

## History of Stormwater in Peru

Stormwater has always had a major influence on Peru Indiana. In the early days of the City, the concern was about flooding. Major floods occurred in 1847, 1883, and 1904. All of these pale in comparison to the Great Flood of March 1913.



Fifth Street looking east from Broadway, boats landing on Court House lawn



North Broadway, Peru, March 25, 1913. Elks Home on the right, Masonic Temple behind street car

According to the book "History of Miami County Indiana Volume I" published in 1914, "Rain began falling early on Sunday, March 23, 1913, and continued almost without intermission for more than thirty-six hours. The Wabash River began rising early Monday morning. ... The flood reached its height on Wednesday morning at about 2:30 o'clock. ... all the streets of the city were practically submerged, with the exception of perhaps a block or less each way from the junction of Main and Broadway, which proved to be the highest point in the business district. There were only a few isolated points in the city which, like this, remained dry throughout the trying time." The United States Geological Survey on their "USGS Surface Water for Indiana: Peak Streamflow" web page show that the river reached a peak gage height of 28.10 feet.

A real-time Wabash River Gauge and other information can be seen at:

[http://waterdata.usgs.gov/in/nwis/uv?site\\_no=03327500](http://waterdata.usgs.gov/in/nwis/uv?site_no=03327500)



Plaque at the Southwest corner of 6<sup>th</sup> and Broadway showing flood level.  
This is the Masonic Temple building shown behind the streetcar in the previous photo.

Other less destructive floods occurred in 1943, 1950, 1958 and 1959. Because of the damage caused by repeated flooding of the Wabash River three dams upstream from Peru were authorized under the Flood Control Act of 1958. These dams on the Mississinewa, Salamonie, and Wabash Rivers were designed and built by the Louisville District of the U.S. Army Corps of Engineers. They operate as a unit to reduce flood stages in the upper Wabash River Basin. The U.S. Army Corps of Engineers website states “Since its completion, Mississinewa Lake has prevented more than \$305 million in flood damages, more than 10 times its original cost of \$24.4 million” According to the USGS National Water Summary, “These lakes regulate the streamflow from 77 percent of the drainage basin upstream from Peru. Regulation has been effective at sustaining low flow and reducing the discharge of the 100-year flood at Peru by more than 50 percent.” Since the completion of the dams in the late 1960s the Wabash River at Peru has not exceeded the flood level of 20 feet.

Wabash River historic peak flow information is available at:

[http://nwis.waterdata.usgs.gov/nwis/peak?site\\_no=03327500&agency\\_cd=USGS&format=html](http://nwis.waterdata.usgs.gov/nwis/peak?site_no=03327500&agency_cd=USGS&format=html)

Toward the end of the 20<sup>th</sup> century, government regulation of surface water became more focused on water quality. In 1972 Congress amended the Federal Water Pollution Control Act (subsequently referred to as the Clean Water Act) to control the discharges of pollutants to the water of the United States from point sources. These initial efforts were focused primarily on reducing pollutants from industrial process wastewater and municipal sewage discharges through the National Pollution Discharge Elimination System (NPDES). These discharges were easily identified as responsible for poor water quality conditions.

Over the next few decades the control measures for industrial and municipal wastewater were refined and it became evident that more diffuse sources of water pollution were also significant causes of water quality problems. Stormwater runoff was found to cause serious pollution problems. As a result, Congress added section 402(p) of the Clean Water Act, which established a comprehensive, two-phase approach to stormwater control using the NPDES program.

In 1990 EPA issued the Phase I Stormwater rule requiring permits for operators of Municipal Separate Storm Sewer Systems (MS4s) serving populations greater than 100,000 and for runoff associated with industrial activity and construction sites five acres and larger. In 1999 EPA issued the Phase II stormwater rule that expanded the permit system to small MS4s (generally municipalities or census urban areas greater than 10,000 population) and to construction sites between one and five acres in size. The City of Peru, with a population of around 12,000, fell under the Phase II regulation.

In 2001 the City of Peru passed an ordinance authorizing a stormwater department and appointed a stormwater board to study how to accomplish the EPA Requirements. An

engineering firm, Bonar and Associates (now GAI Consultants), assisted the Board in developing the plan. Since this was an unfunded mandate the Board recognized that a stormwater utility would need to be formed and a fee structure imposed on the community to comply with the regulations. They established a budget of \$350,000 per year to be used to monitor stormwater emissions, maintain the existing system, and install new stormwater infrastructure in areas that were lacking. This budget was to be met by means of a \$4.00 monthly fee for every residence in the city limits of Peru. Business and industry fees would be based on the amount of impervious land owned in relation to that of the average residence. A cap of \$225.00 per month was placed on business and industrial accounts.

In 2006 the City dissolved the Stormwater Board and appointed Peru Utilities Utility Service Board as the entity responsible for stormwater management. The Stormwater Department has two full-time employees. In severe weather workers from other departments are utilized to help with stormwater maintenance functions.

When the Stormwater Utility was formed several areas requiring major projects were identified:

- West Main Street Phase I, designed by Bonar Engineering, completed in 2004
- The Parkview Heights Project, designed by Schneider Engineering, completed in 2005
- West Main Street Phase II, designed by RQAW, completed in 2006
- The Oakdale Drainage Project, designed by RQAW, completed in 2009

In conjunction with the Wastewater Department several small stormwater separation projects have also been completed. These projects expand the stormwater system and relieve the wastewater treatment plant from having to treat this water. The Stormwater Department plans to continue constructing small separation projects for the foreseeable future. The following projects have been completed to date:

- Second and Clay, completed in 2008
- Second and Water, completed in 2010
- Sixth and Tippecanoe, completed in 2012
- West Warren, completed in 2012
- Sixth and Chestnut, completed in 2013
- Second and Brownell, completed in 2014
- Canal and Tippecanoe, completed in 2015

These small projects have diverted the stormwater drainage of approximately 25.5 acres. This relieves the wastewater treatment plant from having to treat this runoff water.

As part of the federal mandate the Stormwater Department is required to implement public participation and public education projects. We do these projects to educate the public about the importance of stormwater drainage and the effect that we as individuals can have on the quality of the water in our environment. It is vital for the public to know that the things they do on land can have a great impact on the water that the land drains to. Two of the projects we would like to encourage the public to participate in are:

- Semiannual river cleanup events. Join us for “Detrash the Wabash” in April and September
- Hoosier Riverwatch Training. This free class teaches interested citizens to assess the habitat, chemical and biological elements of a water body to determine how healthy it is. (This sounds complicated, but it isn't)

For more information on these or other water quality events please contact Peru Utilities Division of Water Management at (765) 473-7651.



Photographs of a Detrash the Wabash event

The Wabash River is central to the history of the City of Peru. Our citizens have always worked and played on the river. We have contended with it during flooding, and have dammed it to protect both lives and property. We have worked hard to clean it and educate our residents to prevent pollution and protect this vital natural resource. With your help the Wabash River and its tributaries will continue to be an attractive and vital part of Peru Indiana.