

Upper Riley Creek Ecological Enhancement Project

Overview

Project Need

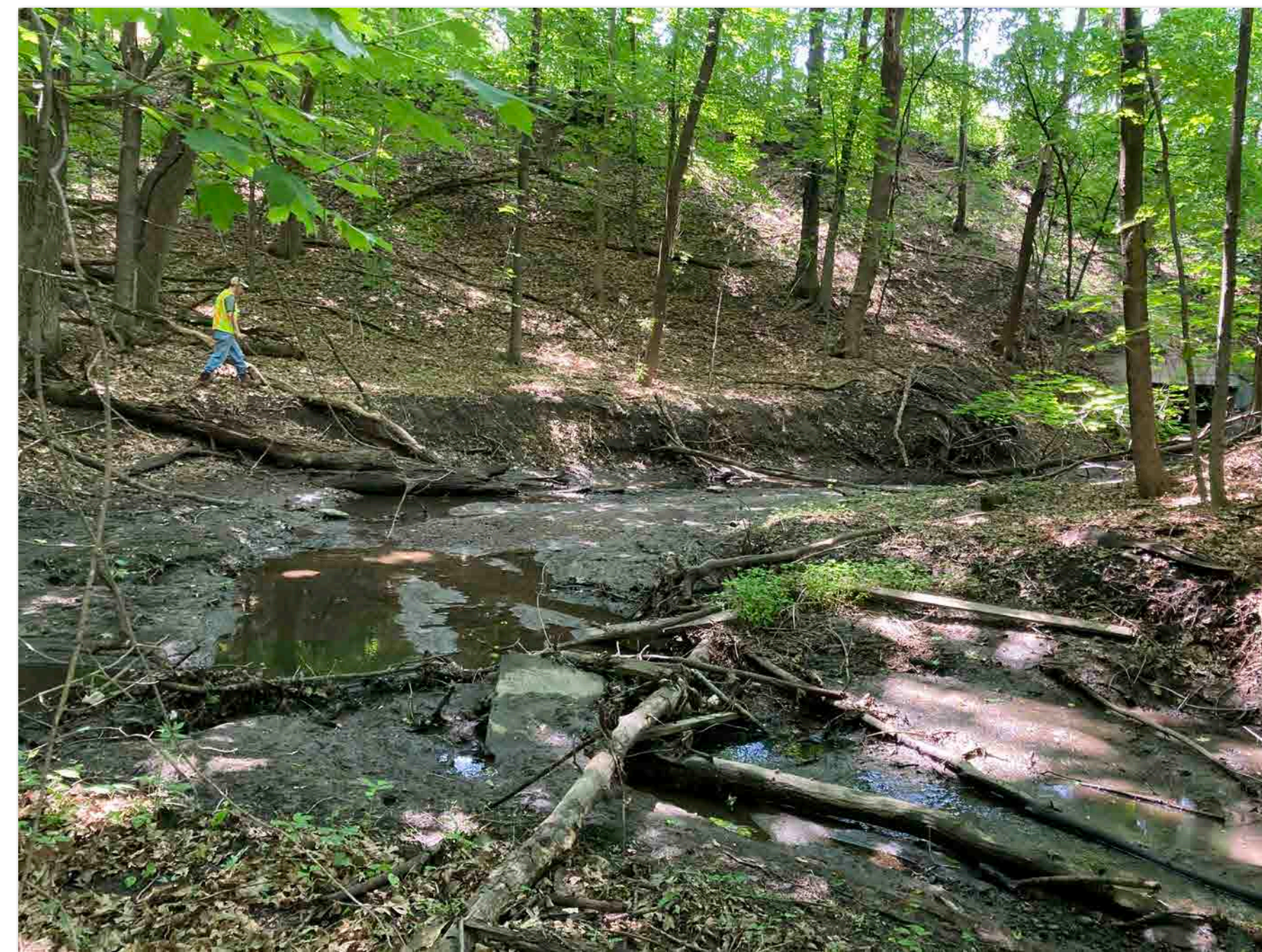
Upper Riley Creek does not meet water quality standards for streams set by the Minnesota Pollution Control Agency. The creek also discharges pollution to Lake Susan, which is also below water quality standards.

The primary concerns for the creek are:

- Streambank erosion
- Perched culverts and outfall pipes
- Incised channel disconnected from floodplain
- In-channel debris
- Sediment deposit at outfall into Lake Susan



Steeply incised ravine on north end of project area near Highway 5/Arboretum Blvd.

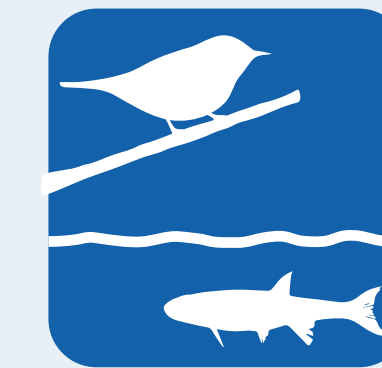


Erosion and sedimentation in creek north of the railroad crossing.

Project Benefits



Improves ecological function of Upper Riley Creek.



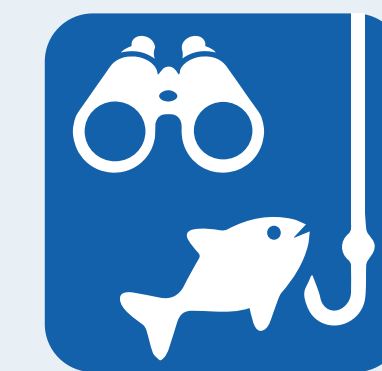
Provides diverse habitat layers for wildlife.



Significantly reduces streambank erosion.

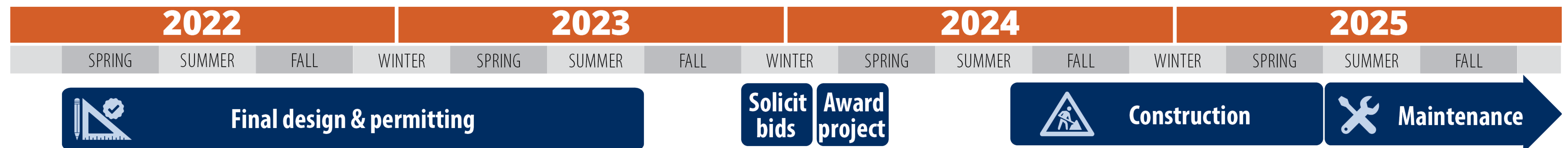


Demonstrates to public importance of stream stability.



Improves public access to Upper Riley Creek.

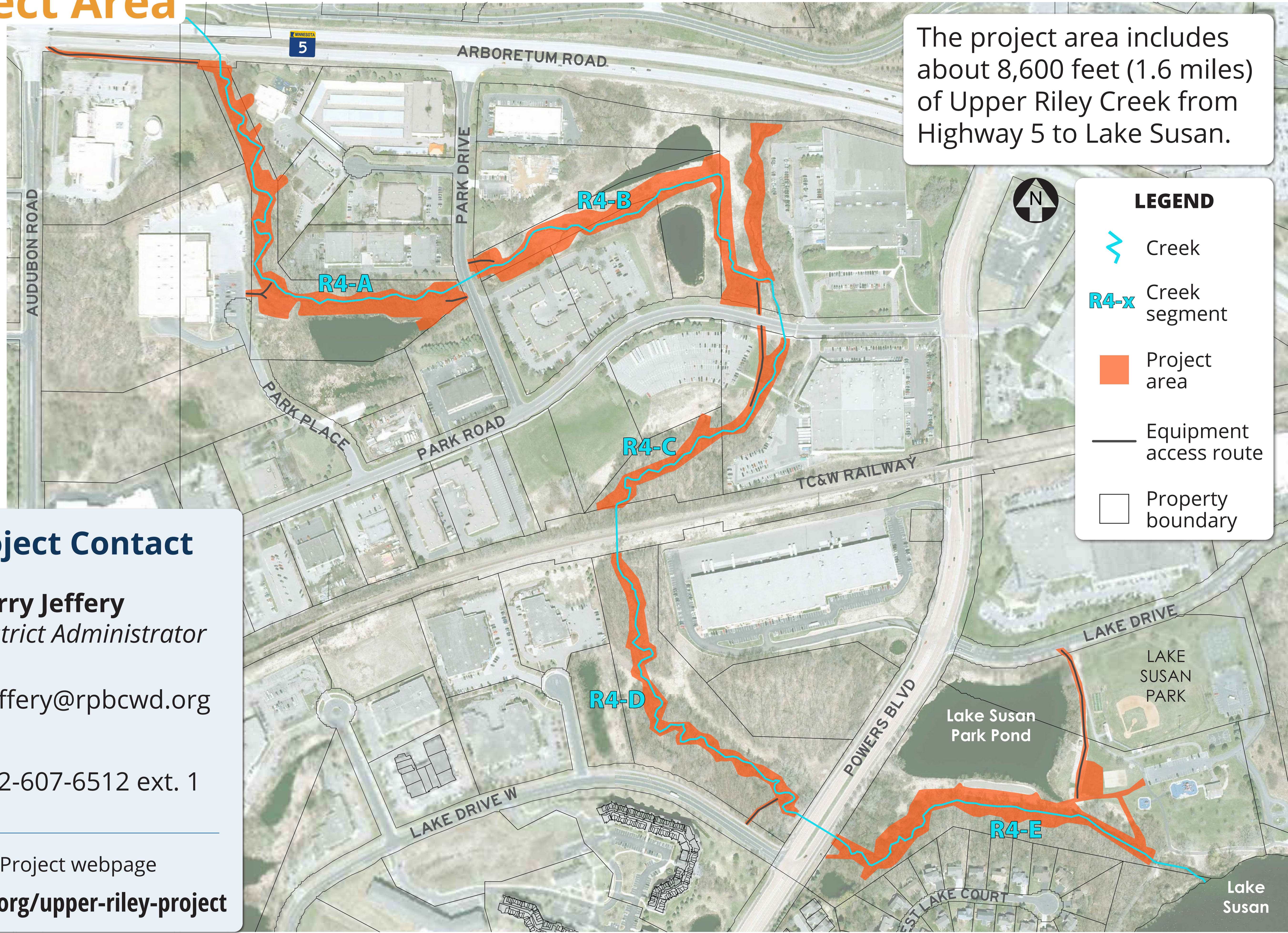
Timeline



Upper Riley Creek Ecological Enhancement Project

Project Area

The project area includes about 8,600 feet (1.6 miles) of Upper Riley Creek from Highway 5 to Lake Susan.



LEGEND

- Creek
- Creek segment
- Project area
- Equipment access route
- Property boundary

Project Contact

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District Administrator

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Project webpage
rpbcwd.org/upper-riley-project

Existing Conditions

This project will address a variety of issues in Upper Riley Creek.



Steeply eroded streambank



Streambank undercutting



Sediment deposits



Perched stormwater outlet



Degraded streambank



Degraded stream channel

Upper Riley Creek Ecological Enhancement Project

What to Expect

Construction equipment and activities

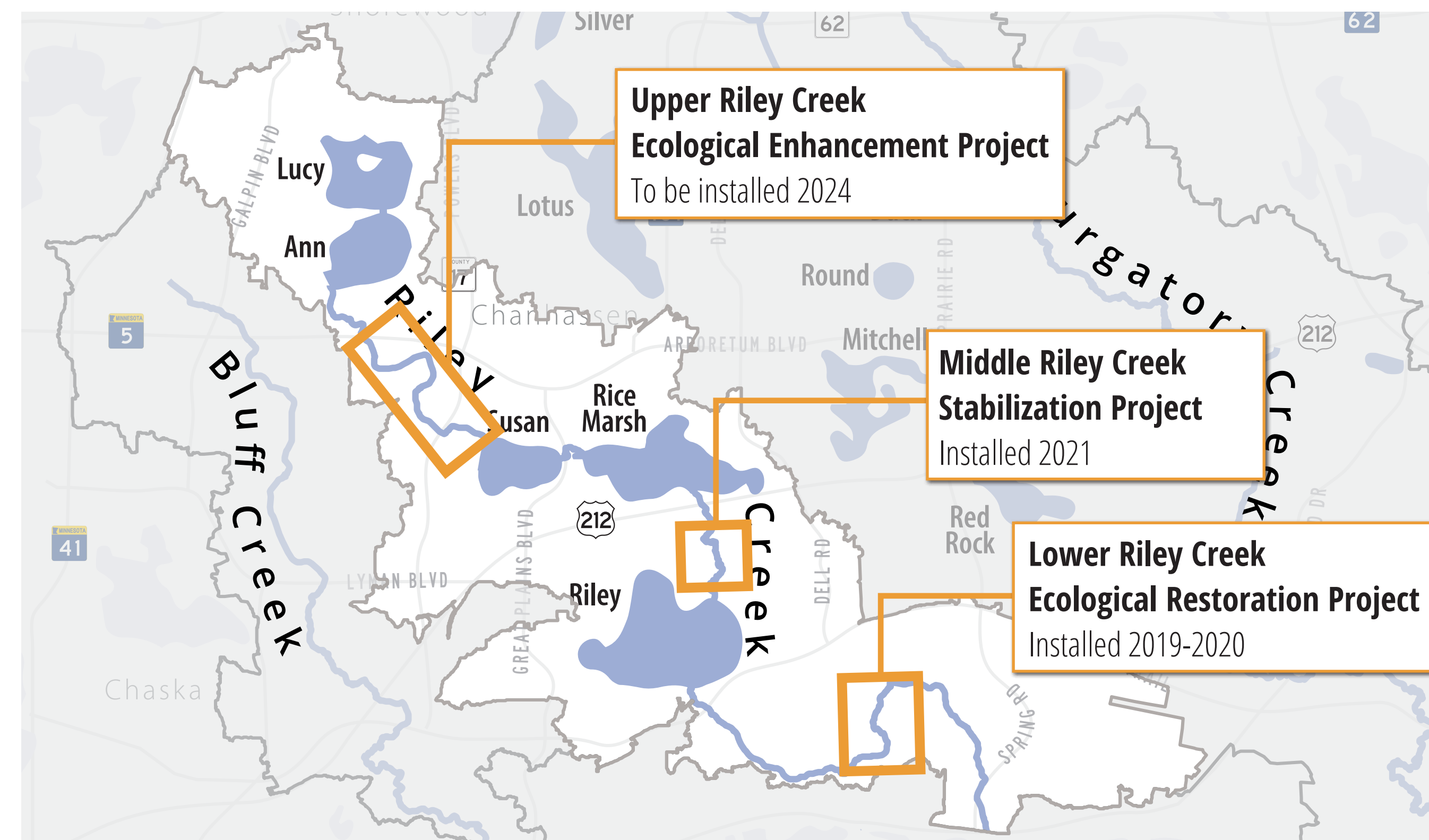
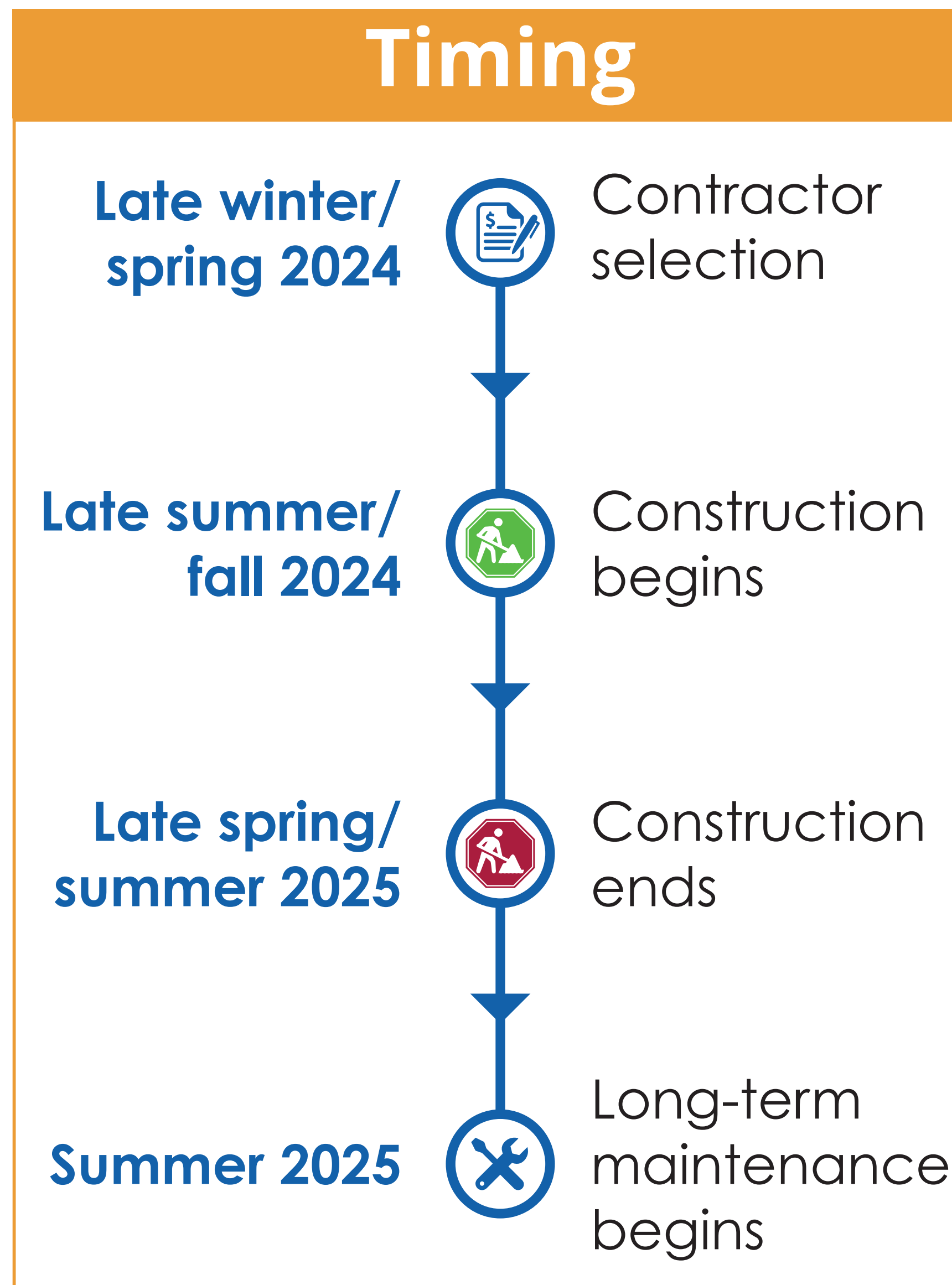
- Heavy machinery including backhoes and dump trucks
- Grading and movement of soils
- Truckloads of materials such as boulders and gravel
- Installation of native plant seeds and live plants

Working to Restore Riley

The Upper Riley Ecological Enhancement Project is the third restoration project to occur on Riley Creek in recent years.

In 2021, the Middle Riley Creek Stabilization Project within Bearpath Golf & Country Club was substantially complete.

In winter 2019-2020, crews performed restoration work on the Lower Riley Creek Ecological Restoration Project. Many of the same techniques used in these project will be used to restore Upper Riley Creek.



Upper Riley Creek Ecological Enhancement Project

Stream Restoration

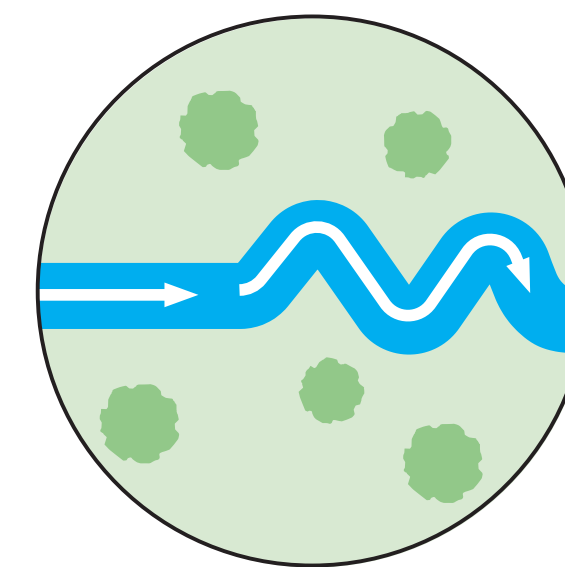
The project will enhance approximately 8,600 feet of Upper Riley Creek and improve its ecological functions. Engineers estimate that the project will prevent 470,000 pounds of total suspended solids (TSS) and 250 pounds of total phosphorus (TP) from entering the creek each year. This reduction will improve water quality in downstream Lake Susan, which is currently on the list of Impaired Waters maintained by the Minnesota Pollution Control Agency (MPCA).

This project will keep nearly **17 dump truck loads of sediment** from entering Riley Creek **each year!**

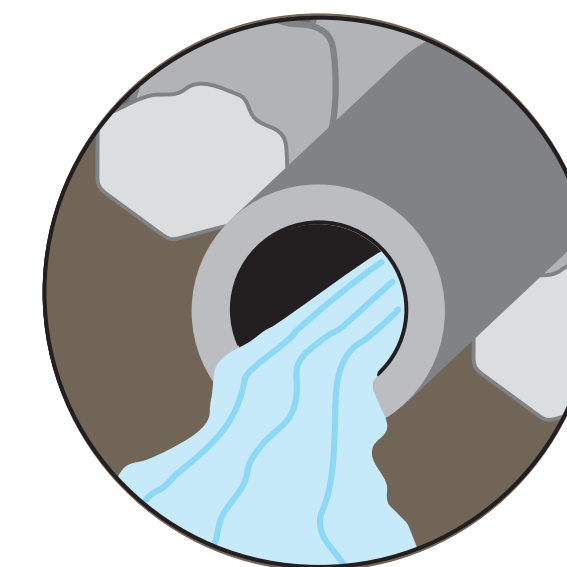


TECHNIQUES

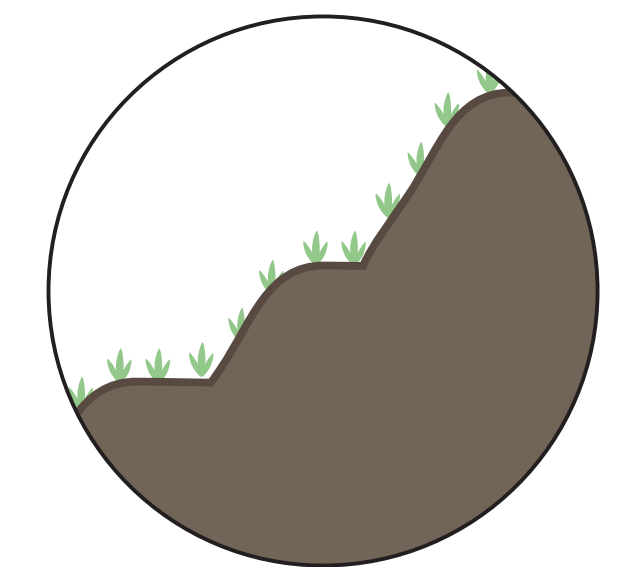
A variety of techniques will be used in the restoration of Upper Riley Creek.



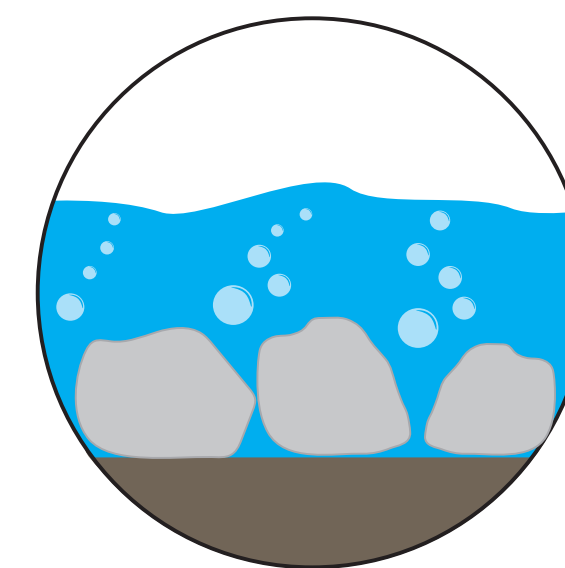
Re-meander creek channel to slow the flow.



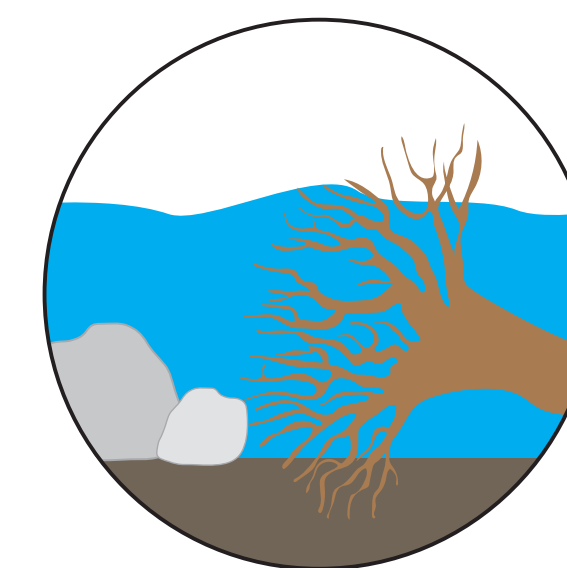
Repair stormwater outlets.



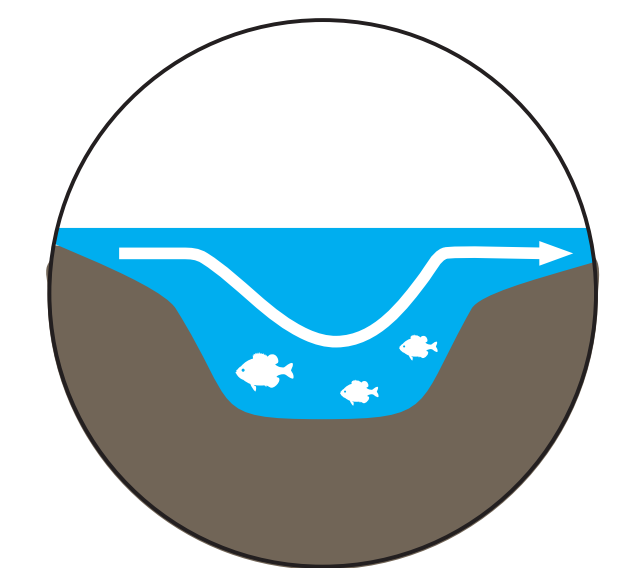
Use Vegetated Reinforced Slope Stabilization (VRSS)



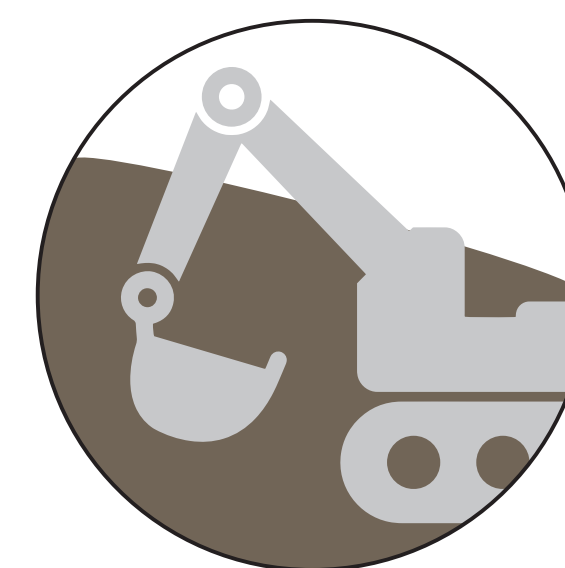
Add riffles to oxygenate water.



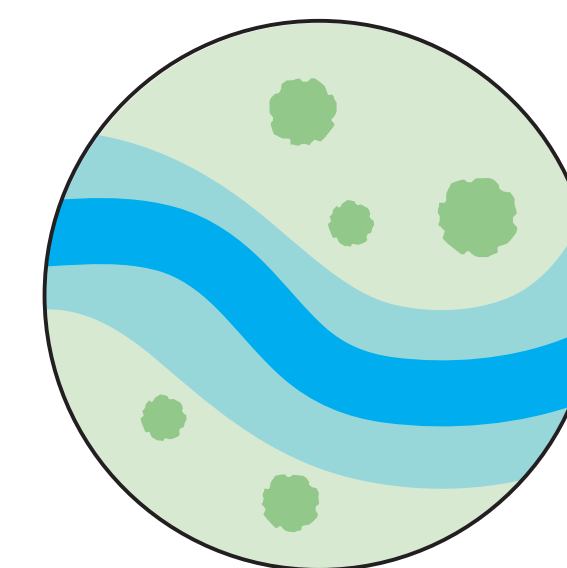
Add structure (boulders, root wads) to slow water.



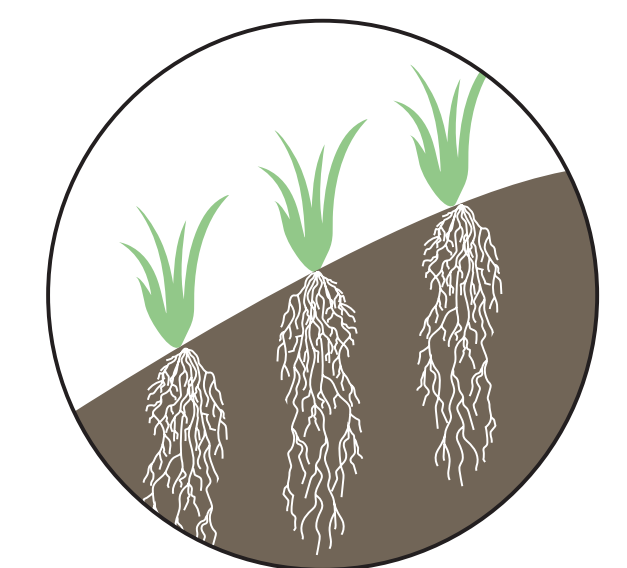
Create pools of deep water.



Regrade soils to reduce slopes.



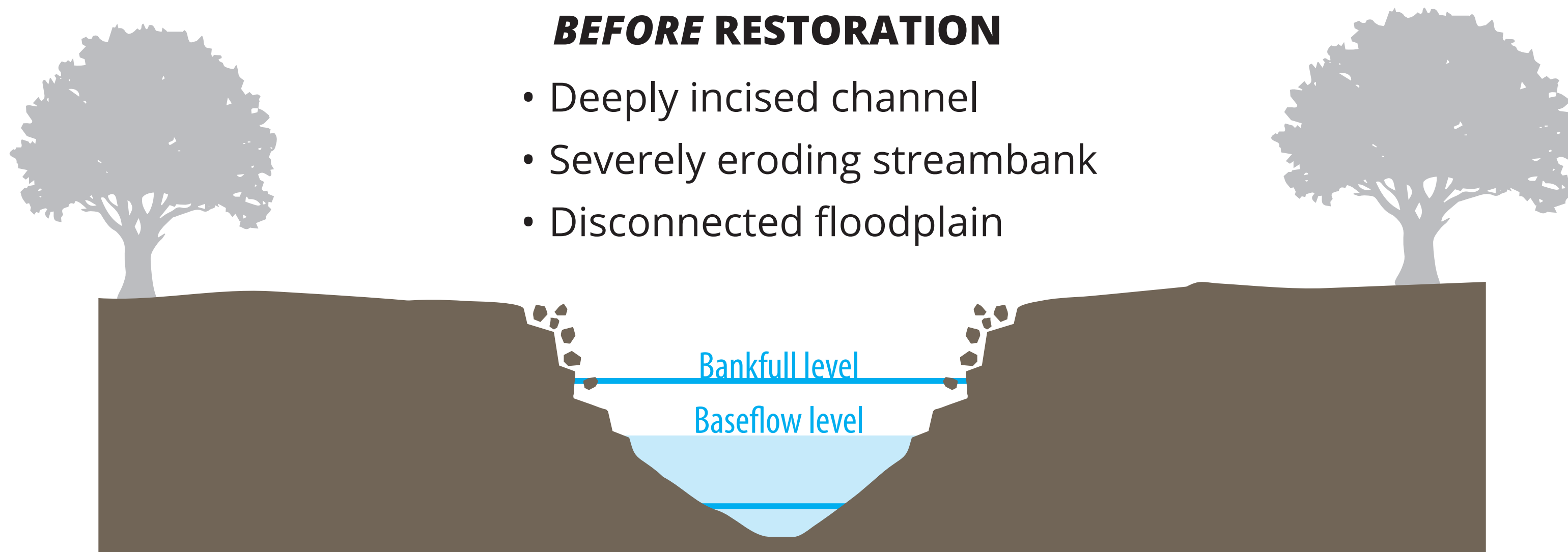
Reconnect floodplain.



Establish native vegetation to stabilize slopes.

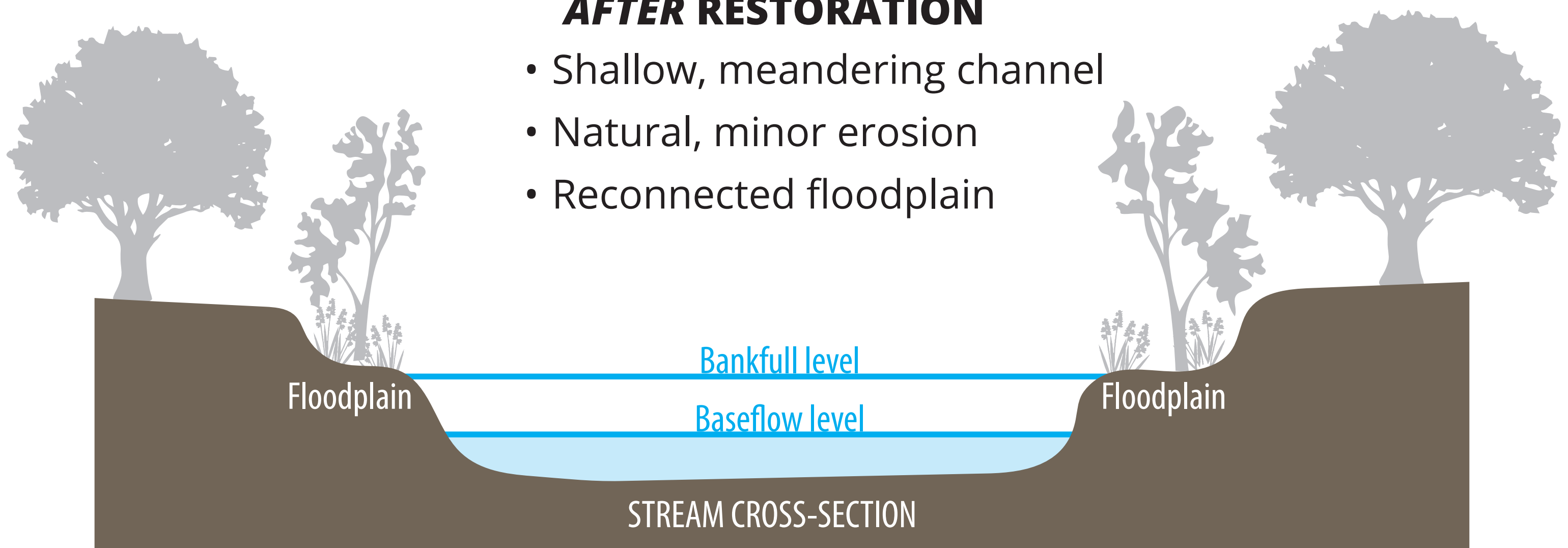
BEFORE RESTORATION

- Deeply incised channel
- Severely eroding streambank
- Disconnected floodplain



AFTER RESTORATION

- Shallow, meandering channel
- Natural, minor erosion
- Reconnected floodplain



STREAM CROSS-SECTION

Private Property Access

In the next several months, the watershed district will reach out to some private property owners to formally request right of entry.

Why we might ask for right of entry

- To travel across private property to access Riley Creek during project construction or for post-construction inspections
- To restore or stabilize creek-adjacent areas on private property
- To perform future maintenance of restored/stabilized areas on private property



What will the area look like after construction?

Access roads or other disturbed areas not related to permanent project features will be restored to original conditions.

