



*DUCK CREEK TRIBUTARY RESTORATION
PROJECT IN HOBART*

*OUR PARTNERSHIP: CITY OF HOBART, HOBART
SANITARY DISTRICT, AND DELTA INSTITUTE*

HOBART SANITARY AND STORMWATER MANAGEMENT DISTRICT

- The Hobart Sanitary and Stormwater District (HSD) manages Hobart's storm sewer system which consists of catch basins, inlets, and conveyance pipes that collect and transfer stormwater from rainfall and snow melt from streets, yards, buildings, and parking lots and then release it to local streams and rivers.
- HSD is responsible for managing stormwater and implementing a program to reduce pollution in stormwater runoff and improve water quality.
- HSD has undertaken multiple installations of Green Infrastructure to enhance, preserve, and safeguard the historic character and natural resources of the Hobart Lake Front District, Lake George and Deep River.



HOBART
WELCOME TO THE HILLMAN PARK NATIVE PRAIRIE

A SMART STORMWATER SOLUTION

This area has been planted with native wildflowers and grasses, providing habitat for pollinators, birds and other wildlife while managing rainfall and water runoff. By absorbing rainwater where it falls, this prairie serves as a filter to improve water quality in the Deep River area.

Project Partners

Cardno, delta, GREAT LAKES

This project was funded by a Great Lakes Restoration Initiative grant through the U.S. Environmental Protection Agency (EPA). The \$355,510 grant has supported this green infrastructure installation and other throughout the

HOBART

Rain Garden



Blue Flag Iris

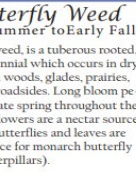
May to June
 Blue flag, is a clump forming iris that is native to marshes, swamps, wet meadows, ditches and shorelines from Manitoba to Nova Scotia south to Virginia, Ohio, Illinois and Minnesota. Clumps spread slowly by tough, creeping rhizomes. Northern blue flag thrives in wetland habitats frequented by rushes and sedges.



IRI VIR

Prairie Blazing Star

July to Frost
 Prairie Blazing Stars is truly majestic with its spectacular spike of tightly bunched lavender flowers. The flower begins blooming at the top and work their way down the single stem. Butterflies, bees, hummingbirds and moths all visit this plant, including the rare Glorious Flower Moth which feeds on the flowers and seed capsules of this flower.



LIA PYC

Big Leaf Aster

Late Summer to early Fall
 Big Leaf Aster is the perfect plant for shady areas with less than perfect soil. Drought tolerant, it thrives in both dry sand and heavy clay soils that possess a modicum of organic matter. Spreads by rhizomes to form a groundcover. Great for stabilizing shaded hillsides and slopes. Big Leaf Aster hosts the larva (caterpillars of the Pearl Crescent Butterfly).



EUR MAC

Butterfly Weed

Early Summer to Early Fall
 Butterfly weed, is a tuberous rooted, native perennial which occurs in dry/rocky open woods, glades, prairies, fields and roadsides. Long bloom period from late spring throughout the summer. Flowers are a nectar source for many butterflies and leaves are a food source for monarch butterfly larvae (caterpillars).



ASC TUB

Prairie Dropseed

August to October
 Prairie dropseed, is a clump-forming, warm season, native perennial grass which typically occurs in prairies, glades, open ground and along railroads. This is a prairie grass that is native from Quebec to Saskatchewan south to Colorado, Texas and Connecticut. Flowers have pink and brown tints, but are perhaps most noted for their unique fragrance.



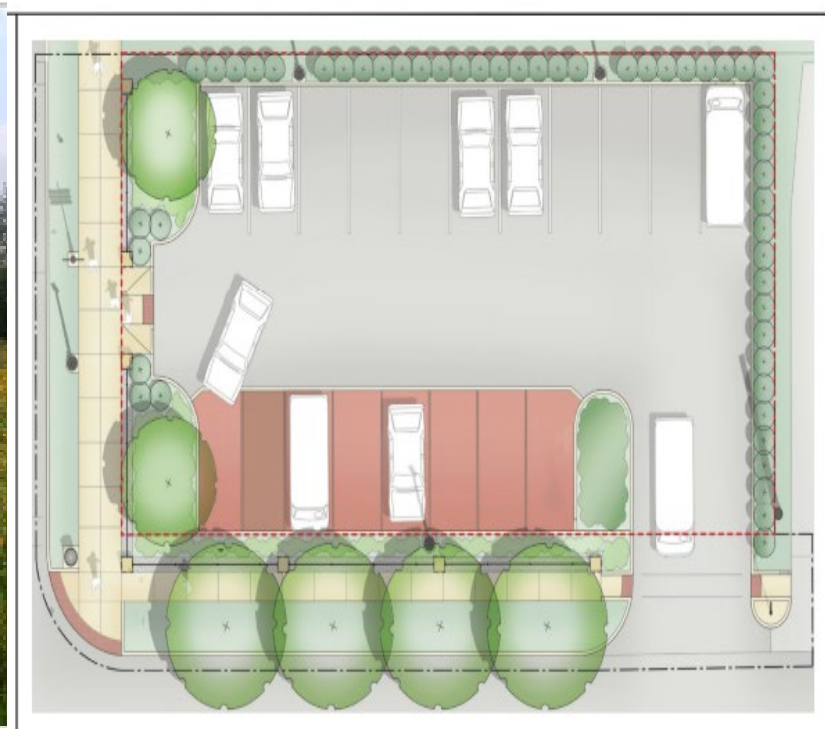
SPO HET

Lance-Leaved Coreopsis

Summer
 Lance-leaf coreopsis, is a native wildflower which typically grows to 2' tall and occurs in prairies, glades, fields and roadsides primarily in the Ozark region of the State. Flower features; solitary, yellow, daisy-like flowers (1-2" diameter) with eight yellow rays (toothed at the tips) and flat yellow center disks.



COR LAN





NATURE-BASED CLIMATE SOLUTIONS

Delta Institute assists municipalities by integrating natural climate solutions and Green Infrastructure (GI) to reduce climate change impacts by capturing **100 million stormwater gallons** and leveraging **\$100 million in municipal GI investment**. We focus on communities that are disproportionately affected by flooding and climate change, to collaboratively improve their environmental indicators, mitigate local impacts of climate change, and strengthen their neighborhoods' resilience.

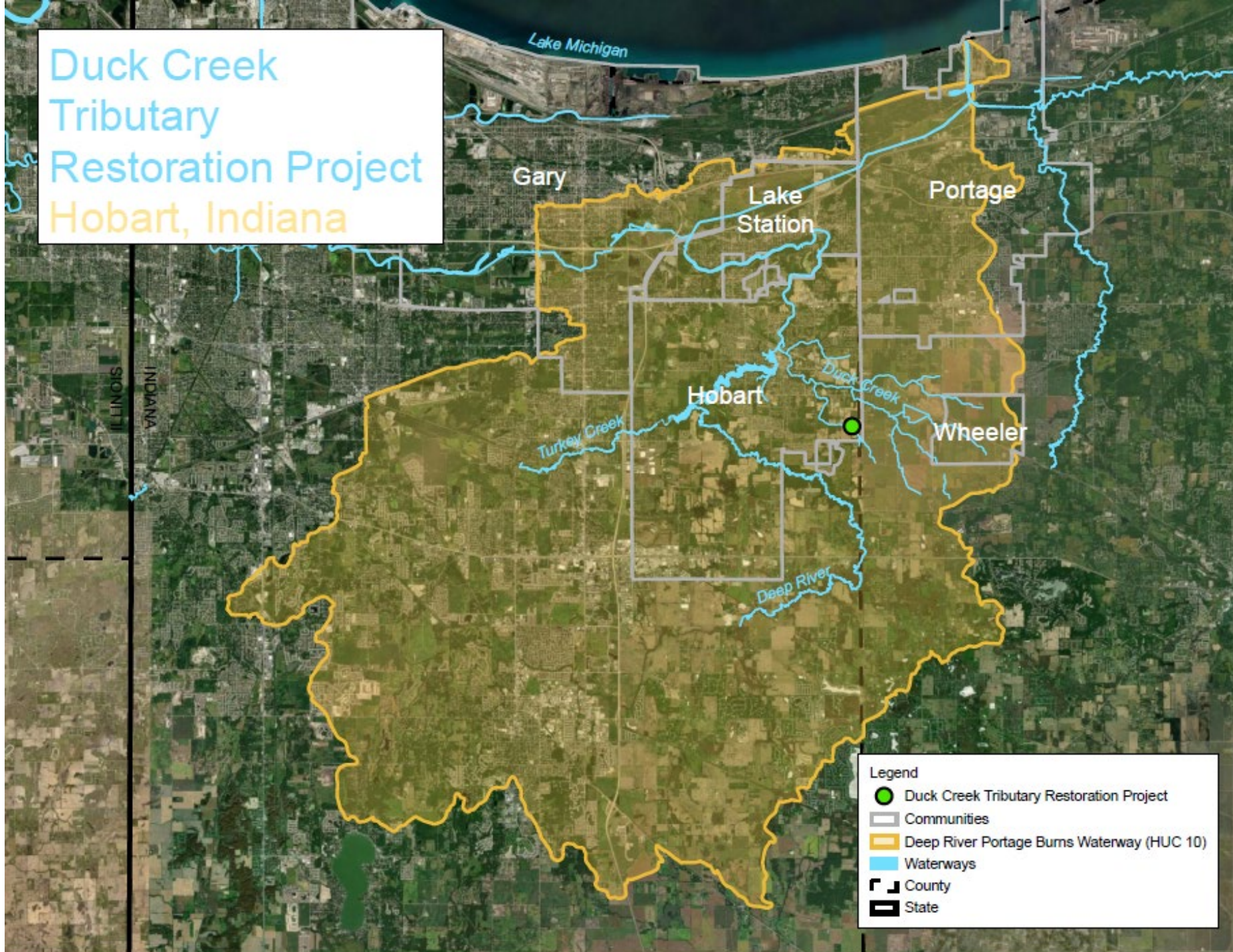


*THE PROJECT: RESTORING THE DUCK CREEK
TRIBUTARY IN HOBART*

PROJECT LOCATION, AND WHY IT WAS ESSENTIAL

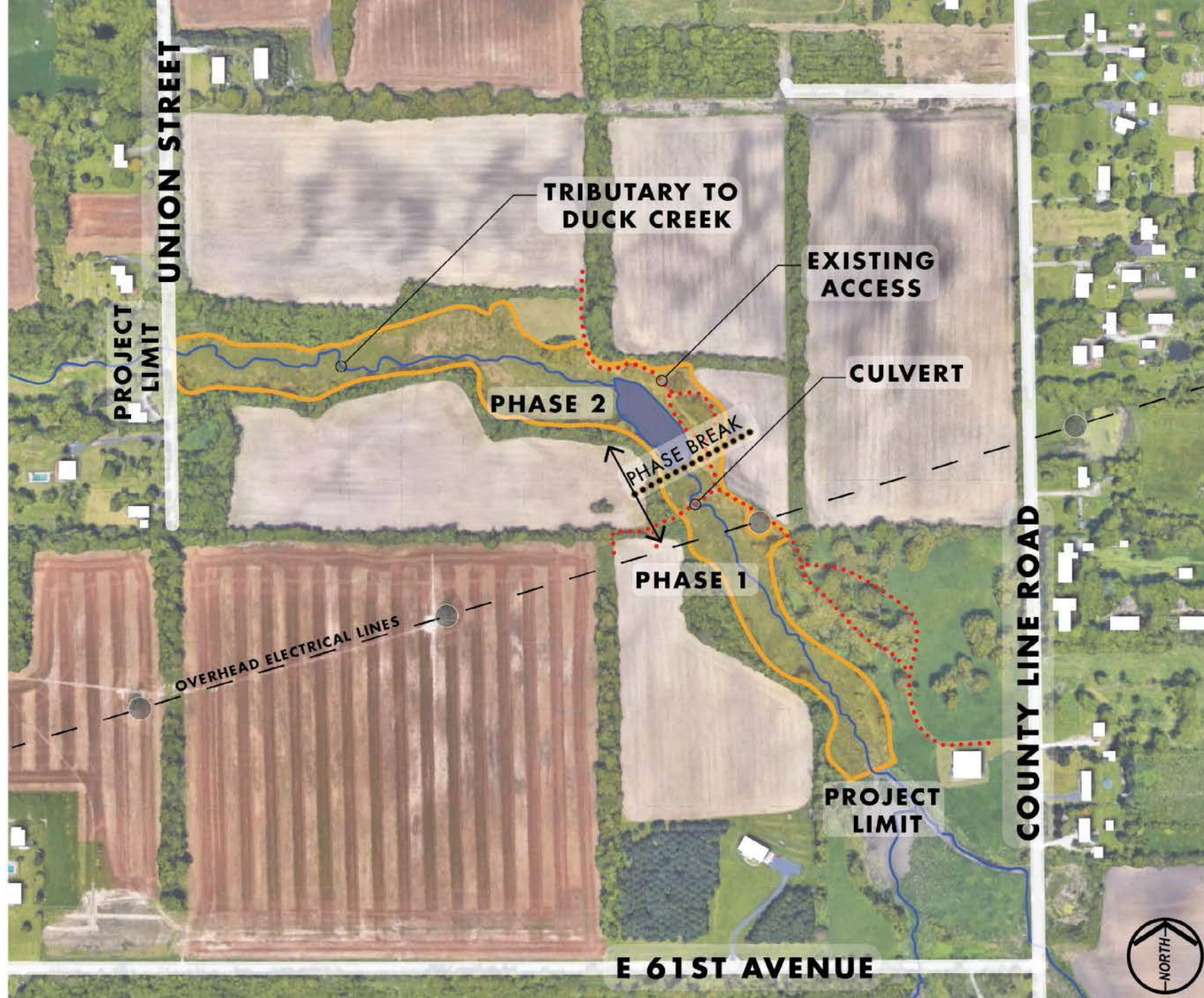
- The Duck Creek Tributary in Hobart is part of the Deep River-Portage Burns Waterway Watershed, which flows into the Little Calumet River and ultimately into Lake Michigan. The extensive flooding along the Tributary causes significant water quality issues due to sediment, agricultural, and nutrient runoff.
- Streambank restoration along this segment of the Duck Creek Tributary will reduce flooding, improve water quality, restore natural habitat and ultimately contribute to improved conditions for wildlife, recreation, and communities throughout the watershed in Northwest Indiana.
- Our restoration efforts directly align with local-, watershed- and regional plans, including the 2020 Indiana State Forest Action Plan and the Deep River Portage Burns Waterway Watershed Management Plan.

Duck Creek
Tributary
Restoration Project
Hobart, Indiana



*PROJECT
LOCATION
WITHIN THE
TARGETED
WATERSHED*





PROJECT METHODS AND ACTIVITIES

- Since 2019, Delta Institute and HSD have collaboratively implemented streambank stabilization and restoration, via installing a riparian buffer that improves permeability and infiltration along the Tributary corridor within two distinct phases of work.
- The first phase was completed in Summer 2023, and exceeded key metrics—including **capturing 50% more stormwater gallons** and more than **20 times more sediment** than previously forecasted via restoration on **3.7 acres of riparian corridor with 1,100 linear feet of perennial stream**.
- Implementation occurred in 2023 after several years of planning, design, securing funding, and coordination with local private landowners.

*DUCK CREEK TRIBUTARY (HOBART, IN) RESTORATION
PRE- / DURING- / POST-IMPLEMENTATION PHOTOS*

SPRING 2023 – FALL 2023

PRE-IMPLEMENTATION: SPRING 2023



IMPLEMENTATION: SPRING 2023



IMPLEMENTATION: JUNE 2023



POST-IMPLEMENTATION: SEPTEMBER 2023



POST-IMPLEMENTATION: AUGUST 2024



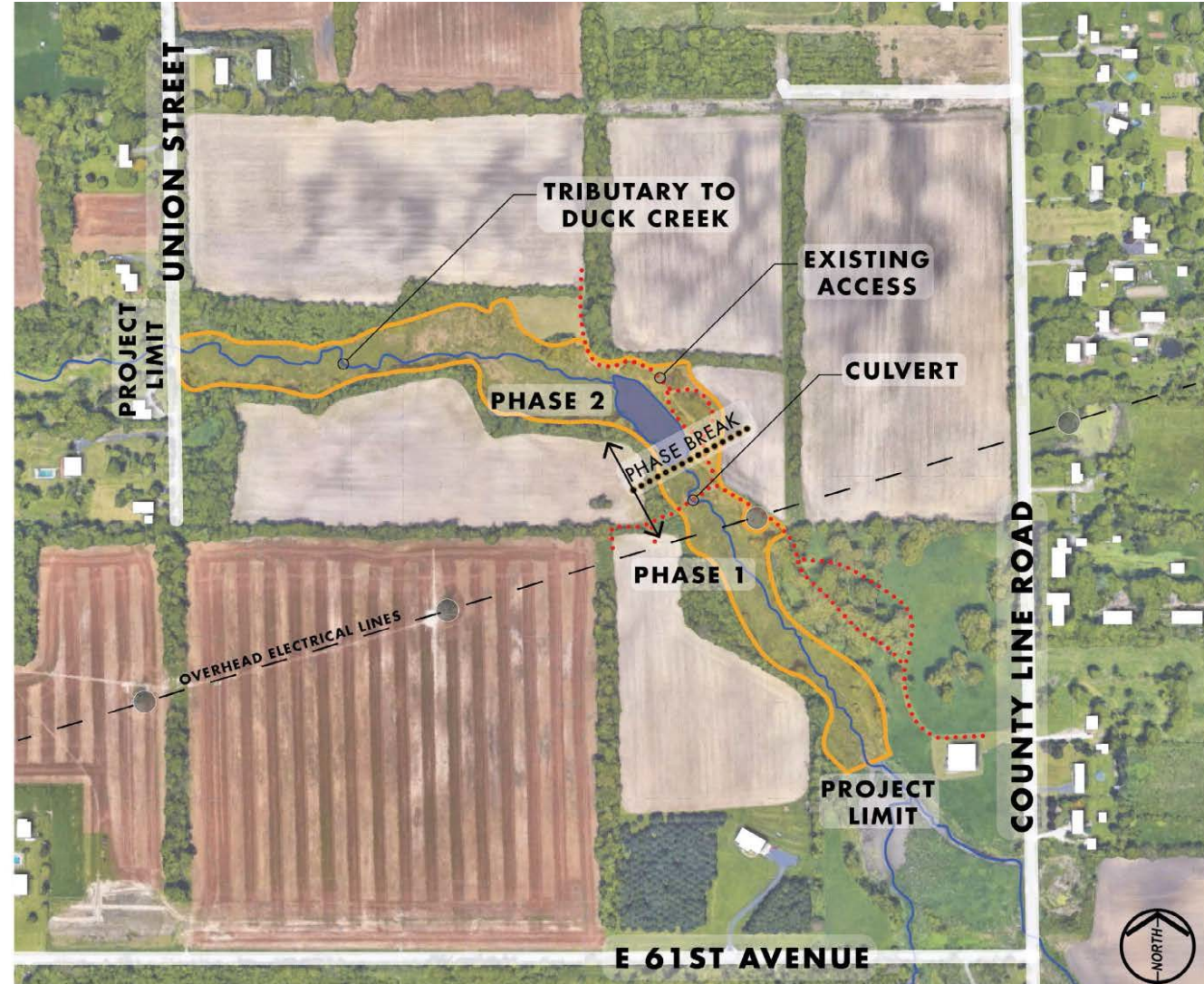
PHASE 1 (2020-2023) OUTCOMES AND IMPACT

- The project area for our first phase of restoration totaled **3.7 acres of riparian corridor with 1,100 linear feet of perennial stream**, and Delta is pleased to share that the first phase of restoration efforts completed in Summer 2023 has been successful:
- **Flood Reduction and Stormwater Management:** 127,996 gallons of stormwater storage added, captured and infiltrated per year; 161,172 square feet of green infrastructure added.
- **Erosion control:** 0.2083 miles streambank stabilized; 24,000 lbs. of sediment inputs avoided annually.
- **Water Quality Improvement:** 3,682.85 lbs. of phosphorus inputs avoided annually; 7,409 lbs. of nitrogen inputs avoided annually; 64% reduction of E-coli inputs avoided annually.
- **Habitat Restoration:** 0.2083 miles of instream and riparian habitat restored.

PHASE 2 UNDERWAY

For the second phase of work ongoing from 2023-2025 with funding from the US EPA Great Lakes Restoration Initiative, Delta and HSD are restoring upwards of .3 miles to:

- Increase stormwater capacity and infiltration,
- Reduce nonpoint source pollution from entering the creek,
- Prevent erosion, and,
- Avoid flood damage to surrounding infrastructure.





THANK YOU FOR THIS HONOR AND RECOGNITION

