RADWAY & BRIDGE PROJECT
Vulnerable Bridge - Mean Depth in Feet i.e. 0.6'
Bridge Points - BRIDGE ID i.e. 030104
Bridge Centers
Vulnerable Roadway - Mean Depth in Feet i.e. 0.2'
Roadway i.e. 030110
Community Boundary

FEMA FLOODPLAIN
FEMA Stream Centerline
FEMA Base Flood Elevation
FEMA Cross Section
FEMA REGULATORY
FEMA REGULATORY SFHA

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
Existing Conditions SFHA Extents

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
Projected SFHA Extents

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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Flood Vulnerability Analysis
Allegheny County, PA
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(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2000 rainfall projections)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 928'
- Bridge Points - Bridge ID i.e. 328'
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 928'
- Roadway i.e. 328'
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA REGULATORY SFHA

EXISTING CONDITIONS
- (Based on Depth Grid Boundary)
- Existing Conditions SFHA Extends

FUTURE CONDITIONS
- (Based on Depth Grid Boundary)
- Projected SFHA Extends

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain
(Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

FEMA Floodplain
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

Existing Conditions
(Based on Depth Grid Boundary)

Future Conditions
(Based on Depth Grid Boundary)

FEMA Regulatory
- FEMA Regulatory SFHA

Roadway & Bridge Project
- Vulnerable Bridge - Mean Depth in Feet
- Bridge Points - Bridge ID
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet
- Roadway - i.e. 328'

Allegheny County, PA

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 747.48' V
- Bridge Points - BRIDGE ID i.e. 759.2
- Bridge ID i.e. 759.4
- Bridge ID i.e. 760
- Bridge ID i.e. 27

ROADWAY - i.e. Vulnerable Roadway - Mean Depth in Feet i.e. 751

CODY ST
BELL ACRES (EL 753')
02403600702675
754

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA REGULATORY SFHA

EXISTING CONDITIONS
- Based on Depth Grid Boundary
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
- Based on Depth Grid Boundary
- Projected SFHA Events

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Flood Vulnerability Analysis Allegheny County, PA (Planning Level Assessment) (Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

FEMA Floodplain
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section
- FEMA Regulatory
- FEMA Regulatory SFHA

Existing Conditions
- Based on Depth Grid Boundary
- Existing Conditions SFHA Extents

Future Conditions
- Based on Depth Grid Boundary
- Projected SFHA Extents

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
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Michael Baker International
Locality Map
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Vulnerable Bridge - Mean Depth in Feet i.e. 943.08'

MAP SYMBOLOGY
- Vulnerable Bridge - Mean Depth in Feet i.e. 943.08'
- Bridge Points - BRIDGE ID i.e. 03855067004022
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 939.5'
- Roadway i.e. 939.2'
- Community Boundary

Data Frame Properties:

NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: NGVD29
Scale Factor: 0.9999000

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84 LOCATOR MAP
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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Roadway & Bridge Project
- Vulnerable Bridge - Mean Depth in Feet i.e.
- Bridge Points - BRIDGE ID i.e.
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e.
- Community Boundary

FEMA Floodplain
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA Regulatory
- FEMA Regulatory SFHA

Existing Conditions
- Existing Conditions SFHA Extents

Future Conditions
- Based on Depth Grid Boundary

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Planning Level Assessment)
(Planning Level Assessment)

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1,000

0
FEMA 100-Year Floodplain (Regulatory SFHA)

Bridge Points - BRIDGE ID i.e.

Vulnerable Roadway - Mean Depth in Feet i.e. Bridge Centerlines

ZONE AE

TOWNSHIP OF LEET

TOWNSHIP OF LEET

TOWNSHIP OF LEET

FEMA FLOODPLAIN

FEMA Stream Centerline

FEMA Base Flood Elevation

FEMA Cross Section

FEMA REGULATORY

FEMA REGULATORY SFHA

EXISTING CONDITIONS

(Based on Depth Grid Boundary)

Existing Conditions SFHA Extents

FUTURE CONDITIONS

(Based on Depth Grid Boundary)

Projected SFHA Extents

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

(Planning Level Assessment)

(Methiodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 328
- Bridge Points - BRIDGE ID i.e. 02101000101980
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 328
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA REGULATORY SFHA

EXISTING CONDITIONS
- (Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
- (Based on Depth Grid Boundary)
- Projected SFHA Events

Flood Vulnerability Analysis
Allegheny County, PA
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(Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 328'
- Bridge Points: BRIDGE ID i.e. 23100100301362
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 328'
- Roadway i.e. FREEPORT RD
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section
- FEMA REGULATORY
- FEMA REGULATORY SFHA

EXISTING CONDITIONS
- (Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents
- Projected SFHA Extents

FUTURE CONDITIONS
- (Based on Depth Grid Boundary)

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Bridge Points - BRIDGE ID i.e. 100

Vulnerable Bridge - Mean Depth in Feet i.e. 1,000

Roadway - i.e. FEMA 100-Year Floodplain

929.68' 949.78' 922 925 930 BEAR 328' 919 934 918 938 941

FEMA Floodplain

FEMA Base Flood Elevation

HORIZONTALS

920.5' 950' 926.2 925.2 932.3 919.3 918.3 938.3 941.3 943.3

Vertical Datum: North American Vertical Datum 1988

Horizontal Datum: North American 1983

Projection: Lambert Conformal Conic

Flood Vulnerability Analysis

Allegeny County, PA

(Planning Level Assessment)

(Methology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Roadway & Bridge Project
- Vulnerable Bridge - Mean Depth in Feet (i.e. 1.5')
- Bridge Points - Bridge ID (i.e. 02711600002710)
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet (i.e. 0.7')
- Community Boundary

Map Symbols:
- FEMA Floodplain
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section
- FEMA Regulatory
- FEMA Regulatory SFHA

Existing Conditions
- Based on Depth Grid Boundary
- Existing Conditions SFHA Extents

Future Conditions
- Based on Depth Grid Boundary
- Projected SFHA Extents

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

**MAP SYMBOLOGY**

**ROADWAY & BRIDGE PROJECT**
- Vulnerable Bridge - Mean Depth in Feet i.e. 929
- Bridge Points, BRIDGE ID i.e. 0260203102415
- Bridge Cross Sections
- Vulnerable Roadway - Mean Depth in Feet i.e. 929
- Roadway i.e. 0260203102415
- Community Boundary

**FEMA FLOODPLAIN**
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

**EXISTING CONDITIONS**
- (Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

**FUTURE CONDITIONS**
- (Based on Depth Grid Boundary)
- Projected SFHA Extents

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

VULNERABILITY ANALYSIS:
Allegheny County, PA
(Planning Level Assessment)

Projected SFHA Events

Existing Conditions SFHA Events

Planning Level Assessment

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 0.32
- Bridge Points - BRIDGE ID i.e. 01090080
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 0.1
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA REGULATORY SFHA

EXISTING CONDITIONS
(Based on Depth Grid Boundary)

FUTURE CONDITIONS
(Based on Depth Grid Boundary)

Projection: Lambert Conformal Conic Coordinate System:

DD Feet

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 0.25
- Bridge Points - BRIDGE ID i.e. 00001
- Roadway i.e. 0001
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA Regulatory SFHA

EXISTING CONDITIONS
- (Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents
- FEMA Floodplain
- FEMA Regulatory SFHA

FUTURE CONDITIONS
- (Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents
- FEMA Floodplain
- FEMA Regulatory SFHA

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis Allegheny County, PA (Planning Level Assessment) (Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 325
- Bridge Points
- Bridge ID i.e. 123
- Vulnerable Roadway - Mean Depth in Feet i.e. 210
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA Regulatory SFHA

EXISTING CONDITIONS
- Based on Depth Grid Boundary
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
- Based on Depth Grid Boundary
- Projected SFHA Events

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Bridge Points - BRIDGE ID i.e. 2.6'
Vulnerable Bridge - Mean Depth in Feet i.e. 176 2.4'
(Planning Level Assessment)

Roadway - i.e. Bridge Centerlines

CEMETERY LN
ROADWAY & BRIDGE PROJECT

FEMA STREAM CENTERLINE
FEMA BASE FLOOD ELEVATION
FEMA CROSS SECTION
FEMA REGULATORY SFHA

FEMA FLOODPLAIN

Existing Conditions SFHA Extents
Future Conditions
(Based on Depth Grid Boundary)
Projected SFHA Events

existing conditions

FEMA BASE FLOOD ELEVATION

FEMA STREAM CENTERLINE

FEMA REGULATORY SFHA

MCKNIGHT RD
GIRTYS RUN

FEMA REGULATORY SFHA

FEMA Base Flood Elevation
FEMA Stream Centerline
FEMA REGULATORY SFHA

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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Roadway - i.e. Vulnerable Bridge - Mean Depth in Feet i.e. 0.929
Bridge Points - BRIDGE ID i.e. 02742900001004
Bridge Centerlines
Roadway - i.e. 0.929/1000
Community Boundary
FEMA 100-Year Floodplain
(Regulatory SFHA)

FEMA Floodplain Scenario 1
(2050 rainfall projections)

FEMA Floodplain Scenario 2
(2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

MAP SYMBOLOGY
ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 328'
- Bridge Points - BRIDGE ID i.e. 54
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 328'
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section
- FEMA REGULATORY
- FEMA REGULATORY SFHA

EXISTING CONDITIONS
- Existing Conditions SFHA Extents
- (Based on Depth Grid Boundary)

FUTURE CONDITIONS
- Projected SFHA Events
- (Based on Depth Grid Boundary)

FEMA 100-Year Floodplain
(Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

FEDERAL EMERGENCY MANAGEMENT AGENCY
FEMA REGULATORY SFHA

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)

(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario (2050 rainfall projections)

Future Floodplain Scenario (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methology and Limitations Provided in Project Study Report)

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Vertical Datum: North American Vertical Datum 1988
Coordinate System: (Methodology and Limitations Provided in Project Study Report)
**FEMA 100-Year Floodplain**
(Regulatory SFHA)

**Future Floodplain Scenario 1**
(2050 rainfall projections)

**Future Floodplain Scenario 2**
(2100 rainfall projections)

**MAP SYMBOLOGY**

- **ROADWAY & BRIDGE PROJECT**
  - Vulnerable Bridge - Mean Depth in Feet i.e. 92.1
  - Bridge Points - BRIDGE ID i.e. 92.1
  - Bridge Centerlines
  - Vulnerable Roadway - Mean Depth in Feet i.e. 92.1
  - Roadway i.e. 92.1
  - Community Boundary

- **FEMA FLOODPLAIN**
  - FEMA Stream Centerline
  - FEMA Base Flood Elevation
  - FEMA Cross Section

- **FEMA REGULATORY**
  - FEMA REGULATORY SFHA

**EXISTING CONDITIONS**
(Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

**FUTURE CONDITIONS**
(Based on Depth Grid Boundary)
- Projected SFHA Extents

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**Flood Vulnerability Analysis**
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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Coordinate System:
(Methodology and Limitations Provided in Project Study Report)
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 921
- Bridge Points, BRIDGE ID i.e. 02208600200236
- Roadway - i.e. 0301142
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA Regulatory SFHA

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
- Existing Conditions SFHA Extends

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
- Projected SFHA Events

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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Michael Baker International

Projection: Lambert Conformal Conic
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Coordinate System:
(2017 methodology and limitations provided in Project Study Report)
Planning Level Assessment

Bridge Points - BRIDGE ID i.e. 97

FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

FEMA 100-Year Floodplain

Bridge Centerlines

FEMA Floodplain

Existing Conditions

Projected SFHA Events

FEMA Regulatory

FEMA Regulatory SFHA

November 23, 2016
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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Vertical Datum: North American Vertical Datum 1988
Coordinate System: NAD 1983 North American Datum
DATA FRAME PROPERTIES:
- Projection: Lambert Conformal Conic
- Standard Parallel 1: 39.82959°
- Standard Parallel 2: 40.92959°
- Central Meridian: 80° W
- False Easting: 0
- False Northing: 0
- Zone: 17

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section
- FEMA Regulatory SFHA

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
- Projected SFHA Events
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

Vulnerable Bridge - Mean Depth in Feet i.e. 328'
Bridge Points - BRIDGE ID i.e. 9247
Vulnerable Roadway - Mean Depth in Feet i.e. 318'
Community Boundary

FEMA FLOODPLAIN

FEMA Stream Centerline
FEMA Base Flood Elevation
FEMA Cross Section
FEMA REGULATORY

EXISTING CONDITIONS

(Based on Depth Grid Boundary)
Existing Conditions SFHA Extents

FUTURE CONDITIONS

(Based on Depth Grid Boundary)
Projected SFHA Extents

FEMA REGULATORY SFHA

FEMA 70% SFHA

FEMA Cross Section

FEMA Stream Centerline

FEMA Base Flood Elevation

VULNERABILITY ANALYSIS:

Allegheny County, PA
(Planning Level Assessment)
(Methedology and Limitations Provided in Project Study Report)
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Allegheny County, PA
(Planning Level Assessment)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methowdology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT
Vulnerable Bridge - Mean Depth in Feet i.e. 0.4'
Bridge Points - BRIDGE ID i.e. 9242
Bridge Centerlines
Vulnerable Roadway - Mean Depth in Feet i.e. 0.4'
Roadway i.e. 924207
Community Boundary

FEMA FLOODPLAIN
FEMA Stream Centerline
FEMA Base Flood Elevation
FEMA Cross Section

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
Existing Conditions SFHA Extents

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
Projected SFHA Extents
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

---

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 9.22
- Bridge Points - BRIDGE ID i.e. 0921863
- Bridge Centers
- Vulnerable Roadway - Mean Depth in Feet i.e. 0.1
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA REGULATORY SFHA

EXISTING CONDITIONS
- Projected Depth Grid Boundary

FUTURE CONDITIONS
- Existing Conditions SFHA Extents
- FEMA Regulatory SFHA Extents

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Flood Vulnerability Analysis Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

FEMA FLOODPLAIN
FEMA Stream Centerline
FEMA Base Flood Elevation
FEMA Cross Section
FEMA REGULATORY
FEMA REGULATORY SFHA

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
Existing Conditions SFHA Extents

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
Projected SFHA Extents

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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MAP SYMBOLOGY
ROADWAY & BRIDGE PROJECT
Vulnerable Bridge - Mean Depth in Feet i.e. 866.38'
Bridge Points: BRIDGE ID i.e. 867.08'
Bridge Centers
Vulnerable Roadway - Mean Depth in Feet i.e. 866.2'
Roadway i.e. 866.6'
Community Boundary

NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Coordinate System:
(Methodology and Limitations Provided in Project Study Report)
Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 9.8'
- Bridge Points: BRIDGE ID i.e. 02212200100025
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 3.5'
- Roadway i.e. 821
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA Regulatory SFHA

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
- Projected SFHA Extents
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
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Performed by: Michael Baker International

Coordinate System: DATA FRAME
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

FEMA 100-Year Floodplain Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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Flood Vulnerability Analysis
Allegheny County, PA
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario (2050 rainfall projections)

Future Floodplain Scenario (2100 rainfall projections)

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(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

Vulnerable Bridge - Mean Depth in Feet i.e. 392'
Bridge Points - BRIDGE ID i.e. 000189
Vulnerable Roadway - Mean Depth in Feet i.e. 768.3'
Community Boundary

FEMA FLOODPLAIN

FEMA Stream Centerline
FEMA Base Flood Elevation
FEMA Cross Section
FEMA REGULATORY

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
Existing Conditions SFHA Extents

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
Projected SFHA Events

Vertical Datum: North American Vertical Datum 1988
Horizontal Datum: North American 1983
Projection: Lambert Conformal Conic

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

**MAP SYMBOLOGY**

- **ROADWAY & BRIDGE PROJECT**
  - Vulnerable Bridge - Mean Depth in Feet i.e. 32.5
  - Bridge Points - BRIDGE ID i.e. 00000000
  - Roadway i.e. 00000000
  - Community Boundary

- **FEMA FLOODPLAIN**
  - FEMA Stream Centerline
  - FEMA Base Flood Elevation
  - FEMA Cross Section

- **FEMA REGULATORY**
  - FEMA Regulatory SFHA

**EXISTING CONDITIONS**

- Based on Depth Grid Boundary
- Existing Conditions SFHA Extents

**FUTURE CONDITIONS**

- Based on Depth Grid Boundary
- Projected SFHA Extents

Flood Vulnerability Analysis
Allegheny County, PA
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Fema 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

VULNERABILITY ANALYSIS:
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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© OpenStreetMap (and)
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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Coordinate System:
Performed by: Michael Baker International
VULNERABILITY ANALYSIS:
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

Bridge Centerlines
FEMA Stream Centerline
FEMA Floodplain - Mean Depth in Feet i.e.
Bridge Points - BRIDGE ID i.e.

LOCATOR MAP

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)
**Flood Vulnerability Analysis**

**Allegheny County, PA**

(Planning Level Assessment)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)
**FEMA 100-Year Floodplain (Regulatory SFHA)**

**Future Floodplain Scenario 1**
(2050 rainfall projections)

**Future Floodplain Scenario 2**
(2100 rainfall projections)

MAP SYMBOLOGY

- **FEMA Floodplain**
  - FEMA Stream Centerline
  - FEMA Base Flood Elevation
  - FEMA Cross Section
- **FEMA Regulatory**
  - FEMA Regulatory SFHA
- **Existing Conditions**
  - Based on Depth Grid Boundary
  - Existing Conditions SFHA Events
- **Future Conditions**
  - Based on Depth Grid Boundary
  - Projected SFHA Events

**Notes:**
- Flood Vulnerability Analysis Allegheny County, PA
- Planning Level Assessment
- Methodology and Limitations Provided in Project Study Report
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**MAP DATA SOURCES:**
- OpenStreetMap contributors, CC-BY-SA
- NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
- Bridge and Roadway Data Provided by: Pennsylvania DOT
- Performed by: Michael Baker International
Flood Vulnerability Analysis
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FEMA Floodplain
(Flood Zone A)

Roadway Data Provided by: Pennsylvania DOT

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FEMA 100-Year Floodplain (Regulatory SFHA)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

FEMA FLOODPLAIN

FEMA REGULATORY

EXISTING CONDITIONS

FUTURE CONDITIONS

Flood Vulnerability Analysis
Allegheny County, PA
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Cooperstown, Washington
County, PA

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INTERNATIONAL
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

**MAP SYMBOLOGY**

- **ROADWAY & BRIDGE PROJECT**
  - Vulnerable Bridge - Mean Depth in Feet i.e. 328'
  - Bridge Points: BRIDGE ID i.e. 02218300100490
  - Bridge Centers
  - Vulnerable Roadway - Mean Depth in Feet i.e. 328'
  - Community Boundary

- **FEMA FLOODPLAIN**
  - FEMA Stream Centerline
  - FEMA Base Flood Elevation
  - FEMA Cross Section
  - FEMA REGULATORY
    - FEMA REGULATORY SFHA

- **EXISTING CONDITIONS**
  - (Based on Depth Grid Boundary)
    - Existing Conditions SFHA Extents
  - FUTURE CONDITIONS
    - (Based on Depth Grid Boundary)
    - Projected SFHA Extents

**FLOOD VULNERABILITY ANALYSIS**
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis Allegheny County, PA (Planning Level Assessment) (Methodology and Limitations Provided in Project Study Report)

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NOVEMBER 23, 2016
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. 92'
- Bridge Points - BRIDGE ID i.e. FF92F9009
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 90
- Roadway i.e. 900107
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA REGULATORY SFHA

EXISTING CONDITIONS
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
- Projected SFHA Extents

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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Bridge and Roadway Data Provided by: Pennsylvania DOT
Performed by: Michael Baker International
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

MAP SYMBOLOGY

- FEMA Floodplain
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section
- FEMA Regulatory SFHA
- FEMA SFHAs
- Existing Conditions
- Existing Conditions SFHA Extents
- Future Conditions
- Future Conditions SFHA Extents
- Bridge Centers

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. 328'
- Bridge Points - BRIDGE ID i.e. 971
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 117
- Community Boundary

FEMA FLOODPLAIN

- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY

- FEMA REGULATORY SFHA

EXISTING CONDITIONS

- (Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

FUTURE CONDITIONS

- (Based on Depth Grid Boundary)
- Projected SFHA Extents

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

November 23, 2016

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)

(Methology and Limitations Provided in Project Study Report)

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Credit: Michael Baker International

Bridge and roadway data provided by Pennsylvania DOT

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Prepared at: 07/16/2016; Updated at: 07/16/2016; Valid for: 07/16/2016; Sheet: Sheet 190/265

Feet

1,000

0
Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Planning Level Assessment)
(Planning Level Assessment)
(Methology and Limitations Provided in Project Study Report)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

1.3' Feet

November 23, 2016
FLOOD VULNERABILITY ANALYSIS
Allegheny County, PA
(Planning Level Assessment)
(11016) Data Points
(3050) Polygons
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1. FEMA Floodplain (Regulatory SFHA)
2. Future Floodplain Scenario 1 (2050 rainfall projections)
3. Future Floodplain Scenario 2 (2100 rainfall projections)

MAP SYMBOLOGY
ROADWAY & BRIDGE PROJECT
Fema Floodplain
Fema Stream Centerline
Fema Base Flood Elevation
Fema Cross Section
Fema Regulatory
Fema Regulatory SFHA
Existing Conditions
Fema Regulatory SFHA Extends
Future Conditions
Fema Regulatory SFHA Extends
Projected SFHA Events

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Flood Vulnerability Analysis Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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MAP SYMBOLOGY
ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet 0.92
- Bridge Points - BRIDGE ID I.D.
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet 0.4
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA REGULATORY SFHA

EXISTING CONDITIONS
- (Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
- (Based on Depth Grid Boundary)
- Projected SFHA Extents

DATA SOURCES:
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

FEMA Base Flood Elevation

FEMA Floodplain

Future Conditions (Based on Depth Grid Boundary)

Existing Conditions SFHA Extents

FEMA Regulatory

FEMA Regulatory SFHA

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

November 23, 2016
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario (2050 rainfall projections)

Future Floodplain Scenario (2100 rainfall projections)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 3.2'
- Bridge Points - BRIDGE ID i.e. 934
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 2.9'
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section
- FEMA REGULATORY
- FEMA REGULATORY SFHA

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
- Projected SFHA Events

Provision of this map is in accordance with the Flood Insurance Rate Map (FIRM) Data Accuracy Standards as the map is in a draft stage and is not the official FIRM. The base data sources include the 2009 FEMA national flood data, 2014 Pennsylvania Floodplain, 2014 National Hydrography Processes and the 2014 National Flood Hazard Boundary Layer. The data and information are used solely for floodplain analysis and management, and may not be used for hazard mitigation, regulatory or planning purposes.

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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PROJECT
WATERWAY & BRIDGE PROJECT
ROADWAY & BRIDGE PROJECT
VULNERABILITY ANALYSIS:
FEMA 100-Year Floodplain (Regulatory SFHA)
Future Floodplain Scenario 1 (2050 rainfall projections)
Future Floodplain Scenario 2 (2100 rainfall projections)

MAP SYMBOLOGY
ROADWAY & BRIDGE PROJECT
VULNERABILITY ANALYSIS:
FEMA 100-Year Floodplain (Regulatory SFHA)
Future Floodplain Scenario 1 (2050 rainfall projections)
Future Floodplain Scenario 2 (2100 rainfall projections)

November 23, 2016
FEMA 10-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

FEMA 10-Year Floodplain
(Regulatory SFHA)

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
- Existing Conditions SFHA Events

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
- Projected SFHA Events

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Planning Level Assessment)

(existing Conditions SFHA Extents)

Existing Conditions SFHA Extents

Projected SFHA Extents

Projection: Lambert Conformal Conic

Zoning Area and Study Extents (2050 rainfall projections)

Zoning Area and Study Extents (2100 rainfall projections)

FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2050 rainfall projections)

(Youghiogheny River)

FEMA Cross Section

FEMA Stream Centerline

FEMA Base Flood Elevation

FEMA Cross Section

FEMA Regulatory

FEMA Regulatory SFHA

Roadway - i.e. Vulnerable Roadway - Mean Depth in Feet i.e.

Bridge Points - Bridge ID i.e.

Roadway - i.e. Vulnerable Roadway - Mean Depth in Feet i.e.

Legend

ROADWAY & BRIDGE PROJECT

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Performed by: Michael Baker International

Allegheny County, PA

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 527
- Bridge Points - Bridge ID i.e. 02710540327999
- Vulnerable Roadway - Mean Depth in Feet i.e. 684
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA Regulatory SFHA

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
- Projected SFHA Extents

 Allegheny County, PA
(Planning Level Assessment)

(Methology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)

Methodology and Limitations Provided in Project Study Report

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FEMA 100-Year Floodplain
(Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

ROADWAY & BRIDGE PROJECT

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA Regulatory SFHA

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
- Projected SFHA Events

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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Roadway - i.e.
Vulnerable Roadway - Mean Depth in Feet i.e.
Bridge and Roadway Data Provided by: Pennsylvania DOT
Performed by: Michael Baker International
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

FEMA Floodplain
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

Future Conditions
- Based on Depth Grid Boundary
- Existing Conditions SFHA Events
- Projected SFHA Events

Existing Conditions
- Based on Depth Grid Boundary
- Existing Conditions SFHA Events

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Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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Michael Baker International
Bridge and Slope Design Team for Pennsylvania DOD

MAP SYMBOLOGY
ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet (e.g. 32')
- Bridge Points - BRIDGE ID (e.g. 082014)
- Bridge Centerslines
- Vulnerable Roadway - Mean Depth in Feet (e.g. 080147)
- Roadway ID (e.g. 080147)
- Community Boundary
Bridge Points - BRIDGE ID i.e. 328'

FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. 328'
- Bridge Points - BRIDGE ID i.e. 328'
- Vulnerable Roadway - Mean Depth in Feet i.e. 328'
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY
- FEMA Regulatory SFHA

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
- Projected SFHA Extents

November 23, 2016

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)
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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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November 23, 2016
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. 6.0
- Bridge Points - BRIDGE ID i.e. 03201301
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 4.0
- Community Boundary

FEMA FLOODPLAIN

- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section

FEMA REGULATORY

- FEMA REGULATORY SFHA

EXISTING CONDITIONS

(Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents
- Future Conditions

FUTURE CONDITIONS

(Based on Depth Grid Boundary)
- Projected SFHA Events

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)
FEMA 100-Year Floodplain
(Regulatory SFHA)

Future Floodplain Scenario 1
(2050 rainfall projections)

Future Floodplain Scenario 2
(2100 rainfall projections)

Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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VULNERABILITY ANALYSIS:
Bridge and Roadway Data Provided by: Pennsylvania DOT
Performed by: Michael Baker International
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

Future Floodplain Scenario 2 (2100 rainfall projections)

FLOODPLAIN ANALYSIS
(Planning Level Assessment)
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Future Floodplain Scenario 1
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**Flood Vulnerability Analysis**
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© OpenStreetMap (and)
FEMA 100-Year Floodplain (Regulatory SFHA)

Future Floodplain Scenario 1 (2050 rainfall projections)

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. 0.7'
- Bridge Points - BRIDGE ID i.e. 02013600800000
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. 0.7'
- Community Boundary

FEMA FLOODPLAIN
- FEMA Stream Centerline
- FEMA Base Flood Elevation
- FEMA Cross Section
- FEMA REGULATORY
- FEMA REGULATORY SFHA

EXISTING CONDITIONS
(Based on Depth Grid Boundary)
- Existing Conditions SFHA Extents

FUTURE CONDITIONS
(Based on Depth Grid Boundary)
- Projected SFHA Events

Flood Vulnerability Analysis
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