SITE VISIT SCHEDULE: JULY 26, 2024

During this visit, we will hear about the efforts of the Wetlands Initiative and Partners to restore much of the West Branch floodplain basin to create diverse, functional habitats that support rare marsh birds and other wildlife, while also improving public access and recreational opportunities at this important local resource.

Metropolitan Planning Council
Building Equity in the Built Environment

CALUMET STORMWATER COLLABORATIVE

FIRST STOP: 10 AM

On the levees at Chase Street in southwestern Gary

Corridor overview; restoration and community engagement now beginning across 750 acres

SPEAKERS:
Paul Botts and Harry Kuttner, the Wetlands Initiative

SECOND STOP: 10:30 AM

On the levees at MLK Blvd in south-central Gary

Restoration well underway across a 120-acre leveed unit

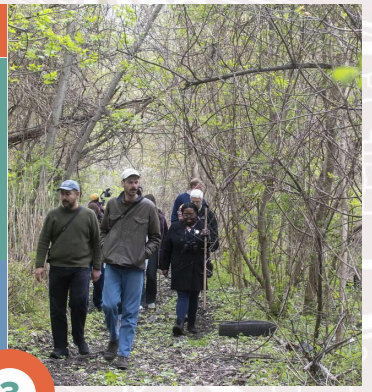
SPEAKERS:
Joel Perez-Castaneda, TNC-Indiana
Craig Zandstra, Lake County Parks

THIRD STOP: 11 AM

Hatcher Park in south-central Gary

Community engagement and rebirth of a shuttered public park, as a gateway to a 400-acre restoration project now in design engineering.

SPEAKERS:
Brenda Scott-Henry, City of Gary
Daniel Suarez, Audubon Great Lakes



Photos courtesy of the Wetlands Initiative

Scan for interactive map

When ecology meets engineering: Restoring wetlands in the Calumet

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THE WETLANDS INITIATIVE

At TWI, successful wetland restoration involves more than getting rid of invasive species and planting native wildflowers and sedges. While these are important steps, it's ecology combined with engineering that makes the magic happen. This is especially true in the Calumet region along the southern shores of Lake Michigan, where the hydrology has been extensively altered by industrial and residential development.

The phrase water-control structure may not conjure up images of a vibrant marsh but installing them allows manipulation of water levels, which is key to unlocking the full potential of sites we're restoring along the West Branch of the Little Calumet River in northwest Indiana. TWI is taking the lead on this critical hydrologic step of habitat restoration as part of the conservation collaborative in the West Branch corridor.

Different types of water-control structures can be used depending on the needed application. On two West Branch parcels, we're planning to use a basic stoplog design. The stoplog structure will be built inside the outlet channel of both the MLK South and Highland Rookery sites, where water flows into the Little Calumet River. The structures will function like a small dam with a rectangular notch or opening at the top through which water drains out of the wetland. The bottom of the opening sets the minimum water elevation inside the wetland; water fills up until it reaches the top of the opening, and excess water above that level drains out. By stacking three- to six-inch-high stoplogs (aluminum or wooden boards) into grooves in the side of the opening, or by removing those boards, we'll be able to raise or lower the sites' water levels across a range of at least 24 inches.

Being able to adjust the water levels in a wetland has several practical benefits for restoration. By drawing down levels low enough, the field crew can access wet areas and more easily remove invasive plants like phragmites. Also, exposing the bottom sediments of a wetland allows them to consolidate and harden enough to support the planting of native species that otherwise could not take hold. And reducing water levels can even eliminate invasive carp that damage the vegetation.

Most importantly, water-control structures will allow us to reestablish the hydrologic functioning of these wetlands over time. Hemi-marsh, which was once abundant throughout the Calumet region, has a roughly 50-50 mix of open water and emergent plant growth (plants that grow above the surface of the water). The conditions needed for healthy hemi-marsh are maintained through natural periods of drought and flooding. In the Calumet, development has interrupted these dynamic fluctuations in water levels, turning many marshes into permanently flooded ponds or leaving them stranded high and dry.

The problem is, many wetland birds and wildlife are like Goldilocks. They don't like it to stay too wet or too dry; they need their marsh to be "just right"—and just right in this case means frequently changing water levels. Water-control structures give us the ability to mimic naturally variable water patterns, giving valuable hemi-marsh the chance to develop once again.

"We can't actually restore hemi-marsh directly," says TWI Senior Ecologist Dr. Gary Sullivan. "You can only reestablish the conditions under which hemi-marsh can develop. After that, you need the real stars of the show to make hemi-marsh happen."

The stars he's referring to are another type of wetland engineer: muskrats. After low water levels allow a wide swath of emergent plants like cattails and bulrushes to germinate, these small semi-aquatic mammals move in and start eating the vegetation and building houses. Muskrat activity naturally creates the openings to form hemi-marsh, providing a range of marsh birds and wildlife with ideal foraging and nesting habitat.

"In the absence of water-level control, however, all those new plants are on a one-way trip," explains Dr. Sullivan. Over time, the vegetation will gradually diminish and die back as animals consume it. Depending on the dynamics in each wetland system, in three, five, or perhaps more years it will be time to draw down water levels again to jumpstart the cycle anew.

In a developed landscape where the flow of water has been greatly changed by humans, water-control structures make it possible for remnant wetlands to thrive. They also help the habitats to be resilient through periods of more-severe drought and more-intense flooding due to our changing climate. Without some hydrologic engineering—and an assist from those muskrats!—wetland restoration projects in the Calumet region won't lead to the hemi-marsh we're hoping to bring back.