improving the absorption of run-off in the stormwater swales constructed during the rebuilding of Ripley Road.

These swales were designed to intercept, hold, adsorb, and transport runoff water. Their size was determined by engineering studies done specifically for Ripley Road, and for reducing the impacts of rainfall events to Lake Ripley. Thus, it is very important that the size, shape, capacity, or location of the swales are not altered.

But the functioning of these swales can be improved by planting appropriate native plants in them. Turf grass and ordinary, cultivated flowers do not have the necessary rooting capacity to improve the stormwater function of the swales. Native plants all have deep fibrous roots that can withstand the unusual conditions of swales, with their alternating dry/deep water periods. The appropriate selection of native flowering plants, grasses, and sedges can and will reduce erosion, trap pollutants and sediments, and greatly increase infiltration of water that would otherwise eventually reach the lake.

We are implementing a modified cost-share program to provide assistance to owners whose frontage has been changed by these swales on Ripley Road. Because the swales are in the Town right-of-way, this agreement would not include an easement, but rather an agreement to care for the planting. We are calling it "Swale Enhancement Program".

The total project cost is capped at \$5,000.

What we are we looking for?

A stormwater swale is an open, manmade waterway that treats and transports stormwater runoff. Swales are designed to intercept, hold, transport, and absorb runoff water. They are important in preventing flooding along Ripley Road.

We are looking to collaborate with property owners along Ripley Road to plant appropriate native plants in their swales along their frontage. We see an opportunity to demonstrate that this program will be an important contribution to our water quality in the lake.

Types of Swale Plantings

1. Native Vegetated Mats (NVM)

Native vegetated mats consist of a coir reinforcing mat, soilless growing medium and native vegetation. The mats are easy to install with minimal site preparation, quick to grow and require minimal weeding and maintenance. These mats are perfect for rain gardens, shorelines, and stormwater swales where slopes make planting individual plants more difficult.

Native vegetated mats cost \$40/square yard. If your swale is smaller in size, this might be the best option for you! The mats weigh up to 250lb; delivery through Agrecol is available if necessary. There are two different harvest times for the NVMs. The first harvest is in mid-July, and the second harvest is in mid-October; this gives you the option of planting in the summer or the fall.

Site Preparation and Planting

Eliminate all existing unwanted vegetation by either stripping the existing sod, using an aquatic-safe herbicide (a few weeks before installation), through repeated weeding, or with smothering techniques. Loosen the soil to allow rapid deep root development of natives. Amend soil with clean compost and mix into surface to decrease transitional rooting time into existing soil. Smooth, but do not compact, the soil surface to prevent root pruning from air gaps.

Roll the NVMs out along the bottom and sides of the ditch. Pin down with landscaping pins to ensure the mats do not curl up at the corners.

Maintenance

Watering

Water the plants heavily at the time of planting. Plants will need to be watered daily for 2-3 weeks, and then twice per week until the roots are established (approximately 6-8 weeks or at the end of the first growing season). A half-inch of rainfall can replace one watering session. The plants will need to be watered regularly during the first years' growing season. Watering is seldom needed once the native vegetation is established.

Weeding

After you have planted the mat, there will be little weeding needed at the onset. After the first year, the site will need to be weeded at least once a season. Once the plants have grown and filled in, much less maintenance will be required.

2. Plant Plugs

Planting native plant plugs at one plant per square foot (at \$2/plant or less through the District's native plant sale!) is the most cost-effective, but it does require more maintenance, including the installation of an erosion control blanket, and weeding. The erosion control blanket should be 100% coconut fiber material.

Site Preparation and Planting

Prior to planting, this site will need to be sprayed with an aquatic approved herbicide a few weeks before planting. There is no need to clean up the dead grass, as the new plants will be planted within the dead turf grass to prevent erosion until the plants have grown and spread. Install a 100% coconut fiber erosion control blanket before planting any native plants at the site. This will provide protection to both the soil and the plants if a heavy rainfall event would occur as they are establishing themselves. The plants should be planted 1 plant per square foot.

Maintenance

Watering

Water the plants heavily at the time of planting. Plants will need to be watered daily for 2-3 weeks, and then twice per week until the roots are established (approximately 6-8 weeks or at the end of the first growing season). A half-inch of rainfall can replace one watering session. The plants will need to be watered regularly during the first years' growing season.

Weeding

After you have planted your natives, the planting will need to be weeded approximately every week. After the first full growing season, the plants should only need to be weeded once or twice a year. It is also important to manage weeds associated with neighboring turfgrass plantings by preventing weeds from going to seed and/or mowing and hand-pulling weeds nearby. It is very important to avoid the use of broadleaf herbicides near native plantings; even drift from the liquid/spray on weed killers can adversely affect native plantings.

General Maintenance

Keep an eye out for any areas that appear to be eroding. These areas can be planted denser with plants or, if needed, stones placed over geotextile fabric can be utilized to prevent erosion. Mulching is not suggested since mulch can get washed away and clog pipes downstream.

Thank you for your interest in partnering with the Lake Ripley Management District in a project that will protect and improve the water quality of Lake Ripley. We support projects that benefit the lake as a whole, such as helping infiltrate stormwater runoff before it reaches the lake!

Things to consider when designing your swale planting:

- Are there utilities to avoid when planting? (Plant plugs are only 3 inches deep.)
- When was the last time the swale was dug out for utility work? Will that be happening soon?
Note: The District is not responsible for any damage to the swale/plant plugs. The homeowner is responsible for any repairs needed.
- Does the location have mostly sun or shade? (This will affect appropriate plant choices.)
- What size area do you want to plant and maintain? How far above the top of the swale would you like to create a buffer? At a minimum, the buffer should extend to the top of the swale bank.
- Plants need to be short enough (2-3 feet maximum) to allow cars in the driveway to see traffic when backing out.
- Is there sitting water during the spring and summer? (This will affect appropriate plant choices.)
- Is there a lot of stormwater flowing through the swale? What is the volume and speed? Are there currently erosion problems? Is there anything blocking the flow of water?
- Is there a lot of road salt in the winter?
- Are you able to provide bi-weekly maintenance, especially in the first two years?

Possible Costs

- Native plants and/or native vegetated mat
 - Native vegetated mat: \$220/roll
 - The rolled out NVM will measure: 40 inches x 11 feet
 - Native plants are approximately \$2.00/plant – take advantage of the District’s annual plant sale!
- Landscaper to install plants if desired
- Erosion control blanket (plugs only)
- Weeding labor
- Watering costs
- Aquatic herbicide and application costs (labor)
- Aquatic herbicide/other eradication tool for existing turf or non-desirables
- Site preparation for native vegetated mat
 - Sod removal
 - Clean compost
 - Landscaping fabric pins (to hold down corners of NVM)

What if I want to convert my swale by myself?

To all those 'do-it-yourselfers', we can still offer advice to anyone interested. We can offer a complete planting plan, or a list of appropriate plants for your specific site! Our native plant sale each spring is a convenient and economical way of getting verified native plants (about \$2/plant, sometimes less!)

As always, our primary concern is for the lake. Just as shoreline cost-shares have helped maintain water quality, we know swale cost-shares along Ripley Road will help us achieve our goals for water quality in Lake Ripley.

Let's go from this...



...to this!



Guidance for Landowners about the Stormwater Runoff Reduction Program Cost-Share Process

Step 1: Landowner notifies the District of their interest in the Swale Program and requests an on-site visit with the Lake Manager. Stop in the District's office or call: 608-423-4537 or email lake.manager@tn.oakland.jefferson.wi.gov.

Step 2: District conducts preliminary site inspection and discusses project with Landowner (scope, options, cost-share eligibility, possible permitting requirements, etc.). Landowner receives packet outlining process.

Step 3: Landowner refines idea of project scope. When ready with an **actual** proposal, Landowner requests follow-up meeting with Lake Manager. Proposal should include choice of native vegetated mat or plant plugs, installation process, pricing, and landowner plan of action.

Step 4: Cost-share Committee meets to score the project. Project must demonstrate its value to the lake as a whole, include eligible practices, and meet applicable design standards. Committee either preliminarily approves the project or sends it back to the Landowner for additions which would increase chance of approval or denies approval.

If approved, Lake Manager informs Landowner that they may begin the process of obtaining three (3) contractor bids. This should include landscaping costs of installing plant plugs or native vegetated mats, if desired route.

Step 5: Landowner has three (3) months to obtain bids.

Step 6: Landowner when ready, requests to be put on the agenda for the next regular monthly Board meeting to present their project, with the three (3) contractor bids, for full District Board approval of the Swale-Program project. The Board's approval is contingent upon the Cost-share Committee's recommendation and availability of District funds. **Note: the District cost-shares at 50% of the lowest responsible bid.** Landowner may choose a different bid, if that bid is fully eligible, and if Landowner is willing to make up the cost difference.

Step 7: If project is approved for funding, Landowner has one (1) year to complete the project. Delays due to weather may allow extensions of timing, and Landowner should request such. Landowner must notify Lake Manager at least three (3) business days in advance of any contractor work to ensure proper oversight. All eligible expense receipts should be saved for reimbursement from the District. Permit-application fees are the responsibility of the Landowner and are not cost-share eligible.

Step 8: Landowner – Landowner signs the Soil and Water Conservation Agreement, and the Cost-share Agreement with the District.

Step 9: Landowner – it is the responsibility of the Landowner to notify the Lake Manager if at any time during the process they decide to abandon the project. District can then free up funds for other projects.

Step 10: District: upon project completion, Lake Manager will perform a final site inspection to verify that all required specifications have been met. Funds will not be disbursed without signed contracts between the District and Landowner.

Step 11: Landowner – If project passes inspection, Landowner pays any remaining balance owned, and receives a receipt or proof-of-payment from the contractor. Landowner then presents the document to the District for reimbursement. **Note: Cost-share grants are treated as “other income” by the IRS for tax-reporting purposes, which requires an issuance of 1099 forms to the Landowner.**

Step 12: Landowner is legally obligated to maintain the project for the duration specified in the contract.