

FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 3



HAMILTON COUNTY, OHIO AND INCORPORATED AREAS

| COMMUNITY NAME | NUMBER | COMMUNITY NAME | NUMBER |
|---------------------------------------|--------|-------------------------------------|--------|
| ADDYSTON, VILLAGE OF | 390205 | LOVELAND, CITY OF | 390068 |
| AMBERLEY, VILLAGE OF | 390206 | MADEIRA, CITY OF | 390225 |
| ARLINGTON HEIGHTS, VILLAGE OF | 390207 | MARIEMONT, VILLAGE OF | 390226 |
| BLUE ASH, CITY OF | 390208 | MONTGOMERY, CITY OF | 390228 |
| CHEVIOT, CITY OF* | 390209 | MOUNT HEALTHY, CITY OF | 390229 |
| CINCINNATI, CITY OF | 390210 | NEWTOWN, VILLAGE OF | 390230 |
| CLEVES, VILLAGE OF | 390211 | NORTH BEND, VILLAGE OF | 390231 |
| DEER PARK, CITY OF* | 390212 | NORTH COLLEGE HILL, CITY OF | 390232 |
| ELMWOOD PLACE, VILLAGE OF | 390213 | NORWOOD, CITY OF* | 390233 |
| EVENDALE, VILLAGE OF | 390214 | READING, CITY OF | 390234 |
| FAIRFAX, VILLAGE OF | 390215 | SHARONVILLE, CITY OF | 390236 |
| FOREST PARK, CITY OF | 390216 | SILVERTON, CITY OF* | 390237 |
| GLENDALE, VILLAGE OF | 390217 | SPRINGDALE, CITY OF | 390877 |
| GOLF MANOR, CITY OF* | 390218 | ST. BERNARD, CITY OF | 390235 |
| GREENHILLS, VILLAGE OF | 390219 | TERRACE PARK, VILLAGE OF | 390633 |
| HAMILTON COUNTY, UNINCORPORATED AREAS | 390204 | THE VILLAGE OF INDIAN HILL, CITY OF | 390221 |
| HARRISON, CITY OF | 390220 | WOODLAWN, VILLAGE OF | 390239 |
| LINCOLN HEIGHTS, VILLAGE OF* | 390222 | WYOMING, CITY OF | 390240 |
| LOCKLAND, VILLAGE OF | 390223 | | |

*No Special Flood Hazard Areas Identified

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| Duck Creek | 024-028 P |
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Published Separately

Flood Insurance Rate Map (FIRM)

FLOOD INSURANCE STUDY REPORT HAMILTON COUNTY, OHIO

SECTION 1.0 – INTRODUCTION

1.1 The National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a voluntary federal program that enables property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods.

For decades, the national response to flood disasters was generally limited to constructing flood-control works such as dams, levees, sea-walls, and the like, and providing disaster relief to flood victims. This approach did not reduce losses nor did it discourage unwise development. In some instances, it may have actually encouraged additional development. To compound the problem, the public generally could not buy flood coverage from insurance companies, and building techniques to reduce flood damage were often overlooked.

In the face of mounting flood losses and escalating costs of disaster relief to the general taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances, and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for the protection.

The U.S. Congress established the NFIP on August 1, 1968, with the passage of the National Flood Insurance Act of 1968. The NFIP was broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994 and the Flood Insurance Reform Act of 2004. The NFIP is administered by the Federal Emergency Management Agency (FEMA), which is a component of the Department of Homeland Security (DHS).

Participation in the NFIP is based on an agreement between local communities and the federal government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction and substantially improved structures in Special Flood Hazard Areas (SFHAs), the federal government will make flood insurance available within the community as a financial protection against flood losses. The community's floodplain management regulations must meet or exceed criteria established in accordance with Title 44 Code of Federal Regulations (CFR) Part 60, *Criteria for Land Management and Use*.

SFHAs are delineated on the community's Flood Insurance Rate Maps (FIRMs). Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "Pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for Pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the federal government.

Congress also recognized that most of these floodprone buildings were built by individuals who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after the effective date of the initial FIRM for the community or after December 31, 1974, whichever is later. These buildings are generally referred to as "Post-FIRM" buildings.

1.2 Purpose of this Flood Insurance Study Report

This Flood Insurance Study (FIS) Report revises and updates information on the existence and severity of flood hazards for the study area. The studies described in this report developed flood hazard data that will be used to establish actuarial flood insurance rates and to assist communities in efforts to implement sound floodplain management.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive than the minimum federal requirements. Contact your State NFIP Coordinator to ensure that any higher state standards are included in the community's regulations.

1.3 Jurisdictions Included in the Flood Insurance Study Project

This FIS Report covers the entire geographic area of Hamilton County, Ohio.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the United States Geological Survey (USGS) 8-digit Hydrologic Unit Code (HUC-8) sub-basins affecting each, are shown in Table 1. The FIRM panel numbers that affect each community are listed. If the flood hazard data for the community is not included in this FIS Report, the location of that data is identified.

The location of flood hazard data for participating communities in multiple jurisdictions is also indicated in the table.

Jurisdictions that have no identified SFHAs as of the effective date of this study are indicated in the table. Changed conditions in these communities (such as urbanization or annexation) or the availability of new scientific or technical data about flood hazards could make it necessary to determine SFHAs in these jurisdictions in the future.

Table 1: Listing of NFIP Jurisdictions

| Community | CID | HUC-8 Sub-Basin(s) | Located on FIRM Panel(s) | If Not Included, Location of Flood Hazard Data |
|----------------------|--------|--------------------|---------------------------------------|------------------------------------------------|
| Addyston, Village of | 390205 | 05090203 | 39061C0188F, 39061C0189F, 39061C0302F | |
| Amberley, Village of | 390206 | 05090203 | 39061C0229E, 39061C0231E, 39061C0233E | |

Table 1: Listing of NFIP Jurisdictions (continued)

| Community | CID | HUC-8 Sub-Basin(s) | Located on FIRM Panel(s) | If Not Included, Location of Flood Hazard Data |
|--------------------------------------------|--------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Arlington Heights, Village of ¹ | 390207 | 05090203 | 39061C0227E, 39061C0229E | |
| Blue Ash, City of | 390208 | 05090202, 05090203 | 39061C0094E, 39061C0113F, 39061C0231E, 39061C0232E ² , 39061C0234E ² , 39061C0251F, 39061C0253F | |
| Cheviot, City of ¹ | 390209 | 05080002, 05090203 | 39061C0194E, 39061C0211E ² , 39061C0213E ² | |
| Cincinnati, City of | 390210 | 05090201, 05090202, 05090203 | 39061C0189F, 39061C0204E, 39061C0208E, 39061C0209E, 39061C0211E ² , 39061C0212E, 39061C0213E ² , 39061C0214E ² , 39061C0216F, 39061C0217F, 39061C0218F, 39061C0219E ² , 39061C0226E, 39061C0228E, 39061C0229E, 39061C0233E, 39061C0234E ² , 39061C0236E, 39061C0237E ² , 39061C0238E ² , 39061C0239E ² , 39061C0241F, 39061C0242F, 39061C0243F, 39061C0244F, 39061C0263F, 39061C0302F, 39061C0306F, 39061C0307F, 39061C0309F, 39061C0326E, 39061C0327E ² , 39061C0328F, 39061C0329F, 39061C0331F, 39061C0332F, 39061C0333F, 39061C0334F, 39061C0355G, 39061C0356G, 39061C0357F, 39061C0358G, 39061C0359E ² , 39061C0366F, 39061C0376F, 39061C0378F | |
| Cleves, Village of | 390211 | 05080002, 05090203 | 39061C0167E, 39061C0169F, 39061C0186E, 39061C0188F | |
| Deer Park, City of ¹ | 390212 | 05090202, 05090203 | 39061C0233E, 39061C0234E ² | |

¹ No Special Flood Hazard Areas Identified

² Panel Not Printed

Table 1: Listing of NFIP Jurisdictions (continued)

| Community | CID | HUC-8 Sub-Basin(s) | Located on FIRM Panel(s) | If Not Included, Location of Flood Hazard Data |
|----------------------------------------|--------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Elmwood Place, Village of ¹ | 390213 | 05090203 | 39061C0228E, 39061C0236E | |
| Evendale, Village of | 390214 | 05090202, 05090203 | 39061C0089E, 39061C0093E, 39061C0094E, 39061C0227E, 39061C0231E, 39061C0232E ² | |
| Fairfax, Village of | 390215 | 05090202 | 39061C0244F | |
| Fairfield, City of ³ | 390038 | 05080002 | N/A | Butler County FIS Report 2019 (39017C) |
| Forest Park, City of | 390216 | 05080002, 05090203 | 39061C0065E, 39061C0066E, 39061C0067E ² , 39061C0068E, 39061C0069E, 39061C0086E, 39061C0088E | |
| Glendale, Village of | 390217 | 05090203 | 39061C0088E, 39061C0089E | |
| Golf Manor, City of ¹ | 390218 | 05090203 | 39061C0229E, 39061C0237E ² | |
| Greenhills, Village of ¹ | 390219 | 05090203 | 39061C0068E, 39061C0069E | |
| Hamilton County, Unincorporated Areas | 390204 | 05080002, 05080003, 05090201, 05090202, 05090203 | 39061C0015E, 39061C0019E, 39061C0020E, 39061C0036E, 39061C0037E, 39061C0038E, 39061C0039E, 39061C0041E, 39061C0042E, 39061C0043E, 39061C0044E, 39061C0065E, 39061C0066E, 39061C0067E ² , 39061C0068E, 39061C0069E, 39061C0088E, 39061C0092E, 39061C0111E, 39061C0112F, 39061C0113F, 39061C0114F, 39061C0116E ² , 39061C0117F, 39061C0118F, 39061C0119F, 39061C0152E, 39061C0154E ² , 39061C0156E, 39061C0157E, 39061C0158E, 39061C0159E, 39061C0162E, 39061C0164E, 39061C0166E, 39061C0167E, 39061C0168E, 39061C0169F, 39061C0176E, 39061C0177E, | |

¹ No Special Flood Hazard Areas Identified

² Panel Not Printed

³ Area Not Included

Table 1: Listing of NFIP Jurisdictions (continued)

| Community | CID | HUC-8 Sub-Basin(s) | Located on FIRM Panel(s) | If Not Included, Location of Flood Hazard Data |
|------------------------------------------|--------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Hamilton County Unincorporated Areas | 390204 | 05080002, 05080003, 05090201, 05090202, 05090203 | 39061C0178E, 39061C0179E, 39061C0185E, 39061C0186E, 39061C0187E ² , 39061C0188F, 39061C0189F, 39061C0191E, 39061C0192E, 39061C0193E, 39061C0194E, 39061C0201E, 39061C0202E, 39061C0203E, 39061C0204E, 39061C0206E, 39061C0207E, 39061C0208E, 39061C0209E, 39061C0211E ² , 39061C0212E, 39061C0213E ² , 39061C0226E, 39061C0228E, 39061C0229E, 39061C0231E, 39061C0232E ² , 39061C0233E, 39061C0234E ² , 39061C0237E ² , 39061C0241F, 39061C0242F, 39061C0244F, 39061C0251F, 39061C0252F, 39061C0253F, 39061C0256F, 39061C0258F, 39061C0259F, 39061C0263F, 39061C0264F, 39061C0266F, 39061C0268F, 39061C0277F, 39061C0281F, 39061C0282F, 39061C0302F, 39061C0306F, 39061C0307F, 39061C0309F, 39061C0326E, 39061C0327E ² , 39061C0328F, 39061C0329F, 39061C0356G, 39061C0357F, 39061C0358G, 39061C0359E ² , 39061C0366F, 39061C0367F, 39061C0376F, 39061C0377F, 39061C0378F, 39061C0379F, 39061C0385E ² , 39061C0390F | |
| Harrison, City of | 390220 | 05080003 | 39061C0015E, 39061C0019E, 39061C0020E, 39061C0152E, 39061C0156E, 39061C0157E | |
| Lincoln Heights, Village of ¹ | 390222 | 05090203 | 39061C0089E, 39061C0227E | |

¹ No Special Flood Hazard Areas Identified

² Panel Not Printed

Table 1: Listing of NFIP Jurisdictions (continued)

| Community | CID | HUC-8 Sub-Basin(s) | Located on FIRM Panel(s) | If Not Included, Location of Flood Hazard Data |
|---------------------------------|--------|--------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Lockland, Village of | 390223 | 05090203 | 39061C0227E, 39061C0229E | |
| Loveland, City of | 390068 | 05090202 | 39061C0116E ² , 39061C0117F, 39061C0118F, 39061C0119F, 39061C0138F | |
| Madeira, City of | 390225 | 05090202 | 39061C0234E ² , 39061C0242F, 39061C0253F, 39061C0261F | |
| Mariemont, Village of | 390226 | 05090202 | 39061C0244F, 39061C0263F | |
| Milford, City of ³ | 390227 | 05090202 | N/A | Clermont County FIS Report (TBD)(39025C) |
| Montgomery, City of | 390228 | 05090202, 05090203 | 39061C0113F, 39061C0114F, 39061C0118F, 39061C0251F, 39061C0252F | |
| Mount Healthy, City of | 390229 | 05090203 | 39061C0206E | |
| Newtown, Village of | 390230 | 05090202 | 39061C0263F, 39061C0264F, 39061C0376F, 39061C0377F | |
| North Bend, Village of | 390231 | 05080002, 05090203 | 39061C0169F, 39061C0186E, 39061C0188F | |
| North College Hill, City of | 390232 | 05090203 | 39061C0202E, 39061C0204E, 39061C0206E, 39061C0208E | |
| Norwood, City of ¹ | 390233 | 05090202, 05090203 | 39061C0236E, 39061C0237E ² , 39061C0238E ² , 39061C0239E ² , 39061C0241F | |
| Reading, City of | 390234 | 05090203 | 39061C0227E, 39061C0229E, 39061C0231E, 39061C0233E | |
| Sharonville, City of | 390236 | 05090202, 05090203 | 39061C0087E, 39061C0089E, 39061C0091E, 39061C0092E, 39061C0093E, 39061C0094E, 39061C0111E, 39061C0113F | |
| Silverton, City of ¹ | 390237 | 05090202, 05090203 | 39061C0233E, 39061C0234E ² , 39061C0241F, 39061C0242F | |

¹ No Special Flood Hazard Areas Identified

² Panel Not Printed

³ Area Not Included

Table 1: Listing of NFIP Jurisdictions (continued)

| Community | CID | HUC-8 Sub-Basin(s) | Located on FIRM Panel(s) | If Not Included, Location of Flood Hazard Data |
|-------------------------------------|--------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Springdale, City of | 390877 | 05080002, 05090203 | 39061C0067E ² , 39061C0086E, 39061C0087E, 39061C0088E, 39061C0089E | |
| St. Bernard, City of | 390235 | 05090203 | 39061C0217F, 39061C0236E | |
| Terrace Park, Village of | 390633 | 05090202 | 39061C0262E ² , 39061C0264F, 39061C0266F, 39061C0268F | |
| The Village of Indian Hill, City of | 390221 | 05090202 | 39061C0114F, 39061C0242F, 39061C0244F, 39061C0251F, 39061C0252F, 39061C0253F, 39061C0254F, 39061C0256F, 39061C0258F, 39061C0261F, 39061C0262E ² , 39061C0263F, 39061C0264F, 39061C0266F | |
| Woollawn, Village of | 390239 | 05090203 | 39061C0088E, 39061C0089E, 39061C0226E, 39061C0227E | |
| Wyoming, City of | 390240 | 05090203 | 39061C0207E, 39061C0209E, 39061C0226E, 39061C0227E, 39061C0228E, 39061C0229E | |

² Panel Not Printed

1.4 Considerations for using this Flood Insurance Study Report

The NFIP encourages state and local governments to implement sound floodplain management programs. To assist in this endeavor, each FIS Report provides floodplain data, which may include a combination of the following: 10-, 4-, 2-, 1-, and 0.2-percent annual chance flood elevations (the 1-percent-annual-chance flood elevation is also referred to as the Base Flood Elevation (BFE)); delineations of the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains; and 1-percent-annual-chance floodway. This information is presented on the FIRM and/or in many components of the FIS Report, including Flood Profiles, Floodway Data tables, Summary of Non-Coastal Stillwater Elevations tables, and Coastal Transect Parameters tables (not all components may be provided for a specific FIS).

This section presents important considerations for using the information contained in this FIS Report and the FIRM, including changes in format and content. Figures 1, 2, and 3 present information that applies to using the FIRM with the FIS Report.

- Part or all of this FIS Report may be revised and republished at any time. In addition, part of this FIS Report may be revised by a Letter of Map Revision (LOMR), which does not involve republication or redistribution of the FIS Report.

Refer to Section 6.5 of this FIS Report for information about the process to revise the FIS Report and/or FIRM.

It is, therefore, the responsibility of the user to consult with community officials by contacting the community repository to obtain the most current FIS Report components. Communities participating in the NFIP have established repositories of flood hazard data for floodplain management and flood insurance purposes. Community map repository addresses are provided in Table 30, "Map Repositories," within this FIS Report.

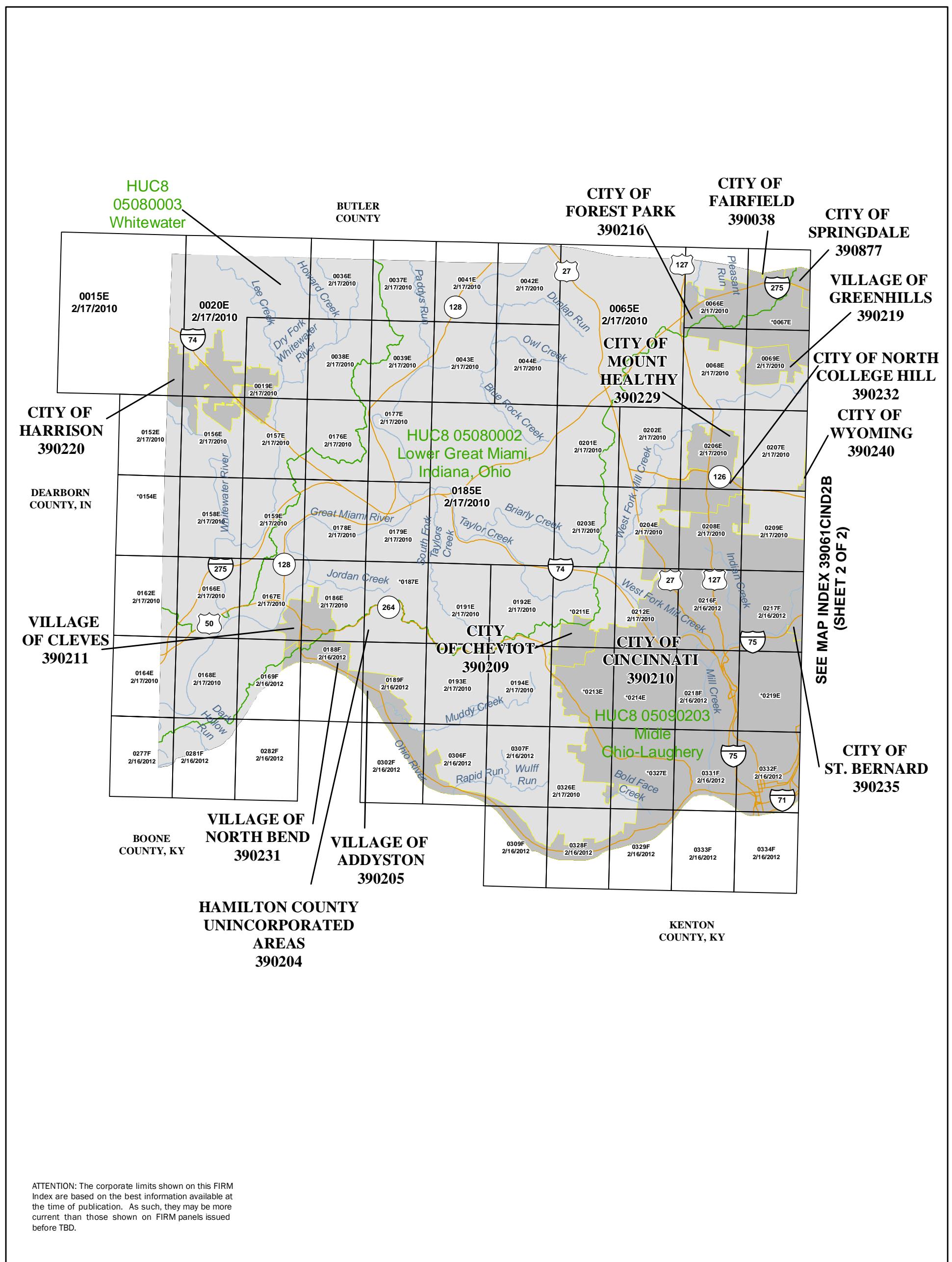
- New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for the purposes of the NFIP.
- The initial Countywide FIS Report for Hamilton County became effective on May 17, 2004. Refer to Table 27 for information about subsequent revisions to the FIRMs.
- The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Visit the FEMA Web site at www.fema.gov/national-flood-insurance-program-community-rating-system or contact your appropriate FEMA Regional Office for more information about this program.
- Previous FIS Reports and FIRMs may have included levees that were accredited as reducing the risk associated with the 1-percent-annual-chance flood based on the information available and the mapping standards of the NFIP at that time. For FEMA to continue to accredit the identified levees, the levees must meet the criteria of the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10), titled "Mapping of Areas Protected by Levee Systems."

Since the status of levees is subject to change at any time, the user should contact the appropriate agency for the latest information regarding levees presented in Table 8 of this FIS Report. For levees owned or operated by the U.S. Army Corps of Engineers (USACE), information may be obtained from the USACE National Levee Database (nld.usace.army.mil). For all other levees, the user is encouraged to contact the appropriate local community.

- FEMA has developed a *Guide to Flood Maps* (FEMA 258) and online tutorials to assist users in accessing the information contained on the FIRM. These include how to read panels and step-by-step instructions to obtain specific information. To obtain this guide and other assistance in using the FIRM, visit the FEMA Web site at www.fema.gov/online-tutorials.

The FIRM Index in Figure 1 shows the overall FIRM panel layout within Hamilton County, and also displays the panel number and effective date for each FIRM panel in the county. Other information shown on the FIRM Index includes community boundaries, flooding sources, watershed boundaries, and USGS HUC-8 codes.

Figure 1 FIRM Panel Index



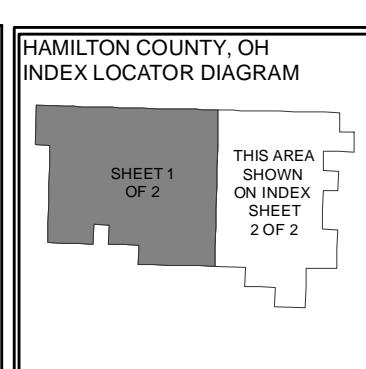
1 inch = 13,333.33 feet
1:160,000
0 6,500 13,000 26,000 Feet

Map Projection:
NAD 1983 StatePlane Ohio South FIPS 3402 Feet
North American Datum of 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTPS://MSC.FEMA.GOV](https://msc.fema.gov)

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

* PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP INDEX
(SHEET 1 OF 2)

HAMILTON COUNTY, OH and Incorporated Areas

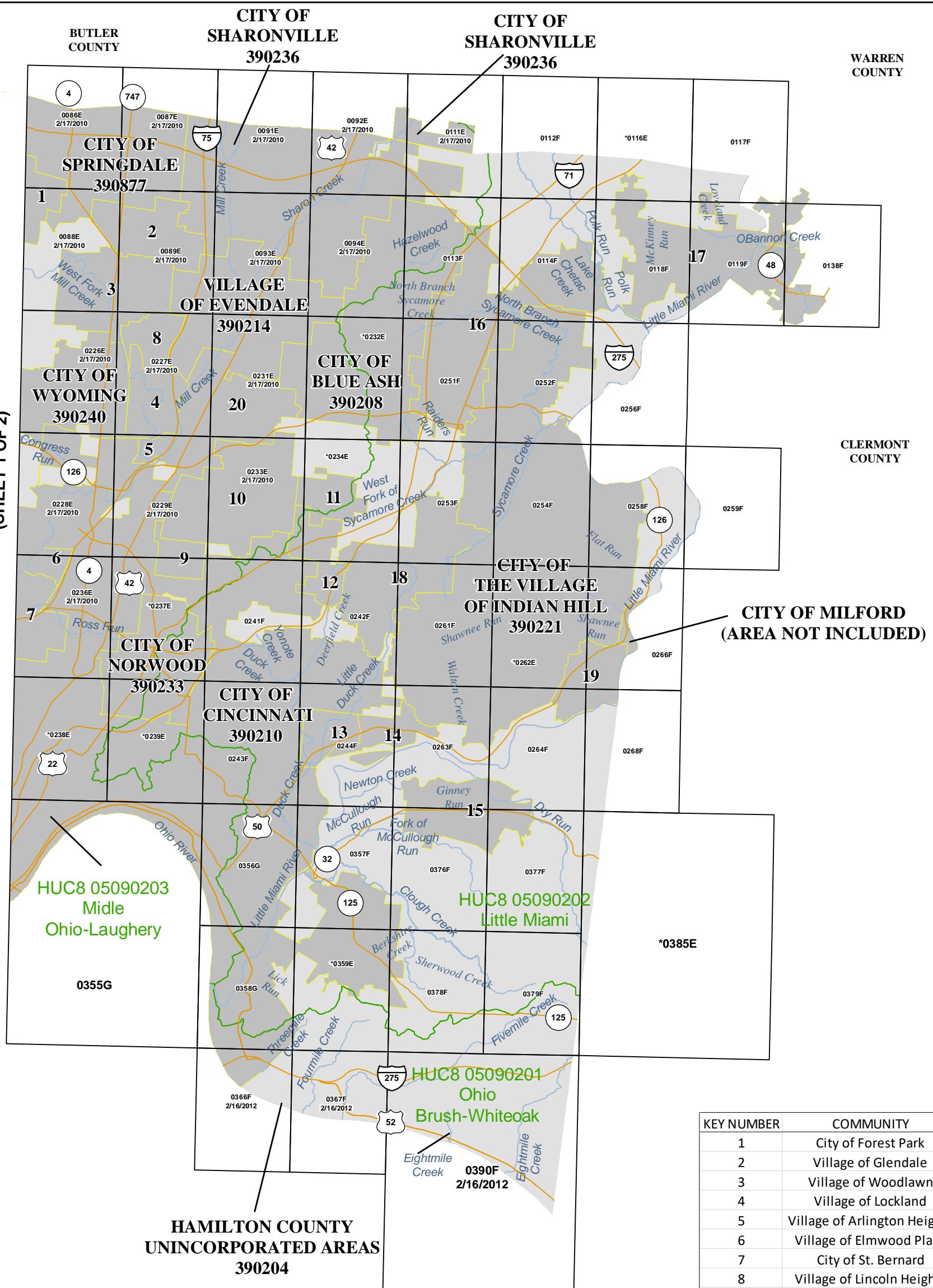
PANELS PRINTED:
0015, 0019, 0020, 0036, 0037, 0038, 0039, 0041, 0042, 0043, 0044, 0065, 0066, 0068, 0069, 0152, 0156, 0157, 0158, 0159, 0162, 0164, 0166, 0167, 0168, 0169, 0176, 0177, 0178, 0179, 0185, 0186, 0188, 0189, 0191, 0192, 0193, 0194, 0201, 0202, 0203, 0204, 0206, 0207, 0208, 0209, 0212, 0216, 0217, 0218, 0277, 0281, 0282, 0302, 0306, 0307, 0309, 0326, 0328, 0329, 0331, 0332, 0333, 0334



MAP REVISED
03/05/2021

Figure 1 FIRM Panel Index (Continued)

SEE MAP INDEX 39061CIND1B
(SHEET 1 OF 2)



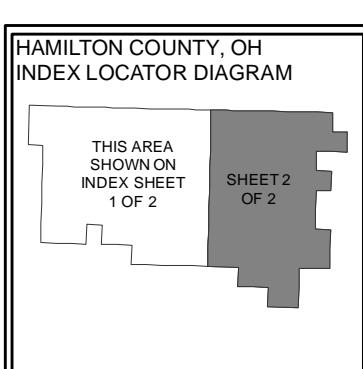
1 inch = 10,000 feet
0 5,000 10,000 20,000 Feet
N

Map Projection:
NAD 1983 StatePlane Ohio South FIPS 3402 Feet
North American Datum of 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTPS://MSC.FEMA.GOV](https://msc.fema.gov)

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

* PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP INDEX
(SHEET 2 OF 2)

HAMILTON COUNTY, OH and Incorporated Areas

PANELS PRINTED:
0086, 0087, 0088, 0089, 0091, 0092, 0093, 0094, 0111, 0112, 0113, 0114, 0117, 0118, 0119, 0138, 0226, 0227, 0228, 0229, 0231, 0233, 0236, 0241, 0242, 0243, 0244, 0251, 0252, 0253, 0254, 0256, 0258, 0259, 0261, 0263, 0264, 0266, 0268, 0355, 0356, 0357, 0358, 0366, 0367, 0376, 0377, 0378, 0379, 0390

PRELIMINARY
03/05/2021



MAP NUMBER
39061CIND2B

MAP REVISED

Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on that map. However, the FIRM panel does not contain enough space to show all the notes that may be relevant in helping to better understand the information on the panel. Figure 2 contains the full list of these notes.

Figure 2: FIRM Notes to Users

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Flood Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to Table 27 in this FIS Report.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PRELIMINARY FIS REPORT: FEMA maintains information about map features, such as street locations and names, in or near designated flood hazard areas. Requests to revise information in or near designated flood hazard areas may be provided to FEMA during the community review period, at the final Consultation Coordination Officer's meeting, or during the statutory 90-day appeal period. Approved requests for changes will be shown on the final printed FIRM.

The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.

BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Non-Coastal Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.

FLOODWAY INFORMATION: Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the FIS Report for this jurisdiction.

FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.3 "Non-Levee Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.

Figure 2: FIRM Notes to Users (continued)

PROJECTION INFORMATION: The projection used in the preparation of the map was Ohio State Plane South FIPS 3402 Feet. The horizontal datum was the North American Datum of 1983 NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

ELEVATION DATUM: Flood elevations on the FIRM are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov.

Local vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community listed in Table 30 of this FIS Report.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided in digital format by the United States Geological Survey (USGS), US Census Bureau, FEMA, State of Ohio and Cincinnati Area Geographic Information System (CAGIS). Orthophotography was obtained from the Ohio Statwide Imagery Program (OSIP III), dated 2018. For information about base maps, refer to Section 6.2 "Base Map" in this FIS Report.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on the map.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Hamilton County, OHIO, corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to Table 27 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

ATTENTION: The corporate limits shown on this FIRM Index are based on the best information available at the time of publication. As such, they may be more current than those shown on FIRM panels issued before **TO BE DETERMINED**.

Figure 2: FIRM Notes to Users (continued)

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Hamilton County, Ohio, effective TBD.

ACCREDITED LEVEE: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit www.fema.gov/national-flood-insurance-program.

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Hamilton County.

Figure 3: Map Legend for FIRM

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SPECIAL FLOOD HAZARD AREAS: The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown. | |
| Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE) | |
| Zone A | The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone. |
| Zone AE | The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone. |
| Zone AH | The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone. |
| Zone AO | The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the hydraulic analyses are shown within this zone. |
| Zone AR | The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood. |
| Zone A99 | The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone. |
| Zone V | The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone. |
| Zone VE | Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone. |

Figure 3: Map Legends for FIRM (continued)

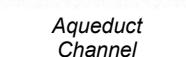
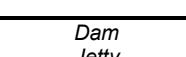
| | |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Regulatory Floodway determined in Zone AE. |
| OTHER AREAS OF FLOOD HAZARD | |
|  | Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile. |
|  | Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone. |
|  | Area with Reduced Flood Risk due to Levee: Areas where an accredited levee, dike, or other flood control structure has reduced the flood risk from the 1% annual chance flood. See Notes to Users for important information. |
|  | Area with Flood Risk due to Levee: Areas where a non-accredited levee, dike, or other flood control structure is shown as providing protection to less than the 1% annual chance flood. |
| OTHER AREAS | |
|  | Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible. |
|  | Unshaded Zone X: Areas of minimal flood hazard. |
| FLOOD HAZARD AND OTHER BOUNDARY LINES | |
|  | Flood Zone Boundary (white line on ortho-photography-based mapping; gray line on vector-based mapping) |
|  | Limit of Study |
|  | Jurisdiction Boundary |
|  | Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet |
| GENERAL STRUCTURES | |
|  | Channel, Culvert, Aqueduct, or Storm Sewer |
|  | Dam, Jetty, Weir |

Figure 3: Map Legends for FIRM (continued)

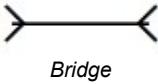
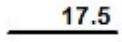
| | |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Levee, Dike, or Floodwall |
|  | Bridge <i>Bridge</i> |
| REFERENCE MARKERS | |
|  | River mile Markers |
| CROSS SECTION & TRANSECT INFORMATION | |
|  | 20.2 Lettered Cross Section with Regulatory Water Surface Elevation (BFE) |
|  | 21.1 Numbered Cross Section with Regulatory Water Surface Elevation (BFE) |
|  | 17.5 Unlettered Cross Section with Regulatory Water Surface Elevation (BFE) |
|  | 8 Coastal Transect |
|  | Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation. |
|  | Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping. |
|  | 513 Base Flood Elevation Line |
| ZONE AE (EL 16) | Static Base Flood Elevation value (shown under zone label) |
| ZONE AO (DEPTH 2) | Zone designation with Depth |
| ZONE AO (DEPTH 2) (VEL 15 FPS) | Zone designation with Depth and Velocity |
| BASE MAP FEATURES | |
|  | Missouri Creek River, Stream or Other Hydrographic Feature |
|  | 234 Interstate Highway |
|  | 234 U.S. Highway |
|  | 234 State Highway |

Figure 3: Map Legends for FIRM (continued)

| | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
|  234 | County Highway |
|  MAPLE LANE | Street, Road, Avenue Name, or Private Drive if shown on Flood Profile |
|  RAILROAD | Railroad |
|  _____ | Horizontal Reference Grid Line |
|  _____ | Horizontal Reference Grid Ticks |
|  + | Secondary Grid Crosshairs |
| Land Grant | Name of Land Grant |
| 7 | Section Number |
| R. 43 W. T. 22 N. | Range, Township Number |
| 42°76'000mE | Horizontal Reference Grid Coordinates (UTM) |
| 365000 FT | Horizontal Reference Grid Coordinates (State Plane) |
| 80° 16' 52.5" | Corner Coordinates (Latitude, Longitude) |

SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS

2.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance (500-year) flood is employed to indicate additional areas of flood hazard in the community.

Each flooding source included in the project scope has been studied and mapped using professional engineering and mapping methodologies that were agreed upon by FEMA and Hamilton County as appropriate to the risk level. Flood risk is evaluated based on factors such as known flood hazards and projected impact on the built environment. Engineering analyses were performed for each studied flooding source to calculate its 1-percent-annual-chance flood elevations; elevations corresponding to other floods (e.g. 10-, 4-, 2-, 0.2-percent-annual-chance, etc.) may have also been computed for certain flooding sources. Engineering models and methods are described in detail in Section 5.0 of this FIS Report. The modeled elevations at cross sections were used to delineate the floodplain boundaries on the FIRM; between cross sections, the boundaries were interpolated using elevation data from various sources. More information on specific mapping methods is provided in Section 6.0 of this FIS Report.

Depending on the accuracy of available topographic data (Table 22), study methodologies employed (Section 5.0), and flood risk, certain flooding sources may be mapped to show both the 1- and 0.2-percent-annual-chance floodplain boundaries, regulatory water surface elevations (BFEs), and/or a regulatory floodway. Similarly, other flooding sources may be mapped to show only the 1-percent-annual-chance floodplain boundary on the FIRM, without published water surface elevations. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM. Figure 3 “Map Legend for FIRM”, describes the flood zones that are used on the FIRMs to account for the varying levels of flood risk that exist along flooding sources within the project area. Table 2 and Table 3 indicate the flood zone designations for each flooding source and each community within Hamilton County, respectively.

Table 2, “Flooding Sources Included in this FIS Report,” lists each flooding source, including its study limits, affected communities, mapped zone on the FIRM, and the completion date of its engineering analysis from which the flood elevations on the FIRM and in the FIS Report were derived. Descriptions and dates for the latest hydrologic and hydraulic analyses of the flooding sources are shown in Table 12. Floodplain boundaries for these flooding sources are shown on the FIRM (published separately) using the symbology described in Figure 3. On the map, the 1-percent-annual-chance floodplain corresponds to the SFHAs. The 0.2-percent-annual-chance floodplain shows areas that, although out of the regulatory floodplain, are still subject to flood hazards.

Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data. The procedures to remove these areas from the SFHA are described in Section 6.5 of this FIS Report.

Table 2: Flooding Sources Included in this FIS Report

| Flooding Source | Community | Downstream Limit | Upstream Limit | HUC-8 Sub-Basin(s) | Length (mi) (streams or coastlines) | Floodway (Y/N) | Zone shown on FIRM | Date of Analysis |
|----------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------|-------------------------------------|----------------|--------------------|------------------|
| Bares Run | Loveland, City of | Approximately 25 feet downstream from the crossing of E Loveland Avenue | Approximately 2,905 feet upstream from the crossing of E Loveland Ave | 05090202 | 0.6 | N | A | 09/30/2016 |
| Berkshire Creek | Hamilton County, Unincorporated Areas | Confluence with Clough Creek | Approximately 110 feet upstream from Stanley Road | 05090202 | 1.5 | N | A | September 2018 |
| Brookwood Creek | Amberley, Village of | Approximately 450 feet downstream of Fair Oaks Drive | Fair Oaks Drive | 05090203 | 0.2 | Y | AE | December 1978 |
| Clough Creek | Cincinnati, City of; Hamilton County, Unincorporated Areas | Confluence with Little Miami River | Approximately 645 feet upstream from State Road | 05090202 | 5.1 | Y | AE | March 1979 |
| Congress Run | Cincinnati, City of; Hamilton County, Unincorporated Areas; Wyoming, City of | Confluence with Mill Creek | Approximately 580 feet upstream of North Hill Lane | 05090203 | 2.8 | Y | AE | March 1979 |
| Dry Fork of The Whitewater River | Hamilton County, Unincorporated Areas | Confluence with Whitewater River | Approximately 160 feet upstream of Marion Road | 05080003 | 12.0 | Y | AE | March 1979 |
| Dry Run | Hamilton County, Unincorporated Areas; Newtown, Village of | Approximately 650 feet downstream from Railroad | Approximately 95 feet upstream from Whiting Way | 05090202 | 1.5 | N | A | September 2018 |
| Duck Creek | Cincinnati, City of; Fairfax, Village of | Confluence with Little Miami River | Approximately 1,200 feet upstream of Red Bank Road | 05090202 | 3.2 | Y | AE | 02/22/2007 |
| Duck Creek | Cincinnati, City of | Approximately 1,200 feet upstream of Red Bank Road | Approximately 957 feet upstream from Ridge Ave | 05090202 | 2.4 | Y | AE | 09/20/2013 |

Table 2: Flooding Sources Included in this FIS Report (continued)

| Flooding Source | Community | Downstream Limit | Upstream Limit | HUC-8 Sub-Basin(s) | Length (mi) (streams or coastlines) | Floodway (Y/N) | Zone shown on FIRM | Date of Analysis |
|------------------------------|------------------------------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|--------------------|-------------------------------------|----------------|--------------------|------------------|
| East Fork Mill Creek | Sharonville, City of | Confluence with Mill Creek | Crescentville Road | 05090203 | 0.8 | Y | AE | July 2009 |
| Fork of McCullough Run | Hamilton County, Unincorporated Areas; Newtown, Village of | Confluence with McCullough Run | Ragland Road | 05090202 | 0.7 | Y | AE | March 1979 |
| Great Miami River | Cleves, Village of; Hamilton County, Unincorporated Areas | Confluence with Ohio River | Approximately 0.9 miles upstream of State Route 126 | 05080002 | 26.0 | Y | AE | March 1979 |
| Hazelwood Creek | Blue Ash, City of | Kenwood Road | Cornell Road | 05090203 | 0.9 | Y | AE | December 1978 |
| Howard Creek | Hamilton County, Unincorporated Areas | Confluence with Whitewater River | Oxford Road | 05080003 | 1.1 | Y | AE | March 1979 |
| Lake Chetac Creek | Hamilton County, Unincorporated Areas; Montgomery, City of | Confluence with Polk Run | Corporate limits of City of Montgomery | 05090202 | 0.8 | Y | AE | September 2018 |
| Lake Chetac Creek | Hamilton County, Unincorporated Areas; Montgomery, City of | Corporate limits of City of Montgomery | Fields Ertel Road and Hamilton/Warren County Boundary | 05090202 | 2.2 | N | A | September 2018 |
| Left Fork Section Road Creek | Amberley, Village of | Confluence with Section Road Creek | Aracoma Forest Drive | 05090203 | 0.7 | Y | AE | December 1978 |
| Little Duck Creek | Fairfax, Village of | Confluence with Duck Creek | Approximately 500 feet downstream from Red Bank Road | 05090202 | 0.2 | Y | AE | 02/22/2007 |
| Little Duck Creek | Cincinnati, City of; Fairfax, Village of | Approximately 500 feet downstream from Red Bank Road | Approximately 100 feet upstream of Murray Road | 05090202 | 1.4 | Y | AE | September 2018 |
| Little Duck Creek | Cincinnati, City of; Hamilton County, Unincorporated Areas; Madeira, City of | Approximately 100 feet upstream of Murray Road | Approximately 780 feet upstream from Dawson Road | 05090202 | 3.4 | N | A | September 2018 |

Table 2: Flooding Sources Included in this FIS Report (continued)

| Flooding Source | Community | Downstream Limit | Upstream Limit | HUC-8 Sub-Basin(s) | Length (mi) (streams or coastlines) | Floodway (Y/N) | Zone shown on FIRM | Date of Analysis |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------|--------------------|-------------------------------------|----------------|--------------------|------------------|
| Little Miami River | Cincinnati, City of; Hamilton County, Unincorporated Areas; Loveland, City of; Mariemont, Village of; Newtown, Village of; Terrace Park, Village of; The Village of Indian Hill, City of | Confluence with Ohio River | Northern Hamilton/Warren County Boundary | 05090202 | 26.1 | Y | AE | September 2018 |
| Loveland Creek | Hamilton County, Unincorporated Areas; Loveland, City of | Confluence with Little Miami River | Approximately 1800 feet upstream of Rich Road | 05090202 | 1.3 | N | A/AE | September 2018 |
| McCullough Run | Hamilton County, Unincorporated Areas; Newtown, Village of | Confluence with Little Miami River | Turpin Lane | 05090202 | 1.9 | Y | AE | March 1979 |
| Mill Creek | Arlington Heights, Village of; Cincinnati, City of; Elmwood Place, Village of; Evendale, Village of; Hamilton County, Unincorporated Areas; Lockland, Village of; Reading, City of; Sharonville, City of; St. Bernard, City of | Barrier Dam | E Sharon Rd | 05090203 | 16.4 | Y | AE | 04/20/2000 |
| Mill Creek | Sharonville, City of | E Sharon Rd | Just upstream of Crescentville Road | 05090203 | 2.1 | Y | AE | July 2009 |
| Muddy Creek | Addyston, Village of; Cincinnati, City of; Hamilton County, Unincorporated Areas | Confluence with Ohio River | 0.2 miles upstream of Sidney Road | 05090203 | 6.6 | Y | AE | March 1979 |

Table 2: Flooding Sources Included in this FIS Report (continued)

| Flooding Source | Community | Downstream Limit | Upstream Limit | HUC-8 Sub-Basin(s) | Length (mi) (streams or coastlines) | Floodway (Y/N) | Zone shown on FIRM | Date of Analysis |
|-----------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------|-------------------------------------|----------------|--------------------|------------------|
| Newton (Clear Creek) | Hamilton County, Unincorporated Areas | Confluence with Little Miami River | Railroad | 05090202 | 1.4 | Y | AE | September 2018 |
| North Branch Sycamore Creek | Montgomery, City of | Approximately 1,880 feet upstream of Carriage Trail | I-71 Highway | 05090202 | 2.1 | Y | AE | September 2018 |
| North Branch Sycamore Creek | The Village of Indian Hill, City of; Montgomery, City of | Confluence with Sycamore Creek | Approximately 1,880 feet upstream of Carriage Trail | 05090202 | 3.8 | N | A | September 2018 |
| Northland Road Tributary | Springdale, City of | Confluence with Springdale Tributary | Approximately 320 feet upstream of Springfield Pike/ State Route 4 | 05090203 | 1.2 | N | AE | July 1988 |
| O'Bannon Creek | Loveland, City of | Confluence with Little Miami River | Eastern corporate limit of City of Loveland | 05090202 | 0.9 | Y | AE | September 2018 |
| Ohio River | Addyston, Village of; Cincinnati, City of; Hamilton County, Unincorporated Areas; North Bend, Village of | Approximately 0.35 miles downstream of the confluence of Great Miami River | Approximately 1.15 miles upstream of the confluence of Eight Mile Creek | 05090201, 05090203 | 43.5 | Y | AE | January 2011 |
| Pleasant Run | Hamilton County, Unincorporated Areas | 100 feet downstream of John Gray Road | Approximately 0.5 miles upstream of confluence of Pleasant Run Tributary | 05080002 | 0.6 | Y | AE | 04/26/2006 |
| Polk Run | Hamilton County, Unincorporated Areas; Montgomery, City of | Approximately 3,850 feet upstream from Loveland Madeira Road | Approximately 380 feet upstream from East Kemper Road | 05090202 | 0.9 | Y | AE | September 2018 |
| Polk Run | Hamilton County, Unincorporated Areas; Montgomery, City of | Approximately 380 feet upstream from East Kemper Road | Fields Ertel Road | 05090202 | 2.6 | N | A | September 2018 |
| Polk Run | Hamilton County, Unincorporated Areas | Confluence with Little Miami River | Approximately 3,850 feet upstream from Loveland Madeira Road | 05090202 | 1 | N | A/AE | September 2018 |

Table 2: Flooding Sources Included in this FIS Report (continued)

| Flooding Source | Community | Downstream Limit | Upstream Limit | HUC-8 Sub-Basin(s) | Length (mi) (streams or coastlines) | Floodway (Y/N) | Zone shown on FIRM | Date of Analysis |
|---------------------------|----------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------|--------------------|-------------------------------------|----------------|--------------------|------------------|
| Raiders Run | Blue Ash, City of; Hamilton County, Unincorporated Areas | Confluence with West Fork of Sycamore Creek | South of Ronald Reagan Cross CO EB Highway | 05090202 | 1.4 | Y | AE | March 1979 |
| Section Road Creek | Amberley, Village of; Cincinnati, City of | Approximately 0.2 miles downstream of Elbrook Avenue | Approximately 0.3 miles upstream of West Beechlands Drive | 05090203 | 1.5 | Y | AE | December 1978 |
| Sharon Creek | Evendale, Village of; Sharonville, City of | Confluence with Mill Creek | Approximately 440 feet upstream of Park Road | 05090203 | 2.2 | Y | AE | July 2009 |
| Sharon Creek Tributary | Evendale, Village of; Sharonville, City of | Confluence with Sharon Creek | 0.5 miles upstream of Main Street | 05090203 | 1.0 | Y | AE | July 2009 |
| Springdale Tributary | Sharonville, City of; Springdale, City of | Chesterdale Road | Approximately 50 feet upstream of Cloverdale Avenue | 05090203 | 3.1 | N | AE | July 1988 |
| Sycamore Creek | Hamilton County, Unincorporated Areas; The Village of Indian Hill, City of | Confluence with Little Miami River | Approximately 4,580 feet upstream of Keller Road | 05090202 | 2.8 | N | A/AE | September 2018 |
| Sycamore Creek | Madeira, City of; The Village of Indian Hill, City of | Approximately 4,580 feet upstream of Keller Road | Approximately 700 feet upstream from Camargo Road | 05090202 | 1.2 | Y | AE | September 2018 |
| Tributary A | North College Hill, City of | Mouth at West Fork Lake Tributary | Approximately 820 feet upstream of Northbridge Avenue | 05090203 | 0.3 | Y | AE | May 1985 |
| Tributary To Pleasant Run | Hamilton County, Unincorporated Areas | Confluence with Pleasant Run | Approximately 0.6 miles upstream of confluence with Pleasant Run | 05080002 | 0.6 | Y | AE | 04/26/2006 |
| West Fork Creek | Cincinnati, City of | Confluence with Mill Creek | Confluence of McFarland Creek | 05090203 | 2.6 | Y | AE | March 1979 |

Table 2: Flooding Sources Included in this FIS Report (continued)

| Flooding Source | Community | Downstream Limit | Upstream Limit | HUC-8 Sub-Basin(s) | Length (mi) (streams or coastlines) | Floodway (Y/N) | Zone shown on FIRM | Date of Analysis |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------|-------------------------------------|----------------|--------------------|------------------|
| West Fork Lake Tributary | City of Cincinnati; Hamilton County, Unincorporated Areas; Mount Healthy, City of; North College Hill, City of | 200 feet downstream of Desoto Drive | Approximately 340 feet upstream of Emerson Avenue | 05090203 | 1.7 | Y | AE | May 1985 |
| West Fork Mill Creek | Arlington Heights, Village of; Hamilton County, Unincorporated Areas; Lockland, Village of; Mount Healthy, City of; Woodlawn, Village of; Wyoming, City of | Confluence with Mill Creek | Just upstream of Blue Rock Road | 05090203 | 12.1 | Y | AE | October 1992 |
| West Fork Mill Creek South Tributary | Woodlawn, Village of | Confluence with West Fork Mill Creek | Just upstream of footbridge | 05090203 | 0.4 | Y | AE | June 1985 |
| West Fork of Sycamore Creek | Hamilton County, Unincorporated Areas; The Village of Indian Hill, City of | Confluence with Sycamore Creek | approximately 1.6 miles above confluence with Sycamore Creek | 05090202 | 1.6 | N | A | September 2018 |
| West Fork of Sycamore Creek | Hamilton County, Unincorporated Areas | approximately 1.6 miles above confluence with Sycamore Creek | North of East Galbraith Road | 05090202 | 1.0 | Y | AE | March 1979 |
| Whitewater River | Hamilton County, Unincorporated Areas; Harrison, City of | Confluence with Great Miami River | Approximately 1.7 miles upstream of Jamison Road | 05080003 | 10.6 | Y | AE | March 1979 |
| Winton Woods Creek | Hamilton County, Unincorporated Areas; Mount Healthy, City of | Approximately 1.6 miles downstream of Bridgecreek Lane | Approximately 200 feet upstream of Desoto Drive | 05090203 | 2.9 | Y | AE | 03/02/1993 |

Table 2: Flooding Sources Included in this FIS Report (continued)

| Flooding Source | Community | Downstream Limit | Upstream Limit | HUC-8 Sub-Basin(s) | Length (mi) (streams or coastlines) | Floodway (Y/N) | Zone shown on FIRM | Date of Analysis |
|----------------------------------------|------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------|--------------------|-------------------------------------|----------------|--------------------|------------------|
| Wulff Run | Hamilton County, Unincorporated Areas | Approximately 0.3 miles downstream of Delhi Road | Anderson Ferry Road | 05090203 | 0.8 | Y | AE | March 1979 |
| Yonote Creek | Cincinnati, City of; Hamilton County, Unincorporated Areas | Confluence with Duck Creek | South of I-71 NB Expressway | 05090202 | 0.3 | Y | AE | 09/20/2013 |
| Zone A Stream (Little Miami Tributary) | Hamilton County, Unincorporated Areas | Approximately 500 feet upstream of Round Bottom Road | Approximately 0.75 miles upstream of Round Bottom Road | 05090202 | 0.6 | N | A | March 1979 |

Table 2: Flooding Sources Included in this FIS Report (continued)

| Flooding Source | Community | Downstream Limit | Upstream Limit | HUC-8 Sub-Basin(s) | Length (mi) (streams or coastlines) | Floodway (Y/N) | Zone shown on FIRM | Date of Analysis |
|---------------------------------------------------------------|-----------|------------------|----------------|--------------------|-------------------------------------|----------------|--------------------|------------------|
| Zone A Streams (Lower Great Miami, Indiana, Ohio Tributaries) | Various | Varies | Varies | 05080002 | Varies | N | A | March 1979 |
| Zone A Streams (Middle Ohio - Laughery Tributaries) | Various | Varies | Varies | 05090203 | Varies | N | A | June 1985 |
| Zone A Streams (Ohio Brush-Whiteoak Tributaries) | Various | Varies | Varies | 05090201 | Varies | N | A | March 1979 |
| Zone A Streams (Whitewater Tributaries) | Various | Varies | Varies | 05080003 | Varies | N | A | March 1979 |

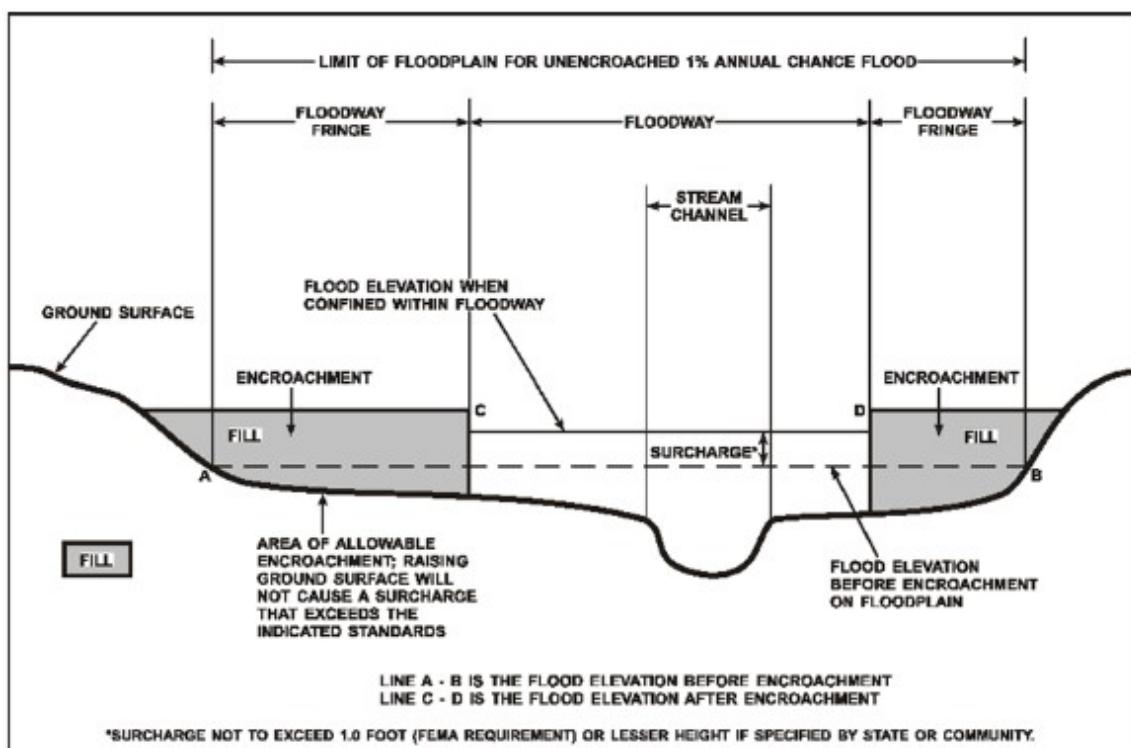
2.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard.

For purposes of the NFIP, a floodway is used as a tool to assist local communities in balancing floodplain development against increasing flood hazard. With this approach, the area of the 1-percent-annual-chance floodplain on a river is divided into a floodway and a floodway fringe based on hydraulic modeling. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order to carry the 1-percent-annual-chance flood. The floodway fringe is the area between the floodway and the 1-percent-annual-chance floodplain boundaries where encroachment is permitted. The floodway must be wide enough so that the floodway fringe could be completely obstructed without increasing the water surface elevation of the 1-percent-annual-chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 4.

To participate in the NFIP, federal regulations require communities to limit increases caused by encroachment to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this project are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway projects.

Figure 4: Floodway Schematic



Floodway widths presented in this FIS Report and on the FIRM were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. For certain stream segments, floodways were adjusted so that the amount of floodwaters conveyed on each side of the floodplain would be reduced equally. The results of the floodway computations have been tabulated for selected cross sections and are shown in Table 23, "Floodway Data."

All floodways that were developed for this Flood Risk Project are shown on the FIRM using the symbology described in Figure 3. In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown on the FIRM. For information about the delineation of floodways on the FIRM, refer to Section 6.3.

2.3 Base Flood Elevations

The hydraulic characteristics of flooding sources were analyzed to provide estimates of the elevations of floods of the selected recurrence intervals. The Base Flood Elevation (BFE) is the elevation of the 1-percent-annual-chance flood. These BFEs are most commonly rounded to the whole foot, as shown on the FIRM, but in certain circumstances or locations they may be rounded to 0.1 foot. Cross section lines shown on the FIRM may also be labeled with the BFE rounded to 0.1 foot. Whole-foot BFEs derived from engineering analyses that apply to coastal areas, areas of ponding, or other static areas with little elevation change may also be shown at selected intervals on the FIRM.

BFEs are primarily intended for flood insurance rating purposes. Cross sections with BFEs shown on the FIRM correspond to the cross sections shown in the Floodway Data table and Flood Profiles in this FIS Report. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. For example, the user may use the FIRM to determine the stream station of a location of interest and then use the profile to determine the 1-percent-annual-chance elevation at that location. Because only selected cross sections may be shown on the FIRM for riverine areas, the profile should be used to obtain the flood elevation between mapped cross sections. Additionally, for riverine areas, whole-foot elevations shown on the FIRM may not exactly reflect the elevations derived from the hydraulic analyses; therefore, elevations obtained from the profile may more accurately reflect the results of the hydraulic analysis.

2.4 Non-Encroachment Zones

This section is not applicable to this Flood Risk Project.

The State of Ohio participates within the minimum NFIP standards.

2.5 Coastal Flood Hazard Areas

This section is not applicable to this Flood Risk Project.

2.5.1 Water Elevations and the Effects of Waves

This section is not applicable to this Flood Risk Project.

Figure 5: Wave Runup Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.2 Floodplain Boundaries and BFEs for Coastal Areas

This section is not applicable to this Flood Risk Project.

2.5.3 Coastal High Hazard Areas

This section is not applicable to this Flood Risk Project.

Figure 6: Coastal Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.4 Limit of Moderate Wave Action

This section is not applicable to this Flood Risk Project.

SECTION 3.0 – INSURANCE APPLICATIONS

3.1 National Flood Insurance Program Insurance Zones

For flood insurance applications, the FIRM designates flood insurance rate zones as described in Figure 3, “Map Legend for FIRM.” Flood insurance zone designations are assigned to flooding sources based on the results of the hydraulic or coastal analyses. Insurance agents use the zones shown on the FIRM and depths and base flood elevations in this FIS Report in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

The 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (e.g. Zones A, AE, V, VE, etc.), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of additional flood hazards.

Table 3 lists the flood insurance zones in Hamilton County.

Table 3: Flood Zone Designations by Community

| Community | Flood Zone(s) |
|---------------------------------------|---------------|
| Addyston, Village of | AE, X |
| Amberley, Village of | AE, AO, X |
| Arlington Heights, Village of | AE, X |
| Blue Ash, City of | A, AE, X |
| Cheviot, City of* | X |
| Cincinnati, City of | A, AE, X |
| Cleves, Village of | AE, X |
| Deer Park, City of* | X |
| Elmwood Place, Village of | A, AE, X |
| Evendale, Village of | A, AE, X |
| Fairfax, Village of | AE, X |
| Forest Park, City of | A, AE, X |
| Glendale, Village of | A, X |
| Golf Manor, City of* | X |
| Greenhills, Village of | A, X |
| Hamilton County, Unincorporated Areas | A, AE, X |
| Harrison, City of | A, AE, X |
| Lincoln Heights, Village of* | X |
| Lockland, Village of | A, AE, X |
| Loveland, City of | A, AE, X |
| Madeira, City of | A, AE, X |
| Mariemont, Village of | AE, X |
| Montgomery, City of | A, AE, X |
| Mount Healthy, City of | A, AE, X |
| Newtown, Village of | A, AE, X |
| North Bend, Village of | AE, X |
| North College Hill, City of | A, AE, X |
| Norwood, City of* | X |
| Reading, City of | A, AE, X |
| Sharonville, City of | A, AE, X |

*No Special Flood Hazard Areas Identified

Table 3: Flood Zone Designations by Community (continued)

| Community | Flood Zone(s) |
|-------------------------------------|---------------|
| Silverton, City of* | X |
| Springdale, City of | A, AE, X |
| St. Bernard, City of | A, AE, X |
| Terrace Park, Village of | AE, X |
| The Village of Indian Hill, City of | A, AE, X |
| Woodlawn, Village of | A, AE, X |
| Wyoming, City of | A, AE, X |

*No Special Flood Hazard Areas Identified

SECTION 4.0 – AREA STUDIED

4.1 Basin Description

Table 4 contains a description of the characteristics of the HUC-8 sub-basins within which each community falls. The table includes the main flooding sources within each basin, a brief description of the basin, and its drainage area.

Table 4: Basin Characteristics

| HUC-8 Sub-Basin Name | HUC-8 Sub-Basin Number | Primary Flooding Source | Description of Affected Area | Drainage Area (Square Miles) |
|----------------------------------|------------------------|-------------------------|------------------------------|------------------------------|
| Little Miami | 05090202 | Little Miami River | East Hamilton County | 1,758 |
| Lower Great Miami, Indiana, Ohio | 05080002 | Great Miami River | West Hamilton County | 1,381 |
| Middle Ohio-Laughery | 05090203 | Mill Creek - Ohio River | Central Hamilton County | 1,410 |
| Ohio Brush-Whiteoak | 05090201 | Ohio River | Southeast Hamilton County | 2,100 |
| Whitewater | 05080003 | Whitewater River | Northwest Hamilton County | 1,474 |

4.2 Principal Flood Problems

Table 5 contains a description of the principal flood problems that have been noted for Hamilton County by flooding source.

Table 5: Principal Flood Problems

| Flooding Source | Description of Flood Problems |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Duck Creek & Little Duck Creek | <p>The low-lying areas of the Village of Fairfax are subject to periodic flooding caused by the overflow of Duck Creek and Little Duck Creek. The principal problem from Duck Creek occurs from the Red Bank Road bridge to the upstream end of the study area. The right overbank is low lying, and flow during a higher magnitude flood will cover the area. A building supported by piers extends across the creek in this reach, giving the effect of 170-foot bridge which allows no weir flow. Upstream overbank flow for higher level floods will leave the stream and cross the above-mentioned low-lying area before reentering the stream. This area is primarily paved parking surrounding scattered buildings.</p> <p>A higher concentration of culverts and bridges on Little Duck Creek (five in 0.33 mile) causes backwater and low stream velocities. This results in ponding conditions above the railroad culverts and the Columbia Parkway culvert during all frequency floods of this study. The Red Bank Road and the railroad culverts, due to their relatively low capacities and high embankments, cause exceptionally high surcharges with a resulting high tailwater elevation at the Columbia Parkway culvert. The ponds thus formed above the railroad and Columbia Parkway serve as retention basins for the downstream reaches of the stream and reduce the peak discharges through the downstream bridges. The low-lying area between these culverts has several commercial buildings and a paved parking area on the left bank. The lower area above the Columbia Parkway culvert is also along the left bank but contains primarily residential dwellings. The Little Duck Creek flows above the ponding area causing overflow flooding in the upper reaches of the stream, which are also primarily residential.</p> <p>Debris buildup in the Little Duck Creek structures also causes overbank flow in the upper reaches. In general, obstructions intensify the flooding situation by causing overbank flows with possible damage to or destruction of bridges, flooding in unpredictable areas, and by increasing velocities of flow immediately downstream.</p> |
| Mill Creek | <p>Flooding has been a chronic problem on Mill Creek for some time with the March 1913 event as the flood of record. However, the most damaging flood occurred in January 1959. There have been numerous other headwater floods of lesser magnitudes such as those that occurred in May 1996, April 1998, and July 2001. A detailed economic analysis showed that for existing conditions, significant damages would occur from a flood with a 50-percent annual chance of occurrence. For the 1-percent-annual-chance flood, there are approximately 560 structures located in the floodplain with total residual damages of over \$480 million with the existing USACE flood control project in place. Total average annual damages for the study area under existing conditions are over \$32 million with about 92% occurring above Glendale-Milford Road in the Evendale and Sharonville areas. Table 5 presents total damages and number of structures flooded for a range of frequency floods. Damages shown in Table 5 are assumed to begin when floodwaters initially come in contact with the structures within the floodplain. These damages are based upon an economic analysis update for Mill Creek dated June 1997.</p> |

Table 6 contains information about historic flood elevations in the communities within Hamilton County.

Table 6: Historic Flooding Elevations

[Not Applicable to this Flood Risk Project]

4.3 Non-Levee Flood Protection Measures

Table 7 contains information about non-levee flood protection measures within Hamilton County such as dams, jetties, and or dikes. Levees are addressed in Section 4.4 of this FIS Report.

Table 7: Non-Levee Flood Protection Measures

| Flooding Source | Structure Name | Type of Measure | Location | Description of Measure |
|-----------------------------|---------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Great Miami River Watershed | Miami Conservancy District (MCD) Dams | Dams | Along Great Miami River and its various tributaries | The Germantown, Englewood, Huffman, Lockington, and Taylorsville Dams, constructed from 1919 to 1922, aid in the reduction of flood peaks on the Great Miami River basin in conjunction with scattered levees and channel improvements. |
| Little Miami River | Caesar Creek Reservoir | Reservoir | Located approx. 30 miles northeast of Cincinnati | The reservoir controls a drainage area of 237 square miles of the total of 1,145 square miles at the City of Loveland |
| Ohio River | Barrier Dam | Dam | Near confluence with Ohio River along the Mill Creek | In order to provide protection against Ohio River backwater flooding, a barrier dam across Mill Creek near the mouth, 1,420 feet of levee and concrete wall between the western abutment of the dam and pump house, 5,660 feet of concrete wall to form the eastern closure of the dam, and 6 pumps were constructed starting in January 1941 and completed in March 1948. |
| Ohio River | | Dike | Four Seasons Marina | Earthen embankment to control flooding from Ohio River and Little Miami River |
| West Fork Mill Creek | Winton Park Dam | Dam | 1.5 miles upstream of Rockhampton Circle | The dam controls the flow that would occur as a result of the 10-, 2-, 1-, or 0.2-percent-annual-chance storms. |
| Whitewater River | Brookville Reservoir | Reservoir | Located in Brookville Township, Franklin County, Indiana, just north of Brookville, in the southeastern part of the state. | The earthen dam was constructed in 1974 by the United States Army Corps of Engineers with a height of 181 feet and 2,800 feet long at its crest. It impounds the East Fork of the Whitewater River for flood control and storm water management. |

4.4 Levee Systems

For purposes of the NFIP, FEMA only recognizes levee systems that meet, and continue to meet, minimum design, operation, and maintenance standards that are consistent with comprehensive floodplain management criteria. The Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10) describes the information needed for FEMA to determine if a levee system reduces the flood hazard from the 1-percent-annual-chance flood. This information must be supplied to FEMA by the community or other party when a flood risk study or restudy is conducted, when FIRMs are revised, or upon FEMA request. FEMA reviews the information for the purpose of establishing the appropriate flood hazard zone.

Levee systems that are determined to reduce the hazard from the 1-percent-annual-chance flood are accredited by FEMA. FEMA can also grant provisional accreditation to a levee system that was previously accredited on an effective FIRM and for which FEMA is awaiting data and/or documentation to demonstrate compliance with 44 CFR 65.10. These levee systems are referred to as Provisionally Accredited Levees, or PALs. Provisional accreditation provides communities and levee owners with a specified timeframe to obtain the necessary data to confirm the levee system's accreditation status. Accredited levee systems and PALs are shown on the FIRM using the symbology shown in Figure 3. If the required information for a PAL is not submitted within the required timeframe, or if information indicates that a levee system no longer meets 44 CFR 65.10, FEMA will consider the levee system as non-accredited and issue an effective FIRM showing the levee-impacted area as a SFHA or Zone D.

FEMA coordinated with the USACE, the local communities, and other organizations to compile a list of levees that exist within Hamilton County. Table 8, "Levee Systems," lists all accredited levees, PALs, and de-accredited levees shown on the FIRM for this FIS Report. Other categories of levees may also be included in the table. The Levee ID shown in this table may not match numbers based on other identification systems that were listed in previous FIS Reports. Levees identified as PALs in the table are labeled on the FIRM to indicate their provisional status.

Please note that the information presented in Table 8 is subject to change at any time. For that reason, the latest information regarding the levee systems presented in the table may be obtained by accessing the National Levee Database. For additional information, contact the levee owner/sponsor or the local community shown in Table 30.

Table 8: Levee Systems

| Community | Flooding Source(s) | NLD Levee System ID | NLD Levee System Name | Levee System Status on Effective FIRM | FIRM Panel(s) | Levee Owner(s) / Sponsor(s) |
|------------------------------------------------------------|---------------------------------|---------------------|-----------------------------------------------------------------|---------------------------------------|---------------------------------------|-----------------------------|
| Cincinnati, City of | Duck Creek | 3905520001 | Duck Creek, OH - Phase II Levee System | Accredited | 39061C0243F | City of Cincinnati |
| Cincinnati, City of | Duck Creek | 3905520002 | Duck Creek, OH - Phase IIa Levee System | Non-Accredited | 39061C0243F | City of Cincinnati |
| Cincinnati, City of | Duck Creek | 3905520004 | Duck Creek, OH - Phase IV B Section 1 Alignment A Levee System | Accredited | 39061C0241F | City of Cincinnati |
| Cincinnati, City of | Duck Creek | 3905520005 | Duck Creek, OH - Phase IV B Section 1 Alignment B Levee System | Accredited | 39061C0241F | City of Cincinnati |
| Fairfax, Village of | Duck Creek | 3905520003 | Duck Creek, OH - Phase III Levee System | Accredited | 39061C0244F | City of Cincinnati |
| Cincinnati, City of; Hamilton County, Unincorporated Areas | Duck Creek & Yonote Creek | 3905520006 | Duck Creek, OH - Phase IV B Section 2 & Phase IV C Levee System | Accredited | 39061C0241F | City of Cincinnati |
| Cincinnati, City of | Little Miami River & Ohio River | 1505000015 | Lunken Airport Levee System | Non-Accredited | 39061C0356G, 39061C0357F, 39061C0358G | City of Cincinnati |
| Cincinnati, City of | Ohio River | 3905000003 | Cincinnati Levee System | Accredited | 39061C0331F, 39061C0332F | City of Cincinnati |
| Cincinnati, City of | Ohio River | 1505001104 | Hamilton Unincorporated Levee | Non-Accredited | 39061C0306F | City of Cincinnati |

SECTION 5.0 – ENGINEERING METHODS

For the flooding sources in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded at least once on the average during any 10-, 25-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 25-, 50-, 100-, and 500-year floods, have a 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance, respectively, of being equaled or exceeded during any year.

Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of annual exceedance) during the term of a 30-year mortgage is approximately 26 percent (about 3 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

In addition to these flood events, the “1-percent-plus”, or “1%+”, annual chance flood elevation has been modeled and included on the flood profile for certain flooding sources in this FIS Report. While not used for regulatory or insurance purposes, this flood event has been calculated to help illustrate the variability range that exists between the regulatory 1-percent-annual-chance flood elevation and a 1-percent-annual-chance elevation that has taken into account an additional amount of uncertainty in the flood discharges (thus, the 1% “plus”). For flooding sources whose discharges were estimated using regression equations, the 1%+ flood elevations are derived by taking the 1-percent-annual-chance flood discharges and increasing the modeled discharges by a percentage equal to the average predictive error for the regression equation. For flooding sources with gage- or rainfall-runoff-based discharge estimates, the upper 84-percent confidence limit of the discharges is used to compute the 1%+ flood elevations.

The engineering analyses described here incorporate the results of previously issued Letters of Map Change (LOMCs) listed in Table 26, “Incorporated Letters of Map Change”, which include Letters of Map Revision (LOMRs). For more information about LOMRs, refer to Section 6.5, “FIRM Revisions.”

5.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied. Hydrologic analyses are typically performed at the watershed level. Depending on factors such as watershed size and shape, land use and urbanization, and natural or man-made storage, various models or methodologies may be applied. A summary of the

hydrologic methods applied to develop the discharges used in the hydraulic analyses for each stream is provided in Table 12. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges is provided in Table 9. A summary of stillwater elevations developed for non-coastal flooding sources is provided in Table 10. Stream gage information is provided in Table 11.

Table 9: Summary of Discharges

| Flooding Source | Location | Drainage Area (Square Miles) | Peak Discharge (cfs) | | | | |
|----------------------------------|------------------------------------------------------------------------------------|------------------------------|----------------------|------------------|------------------|------------------|--------------------|
| | | | 10% Annual Chance | 4% Annual Chance | 2% Annual Chance | 1% Annual Chance | 0.2% Annual Chance |
| Brookwood Creek | At the CONRAIL crossing located just downstream of the downstream corporate limits | 0.3 | 890 | * | 1,370 | 1,680 | 2,700 |
| Clough Creek | At mouth | 8 | 4,774 | * | 7,847 | 9,781 | 13,500 |
| Clough Creek | At Turpinhills Drive | 7.4 | 4,600 | * | 7,000 | 8,800 | 12,000 |
| Clough Creek | Below Hunley Road | 6.3 | 4,441 | * | 6,313 | 8,595 | 11,700 |
| Clough Creek | Below Berkshire Lane Tributary | 5.4 | 3,700 | * | 5,900 | 7,100 | 10,700 |
| Clough Creek | Above Berkshire Lane Tributary | 2 | 2,775 | * | 4,044 | 4,463 | 5,950 |
| Clough Creek | At State Road- Clough Pike Intersection | 1.8 | 2,210 | * | 3,420 | 4,200 | 5,000 |
| Clough Creek | At State Road-Wolfangle Road intersection | 0.9 | 1,580 | * | 2,440 | 3,000 | 4,700 |
| Congress Run | At mouth | 3.8 | 3,333 | * | 5,118 | 7,072 | 10,000 |
| Congress Run | Above tributary at Caldwell Drive | 1.9 | 2,439 | * | 3,779 | 4,205 | 5,825 |
| Congress Run | Above Cincinnati corporate limit | 1.4 | 2,078 | * | 3,215 | 3,617 | 5,000 |
| Congress Run | At extension of View Place Drive | 0.7 | 1,450 | * | 2,250 | 2,750 | 4,380 |
| Dry Fork of the Whitewater River | At mouth | 81.7 | 13,800 | * | 21,800 | 25,500 | 36,000 |
| Dry Fork of the Whitewater River | Below confluence of Lee Creek | 76.8 | 13,200 | * | 21,000 | 25,000 | 35,000 |
| Dry Fork of the Whitewater River | Above confluence of Lee Creek | 65.8 | 12,200 | * | 19,700 | 23,000 | 32,500 |
| Dry Fork of the Whitewater River | Below confluence of Howard Creek | 59.8 | 11,700 | * | 18,800 | 22,000 | 31,000 |

*Data not available

Table 9: Summary of Discharges (continued)

| Flooding Source | Location | Drainage Area (Square Miles) | Peak Discharge (cfs) | | | | |
|----------------------------------|---------------------------------------|---------------------------------|-------------------------|---------------------|---------------------|---------------------|--------------------------|
| | | | 10% Annual Chance | 4% Annual Chance | 2% Annual Chance | 1% Annual Chance | 0.2% Annual Chance |
| Dry Fork of the Whitewater River | Above confluence of Howard Creek | 52.1 | 11,000 | * | 17,400 | 20,700 | 29,500 |
| Duck Creek | At Conrail CSX | 15 | 7,090 | * | 9,410 | 10,120 | 10,510 |
| Duck Creek | Below confluence of Little Duck Creek | 14.2 | 6,000 | * | 9,300 | 11,200 | 16,500 |
| Duck Creek | Just upstream of Norfolk Railroad | 10.1 | 5,030 | * | 6,780 | 7,330 | 7,750 |
| Duck Creek | Above confluence of Little Duck Creek | 9.7 | 5,300 | * | 7,000 | 7,630 | 7,950 |
| Duck Creek | At railroad | 9.1 | 4,850 | * | 6,860 | 8,650 | 12,150 |
| Duck Creek | At Erie Avenue | 8.6 | 3,450 | * | 4,100 | 4,700 | 4,750 |
| Duck Creek | At railroad | 6.6 | 3,500 | * | 4,200 | 4,500 | 4,850 |
| Duck Creek | At Madison Road | 6.3 | 3,000 | * | 3,300 | 3,400 | 3,600 |
| Duck Creek | Just upstream of railroad | 6.3 | 4,000 | * | 4,500 | 4,600 | 5,000 |
| Duck Creek | At Kennedy Avenue Extension | 3.8 | 3,900 | * | 4,000 | 4,300 | 4,500 |
| East Fork Mill Creek | At mouth | 9.4 | 1,100 | * | 1,850 | 2,210 | 3,110 |
| Fork of McCullough Run | At mouth | 2.1 | 2,400 | * | 3,700 | 4,550 | 7,000 |
| Fork of McCullough Run | Below Ragland Road | 1.9 | 2,300 | * | 3,550 | 4,300 | 6700 |
| Great Miami River | At mouth | 5,371 | 115,130 | * | 161,137 | 179,444 | 225,000 |
| Great Miami River | Above confluence of Whitewater River | 3,881 | 82,314 | * | 116,273 | 128,900 | 163,000 |

*Data not available

Table 9: Summary of Discharges (continued)

| Flooding Source | Location | Drainage Area (Square Miles) | Peak Discharge (cfs) | | | | |
|--------------------------------|----------------------------------------------------------------------------|------------------------------|----------------------|------------------|------------------|------------------|--------------------|
| | | | 10% Annual Chance | 4% Annual Chance | 2% Annual Chance | 1% Annual Chance | 0.2% Annual Chance |
| Great Miami River | At Hamilton | 3,630 | 814,000 | * | 114,600 | 128,400 | 162,000 |
| Hazelwood Creek | Kenwood Road | 0.8 | 1,550 | * | 2,400 | 2,900 | 4,650 |
| Howard Creek | At mouth | 7.6 | 4,400 | * | 7,000 | 8,400 | 12,500 |
| Lake Chetac Creek | At Montgomery City Limits | 2.4 | 990 | 1,275 | 1,515 | 1,770 | 2,395 |
| Lake Chetac Creek | At confluence with Polk Run | 2.4 | 905 | 1,160 | 1,375 | 1,590 | 2,105 |
| Left Fork Section Road Creek | At mouth | 0.4 | 1,030 | * | 1,600 | 1,950 | 3,100 |
| Little Duck Creek ¹ | At confluence with Duck Creek | 4.1 | 1,305 | 1,540 | 1,750 | 1,980 | 2,535 |
| Little Duck Creek ¹ | Approximately 275 feet downstream of Red Bank Road | 4.1 | 1,305 | 1,545 | 1,755 | 1,985 | 2,545 |
| Little Duck Creek | Approximately 90 feet downstream of Murray Road | 3.5 | 1,400 | 1,820 | 2,170 | 2,540 | 3,450 |
| Little Miami River | Approximately 1,140 feet downstream of OH-32 Beechmont Avenue | 1,759 | 48,320 | 62,025 | 73,155 | 84,620 | 114,925 |
| Little Miami River | Approximately 1,120 feet downstream of OH-32 Beechmont Avenue | 1,755 | 49,520 | 62,840 | 73,750 | 85,270 | 115,625 |
| Little Miami River | At confluence with Duck Creek | 1,743 | 49,540 | 62,820 | 73,720 | 85,235 | 115,545 |
| Little Miami River | At confluence with East Fork Little Miami River | 1,707 | 51,635 | 64,470 | 74,780 | 86,465 | 116,590 |
| Little Miami River | Approximately 675 feet upstream from the Hamilton/Clermont County Boundary | 1,199 | 32,885 | 42,210 | 49,795 | 58,755 | 82,180 |
| Little Miami River | At confluence with Sycamore Creek | 1,186 | 33,045 | 41,900 | 49,645 | 58,405 | 81,780 |
| Little Miami River | At confluence with Polk Run | 1,162 | 31,745 | 40,070 | 47,335 | 55,610 | 78,025 |
| Little Miami River | At confluence of O'Bannon Creek | 1,148 | 31,350 | 39,575 | 46,770 | 54,900 | 77,935 |

*Data not available

¹ Discharges reduced by ponding above the railroad bridge and the Columbia Parkway bridge

Table 9: Summary of Discharges (continued)

| Flooding Source | Location | Drainage Area (Square Miles) | Peak Discharge (cfs) | | | | |
|-----------------------------|-----------------------------------------------------|------------------------------|----------------------|------------------|------------------|------------------|--------------------|
| | | | 10% Annual Chance | 4% Annual Chance | 2% Annual Chance | 1% Annual Chance | 0.2% Annual Chance |
| McCullough Run | At mouth | 4.2 | 3,300 | * | 5,200 | 6,300 | 9,600 |
| McCullough Run | Above Fork of McCullough Run | 1.7 | 2,200 | * | 3,400 | 4,200 | 6,450 |
| Mill Creek | At mouth | 160 | 12,810 | * | 18,060 | 20,160 | 25,660 |
| Mill Creek | Above Lower West Fork | 139 | 10,570 | * | 14,830 | 16,940 | 21,840 |
| Mill Creek | At Mitchell Avenue | 123 | 8,700 | * | 11,620 | 12,970 | 16,230 |
| Mill Creek | At Carthage Gage | 115 | 7,310 | * | 9,780 | 10,940 | 13,740 |
| Mill Creek | Above West Fork | 74.3 | 4,820 | * | 6,440 | 7,300 | 9,390 |
| Mill Creek | Above Cooper Creek | 63.3 | 3,580 | * | 4,490 | 4,880 | 5,770 |
| Mill Creek | Above Glendale Road | 50.4 | 2,960 | * | 3,340 | 3,630 | 4,320 |
| Mill Creek | At Sharon Road | 48 | 2,830 | * | 4,000 | 4,620 | 6,230 |
| Mill Creek | At Kemper Road | 43.9 | 2,790 | * | 4,190 | 4,950 | 7,010 |
| Mill Creek | Above East Fork | 32.8 | 2,280 | * | 3,390 | 3,990 | 5,520 |
| Muddy Creek | At mouth | 16.2 | 7,123 | * | 11,732 | 13,480 | 19,100 |
| Muddy Creek | Above confluence of West Fork | 13.3 | 5,772 | * | 9,780 | 11,216 | 16,100 |
| Muddy Creek | Below Warsaw Road | 10.2 | 5,679 | * | 8,840 | 10,109 | 14,000 |
| Muddy Creek | At Devils Backbone Road | 8.9 | 4,800 | * | 7,400 | 9,000 | 13,300 |
| Muddy Creek | Below Ebenezer Road | 7.9 | 4,500 | * | 7,100 | 8,600 | 12,800 |
| Muddy Creek | At Muddy Creek Road at Sidney Road | 5.3 | 3,700 | * | 5,750 | 7,000 | 10,500 |
| Muddy Creek | At Hillside Avenue | 1.9 | 5,700 | * | 9,000 | 10,300 | 15,200 |
| Newton (Clear) Creek | At mouth | 1.1 | 1,750 | * | 2,700 | 3,350 | 5,200 |
| Newton (Clear) Creek | Below Norfolk & Western Railroad | 0.5 | 1,210 | * | 1,880 | 2,300 | 3,650 |
| North Branch Sycamore Creek | Approximately 1,820 feet upstream of Carriage Trail | 4.6 | 1,250 | 1,605 | 1,900 | 2,230 | 3,040 |
| North Branch Sycamore Creek | At confluence with Sycamore Creek | 4.6 | 1,125 | 1,460 | 1,740 | 2,030 | 2,685 |

*Data not available

Table 9: Summary of Discharges (continued)

| Flooding Source | Location | Drainage Area (Square Miles) | Peak Discharge (cfs) | | | | |
|-----------------------------|--------------------------------------------------------------------------------------------|------------------------------|----------------------|------------------|------------------|------------------|--------------------|
| | | | 10% Annual Chance | 4% Annual Chance | 2% Annual Chance | 1% Annual Chance | 0.2% Annual Chance |
| North Branch Sycamore Creek | Approximately 345 feet downstream of Interstate 71 | 2.3 | 655 | 830 | 975 | 1,125 | 1,495 |
| Northland Road Tributary | At West Kemper Road | 0.7 | 510 | * | 660 | 800 | * |
| Northland Road Tributary | At Northland Road | 0.3 | * | * | * | 300 | * |
| O'Bannon Creek | At confluence with Little Miami River | 59.7 | 7,615 | 9,890 | 11,590 | 13,530 | 17,880 |
| O'Bannon Creek | Approximately 1,065 feet upstream of Warren Clermont County Boundary | 55.9 | 7,485 | 9,720 | 11,605 | 13,610 | 18,460 |
| Ohio River | At Cincinnati (mile 470.5) | 76,580 | 532,000 | * | 663,000 | 718,000 | 844,200 |
| Ohio River | Approximately one mile downstream of the confluence of the Little Miami River (mile 464.5) | 72,890 | 524,600 | * | 626,600 | 677,900 | 800,700 |
| Ohio River | Approximately 0.4 mile upstream of the confluence of Eight Mile Creek (mile 456.0) | 71,100 | 520,000 | * | 604,000 | 653,000 | 775,000 |
| Pleasant Run | * | * | * | * | * | * | * |
| Polk Run | Approximately 1,720 feet upstream of East Kemper Road | 6.7 | 1,475 | 1,975 | 2,405 | 2,835 | 3,870 |
| Polk Run | At confluence with Little Miami River | 6.7 | 1,450 | 1,950 | 2,275 | 2,650 | 3,600 |
| Polk Run | At confluence with Lake Chetac Creek | 5.8 | 1,220 | 1,700 | 2,070 | 2,470 | 3,375 |
| Polk Run | Approximately 615 feet downstream of Fields Ertel Road | 1.7 | 570 | 760 | 925 | 1,095 | 1,525 |

*Data not available

Table 9: Summary of Discharges (continued)

| Flooding Source | Location | Drainage Area (Square Miles) | Peak Discharge (cfs) | | | | |
|------------------------|------------------------------------------------------------------------------------------------|------------------------------|----------------------|------------------|------------------|------------------|--------------------|
| | | | 10% Annual Chance | 4% Annual Chance | 2% Annual Chance | 1% Annual Chance | 0.2% Annual Chance |
| Raiders Run | At Montgomery Road | 1.9 | 1,500 | * | 1,820 | 1,876 | 1,900 |
| Raiders Run | Above Pepperell Lane | 1.7 | 1,250 | * | 1,530 | 1,660 | 1,800 |
| Raiders Run | At Interstate Route 71 | 1.5 | 2,050 | * | 3,150 | 3,850 | 5,500 |
| Raiders Run | At Donjoy Drive | 0.8 | 1,370 | * | 2,400 | 2,550 | 3,800 |
| Raiders Run | At Bellview Avenue | 0.7 | 1,676 | * | 2,628 | 2,899 | 4,050 |
| Section Road Creek | At the Conrail crossing located just downstream of the downstream corporate limits | 2.5 | 2,930 | * | 4,591 | 5,182 | 7,400 |
| Section Road Creek | At the private drive located approximately 2,400 feet upstream of Left Fork Section Road Creek | 2 | 2,384 | * | 4,383 | 4,976 | 7,000 |
| Section Road Creek | Just downstream of Ridge Road | 1.5 | 1,995 | * | 3,503 | 3,896 | 5,900 |
| Sharon Creek | At mouth | 10.5 | 3,500 | * | 5,050 | 6,000 | 8,350 |
| Sharon Creek | Above confluence of Sharon Creek Tributary | 6.7 | 3,250 | * | 4,800 | 5,750 | 8,250 |
| Sharon Creek | At Reading Road | 5.8 | 3,180 | * | 4,730 | 5,650 | 8,200 |
| Sharon Creek Tributary | At mouth | 3.6 | 1,700 | * | 2,110 | 2,590 | 4,050 |
| Sharon Creek Tributary | Above Main Street | 3.1 | 1,700 | * | 2,110 | 2,590 | 4,050 |
| Sharon Creek Tributary | Above Thornview Drive | 0.6 | 1,380 | * | 2,100 | 2,590 | 4,050 |
| Springdale Tributary | At Chesterfield Road | 4.5 | 1,700 | * | 2,400 | 2,640 | * |
| Springdale Tributary | At Interstate Route 275 | 3.4 | 1,500 | * | 2,130 | 2,340 | * |
| Springdale Tributary | At Princeton Road | 3.4 | 1,470 | * | 2,100 | 2,310 | * |

*Data not available

Table 9: Summary of Discharges (continued)

| Flooding Source | Location | Drainage Area (Square Miles) | Peak Discharge (cfs) | | | | |
|--------------------------|-------------------------------------------------|------------------------------|----------------------|------------------|------------------|------------------|--------------------|
| | | | 10% Annual Chance | 4% Annual Chance | 2% Annual Chance | 1% Annual Chance | 0.2% Annual Chance |
| Springdale Tributary | At Neuss Avenue | 2.4 | 1,210 | * | 1,700 | 1,880 | * |
| Springdale Tributary | At Springfield Road | 1.4 | 840 | * | 1,180 | 1,290 | * |
| Springdale Tributary | At Cloverdale Avenue | 0.6 | 470 | * | 620 | 760 | * |
| Sycamore Creek | At confluence with North Branch Sycamore Creek | 20.6 | 6,295 | 8,020 | 9,450 | 10,950 | 14,510 |
| Sycamore Creek | At confluence with Little Miami River | 20.6 | 4,540 | 5,440 | 6,370 | 7,505 | 9,795 |
| Sycamore Creek | Approximately 60 feet upstream of Camargo Road | 1.9 | 670 | 840 | 980 | 1,130 | 1,485 |
| Sycamore Creek | Approximately 880 feet upstream of Camargo Road | 0.4 | 285 | 355 | 420 | 480 | 635 |
| West Fork | At mouth | 9.4 | 4,340 | * | 6,586 | 7,910 | 11,940 |
| West Fork | Above Interstate Highway 74 | 8.9 | 4,800 | * | 7,600 | 9,200 | 13,600 |
| West Fork | Above Runnymede Avenue | 6.8 | 4,300 | * | 6,500 | 7,800 | 11,800 |
| West Fork Lake Tributary | Just downstream of Clovemook Avenue | 2.6 | * | * | * | 4,580 | * |
| West Fork Mill Creek | At mouth | 36.4 | 1,725 | * | 2,050 | 2,175 | 2,450 |
| West Fork Mill Creek | At Riddle Road | 32.2 | 1,600 | * | 1,900 | 2,010 | 2,270 |
| West Fork Mill Creek | Just downstream of West Fork Lake | 29.9 | 1,400 | * | 1,400 | 1,400 | 1,400 |
| West Fork Mill Creek | Just downstream of Hamilton Avenue | 11.2 | 5,300 | * | 8,400 | 10,000 | 14,800 |

*Data not available

Table 9: Summary of Discharges (continued)

| Flooding Source | Location | Drainage Area (Square Miles) | Peak Discharge (cfs) | | | | |
|--------------------------------------|------------------------------------------------------------|------------------------------|----------------------|------------------|------------------|------------------|--------------------|
| | | | 10% Annual Chance | 4% Annual Chance | 2% Annual Chance | 1% Annual Chance | 0.2% Annual Chance |
| West Fork Mill Creek South Tributary | At mouth | 0.4 | 700 | * | 1,080 | 1,330 | 2,070 |
| West Fork of Sycamore Creek | At Indian Hill Village corporate limit | 4.2 | 3,411 | * | 5,409 | 7,024 | 9,800 |
| West Fork of Sycamore Creek | Above Raiders Run | 1.8 | 2,222 | * | 3,612 | 4,595 | 6,600 |
| West Fork of Sycamore Creek | Below Galbraith Road | 0.5 | 720 | * | 1,350 | 1,650 | 2,900 |
| West Fork of Sycamore Creek | Below Hosbrook Avenue | 0.4 | 1,130 | * | 1,750 | 2,110 | 3,400 |
| Whitewater River | At mouth | 1,474 | 43,739 | * | 56,451 | 64,747 | 87,807 |
| Whitewater River | Above Dry Fork | 1,385 | 43,621 | * | 56,298 | 64,571 | 87,563 |
| Whitewater River | At Harrison Special Study site (near Dearborn County Line) | 1,368 | 42,500 | * | 55,000 | 62,000 | 83,600 |
| Winton Woods Creek | At McKelvey Road | 7.3 | 4,830 | * | 7,311 | 8,313 | 11,000 |
| Winton Woods Creek | Below Daly Road | 2.7 | 2,660 | * | 4,200 | 5,100 | 8,800 |
| Winton Woods Creek | Just downstream of Clovemook Avenue | 2.6 | * | * | * | 4,580 | * |
| Wulff Run | At Delhi Pike near Hillbrook Drive | 1.5 | 1,971 | * | 3,154 | 3,862 | 5,500 |
| Wulff Run | At Delhi Pike near Viscount Drive | 1.3 | 1,900 | * | 2,900 | 3,600 | 5,000 |
| Wulff Run | At Morrvue Drive | 0.7 | 1,400 | * | 2,150 | 2,600 | 4,150 |
| Yonote Creek | At U.S. Highway 71 | 1.6 | 830 | * | 1,360 | 1,470 | 1,720 |

*Data not available

Figure 7: Frequency Discharge-Drainage Area Curves
[Not Applicable to this Flood Risk Project]

Table 10: Summary of Non-Coastal Stillwater Elevations

| Flooding Source | Location | Elevations (feet NAVD88) | | | | |
|--------------------------|-------------------------------------------------------------------------------------|--------------------------|------------------|------------------|------------------|--------------------|
| | | 10% Annual Chance | 4% Annual Chance | 2% Annual Chance | 1% Annual Chance | 0.2% Annual Chance |
| Duck Creek (Old Channel) | An area of ponding along Duck Creek bounded by Red Bank Road to the North and South | * | * | * | 503.4 | * |

*Data not available

Table 11: Stream Gage Information used to Determine Discharges

| Flooding Source | Gage Identifier | Agency that Maintains Gage | Site Name | Drainage Area (Square Miles) | Period of Record | |
|--------------------|-----------------|----------------------------|------------------------------------------------------|------------------------------|------------------|------------|
| | | | | | From | To |
| Little Miami River | 03245500 | USGS | Little Miami River at Milford, Clermont County, Ohio | 1,203 | 03/04/1977 | 12/27/2015 |

5.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Base flood elevations on the FIRM represent the elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations. These whole-foot elevations may not exactly reflect the elevations derived from the hydraulic analyses. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

For streams for which hydraulic analyses were based on cross sections, locations of selected cross sections are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 6.3), selected cross sections are also listed in Table 23, "Floodway Data."

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 12. Roughness coefficients are provided in Table 13. Roughness coefficients are values representing the frictional resistance water experiences when passing overland or through a channel. They are used in the calculations to determine water surface elevations. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

Table 12: Summary of Hydrologic and Hydraulic Analyses

| Flooding Source | Study Limits Downstream Limit | Study Limits Upstream Limit | Hydrologic Model or Method Used | Hydraulic Model or Method Used | Date Analyses Completed | Flood Zone on FIRM | Special Considerations |
|----------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------|--------------------------------|-------------------------|--------------------|-----------------------------------------------------|
| Bares Run | Approximately 25 feet downstream from the crossing of East Loveland Avenue | Approximately 2,905 feet upstream from the crossing of E Loveland Ave | Regression Equations | HEC-RAS 4.1 | 09/30/2016 | A | |
| Berkshire Creek | Confluence with Clough Creek | Approximately 110 feet upstream from Stanley Road | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | A | |
| Brookwood Creek | Approximately 450 feet downstream of Fair Oaks Drive | Fair Oaks Drive | Regression Equations | HEC-2 | December 1978 | AE w/ Floodway | |
| Clough Creek | Confluence with Little Miami River | Approximately 645 feet upstream from State Road | OTHER | HEC-2 | March 1979 | AE w/ Floodway | Redelineation of effective stream on September 2018 |
| Congress Run | Confluence with Mill Creek | Approximately 580 feet upstream of North Hill Lane | Regression Equations | HEC-2 | March 1979 | AE w/ Floodway | |
| Dry Fork of The Whitewater River | Confluence with Whitewater River | Approximately 160 feet upstream of Marion Road | OTHER | HEC-2 | March 1979 | AE w/ Floodway | |
| Dry Run | Approximately 650 feet downstream from Railroad | Approximately 95 feet upstream from Whiting Way | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | A | |
| Duck Creek | Confluence with Little Miami River | Approximately 1,200 feet upstream of Red Bank Road | Regression Equations | HEC-RAS 3.1.1 and up | 02/22/2007 | AE w/ Floodway | Redelineation of effective stream on September 2018 |

Table 12: Summary of Hydrologic and Hydraulic Analyses (continued)

| Flooding Source | Study Limits Downstream Limit | Study Limits Upstream Limit | Hydrologic Model or Method Used | Hydraulic Model or Method Used | Date Analyses Completed | Flood Zone on FIRM | Special Considerations |
|------------------------------|------------------------------------------------------|-------------------------------------------------------|---------------------------------|--------------------------------|-------------------------|--------------------|-----------------------------------------------------|
| Duck Creek | Approximately 1,200 feet upstream of Red Bank Road | Approximately 957 feet upstream from Ridge Ave | Regression Equations | HEC-RAS 3.1.1 and up | 09/20/2013 | AE w/ Floodway | LOMR 13-05-0281P |
| East Fork Mill Creek | Confluence with Mill Creek | Crescentville Road | Regression Equations | HEC-2 | July 2009 | AE w/ Floodway | |
| Fork of McCullough Run | Confluence with McCullough Run | Ragland Road | OTHER | HEC-2 | March 1979 | AE w/ Floodway | Redelineation of effective stream on September 2018 |
| Great Miami River | Confluence with Ohio River | Approximately 0.9 miles upstream of State Route 126 | OTHER | HEC-2 | March 1979 | AE w/ Floodway | |
| Hazelwood Creek | Kenwood Road | Cornell Road | Regression Equations | HEC-2 | December 1978 | AE w/ Floodway | |
| Howard Creek | Confluence with Whitewater River | Oxford Road | OTHER | HEC-2 | March 1979 | AE w/ Floodway | |
| Lake Chetac Creek | Confluence with Polk Run | Corporate limits of City of Montgomery | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | AE w/ Floodway | |
| Lake Chetac Creek | Corporate limits of City of Montgomery | Fields Ertel Road and Hamilton/Warren County Boundary | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | A | |
| Left Fork Section Road Creek | Confluence with Section Road Creek | Aracoma Forest Drive | Regression Equations | HEC-2 | December 1978 | AE w/ Floodway | |
| Little Duck Creek | Confluence with Duck Creek | Approximately 500 feet downstream from Red Bank Road | Regression Equations | HEC-RAS 3.1.1 and up | 02/22/2007 | AE w/ Floodway | Redelineation of effective stream on September 2018 |
| Little Duck Creek | Approximately 500 feet downstream from Red Bank Road | Approximately 100 feet upstream of Murray Road | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | AE w/ Floodway | |

Table 12: Summary of Hydrologic and Hydraulic Analyses (continued)

| Flooding Source | Study Limits Downstream Limit | Study Limits Upstream Limit | Hydrologic Model or Method Used | Hydraulic Model or Method Used | Date Analyses Completed | Flood Zone on FIRM | Special Considerations |
|-----------------------------|-----------------------------------------------------|--------------------------------------------------------------------|---------------------------------|--------------------------------|-------------------------|--------------------|-----------------------------------------------------|
| Little Duck Creek | Approximately 100 feet upstream of Murray Road | Approximately 780 feet upstream from Dawson Road | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | A | |
| Little Miami River | Confluence with Ohio River | Northern Hamilton/Warren County Boundary | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | AE w/ Floodway | |
| Loveland Creek | Confluence with Little Miami River | Approximately 1800 feet upstream of Rich Road | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | A/AE | |
| McCullough Run | Confluence with Little Miami River | Turpin Lane | OTHER | HEC-2 | March 1979 | AE w/ Floodway | Redelineation of effective stream on September 2018 |
| Mill Creek | Barrier Dam | E Sharon Rd | Regression Equations | HEC-2 | 04/20/2000 | AE w/ Floodway | |
| Mill Creek | E Sharon Rd | Just upstream of Crescentville Road | Regression Equations | HEC-2 | July 2009 | AE w/ Floodway | |
| Muddy Creek | Confluence with Ohio River | 0.2 miles upstream of Sidney Road | OTHER | HEC-2 | March 1979 | AE w/ Floodway | |
| Newton (Clear) Creek | Confluence with Little Miami River | Railroad | OTHER | HEC-2 | September 2018 | AE w/ Floodway | Superseded by Little Miami River flood study |
| North Branch Sycamore Creek | Confluence with Sycamore Creek | Approximately 1,880 feet upstream of Carriage Trail | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | A | |
| North Branch Sycamore Creek | Approximately 1,880 feet upstream of Carriage Trail | I-71 Highway | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | AE w/ Floodway | |
| Northland Road Tributary | Confluence with Springdale Tributary | Approximately 320 feet upstream of Springfield Pike/ State Route 4 | Regression Equations | HEC-2 | July 1988 | AE | |

Table 12: Summary of Hydrologic and Hydraulic Analyses (continued)

| Flooding Source | Study Limits Downstream Limit | Study Limits Upstream Limit | Hydrologic Model or Method Used | Hydraulic Model or Method Used | Date Analyses Completed | Flood Zone on FIRM | Special Considerations |
|------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------|--------------------------------|-------------------------|--------------------|-----------------------------------------------------|
| O'Bannon Creek | Confluence with Little Miami River | Eastern corporate limit of City of Loveland | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | AE w/ Floodway | |
| Ohio River | Approximately 0.35 miles downstream of the confluence of Great Miami River | Approximately 1.15 miles upstream of the confluence of Eight Mile Creek | HEC-HMS 3.0 and up | HEC-RAS 3.1.1 and up | January 2011 | AE w/ Floodway | |
| Pleasant Run | 100 feet downstream of John Gray Road | Approximately 0.5 miles upstream of confluence of Pleasant Run Tributary | Regression Equations | HEC-2 | 04/26/2006 | AE w/ Floodway | |
| Polk Run | Confluence with Little Miami River | Approximately 3,850 feet upstream from Loveland Madeira Road | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | A/AE | |
| Polk Run | Approximately 3,850 feet upstream from Loveland Madeira Road | Approximately 380 feet upstream from East Kemper Road | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | AE w/ Floodway | |
| Polk Run | Approximately 380 feet upstream from East Kemper Road | Fields Ertel Road | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | A | |
| Raiders Run | Confluence with West Fork of Sycamore Creek | South of Ronald Reagan Cross CO EB Highway | OTHER | HEC-2 | March 1979 | AE w/ Floodway | Redelineation of effective stream on September 2018 |
| Section Road Creek | Approximately 0.2 miles downstream of Elbrook Avenue | Approximately 0.3 miles upstream of West Beechlands Drive | Regression Equations | HEC-2 | December 1978 | AE w/ Floodway | |
| Sharon Creek | Confluence with Mill Creek | Approximately 440 feet upstream of Park Road | Regression Equations | HEC-2 | July 2009 | AE w/ Floodway | |
| Sharon Creek Tributary | Confluence with Sharon Creek | 0.5 miles upstream of Main Street | Regression Equations | HEC-2 | July 2009 | AE w/ Floodway | |

Table 12: Summary of Hydrologic and Hydraulic Analyses (continued)

| Flooding Source | Study Limits Downstream Limit | Study Limits Upstream Limit | Hydrologic Model or Method Used | Hydraulic Model or Method Used | Date Analyses Completed | Flood Zone on FIRM | Special Considerations |
|--------------------------------------|--------------------------------------------------|------------------------------------------------------------------|---------------------------------|--------------------------------|-------------------------|--------------------|------------------------|
| Springdale Tributary | Chesterdale Road | Approximately 50 feet upstream of Cloverdale Avenue | Regression Equations | HEC-2 | July 1988 | AE | |
| Sycamore Creek | Confluence with Little Miami River | Approximately 4,580 feet upstream of Keller Road | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | A/AE | |
| Sycamore Creek | Approximately 4,580 feet upstream of Keller Road | Approximately 700 feet upstream from Camargo Road | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | AE w/ Floodway | |
| Tributary A | Mouth at West Fork Lake Tributary | Approximately 820 feet upstream of Northbridge Avenue | Regression Equations | HEC-2 | May 1985 | AE w/ Floodway | |
| Tributary To Pleasant Run | Confluence with Pleasant Run | Approximately 0.6 miles upstream of confluence with Pleasant Run | Regression Equations | HEC-2 | 04/26/2006 | AE w/ Floodway | |
| West Fork Creek | Confluence with Mill Creek | Confluence of McFarland Creek | Regression Equations | HEC-2 | March 1979 | AE w/ Floodway | |
| West Fork Lake Tributary | 200 feet downstream of Desoto Drive | Approximately 340 feet upstream of Emerson Avenue | Regression Equations | HEC-2 | May 1985 | AE w/ Floodway | |
| West Fork Mill Creek | Confluence with Mill Creek | Just upstream of Blue Rock Road | HEC-1 | HEC-2 | October 1992 | AE w/ Floodway | |
| West Fork Mill Creek South Tributary | Confluence with West Fork Mill Creek | Just upstream of footbridge | HEC-1 | HEC-2 | June 1985 | AE w/ Floodway | |
| West Fork of Sycamore Creek | Confluence with Sycamore Creek | approximately 1.6 miles above confluence with Sycamore Creek | HEC-HMS 4.2 | HEC-RAS 5.0.1 | September 2018 | A | |

Table 12: Summary of Hydrologic and Hydraulic Analyses (continued)

| Flooding Source | Study Limits Downstream Limit | Study Limits Upstream Limit | Hydrologic Model or Method Used | Hydraulic Model or Method Used | Date Analyses Completed | Flood Zone on FIRM | Special Considerations |
|----------------------------------------|--------------------------------------------------------------|--------------------------------------------------------|---------------------------------|--------------------------------|-------------------------|--------------------|-----------------------------------------------------|
| West Fork of Sycamore Creek | approximately 1.6 miles above confluence with Sycamore Creek | North of East Galbraith Road | OTHER | HEC-2 | March 1979 | AE w/ Floodway | Redelineation of effective stream on September 2018 |
| Whitewater River | Confluence with Great Miami River | Approximately 1.7 miles upstream of Jamison Road | OTHER | HEC-2 | March 1979 | AE w/ Floodway | |
| Winton Woods Creek | Approximately 1.6 miles downstream of Bridgecreek Lane | Approximately 200 feet upstream of Desoto Drive | Regression Equations | HEC-2 | 03/02/1993 | AE w/ Floodway | |
| Wulff Run | Approximately 0.3 miles downstream of Delhi Road | Anderson Ferry Road | OTHER | HEC-2 | March 1979 | AE w/ Floodway | |
| Yonote Creek | Confluence with Duck Creek | South of I-71 NB Expressway | Regression Equations | HEC-RAS 3.1.1 and up | 09/20/2013 | AE w/ Floodway | LOMR 13-05-0281P |
| Zone A Stream (Little Miami Tributary) | Approximately 500 feet upstream of Round Bottom Road | Approximately 0.75 miles upstream of Round Bottom Road | HEC-1 | HEC-2 | March 1979 | A | |

Table 12: Summary of Hydrologic and Hydraulic Analyses (continued)

| Flooding Source | Study Limits Downstream Limit | Study Limits Upstream Limit | Hydrologic Model or Method Used | Hydraulic Model or Method Used | Date Analyses Completed | Flood Zone on FIRM | Special Considerations |
|---------------------------------------------------------------|-------------------------------|-----------------------------|---------------------------------|--------------------------------|-------------------------|--------------------|------------------------|
| Zone A Streams (Lower Great Miami, Indiana, Ohio Tributaries) | Varies | Varies | HEC-1 | HEC-2 | March 1979 | A | |
| Zone A Streams (Middle Ohio - Laughery Tributaries) | Varies | Varies | HEC-1 | HEC-2 | June 1985 | A | |
| Zone A Streams (Ohio Brush-Whiteoak Tributaries) | Varies | Varies | HEC-1 | HEC-2 | March 1979 | A | |
| Zone A Streams (Whitewater Tributaries) | Varies | Varies | HEC-1 | HEC-2 | March 1979 | A | |

Table 13: Roughness Coefficients

| Flooding Source | Channel "n" | Overbank "n" |
|--------------------------------------|---------------|---------------|
| Berkshire Creek | 0.045 | 0.070 - 0.090 |
| Brookwood Creek | 0.040 | 0.080 - 0.090 |
| Clough Creek | 0.050 - 0.070 | 0.065 - 0.120 |
| Congress Run | 0.040 - 0.047 | 0.070 - 0.100 |
| Dry Fork of the Whitewater River | 0.035 - 0.055 | 0.020 - 0.100 |
| Dry Run | 0.045 | 0.070 - 0.090 |
| Duck Creek | 0.015 - 0.075 | 0.012 - 0.120 |
| East Fork Mill Creek | 0.035 - 0.035 | 0.060 - 1.000 |
| Fork of McCullough Run | 0.020 - 0.045 | 0.060 - 0.100 |
| Great Miami River | 0.030 - 0.060 | 0.050 - 0.100 |
| Hazelwood Creek | 0.025 - 0.045 | 0.070 - 0.120 |
| Howard Creek | 0.020 - 0.035 | 0.040 - 0.070 |
| Lake Chetac Creek | 0.045 - 0.080 | 0.040 - 0.140 |
| Left Fork Section Road Creek | 0.020 - 0.045 | 0.060 - 0.100 |
| Little Duck Creek | 0.015 - 0.055 | 0.025 - 0.130 |
| Little Miami River | 0.035 - 0.055 | 0.020 - 0.140 |
| Loveland Creek | 0.045 - 0.055 | 0.070 - 0.120 |
| McCullough Run | 0.040 | 0.060 - 0.070 |
| Mill Creek | 0.030 - 0.050 | 0.060 - 2.000 |
| Muddy Creek | 0.020 - 0.035 | 0.050 - 0.070 |
| Newton (Clear) Creek | 0.050 | 0.070 - 0.100 |
| North Branch Sycamore Creek | 0.030 - 0.045 | 0.025 - 0.150 |
| Northland Road Tributary | * | * |
| O'Bannon Creek | 0.040 - 0.070 | 0.040 - 0.140 |
| Ohio River | 0.025 - 0.030 | 0.100 - 0.110 |
| Pleasant Run | * | * |
| Polk Run | 0.030 - 0.060 | 0.030 - 0.150 |
| Raiders Run | 0.040 | 0.070 - 0.100 |
| Section Road Creek | 0.020 - 0.045 | 0.070 - 0.100 |
| Sharon Creek | 0.040 | 0.065-0.075 |
| Sharon Creek Tributary | 0.045 | 0.060 |
| Springdale Tributary | * | * |
| Sycamore Creek | 0.030 - 0.045 | 0.025 - 0.130 |
| Tributary A | * | * |
| Tributary to Pleasant Run | * | * |
| West Fork Lake Tributary | 0.015 - 0.080 | 0.055 - 0.080 |
| West Fork Mill Creek | 0.035 - 0.047 | 0.075 |
| West Fork Mill Creek (below the dam) | 0.045 | 0.090 - 0.120 |

*Data not available

Table 13: Roughness Coefficients (continued)

| Flooding Source | Channel "n" | Overbank "n" |
|--------------------------------------------------|---------------|---------------|
| West Fork Mill Creek (downstream of Pippin Road) | 0.020 - 0.040 | 0.080 - 0.110 |
| West Fork Mill Creek (upstream of Pippin Road) | 0.015 - 0.075 | 0.045 - 0.120 |
| West Fork Mill Creek South Tributary | 0.045 | 0.075 |
| West Fork of Sycamore Creek | 0.020 - 0.055 | 0.070 - 0.120 |
| Whitewater River | 0.030 - 0.055 | 0.020 - 0.100 |
| Winton Woods Creek | 0.040 | 0.070 - 0.100 |
| Wulff Run | 0.020 - 0.035 | 0.050 - 0.070 |
| Yonote Creek | 0.015 - 0.065 | 0.060 |

5.3 Coastal Analyses

This section is not applicable to this Flood Risk Project.

Table 14: Summary of Coastal Analyses

[Not Applicable to this Flood Risk Project]

5.3.1 Total Stillwater Elevations

This section is not applicable to this Flood Risk Project.

Figure 8: 1-Percent-Annual-Chance Total Stillwater Elevations for Coastal Areas

[Not Applicable to this Flood Risk Project]

Table 15: Tide Gage Analysis Specifics

[Not Applicable to this Flood Risk Project]

5.3.2 Waves

This section is not applicable to this Flood Risk Project.

5.3.3 Coastal Erosion

This section is not applicable to this Flood Risk Project.

5.3.4 Wave Hazard Analyses

This section is not applicable to this Flood Risk Project.

Table 16: Coastal Transect Parameters

[Not Applicable to this Flood Risk Project]

Figure 9: Transect Location Map

[Not applicable to this Flood Risk Project]

5.4 Alluvial Fan Analyses

This section is not applicable to this Flood Risk Project.

Table 17: Summary of Alluvial Fan Analyses

[Not applicable to this Flood Risk Project]

Table 18: Results of Alluvial Fan Analyses

[Not applicable to this Flood Risk Project]

SECTION 6.0 – MAPPING METHODS

6.1 Vertical and Horizontal Control

All FIS Reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS Reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the completion of the North American Vertical Datum of 1988 (NAVD88), many FIS Reports and FIRMs are now prepared using NAVD88 as the referenced vertical datum.

Flood elevations shown in this FIS Report and on the FIRMs are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at www.ngs.noaa.gov.

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the archived project documentation associated with the FIS Report and the FIRMs for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks in the area, please visit the NGS website at www.ngs.noaa.gov.

The datum conversion value that was calculated for Hamilton County is provided in Table 19.

Table 19: Countywide Vertical Datum Conversion

| Quadrangle Name | Quadrangle Corner | Latitude | Longitude | Conversion from NGVD29 to NAVD88 (feet) |
|--------------------------------------------------------|-------------------|----------|-----------|-----------------------------------------|
| * | * | * | * | * |
| Average Conversion from NGVD29 to NAVD88 = -0.593 feet | | | | |

* Data Not Available

Table 20: Stream-Based Vertical Datum Conversion

[Not applicable to this Flood Risk Project]

6.2 Base Map

The FIRMs and FIS Report for this project have been produced in a digital format. The flood hazard information was converted to a Geographic Information System (GIS) format that meets FEMA's FIRM Database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local

GIS and be accessed more easily by the community. The FIRM Database includes most of the tabular information contained in the FIS Report in such a way that the data can be associated with pertinent spatial features. For example, the information contained in the Floodway Data table and Flood Profiles can be linked to the cross sections that are shown on the FIRMs. Additional information about the FIRM Database and its contents can be found in FEMA's *Guidelines and Standards for Flood Risk Analysis and Mapping*, www.fema.gov/flood-maps/guidance-partners/guidelines-standards.

Base map information shown on the FIRM was derived from the sources described in Table 21.

Table 21: Base Map Sources

| Data Type | Data Provider | Data Date | Data Scale | Data Description |
|--------------------------------------------------------|------------------------------------------------------------|-----------|------------|-----------------------------------------------------------------------------------------------------------------------------------|
| National Hydrography Dataset (NHD) - High Resolution | United States Geological Survey (USGS) | 1999 | N/A | Spatial and attribute information for STARR II revised Hydrology analysis - Subbasins feature areas (NHD 1999) |
| Ortho-Imagery of Hamilton County, Ohio | Ohio Geographically Information Referenced Program (OGRIP) | 2018 | N/A | Ortho-Imagery for Little Miami River PMR (OGRIP 2018) |
| Ortho-Imagery of Hamilton County, Ohio | Cincinnati Area Geographic Information System (CAGIS) | 2007 | N/A | Ortho-Imagery of Hamilton County, Ohio, outside Little Miami PMR (CAGIS 2007) |
| Public Land Survey System (PLSS), Political Boundaries | Federal Emergency Management Agency (FEMA) | 2012 | N/A | Spatial and attribute information for public land survey system and political boundaries as part of the effective FIS (NFHL 2012) |
| Surface Water Features for Hamilton County | Cincinnati Area Geographic Information System (CAGIS) | 2012 | N/A | Spatial and attribute information for water feature lines (CAGIS 2012) |
| Transportation Features for Hamilton County | Cincinnati Area Geographic Information System (CAGIS) | 2016 | N/A | Spatial and attribute information for transportation and water features (CAGIS 2016) |

6.3 Floodplain and Floodway Delineation

The FIRM shows tints, screens, and symbols to indicate floodplains and floodways as well as the locations of selected cross sections used in the hydraulic analyses and floodway computations.

For riverine flooding sources, the mapped floodplain boundaries shown on the FIRM have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using the topographic elevation data described in Table 22.

In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

The floodway widths presented in this FIS Report and on the FIRM were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. Table 2 indicates the flooding sources for which floodways have been determined. The results of the floodway computations for those flooding sources have been tabulated for selected cross sections and are shown in Table 23, "Floodway Data."

Table 22: Summary of Topographic Elevation Data used in Mapping

| Community | Flooding Source | Source for Topographic Elevation Data | | | |
|------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| | | Description | Vertical Accuracy | Horizontal Accuracy | Citation |
| Hamilton County and various Incorporated Areas | All within HUC 05090202 and the Ohio River | Light Detection and Ranging data (LiDAR) | RMSE of 0.5-foot - 95% confidence level | The aerial LiDAR acquisition for the State of Ohio was flown to support the creation of digital orthophotography with a 0.5-foot and 1-foot pixel resolution | OGRIP 2007 |
| Hamilton County and various Incorporated Areas | All within HUC 05080002, 05080003, 05090201, 05090203, excluding Ohio River | 2001 2-foot contours | Not provided | Not provided | CAGIS 2001 |

BFEs shown at cross sections on the FIRM represent the 1-percent-annual-chance water surface elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report.

Table 23: Floodway Data

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|-----------------|---------------------|--------------|-------------------------|--------------------------|--------------------------------------------------------------|--------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Brookwood Creek | | | | | | | | |
| A | 1,775 ¹ | 53 | 407 | 4.1 | 606.1 | 606.1 | 606.6 | 0.5 |
| B | 2,365 ¹ | 45 | 136 | 9.0 | 611.9 | 611.9 | 612.0 | 0.1 |
| Clough Creek | | | | | | | | |
| A | 1,300 ² | 86 | 682 | 14.3 | 500.8 | 472.6 ³ | 473.1 | 0.5 |
| B | 2,095 ² | 134 | 1,087 | 9.0 | 500.8 | 483.3 ³ | 483.8 | 0.5 |
| C | 2,781 ² | 81 | 701 | 13.9 | 500.8 | 493.5 ³ | 493.6 | 0.1 |
| D | 3,470 ² | 157 | 2,289 | 4.3 | 506.1 | 506.1 | 506.1 | 0.0 |
| E | 4,665 ² | 125 | 1,355 | 7.2 | 508.2 | 508.2 | 508.3 | 0.1 |
| F | 5,665 ² | 207 | 968 | 10.1 | 513.0 | 513.0 | 513.2 | 0.2 |
| G | 6,876 ² | 146 | 1,520 | 6.4 | 523.6 | 523.6 | 524.2 | 0.6 |
| H | 7,982 ² | 240 | 1,969 | 5.0 | 528.1 | 528.1 | 528.6 | 0.5 |
| I | 8,940 ² | 150 | 1,276 | 6.9 | 532.1 | 532.1 | 532.4 | 0.3 |
| J | 10,091 ² | 231 | 1,715 | 5.1 | 543.1 | 543.1 | 543.8 | 0.7 |
| K | 11,219 ² | 126 | 791 | 11.1 | 551.4 | 551.4 | 551.5 | 0.1 |
| L | 12,711 ² | 156 | 1,461 | 6.0 | 565.7 | 565.7 | 566.7 | 1.0 |
| M | 14,023 ² | 200 | 935 | 9.2 | 572.8 | 572.8 | 573.0 | 0.2 |
| N | 14,975 ² | 159 | 1,630 | 5.3 | 581.5 | 581.5 | 581.8 | 0.3 |
| O | 16,217 ² | 80 | 1,202 | 7.1 | 591.5 | 591.5 | 592.2 | 0.7 |
| P | 17,298 ² | 74 | 729 | 9.7 | 602.0 | 602.0 | 602.0 | 0.0 |

¹ Distances Measured In Feet above Village of Amberley corporate limits

² Distances Measured In Feet above confluence with Little Miami River

³ Computed Without Consideration of Backwater Effects from the Ohio River

| | | |
|----------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: BROOKWOOD CREEK – CLOUGH CREEK |

Table 23 Floodway Data (*continued*)

| LOCATION | | FLOODWAY | | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|--------------------------|---------------------|--------------|----------------------------------------------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | WIDTH REDUCED FROM PRIOR STUDY ³ (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Clough Creek (Continued) | | | | | | | | | |
| Q | 17,904 ¹ | 147 | | 1,455 | 4.9 | 617.0 | 617.0 | 617.1 | 0.1 |
| R | 18,905 ¹ | 65 | | 430 | 10.4 | 628.7 | 628.7 | 628.7 | 0.0 |
| S | 19,975 ¹ | 43 | | 349 | 12.8 | 657.2 | 657.2 | 657.2 | 0.0 |
| T | 20,523 ¹ | 52 | | 461 | 9.7 | 666.6 | 666.6 | 666.8 | 0.2 |
| U | 21,725 ¹ | 50 | 43 | 448 | 9.4 | 684.7 | 684.7 | 685.0 | 0.3 |
| V | 22,690 ¹ | 111 | | 2,435 | 1.7 | 728.5 | 728.5 | 729.3 | 0.8 |
| W | 23,715 ¹ | 72 | | 467 | 9.0 | 737.7 | 737.7 | 737.9 | 0.2 |
| X | 24,737 ¹ | 186 | | 966 | 4.3 | 752.2 | 752.2 | 752.3 | 0.1 |
| Y | 25,272 ¹ | 90 | 73 | 687 | 6.1 | 756.9 | 756.9 | 756.9 | 0.0 |
| Z | 26,223 ¹ | 110 | | 644 | 4.7 | 768.4 | 768.4 | 768.8 | 0.4 |
| Congress Run | | | | | | | | | |
| A | 1,180 ² | 111 | | 1,014 | 7.0 | 524.7 | 524.7 | 525.3 | 0.6 |
| B | 2,110 ² | 112 | | 840 | 5.0 | 528.0 | 528.0 | 528.7 | 0.7 |
| C | 3,050 ² | 66 | | 509 | 8.3 | 534.9 | 534.9 | 535.5 | 0.6 |
| D | 3,460 ² | 95 | | 808 | 5.2 | 542.3 | 542.3 | 543.0 | 0.7 |
| E | 4,535 ² | 261 | | 750 | 5.6 | 550.7 | 550.7 | 551.4 | 0.7 |
| F | 5,828 ² | 50 | | 397 | 10.6 | 587.3 | 587.3 | 587.3 | 0.0 |
| G | 6603 ² | 38 | | 716 | 5.9 | 622.0 | 622.0 | 622.7 | 0.7 |

¹ Distances Measured In Feet Above Confluence With Little Miami River

³ See Explanation in Section 2.2 Floodways

² Distances Measured In Feet Above Confluence With Mill Creek

| | | | |
|-------|----------------------------------------------------------------------------------------|----------------------------------------------|--|
| TABLE | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA | |
| | | FLOODING SOURCE: CLOUGH CREEK – CONGRESS RUN | |

Table 23 Floodway Data (*continued*)

| LOCATION | | FLOODWAY | | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|----------------------------------|---------------------|--------------|----------------------------------------------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | WIDTH REDUCED FROM PRIOR STUDY ⁴ (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Congress Run (Continued) | | | | | | | | | |
| H | 7,675 ¹ | 46 | | 265 | 13.6 | 634.5 | 634.5 | 634.5 | 0.0 |
| I | 9,735 ¹ | 48 | | 222 | 12.4 | 709.8 | 709.8 | 709.8 | 0.0 |
| J | 11,050 ¹ | 54 | | 233 | 11.8 | 758.3 | 758.3 | 758.3 | 0.0 |
| K | 12,370 ¹ | 72 | | 255 | 10.8 | 795.4 | 795.4 | 795.4 | 0.0 |
| L | 13,625 ¹ | 45 | | 219 | 12.5 | 823.8 | 823.8 | 823.8 | 0.0 |
| M | 14,445 ¹ | 80 | 81 | 2,001 | 1.4 | 850.7 | 850.7 | 850.8 | 0.1 |
| Dry Fork of the Whitewater River | | | | | | | | | |
| A | 8,131 ² | 855 | | 6,293 | 4.1 | 498.5 | 498.5 | 498.8 | 0.3 |
| B | 9,610 ² | 197 | | 2,632 | 9.7 | 499.0 | 499.0 | 499.7 | 0.7 |
| C | 11,405 ² | 833 | | 5,579 | 4.6 | 502.3 | 502.3 | 503.3 | 1.0 |
| D | 13,622 ² | 760 | | 4,386 | 5.8 | 504.8 | 504.8 | 505.8 | 1.0 |
| E | 15,734 ² | 358 | | 2,523 | 10.1 | 509.8 | 509.8 | 510.0 | 0.2 |
| F | 17,213 ² | 413 | | 3,559 | 7.2 | 513.0 | 513.0 | 513.3 | 0.3 |
| G | 19,219 ² | 447 | | 4,116 | 6.2 | 515.9 | 515.9 | 516.4 | 0.5 |
| H | 19,958 ² | 554 | | 4,993 | 5.1 | 518.5 | 518.5 | 519.1 | 0.6 |
| I | 22,704 ² | 133 | | 1,724 | 14.8 | 521.3 | 521.3 | 521.8 | 0.5 |
| J | 24,182 ² | 336 | | 3,890 | 6.4 | 527.1 | 527.1 | 527.5 | 0.4 |
| K | 25,819 ² | 377 | | 4,090 | 6.1 | 528.7 | 528.7 | 529.5 | 0.8 |

¹ Distances Measured In Feet Above Confluence With Mill Creek

³ Distances Measured In Feet Above Confluence With Whitewater River

² Distances Measured In Feet Above Confluence With Whitewater River

⁴ See Explanation in Section 2.2 Floodways

| | | |
|----------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: CONGRESS RUN – DRY FORK OF THE WHITEWATER RIVER |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|----------------------------------------------|-----------------------|--------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Dry Fork of the Whitewater River (continued) | | | | | | | | |
| L | 26,928 | 640 | 8,751 | 2.9 | 532.3 | 532.3 | 533.2 | 0.9 |
| M | 27,826 | 852 | 10,311 | 2.4 | 533.1 | 533.1 | 534.0 | 0.9 |
| N | 29,726 | 289 | 4,231 | 5.9 | 533.5 | 533.5 | 534.4 | 0.9 |
| O | 30,413 | 325 | 3,326 | 7.5 | 534.8 | 534.8 | 535.8 | 1.0 |
| P | 33,264 | 580 | 5,279 | 4.7 | 538.4 | 538.4 | 539.3 | 0.9 |
| Q | 35,693 | 747 | 7,132 | 3.2 | 543.6 | 543.6 | 544.4 | 0.8 |
| R | 37,277 | 489 | 4,215 | 5.5 | 544.4 | 544.4 | 545.1 | 0.7 |
| S | 39,758 | 926 | 8,121 | 2.8 | 547.9 | 547.9 | 548.5 | 0.6 |
| T | 41,395 | 1,036 | 7,030 | 3.1 | 549.4 | 549.4 | 550.0 | 0.6 |
| U | 42,504 | 1,399 | 7,887 | 2.8 | 552.5 | 552.5 | 553.2 | 0.7 |
| V | 44,616 | 547 | 5,051 | 4.4 | 555.1 | 555.1 | 555.7 | 0.6 |
| W | 48,312 | 1,050 | 6,975 | 3.0 | 558.5 | 558.5 | 559.3 | 0.8 |
| X | 49,262 | 152 | 2,183 | 9.5 | 562.4 | 562.4 | 562.6 | 0.2 |
| Y | 51,058 | 1,169 | 8,781 | 2.4 | 564.9 | 564.9 | 565.7 | 0.8 |
| Z | 51,533 | 590 | 6,079 | 3.4 | 566.1 | 566.1 | 566.9 | 0.8 |
| AA | 53,962 | 753 | 6,261 | 3.3 | 567.3 | 567.3 | 568.2 | 0.9 |
| AB | 55,757 | 414 | 2,664 | 7.8 | 570.7 | 570.7 | 571.3 | 0.6 |
| AC | 58,661 | 624 | 2,716 | 7.6 | 576.4 | 576.4 | 576.7 | 0.3 |

¹ Distances Measured In Feet Above Confluence With Whitewater River

| | | |
|----------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: DRY FORK OF THE WHITEWATER RIVER |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|----------------------------------------------|---------------------|------------------|-------------------------|--------------------------|--------------------------------------------------------------|--------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Dry Fork of the Whitewater River (continued) | | | | | | | | |
| AD | 59,822 ¹ | 247 | 3,049 | 6.8 | 579.4 | 579.4 | 580.1 | 0.7 |
| AE | 61,301 ¹ | 194 | 1,832 | 11.3 | 581.9 | 581.9 | 582.5 | 0.6 |
| AF | 62,040 ¹ | 882 | 7,235 | 2.9 | 586.7 | 586.7 | 587.5 | 0.8 |
| AG | 64,522 ¹ | 503 | 2,885 | 7.2 | 587.9 | 587.9 | 588.4 | 0.5 |
| AH | 65,894 ¹ | 780 | 4,757 | 4.4 | 592.3 | 592.3 | 592.9 | 0.6 |
| Duck Creek | | | | | | | | |
| A | 1,820 ² | 528 ⁴ | 1,986 | 7.4 | 500.8 | 474.1 ³ | 474.6 | 0.5 |
| B | 4,670 ² | 380 | 4,259 | 3.4 | 500.8 | 477.8 ³ | 478.6 | 0.8 |
| C | 6,065 ² | 256 | 2,248 | 6.5 | 500.8 | 488.4 ³ | 488.8 | 0.4 |
| D | 7,005 ² | 260 | 2,240 | 6.5 | 501.3 | 490.0 ⁴ | 490.8 | 0.8 |
| E | 8,285 ² | 194 | 1,436 | 10.2 | 501.4 | 493.0 ⁴ | 493.8 | 0.8 |
| F | 9,495 ² | 180 | 1,150 | 12.7 | 501.7 | 498.2 ⁴ | 499.1 | 0.9 |
| G | 11,403 ² | 314 | 4,407 | 2.5 | 509.4 | 509.4 | 510.3 | 0.9 |
| H | 15,877 ² | 109 | 1,284 | 3.7 | 523.5 | 523.5 | 523.5 | 0.0 |
| I | 16,347 ² | 120 | 951 | 4.9 | 523.9 | 523.9 | 524.0 | 0.1 |
| J | 17,161 ² | 83 | 615 | 7.6 | 524.2 | 524.2 | 524.2 | 0.0 |
| K | 18,038 ² | 66 | 515 | 9.1 | 524.9 | 524.9 | 525.0 | 0.1 |

¹ Distances Measured In Feet Above Confluence With Whitewater River

⁴ Computed Without Consideration of effects from Little Miami River

² Distances Measured In Feet Above Confluence With Little Miami River

³ Computed Without Consideration of Backwater Effects from the Ohio River

| | | | |
|----------|----------------------------------------------------------------------------------------|----------------------------------------------------------------|--|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA | |
| | | FLOODING SOURCE: DRY FORK OF THE WHITEWATER RIVER – DUCK CREEK | |

Table 23 Floodway Data (*continued*)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|------------------------|---------------------|--------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Duck Creek (Continued) | | | | | | | | |
| L | 19,727 ¹ | 52 | 441 | 10.2 | 526.4 | 526.4 | 526.4 | 0.0 |
| M | 20,752 ¹ | 132 | 1,132 | 4.0 | 533.7 | 533.7 | 533.7 | 0.0 |
| N | 23,782 ¹ | 43 | 291 | 15.5 | 536.5 | 536.5 | 536.5 | 0.0 |
| O | 25,104 ¹ | 77 | 840 | 5.5 | 545.2 | 545.2 | 545.4 | 0.2 |
| P | 26,590 ¹ | 71 | 552 | 7.8 | 547.1 | 547.1 | 547.5 | 0.4 |
| East Fork Mill Creek | | | | | | | | |
| A | 2,200 ² | 269 | 1,685 | 1.3 | 584.1 | 584.1 | 584.6 | 0.5 |
| B | 3,600 ² | 167 | 1,134 | 2.0 | 585.3 | 585.3 | 585.8 | 0.5 |
| C | 4,000 ² | 86 | 623 | 3.6 | 585.8 | 585.8 | 586.3 | 0.5 |
| D | 5,000 ² | 78 | 569 | 3.9 | 586.0 | 586.0 | 586.5 | 0.5 |
| Fork of McCullough Run | | | | | | | | |
| A | 2,715 ³ | 350 | 1,307 | 3.5 | 501.6 | 501.6 | 502.1 | 0.5 |
| B | 3,277 ³ | 294 | 850 | 5.4 | 504.2 | 504.2 | 504.6 | 0.4 |
| C | 3,707 ³ | 166 | 606 | 7.1 | 506.9 | 506.9 | 507.8 | 0.9 |

¹ Distances Measured In Feet Above Confluence With Little Miami River

² Distances Measured In Feet Above Confluence With Mill Creek

³ Distances Measured In Feet Above Confluence With McCullough Run

| | | |
|----------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: DUCK CREEK – EAST FORK MILL CREEK – FORK OF McCULLOUGH RUN |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|-------------------|-----------------------|-------------------------|-------------------------|--------------------------|--------------------------------------------------------------|--------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Great Miami River | | | | | | | | |
| A | 5,000 | 7,236 / 0 ² | 109,493 | 1.6 | 489.9 | 471.7 ³ | 472.7 | 1.0 |
| B | 11,560 | 5,008/2505 ² | 77,005 | 2.3 | 489.9 | 472.3 ³ | 473.3 | 1.0 |
| C | 23,900 | 6,631 | 56,059 | 3.2 | 489.9 | 473.9 ³ | 474.7 | 0.8 |
| D | 26,833 | 3,882 | 35,705 | 5.0 | 489.9 | 474.9 ³ | 475.6 | 0.7 |
| E | 30,400 | 2,656 | 40,406 | 4.4 | 489.9 | 478.6 ³ | 479.1 | 0.5 |
| F | 33,900 | 2,318 | 34,408 | 5.2 | 489.9 | 479.8 ³ | 480.4 | 0.6 |
| G | 38,300 | 1,527 | 22,076 | 5.8 | 489.9 | 482.3 ³ | 483.0 | 0.7 |
| H | 40,905 | 1,473 | 22,808 | 5.7 | 489.9 | 484.3 ³ | 485.2 | 0.9 |
| I | 44,925 | 991 | 19,604 | 6.6 | 489.9 | 487.0 ³ | 488.0 | 1.0 |
| J | 46,872 | 1,010 | 17,714 | 7.3 | 489.9 | 488.7 ³ | 489.6 | 0.9 |
| K | 51,480 | 1,671 | 20,804 | 6.2 | 495.5 | 495.5 | 496.4 | 0.9 |
| L | 56,595 | 926 | 21,228 | 6.1 | 499.2 | 499.2 | 500.1 | 0.9 |
| M | 61,980 | 1,805 | 33,396 | 3.9 | 503.4 | 503.4 | 504.4 | 1.0 |
| N | 66,670 | 757 | 16,907 | 7.6 | 505.4 | 505.4 | 506.3 | 0.9 |
| O | 72,620 | 1,390 | 30,146 | 4.3 | 509.5 | 509.5 | 510.4 | 0.9 |
| P | 75,650 | 1,206 | 23,353 | 5.5 | 510.5 | 510.5 | 511.4 | 0.9 |
| Q | 80,036 | 664 | 17,395 | 7.4 | 515.0 | 515.0 | 516.0 | 1.0 |
| R | 82,893 | 2,027 | 36,910 | 3.5 | 517.1 | 517.1 | 518.1 | 1.0 |

¹ Distances Measured In Feet Above Confluence With Ohio River

² Total Width/Width within County

³ Computed Without Consideration of Backwater Effects from the Ohio River

| | | |
|----------|----------------------------------------------------------------------------------------|------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: GREAT MIAMI RIVER |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|--------------------------------|-----------------------|--------------------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/SEC) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Great Miami River (continued)) | | | | | | | | |
| S | 86,320 | 2,146 | 38,034 | 3.4 | 518.0 | 518.0 | 519.0 | 1.0 |
| T | 88,655 | 2,428 | 42,354 | 3.0 | 518.7 | 518.7 | 519.7 | 1.0 |
| U | 91,545 | 2,539 | 52,025 | 2.5 | 519.4 | 519.4 | 520.4 | 1.0 |
| V | 95,005 | 2,118 | 31,577 | 4.1 | 520.1 | 520.1 | 520.9 | 0.8 |
| W | 99,890 | 2,644 | 41,179 | 3.1 | 522.4 | 522.4 | 523.3 | 0.9 |
| X | 101,100 | 1,816 | 24,810 | 5.2 | 522.6 | 522.6 | 523.5 | 0.9 |
| Y | 106,110 | 1,299 | 18,185 | 7.1 | 526.3 | 526.3 | 527.0 | 0.7 |
| Z | 112,700 | 1,125 | 22,754 | 5.6 | 531.6 | 531.6 | 532.2 | 0.6 |
| AA | 114,220 | 575 | 14,220 | 9.0 | 532.9 | 532.9 | 533.3 | 0.4 |
| AB | 117,330 | 970 | 18,280 | 7.0 | 537.0 | 537.0 | 537.7 | 0.7 |
| AC | 121,245 | 1,199 | 27,483 | 4.7 | 540.5 | 540.5 | 541.4 | 0.9 |
| AD | 124,890 | 859 | 19,169 | 6.7 | 544.4 | 544.4 | 545.4 | 1.0 |
| AE | 132,670 | 5,413 | 61,199 | 2.1 | 548.1 | 548.1 | 549.0 | 0.9 |
| AF | 139,575 | 3,096/1,380 ² | 35,087 | 3.7 | 550.3 | 550.3 | 551.2 | 0.9 |
| AG | 143,830 | 1,101/414 ² | 29,064 | 4.4 | 554.3 | 554.3 | 555.1 | 0.8 |

¹ Distances Measured In Feet Above Confluence With Ohio River

² Total Width/Width within County

| | | |
|----------|----------------------------------------------------------------------------------------|------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: GREAT MIAMI RIVER |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|-------------------|----------|--------------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|--------------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Hazelwood Creek | | | | | | | | |
| | A | 490 ¹ | 95 | 725 | 4.0 | 821.1 | 821.1 | 0.3 |
| | B | 1,450 ¹ | 145 | 974 | 3.0 | 822.9 | 822.9 | 0.4 |
| | C | 2,480 ¹ | 112 | 677 | 4.3 | 827.7 | 827.7 | 0.3 |
| | D | 3,998 ¹ | 151 | 865 | 3.4 | 835.3 | 835.3 | 0.3 |
| | E | 4,933 ¹ | 125 | 755 | 3.8 | 840.9 | 840.9 | 0.6 |
| Howard Creek | | | | | | | | |
| | A | 1,705 ² | 768 | 4,277 | 2.0 | 562.8 | 559.3 ⁴ | 0.7 |
| | B | 2,605 ² | 174 | 1,183 | 7.1 | 563.5 | 559.5 ⁴ | 0.8 |
| | C | 4,145 ² | 464 | 2,166 | 3.9 | 563.5 | 563.5 | 0.6 |
| Lake Chetac Creek | | | | | | | | |
| | A | 119 ³ | 30 | 230 | 7.7 | 682.0 | 680.7 ⁵ | 0.4 |
| | B | 640 ³ | 25 | 201 | 8.8 | 688.3 | 688.3 | 0.9 |
| | C | 1,125 ³ | 31 | 216 | 8.2 | 693.3 | 693.3 | 1.0 |
| | D | 1,551 ³ | 36 | 292 | 6.1 | 697.4 | 697.4 | 1.0 |
| | E | 2,422 ³ | 24 | 168 | 10.6 | 709.4 | 709.4 | 0.8 |
| | F | 2,643 ³ | 56 | 508 | 3.5 | 718.0 | 718.0 | 0.0 |
| | G | 3,133 ³ | 38 | 293 | 6.0 | 720.1 | 720.1 | 0.7 |
| | H | 3,935 ³ | 66 | 735 | 2.4 | 722.8 | 722.8 | 1.0 |

¹ Distances Measured In Feet Above Kenwood Road

⁵ Computed Without Consideration of Backwater Effects from Polk Run

² Distances Measured In Feet Above Confluence with Dry Fork of the Whitewater River

³ Distances Measured In Feet Above Confluence With Polk Run

⁴ Computed Without Consideration of Backwater Effects from Dry Fork of Whitewater River

| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
|----------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| | | FLOODING SOURCE: HAZELWOOD CREEK – HOWARD CREEK – LAKE CHETAC CREEK |

Table 23 Floodway Data (*continued*)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|-------------------|--------------------|------------------|-------------------------|--------------------------|--------------------------------------------------------------|--------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/SEC) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Left Fork Section | | | | | | | | |
| Road Creek | | | | | | | | |
| A | 100 ¹ | 175 ⁵ | 1,310 | 1.5 | 591.3 | 589.2 ³ | 589.2 | 0.0 |
| B | 1,385 ¹ | 119 | 317 | 6.2 | 613.5 | 613.5 | 613.6 | 0.1 |
| C | 1,930 ¹ | 91 | 562 | 3.5 | 621.3 | 621.3 | 621.7 | 0.4 |
| D | 2,727 ¹ | 90 | 372 | 5.2 | 633.6 | 633.6 | 634.1 | 0.5 |
| Little Duck Creek | | | | | | | | |
| A | 475 ² | 100 | 152 | 11.5 | 509.4 | 504.4 ⁴ | 504.4 | 0.0 |
| B | 528 ² | 69 | 647 | 2.7 | 509.4 | 506.6 ⁴ | 506.6 | 0.0 |
| C | 1,563 ² | 219 | 2,949 | 0.9 | 524.0 | 524.0 | 524.1 | 0.1 |
| D | 1,788 ² | 115 | 1,528 | 1.7 | 524.0 | 524.0 | 524.1 | 0.1 |
| E | 2,424 ² | 22 | 340 | 7.5 | 525.1 | 525.1 | 525.6 | 0.5 |
| F | 2,847 ² | 105 | 1,651 | 1.5 | 533.3 | 533.3 | 533.8 | 0.5 |
| G | 3,910 ² | 37 | 694 | 3.7 | 533.4 | 533.4 | 534.1 | 0.7 |
| H | 4,603 ² | 160 | 1,957 | 1.3 | 533.8 | 533.8 | 534.7 | 0.9 |
| I | 5,467 ² | 185 | 1,636 | 1.6 | 533.9 | 533.9 | 534.8 | 0.9 |
| J | 6,403 ² | 172 | 1,031 | 2.5 | 534.7 | 534.7 | 535.5 | 0.8 |
| K | 6,969 ² | 71 | 551 | 4.6 | 535.2 | 535.2 | 535.9 | 0.7 |
| L | 7,209 ² | 115 | 700 | 3.6 | 538.0 | 538.0 | 538.8 | 0.8 |

¹ Distances Measured In Feet Above Confluence With Section Road Creek

² Distances Measured In Feet Above Confluence With Duck Creek

³ Computed Without Consideration of Backwater Effects from Section Road Creek

⁴ Computed Without Consideration of Backwater Effects from Duck Creek

| | | |
|----------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: LEFT FORK SECTION ROAD CREEK – LITTLE DUCK CREEK |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|-------------------------------|---------------------|--------------|-------------------------|--------------------------|--------------------------------------------------------------|--------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/SEC) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Little Duck Creek (continued) | | | | | | | | |
| M | 7,752 ¹ | 360 | 1,671 | 1.5 | 538.3 | 538.3 | 539.3 | 1.0 |
| N | 7,901 ¹ | 271 | 1,258 | 2.0 | 538.4 | 538.4 | 539.4 | 1.0 |
| O | 8,049 ¹ | 201 | 887 | 2.9 | 538.6 | 538.6 | 539.5 | 0.9 |
| P | 8,231 ¹ | 93 | 557 | 4.6 | 538.8 | 538.8 | 539.7 | 0.9 |
| Q | 8,407 ¹ | 33 | 322 | 7.9 | 539.2 | 539.2 | 540.0 | 0.8 |
| Little Miami River | | | | | | | | |
| A | 5,617 ² | 5,011 | 37,061 | 1.9 | 500.8 | 483.4 ³ | 484.2 | 0.8 |
| B | 9,243 ² | 661 | 13,420 | 5.1 | 500.8 | 484.8 ³ | 485.2 | 0.4 |
| C | 15,904 ² | 1,997 | 26,657 | 2.6 | 500.8 | 486.6 ³ | 487.1 | 0.5 |
| D | 18,966 ² | 3,731 | 49,404 | 1.4 | 500.8 | 487.6 ³ | 488.4 | 0.8 |
| E | 25,190 ² | 5,335 | 59,290 | 1.2 | 500.8 | 488.0 ³ | 488.9 | 0.9 |
| F | 34,233 ² | 4,231 | 30,512 | 2.4 | 500.8 | 488.6 ³ | 489.4 | 0.8 |
| G | 36,422 ² | 3,399 | 26,477 | 3.0 | 500.8 | 491.6 ³ | 492.2 | 0.6 |
| H | 39,180 ² | 3,324 | 25,978 | 3.1 | 500.8 | 492.5 ³ | 493.1 | 0.6 |
| I | 42,449 ² | 1,650 | 18,957 | 4.2 | 500.8 | 494.3 ³ | 494.8 | 0.5 |
| J | 43,673 ² | 1,973 | 21,386 | 3.8 | 500.8 | 496.0 ³ | 497.0 | 1.0 |
| K | 46,266 ² | 2,071 | 21,713 | 3.7 | 500.8 | 497.6 ³ | 498.4 | 0.8 |

¹ Distances Measured In Feet Above Confluence With Duck Creek

² Distances Measured In Feet Above Confluence With Ohio River

³ Computed Without Consideration of Backwater Effects from the Ohio River

| | | |
|----------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: LITTLE DUCK CREEK – LITTLE MIAMI RIVER |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|--------------------------------|-----------------------|--------------------------|-------------------------|--------------------------|--------------------------------------------------------------|--------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/SEC) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Little Miami River (continued) | | | | | | | | |
| L | 50,191 | 842 | 11,618 | 6.9 | 500.8 | 500.5 ³ | 501.4 | 0.9 |
| M | 51,893 | 491 | 8,936 | 9.0 | 502.0 | 502.0 | 502.5 | 0.5 |
| N | 57,851 | 1,368 | 13,018 | 6.3 | 505.7 | 505.7 | 506.7 | 1.0 |
| O | 61,118 | 786 | 9,432 | 5.8 | 510.0 | 510.0 | 510.5 | 0.5 |
| P | 64,107 | 210 ² / 113 | 4,874 | 11.3 | 512.5 | 512.5 | 512.5 | 0.0 |
| Q | 66,344 | 279 ² / 158 | 5,945 | 9.3 | 515.8 | 515.8 | 516.3 | 0.5 |
| R | 72,286 | 667 ² / 0 | 7,157 | 7.7 | 522.2 | 522.2 | 522.8 | 0.6 |
| S | 77,263 | 587 ² / 190 | 6,879 | 8.0 | 529.1 | 529.1 | 529.3 | 0.2 |
| T | 79,980 | 748 ² / 591 | 7,134 | 7.7 | 532.7 | 532.7 | 532.8 | 0.1 |
| U | 80,545 | 601 ² / 544 | 6,046 | 9.1 | 533.8 | 533.8 | 534.3 | 0.5 |
| V | 82,596 | 906 ² / 188 | 11,304 | 4.9 | 537.5 | 537.5 | 538.4 | 0.9 |
| W | 87,928 | 780 ² / 662 | 6,336 | 8.7 | 541.6 | 541.6 | 541.7 | 0.1 |
| X | 90,971 | 600 ² / 181 | 8,183 | 6.8 | 547.8 | 547.8 | 548.0 | 0.2 |
| Y | 91,853 | 1,035 ² / 329 | 11,470 | 4.8 | 549.7 | 549.7 | 550.3 | 0.6 |
| Z | 94,761 | 662 ² / 172 | 7,423 | 7.5 | 552.0 | 552.0 | 552.6 | 0.6 |
| AA | 97,241 | 229 ² / 116 | 5,777 | 9.6 | 554.7 | 554.7 | 555.4 | 0.7 |
| AB | 100,464 | 338 ² / 230 | 5,920 | 9.4 | 558.7 | 558.7 | 559.6 | 0.9 |

¹ Distances Measured In Feet Above Confluence With Ohio River

² Total Width/Width within County

³ Computed Without Consideration of Backwater Effects from the Ohio River

| | | |
|----------|----------------------------------------------------------------------------------------|-------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: LITTLE MIAMI RIVER |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|--------------------------------|-----------------------|------------------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/SEC) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Little Miami River (continued) | | | | | | | | |
| AC | 102,252 | 361 ² / 201 | 7,885 | 6.6 | 562.0 | 562.0 | 562.8 | 0.8 |
| AD | 103,522 | 351 ² / 142 | 6,353 | 8.4 | 562.8 | 562.8 | 563.6 | 0.8 |
| AE | 108,152 | 494 ² / 211 | 9,068 | 5.9 | 566.7 | 566.7 | 567.4 | 0.7 |
| AF | 111,533 | 446 ² / 297 | 7,929 | 6.7 | 570.0 | 570.0 | 570.7 | 0.7 |
| AG | 112,102 | 302 ² / 64 | 8,096 | 6.6 | 571.1 | 571.1 | 571.9 | 0.8 |
| AH | 113,227 | 784 ² / 104 | 10,231 | 5.2 | 572.0 | 572.0 | 572.7 | 0.7 |
| AI | 114,652 | 508 ² / 320 | 9,286 | 5.7 | 573.0 | 573.0 | 573.7 | 0.7 |
| AJ | 115,178 | 357 ² / 241 | 8,487 | 6.3 | 573.6 | 573.6 | 574.5 | 0.9 |
| AK | 117,114 | 620 ² / 439 | 10,783 | 4.9 | 574.9 | 574.9 | 575.6 | 0.7 |
| AL | 120,365 | 505 ² / 116 | 7,897 | 6.7 | 577.0 | 577.0 | 577.7 | 0.7 |
| AM | 123,634 | 446 ² / 130 | 8,451 | 6.3 | 579.7 | 579.7 | 580.6 | 0.9 |
| AN | 127,349 | 530 ² / 527 | 7,329 | 7.2 | 581.9 | 581.9 | 582.7 | 0.8 |
| AO | 127,876 | 649 | 7,984 | 6.6 | 584.0 | 584.0 | 585.0 | 1.0 |
| AP | 128,180 | 541 | 9,049 | 5.9 | 584.6 | 584.6 | 585.5 | 0.9 |
| AQ | 128,625 | 385 | 7,457 | 5.8 | 585.4 | 585.4 | 586.0 | 0.6 |
| AR | 130,565 | 616 ² / 123 | 11,076 | 4.2 | 586.4 | 586.4 | 587.2 | 0.8 |
| AS | 132,685 | 692 ² / 197 | 8,930 | 5.2 | 588.0 | 588.0 | 589.0 | 1.0 |
| AT | 135,962 | 521 ² / 87 | 10,361 | 4.6 | 591.3 | 591.3 | 592.2 | 0.9 |

¹ Distances Measured In Feet Above Confluence With Ohio River

² Total Width/Width within County

| | | |
|----------|----------------------------------------------------------------------------------------|-------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: LITTLE MIAMI RIVER |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|----------------|----------|---------------------|----------------------------------------------------|-------------------------|--------------------------|--------------------------------------------------------------|--------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | WIDTH REDUCED FROM PRIOR STUDY ⁶ (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| McCullough Run | | | | | | | | | |
| | A | 4,306 ¹ | 400 ⁵ | 3,008 | 2.1 | 500.8 | 483.5 ³ | 483.9 | 0.4 |
| | B | 5,083 ¹ | 420 ⁵ | 3,118 | 2.0 | 500.8 | 488.7 ³ | 489.4 | 0.7 |
| | C | 7,406 ¹ | 113 | 458 | 8.2 | 500.8 | 491.6 ³ | 491.6 | 0.0 |
| | D | 8,576 ¹ | 225 | 1,384 | 3.0 | 500.8 | 495.4 ³ | 496.3 | 0.9 |
| Mill Creek | | | | | | | | | |
| | A | 580 ² | 186 | 4,075 | 4.9 | 478.9 | 478.9 ⁴ | 478.9 | 0.0 |
| | B | 3,473 ² | 212 | 4,524 | 4.5 | 481.0 | 481.0 ⁴ | 481.0 | 0.0 |
| | C | 7,798 ² | 186 | 3,599 | 5.6 | 482.7 | 482.7 ⁴ | 482.7 | 0.0 |
| | D | 8,009 ² | 200 | 3,582 | 5.6 | 482.8 | 482.8 ⁴ | 482.8 | 0.0 |
| | E | 9,459 ² | 154 | 3,135 | 6.4 | 483.2 | 483.2 ⁴ | 483.2 | 0.0 |
| | F | 12,549 ² | 243 | 4,945 | 4.1 | 484.0 | 484.0 ⁴ | 484.0 | 0.0 |
| | G | 17,109 ² | 304 | 4,778 | 4.2 | 484.9 | 484.9 ⁴ | 484.9 | 0.0 |
| | H | 17,756 ² | 269 | 4,833 | 3.5 | 485.1 | 485.1 ⁴ | 485.1 | 0.0 |
| | I | 19,673 ² | 253 | 3,580 | 4.7 | 485.4 | 485.4 ⁴ | 485.5 | 0.1 |
| | J | 20,893 | 206 | 2,752 | 6.2 | 485.8 | 485.8 | 485.9 | 0.1 |
| | K | 21,403 | 245 | 3,995 | 4.2 | 486.3 | 486.3 | 486.4 | 0.1 |
| | L | 24,530 | 232 | 3,530 | 4.5 | 487.5 | 487.5 | 487.6 | 0.1 |
| | M | 27,600 | 120 | 2,004 | 7.9 | 488.2 | 488.2 | 488.3 | 0.1 |

¹ Distances Measured In Feet Above Confluence With Little Miami River

⁵ Computed without consideration of Little Miami River floodway

² Distances Measured In Feet Above Barrier Dam

⁶ See Explanation in Section 2.2 Floodways

³ Computed Without Consideration of Backwater Effects from Little Miami River

⁴ Computed considering flood elevations controlled by Barrier Dam

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY
HAMILTON COUNTY, OHIO
AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: MCCULLOUGH RUN – MILL CREEK

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|------------------------|-----------------------|--------------|----------------------------------------------------|-------------------------|--------------------------|--------------------------------------------------------------|-------------------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | WIDTH REDUCED FROM PRIOR STUDY ³ (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY ² | WITH FLOODWAY | INCREASE |
| Mill Creek (continued) | | | | | | | | | |
| N | 27,925 | 132 | | 1,861 | 8.5 | 488.2 | 488.2 | 488.3 | 0.1 |
| O | 29,855 | 133 | 30 | 1,673 | 7.8 | 489.2 | 489.2 | 489.3 | 0.1 |
| P | 29,885 | 132 | 36 | 1,657 | 7.9 | 489.3 | 489.3 | 489.4 | 0.1 |
| Q | 29,975 | 140 | | 1,631 | 8.0 | 489.4 | 489.4 | 489.5 | 0.1 |
| R | 32,250 | 150 | | 1,621 | 8.1 | 490.0 | 490.0 | 490.1 | 0.1 |
| S | 32,400 | 150 | | 1,663 | 7.8 | 490.4 | 490.4 | 490.4 | 0.0 |
| T | 34,550 | 110 | | 1,254 | 10.4 | 490.8 | 490.8 | 490.8 | 0.0 |
| U | 34,850 | 116 | 28 | 1,130 | 11.5 | 491.2 | 491.2 | 491.3 | 0.1 |
| V | 36,065 | 110 | | 1,062 | 12.2 | 492.8 | 492.8 | 492.8 | 0.0 |
| W | 36,295 | 100 | 33 | 1,107 | 11.7 | 493.3 | 493.3 | 493.3 | 0.0 |
| X | 36,825 | 137 | | 1,052 | 12.3 | 493.7 | 493.7 | 493.7 | 0.0 |
| Y | 37,277 | 181 | | 1,636 | 7.9 | 495.5 | 495.5 | 495.5 | 0.0 |
| Z | 40,235 | 123 | 30 | 1,110 | 11.7 | 498.1 | 498.1 | 498.1 | 0.0 |
| AA | 40,285 | 103 | 50 | 1,189 | 10.9 | 499.0 | 499.0 | 499.0 | 0.0 |
| AB | 41,518 | 166 | | 1,345 | 8.1 | 508.1 | 508.1 | 508.2 | 0.1 |
| AC | 43,728 | 146 | | 2,339 | 4.7 | 513.6 | 513.6 | 514.3 | 0.7 |
| AD | 43,798 | 137 | | 2,306 | 4.7 | 514.0 | 514.0 | 514.8 | 0.8 |
| AE | 44,828 | 127 | | 2,654 | 4.1 | 515.6 | 515.6 | 516.5 | 0.9 |
| AF | 46,068 | 210 | | 2,700 | 4.1 | 517.3 | 517.3 | 518.1 | 0.8 |

¹ Distances Measured In Feet Above Barrier Dam

³ See Explanation in Section 2.2 Floodways

² Computed considering flood elevations controlled by Barrier Dam

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY
HAMILTON COUNTY, OHIO
AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: MILL CREEK

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|------------------------|-----------------------|--------------|----------------------------------------------------|-------------------------|--------------------------|--------------------------------------------------------------|-------------------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | WIDTH REDUCED FROM PRIOR STUDY ³ (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY ² | WITH FLOODWAY | INCREASE |
| Mill Creek (continued) | | | | | | | | | |
| AG | 46,578 | 165 | | 2,655 | 4.1 | 518.1 | 518.1 | 518.9 | 0.8 |
| AH | 50,536 | 134 | | 2,014 | 5.4 | 521.6 | 521.6 | 522.4 | 0.8 |
| AI | 50,623 | 177 | | 2,627 | 4.2 | 522.0 | 522.0 | 522.9 | 0.9 |
| AJ | 51,638 | 191 | 36 | 3,025 | 3.6 | 523.4 | 523.4 | 524.0 | 0.6 |
| AK | 51,791 | 210 | | 2,734 | 4.0 | 523.4 | 523.4 | 524.0 | 0.6 |
| AL | 52,893 | 157 | 727 | 963 | 11.4 | 528.0 | 528.0 | 528.2 | 0.2 |
| AM | 53,864 | 107 | | 1,479 | 7.4 | 528.4 | 528.4 | 528.6 | 0.2 |
| AN | 54,376 | 141 | | 1,716 | 6.4 | 530.0 | 530.0 | 530.2 | 0.2 |
| AO | 55,046 | 142 | | 1,909 | 5.7 | 531.2 | 531.2 | 531.5 | 0.3 |
| AP | 59,940 | 93 | | 1,372 | 5.3 | 536.1 | 536.1 | 536.3 | 0.2 |
| AQ | 60,771 | 79 | | 1,194 | 6.1 | 537.2 | 537.2 | 537.6 | 0.4 |
| AR | 62,833 | 81 | | 1,220 | 6.0 | 542.4 | 542.4 | 543.4 | 1.0 |
| AS | 62,867 | 81 | | 1,224 | 6.0 | 542.5 | 542.5 | 543.4 | 0.9 |
| AT | 64,620 | 95 | | 1,274 | 5.7 | 546.7 | 546.7 | 547.4 | 0.7 |
| AU | 64,680 | 96 | | 1,284 | 5.7 | 546.9 | 546.9 | 547.6 | 0.7 |
| AV | 65,464 | 157 | | 1,361 | 5.4 | 548.6 | 548.6 | 549.4 | 0.8 |
| AW | 65,984 | 66 | | 1,144 | 6.4 | 549.5 | 549.5 | 550.4 | 0.9 |
| AX | 66,222 | 77 | | 1,291 | 5.7 | 550.1 | 550.1 | 551.0 | 0.9 |
| AY | 68,988 | 109 | | 1,650 | 4.4 | 552.9 | 552.9 | 553.9 | 1.0 |

¹ Distances Measured In Feet Above Barrier Dam

³ See Explanation in Section 2.2 Floodways

² Computed considering flood elevations controlled by Barrier Dam

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY
HAMILTON COUNTY, OHIO
AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: MILL CREEK

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|------------------------|-----------------------|--------------|----------------------------------------------------|-------------------------|--------------------------|--------------------------------------------------------------|-------------------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | WIDTH REDUCED FROM PRIOR STUDY ³ (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY ² | WITH FLOODWAY | INCREASE |
| Mill Creek (continued) | | | | | | | | | |
| AZ | 69,026 | 109 | | 1,652 | 4.4 | 552.9 | 552.9 ² | 553.9 | 1.0 |
| BA | 71,416 | 143 | 56 | 1,908 | 3.8 | 555.9 | 555.9 ² | 556.8 | 0.9 |
| BB | 71,471 | 192 | | 1,975 | 3.7 | 556.2 | 556.2 ² | 557.1 | 0.9 |
| BC | 71,711 | 153 | | 1,924 | 3.8 | 556.7 | 556.7 ² | 557.6 | 0.9 |
| BD | 72,696 | 112 | | 1,456 | 4.4 | 557.8 | 557.8 ² | 558.6 | 0.8 |
| BE | 73,021 | 214 | | 2,281 | 2.8 | 558.5 | 558.5 ² | 559.1 | 0.6 |
| BF | 76,651 | 153 | | 956 | 5.1 | 562.1 | 562.1 ² | 563.0 | 0.9 |
| BG | 77,114 | 249 | | 2,102 | 2.3 | 563.1 | 563.1 ² | 563.8 | 0.7 |
| BH | 80,111 | 141 | | 1,489 | 3.3 | 567.5 | 567.5 ² | 568.3 | 0.8 |
| BI | 80,292 | 100 | | 1,165 | 4.2 | 567.6 | 567.6 ² | 568.4 | 0.8 |
| BJ | 81,557 | 119 | | 1,456 | 2.5 | 570.7 | 570.7 ² | 571.6 | 0.9 |
| BK | 81,663 | 106 | | 1,297 | 2.8 | 570.9 | 570.9 ² | 571.7 | 0.8 |
| BL | 81,759 | 110 | | 1,264 | 2.9 | 571.7 | 571.7 ² | 572.5 | 0.8 |
| BM | 83,091 | 163 | | 1,794 | 2.5 | 572.7 | 572.7 ² | 573.7 | 1.0 |
| BN | 83,816 | 517 | | 3,987 | 1.1 | 573.1 | 573.1 ² | 574.0 | 0.9 |
| BO | 85,271 | 143 | | 1,796 | 2.6 | 574.5 | 574.5 | 575.3 | 0.8 |
| BP | 85,459 | 132 | | 1,464 | 3.2 | 574.8 | 574.8 | 575.7 | 0.9 |
| BQ | 86,555 | 133 | | 1,556 | 3.0 | 576.4 | 576.4 | 577.2 | 0.8 |
| BR | 86,631 | 450 | | 1,885 | 2.5 | 576.7 | 576.7 | 577.0 | 0.3 |

¹ Distances Measured In Feet Above Barrier Dam

³ See Explanation in Section 2.2 Floodways

² Computed considering flood elevations controlled by Barrier Dam

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY
HAMILTON COUNTY, OHIO
AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: MILL CREEK

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|------------------------|---------------------|--------------|----------------------------------------------------|-------------------------|--------------------------|--------------------------------------------------------------|--------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | WIDTH REDUCED FROM PRIOR STUDY ⁴ (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Mill Creek (continued) | | | | | | | | | |
| BS | 88,862 ¹ | 135 | | 1,554 | 3.1 | 578.7 | 578.7 | 579.2 | 0.5 |
| BT | 88,996 ¹ | 244 | | 1,809 | 2.7 | 579.2 | 579.2 | 579.6 | 0.4 |
| BU | 92,196 ¹ | 126 | | 1,577 | 3.1 | 581.1 | 581.1 | 581.6 | 0.5 |
| BV | 92,316 ¹ | 211 | | 1,776 | 2.8 | 581.4 | 581.4 | 581.9 | 0.5 |
| BW | 93,397 ¹ | 130 | | 1,643 | 3.0 | 582.4 | 582.4 | 582.9 | 0.5 |
| BX | 93,991 ¹ | 466 | | 4,066 | 1.2 | 583.5 | 583.5 | 584.0 | 0.5 |
| BY | 97,491 ¹ | 432 | | 2,649 | 1.0 | 584.9 | 584.9 | 585.4 | 0.5 |
| Muddy Creek | | | | | | | | | |
| A | 596 ² | 165 | | 2,451 | 5.5 | 492.4 | 467.1 ³ | 467.9 | 0.8 |
| B | 2,336 ² | 535 | | 8,052 | 1.7 | 492.4 | 469.1 ³ | 469.6 | 0.5 |
| C | 3,549 ² | 521 | | 3,994 | 2.8 | 492.4 | 471.5 ³ | 472.1 | 0.6 |
| D | 4,474 ² | 400 | | 3,204 | 3.5 | 492.4 | 471.8 ³ | 472.4 | 0.6 |
| E | 5,564 ² | 427 | | 2,359 | 4.8 | 492.4 | 472.5 ³ | 473.1 | 0.6 |
| F | 10,500 ² | 171 | | 1,623 | 9.1 | 492.4 | 483.1 ³ | 483.3 | 0.2 |
| G | 11,620 ² | 180 | | 850 | 12.1 | 492.4 | 489.9 ³ | 489.9 | 0.0 |
| H | 13,145 ² | 96 | 45 | 934 | 11.0 | 504.0 | 504.0 | 504.0 | 0.0 |
| I | 13,704 ² | 83 | 43 | 746 | 13.8 | 510.5 | 510.5 | 510.5 | 0.0 |

¹ Distances Measured In Feet Above Barrier Dam

⁴ See Explanation in Section 2.2 Floodways

² Distances Measured In Feet Above Confluence with Ohio River

³ Computed without consideration of backwater Effects from the Ohio River

| | | |
|----------|----------------------------------------------------------------------------------------|-------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: MILL CREEK – MUDDY CREEK |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|-------------------------|---------------------|--------------------|-------------------------|--------------------------|--------------------------------------------------------------|--------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Muddy Creek (continued) | | | | | | | | |
| J | 16,850 ¹ | 70 | 601 | 16.8 | 542.4 | 542.4 | 542.4 | 0.0 |
| K | 18,630 ¹ | 79 | 628 | 16.1 | 572.1 | 572.1 | 572.1 | 0.0 |
| L | 19,840 ¹ | 71 | 603 | 16.8 | 595.4 | 595.4 | 595.4 | 0.0 |
| M | 21,130 ¹ | 77 | 621 | 16.3 | 612.8 | 612.8 | 612.8 | 0.0 |
| N | 22,200 ¹ | 58 | 567 | 17.8 | 631.1 | 631.1 | 631.1 | 0.0 |
| O | 24,115 ¹ | 80 | 604 | 14.9 | 680.4 | 680.4 | 680.4 | 0.0 |
| P | 24,800 ¹ | 73 | 656 | 13.7 | 687.7 | 687.7 | 688.2 | 0.5 |
| Q | 27,080 ¹ | 93 | 600 | 14.3 | 722.3 | 722.3 | 722.3 | 0.0 |
| R | 28,490 ¹ | 55 | 551 | 15.6 | 735.2 | 735.2 | 735.4 | 0.2 |
| S | 29,330 ¹ | 65 | 568 | 15.1 | 747.6 | 747.6 | 747.6 | 0.0 |
| T | 30,700 ¹ | 91 | 1,097 | 7.8 | 761.4 | 761.4 | 762.1 | 0.7 |
| U | 31,255 ¹ | 120 | 2,164 | 3.2 | 762.3 | 762.3 | 762.3 | 0.0 |
| V | 33,023 ¹ | 50 | 443 | 15.8 | 771.5 | 771.5 | 771.5 | 0.0 |
| W | 33,850 ¹ | 30 | 405 | 17.3 | 781.5 | 781.5 | 781.5 | 0.0 |
| Newton (Clear) Creek | | | | | | | | |
| A | 1,780 ² | 3,200 ⁴ | 17,189 | 5.2 | 500.8 | 482.6 ³ | 483.3 | 0.7 |
| B | 5,270 ² | 175 ⁴ | 1,224 | 1.9 | 500.8 | 484.3 ³ | 485.3 | 1.0 |

¹ Distances Measured In Feet Above Confluence with Ohio River

⁴ Computed without consideration of Little Miami River floodway

² Distances Measured In Feet Above Confluence With Little Miami River

³ Computed Without Consideration of Backwater Effects from the Ohio River

| | | |
|----------|----------------------------------------------------------------------------------------|-----------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: MUDDY CREEK – NEWTON (CLEAR) CREEK |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|-----------------------------|-----------------------|--------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| North Branch Sycamore Creek | | | | | | | | |
| A | 23,504 | 38 | 235 | 7.9 | 698.2 | 698.2 | 698.5 | 0.3 |
| B | 24,314 | 33 | 253 | 7.4 | 704.8 | 704.8 | 705.6 | 0.8 |
| C | 25,267 | 37 | 232 | 8.0 | 709.5 | 709.5 | 710.2 | 0.7 |
| D | 26,411 | 38 | 259 | 7.2 | 717.0 | 717.0 | 717.7 | 0.7 |
| E | 26,780 | 46 | 305 | 4.9 | 720.2 | 720.2 | 720.6 | 0.4 |
| F | 27,109 | 24 | 164 | 9.1 | 720.5 | 720.5 | 721.0 | 0.5 |
| G | 27,499 | 32 | 173 | 8.6 | 724.0 | 724.0 | 724.0 | 0.0 |
| H | 27,710 | 24 | 119 | 12.6 | 725.8 | 725.8 | 725.8 | 0.0 |
| I | 28,178 | 40 | 190 | 7.9 | 729.5 | 729.5 | 730.2 | 0.7 |
| J | 28,441 | 29 | 132 | 11.3 | 733.0 | 733.0 | 733.1 | 0.1 |
| K | 28,992 | 28 | 204 | 7.3 | 738.3 | 738.3 | 738.7 | 0.4 |
| L | 29,548 | 30 | 169 | 8.8 | 741.5 | 741.5 | 741.9 | 0.4 |
| M | 29,757 | 43 | 383 | 3.9 | 744.5 | 744.5 | 744.8 | 0.3 |
| N | 31,619 | 45 | 209 | 5.4 | 754.1 | 754.1 | 754.5 | 0.4 |
| O | 33,159 | 32 | 137 | 8.2 | 765.9 | 765.9 | 766.9 | 1.0 |
| P | 33,327 | 47 | 139 | 8.1 | 768.7 | 768.7 | 769.3 | 0.6 |
| Q | 33,583 | 32 | 183 | 6.1 | 771.4 | 771.4 | 771.8 | 0.4 |
| R | 34,222 | 60 | 413 | 2.7 | 778.0 | 778.0 | 779.0 | 1.0 |

¹ Distances Measured In Feet Above Confluence With Sycamore Creek

| | | |
|----------|----------------------------------------------------------------------------------------|----------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: NORTH BRANCH SYCAMORE CREEK |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|----------------|-----------------------|--------------------------|-------------------------|--------------------------|--------------------------------------------------------------|--------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| O'Bannon Creek | | | | | | | | |
| A | 481 ¹ | 434 | 5,260 | 2.6 | 586.1 | 581.8 ⁴ | 582.7 | 0.9 |
| B | 855 ¹ | 182 | 2,745 | 4.9 | 586.1 | 582.6 ⁴ | 583.4 | 0.8 |
| C | 1,228 ¹ | 353 | 3,811 | 3.6 | 586.1 | 583.1 ⁴ | 584.0 | 0.9 |
| D | 1,524 ¹ | 145 | 2,436 | 5.6 | 586.1 | 584.1 ⁴ | 584.9 | 0.8 |
| E | 2,534 ¹ | 231 | 2,538 | 5.4 | 586.1 | 586.1 | 586.6 | 0.5 |
| F | 3,525 ¹ | 137 | 1,613 | 8.4 | 588.4 | 588.4 | 589.0 | 0.6 |
| G | 4,523 ¹ | 127 | 1,591 | 8.6 | 591.7 | 591.7 | 592.6 | 0.9 |
| Ohio River | | | | | | | | |
| A | 490.75 ² | 1,762 / 233 ³ | 121,533 | 5.9 | 489.8 | 489.8 | 490.8 | 1.0 |
| B | 490.25 ² | 1,370 / 153 ³ | 104,252 | 6.9 | 489.9 | 489.9 | 490.9 | 1.0 |
| C | 489.50 ² | 2,140 / 656 ³ | 124,572 | 5.8 | 490.3 | 490.3 | 491.3 | 1.0 |
| D | 489.00 ² | 1,995 / 411 ³ | 126,192 | 5.7 | 490.5 | 490.5 | 491.5 | 1.0 |
| E | 488.50 ² | 1,683 / 226 ³ | 113,032 | 6.4 | 490.6 | 490.6 | 491.6 | 1.0 |
| F | 488.00 ² | 1,399 / 99 ³ | 105,946 | 6.8 | 490.7 | 490.7 | 491.6 | 0.9 |
| G | 487.50 ² | 1,326 / 134 ³ | 98,996 | 7.3 | 490.7 | 490.7 | 491.7 | 1.0 |
| H | 486.00 ² | 1,936 / 337 ³ | 124,136 | 5.8 | 491.6 | 491.6 | 492.6 | 1.0 |
| I | 485.25 ² | 2,085 / 212 ³ | 129,283 | 5.6 | 491.8 | 491.8 | 492.8 | 1.0 |
| J | 483.75 ² | 2,277 / 490 ³ | 122,275 | 5.9 | 492.3 | 492.3 | 493.2 | 0.9 |
| K | 483.25 ² | 1,942 / 189 ³ | 125,681 | 5.7 | 492.4 | 492.4 | 493.4 | 1.0 |

¹ Distances Measured In Feet Above Confluence With Little Miami River

² Miles below headwaters at Pittsburgh

³ Total Width/Width within County

⁴ Computed Without Consideration of Backwater Effects from Little Miami River

| | | |
|----------|----------------------------------------------------------------------------------------|----------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: O'BANNON CREEK – OHIO RIVER |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|------------------------|-----------------------|---------------------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) ² | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Ohio River (continued) | | | | | | | | |
| L | 482.50 | 1,470 / 242 | 109,046 | 6.6 | 492.6 | 492.6 | 493.6 | 1.0 |
| M | 482.00 | 1,941 / 325 | 112,846 | 6.4 | 492.8 | 492.8 | 493.8 | 1.0 |
| N | 481.25 | 1,558 / 265 | 107,506 | 6.7 | 493.0 | 493.0 | 494.0 | 1.0 |
| O | 480.75 | 1,628 / 500 | 105,839 | 6.8 | 493.2 | 493.2 | 494.2 | 1.0 |
| P | 480.25 | 1,740 / 278 | 119,559 | 6.0 | 493.5 | 493.5 | 494.5 | 1.0 |
| Q | 479.50 | 1,635 / 131 | 114,112 | 6.3 | 493.7 | 493.7 | 494.7 | 1.0 |
| R | 477.50 | 1,730 / 460 | 112,902 | 6.4 | 494.3 | 494.3 | 495.3 | 1.0 |
| S | 477.00 | 1,671 / 586 | 111,524 | 6.4 | 494.5 | 494.5 | 495.4 | 0.9 |
| T | 476.50 | 1,557 / 464 | 107,724 | 6.7 | 494.6 | 494.6 | 495.6 | 1.0 |
| U | 476.00 | 1,900 / 332 | 125,775 | 5.7 | 495.0 | 495.0 | 496.0 | 1.0 |
| V | 475.00 | 1,471 / 354 | 102,984 | 7.0 | 495.1 | 495.1 | 496.1 | 1.0 |
| W | 474.50 | 1,625 / 490 | 111,379 | 6.5 | 495.4 | 495.4 | 496.4 | 1.0 |
| X | 474.00 | 1,546 / 250 | 109,421 | 6.6 | 495.6 | 495.6 | 496.6 | 1.0 |
| Y | 473.50 | 1,383 / 234 | 89,554 | 8.0 | 495.6 | 495.6 | 496.6 | 1.0 |
| Z | 473.00 | 1,324 / 298 | 99,781 | 7.2 | 496.0 | 496.0 | 497.0 | 1.0 |
| AA | 472.75 | 1,368 / 193 | 106,064 | 6.8 | 496.2 | 496.2 | 497.2 | 1.0 |
| AB | 472.25 | 1,220 / 217 | 88,391 | 8.1 | 496.2 | 496.2 | 497.2 | 1.0 |
| AC | 472.00 | 1,265 / 345 | 87,096 | 8.2 | 496.3 | 496.3 | 497.3 | 1.0 |

¹ Miles below headwaters at Pittsburgh

² Total Width/Width within County

| | | |
|----------|-----------------------------------------------------------------------------------------------|------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: OHIO RIVER |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|------------------------|-----------------------|----------------------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) ² | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Ohio River (continued) | | | | | | | | |
| AD | 471.75 | 1,089 / 207 | 81,444 | 8.8 | 496.3 | 496.3 | 497.3 | 1.0 |
| AE | 471.50 | 1,168 / 182 | 82,908 | 8.7 | 496.5 | 496.5 | 497.5 | 1.0 |
| AF | 471.00 | 1,531 / 249 | 104,776 | 6.9 | 497.4 | 497.4 | 498.4 | 1.0 |
| AG | 470.50 | 1,406 / 225 | 103,307 | 7.0 | 497.5 | 497.5 | 498.5 | 1.0 |
| AH | 470.00 | 1,640 / 245 | 95,870 | 7.1 | 497.8 | 497.8 | 498.8 | 1.0 |
| AI | 469.50 | 1,626 / 224 | 93,336 | 7.3 | 497.9 | 497.9 | 499.0 | 1.0 |
| AJ | 469.00 | 1,506 / 284 | 97,824 | 6.9 | 498.3 | 498.3 | 499.3 | 1.0 |
| AK | 468.00 | 1,588 / 226 | 97,145 | 7.0 | 498.7 | 498.7 | 499.7 | 1.0 |
| AL | 467.00 | 2,400 / 353 | 122,037 | 5.6 | 499.3 | 499.3 | 500.3 | 1.0 |
| AM | 466.00 | 2,365 / 973 | 120,837 | 5.6 | 499.7 | 499.7 | 500.7 | 1.0 |
| AN | 465.25 | 1,850 / 669 ³ | 113,150 | 6.0 | 500.0 | 500.0 | 501.0 | 1.0 |
| AO | 465.00 | 1,537 / 417 | 106,983 | 6.3 | 500.1 | 500.1 | 501.1 | 1.0 |
| AP | 464.50 | 2,232 / 1,159 ³ | 131,625 | 5.2 | 500.3 | 500.3 | 501.3 | 1.0 |
| AQ | 464.00 | 1,970 / 9200 ⁴ | 136,898 | 4.8 | 500.6 | 500.6 | 501.6 | 1.0 |
| AR | 463.25 | 2,220 / 1,120 ⁴ | 127,626 | 5.1 | 500.8 | 500.8 | 501.8 | 1.0 |
| AS | 463.00 | 1,486 / 467 ³ | 109,971 | 5.9 | 500.8 | 500.8 | 501.8 | 1.0 |
| AT | 462.75 | 1,348 / 426 ³ | 101,406 | 6.4 | 500.9 | 500.9 | 501.9 | 1.0 |
| AU | 462.00 | 1,798 / 750 | 118,785 | 5.5 | 501.3 | 501.3 | 502.3 | 1.0 |
| AV | 461.00 | 2,938 / 599 | 152,481 | 4.3 | 501.8 | 501.8 | 502.8 | 1.0 |

¹ Miles below headwaters at Pittsburgh

³ Width updated to match county boundary

² Total Width/Width within County

⁴ Floodway width updated to county boundary & 2012 FIS extent within County

TABLE 23

**FEDERAL EMERGENCY MANAGEMENT AGENCY
HAMILTON COUNTY, OHIO
AND INCORPORATED AREAS**

FLOODWAY DATA

FLOODING SOURCE: OHIO RIVER

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|------------------------|--------------------|----------------------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Ohio River (continued) | | | | | | | | |
| AW | 460.5 ¹ | 3,380 / 1,448 ³ | 157,562 | 4.1 | 501.9 | 501.9 | 502.9 | 1.0 |
| AX | 460.0 ¹ | 3,429 / 1,680 ³ | 157,030 | 4.2 | 502.0 | 502.0 | 503.0 | 1.0 |
| AY | 459.5 ¹ | 3,023 / 1,150 ³ | 144,353 | 4.5 | 502.1 | 502.1 | 503.1 | 1.0 |
| AZ | 459.0 ¹ | 2,770 / 539 ³ | 143,238 | 4.6 | 502.2 | 502.2 | 503.2 | 1.0 |
| BA | 458.0 ¹ | 3,368 / 418 ³ | 137,930 | 4.7 | 502.3 | 502.3 | 503.3 | 1.0 |
| BB | 457.0 ¹ | 2,100 / 327 ³ | 144,392 | 4.5 | 502.6 | 502.6 | 503.6 | 1.0 |
| BC | 456.0 ¹ | 3,122 / 569 ³ | 162,286 | 4.0 | 502.8 | 502.8 | 503.8 | 1.0 |
| Pleasant Run | | | | | | | | |
| A | 84 ² | 36 | 173 | 9.9 | 664.1 | 664.1 | 664.4 | 0.3 |
| B | 785 ² | 40 | 233 | 7.3 | 672.8 | 672.8 | 673.1 | 0.3 |
| C | 1,758 ² | 113 | 171 | 8.5 | 685.3 | 685.3 | 685.3 | 0.0 |
| D | 2,628 ² | 20 | 92 | 9.1 | 697.0 | 697.0 | 697.5 | 0.5 |
| E | 3,274 ² | 23 | 105 | 8.0 | 705.8 | 705.8 | 706.6 | 0.8 |

¹ Miles below headwaters at Pittsburgh

² Distances Measured In Feet Above John Gray Road

³ Total Width/Width within County

| | | |
|----------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: OHIO RIVER – PLEASANT RUN |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|---------------|----------|--------------------|----------------------------------------------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | WIDTH REDUCED FROM PRIOR STUDY ³ (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Polk Run | A | 5,161 ¹ | 78 | 477 | 5.9 | 592.4 | 592.4 | 593.4 | 1.0 |
| | B | 6,258 ¹ | 103 | | 7.4 | 610.6 | 610.6 | 610.6 | 0.0 |
| | C | 7,003 ¹ | 47 | | 6.6 | 622.8 | 622.8 | 623.7 | 0.9 |
| | D | 7,674 ¹ | 63 | | 6.6 | 636.0 | 636.0 | 636.9 | 0.9 |
| | E | 8,396 ¹ | 56 | | 6.9 | 652.7 | 652.7 | 652.7 | 0.0 |
| | F | 8,966 ¹ | 77 | | 5.7 | 661.4 | 661.4 | 661.5 | 0.1 |
| | G | 9,430 ¹ | 39 | | 12.6 | 670.9 | 670.9 | 670.9 | 0.0 |
| | H | 9,783 ¹ | 90 | | 3.7 | 681.7 | 681.7 | 681.7 | 0.0 |
| Raiders Run | A | 240 ² | 54 | 593 | 3.2 | 708.1 | 708.1 | 708.1 | 0.0 |
| | B | 2,185 ² | 49 | | 10.3 | 731.0 | 731.0 | 731.0 | 0.0 |
| | C | 3,768 ² | 183 | | 1.0 | 778.9 | 778.9 | 779.4 | 0.5 |
| | D | 4,323 ² | 190 | | 0.8 | 779.3 | 779.3 | 779.8 | 0.5 |
| | E | 4,735 ² | 99 | | 2.4 | 779.3 | 779.3 | 779.8 | 0.5 |
| | F | 5,085 ² | 76 | | 4.1 | 779.4 | 779.4 | 779.9 | 0.5 |
| | G | 6,155 ² | 115 | | 4.2 | 792.3 | 792.3 | 792.8 | 0.5 |
| | H | 6,760 ² | 60 | | 10.8 | 798.5 | 798.5 | 798.5 | 0.0 |

¹ Distances Measured In Feet Above Confluence With Little Miami River

² Distances Measured In Feet Above Confluence With West Fork Sycamore Creek

³ See Explanation in Section 2.2 Floodways

| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
|----------|----------------------------------------------------------------------------------------|-----------------------------------------|
| | | FLOODING SOURCE: POLK RUN – RAIDERS RUN |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|--------------------|---------------------|--------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Section Road Creek | | | | | | | | |
| A | 725 ¹ | 190 | 3,261 | 1.6 | 589.4 | 589.4 | 589.9 | 0.5 |
| B | 1,579 ¹ | 226 | 3,716 | 1.4 | 591.3 | 591.3 | 591.6 | 0.3 |
| C | 2,366 ¹ | 180 | 1,687 | 2.9 | 592.0 | 592.0 | 592.0 | 0.0 |
| D | 3,792 ¹ | 280 | 2,265 | 2.2 | 601.7 | 601.7 | 601.8 | 0.1 |
| E | 5,217 ¹ | 200 | 310 | 6.1 | 623.4 | 623.4 | 623.8 | 0.4 |
| F | 6,896 ¹ | 198 | 1,342 | 2.9 | 635.1 | 635.1 | 635.5 | 0.4 |
| Sharon Creek | | | | | | | | |
| A | 306 ² | 133 | 955 | 6.3 | 569.9 | 569.9 | 570.9 | 1.0 |
| B | 1,573 ² | 159 | 1,051 | 5.7 | 573.6 | 573.6 | 574.4 | 0.8 |
| C | 2,883 ² | 141 | 1,179 | 5.1 | 576.7 | 576.7 | 577.7 | 1.0 |
| D | 3,432 ² | 75 | 681 | 8.5 | 577.9 | 577.9 | 578.4 | 0.5 |
| E | 4,736 ² | 140 | 735 | 7.8 | 582.1 | 582.1 | 582.5 | 0.4 |
| F | 5,000 ² | 135 | 838 | 6.9 | 584.0 | 584.0 | 584.5 | 0.5 |
| G | 7,065 ² | 72 | 550 | 10.3 | 591.6 | 591.6 | 591.6 | 0.0 |
| H | 7,297 ² | 195 | 1,263 | 4.5 | 595.9 | 595.9 | 596.1 | 0.2 |
| I | 8,670 ² | 195 | 1,256 | 4.5 | 597.4 | 597.4 | 597.7 | 0.3 |
| J | 10,037 ² | 75 | 473 | 12.0 | 600.0 | 600.0 | 600.4 | 0.4 |
| K | 10,169 ² | 350 | 1,700 | 3.3 | 608.6 | 608.6 | 608.8 | 0.2 |

¹ Distances Measured In Feet Above Corporate Limits

² Distances Measured In Feet Above Confluence with Mill Creek

| | | |
|----------|----------------------------------------------------------------------------------------|----------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: SECTION ROAD CREEK – SHARON CREEK |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|--------------------------|---------------------|--------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Sharon Creek (continued) | | | | | | | | |
| L | 11,194 ¹ | 106 | 1,115 | 5.1 | 622.4 | 622.4 | 622.8 | 0.4 |
| M | 11,563 ¹ | 77 | 739 | 7.6 | 622.4 | 622.4 | 622.7 | 0.3 |
| Sharon Creek Tributary | | | | | | | | |
| A | 1,373 ² | 85 | 366 | 7.1 | 582.2 | 582.2 | 582.5 | 0.3 |
| B | 1,996 ² | 65 | 300 | 8.6 | 586.5 | 586.5 | 586.6 | 0.1 |
| C | 2,270 ² | 50 | 321 | 8.1 | 588.9 | 588.9 | 589.4 | 0.5 |
| D | 2,724 ² | 60 | 400 | 6.5 | 592.8 | 592.8 | 593.2 | 0.4 |
| E | 3,131 ² | 70 | 391 | 6.6 | 594.3 | 594.3 | 594.7 | 0.4 |
| F | 3,226 ² | 60 | 427 | 6.1 | 595.2 | 595.2 | 595.7 | 0.5 |
| G | 4,303 ² | 40 | 210 | 12.4 | 602.7 | 602.7 | 603.2 | 0.5 |
| H | 5,016 ² | 40 | 211 | 12.3 | 621.2 | 621.2 | 621.2 | 0.0 |
| I | 5,333 ² | 41 | 204 | 12.7 | 627.6 | 627.6 | 628.1 | 0.5 |
| Sycamore Creek | | | | | | | | |
| A | 11,519 ³ | 43 | 135 | 8.3 | 701.7 | 701.7 | 701.7 | 0.0 |
| B | 11,936 ³ | 31 | 292 | 3.3 | 711.3 | 711.3 | 712.3 | 1.0 |
| C | 12,653 ³ | 21 | 166 | 5.8 | 716.9 | 716.9 | 717.4 | 0.5 |
| D | 13,676 ³ | 202 | 457 | 1.8 | 726.3 | 726.3 | 726.5 | 0.2 |
| E | 13,905 ³ | 40 | 325 | 2.5 | 728.0 | 728.0 | 729.0 | 1.0 |

¹ Distances Measured In Feet Above Confluence with Mill Creek

² Distances Measured In Feet Above Confluence with Sharon Creek

³ Distances Measured In Feet Above Confluence with Little Miami River

| | | |
|----------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: SHARON CREEK – SHARON CREEK TRIBUTARY – SYCAMORE CREEK |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|----------------------------|---------------------|--------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Sycamore Creek (continued) | | | | | | | | |
| F | 14,725 ¹ | 67 | 275 | 2.9 | 733.9 | 733.9 | 734.2 | 0.3 |
| G | 14,835 ¹ | 51 | 226 | 3.6 | 735.6 | 735.6 | 736 | 0.4 |
| H | 15,316 ¹ | 103 | 446 | 1.8 | 738.4 | 738.4 | 739 | 0.6 |
| I | 15,878 ¹ | 187 | 497 | 1.6 | 739.3 | 739.3 | 740.1 | 0.8 |
| J | 16,330 ¹ | 37 | 148 | 4.4 | 742.7 | 742.7 | 743.4 | 0.7 |
| K | 16,805 ¹ | 22 | 75 | 6.4 | 745.3 | 745.3 | 745.8 | 0.5 |
| L | 16,992 ¹ | 70 | 405 | 1.2 | 751.4 | 751.4 | 752.2 | 0.8 |
| M | 17,630 ¹ | 47 | 68 | 7.0 | 755.9 | 755.9 | 755.9 | 0.0 |
| Tributary A | | | | | | | | |
| A | 206 ² | 46 | 278 | 7.0 | 786.6 | 786.6 | 787.6 | 1.0 |
| B | 444 ² | 38 | 232 | 8.3 | 788.1 | 788.1 | 789.0 | 0.9 |
| C | 686 ² | 63 | 272 | 7.1 | 790.8 | 790.8 | 791.8 | 1.0 |
| D | 1,119 ² | 51 | 303 | 6.4 | 796.4 | 796.4 | 797.2 | 0.8 |
| E | 1,410 ² | 43 | 254 | 7.6 | 798.2 | 798.2 | 799.0 | 0.8 |
| F | 1,705 ² | 29 | 191 | 10.2 | 801.0 | 801.0 | 801.9 | 0.9 |

¹ Distances Measured In Feet Above Keller Road

² Distances Measured In Feet Above Mouth at Confluence with West Fork Lake Tributary

| | | |
|----------|----------------------------------------------------------------------------------------|-----------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: SYCAMORE CREEK – TRIBUTARY A |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|---------------------------|---------------------|--------------|----------------------------------------------------|-------------------------|--------------------------|--------------------------------------------------------------|--------------------|---------------|----------|
| CROSS SECTION | DISTANCE | WIDTH (Feet) | WIDTH REDUCED FROM PRIOR STUDY ⁴ (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| Tributary to Pleasant Run | | | | | | | | | |
| A | 659 ¹ | 30 | | 87 | 10.0 | 680.0 | 680.0 | 680.2 | 0.2 |
| B | 1,237 ¹ | 19 | | 95 | 9.1 | 689.8 | 689.8 | 690.3 | 0.5 |
| C | 2,111 ¹ | 28 | | 122 | 7.0 | 699.4 | 699.4 | 700.0 | 0.6 |
| D | 2,641 ¹ | 19 | | 101 | 8.5 | 704.2 | 704.2 | 704.8 | 0.6 |
| E | 3,120 ¹ | 74 | | 335 | 2.6 | 706.6 | 706.6 | 707.0 | 0.4 |
| West Fork | | | | | | | | | |
| A | 600 ² | 60 | | 544 | 14.5 | 485.0 | 477.9 ³ | 478.4 | 0.5 |
| B | 1,351 ² | 85 | | 769 | 10.3 | 485.0 | 482.4 ³ | 482.8 | 0.4 |
| C | 2,061 ² | 198 | | 1,729 | 4.6 | 485.7 | 485.7 | 485.7 | 0.0 |
| D | 3,043 ² | 68 | | 654 | 12.1 | 486.6 | 486.6 | 487.1 | 0.5 |
| E | 4,160 ² | 198 | 57 | 1,790 | 4.4 | 492.2 | 492.2 | 492.4 | 0.2 |
| F | 5,945 ² | 82 | | 1,345 | 5.8 | 500.6 | 500.6 | 501.1 | 0.5 |
| G | 7,125 ² | 545 | | 4,623 | 1.7 | 507.5 | 507.5 | 508.0 | 0.5 |
| H | 8,148 ² | 131 | | 1,861 | 4.2 | 507.6 | 507.6 | 508.1 | 0.5 |
| I | 9,288 ² | 99 | | 886 | 8.8 | 510.6 | 510.6 | 510.6 | 0.0 |
| J | 10,466 ² | 86 | | 673 | 11.6 | 516.9 | 516.9 | 516.9 | 0.0 |
| K | 12,539 ² | 52 | | 488 | 16.0 | 546.2 | 546.2 | 546.5 | 0.3 |
| L | 13,419 ² | 80 | | 1,025 | 7.6 | 558.2 | 558.2 | 558.7 | 0.5 |

¹ Distances Measured In Feet Above Confluence with Pleasant Run

⁴ See Explanation in Section 2.2 Floodways

² Distances Measured In Feet Above Confluence with Mill Creek

³ Computed Without Consideration of Backwater Effects from Mill Creek

| | | |
|----------|----------------------------------------------------------------------------------------|--------------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: TRIBUTARY TO PLEASANT RUN – WEST FORK |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|--------------------------|-----------------------|--------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| West Fork Lake Tributary | | | | | | | | |
| L | 19,932 | 146 | 1,009 | 4.5 | 781.0 | 781.0 | 782.0 | 1.0 |
| M | 20,117 | 64 | 724 | 6.3 | 781.4 | 781.4 | 782.3 | 0.9 |
| N | 20,323 | 110 | 1,130 | 4.1 | 782.1 | 782.1 | 783.1 | 1.0 |
| O | 20,539 | 107 | 1,063 | 4.3 | 782.4 | 782.4 | 783.4 | 1.0 |
| P | 20,676 | 180 | 1,327 | 3.5 | 782.8 | 782.8 | 783.7 | 0.9 |
| Q | 20,951 | 218 | 2,023 | 2.3 | 783.1 | 783.1 | 784.0 | 0.9 |
| R | 21,162 | 129 | 1,180 | 3.9 | 783.2 | 783.2 | 784.1 | 0.9 |
| S | 21,574 | 257 | 2,225 | 2.1 | 783.5 | 783.5 | 784.5 | 1.0 |
| T | 21,928 | 168 | 1,165 | 3.9 | 783.6 | 783.6 | 784.5 | 0.9 |
| U | 22,303 | 158 | 969 | 4.7 | 784.3 | 784.3 | 785.3 | 1.0 |
| V | 22,646 | 32 | 173 | 5.0 | 785.6 | 785.6 | 786.4 | 0.8 |
| W | 22,746 | 28 | 130 | 6.7 | 785.9 | 785.9 | 786.7 | 0.8 |
| X | 23,338 | 91 | 603 | 1.5 | 794.0 | 794.0 | 794.0 | 0.0 |
| Y | 23,654 | 74 | 370 | 2.4 | 794.0 | 794.0 | 794.0 | 0.0 |
| Z | 24,399 | 74 | 295 | 3.0 | 798.8 | 798.8 | 798.8 | 0.0 |
| AA | 24,552 | 47 | 220 | 4.0 | 801.4 | 801.4 | 801.4 | 0.0 |
| AB | 25,080 | 42 | 189 | 5.9 | 802.5 | 802.5 | 803.1 | 0.6 |
| AC | 25,291 | 24 | 158 | 7.0 | 804.6 | 804.6 | 805.1 | 0.5 |
| AD | 27,667 | 33 | 244 | 4.5 | 830.5 | 830.5 | 831.2 | 0.7 |

¹ Distances Measured In Feet Above Confluence with Mill Creek

| | | |
|----------|-----------------------------------------------------------------------------------------------|--------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: WEST FORK LAKE TRIBUTARY |

Table 23 Floodway Data (continued)

| LOCATION | | FLOODWAY | | | 1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | | |
|--------------------------------------|-----------------------|--------------|-------------------------|--------------------------|--------------------------------------------------------------|------------------|---------------|----------|--|
| CROSS SECTION | DISTANCE ¹ | WIDTH (Feet) | SECTION AREA (Sq. Feet) | MEAN VELOCITY (Feet/Sec) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE | |
| West Fork Lake Tributary (continued) | | | | | | | | | |
| AE | 28,406 | 71 | 327 | 8.8 | 835.3 | 835.3 | 835.6 | 0.3 | |
| AF | 28,829 | 72 | 867 | 3.3 | 844.8 | 844.8 | 845.6 | 0.8 | |
| AG | 29,040 | 71 | 793 | 3.6 | 844.9 | 844.9 | 845.7 | 0.8 | |

¹ Distances Measured In Feet Above Confluence with Mill Creek

| | | |
|----------|-----------------------------------------------------------------------------------------------|--------------------------------------------------|
| TABLE 23 | FEDERAL EMERGENCY MANAGEMENT AGENCY HAMILTON COUNTY, OHIO AND INCORPORATED AREAS | FLOODWAY DATA |
| | | FLOODING SOURCE: WEST FORK LAKE TRIBUTARY |