OPW 54689 - 144th St & W Maple Creek Culvert Outfall / Eagle Run Creek Improvements

Project Description

Eagle Run Creek is a tributary to Big Papillion Creek located between 132nd and 144th Streets in Omaha, Nebraska. With a contributing watershed of approximately 540 acres, the creek experienced significant degradation due to upstream urban development. Increased stormwater runoff from the upstream urbanization resulted in increased flow volumes and higher flow velocities, leading to channel incision, unstable vertical banks, and accelerated erosion. These conditions threatened nearby public infrastructure, including the 144th Street box culvert and adjacent storm sewer outfalls and sanitary sewers.

Project Goals

The Eagle Run Creek Improvements project was designed to restore channel stability, protect critical infrastructure, and improve overall water quality and habitat conditions within the creek corridor. The project also supports broader watershed goals identified in the Papio-Missouri River Basin Water Quality Management Plan, including reductions in sediment, nutrients, and *E. coli* – which has impaired the watershed from recreational use.

Key Project Improvements

- Realigned and regraded the creek to restore it to a more stable shape and form
- Installed grade control structures to prevent downcutting of the stream bed
- Laid back banks and added benches to reconnect the creek to its floodplain
- Protected and improved public infrastructure, including culverts and storm sewer outfalls
- Dredged accumulated sediment from the downstream pond and constructed a forebay to improve sediment management

Before: Degraded culvert outfall (pre-project conditions)

After: Restored channel and stabilized outfall (post-construction)

Project Benefits

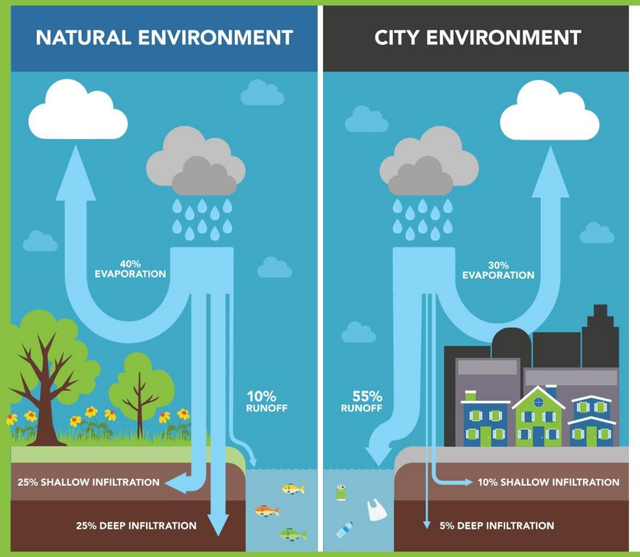
The completed project provides a more stable and resilient stream system that reduces erosion and limits further channel degradation. Slower flow velocities and added vegetation improve water quality by allowing sediment and pollutants to settle and be filtered naturally. These improvements also enhance aquatic and riparian habitat, benefiting fish, amphibians, micro-invertebrates and other wildlife.

Outreach and Education

An interpretive sign was installed along the 144th Street recreational trail to explain how urban development affects waterways and how the project improves stream health. The sign encourages community members to take simple actions such as properly disposing of pet waste, reducing litter, and managing runoff from their properties to help protect local water resources. An image of the interpretive sign is included below.

Collaboration

The project was completed through a partnership between the City of Omaha and Champions Run, with additional support from the Nebraska Department of Water, Energy, and Environment and the Nebraska Environmental Trust. This collaborative approach helped deliver a comprehensive solution that addresses both infrastructure needs and environmental goals.



FROM RAINFALL TO RUNOFF

When rain falls on natural environments like forests and prairies, most of it soaks into the ground. Plants and soil slow the water and filter out pollution.

In city environments, rain falls on **impervious surfaces** like streets, rooftops, and parking lots. Water can't soak in, so it rushes into storm sewers and straight to creeks—fast.

The result is **"flashy" creeks** that rise and fall quickly, flowing harder and causing more erosion.

WHAT HAPPENED HERE AT EAGLE RUN CREEK?

As neighborhoods and commercial areas grew upstream, more stormwater reached Eagle Run Creek faster and in larger amounts.

Over time, this caused:

- **Erosion** of the creek bed and banks.
- **Unstable banks** and soil collapse.
- **Loss of habitat** for local aquatic life.
- **Damage to storm sewers** along the creek.

RESTORING THE CREEK

The City of Omaha and Champions Run worked together to restore Eagle Run Creek and protect nearby infrastructure.

HOW THE CREEK WAS IMPROVED:

- **Creek reshaped** to make it more stable.
- **Rocks and boulders** added to prevent the creek from eroding downward.
- **Floodplain benches** created to spread water out during larger storms.
- **Pools** constructed to slow water coming out of storm sewers.

WHY THIS HELPS:

- Reduces erosion and keeps pollution out of downstream waters.
- Creates better habitat for fish, frogs, turtles, birds, and insects.

CLEANER WATER MATTERS

Clean water supports healthy wildlife and safe recreation.

When it rains, stormwater carries pollution into Eagle Run Creek, including:

- ***E. coli* bacteria** from pet waste and wildlife.
- **Trash** such as plastic bottles and bags.
- **Oil, metals, and grit** from streets and parking lots.
- **Soil** from eroding creek bed and banks.
- **Yard waste and chemicals** from lawns.

Eagle Run Creek carries this pollution downstream to Big Papillion Creek, where ***E. coli* bacteria is the biggest water quality concern**.

High *E. coli* levels make water unsafe for recreation and harmful to aquatic life.

WHEN CITIES GROW, CREEKS CHANGE

HOW YOU CAN HELP

- ✓ Remember that storm sewers flow directly to creeks.
- ✓ Direct downspouts to landscaping, not driveways.
- ✓ Pick up and properly dispose of pet waste.
- ✓ Keep trash off the ground.
- ✓ Keep leaves, grass clippings, and lawn chemicals out of streets.

SMALL ACTIONS UPSTREAM MAKE A BIG DIFFERENCE DOWNSTREAM.

PROJECT FUNDING

Funding for the project comes from the City of Omaha, Champions Run, Nebraska Department of Water, Energy, and Environment, and the Nebraska Environmental Trust.