

## Program History

Representing 15 counties in northwest Ohio, the Maumee Watershed Conservancy District (MWCD) is a political subdivision of the State of Ohio that oversees water management, including flood-risk reduction, as established under Ohio Revised Code Chapter 6101.

Hancock County, one of the communities within the district's boundaries, has long dealt with frequent flooding events. The Blanchard River has reached major flood stage eight times since 1990, with the flooding events of 1913 and 2007 considered the largest floods on record. The Blanchard River Watershed at Findlay encompasses approximately 350 square miles, with Eagle Creek and Lye Creek identified as its largest tributaries.

Hancock County and the City of Findlay worked in cooperation with the U.S. Army Corps of Engineers (USACE) for approximately 10 years following the 2007 event to study the problem and develop a plan to reduce the risk of flooding along the Blanchard River and its tributaries. The Corps' final recommended plan, the Western Diversion of Eagle Creek, was deemed not likely to be eligible to receive federal funding and, in the summer of 2016, the Hancock County Commissioners took control of the project.

In July 2016, the Ohio offices of the engineering firm Stantec Consulting Services Inc. (Stantec) began their review of the Corps' study. Stantec's charge was to review the Corps' plan, look for ways to improve it, and ultimately recommend a flood-risk reduction program that more appropriately met the needs of the community.

In September 2016, MWCD agreed to support Hancock County and the City of Findlay in the review of the flood-risk reduction efforts. MWCD is now considering the Western Diversion of Eagle Creek, as well as other alternative flood-risk reduction projects, and will soon determine if the district will add one of the proposed programs to its official plan.

Major flood stage on the Blanchard River is considered to occur when the USGS gage on the Blanchard River, just west of the city, records a depth of approximately 13.5 feet. During the 2007 flood event, the flood stage reached roughly 18.5 feet, or nearly 4.5 feet above the lowest point of Main Street, just north of the bridge over the Blanchard River. Additionally, at least 15 major intersections and thoroughfares within the city and around the county were also impassable due to inundation. Vast areas of agricultural lands, as well as commercial and residential properties, local parks, recreational facilities and the Hancock County Fairgrounds were adversely impacted by the flooding.

**The goals of the proposed Flood-Risk Reduction Program will be to cost-effectively reduce the impacts caused by the 1% annual chance exceedance (ACE) event by:**

- Lowering the water surface elevation at Main Street in Findlay and other major egress routes to permit passage of emergency response vehicles (6-9 in. max. depth);
- Reducing the number of residential properties required to obtain flood insurance;
- Minimizing prolonged inundation and maximizing retention of productive farmlands;
- Protecting public parks and facilities from flooding; and
- Preserving opportunities for job creation and retention in and around the City of Findlay.

### Proposed Program

Stantec has proposed a suite of projects that includes two technically feasible approaches to a multi-phased program to reduce the risk of flooding along the Upper Blanchard River.

The firm's analysis is based on a 1% ACE event (defined as a wet weather event that has a 1% probability of occurring in any given year). Other approaches and combinations of flood-risk reduction options may be explored at the request of the Program Team.

*This document outlines Stantec's findings and recommendations.  
The Maumee Watershed Conservancy District will further evaluate these options before making a decision to proceed.*

## Phase 1 Hydraulic Improvements along the Blanchard River

Recommended by Stantec

The proposed hydraulic improvements along the Blanchard River through the downtown Findlay area include floodplain bench widening between Broad Avenue and the Norfolk Southern Railroad Bridge on parcels previously purchased by the City of Findlay. The project also recommends the removal of four low-head dams or riffle structures downstream of Lye Creek. Additionally, the recommendation includes modification of the Norfolk Southern Railroad Bridge to increase the clear opening under the bridge. Significant coordination with the railroad would be required to permit the proposed structure modifications. These proposed improvements will increase the flow capacity of the river through the city and lower water surface elevation (WSE) during significant events.

### Project Summary

- Estimated cost: \$20 million, including 30% contingency
- Estimated WSE reduction at Main St. during 1% ACE: 0.9 feet
- Estimated agricultural land impacted by construction: 0 acres
- Estimated agricultural land removed from floodplain: 40 acres
- Estimated number of parcels removed from floodplain: 760



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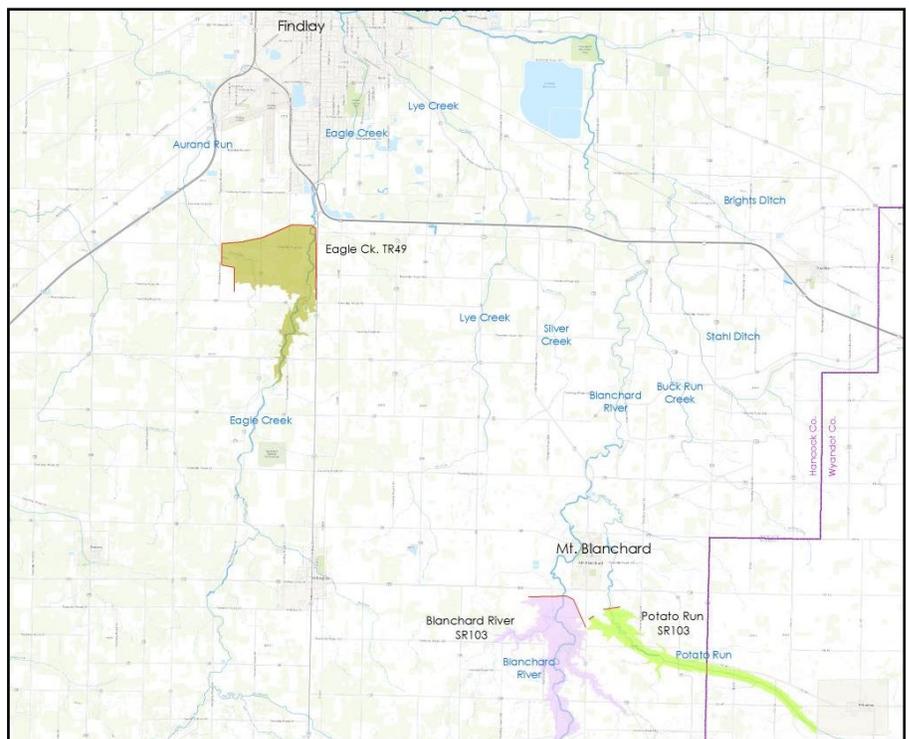
## Phase 2 – Option 1 Eagle Creek, Blanchard River and Potato Run Dry Storage Basins

Recommended by Stantec

The construction of three dry storage basins is recommended to provide temporary impoundments and detain water, up to and including the 1% ACE event. While the basins would span agricultural land, they would fill only during wet weather events and drain within 72 hours. The land should remain dry when there is not a large storm event and has the potential to remain farmable. One basin would be located on Eagle Creek, upstream of Findlay, and two would be constructed south of Mt. Blanchard on the Blanchard River and Potato Run.

### Project Summary

- Estimated cost: \$140 million, including 30% contingency
- Estimated WSE reduction at Main St. during 1% ACE: 3.6 feet total, including Phase 1 WSE reduction
- Estimated agricultural land impacted by construction: 1,900 acres
- Estimated agricultural land removed from floodplain: 2,810 acres
- Estimated number of parcels removed from floodplain: 2,090



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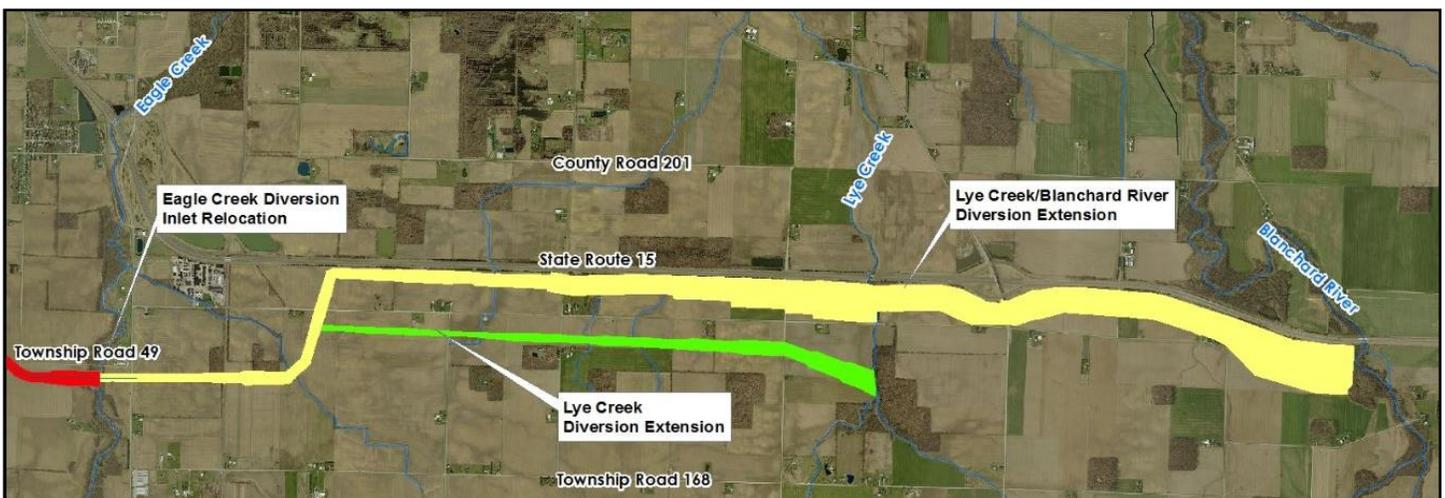
## Phase 2 – Option 2 Western Diversion of Eagle Creek and Easterly Extension to the Blanchard River

*Not recommended by Stantec*

The USACE recommended a 9.2-mile-long westward diversion channel at Eagle Creek that would have capacity to convey a 4% ACE event from Eagle Creek, but would not address flows from Lye Creek or the Blanchard River. The USACE alternative would allow for approximately 0.9 feet of WSE reduction during a 1% ACE event if the rainfall is evenly distributed across the watershed. To reach the anticipated goals for WSE reduction, enable capacity for a 1% ACE event and reduce the risks associated with uneven rainfall distribution, the diversion channel would require significant widening and deepening. The channel would also need to be extended an additional 8.5 miles to reach the Blanchard River. If the full diversion channel is constructed, it will be nearly 19 miles long. Depth would range from two to eight feet and the width would range from 50 feet to 1,200 feet.

### **Project Summary**

- Estimated cost: \$194 million, *including 30% contingency*
- Estimated WSE reduction at Main St. during 1% ACE: 3.6 feet total, including Phase 1 WSE reduction
- Estimated agricultural land impacted by construction: 1,225 acres
- Estimated agricultural land removed from floodplain: 2,580 acres
- Estimated number of parcels removed from floodplain: 1,975



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