Identification_Information:
  Citation: Fowler, K.K., 2016, Flood-inundation maps for the Wabash River at New Harmony, Indiana:
U.S. Geological Survey Scientific Investigations Report 2016-5119, 14 p.
    Citation_Information:
      Originator: U.S. Geological Survey, Indiana-Kentucky Water Science Center
      Publication_Date: 2016
      Title: WabnewhIN_10_25_4
      Geospatial_Data_Presentation_Form: raster digital data
      Series_Information:
        Series_Name: Scientific Investigations Report
        Issue_Identification: SIR 2016-5119
      Publication_Information:
        Publication_Place: Reston, Virginia
        Publisher: U.S. Geological Survey
      Online_Linkage: http://water.usgs.gov/osw/flood_inundation/
      Online_Linkage: http://pubs.usgs.gov/sir/2016/5119
      Larger_Work_Citation:
        Citation_Information:
          Originator: US Geological Survey, Indiana-Kentucky Water Science Center
          Publication_Date: 2016
          Title: Flood-Inundation Maps for the Wabash River at New Harmony, Indiana
          Geospatial_Data_Presentation_Form: document
          Series_Information:
            Series_Name: Scientific Investigations Report
            Issue_Identification: SIR 2016-5119
          Publication_Information:
            Publication_Place: Reston, Virginia
            Publisher: U.S. Geological Survey
          Other_Citation_Details: Fowler, K.K., 2016, Flood-inundation maps for the Wabash River at New Harmony, Indiana: U.S. Geological Survey Scientific Investigations Report 2016-5119, 14 p.
          Online_Linkage: http://pubs.usgs.gov/sir/2016/5119

  Description:

    Abstract: Digital flood-inundation maps for a 3.68-mile reach of the Wabash River extending 1.77 miles upstream and 1.91 miles downstream from streamgage 03378500 at New Harmony, Indiana, were created by the U.S. Geological Survey (USGS) in cooperation with the Indiana Office of Community and Rural Affairs. The flood-inundation maps, which can be accessed through the USGS Flood Inundation Mapping Science Web site at http://water.usgs.gov/osw/flood_inundation/, depict estimates of the areal extent and depth of flooding corresponding to selected water levels (stages) at the USGS streamgage at Wabash River at New Harmony, Ind. (station 03378500). Near-real-

time stages at this streamgage may be obtained from the USGS National Water Information System at http://waterdata.usgs.gov/ or the National Weather Service (NWS) Advanced Hydrologic Prediction Service at http:/water.weather.gov/ahps/, which also forecasts flood hydrographs at this site (NHRI3).

Flood profiles were computed for the stream reach by means of a one-dimensional step-backwater model. The hydraulic model was calibrated by using the most current stage-discharge relations at the Wabash River at New Harmony, Ind., streamgage and the documented high-water marks from the flood of April 27–28, 2013. The calibrated hydraulic model was then used to compute 17 water-surface profiles for flood stages at approximately 1-foot intervals referenced to the streamgage datum and ranging from 10.0 feet, or near bankfull, to 25.4 feet, the highest stage of the stage-discharge rating curve used in the model. The simulated water-surface profiles were then combined with a geographic information system digital elevation model (derived from light detection and ranging (lidar) data having a 0.98-ft vertical accuracy and 4.9-ft horizontal resolution) to delineate the area flooded at each water level.

The availability of these maps along with Internet information regarding current stage from the USGS streamgage at Wabash River at New Harmony, Ind., and forecasted stream stages from the NWS will provide emergency management personnel and residents with information that is critical for flood response activities such as evacuations and road closures as well as for post-flood recovery efforts.

Purpose: This dataset was created to support the development of flood-inundation maps for a reach of the Wabash River at New Harmony, Indiana.

Supplemental_Information: Flood-inundation maps were created for USGS streamgage 03378500, Wabash River at New Harmony, Ind., which is also a NWS flood-forecast point. The maps were created in a GIS by combining the water-surface profiles and digital elevation model data. The digital elevation model (DEM) data were derived from LiDAR data with horizontal resolution of 4.9 ft and vertical accuracy of 0.98 ft at a 95-percent confidence level based on a root mean squared error of 0.49 ft for the open terrain land-cover category. Estimated flood-inundation boundaries for each simulated profile were developed with HEC-GeoRAS software. HEC-GeoRAS is a set of procedures, tools, and utilities for processing geospatial data in ArcGIS by using a graphical user interface. The interface allows the preparation of geometric data for import into HEC-RAS and processes simulation results exported from HEC-RAS. USGS personnel then modified the HEC-GeoRAS results to ensure a hydraulically reasonable transition of the

boundary between modeled cross sections relative to the contour data for the land surface. The maps show estimated flood-inundated areas for each of the water-surface profiles that were generated by the hydraulic model. For more information on data processing and checking procedures, see the full report at http://pubs.usgs.gov/sir/2016/5119. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government. Although this Federal Geographic Data Committee-compliant metadata file is intended to document the dataset in nonproprietary form, as well as in ArcGIS format, this metadata file may include some ArcGIS-specific terminology.

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    Time_Period_Information:
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    Maintenance_and_Update_Frequency: None planned
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      North_Bounding_Coordinate: 38.164132
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      Theme_Keyword: river/stream
      Theme_Keyword: flood-inundation maps
      Theme_Keyword: high-water marks
      Theme_Keyword: flooded area
      Theme_Keyword: geospatial analysis
    Place:
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      Place_Keyword: Indiana
      Place_Keyword: Wabash River
      Place_Keyword: Posey County
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      Place_Keyword: USA
  Access_Constraints: None. This dataset is provided by USGS as a
public service. Users of this geospatial database and geologic
information derived there from should acknowledge the U.S. Geological
Survey as the source of the data.
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Use_Constraints: Users must assume responsibility to determine the appropriate use of this data. Users should be aware of the limitations of this dataset if using for critical application.
Point_of_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: US Geological Survey, Indiana-Kentucky Water Science Center
Contact_Address:
Address_Type: mailing and physical address
Address: 5957 Lakeside Blvd.
City: Indianapolis
State_or_Province: Indiana
Postal_Code: 46278
Contact_Voice_Telephone: 317-290-3333
Native_Data_Set_Environment: Microsoft Windows Vista Version 6.1 (Build 7601) Service Pack 1; ESRI ArcCatalog 10.2.2
Cross_Reference:
Citation_Information:
Originator: US Geological Survey, Indiana-Kentucky Water Science Center
Publication_Date: 2016
Publication_Time: Unknown
Title: Flood-Inundation Maps for the Wabash River at New Harmony, Indiana
Geospatial_Data_Presentation_Form: raster digital data
Series_Information:
Series_Name: Scientific Investigations Report
Issue_Identification: SIR 2016-5119
Publication_Information:
Publication_Place: Reston, VA
Publisher: US Geological Survey
Online_Linkage: http://pubs.usgs.gov/sir/2016/5119
Online_Linkage: http://water.usgs.gov/osw/flood_inundation/
Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report: Attributes for water-surface elevation were input from the HEC-RAS model output data table. Flow input data for the HEC-RAS model were obtained from the most current stage-discharge relation at the USGS streamgage 03378500 Wabash River at New Harmony, IN.
Logical_Consistency_Report: There are no unclosed polygons or intersections without nodes. The ArcGIS geodatabase topology tools were used to make corrections using rules including no gaps, no duplicate lines with the same beginning and ending nodes.
Completeness_Report: This dataset is complete; there are no planned revisions or updates at this time.
Positional_Accuracy:
Horizontal_Positional_Accuracy:
Horizontal_Positional_Accuracy_Report: Used cross-section data points from surveyed data, accurate to the datum of the survey.
Vertical_Positional_Accuracy:

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      Vertical_Positional_Accuracy_Report: Used cross-section data
points from surveyed data, accurate to the datum of the survey.
Vertical accuracy to the input Lidar DEM dataset.
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      Source_Citation:
        Citation_Information:
          Originator: U.S. Geological Survey, Indiana Water Science
Center
          Publication_Date: 2016
          Title: Flood-Inundation Maps for the Wabash River at New
Harmony, Indiana
      Type_of_Source_Media: online
      Source_Time_Period_of_Content:
        Time_Period_Information:
          Single_Date/Time:
            Calendar_Date: 2016
        Source_Currentness_Reference: ground condition
      Source_Citation_Abbreviation: Fowler(2016)
      Source_Contribution: Numeric hydraulic model was used to compute
water-surface profiles at selected elevations
along mapped reach. The water-surface profiles were then used to
generate the inundation map boundaries.
    Process_Step:
      Process_Description: This dataset was created to support the
development of flood-inundation maps for a reach of the
Wabash River at New Harmony, Indiana.
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      Process_Date: 20160401
      Process_Time: 12010100
    Process_Step:
      Process_Description: Metadata imported.
      Source_Used_Citation_Abbreviation:
      Process_Date: 20160401
      Process_Time: 17063000
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    Column_Count: 3722
    Vertical_Count: 1
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          Longitude_of_Central_Meridian: -87.083333
          Latitude_of_Projection_Origin: 37.500000
          False_Easting: 2952750
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False_Northing: 820208.333333
Planar_Coordinate_Information
Planar_Coordinate_Encoding_Method: row and column
Coordinate_Representation:
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Ordinate_Resolution: 5.000000
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Ellipsoid_Name: Geodetic Reference System 80
Semi-major_Axis: 6378137.000000
Denominator_of_Flattening_Ratio: 298.257222
Vertical_Coordinate_System_Definition:
Altitude_System_Definition:
Altitude_Datum_Name: North American Vertical Datum of 1988
Altitude_Resolution: 0.000001
Altitude_Distance_Units: feet
Altitude_Encoding_Method: Attribute values
Entity_and_Attribute_Information:
Overview_Description:
Entity_and_Attribute_Overview:
Each entity corresponds to an estimated flood depth values for stream stages 10-25.4 feet at the USGS streamgage 03378500 Wabash River at New Harmony, Indiana.
Entity_Type_Label wabnewhIN
Entity_Type_Definition 03378500(station ID) flood-inundation depth values
Attribute_Label Value
Attribute_Definition flood-inundation depth values.

Entity_and_Attribute_Detail_Citation: Fowler, K.K.,2016, Flood-inundation maps for the Wabash River at New Harmony, Indiana: U.S. Geological Survey Scientific Investigations Report 2016-5119, 14 p.
Distribution_Information:
Distributor:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: US Geological Survey, Indiana-Kentucky Water Science Center
Contact_Position: GIS Specialist
Contact_Address:
Address_Type: mailing and physical address
Address: 5957 Lakeside Blvd.
City: Indianapolis
State_or_Province: Indiana
Postal_Code: 46278
Contact_Voice_Telephone: 317-290-3333
Resource_Description: Downloadable Data
Distribution_Liability:
This database, identified as SIR 2016-5119, has been approved for release and publication by the Director of the USGS. Although this database has been subjected to rigorous review and is substantially

complete, the USGS reserves the right to revise the data pursuant to further analysis and review. Furthermore, it is released on condition that neither the USGS nor the United States Government may be held liable for any damages resulting from its authorized or unauthorized use.

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      Digital_Transfer_Information:
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        Transfer_Size: 3.01
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        Online_Option:
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            Network_Address:
              Network_Resource_Name:
http://water.usgs.gov/osw/flood_inundation/
    Fees: none
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Format compatibility is the user's responsibility.
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  Metadata_Review_Date: 20160708
  Metadata_Contact:
    Contact_Information:
      Contact_Organization_Primary:
        Contact_Organization: US Geological Survey
        Contact_Person: GIS Specialist
      Contact_Position: Ask USGS - Water Webserver Team
      Contact_Address:
        Address_Type: mailing address
        Address: 507 National Center
```

```
        City: Reston
        State_or_Province: Virginia
        Postal_Code: 20192
        Country: USA
      Contact_Voice_Telephone: 1-888-275-8747  (1-888-ASK-USGS)
  Metadata_Standard_Name: FGDC Content Standards for Digital
Geospatial Metadata
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