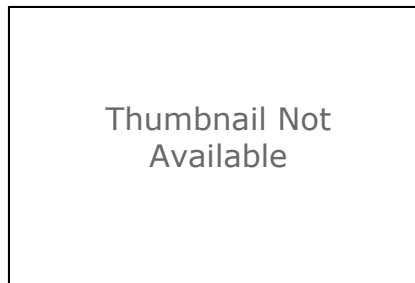# Flood-Inundation Maps and Wetland Restoration Suitability Index for the Blue River and Selected Tributaries, Kansas City, Missouri, and Vicinity, 2012

Shapefile

Thumbnail Not Available

Tags

Flood-inundation polygon shapefile for the Blue River at Stadium Drive 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 depth grids (numbered 1 through 28) correlate with the range in the 28 1-ft increment stage conditions (stages 26 through 50 ft) at the USGS streamgage Blue River at Stadium Drive in Kansas City, Missouri (station 06893578). That is, the inundation polygon for stage 26 correlates with depth grid 1, and stage 50 correlates with depth grid 2, 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   -94.558531   **East**   -94.493618
    North   39.080710   **South**   39.034243

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 * vector

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

ARCGIS ITEM PROPERTIES
  * NAME BlueR_Stadium
  * SIZE 93.734
  * LOCATION file://\\IGSKRACWWS01
\H$\Submitted_FIM_libraries\Stadium\MOStadium\BlueR_Stadium.shp
    * 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 -94.558531
      * EAST LONGITUDE -94.493618
      * NORTH LATITUDE 39.080710
      * SOUTH LATITUDE 39.034243
      * EXTENT CONTAINS THE RESOURCE Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM
  * WEST LONGITUDE -10526207.510253
  * EAST LONGITUDE -10518981.456700
  * SOUTH LATITUDE 4726577.755926
  * NORTH LATITUDE 4733239.220808
  * 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 NAD83_Missouri_West
* COORDINATE REFERENCE DETAILS
  PROJECTED COORDINATE SYSTEM
    X ORIGIN -15658800
    Y ORIGIN -45949000
    XY SCALE 137249632.08009261
    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["NAD83_Missouri_West",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",2788708.333333334],PARAMETER["false_northing",0.0],PARAMETER ["central_meridian",-94.5],PARAMETER["scale_factor",0.999941177],PARAMETER ["latitude_of_origin",36.16666666666666],UNIT["Foot_US",0.3048006096012192]]

REFERENCE SYSTEM IDENTIFIER
* VALUE 0
* CODESPACE EPSG
* VERSION 8.2.6

Hide Spatial Reference ▲

Spatial Data Properties ►

Georectified Grid ►
Number of dimensions 2

Axis dimensions properties
Dimension type row (y-axis)
Dimension size 4125

Axis dimensions properties
Dimension type column (x-axis)
Dimension size 4654

Cell geometry area

Transformation parameters are available No

Check points are available No

Hide Georectified Grid ▲

Vector ►
* Level of topology for this dataset geometry only

Geometric objects
Feature class name BlueR_Stadium
* Object type composite
* Object count 28

Hide Vector ▲

ArcGIS Feature Class Properties ►
Feature class name BlueR_Stadium
* Feature type Simple
* Geometry type Polygon
* Has topology FALSE
* Feature count 28
* Spatial index TRUE
* Linear referencing FALSE

Hide ArcGIS Feature Class Properties ▲

Hide Spatial Data Properties ▲

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 ▲

Geoprocessing history ▼

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   Shapefile

TRANSFER OPTIONS
* TRANSFER SIZE   93.734

Hide Distribution ▲

Fields ►

DETAILS FOR OBJECT BlueR_Stadium   ►
* TYPE   Feature Class
* ROW COUNT   28

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 OBJECTID ▶
* ALIAS   OBJECTID
* DATA TYPE   Integer
* WIDTH   9
* PRECISION   9
* SCALE   0

Hide Field OBJECTID ▲

FIELD Shape_Leng ▶
* ALIAS   Shape_Leng
* DATA TYPE   Double
* WIDTH   19
* PRECISION   0
* SCALE   0

Hide Field Shape_Leng ▲

FIELD Shape_Area ▶
* ALIAS   Shape_Area
* DATA TYPE   Double
* WIDTH   19
* PRECISION   0
* SCALE   0
* FIELD DESCRIPTION
  Area of feature in internal units squared.

* DESCRIPTION SOURCE
    Esri

* DESCRIPTION OF VALUES
    Positive real numbers that are automatically generated.

Hide Field Shape_Area ▲

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 BlueR_Stadium* ▲

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
> STANDARD OR PROFILE USED TO EDIT METADATA   FGDC
> METADATA STYLE   FGDC CSDGM Metadata

> CREATED IN ARCGIS FOR THE ITEM   2014-12-05   16:07:06
> LAST MODIFIED IN ARCGIS FOR THE ITEM   2014-12-08   95:70:80

> AUTOMATIC UPDATES
> > HAVE BEEN PERFORMED   Yes
> > LAST UPDATE   2014-12-08   09:56:30

> ITEM LOCATION HISTORY
> > ITEM COPIED OR MOVED   2014-12-05   16:07:06
> > > FROM   H:\Submitted_FIM_libraries\Stadium\MOStadium
> > > TO   \\IGSKRACWWS01\H$\Submitted_FIM_libraries\Stadium\MOStadium\MOStadium

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

> > 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 Metadata Contacts ▲

Metadata Maintenance ▶

MAINTENANCE
   UPDATE FREQUENCY   not planned

Hide Metadata Maintenance ▲

FGDC Metadata (read-only) ▼