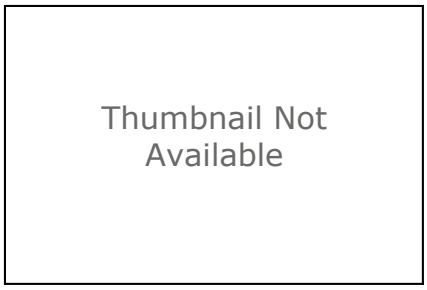
Flood-Inundation Maps and Wetland Restoration Suitability Index for the Blue River and Selected Tributaries, Kansas City, Missouri, and Vicinity, 2012

Raster Dataset



Tags

Flood-inundation depth grids for the Blue River at Colorado Avenue in Kansas City, Missouri.

Summary

This dataset was created to support the development of flood-inundation maps for the Blue River and selected tributaries in Kansas City, Missouri and vicinity.

Description

Digital flood-inundation maps for a 39.7-mile reach of the Blue River and selected tributaries (Brush Creek, Indian Creek, and Dyke Branch) at Kansas City, Missouri, and vicinity, were created by the U.S. Geological Survey (USGS) in cooperation with the City of Kansas City, Missouri. The flood-inundation maps, accessed through the USGS Flood-Inundation Mapping Science Web site at http://water.usgs.gov/osw/flood_inundation/, depict estimates of the spatial extent and depth of flooding corresponding to selected water levels (stages) at 15 reference streamgages and associated stream reaches in the Blue River Basin. Near-real-time stage data from the streamgages 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 (AHPS) at http:/water.weather.gov/ahps/, which also forecasts flood hydrographs at selected sites. Flood profiles were computed for each of 15 reaches by means of one-dimensional or two-dimensional hydraulic models. The models were calibrated by using the current stage-discharge relations at 10 USGS streamgages and documented high-water marks from the flood of June 14, 2010. Hydraulic models were then used to compute water-surface profiles for flood stages at 1-foot intervals referenced to the streamgage datum and ranging from the National Weather Service Action stage, or near bankfull discharge, through the stage corresponding to, or exceeding, the estimated 0.2-percent annual exceedance probability flood (500-year recurrence interval flood).The simulated water-surface profiles were then combined with a geographic information system (GIS) terrain model (derived from light detection and ranging (lidar) data having a vertical accuracy of less than 0.6 foot and nominal horizontal post spacing of 2.46 to 3.28 feet) to delineate the area flooded at each 1-foot increment of stage. The availability of these flood-inundation maps, along with Internet information regarding current stage from the USGS streamgages and forecasted high-flow stages from the NWS, will provide emergency management personnel and residents with information for flood response activities such as evacuations and road closures, as well as for post flood recovery efforts.

The accompanying shape file containing inundation extent polygons for stages 48 through 72 ft correlate with the range in the 25, 1-ft increment depth grids (GRIDID 1 through 25) such that GRIDID 1 correlates with stage 48, and GRIDID 2 correlates with stage 49, etc.

Credits
There are no credits for this item.

Use limitations

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.

Extent

West -94.530379 **East** -94.518054
North 39.038083 **South** 39.024615

Scale Range

Maximum (zoomed in) 1:5,000
Minimum (zoomed out) 1:150,000,000

ArcGIS Metadata ►

Topics and Keywords ►

* CONTENT TYPE Downloadable Data

PLACE KEYWORDS Missouri, Jackson County, Blue River Basin, Indian Creek, Kansas City

THEME KEYWORDS Flooding, Flood-inundation mapping, Blue River Basin, Indian Creek

THEME KEYWORDS Flood, Flood-inundation mapping, Blue River

Hide Topics and Keywords ▲

Citation ►

TITLE Flood-Inundation Maps and Wetland Restoration Suitability Index for the Blue River and Selected Tributaries, Kansas City, Missouri, and Vicinity, 2012
PUBLICATION DATE 2014-11-26 00:12:00

PRESENTATION FORMATS digital map

Hide Citation ▲

Citation Contacts ►

RESPONSIBLE PARTY
ORGANIZATION'S NAME David Heimann, U.S. Geological Survey, Hydrologist
CONTACT'S ROLE originator

Hide Citation Contacts ▲

Resource Details ►

DATASET LANGUAGES English (UNITED STATES)
DATASET CHARACTER SET utf8 - 8 bit UCS Transfer Format

STATUS completed
SPATIAL REPRESENTATION TYPE * grid

* PROCESSING ENVIRONMENT Microsoft Windows 7 Version 6.1 (Build 7601) Service Pack 1; Esri ArcGIS 10.2.1.3497

ARCGIS ITEM PROPERTIES
* NAME 25.flt
* LOCATION file://H:\Submitted_FIM_libraries\Colorado\Colorado\CO\finalfiles\25.flt
* ACCESS PROTOCOL Local Area Network

Hide Resource Details ▲

Extents ►

EXTENT
DESCRIPTION
Flood-inundation project began in October 2012 and completed in November 2014

TEMPORAL EXTENT
BEGINNING DATE 2012-10-01 00:12:00
ENDING DATE 2014-11-26 00:12:00

EXTENT
GEOGRAPHIC EXTENT
BOUNDING RECTANGLE
WEST LONGITUDE -94.503927
EAST LONGITUDE -94.45471
SOUTH LATITUDE 39.09201
NORTH LATITUDE 39.125997

EXTENT
GEOGRAPHIC EXTENT
BOUNDING RECTANGLE
EXTENT TYPE Extent used for searching
* WEST LONGITUDE -94.530379
* EAST LONGITUDE -94.518054
* NORTH LATITUDE 39.038083
* SOUTH LATITUDE 39.024615
* EXTENT CONTAINS THE RESOURCE Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM
* WEST LONGITUDE 1205867.981647
* EAST LONGITUDE 1209287.981647
* SOUTH LATITUDE 14175240.256153
* NORTH LATITUDE 14180088.256153
* EXTENT CONTAINS THE RESOURCE Yes

Hide Extents ▲

Resource Points of Contact ►

POINT OF CONTACT
INDIVIDUAL'S NAME David Heimann
ORGANIZATION'S NAME U.S. Geological Survey
CONTACT'S POSITION Hydrologist

CONTACT'S ROLE point of contact

CONTACT INFORMATION ►
PHONE
VOICE 816-554-3489 x 206

ADDRESS
TYPE postal
DELIVERY POINT 401 NW Capital Drive
CITY Lee's Summit
ADMINISTRATIVE AREA Missouri
POSTAL CODE 64029
E-MAIL ADDRESS dheimann@usgs.gov

Hide Contact information ▲

Hide Resource Points of Contact ▲

Resource Maintenance ►

RESOURCE MAINTENANCE
UPDATE FREQUENCY not planned

Hide Resource Maintenance ▲

Resource Constraints ►

LEGAL CONSTRAINTS
LIMITATIONS OF USE
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.

OTHER CONSTRAINTS
Disclaimer for Flood-Inundation Maps; Inundated areas shown should not be used for navigation, regulatory, permitting, or other legal purposes. The USGS provides these maps as-is for a quick reference, emergency planning tool but assumes no legal liability or responsibility resulting from the use of this information. Uncertainties and Limitations Regarding Use of Flood-Inundation Maps; Although the flood-inundation maps represent the boundaries of inundated areas with a distinct line, some uncertainty is associated with these maps. The flood boundaries shown were estimated based on water stages (water-surface elevations) and streamflows at USGS reference streamgages. Water-surface elevations along the stream reaches were estimated by steady-state hydraulic modeling, assuming unobstructed flow, and using discharges and hydrologic conditions anticipated at the USGS streamgage. The hydraulic model reflects the land-cover characteristics and any bridge, dam, levee, or other hydraulic structures existing as of June 2010. Unique meteorological factors (timing and distribution of precipitation) may cause actual discharges along the modeled reach to vary from those assumed during a flood and lead to deviations in the water-surface elevations and inundation boundaries shown. Additional areas may be flooded due to unanticipated conditions such as changes in the streambed elevation or roughness, backwater into tributaries along a main-stem river, or backwater from localized debris or ice jams. The accuracy of the floodwater extent portrayed on these maps will vary with the accuracy of the topographic data used to simulate the land surface. Additional uncertainties and limitations pertinent to this study are described elsewhere in USGS report SIR 2014-5180. If this series of flood-inundation maps will be used in conjunction with NWS river forecasts, the user should be aware of additional

uncertainties that may be inherent or factored into NWS forecast procedures. The NWS uses forecast models to estimate the quantity and timing of water flowing through selected stream reaches in the United States. These forecast models (1) estimate the amount of runoff generated by precipitation and snowmelt, (2) simulate the movement of floodwater as it proceeds downstream, and (3) predict the flow and stage (and water-surface elevation) for the stream at a given location (AHPS forecast point) throughout the forecast period (every 6 hours and 3 to 5 days out in many locations). For more information on AHPS forecasts, please see http://water.weather.gov/ahps/pcpn_and_river_forecasting.pdf.

CONSTRAINTS

LIMITATIONS OF USE

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.

Hide Resource Constraints ▲

Spatial Reference ►

ARCGIS COORDINATE SYSTEM

* TYPE Projected
* GEOGRAPHIC COORDINATE REFERENCE GCS_North_American_1983
* PROJECTION North_American_1983_UTM_Zone_15N
* COORDINATE REFERENCE DETAILS

PROJECTED COORDINATE SYSTEM

X ORIGIN -16800800
Y ORIGIN -32802000
XY SCALE 137296494.95062786
Z ORIGIN -100000
Z SCALE 10000
M ORIGIN -100000
M SCALE 10000
XY TOLERANCE 0.0032808333333333331
Z TOLERANCE 0.001
M TOLERANCE 0.001
HIGH PRECISION true
WELL-KNOWN TEXT PROJCS["North_American_1983_UTM_Zone_15N",GEOGCS["GCS_North_American_1983",DATUM["D_North_American_1983",SPHEROID["GRS_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION["Transverse_Mercator"],PARAMETER["false_easting",1640416.666666667],PARAMETER["false_northing",0.0],PARAMETER["central_meridian",-93.0],PARAMETER["scale_factor",0.9996],PARAMETER["latitude_of_origin",0.0],UNIT["Foot_US",0.3048006096012192]]

REFERENCE SYSTEM IDENTIFIER

* VALUE 0

Hide Spatial Reference ▲

Spatial Data Properties ►

GEORECTIFIED GRID ►

* NUMBER OF DIMENSIONS 2

AXIS DIMENSIONS PROPERTIES

DIMENSION TYPE row (y-axis)
* DIMENSION SIZE 1616
* RESOLUTION 3.000000 Foot_US

AXIS DIMENSIONS PROPERTIES
DIMENSION TYPE column (x-axis)
* DIMENSION SIZE 1140
* RESOLUTION 3.000000 Foot_US

* CELL GEOMETRY area
* POINT IN PIXEL center

* TRANSFORMATION PARAMETERS ARE AVAILABLE Yes

* CHECK POINTS ARE AVAILABLE No

CORNER POINTS
* POINT 1205867.981647 14175240.256153
* POINT 1205867.981647 14180088.256153
* POINT 1209287.981647 14180088.256153
* POINT 1209287.981647 14175240.256153

* CENTER POINT 1207577.981647 14177664.256153

Hide Georectified Grid ▲

ARCGIS RASTER PROPERTIES ►
GENERAL INFORMATION
* PIXEL DEPTH 32
* COMPRESSION TYPE None
* NUMBER OF BANDS 1
* RASTER FORMAT FLT
* SOURCE TYPE continuous
* PIXEL TYPE floating point
* NO DATA VALUE -9999
* HAS COLORMAP No
* HAS PYRAMIDS No

Hide ArcGIS Raster Properties ▲

Hide Spatial Data Properties ▲

Spatial Data Content ►

IMAGE DESCRIPTION
* TYPE OF INFORMATION image

BAND INFORMATION
* DESCRIPTION Band_1
* NUMBER OF BITS PER VALUE 32

Hide Spatial Data Content ▲

Data Quality ►

SCOPE OF QUALITY INFORMATION ▶
RESOURCE LEVEL attribute

Hide Scope of quality information ▲

DATA QUALITY REPORT - QUANTITATIVE ATTRIBUTE ACCURACY ▶
DIMENSION horizontal

MEASURE DESCRIPTION
Horizontal position accuracy is based on the accuracy of lidar data, survey data (accurate to the datum of the survey) and the accuracy of the one-dimensional or two-dimensional hydraulic model used to develop the water surface profiles.

Hide Data quality report - Quantitative attribute accuracy ▲

DATA QUALITY REPORT - QUANTITATIVE ATTRIBUTE ACCURACY ▶
DIMENSION vertical

MEASURE DESCRIPTION
Vertical position accuracy is based on the accuracy of lidar data, survey data (accurate to the datum of the survey) and the accuracy of the one-dimensional or two-dimensional hydraulic model used to develop the water surface profiles.

Hide Data quality report - Quantitative attribute accuracy ▲

Hide Data Quality ▲

Lineage ▶

PROCESS STEP ▶
WHEN THE PROCESS OCCURRED 2014-11-26
DESCRIPTION
This dataset was created to support the development of flood-inundation maps for a reach of the Blue River at Kansas City, Missouri.

PROCESS CONTACT
INDIVIDUAL'S NAME David Heimann
ORGANIZATION'S NAME U.S. Geological Survey
CONTACT'S POSITION Hydrologist
CONTACT'S ROLE processor

CONTACT INFORMATION ▶
ADDRESS
E-MAIL ADDRESS dheimann@usgs.gov

Hide Contact information ▲

Hide Process step ▲

SOURCE DATA ►
DESCRIPTION
Heimann, D. C.,Weilert, T.E., Kelly, B.P., and Studley, S.E., 2014, Flood-inundation maps and Wetland Restoration Suitability Index for the Blue River and selected tributaries, Kansas City, Missouri, and vicinity, 2012: U.S. Geological Survey Scientific Investigations Report 2014-5180, xx p. Online_Linkage: http://pubs.er.usgs.gov/publication/sir20145180

SOURCE MEDIUM NAME online link
Hide Source data ▲

Hide Lineage ▲

Distribution ►

DISTRIBUTOR ►
CONTACT INFORMATION
ORGANIZATION'S NAME U.S. Geological Survey
CONTACT'S ROLE distributor

CONTACT INFORMATION ►
PHONE
VOICE 1-888-ASK-USGS

ADDRESS
TYPE physical
DELIVERY POINT USGS Information Services Box 25286
CITY Denver
ADMINISTRATIVE AREA Colorado
POSTAL CODE 80225

Hide Contact information ▲

Hide Distributor ▲

DISTRIBUTION FORMAT
* NAME Raster Dataset

Hide Distribution ▲

Fields ►

DETAILS FOR OBJECT Colorado ►
* TYPE Feature Class
* ROW COUNT 25

FIELD FID ►
* ALIAS FID
* DATA TYPE OID
* WIDTH 4
* PRECISION 0

* SCALE 0
* FIELD DESCRIPTION
  Internal feature number.

* DESCRIPTION SOURCE
  Esri

* DESCRIPTION OF VALUES
  Sequential unique whole numbers that are automatically generated.

Hide Field FID ▲

FIELD Shape ►
* ALIAS Shape
* DATA TYPE Geometry
* WIDTH 0
* PRECISION 0
* SCALE 0
* FIELD DESCRIPTION
  Feature geometry.

* DESCRIPTION SOURCE
  ESRI

* DESCRIPTION OF VALUES
  Coordinates defining the features.

Hide Field Shape ▲

FIELD STAGE ►
* ALIAS Stage
* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
  USGS river stage associated with the inundation area, in feet.

DESCRIPTION SOURCE
  USGS streamgage

Hide Field STAGE ▲

FIELD ELEV ►
* ALIAS ELEV
* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
  NAVD88 water-surface elevation that correlates with the USGS river stage, in feet.

DESCRIPTION SOURCE
USGS streamgage datum

Hide Field ELEV ▲

FIELD USGSID ►
* ALIAS USGSID
* DATA TYPE String
* WIDTH 20
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
USGS station ID number

DESCRIPTION SOURCE
USGS streamgage

Hide Field USGSID ▲

FIELD GRIDID ►
* ALIAS GRIDID
* DATA TYPE SmallInteger
* WIDTH 4
* PRECISION 4
* SCALE 0
FIELD DESCRIPTION
sequential number with GRID 1 corresponding to first stage , GRID 2 to second stage, etc

DESCRIPTION SOURCE
USGS

Hide Field GRIDID ▲

Hide Details for object Colorado ▲

Hide Fields ▲

Metadata Details ►

METADATA LANGUAGE English (UNITED STATES)
METADATA CHARACTER SET utf8 - 8 bit UCS Transfer Format

SCOPE OF THE DATA DESCRIBED BY THE METADATA dataset
SCOPE NAME * dataset

* LAST UPDATE 2014-12-08

ARCGIS METADATA PROPERTIES
METADATA FORMAT ArcGIS 1.0
METADATA STYLE FGDC CSDGM Metadata
STANDARD OR PROFILE USED TO EDIT METADATA FGDC

CREATED IN ARCGIS FOR THE ITEM 2014-11-22 10:26:33

LAST MODIFIED IN ARCGIS FOR THE ITEM 2014-12-08 09:45:24

AUTOMATIC UPDATES
HAVE BEEN PERFORMED Yes
LAST UPDATE 2014-12-08 09:45:24

Hide Metadata Details ▲

Metadata Contacts ►

METADATA CONTACT
INDIVIDUAL'S NAME David Heimann
ORGANIZATION'S NAME U.S. Geological Survey
CONTACT'S POSITION Hydrologist
CONTACT'S ROLE point of contact

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Hide Contact information ▲

Hide Metadata Contacts ▲

Metadata Maintenance ►

MAINTENANCE
UPDATE FREQUENCY not planned

Hide Metadata Maintenance ▲

FGDC Metadata (read-only) ▼