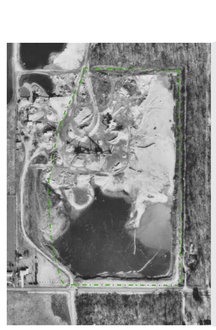
DIGGING DEEP

gravel pit to public park

Let's step back in time 10,000 years. Back to when massive ice sheets called **glaciers** covered Central Indiana.

Look at the orange map of Indiana. Do you see the horizontal black line in the middle of the state? That is the lower glacial boundary from the **Wisconsin glaciation**. As the temperature changed, these glaciers eventually disappeared and left behind unsorted rock, sand and gravel called **glacial till**. The orange area on the map shows where glacial till is found in Indiana — and it's right here in Founders Park!

Before Founders Park was a park, it was an active sand and gravel mine, called a quarry. In 1999, Martin Marietta donated 37 acres for the park to the City of Carmel. The old quarry is now a lake that serves as a habitat for fish, birds and wildlife. It is also a stormwater detention pond that treats, stores, and slowly releases stormwater runoff from the park, surrounding neighborhoods, and even Hazel Dell Parkway before releasing it to Cool Creek. Grab your fishing pole and see what you can catch!



Sand & Gravel Mine, 1974

Founders Park, 2019

Birds love water!

Water bodies are important resting spots for birds and wildlife. Do you see any birds on the pond?

City of Carmel Utilities

City of Carmel Storm Water — Be The Solution To Storm Water Pollution

Hamilton County Soil & Water Conservation District

Carmel • Clay Parks & Recreation

BIOSWALES & STORM WATER

nature's water filter

Look! What do you see in front of you? The ditch you see is actually called a **bioswale**.

Bioswales are usually found in parking lots and along roadways. After it rains, water runs along the surface and collects in the bioswale. Then it slowly filters into the **soil** before returning to **groundwater** or other water bodies. Bioswales help remove debris and contaminants that would otherwise pollute our water bodies! Look at the Founders Park map to the right. Can you find all the bioswales?

New England Aster
Symphyotrichum novae-angliae

Ironweed
Vernonia fasciculata

Swamp Rose
Hibiscus moscheutos

Plants love water!

Some plants like water more than others. We use plants that really love water in a bioswale. See if you can spot any of the water-loving plants in the Founders Park bioswales pictured on the left.

City of Carmel Utilities

City of Carmel Be The Solution To Storm Water Pollution Storm Water

Hamilton County Soil & Water Conservation District

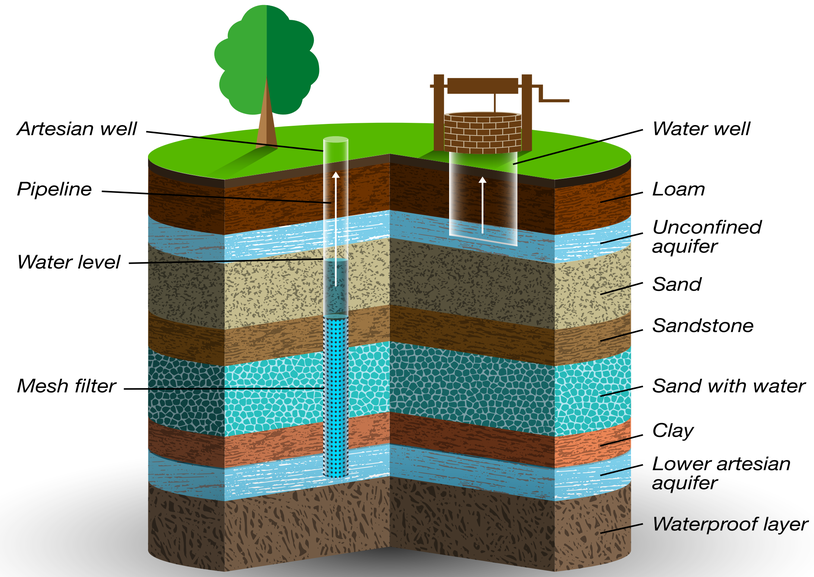
Carmel • Clay Parks & Recreation

TAPPING THE AQUIFER

the well

Wells contain more history underground than can be seen on the surface.

At the surface, a wellhead can be in an enclosed building, like you see here, or out in the open up to several feet above ground. But if you look below the ground, the well extends all the way down to the aquifer! Many aquifers in Indiana are unconfined aquifers or “water table” aquifers that form in sediment called **glacial outwash**. Glacial outwash is a layered mix of large and small rock and sediment that was left behind from the **Wisconsin glaciation** some 10,000 years ago. Water fills the pores and spaces in the glacial outwash, forming the aquifer. The aquifer in Carmel is called the White River and Tributaries Outwash Aquifer and supplies 100% of Carmel’s drinking water!



Be a guardian!

You can protect our groundwater by doing simple things like not littering or dumping materials into waterways. How were you a water guardian today?

City of Carmel Utilities

City of Carmel Storm Water — Be The Solution To Storm Water Pollution

Hamilton County Soil & Water Conservation District

Carmel • Clay Parks & Recreation

THE CARMEL WATER CYCLE

source to sink

Our water is endlessly recycled through the **water cycle**. Water passes through the atmosphere as vapor then precipitates to earth as rain or snow eventually evaporating and returning to the atmosphere.

In Carmel, all of the water we use is **groundwater**. That groundwater is stored in an **aquifer**, or a porous rock and sediment layer saturated with water.

The water you drink from your tap comes from an aquifer. How does it get from the aquifer to your faucet?

1. A well is drilled to the aquifer.
2. The City of Carmel pipes that groundwater to your local water treatment plant.
3. It is stored in a water tower to provide water pressure to your home.
4. Finally, used water is treated at a wastewater facility and clean water re-enters the water cycle through the White River!

Trust the tap!

Drinking water from the tap with a reusable water bottle reduces plastic waste and helps the environment! We encourage you to reduce, reuse and recycle.

City of Carmel Utilities

City of Carmel Storm Water — Be The Solution To Storm Water Pollution

Hamilton County Soil & Water Conservation District

Carmel • Clay Parks & Recreation