



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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 2 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. **328'**
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- Vulnerable Roadway - Mean Depth in Feet i.e. **328'**
- Roadway - i.e. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

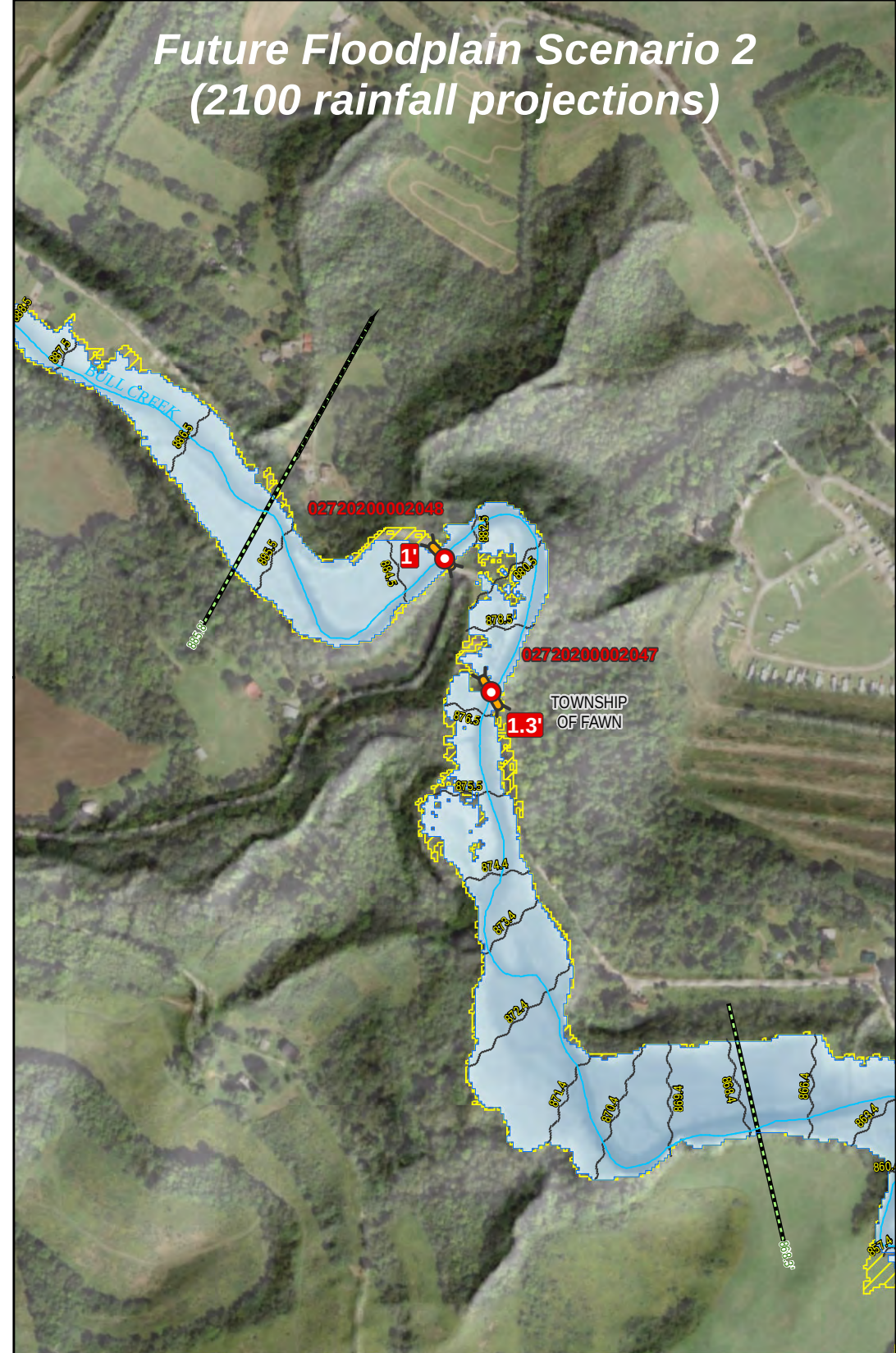
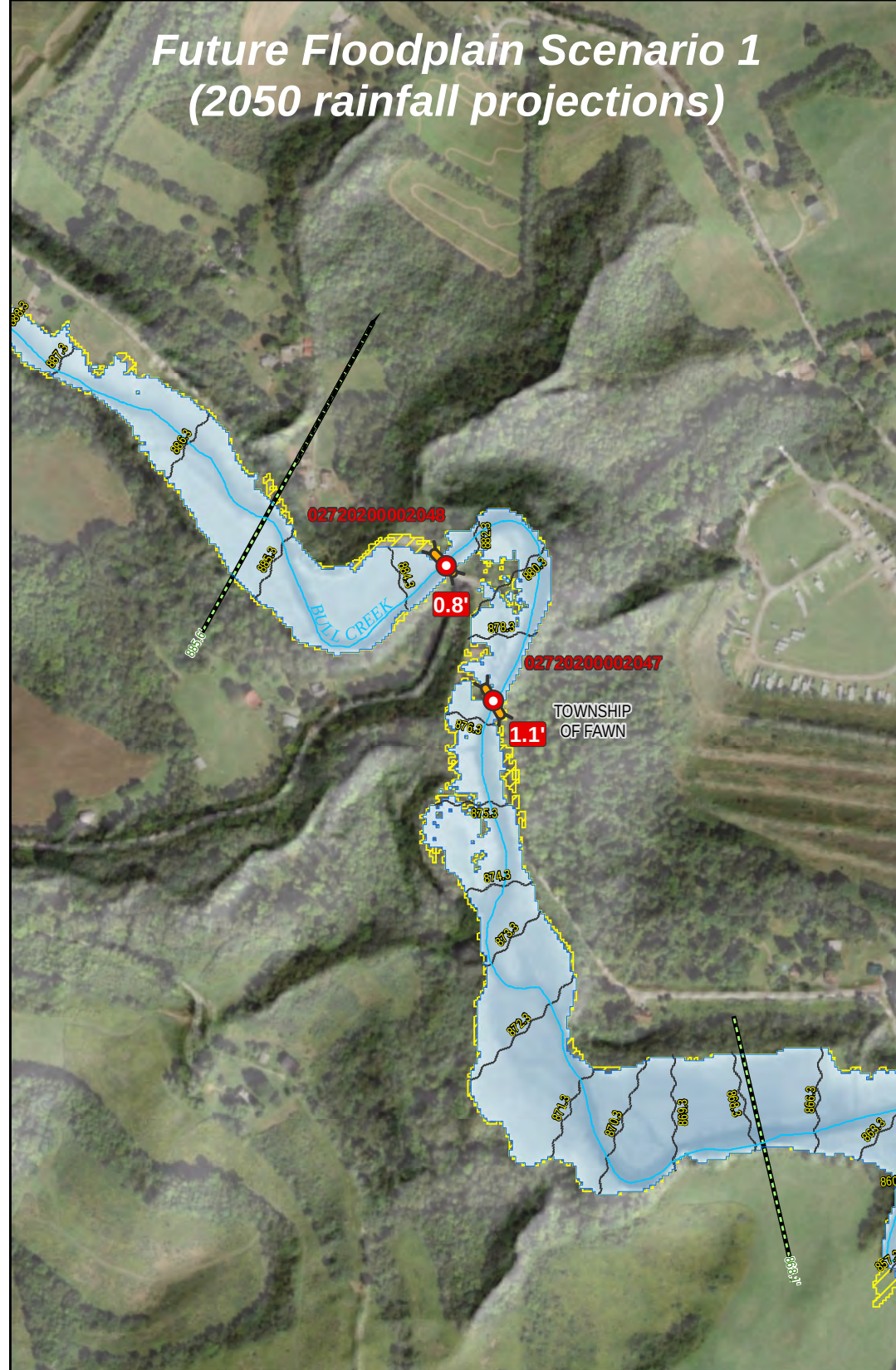
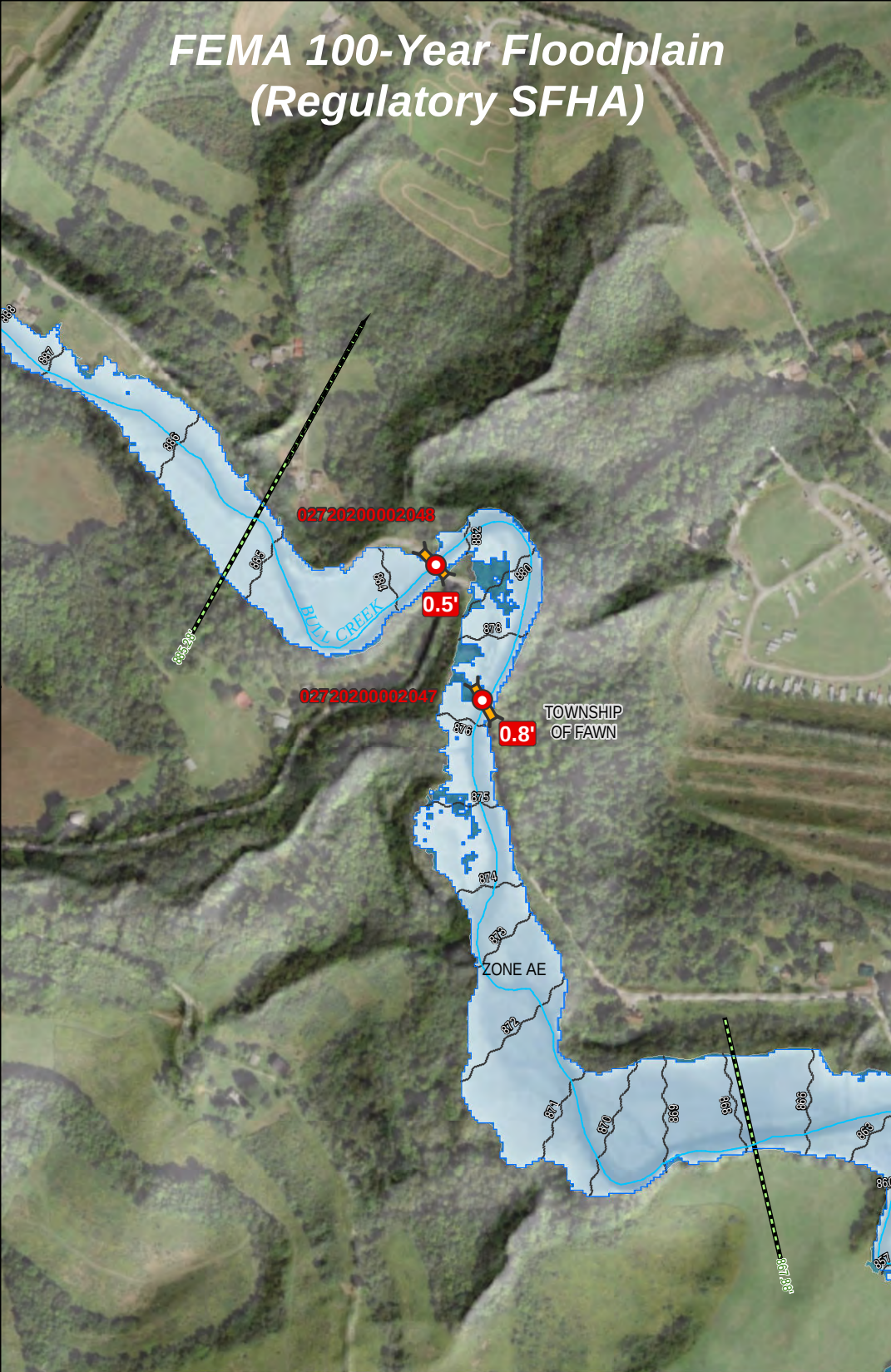
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DATA FRAME PROPERTIES:
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LOCATOR MAP

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	Roadway - i.e. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

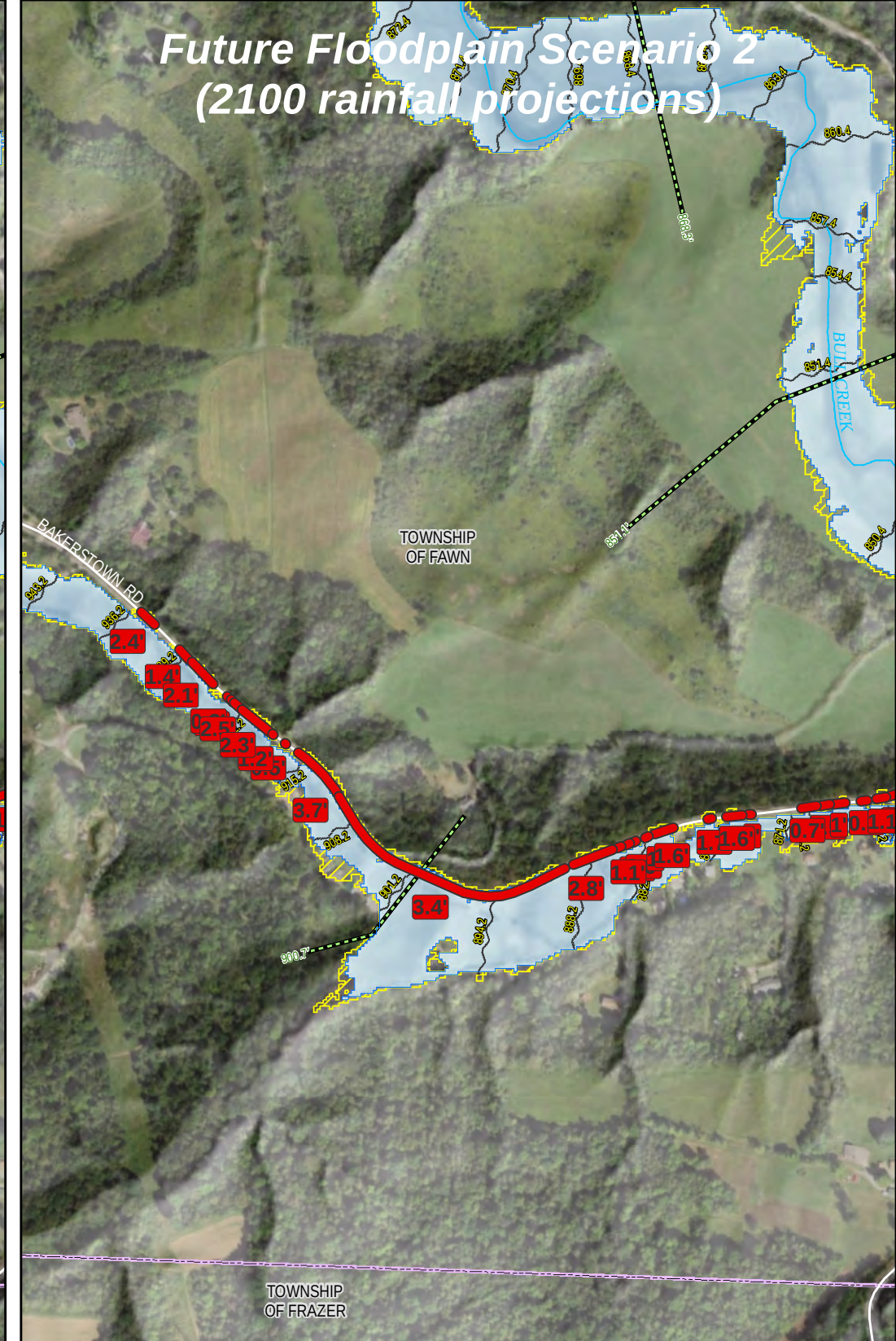
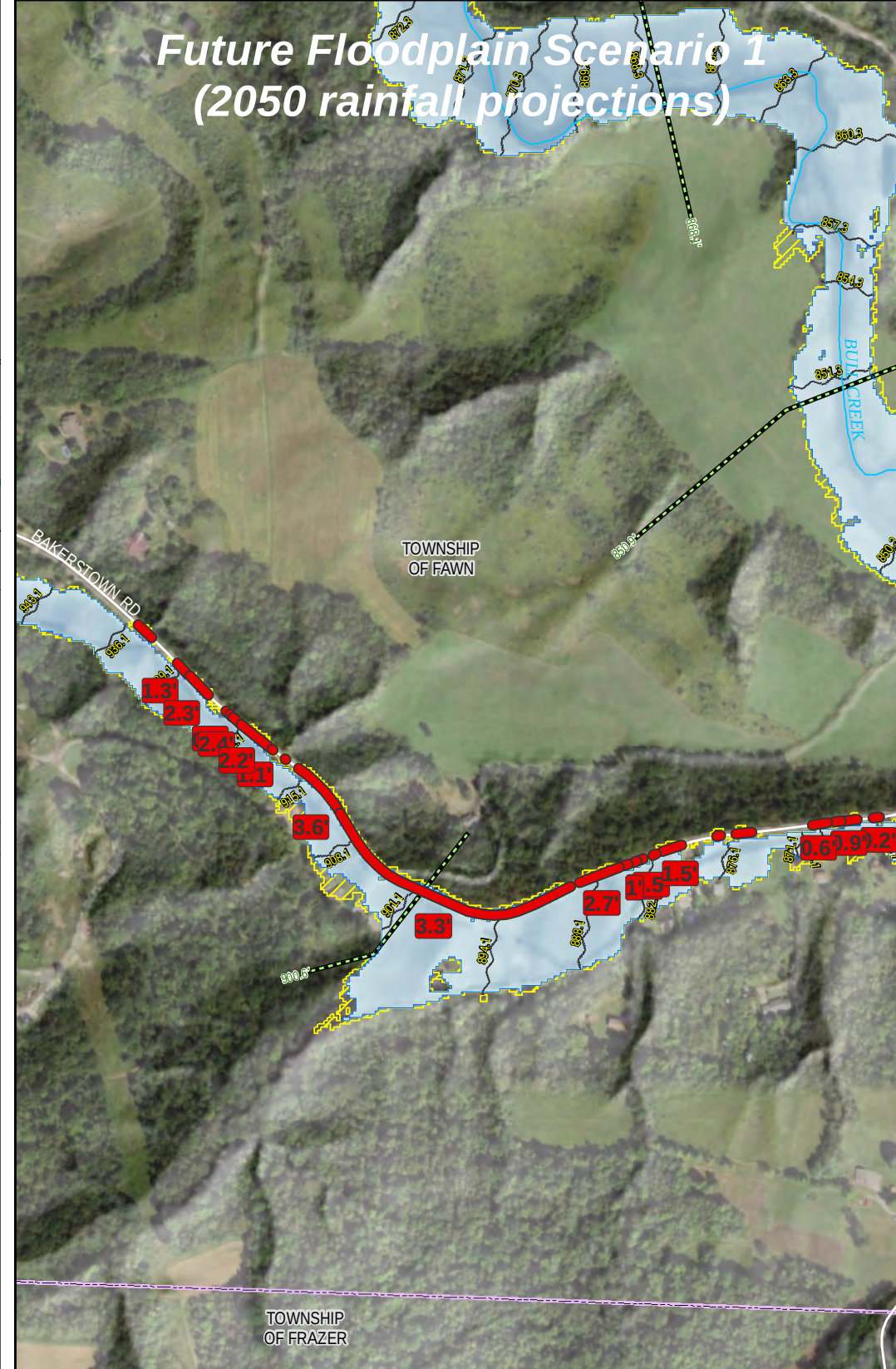
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DATA FRAME PROPERTIES:
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FEMA FLOODPLAIN	
	FEMA Stream Centerline
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	FEMA Cross Section
FEMA REGULATORY	
	FEMA REGULATORY SFHA

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

0 1,000 Feet

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

Sheet 6 of 265

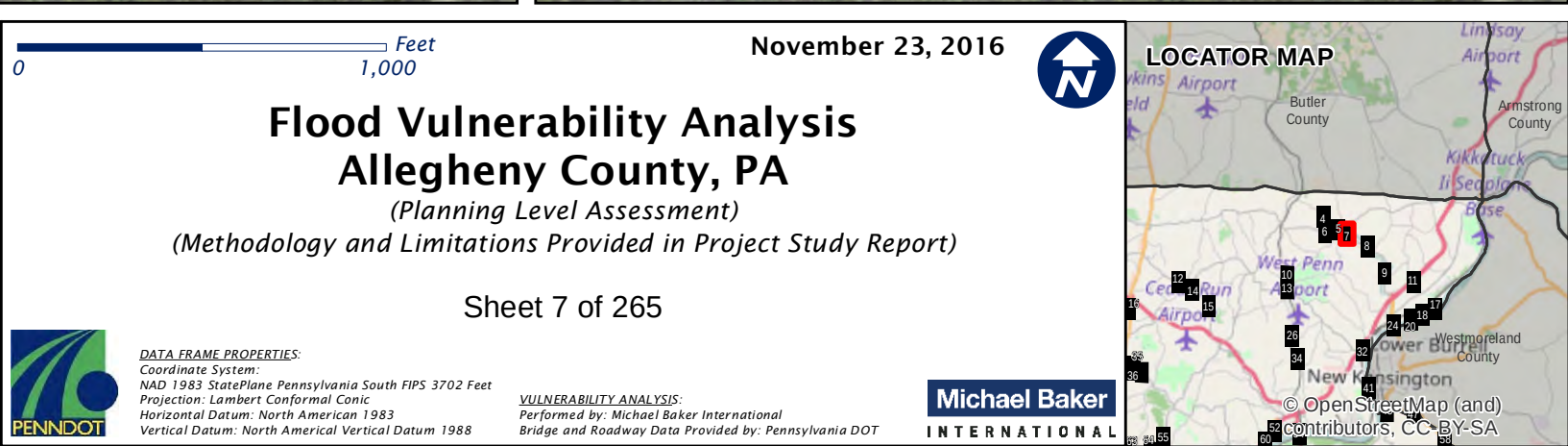
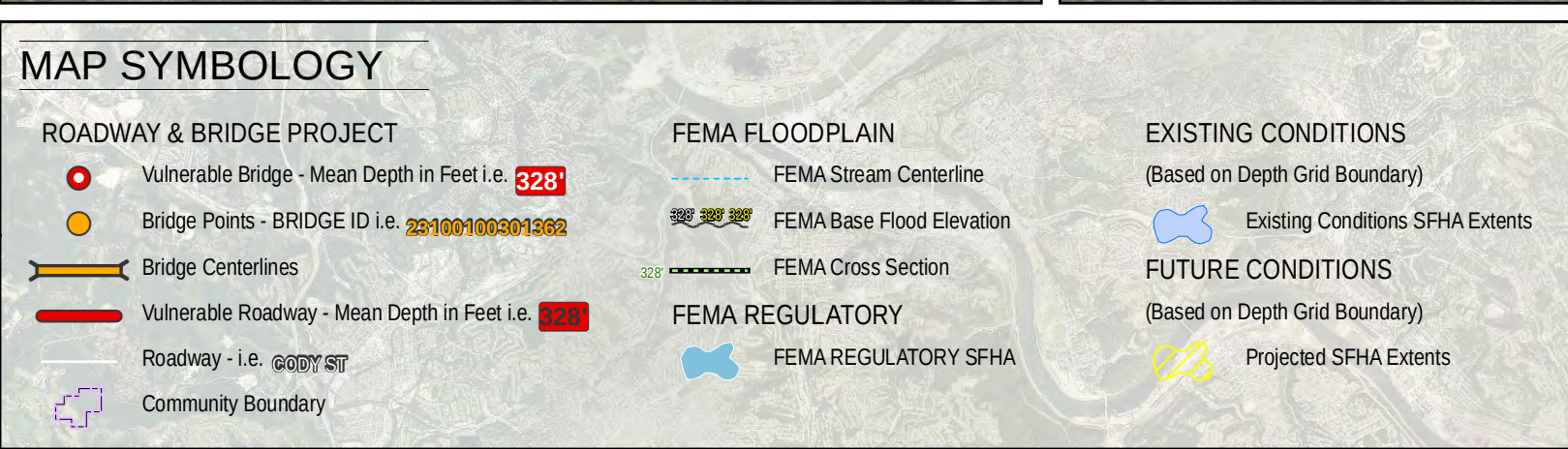
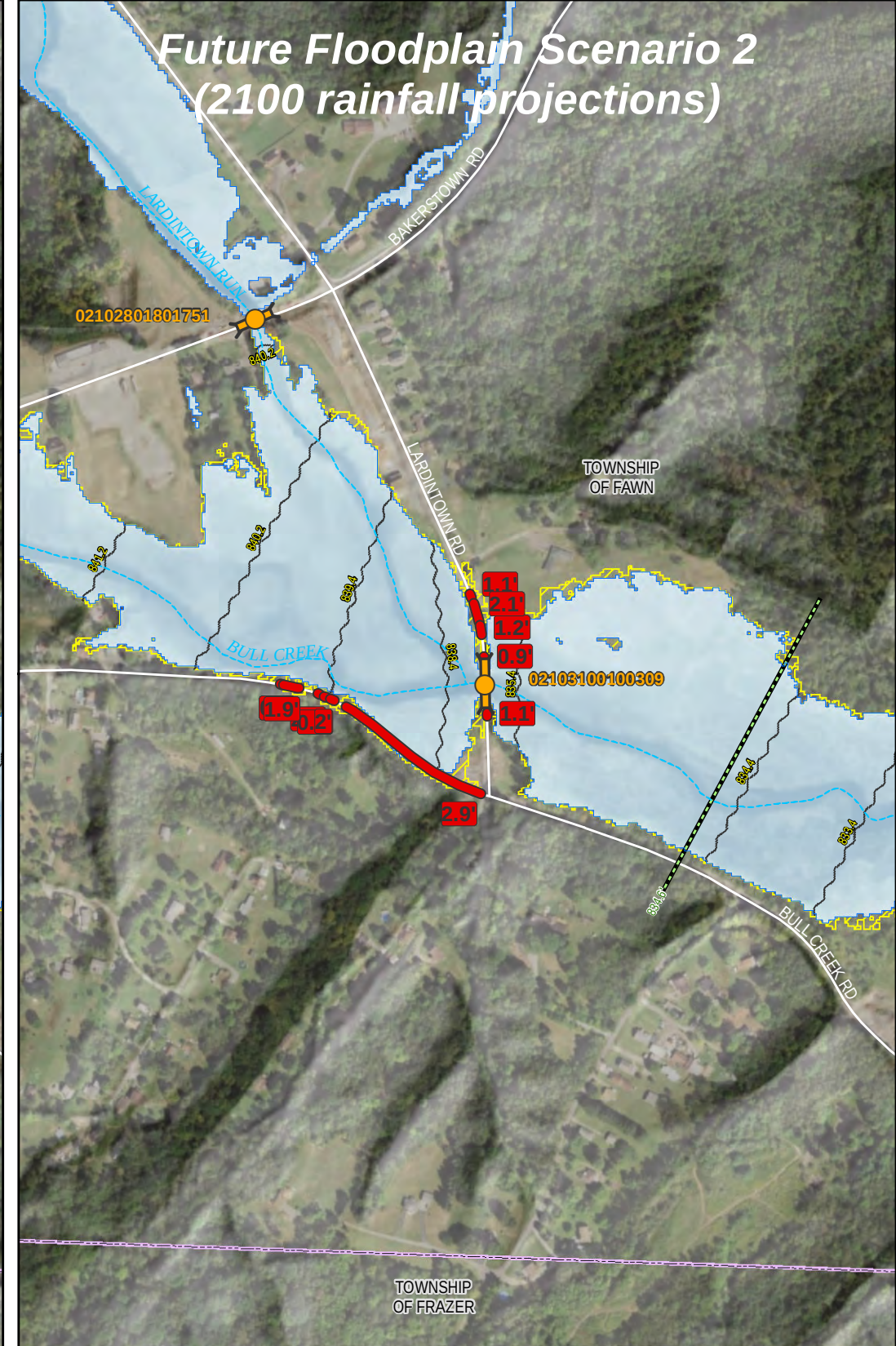
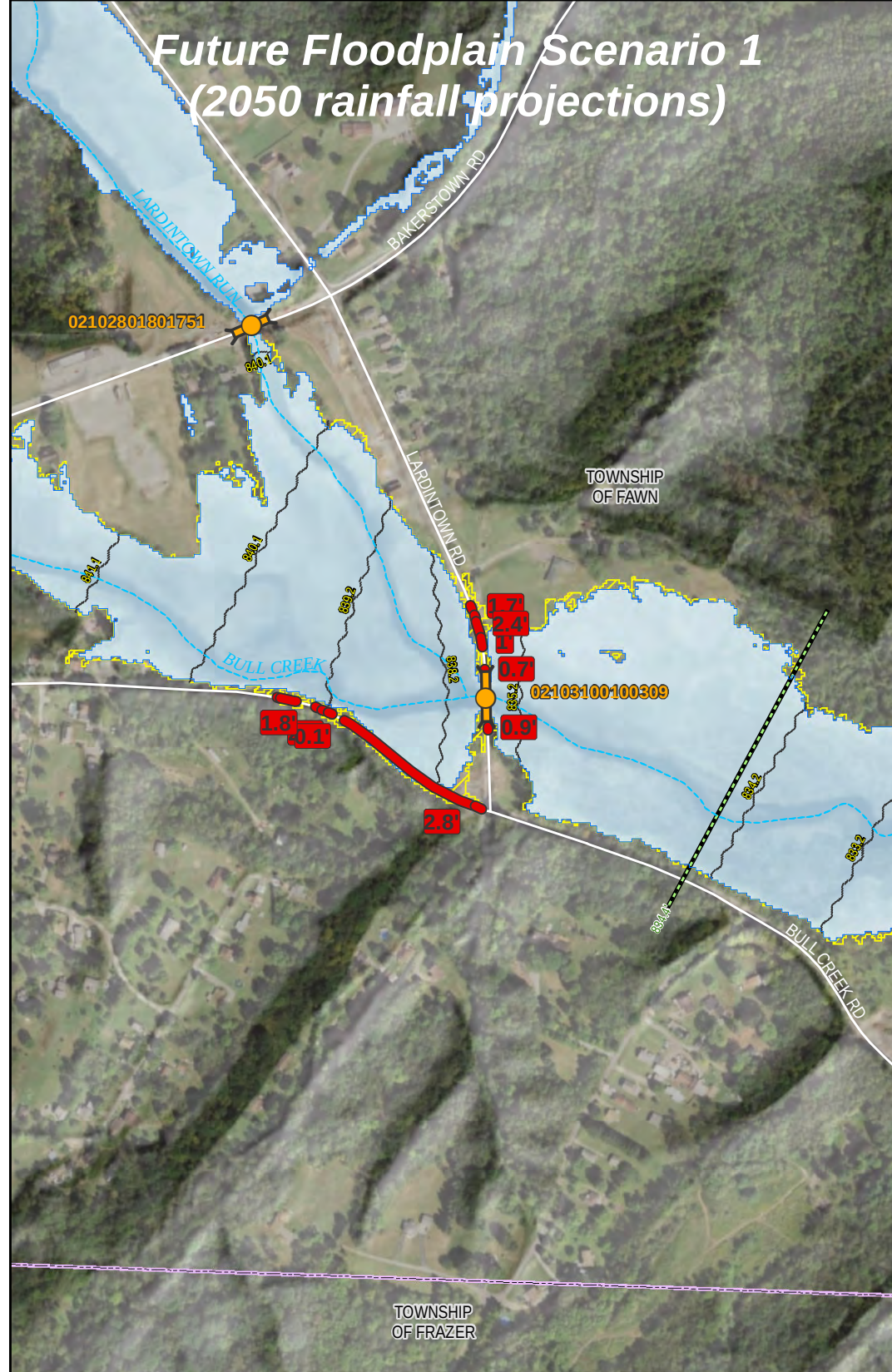
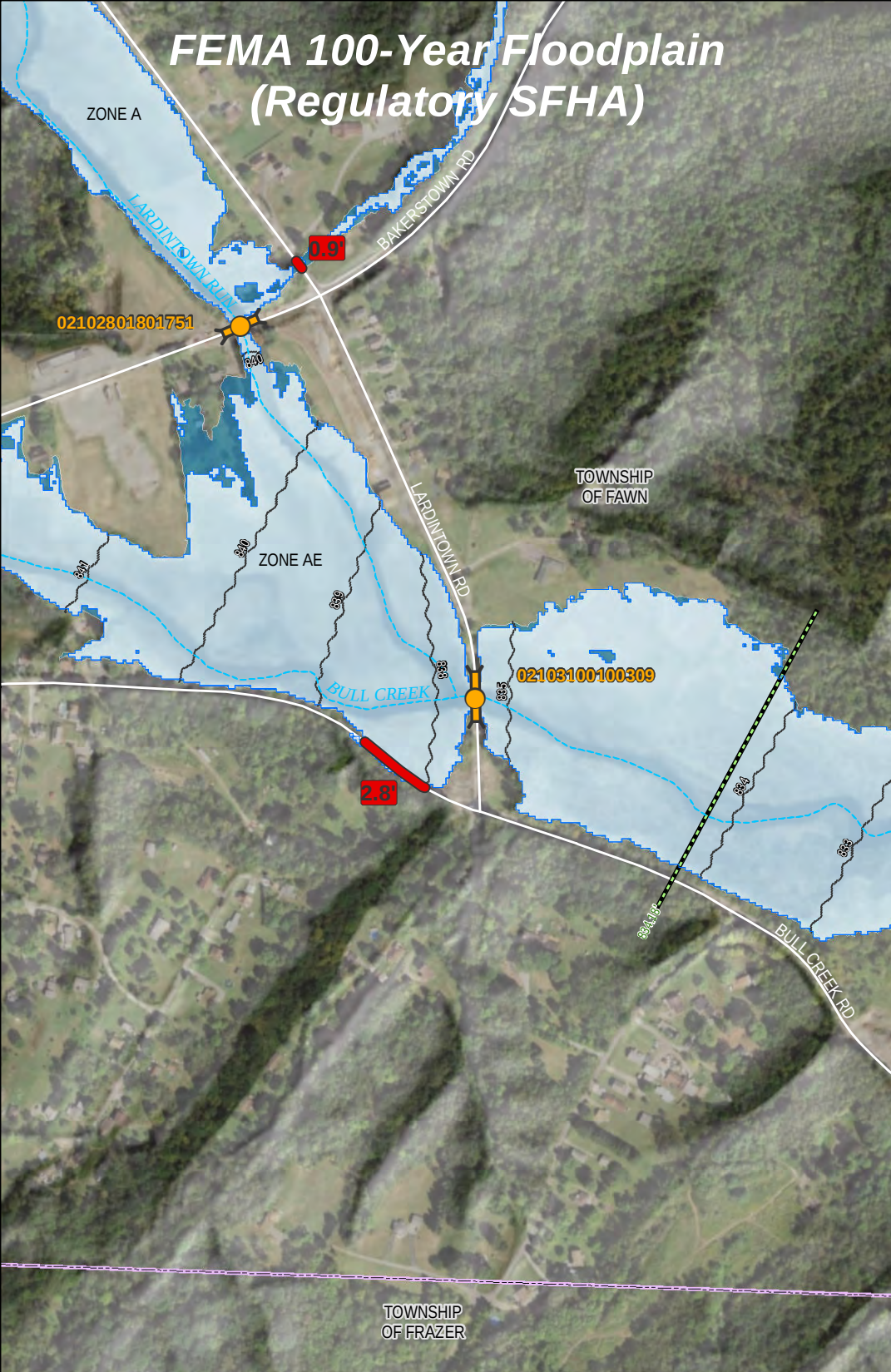
**Michael Baker
INTERNATIONAL**

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Performed by: Michael Baker International
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November 23, 2016

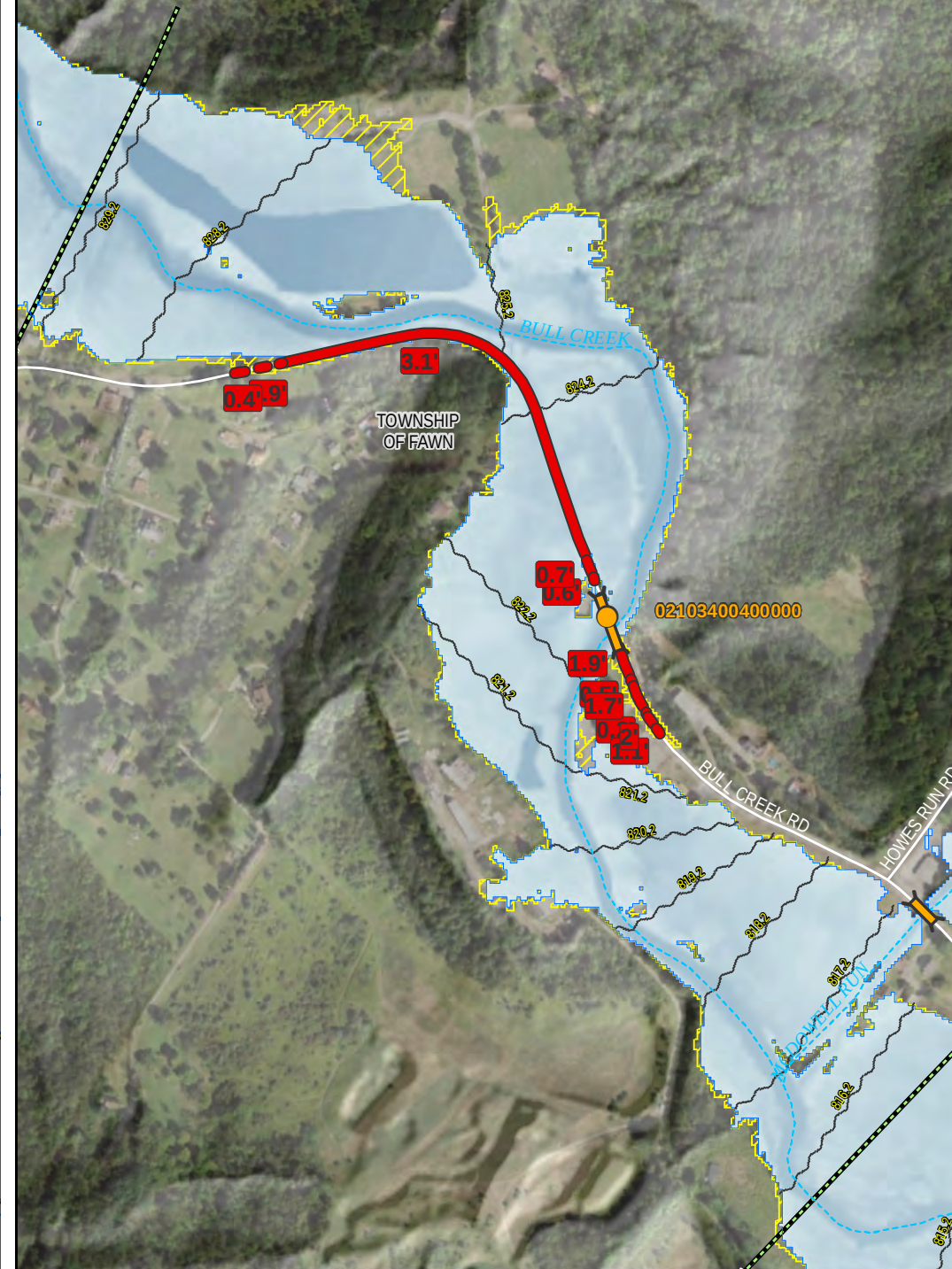
LOCATOR MAP



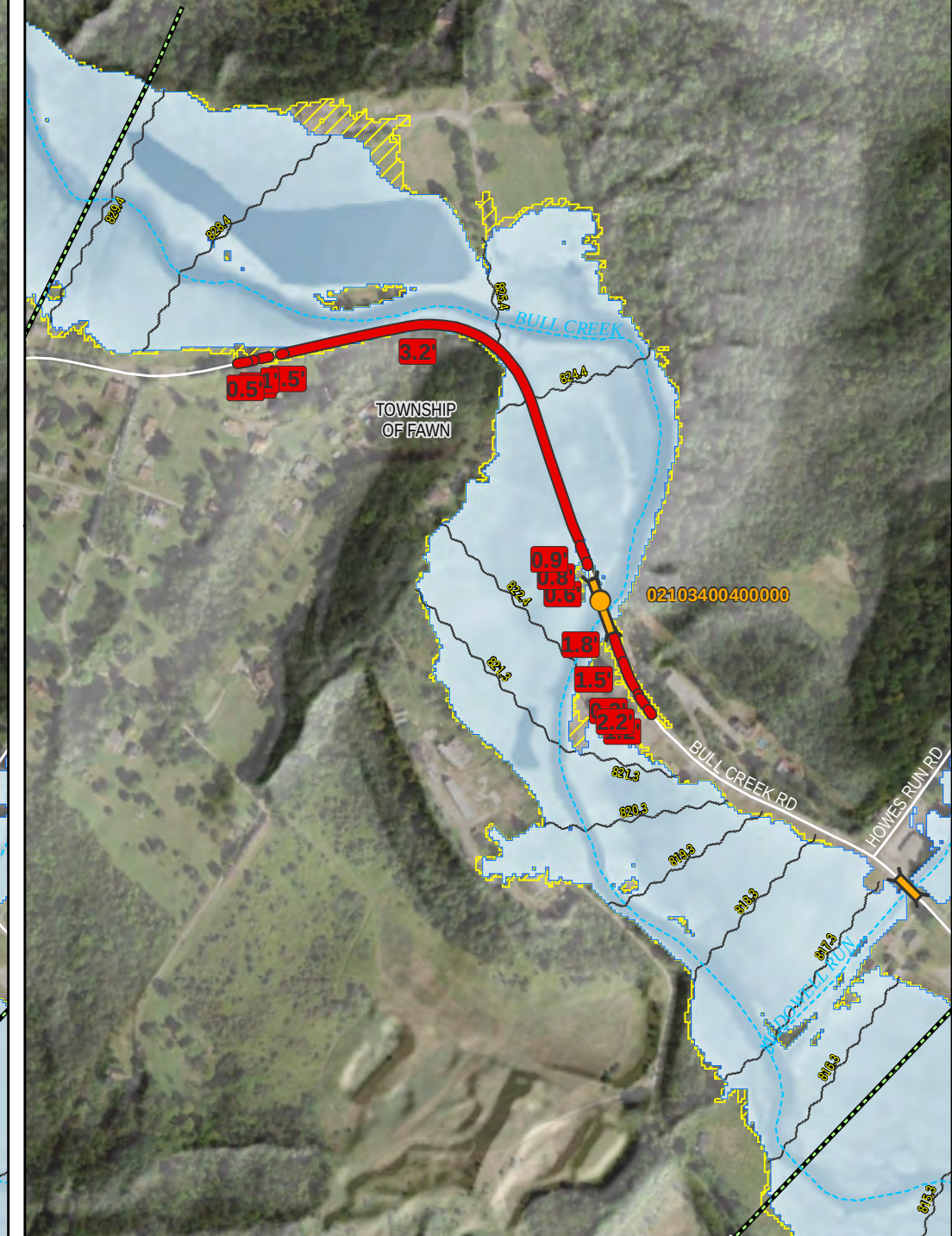
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

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- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. **328'**
- Roadway - i.e. **60DY ST**
- 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

0 1,000 Feet

November 23, 2016



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

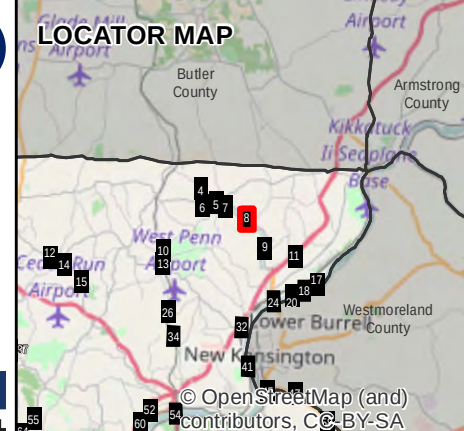
Sheet 8 of 265

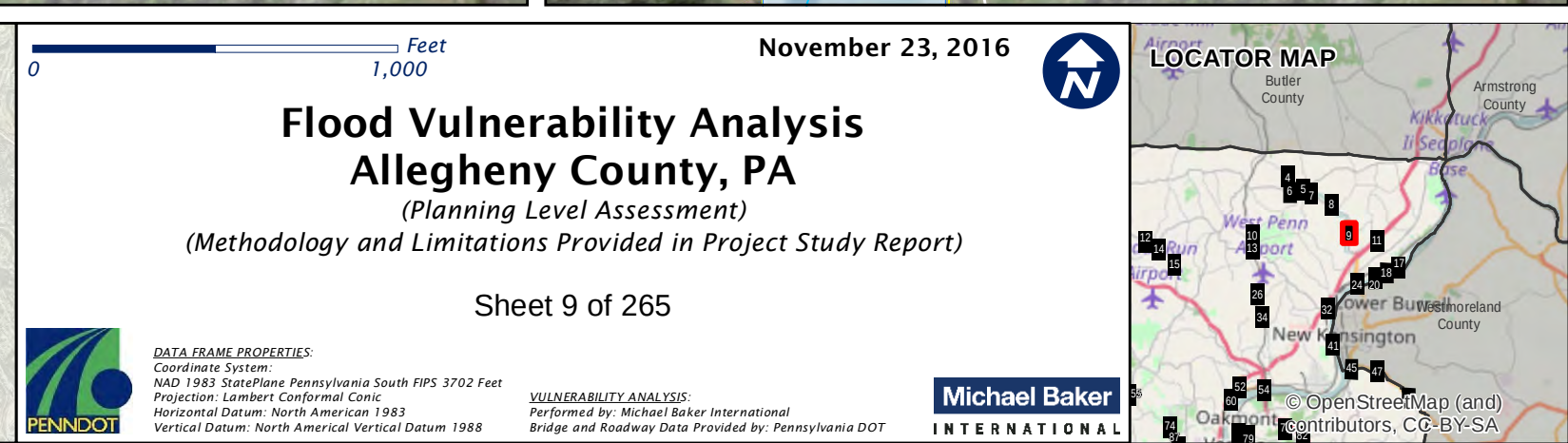
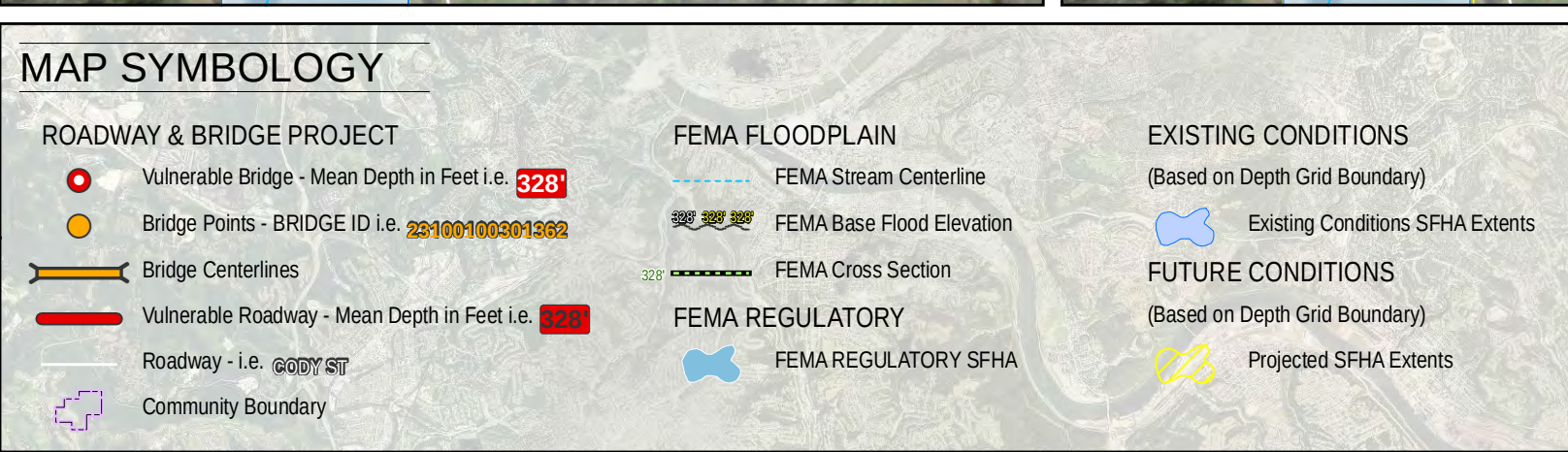
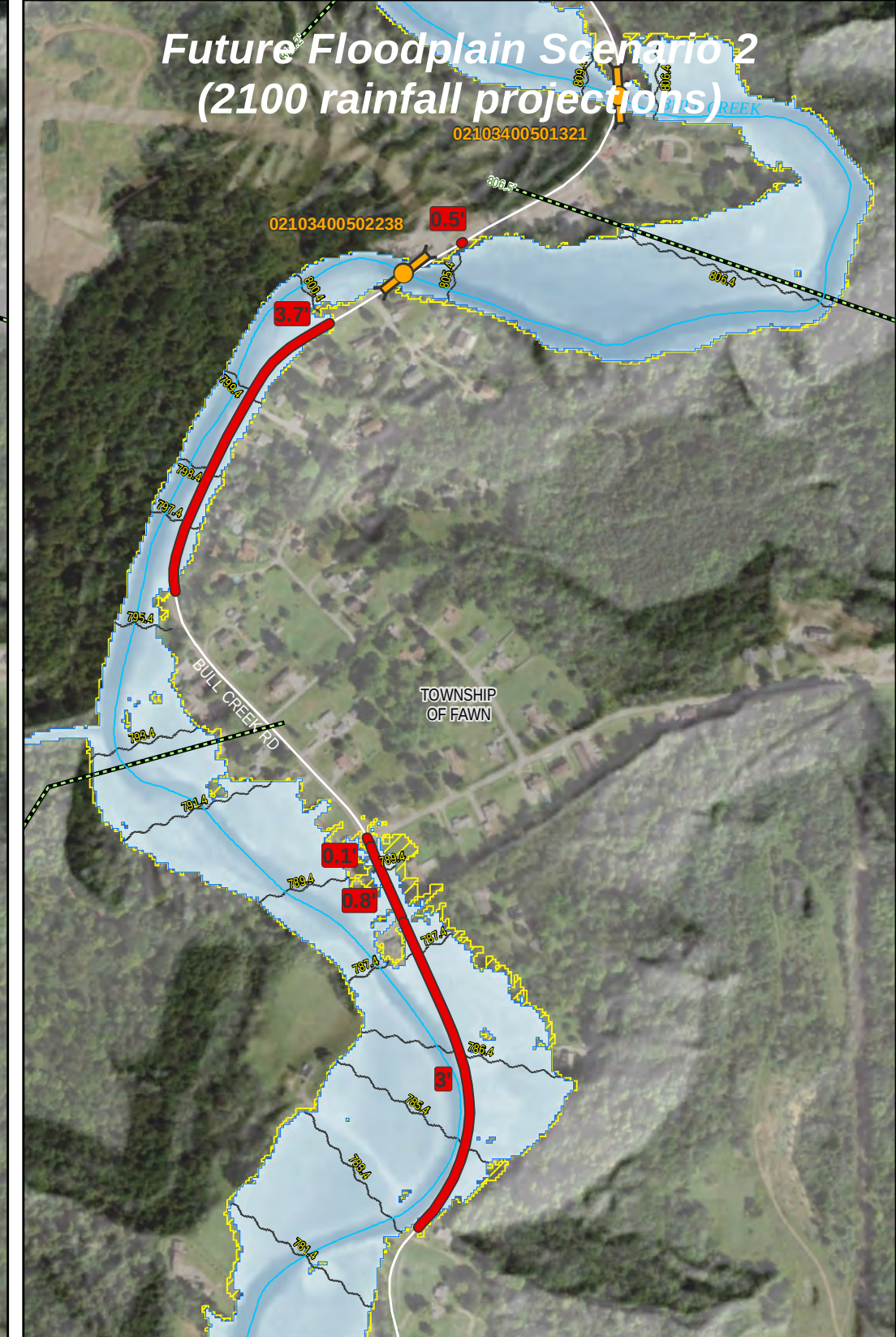
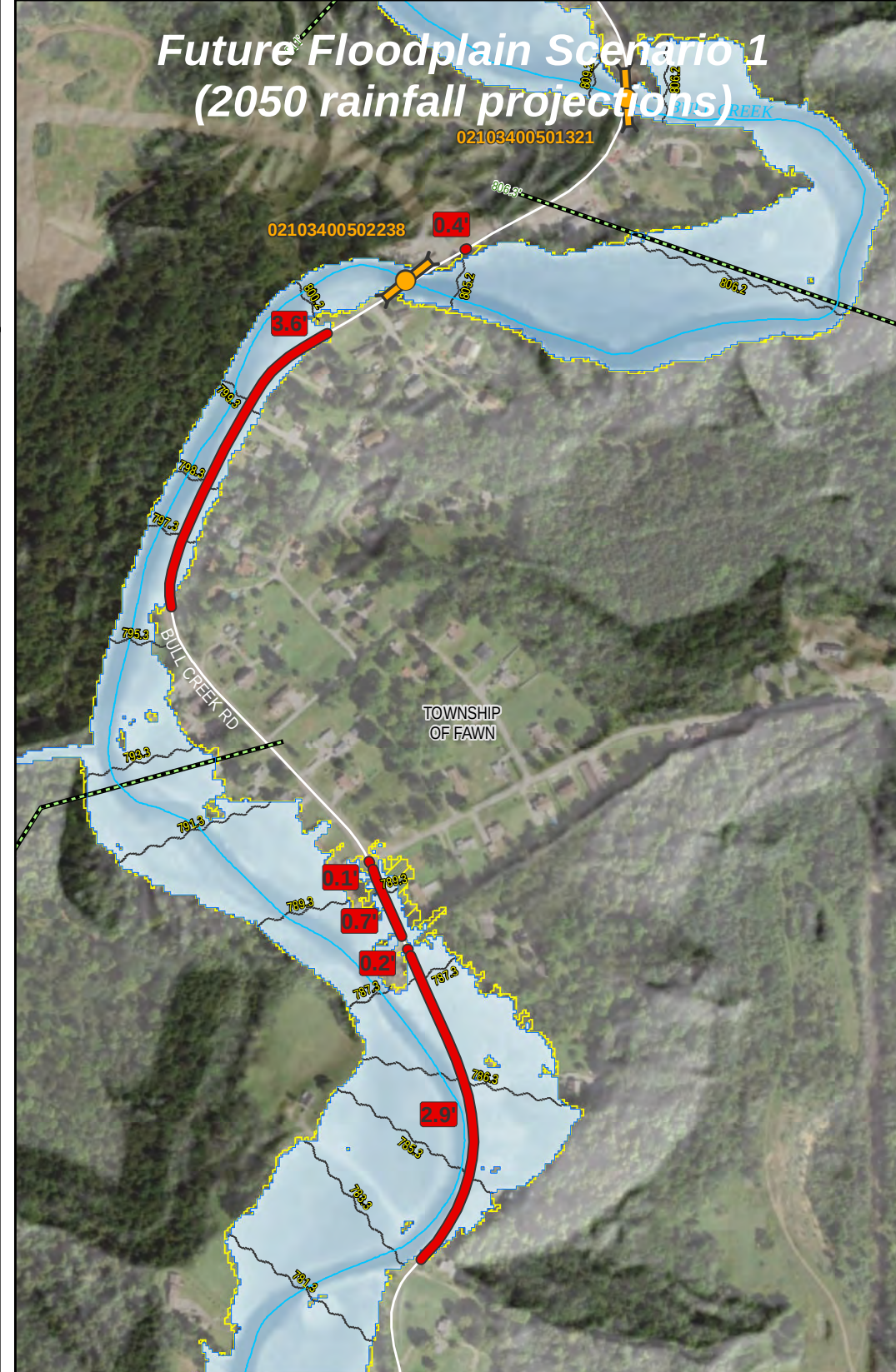
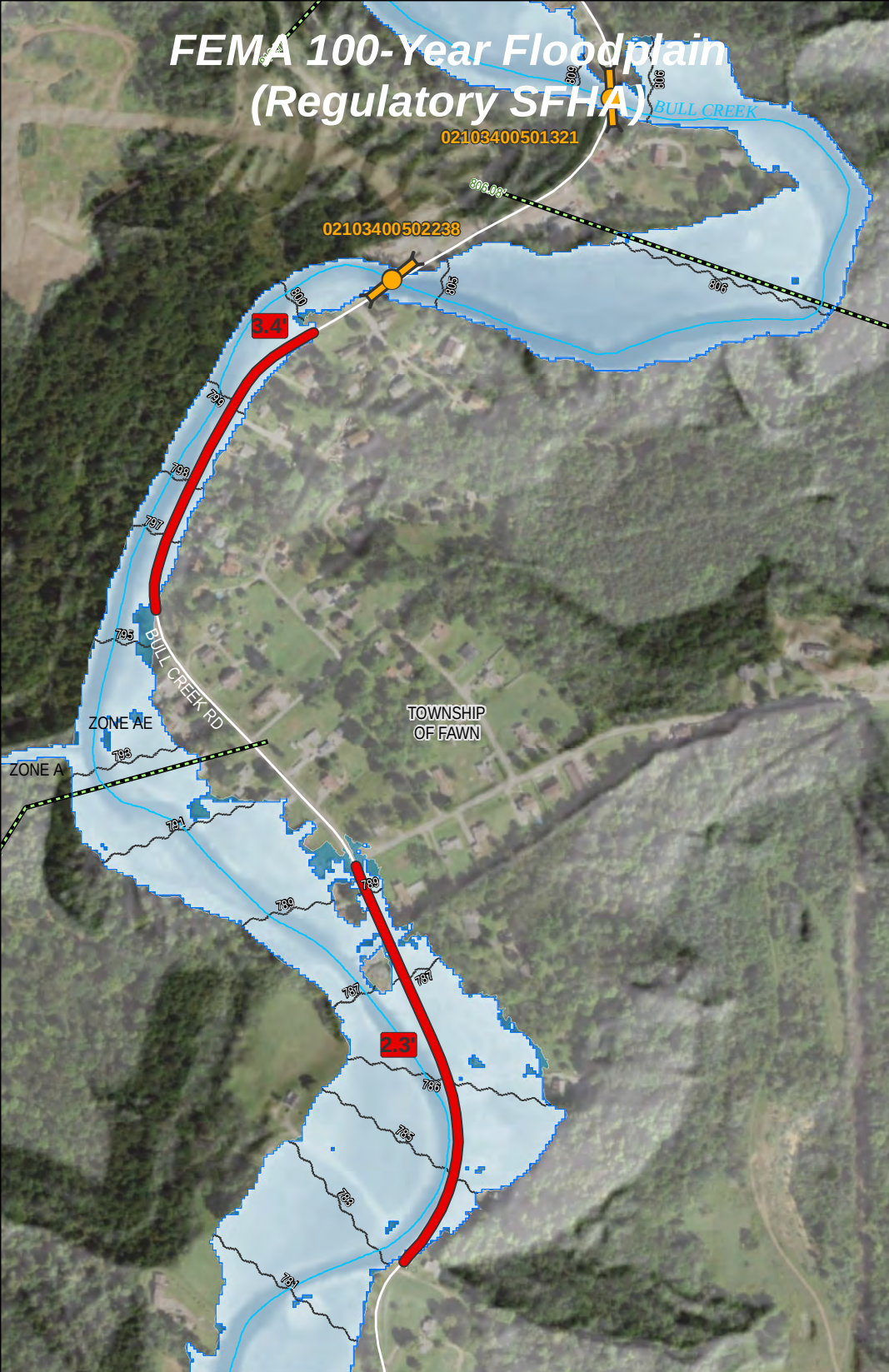


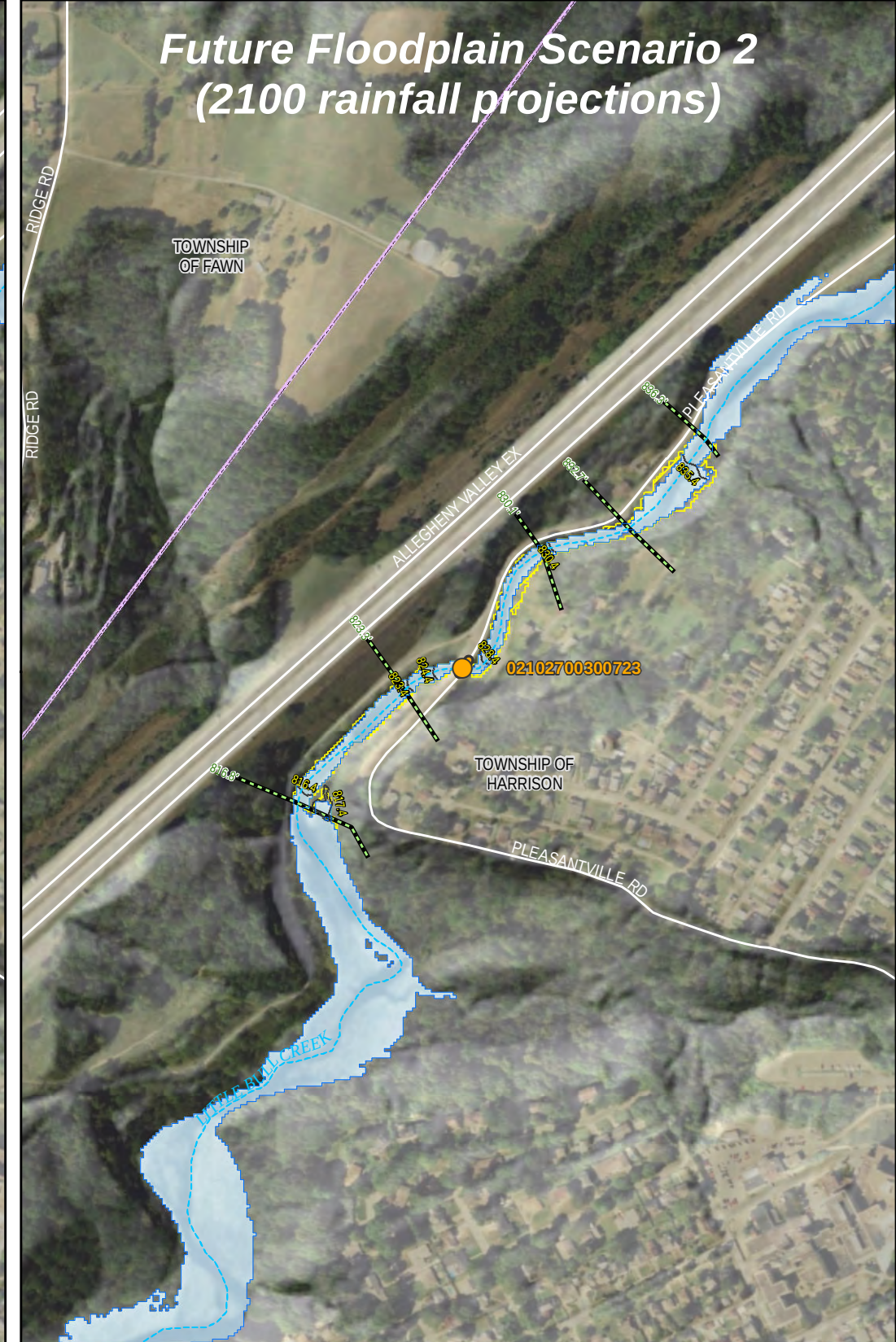
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL







MAP SYMBOLOGY

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	Roadway - i.e. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

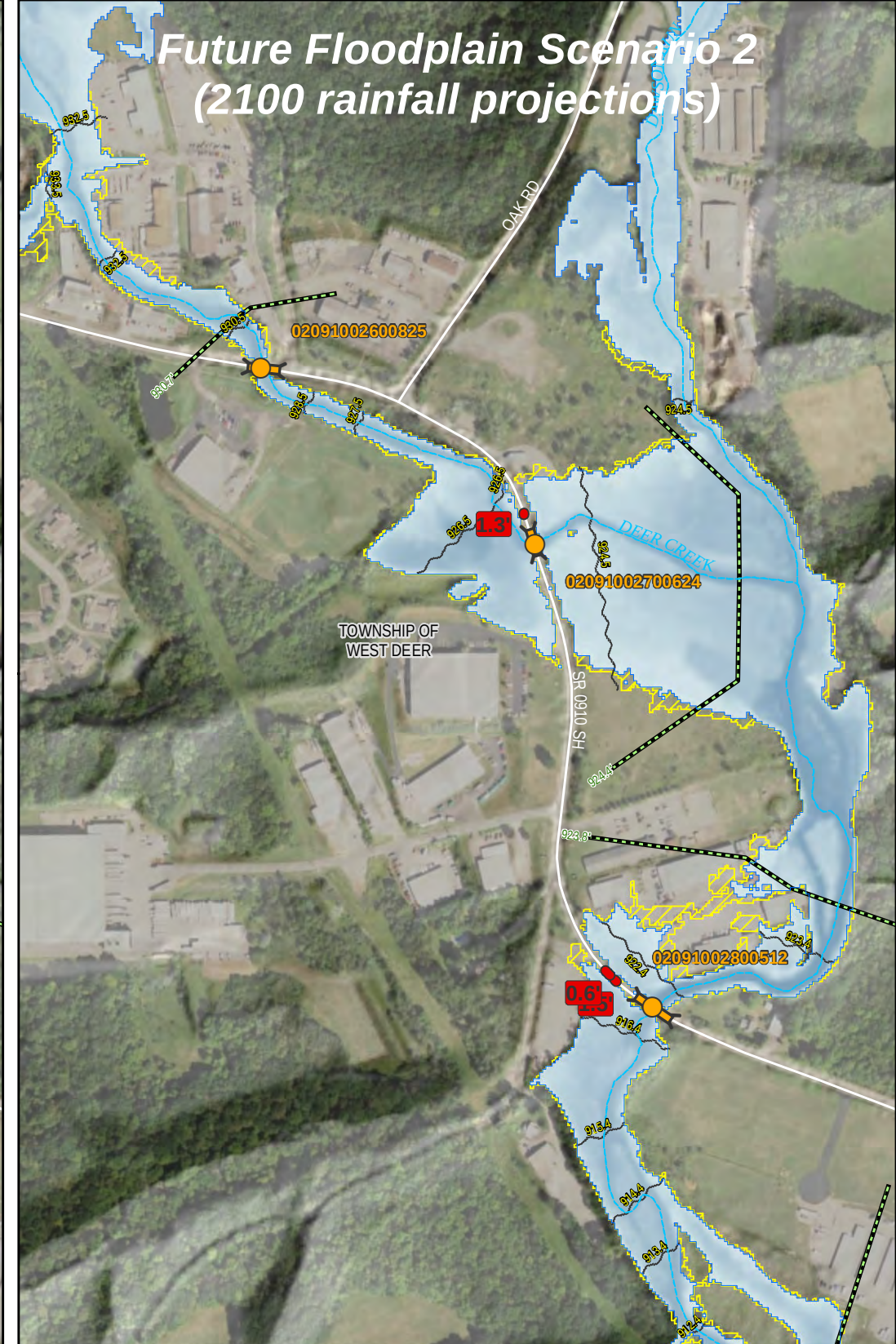
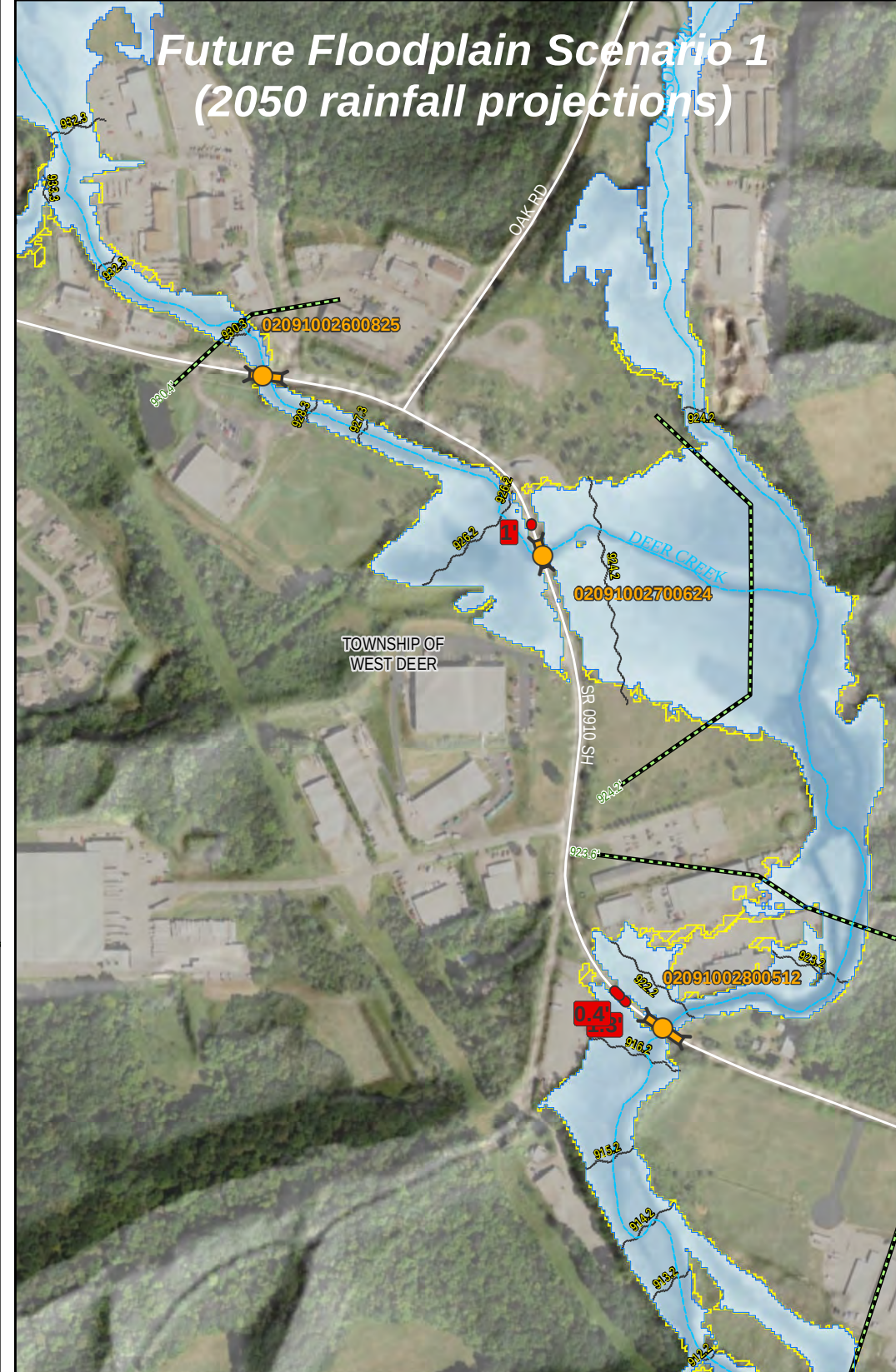
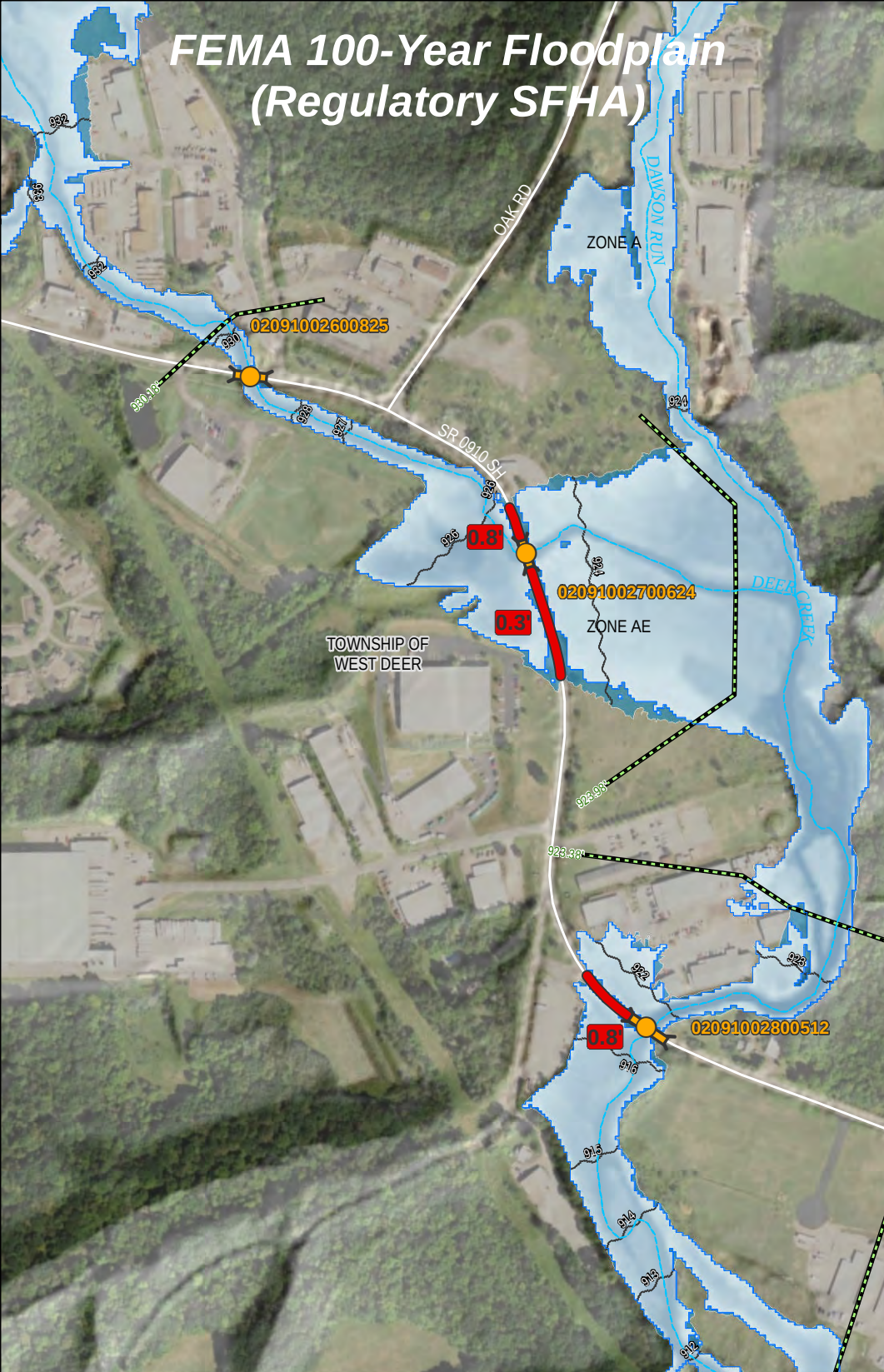
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System:
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
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LOCATOR MAP



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

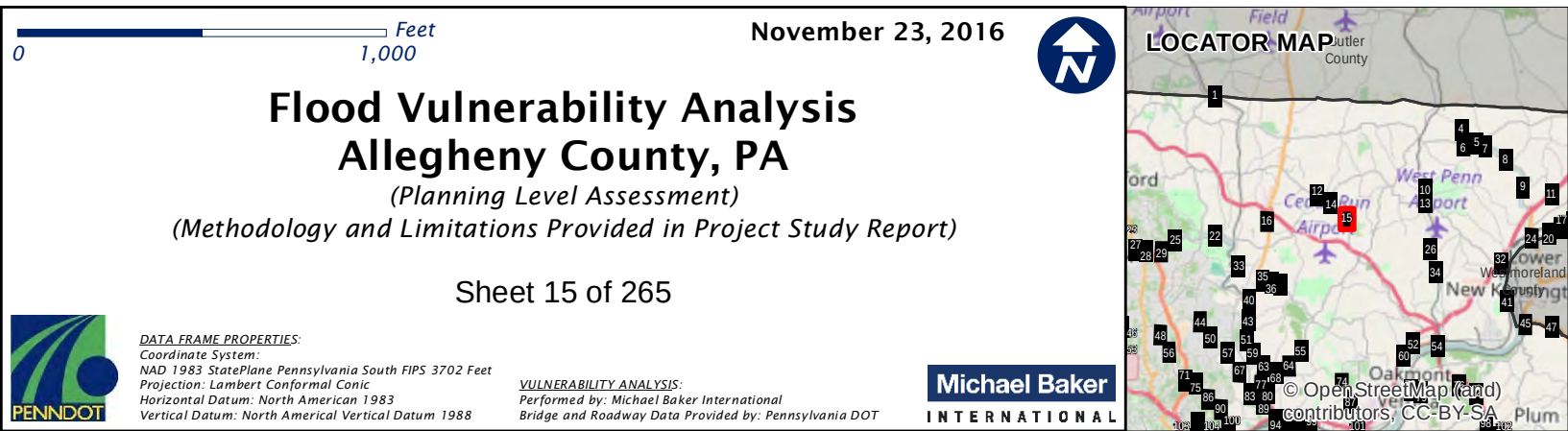
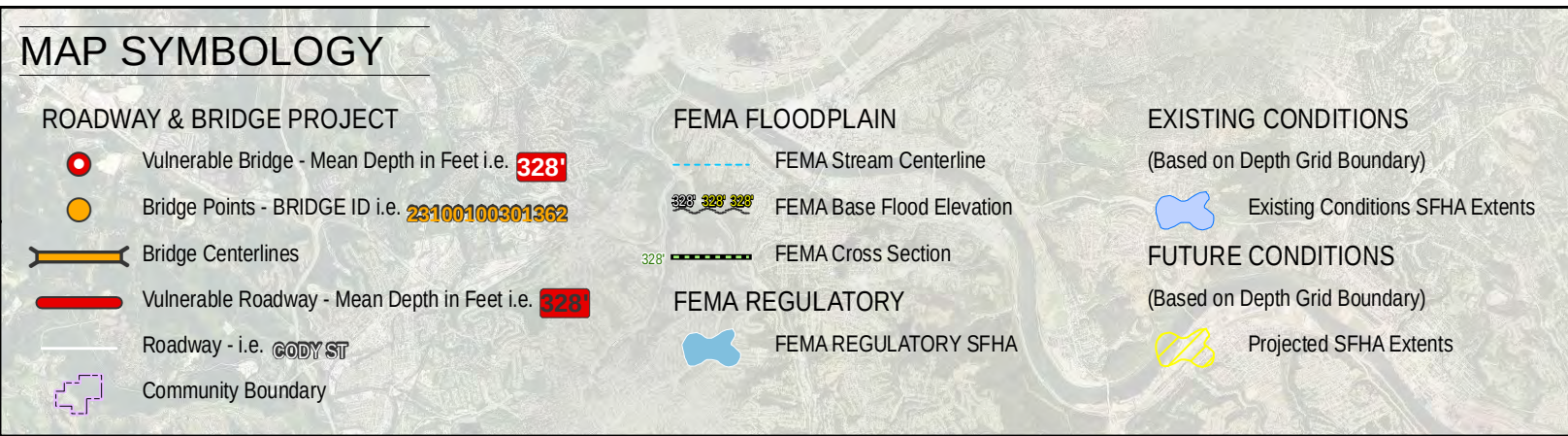
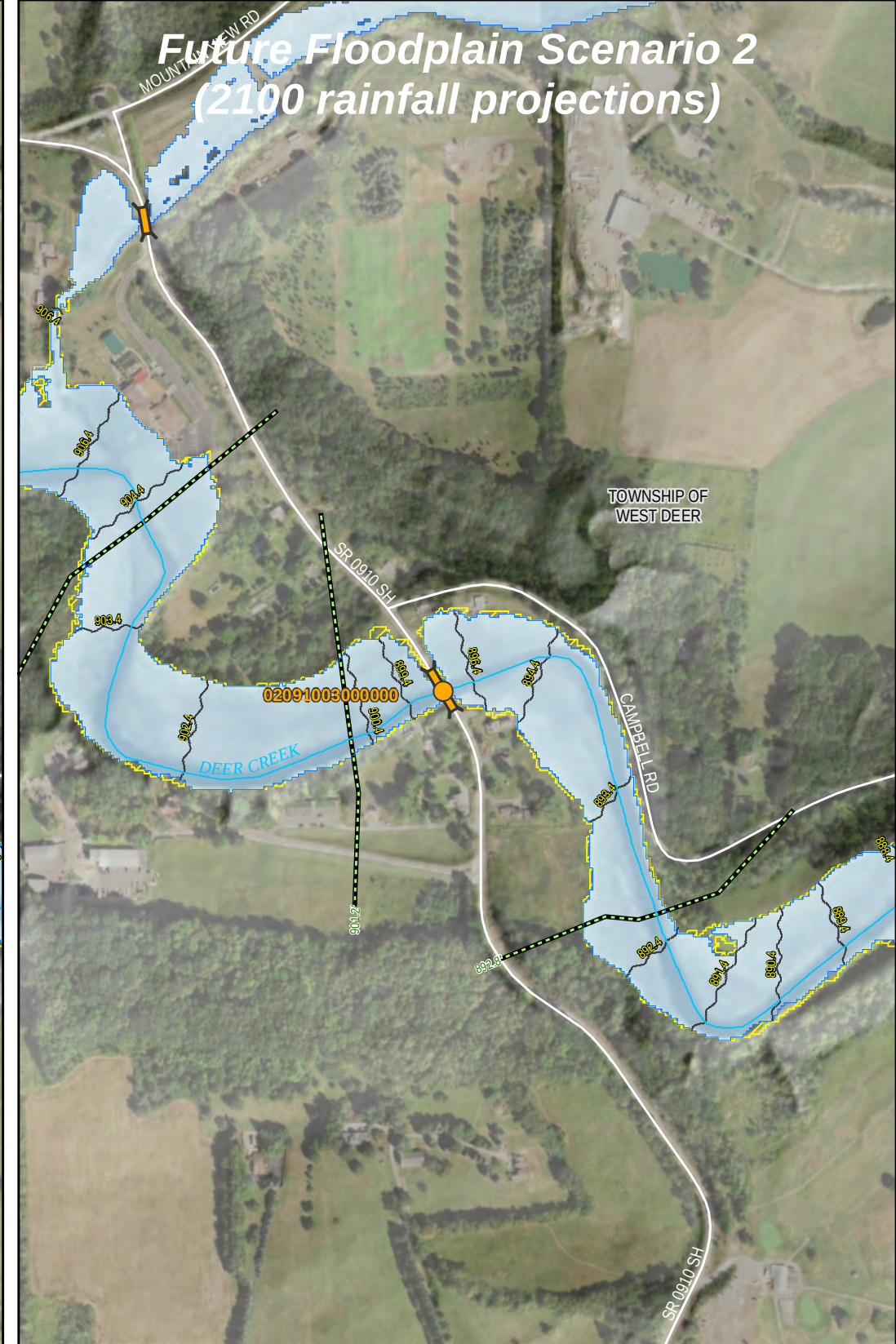
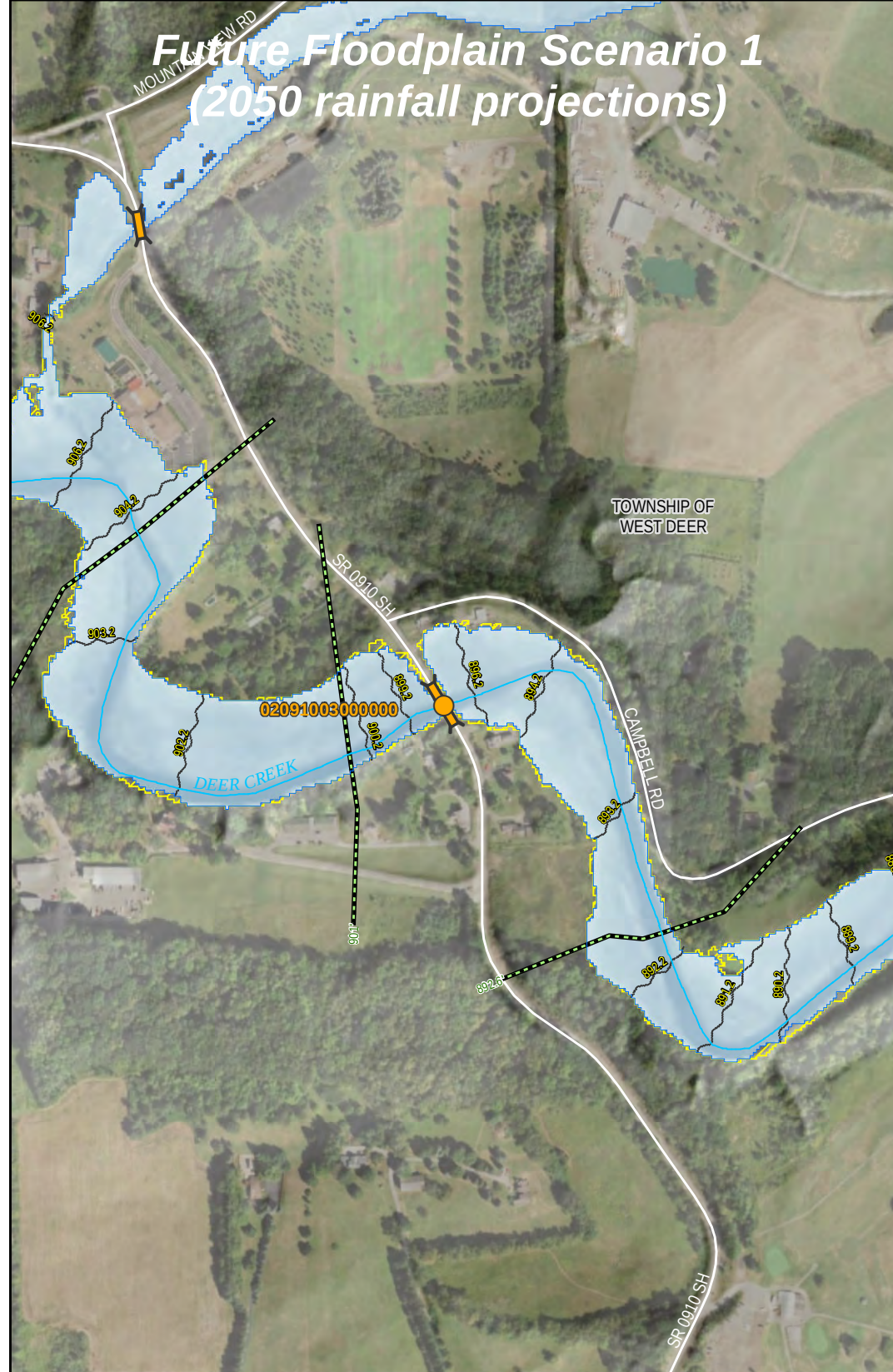
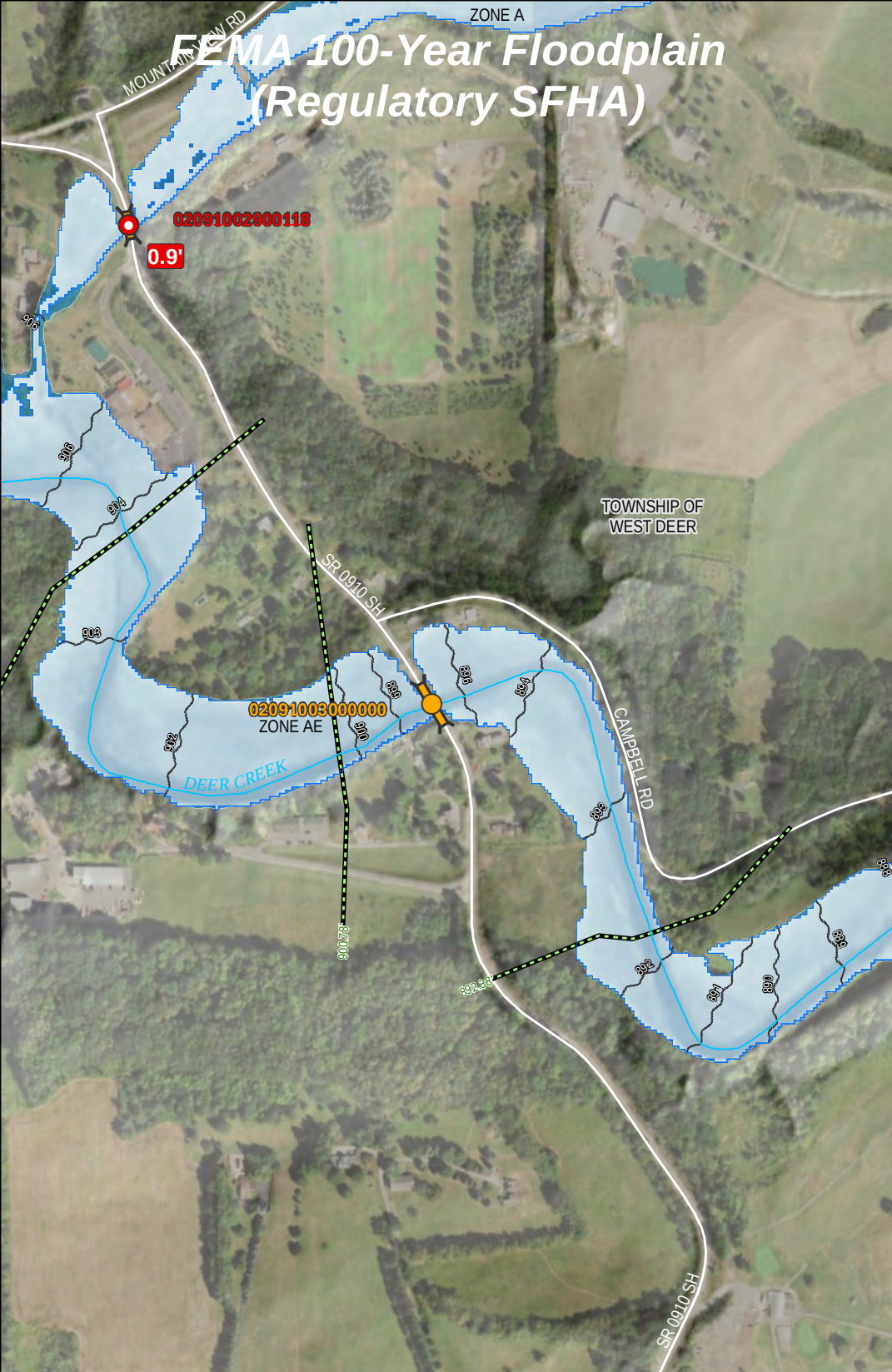
Flood Vulnerability Analysis Allegheny County, PA

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

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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Bridge and Roadway Data Provided by: Pennsylvania DOT





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	
	Vulnerable Bridge - Mean Depth in Feet i.e. 328'
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	Roadway - i.e. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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LOCATOR MAP



MAP SYMBOLOGY

- ### ROADWAY & BRIDGE PROJECT
- Vulnerable Bridge - Mean Depth in Feet i.e. **328'**
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- ### FEMA FLOODPLAIN
- FEMA Stream Centerline
 - FEMA Base Flood Elevation
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- ### FEMA REGULATORY
- FEMA REGULATORY SFHA

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0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

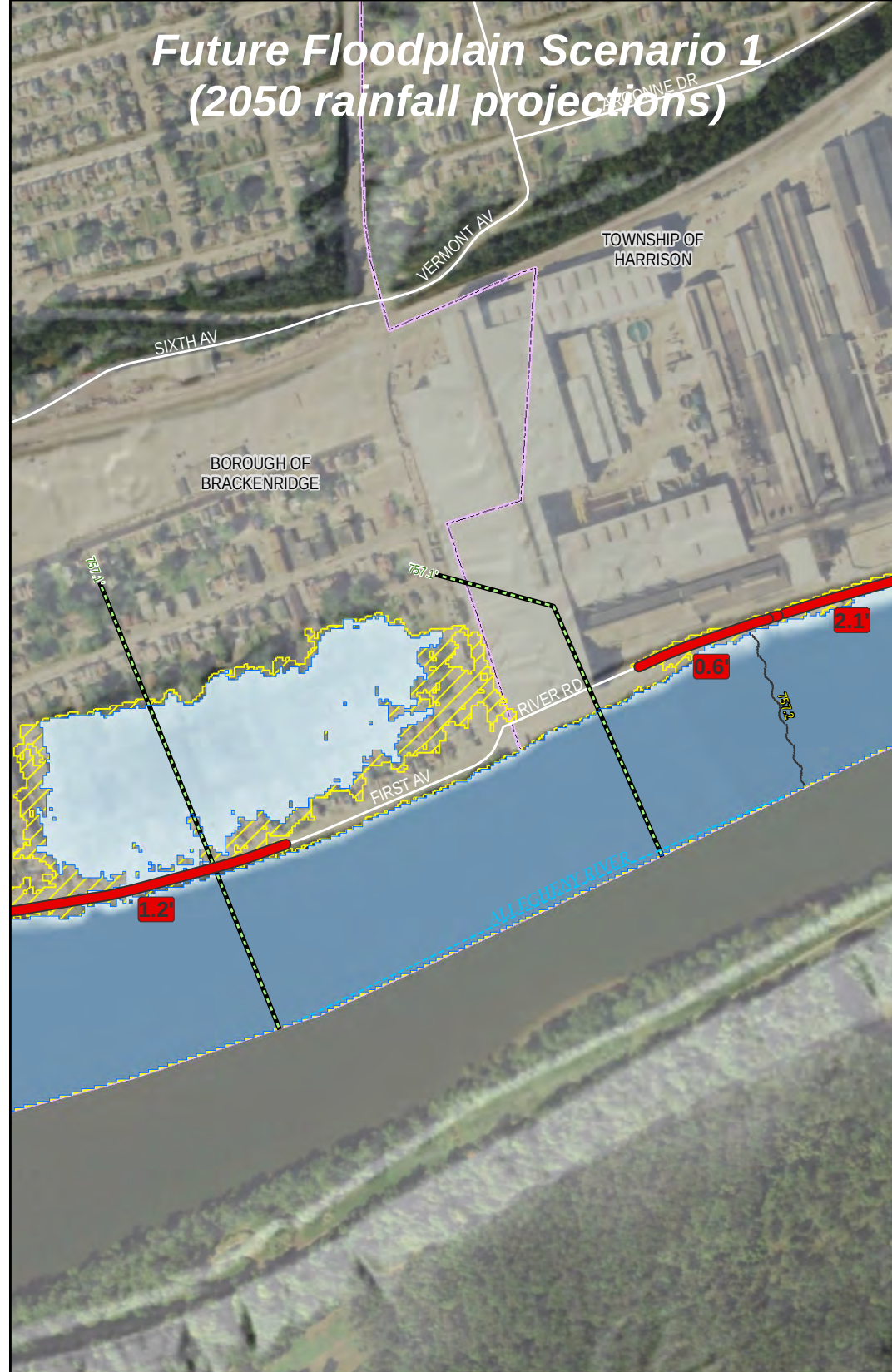
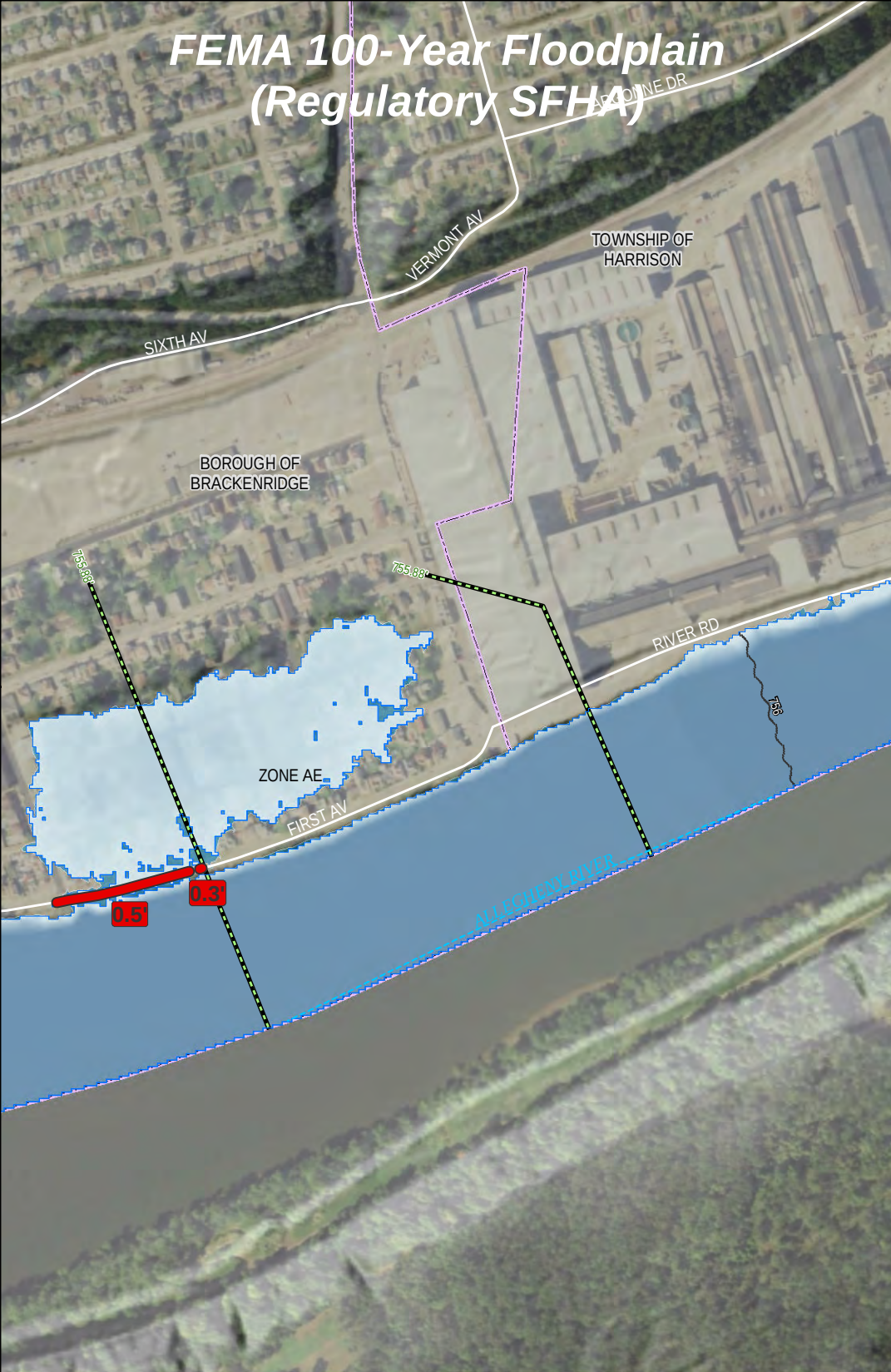
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Coordinate System:
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LOCATOR MAP

County



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. **328'**
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FEMA FLOODPLAIN

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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

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INTERNATIONAL**

LOCATOR MAP

FEMA 100-Year Floodplain
(Regulatory SFHA)



Future Floodplain Scenario 1
(2050 rainfall projections)



Future Floodplain Scenario 2
(2100 rainfall projections)



MAP SYMBOLOGY

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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

0 1,000 Feet

November 23, 2016



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

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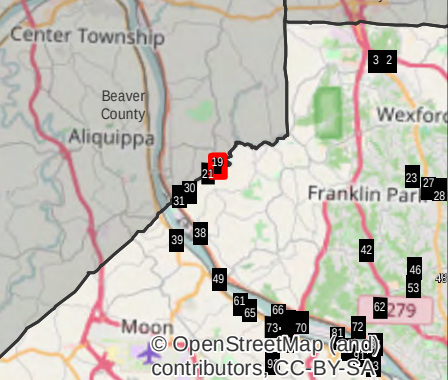


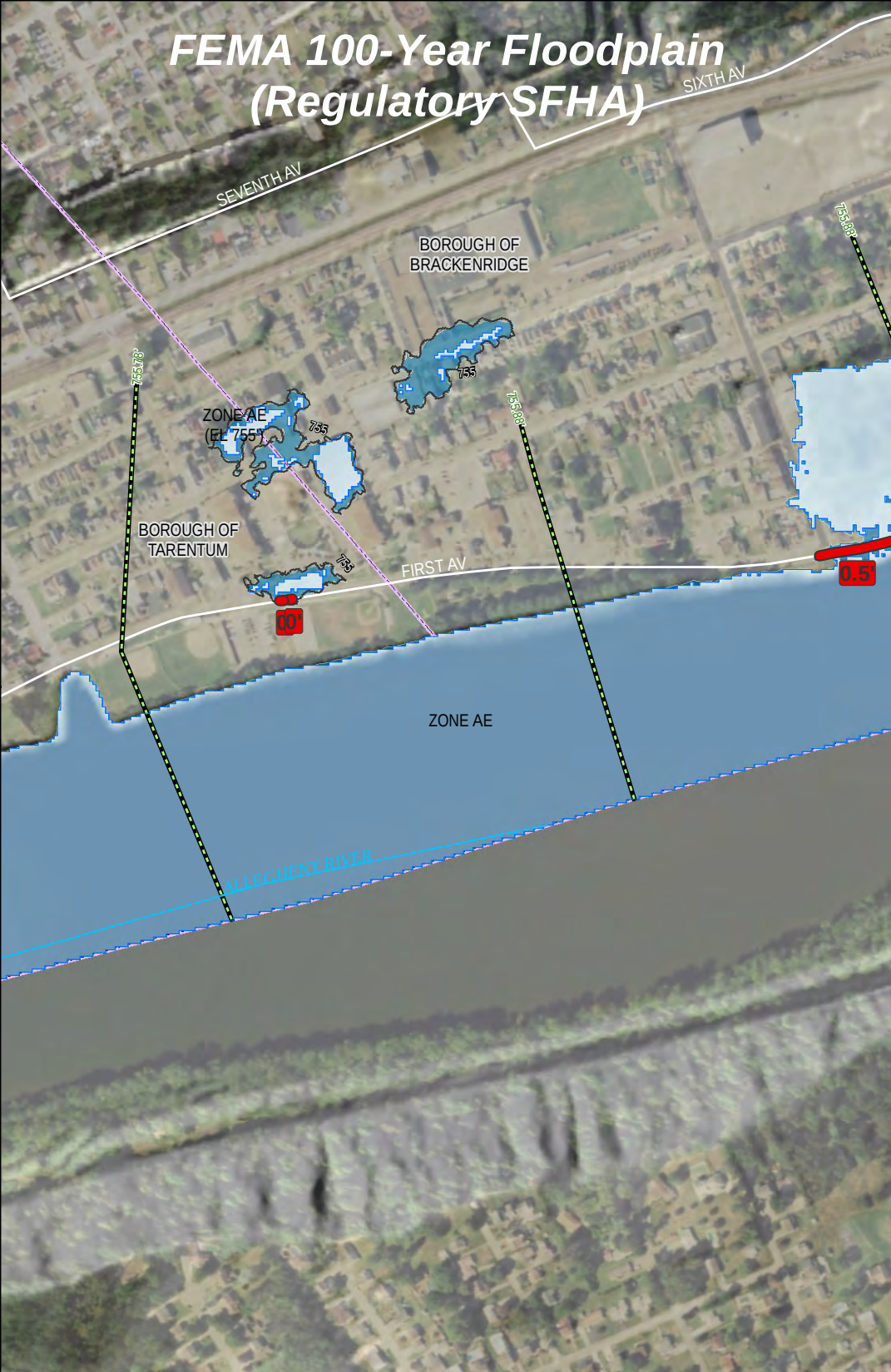
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
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INTERNATIONAL

LOCATOR MAP





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 3.28'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 3.28'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

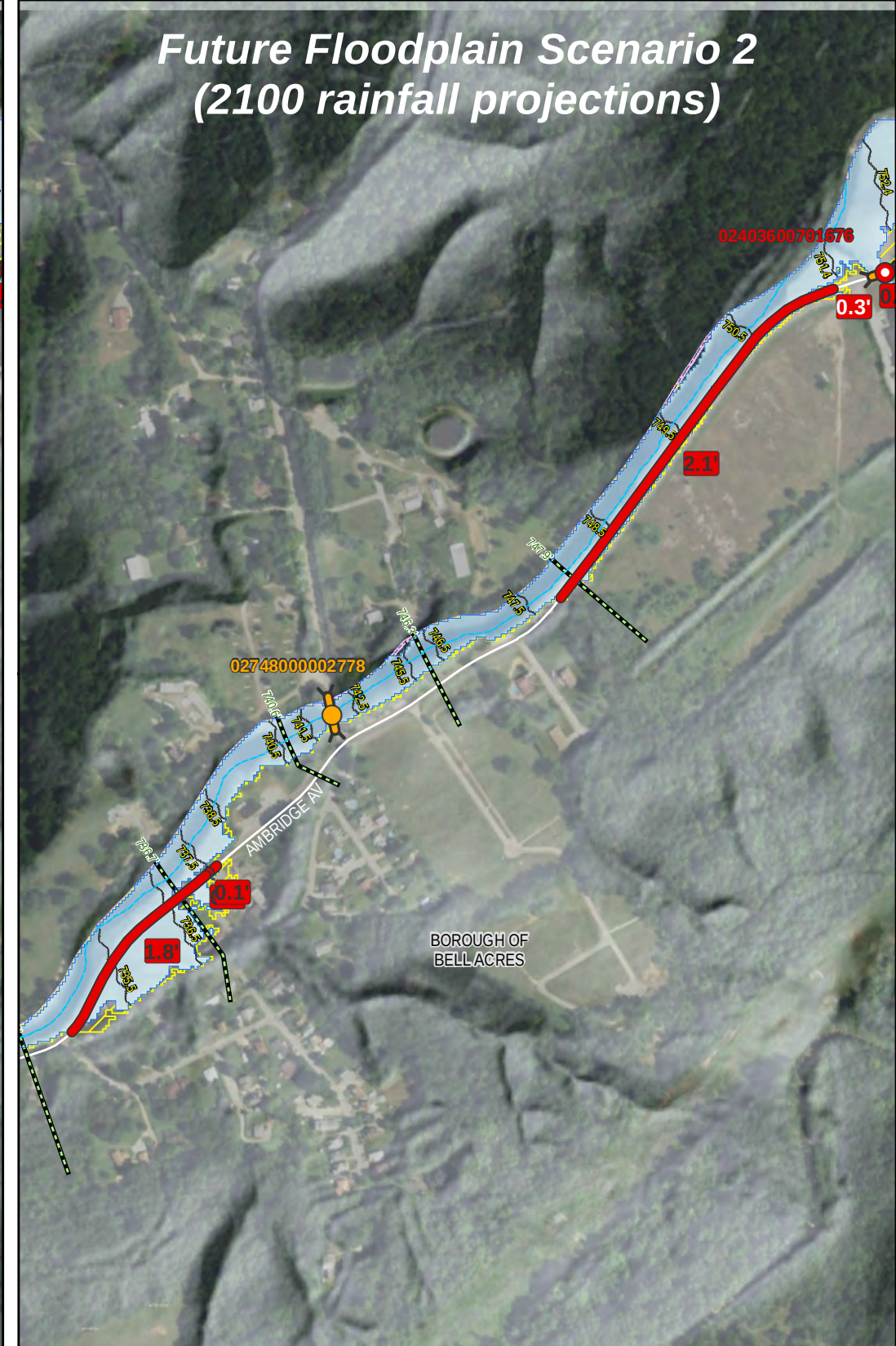
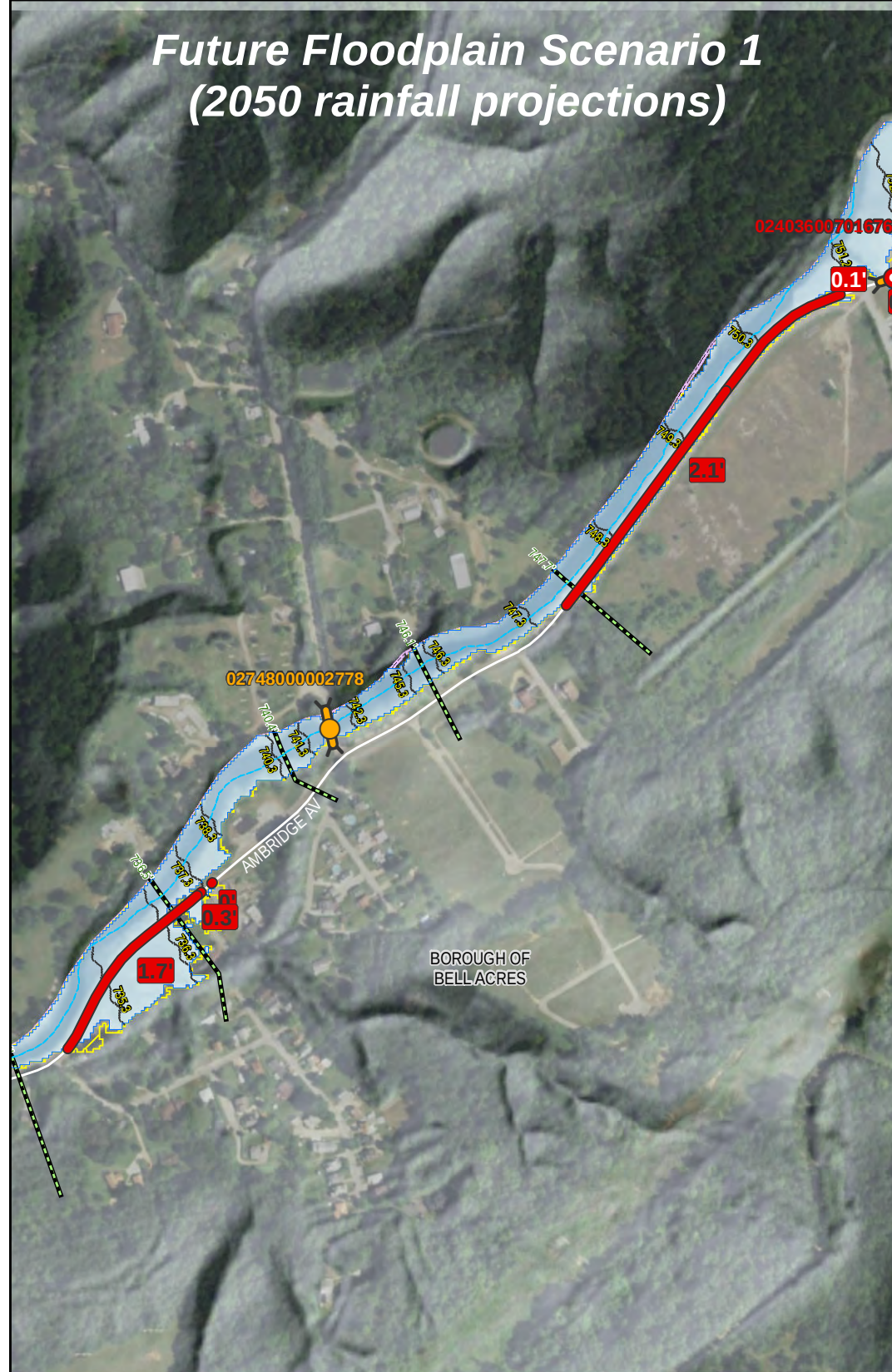
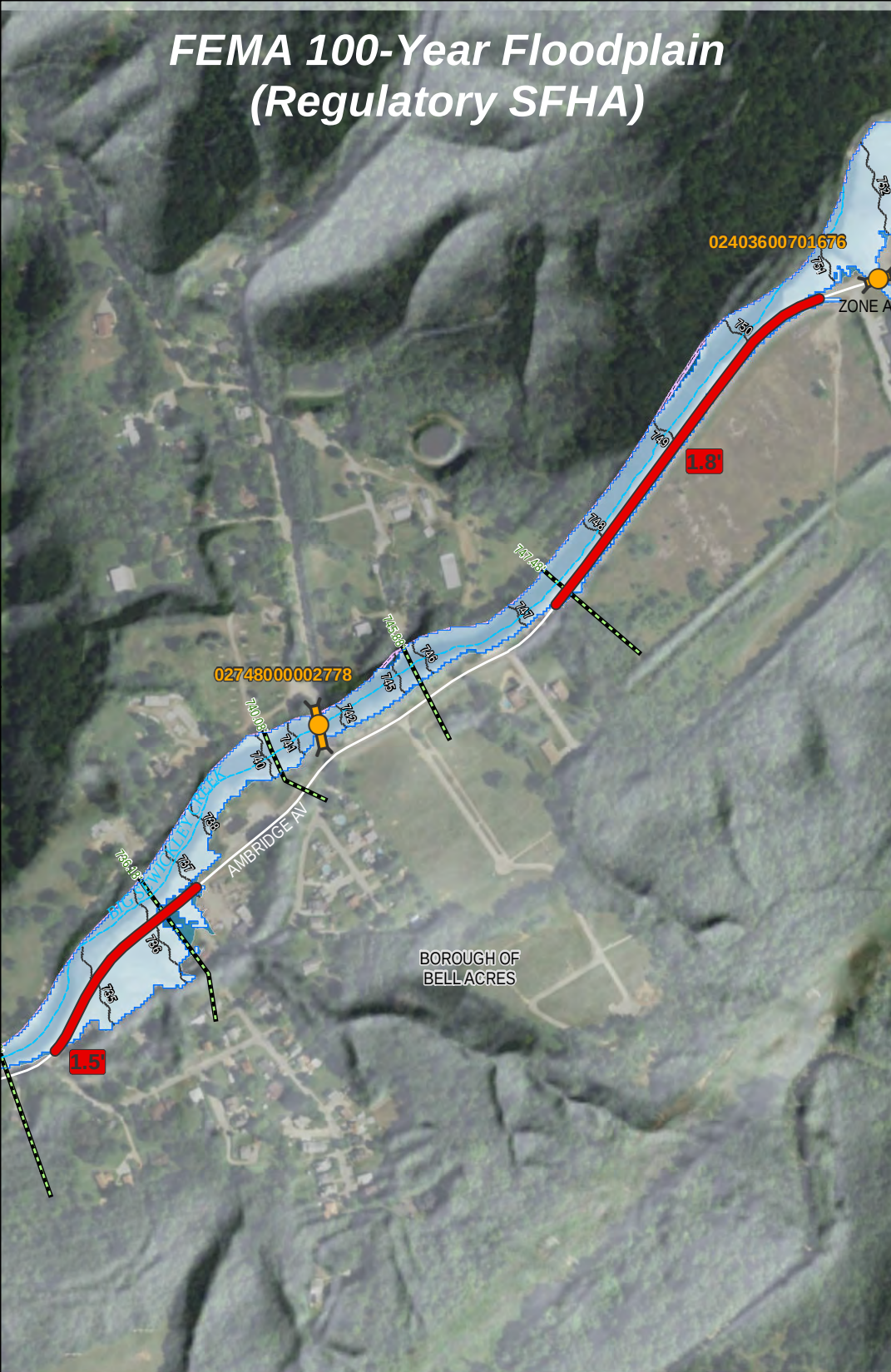
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
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LOCATOR MAP



MAP SYMBOLOGY

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Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

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PENNDOT

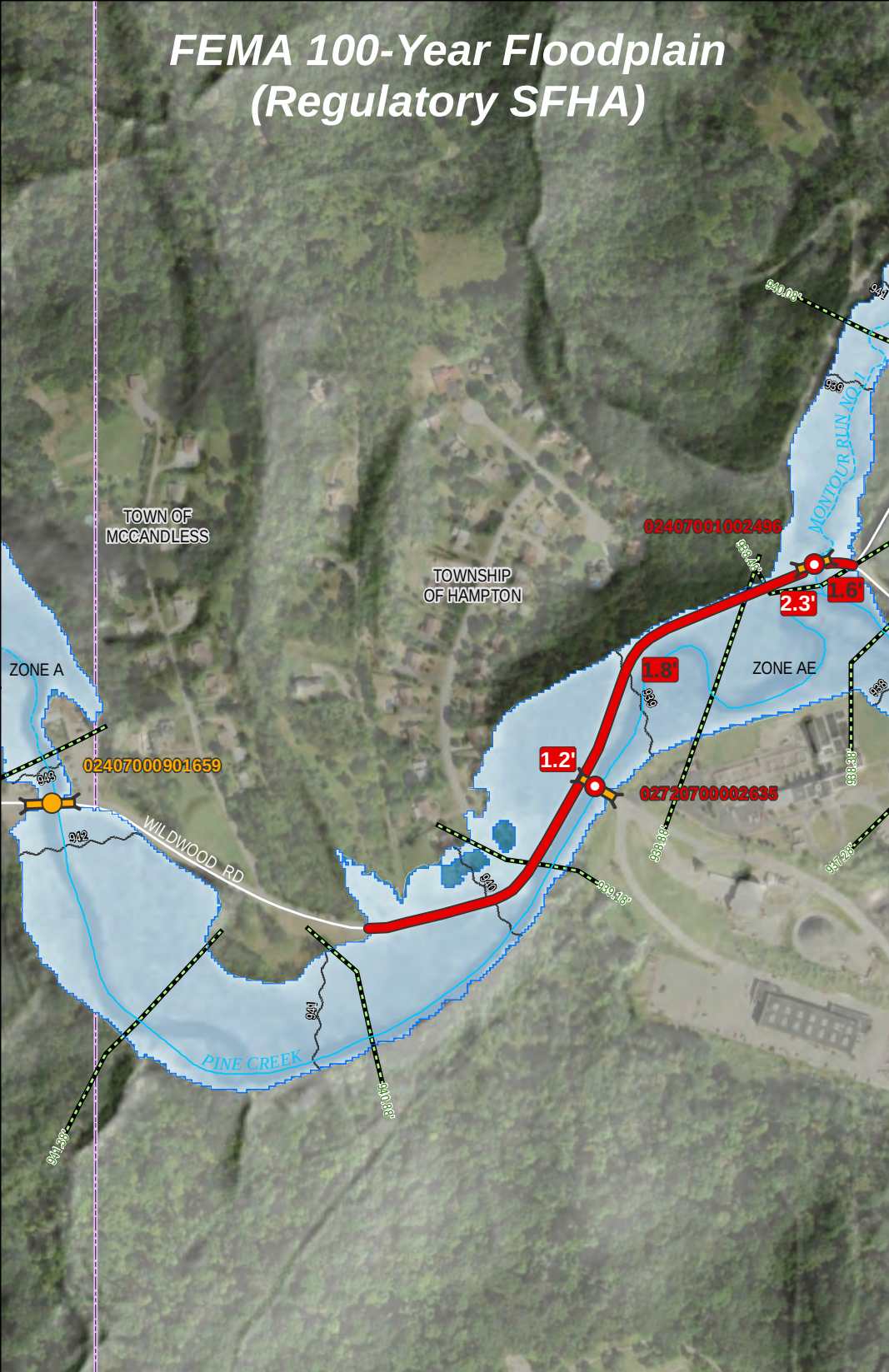
Michael Baker INTERNATIONAL

LOCATOR MAP

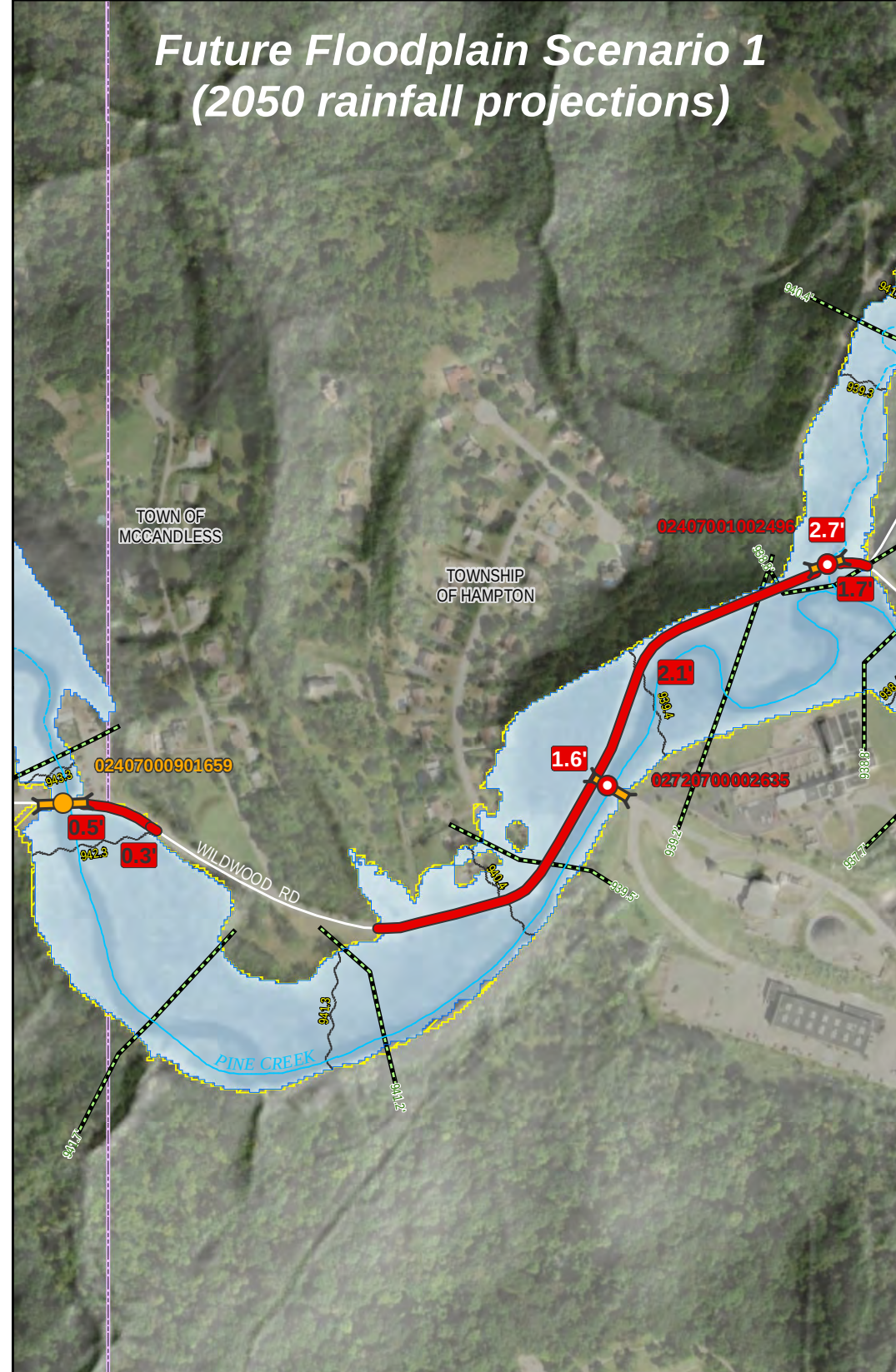
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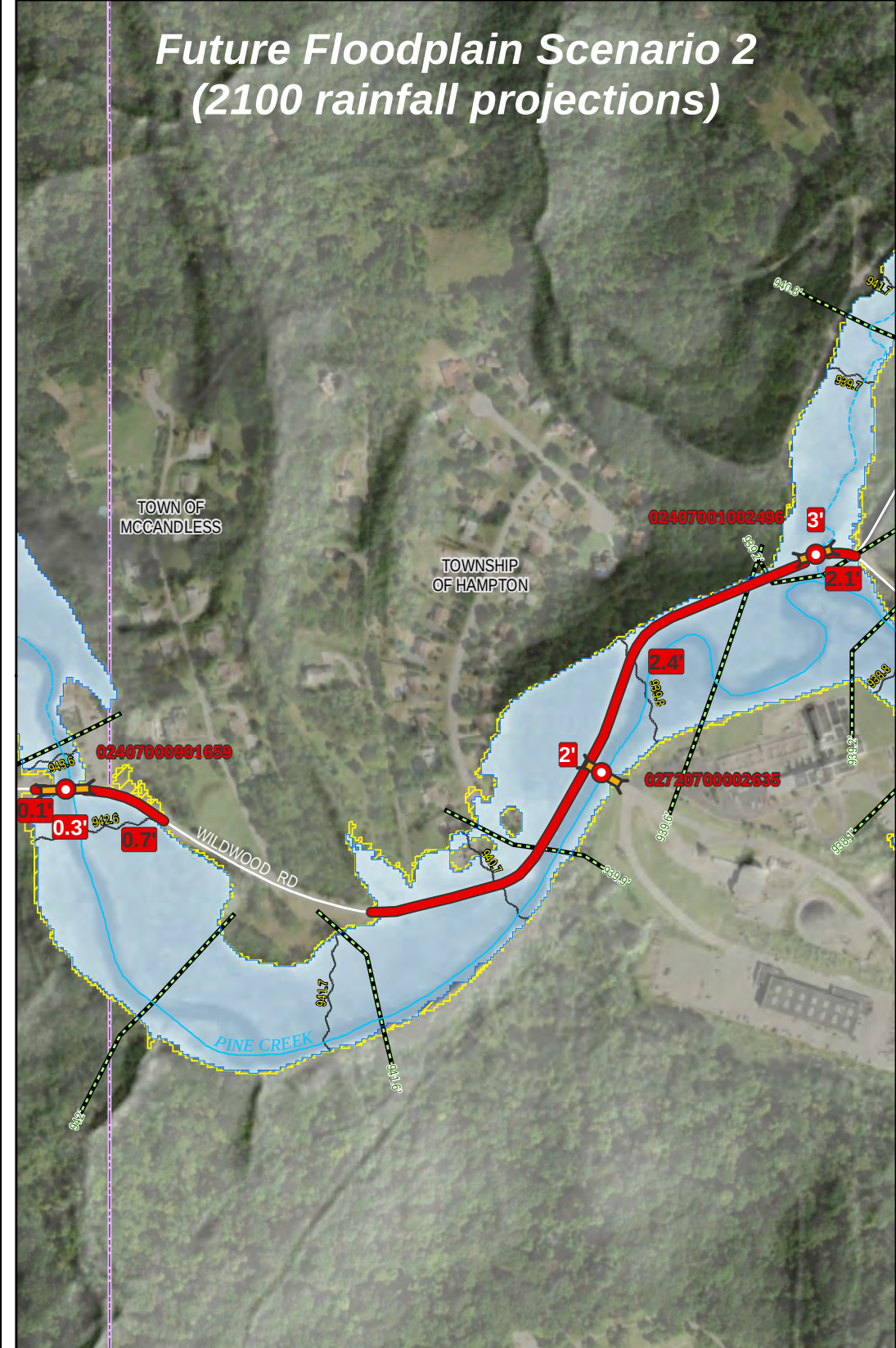
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOGY

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FEMA FLOODPLAIN

- FEMA Stream Centerline
- FEMA Base Flood Elevation
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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

0 Feet
1,000

November 23, 2016



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

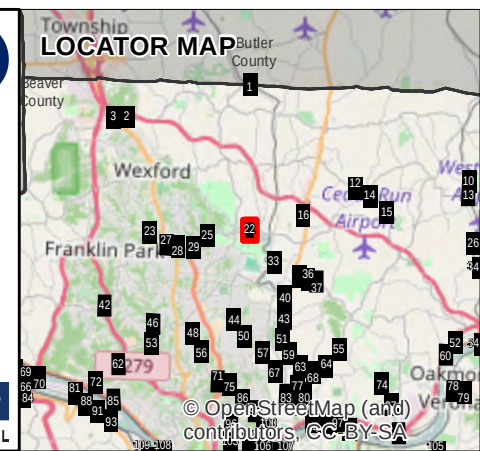
Sheet 22 of 265

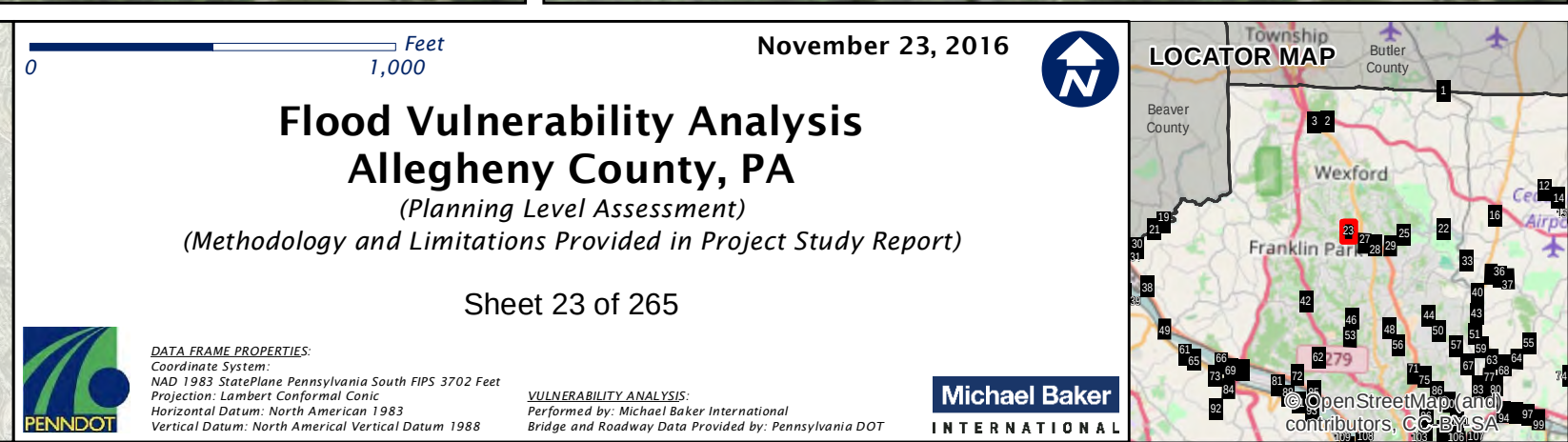
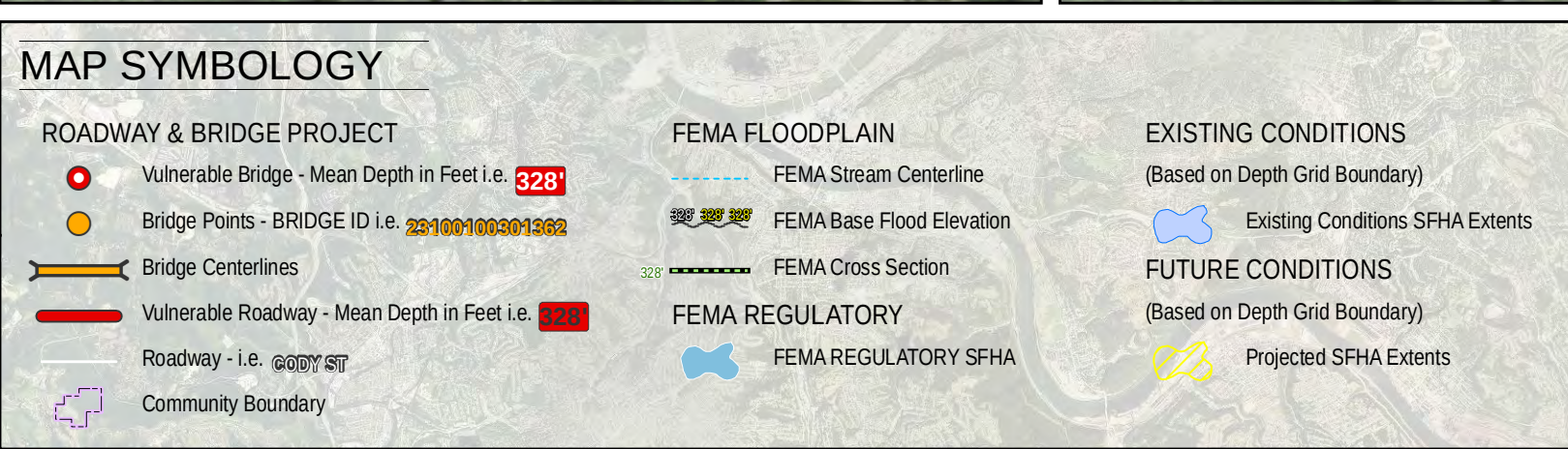
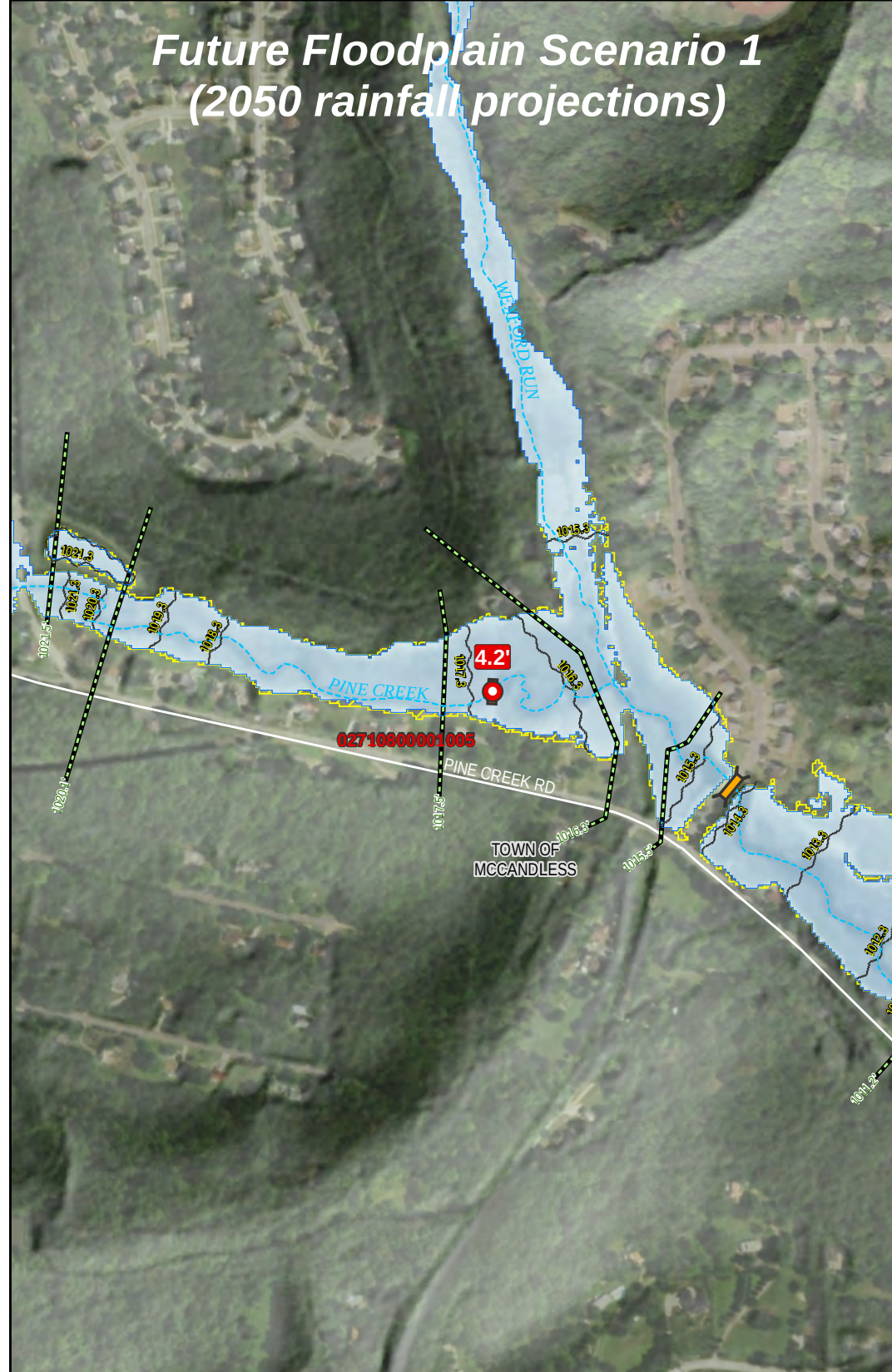
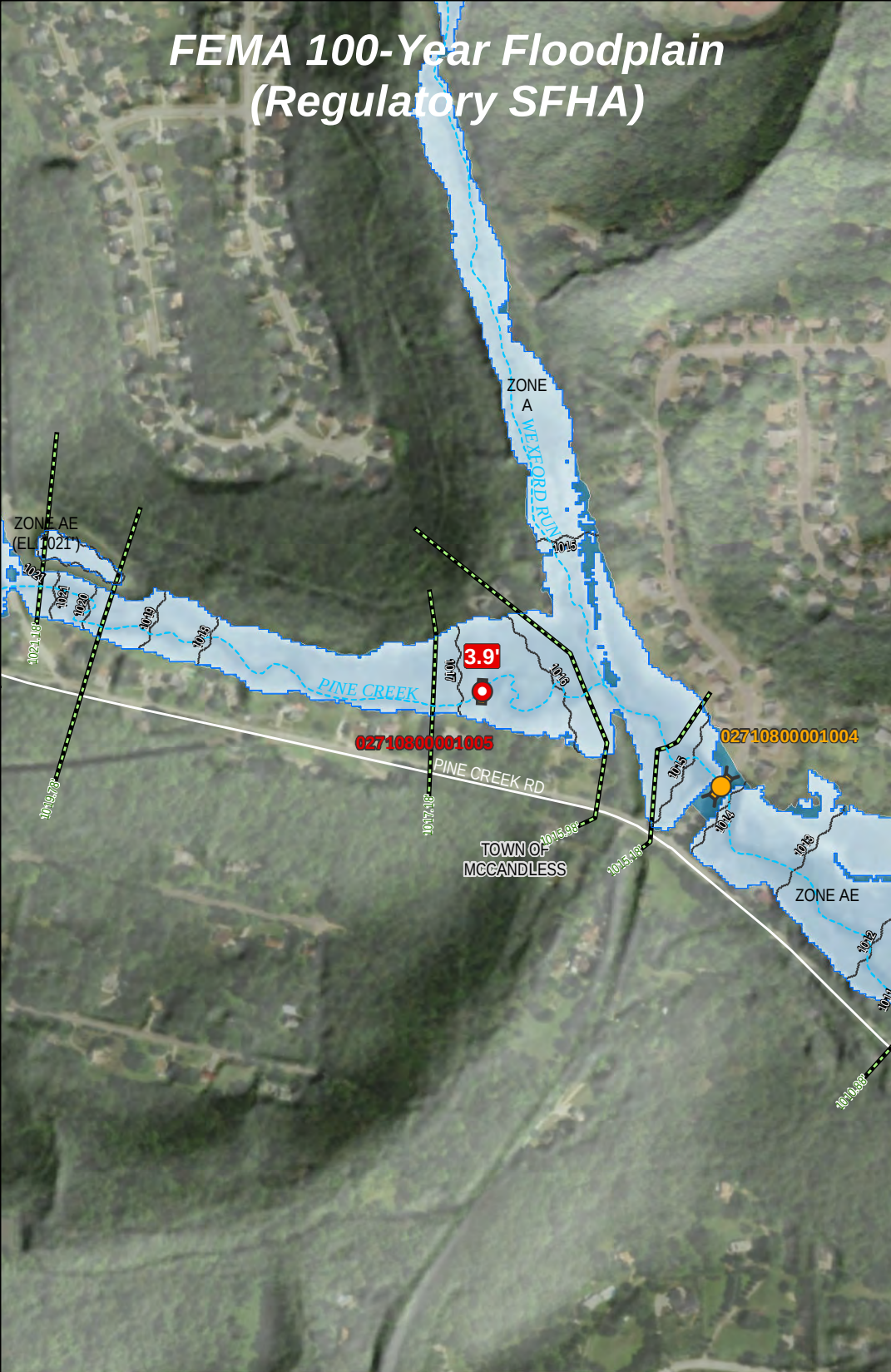


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**







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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

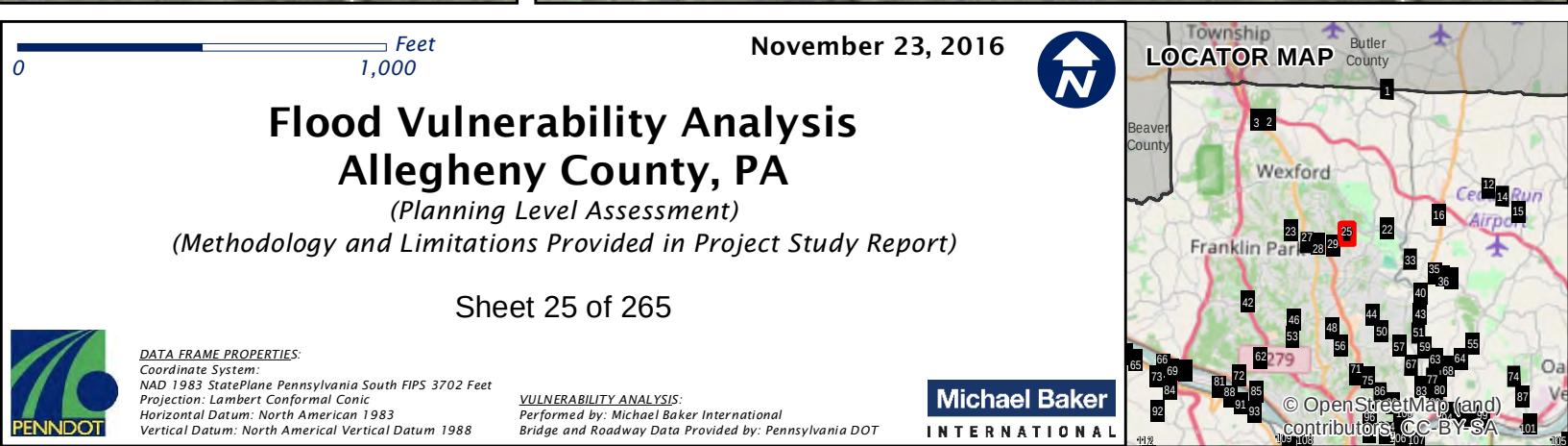
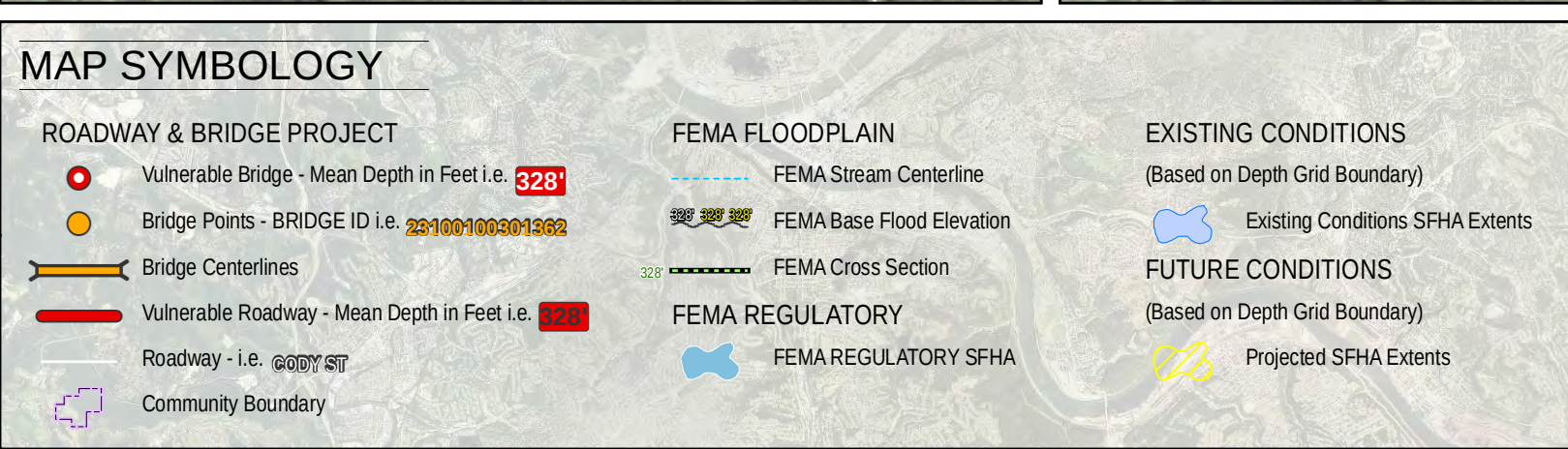
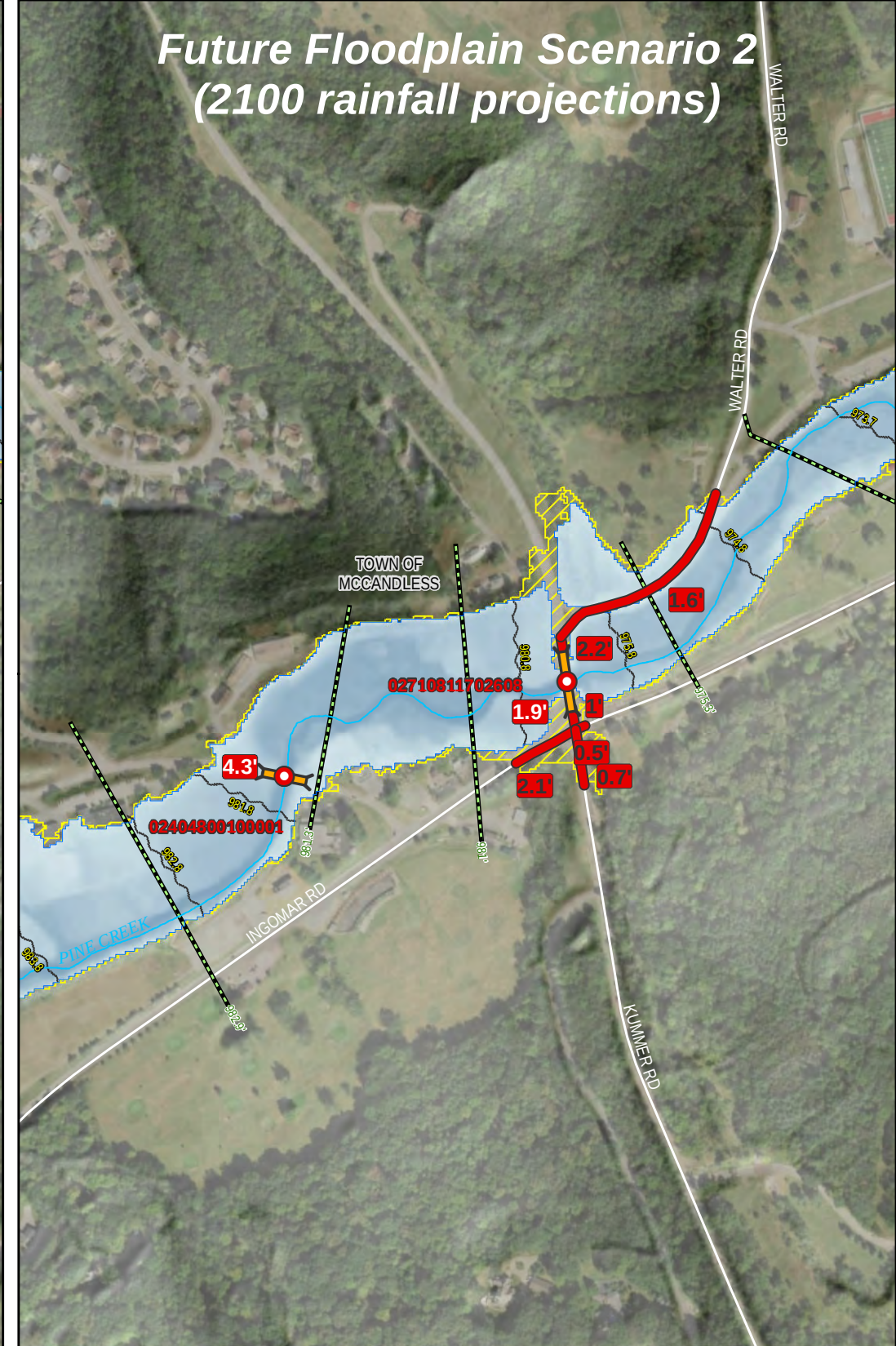
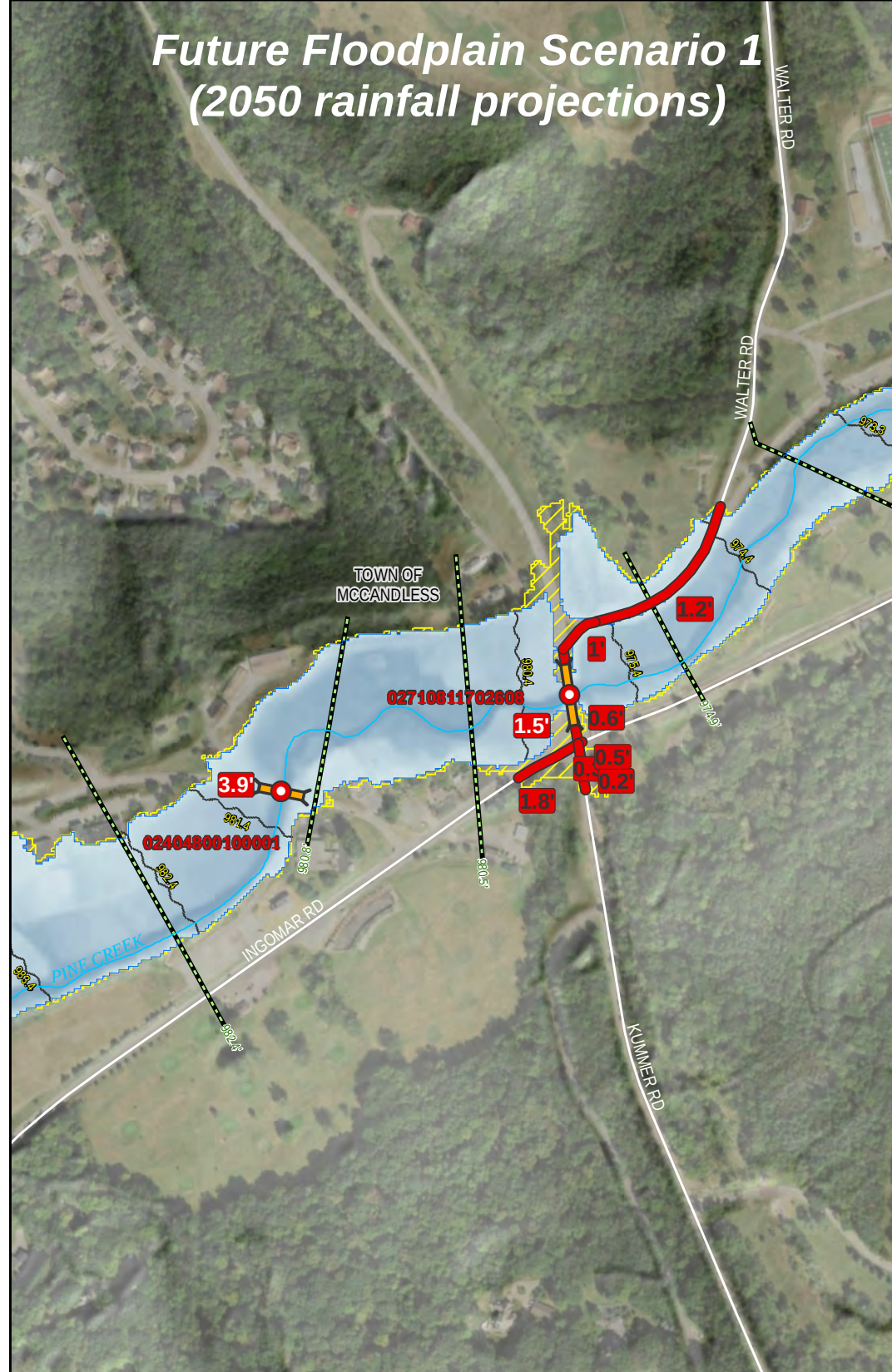
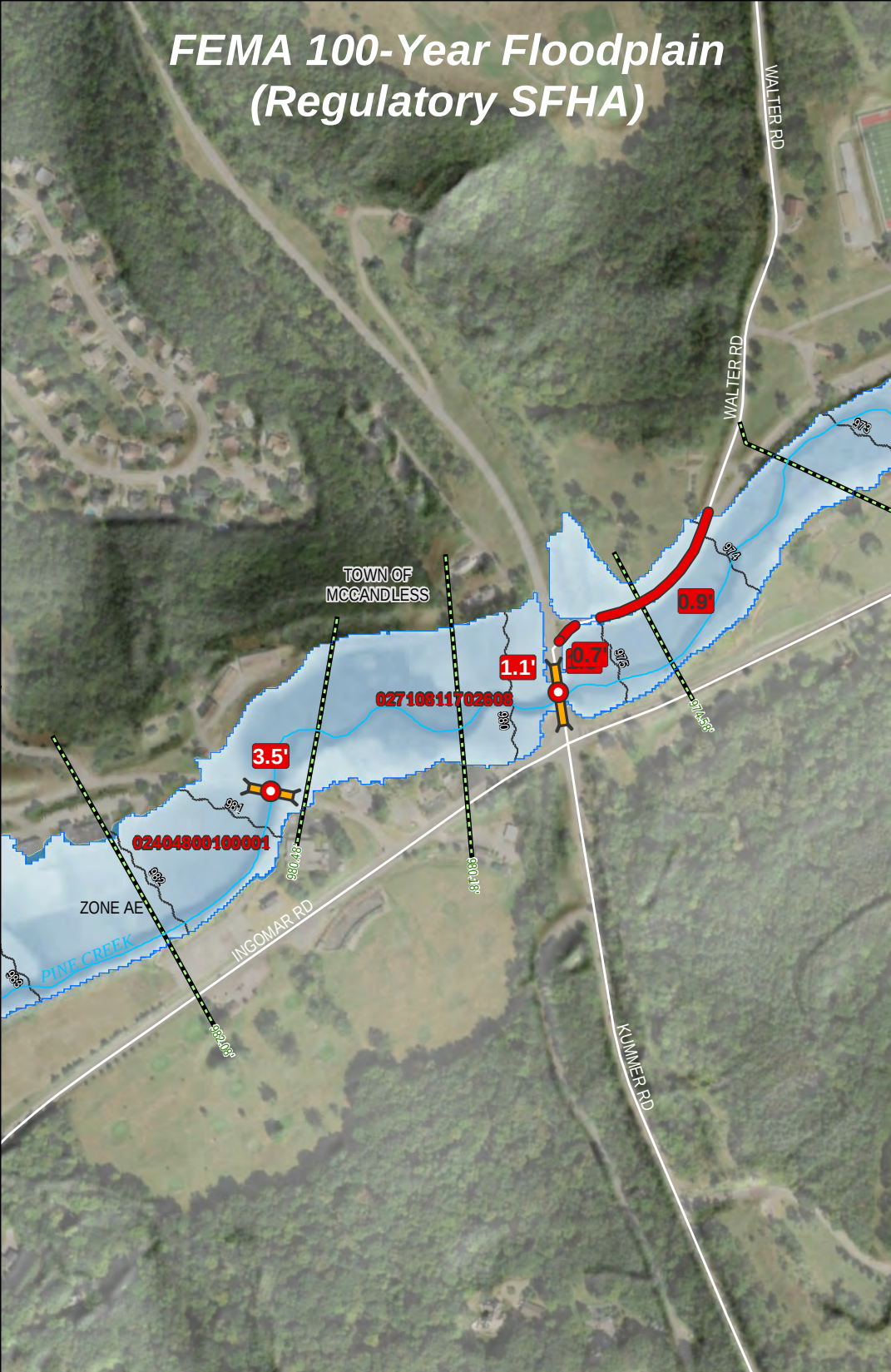
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

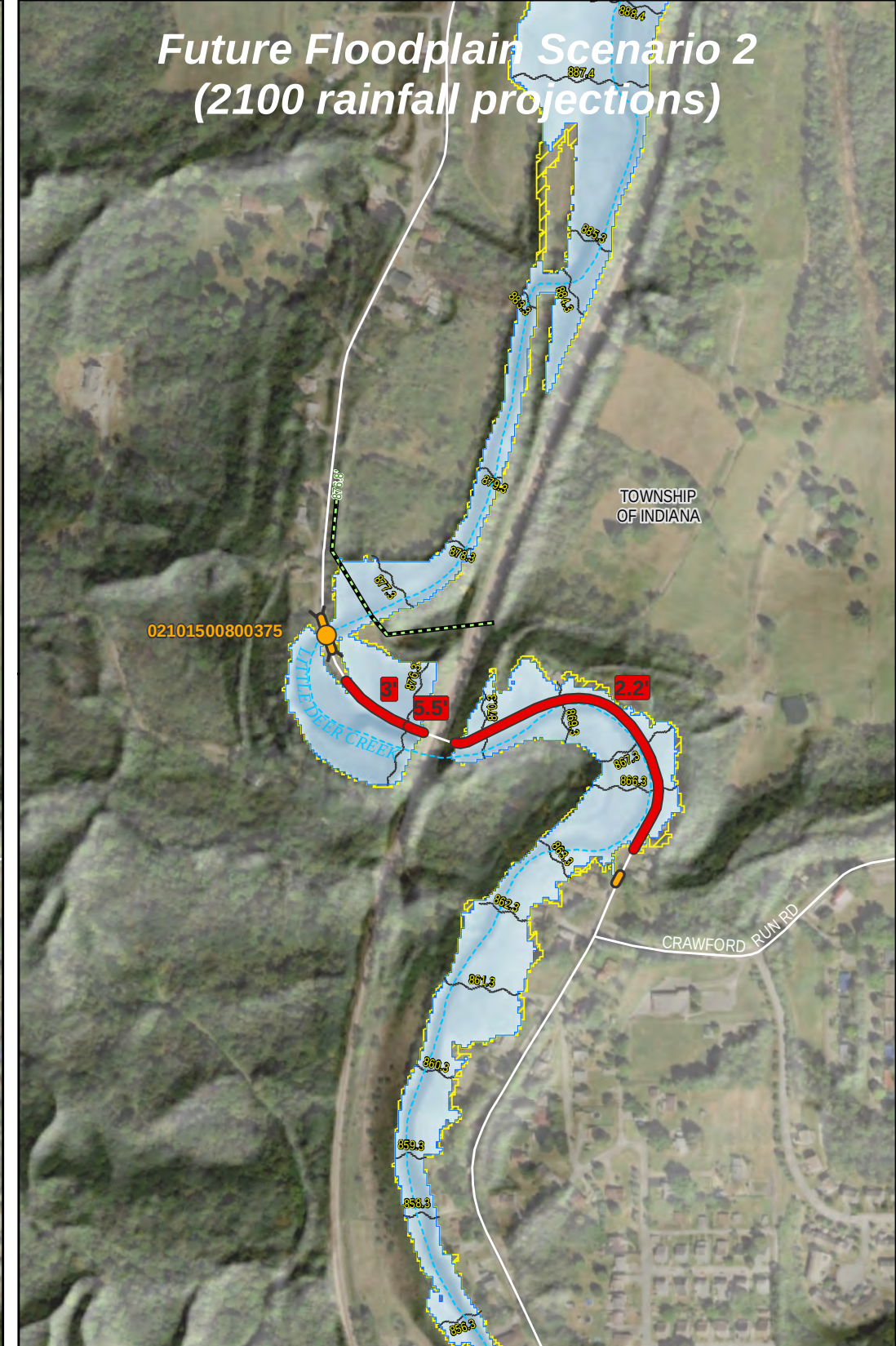
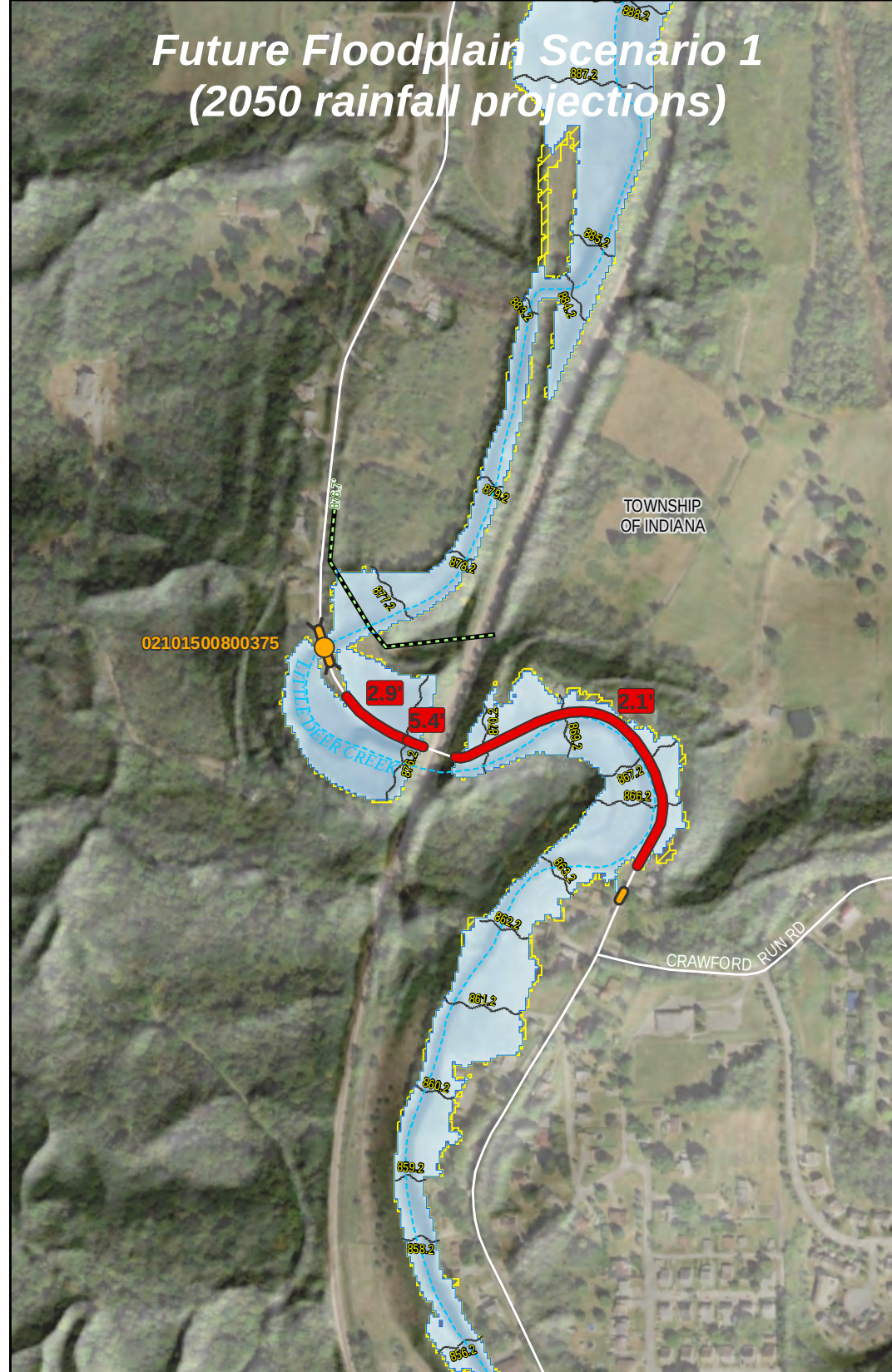
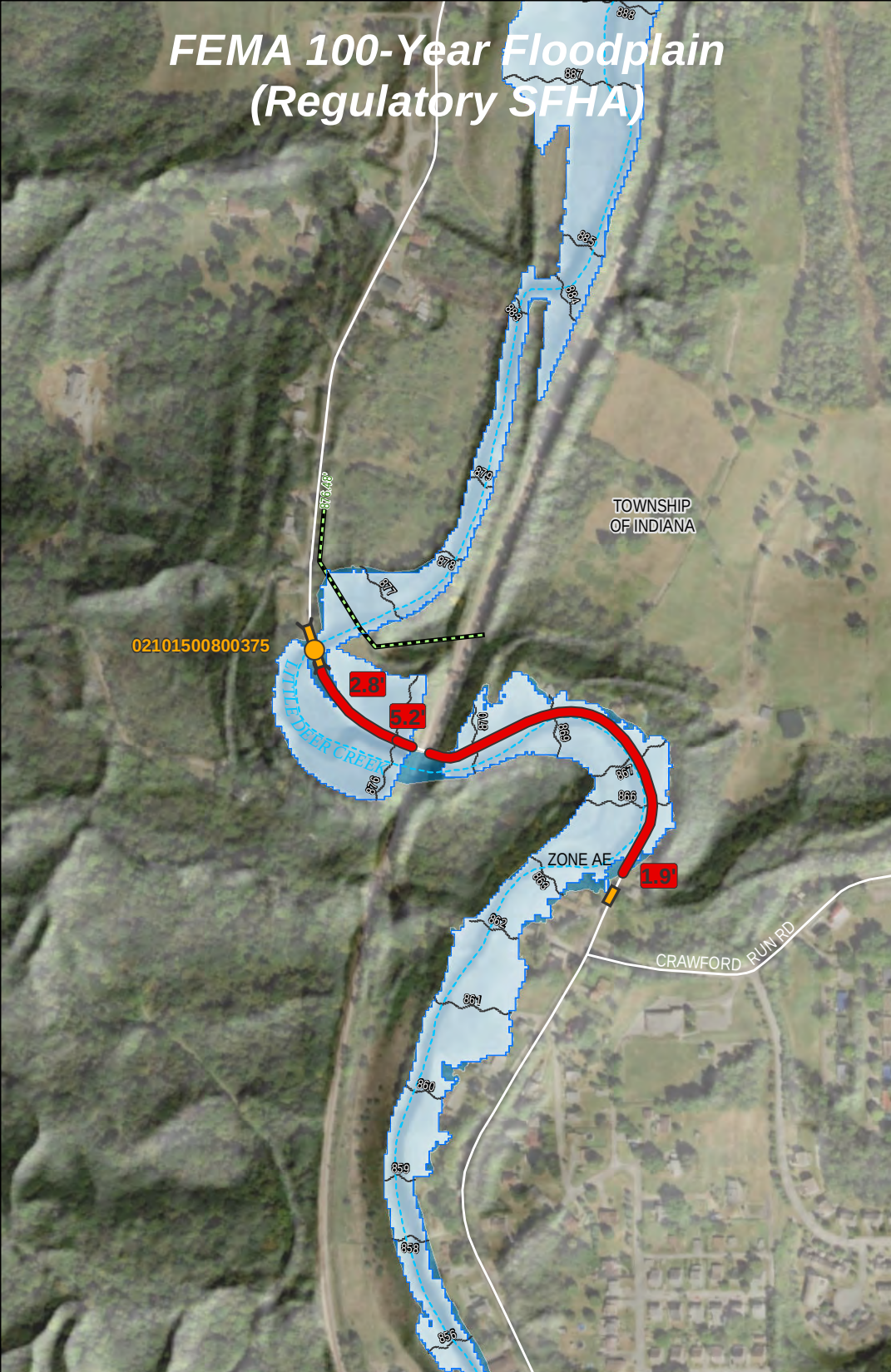
Sheet 24 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP





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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

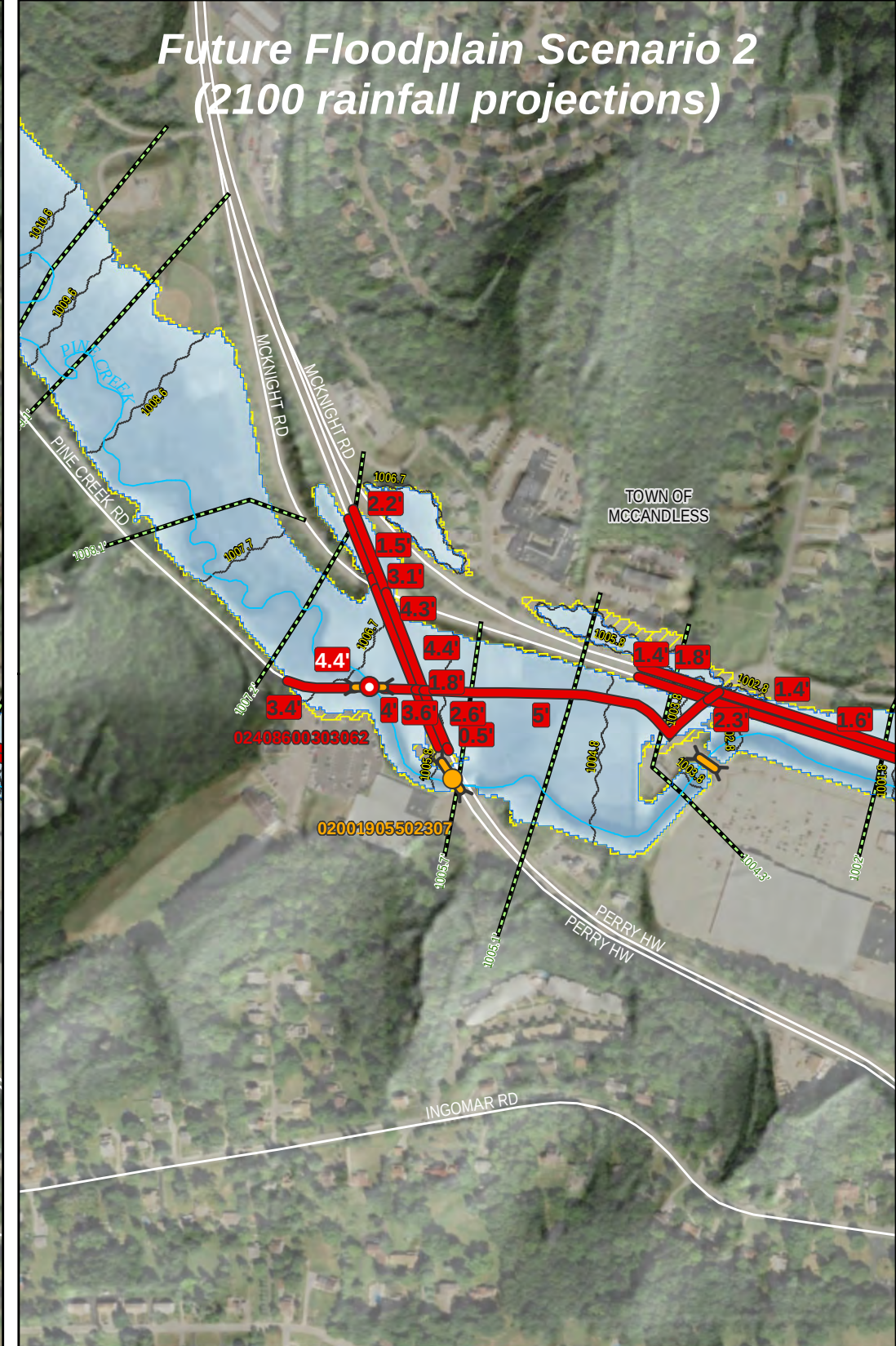
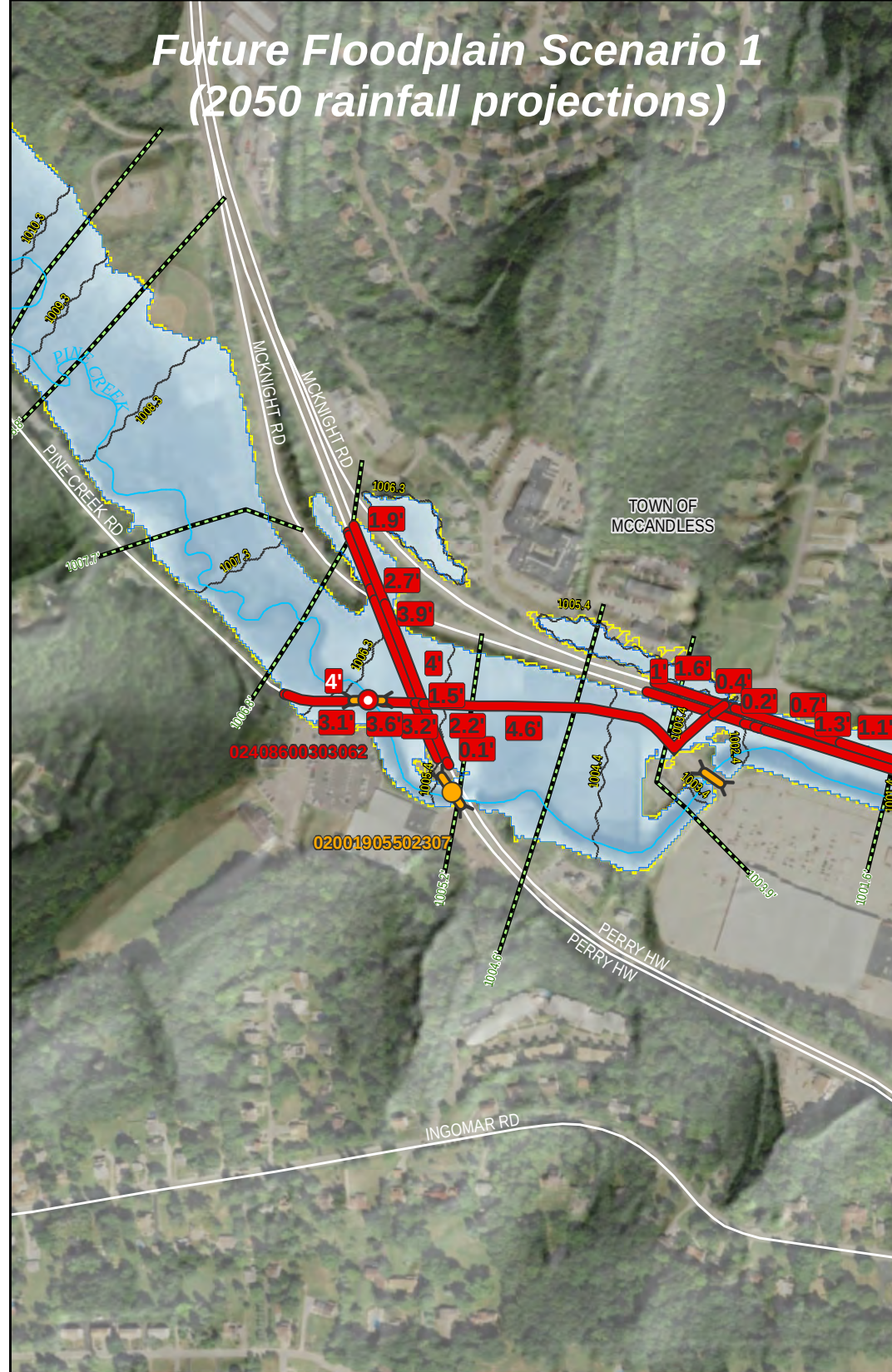
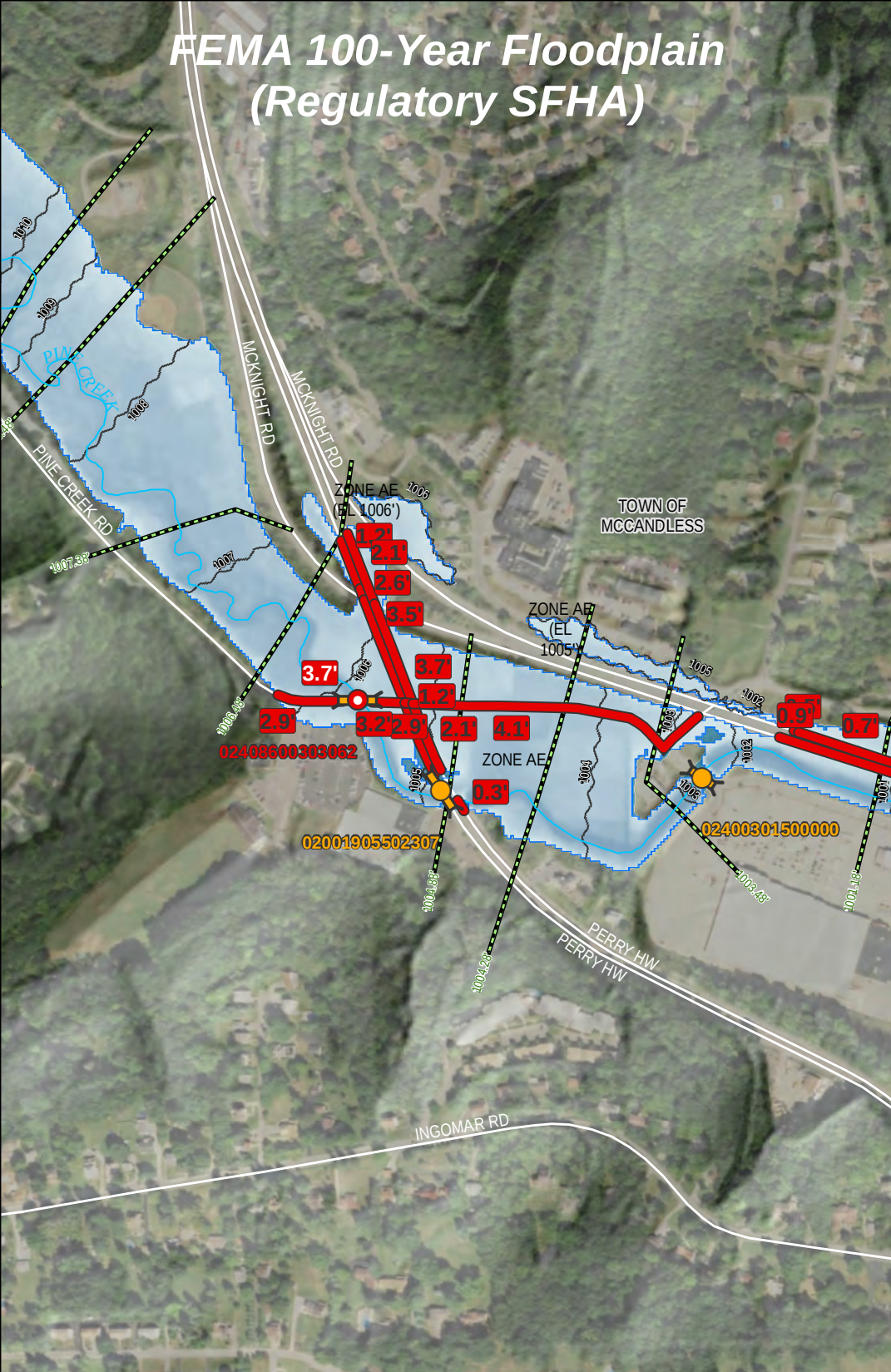
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 26 of 265

DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	Projected SFHA Extents
Bridge Centerlines	FEMA Cross Section	
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY SFHA	
Roadway - i.e. CODY ST		
Community Boundary		

MAP METADATA

November 23, 2016

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

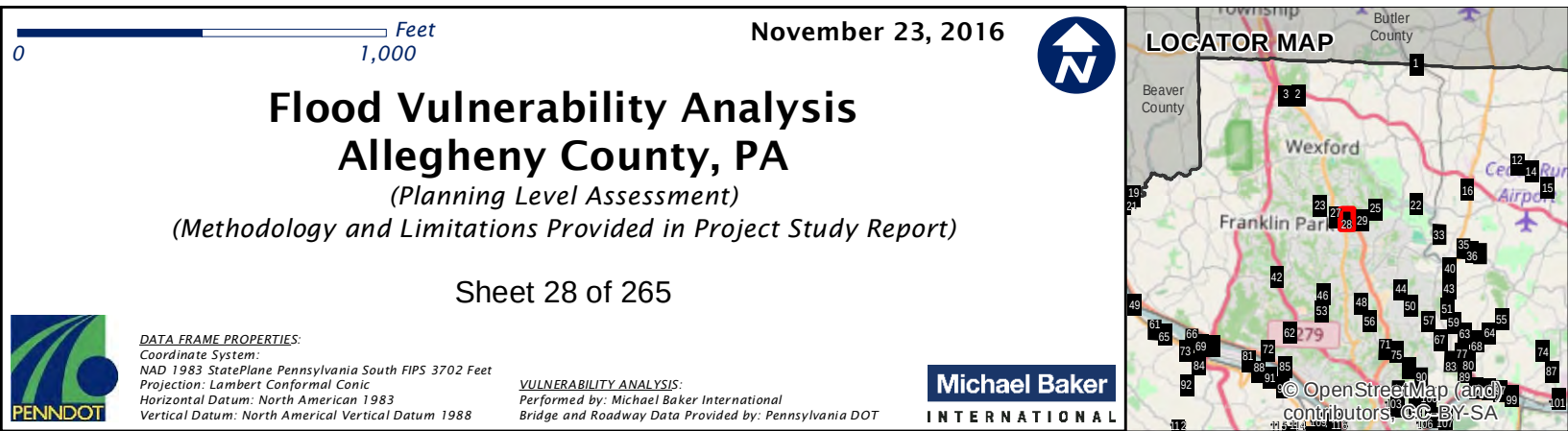
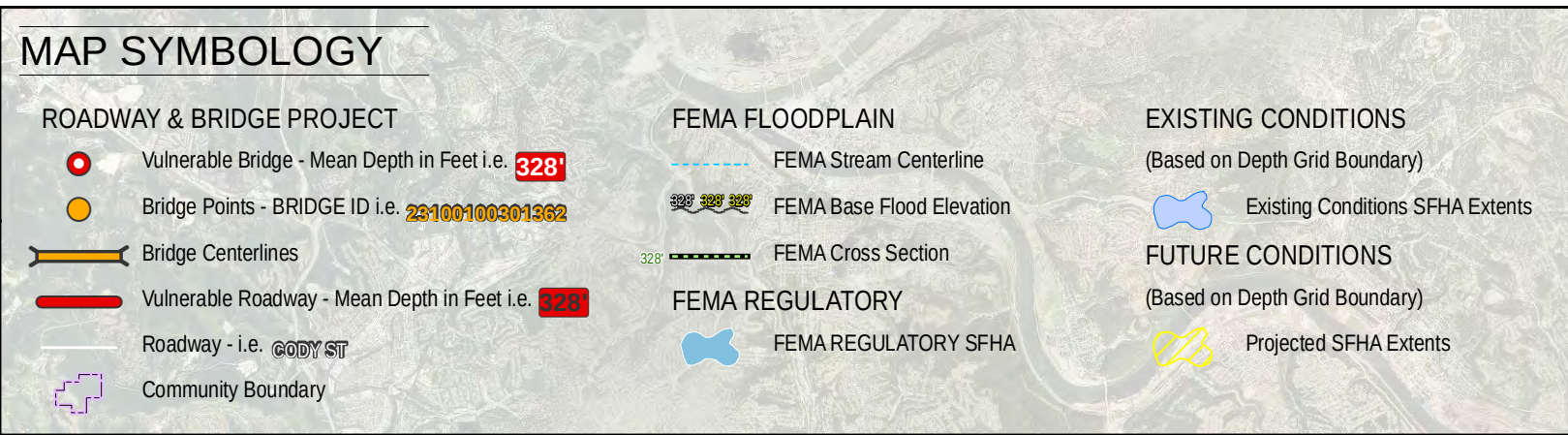
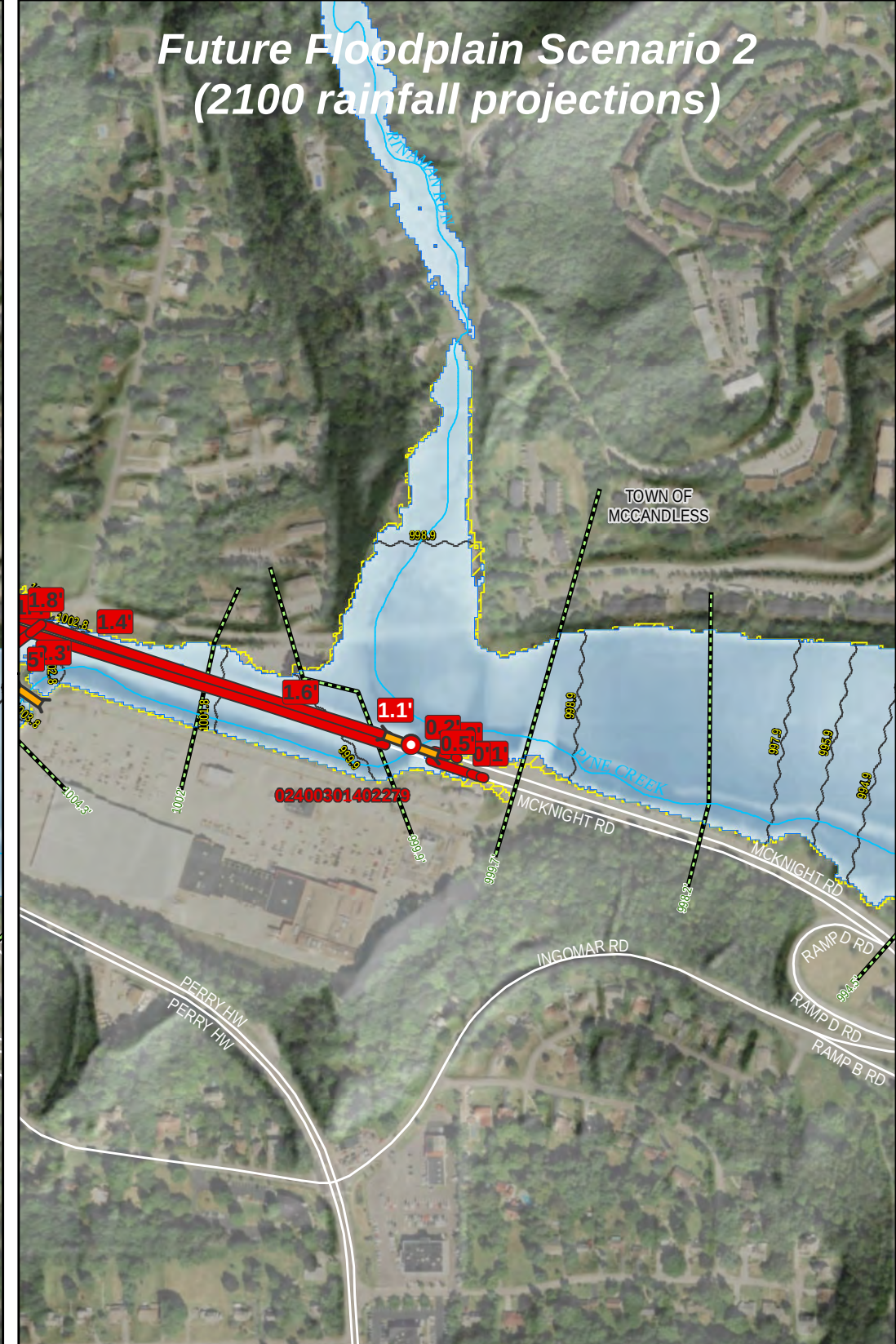
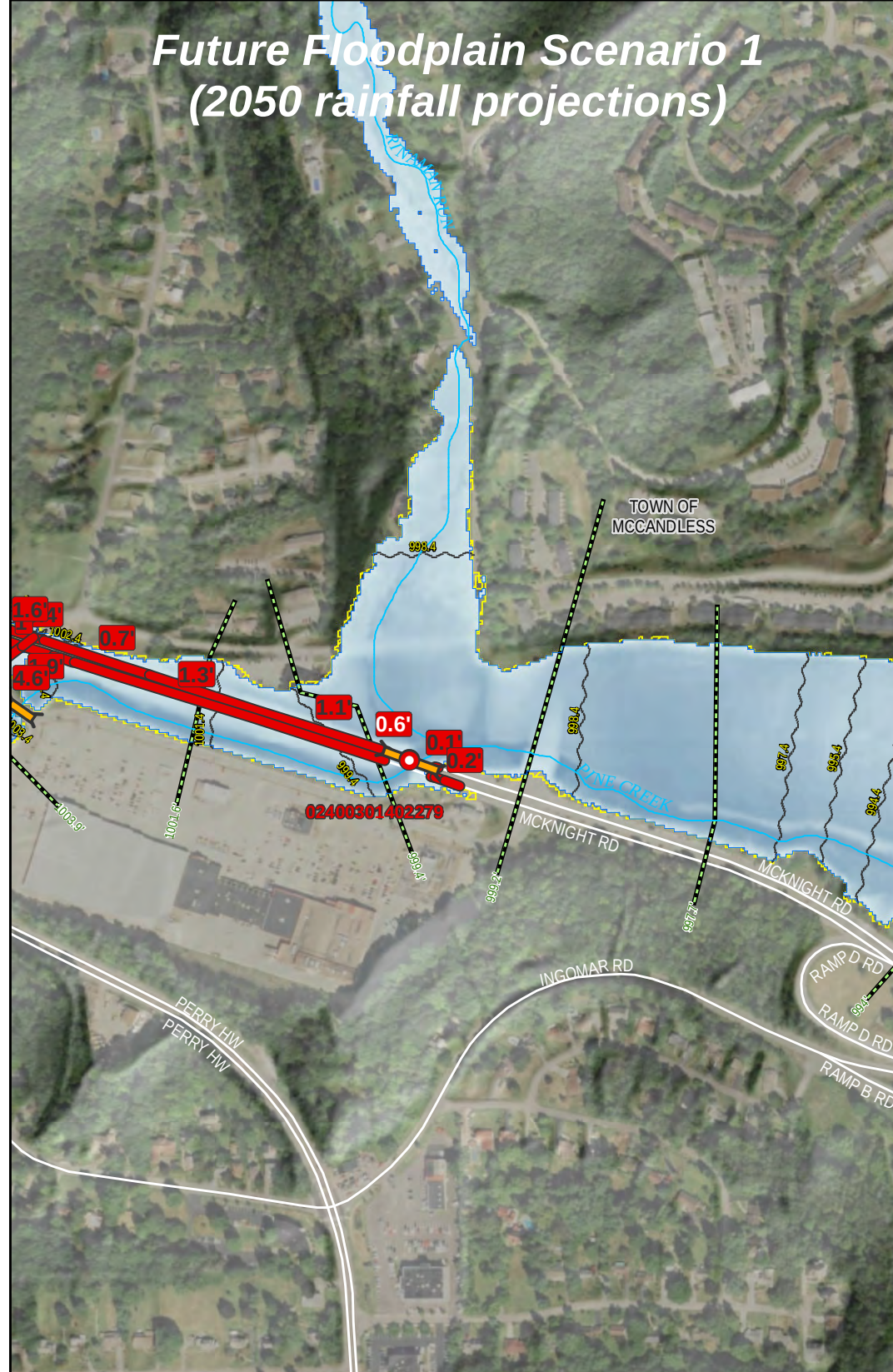
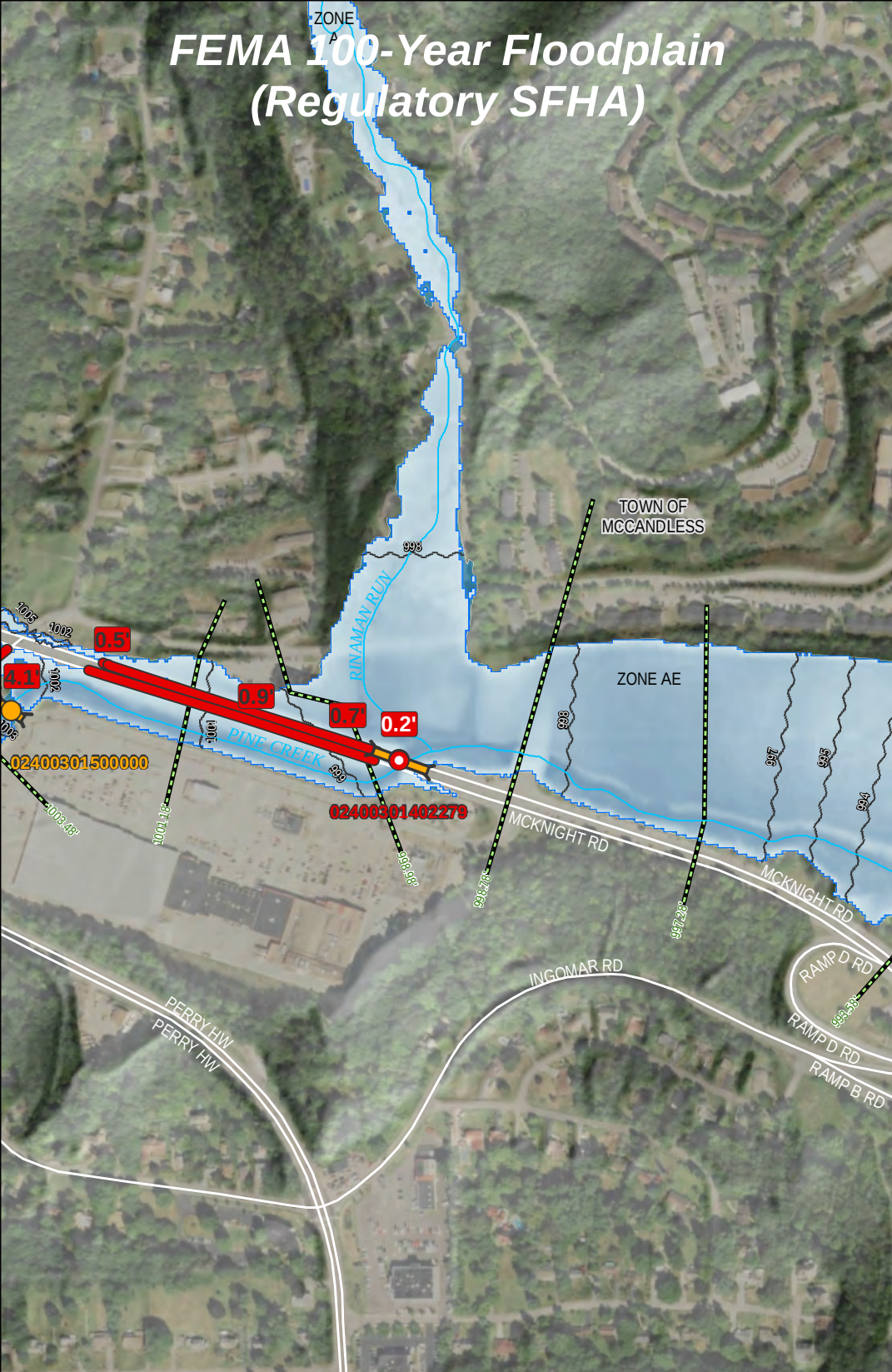
Sheet 27 of 265

PENNDOT

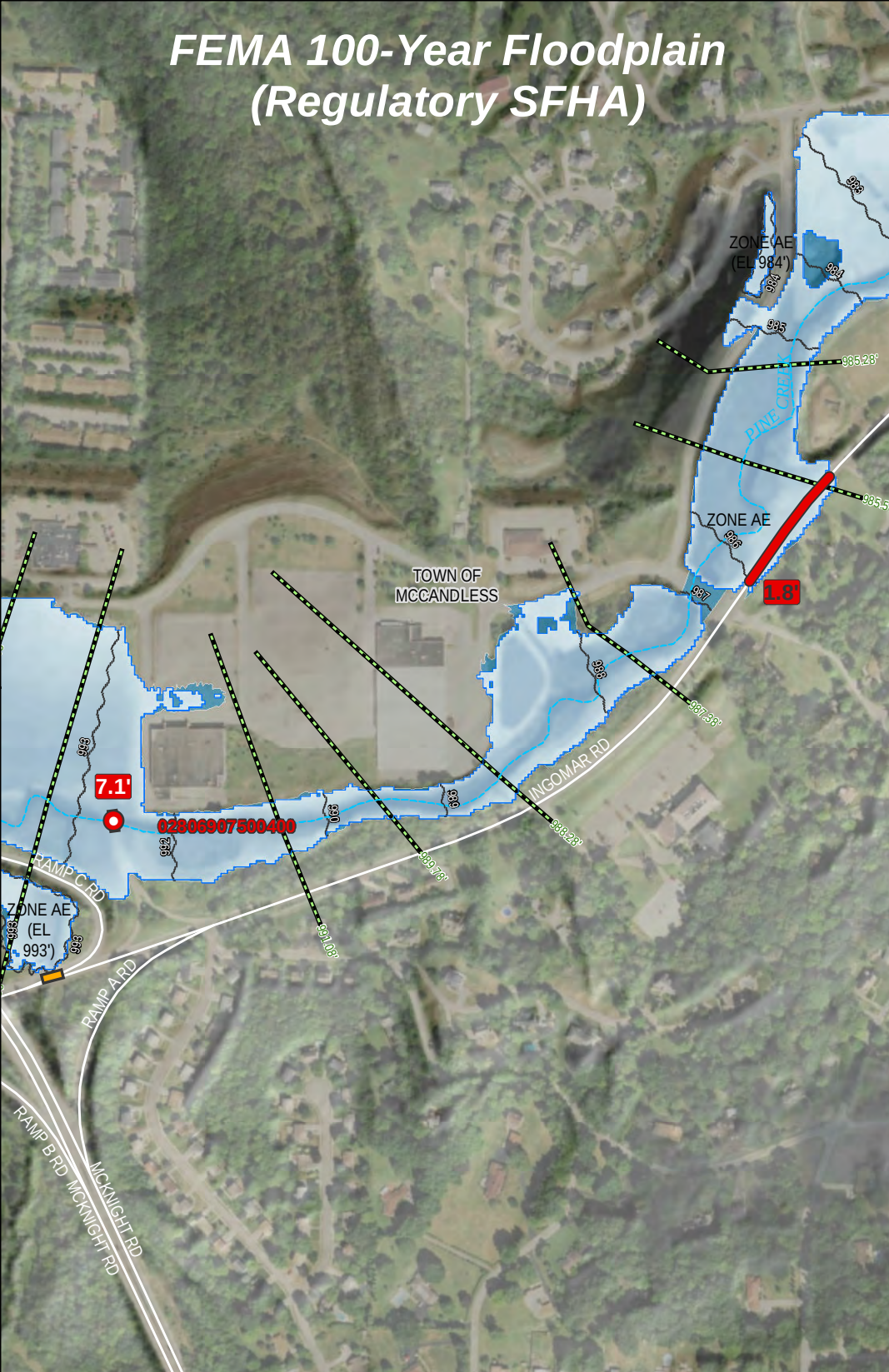
DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

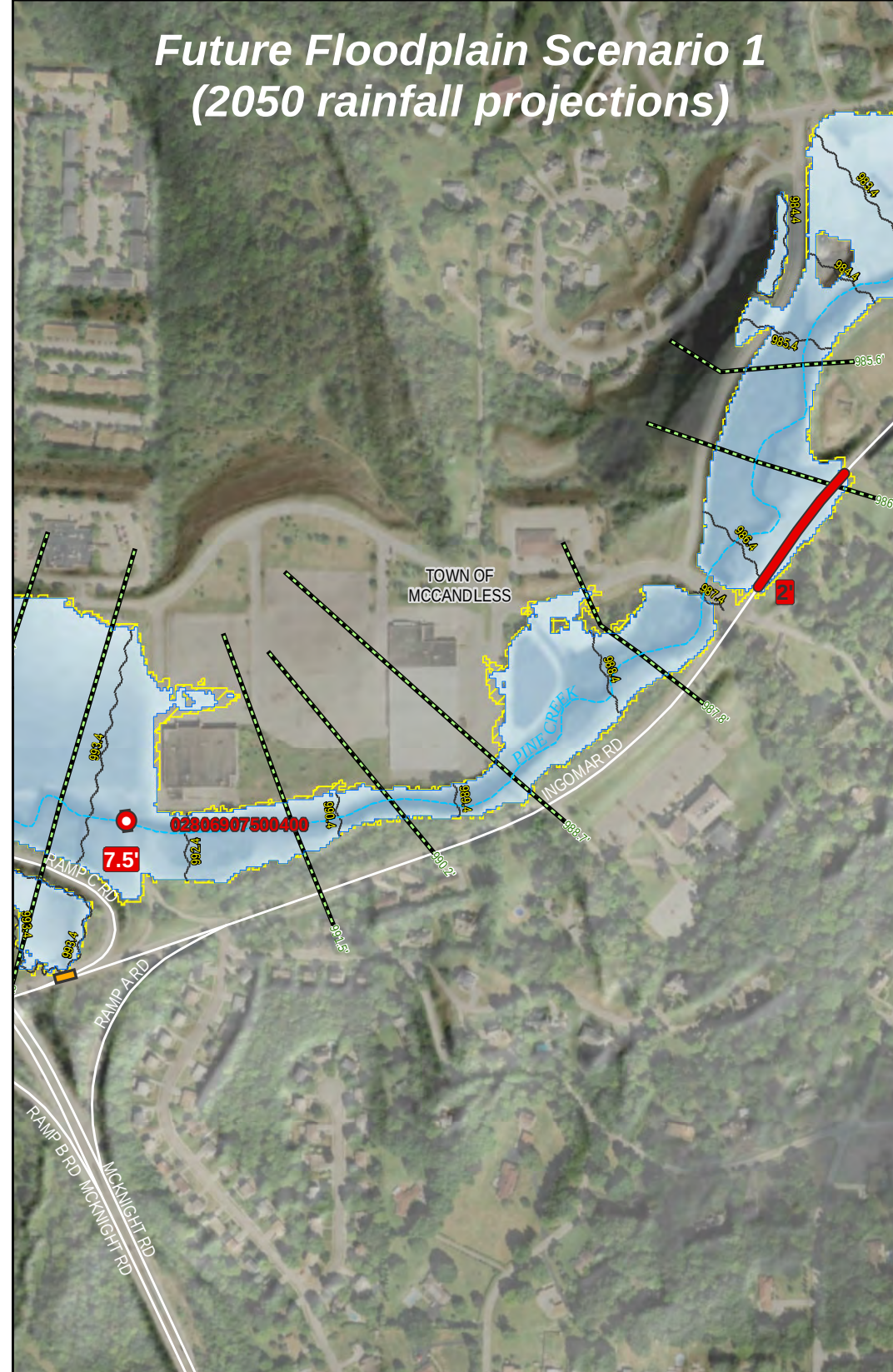
Michael Baker INTERNATIONAL



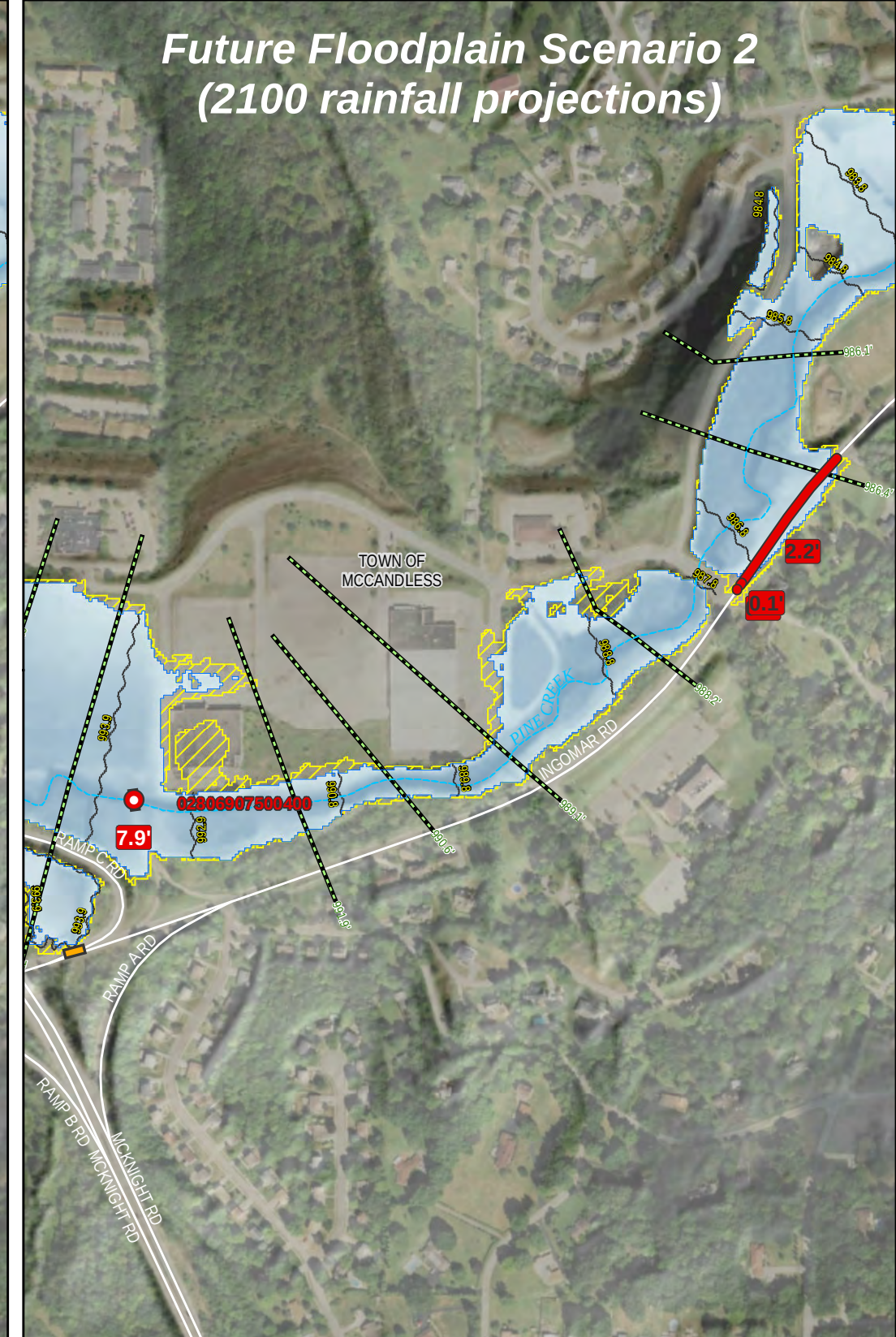
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOGY

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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016



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

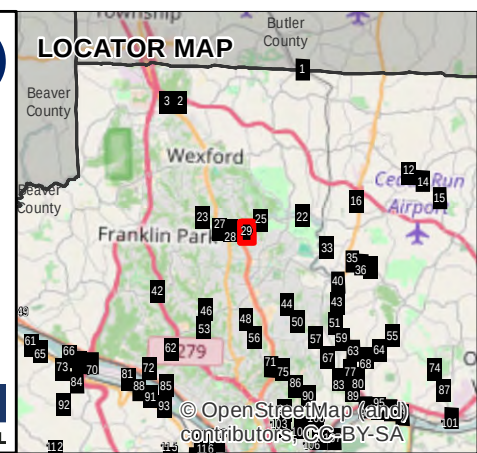
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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**





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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 30 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL

LOCATOR MAP

Center Township

Beaver

Washington County

Butler County

Franklin Park

Wex

3 2

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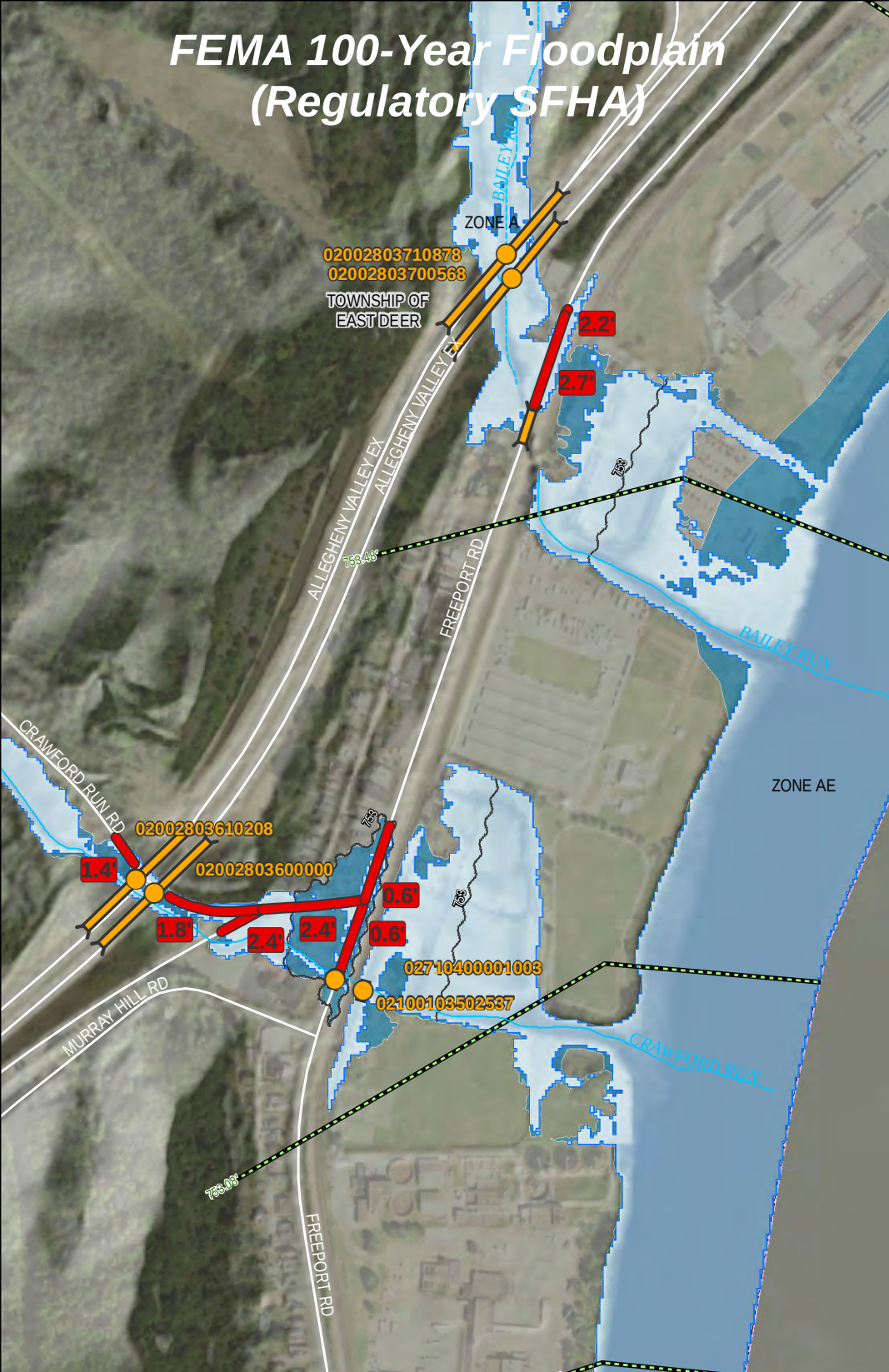
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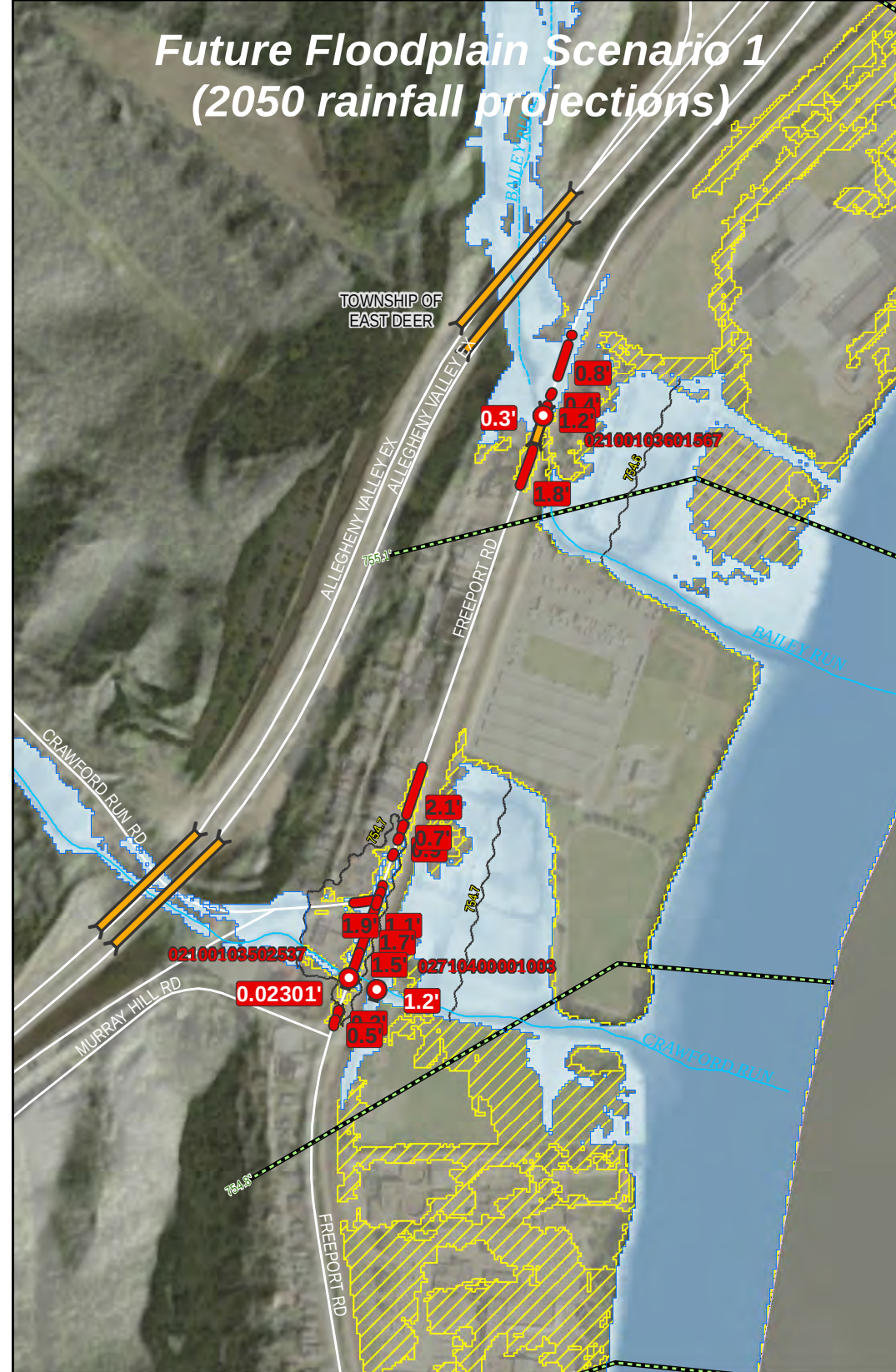
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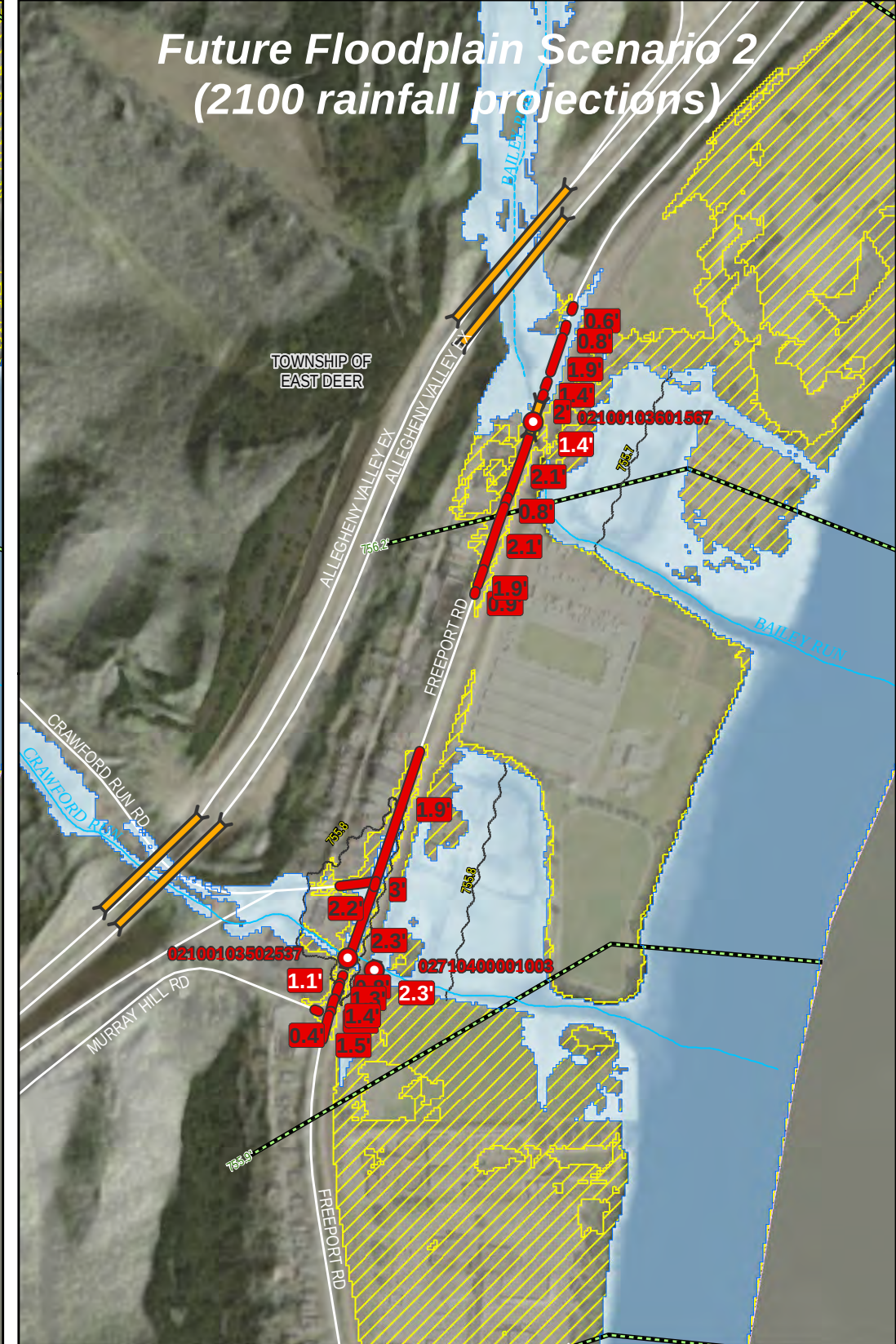
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

Sheet 32 of 265

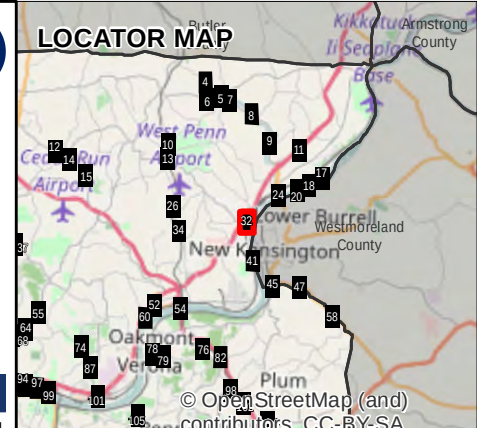


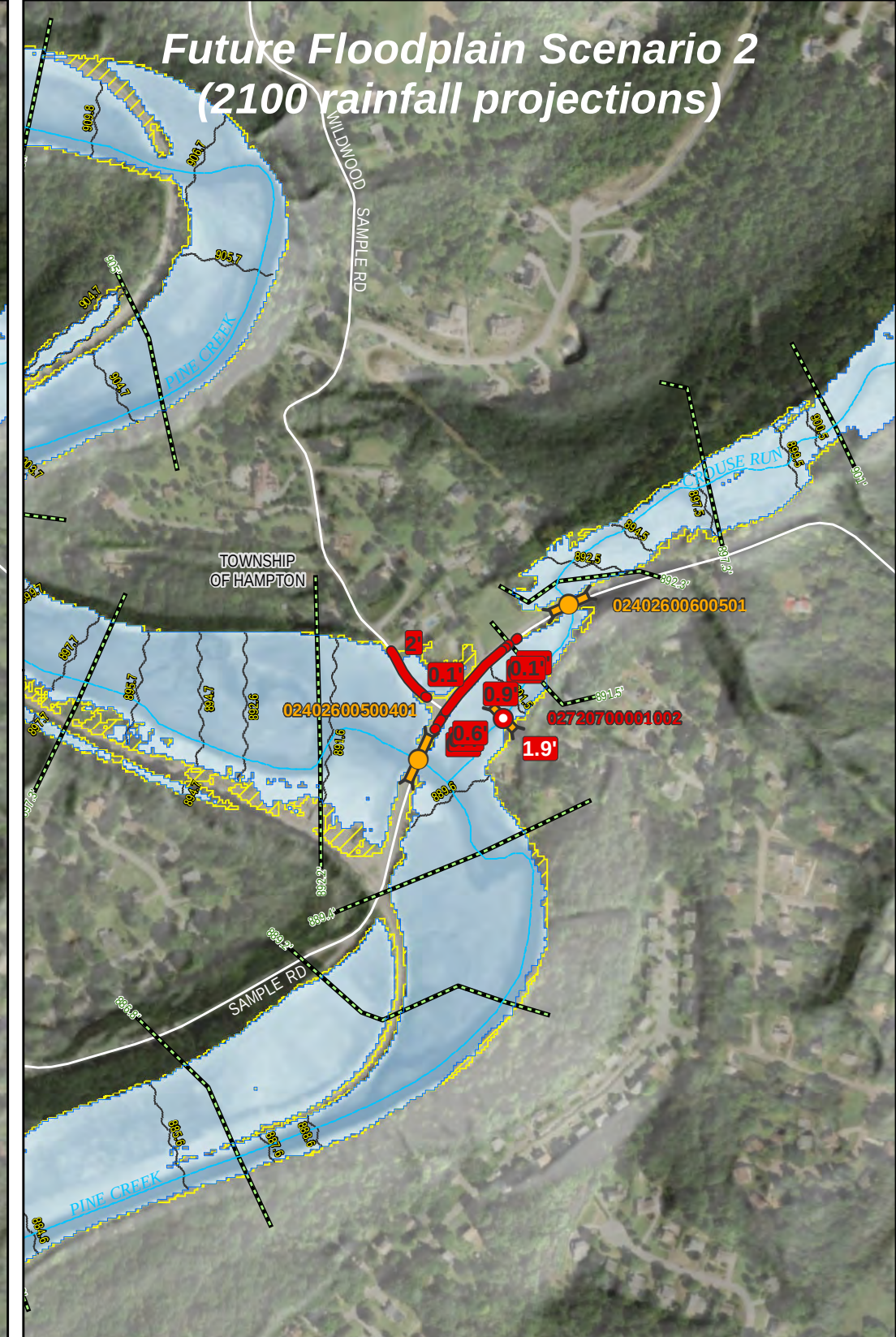
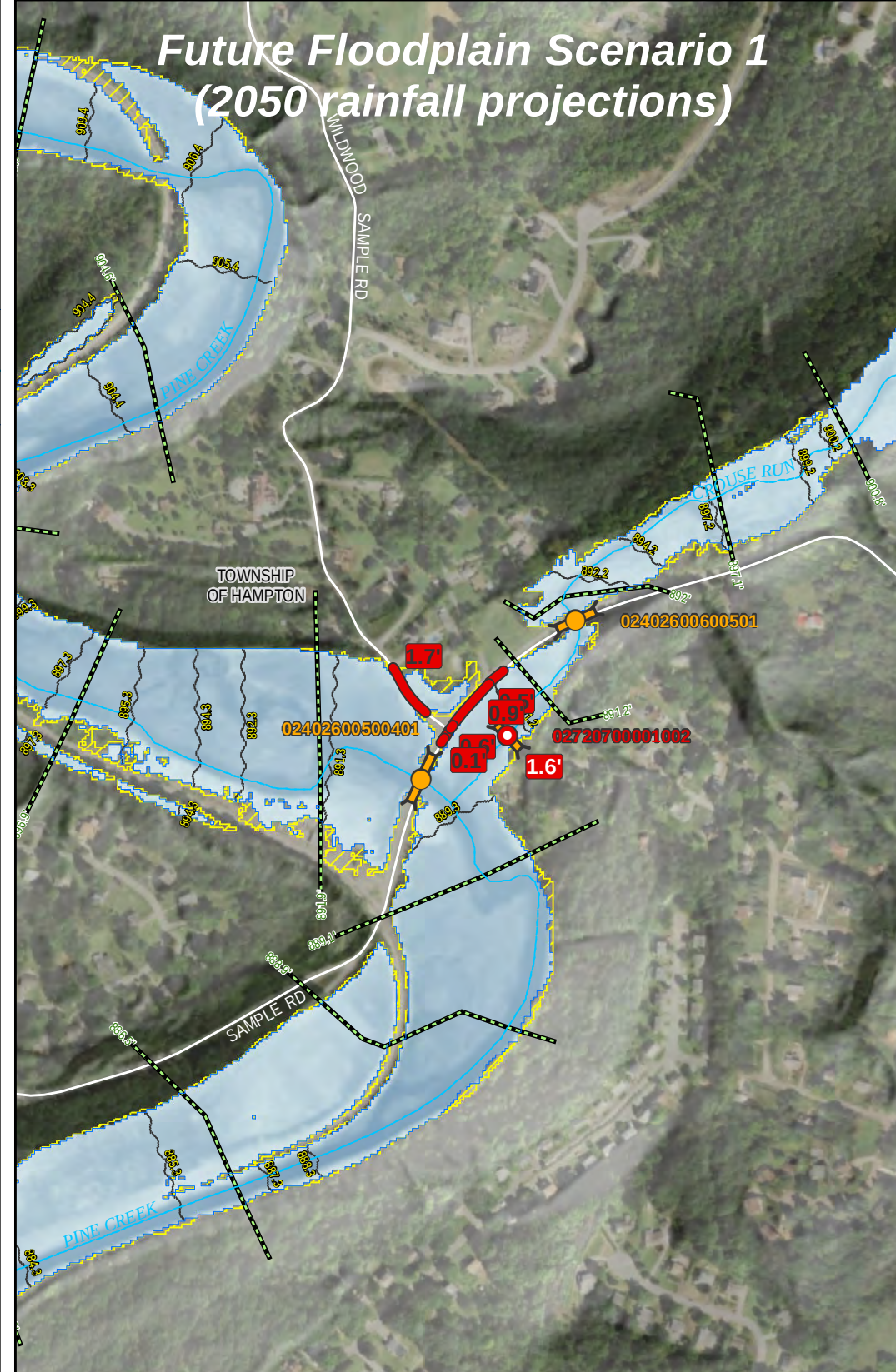
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL

LOCATOR MAP





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	Future Conditions SFHA Extents
Bridge Centerlines	FEMA Cross Section	
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

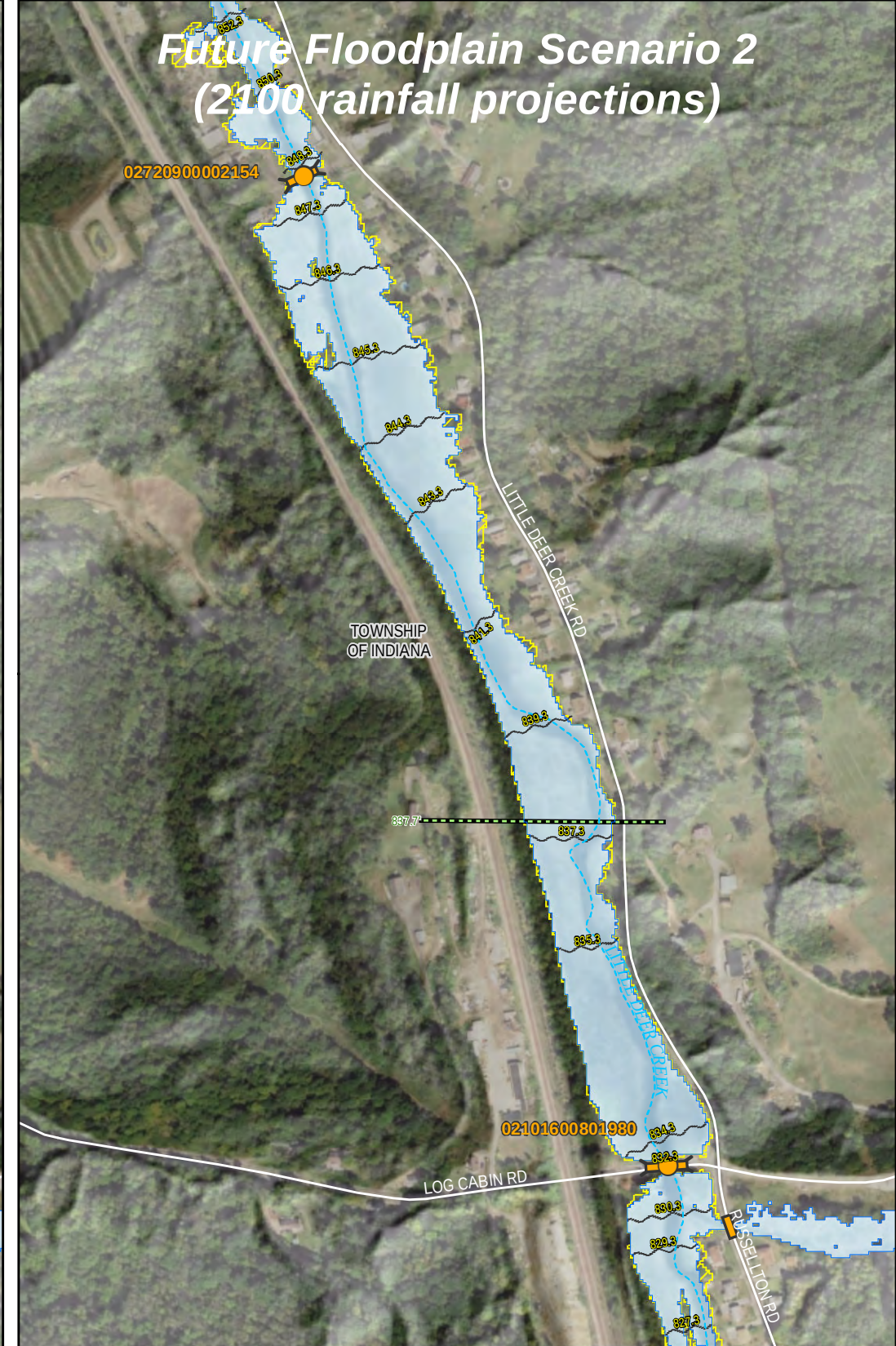
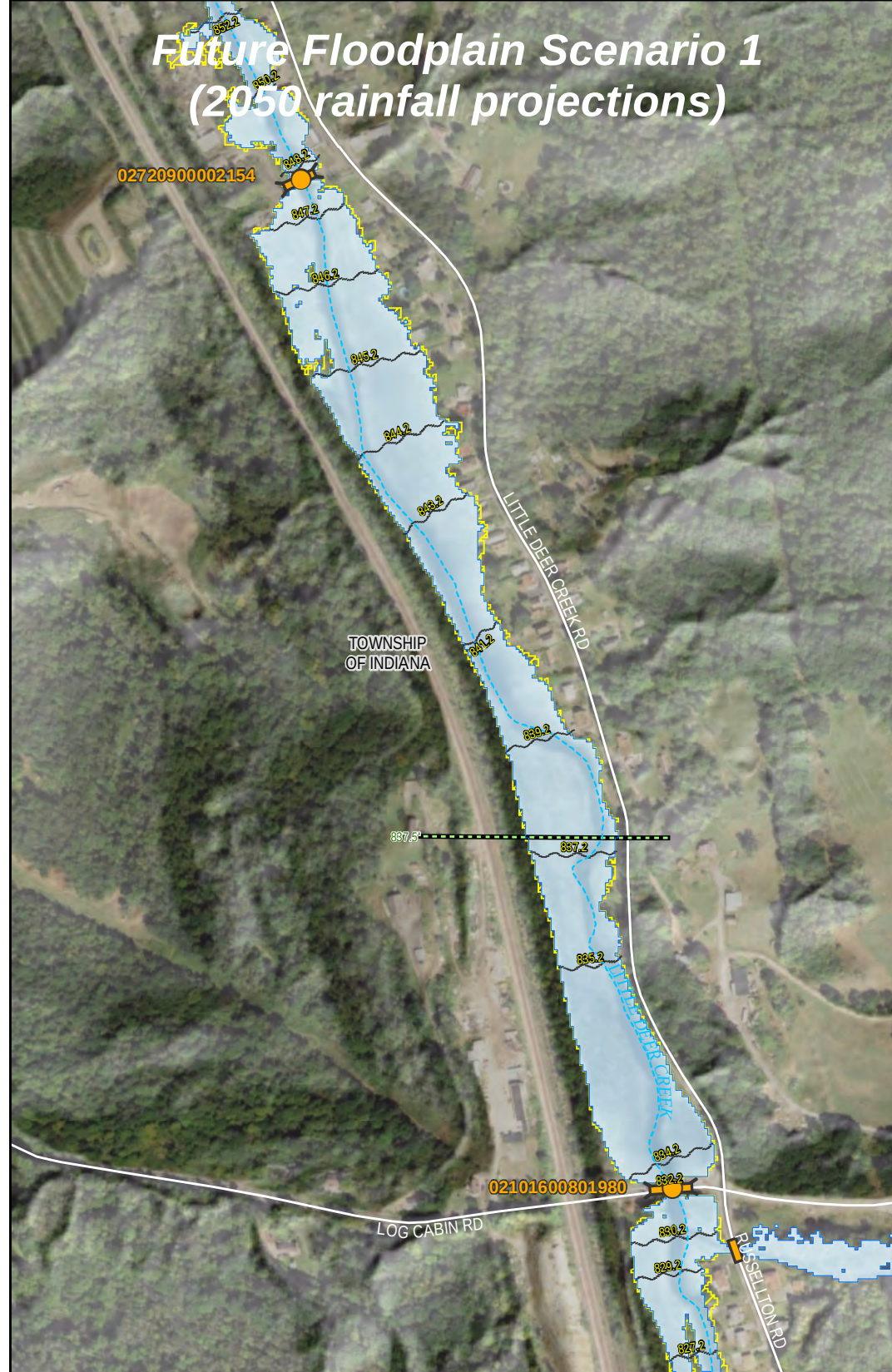
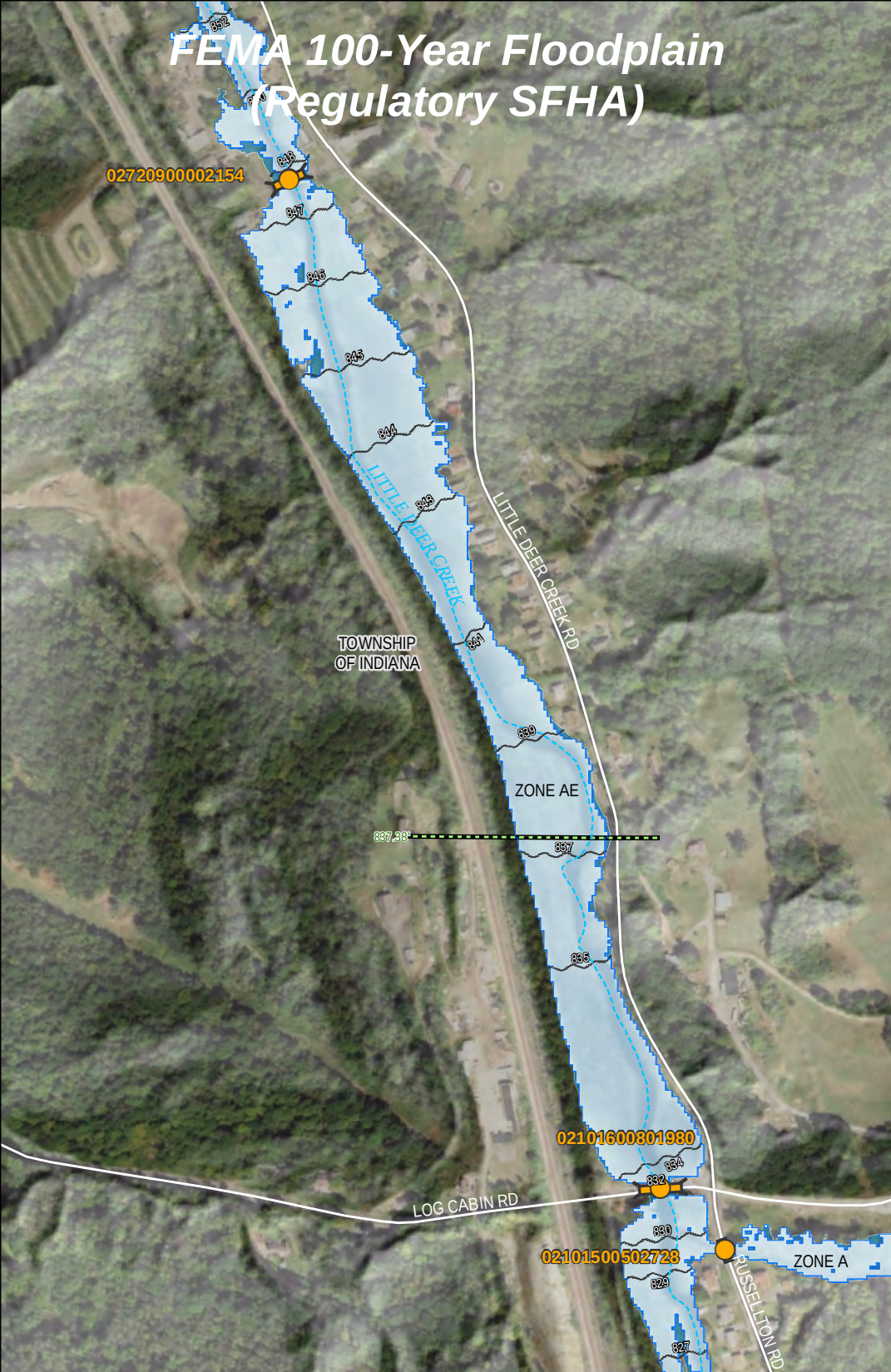
Sheet 33 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

Butler County
Wexford
Franklin Park
Oakmont
Verona
West Penn
Central
Airport
N



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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

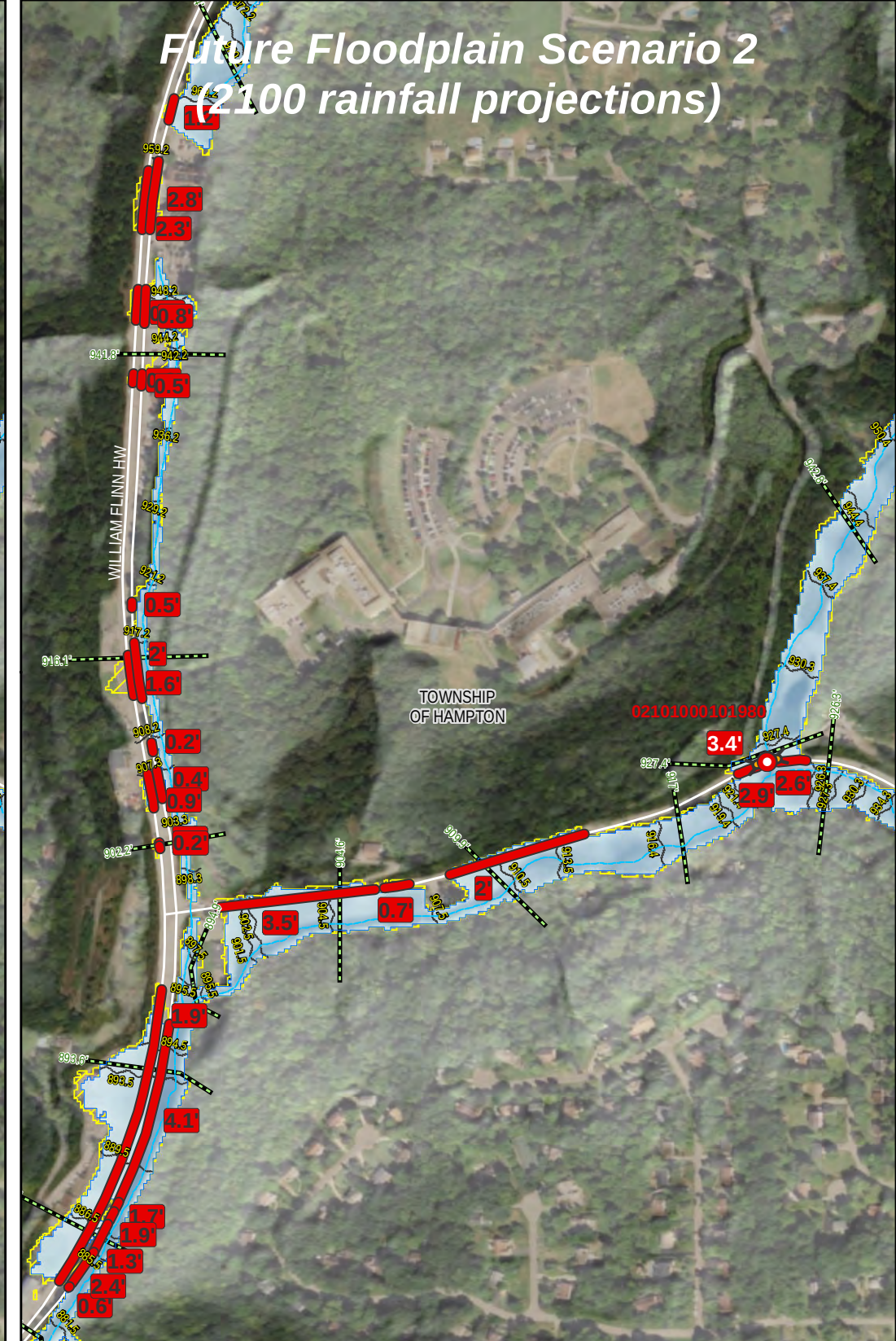
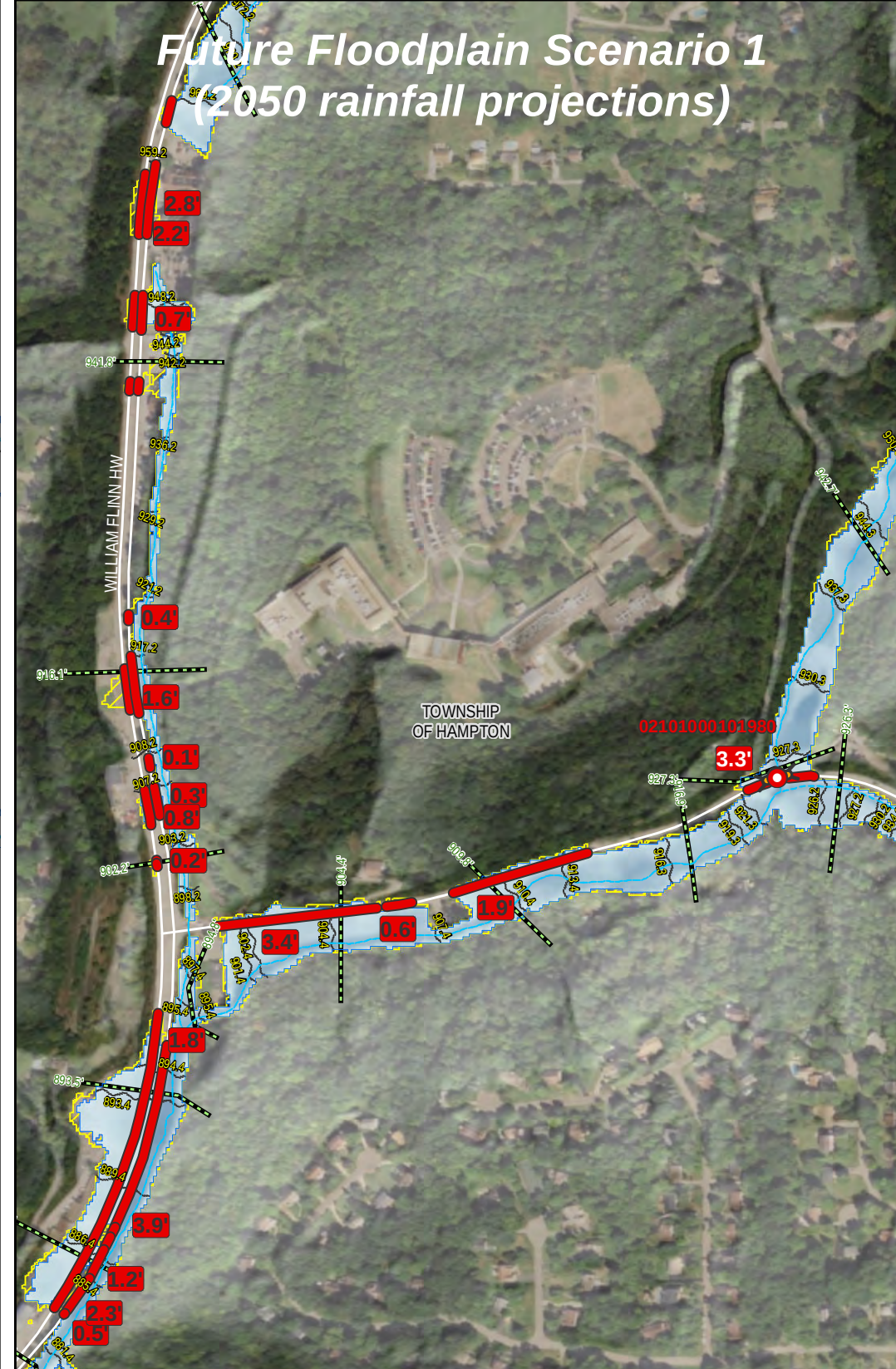
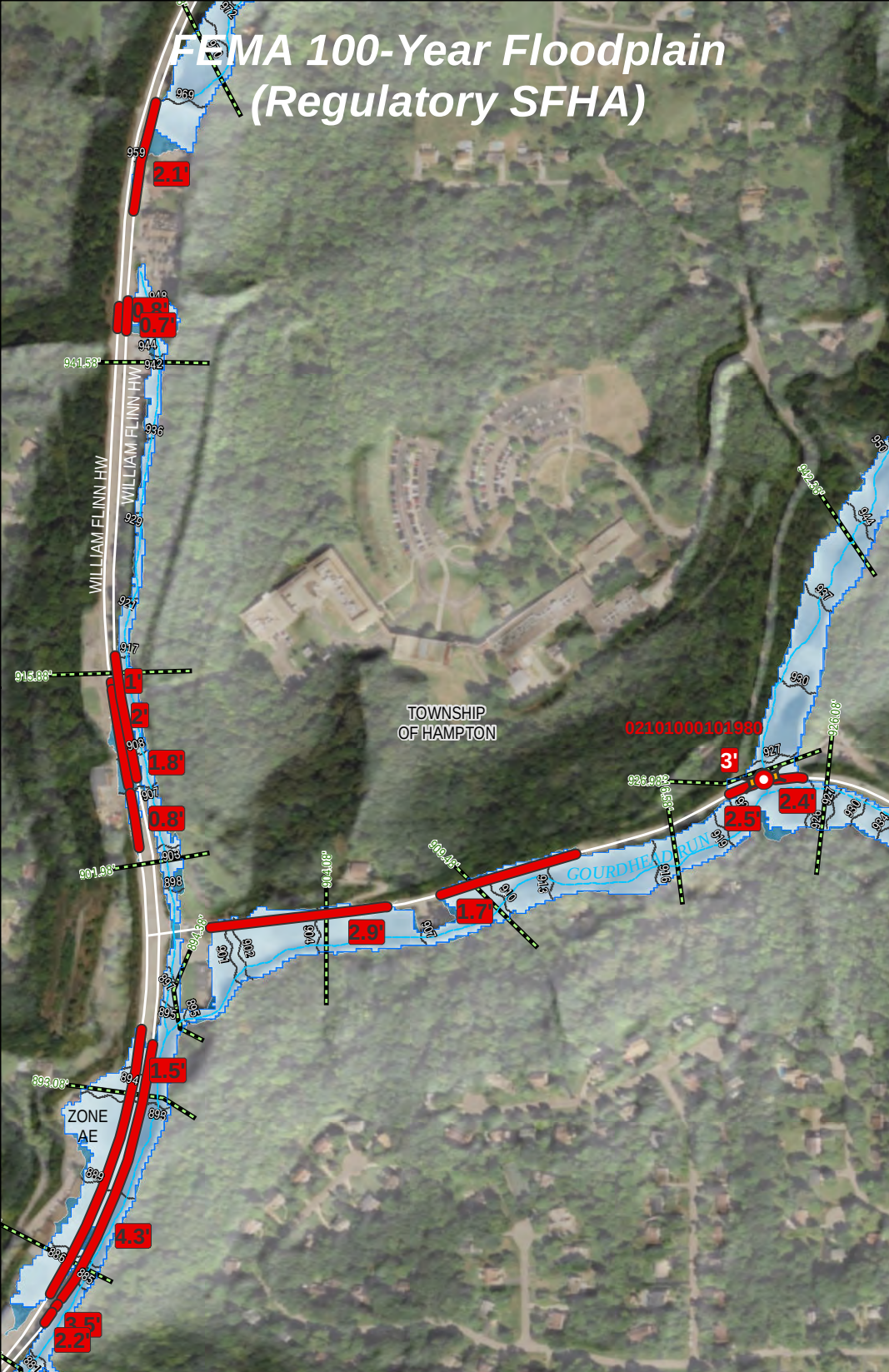
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 34 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

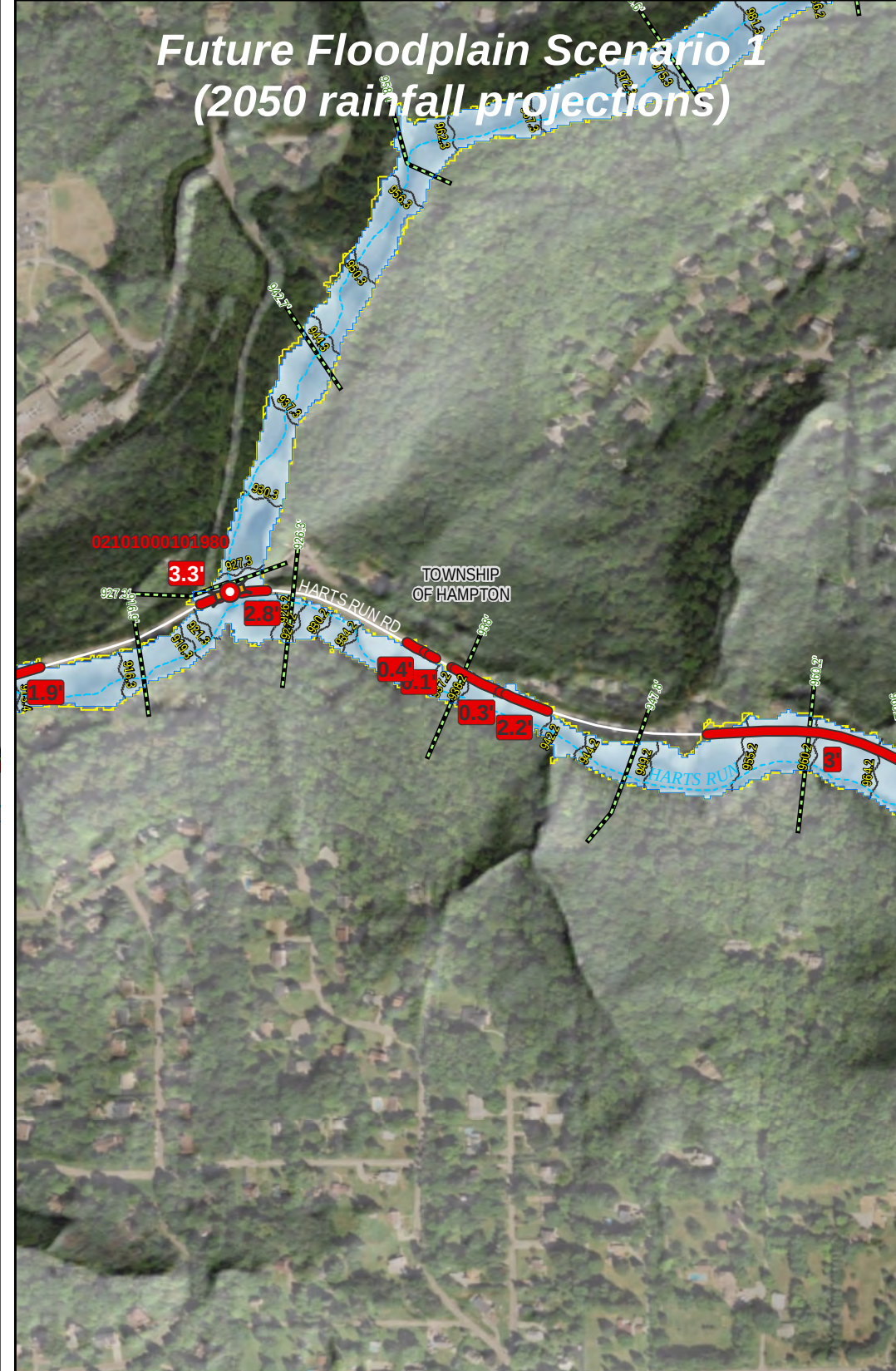
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 35 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	
	Vulnerable Bridge - Mean Depth in Feet i.e. 3.28'
	Bridge Points - BRIDGE ID i.e. 23100100301362
	Bridge Centerlines
	Vulnerable Roadway - Mean Depth in Feet i.e. 3.28'
	Roadway - i.e. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

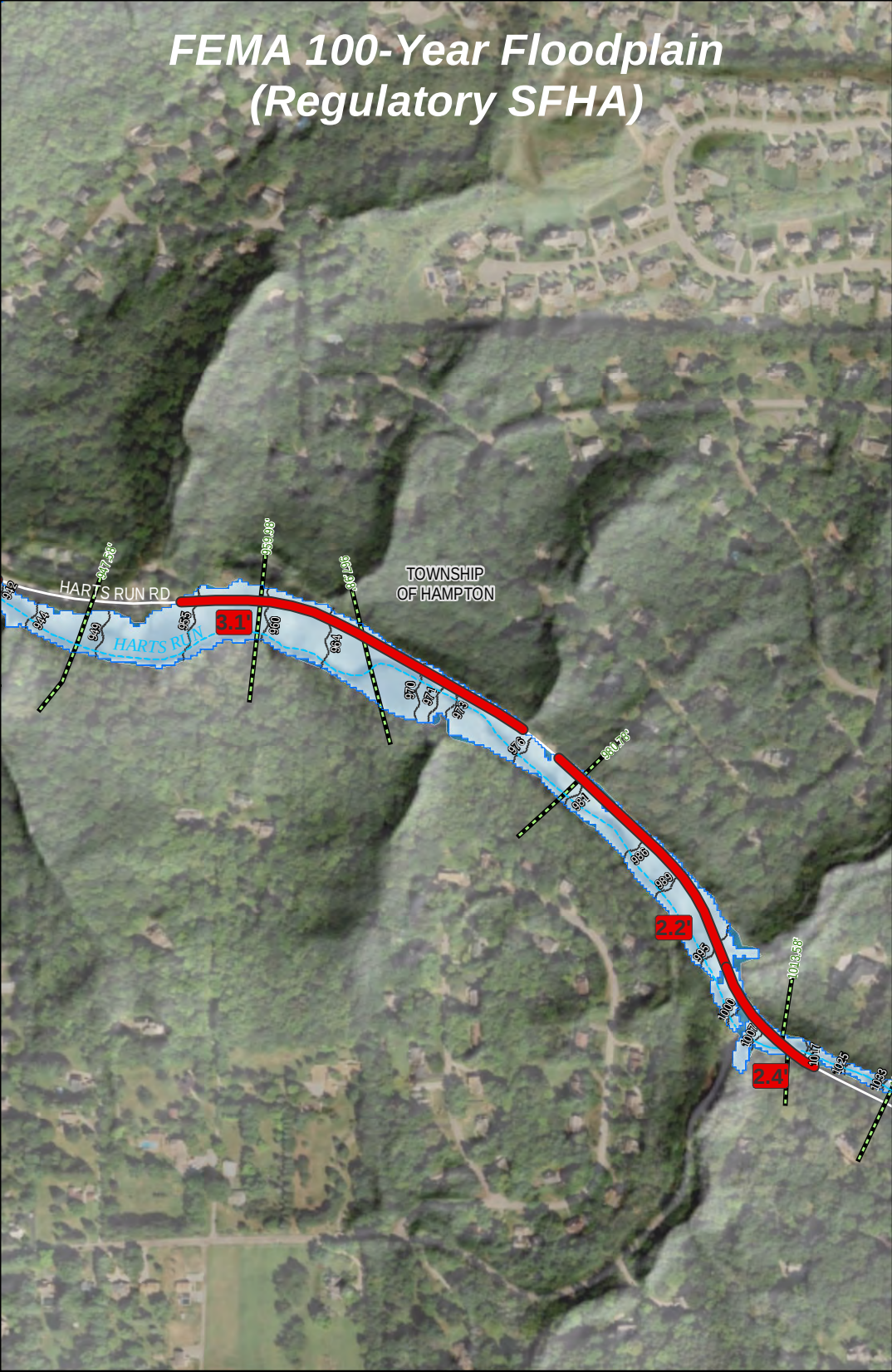
Sheet 36 of 265

DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

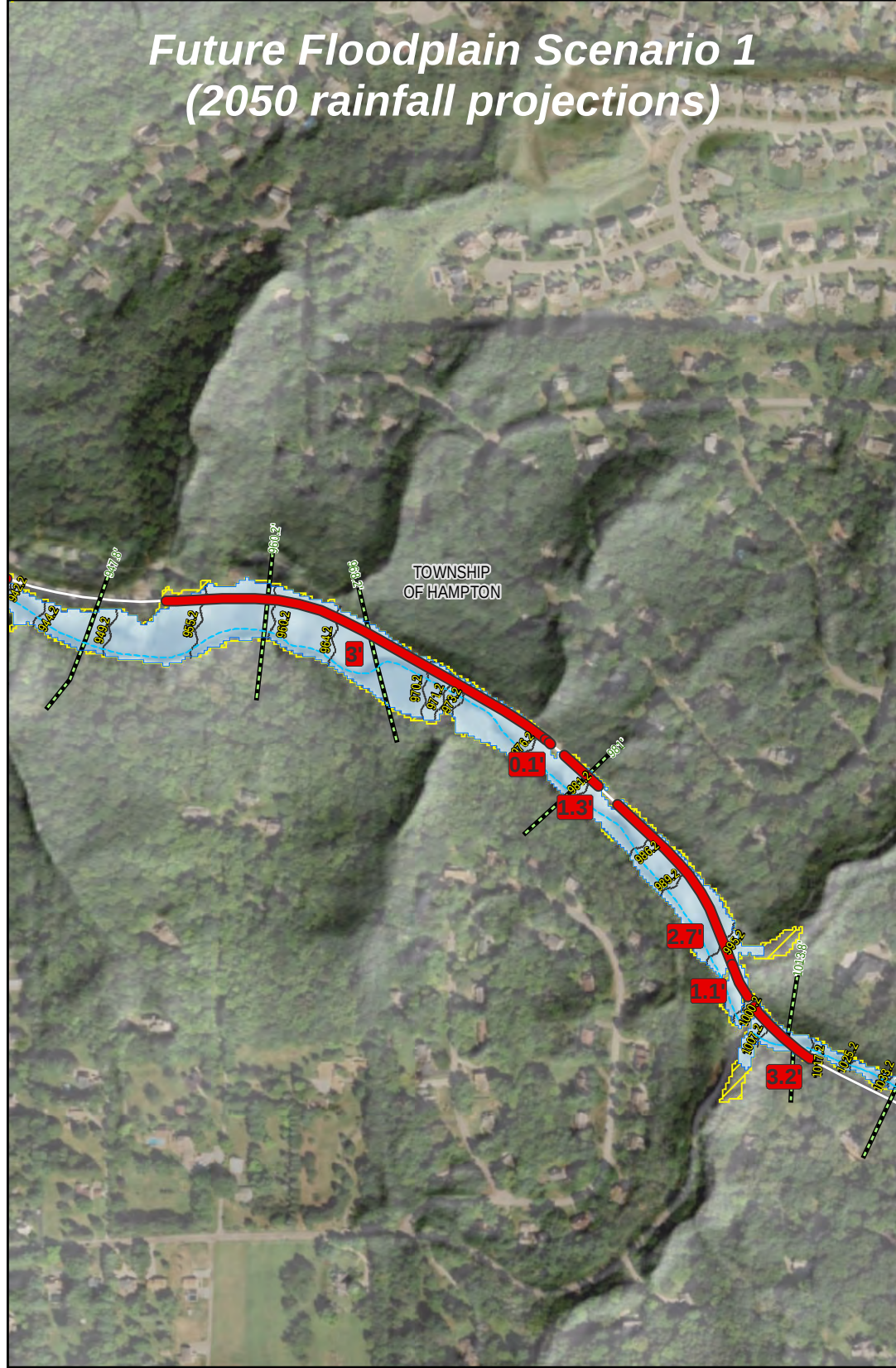
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

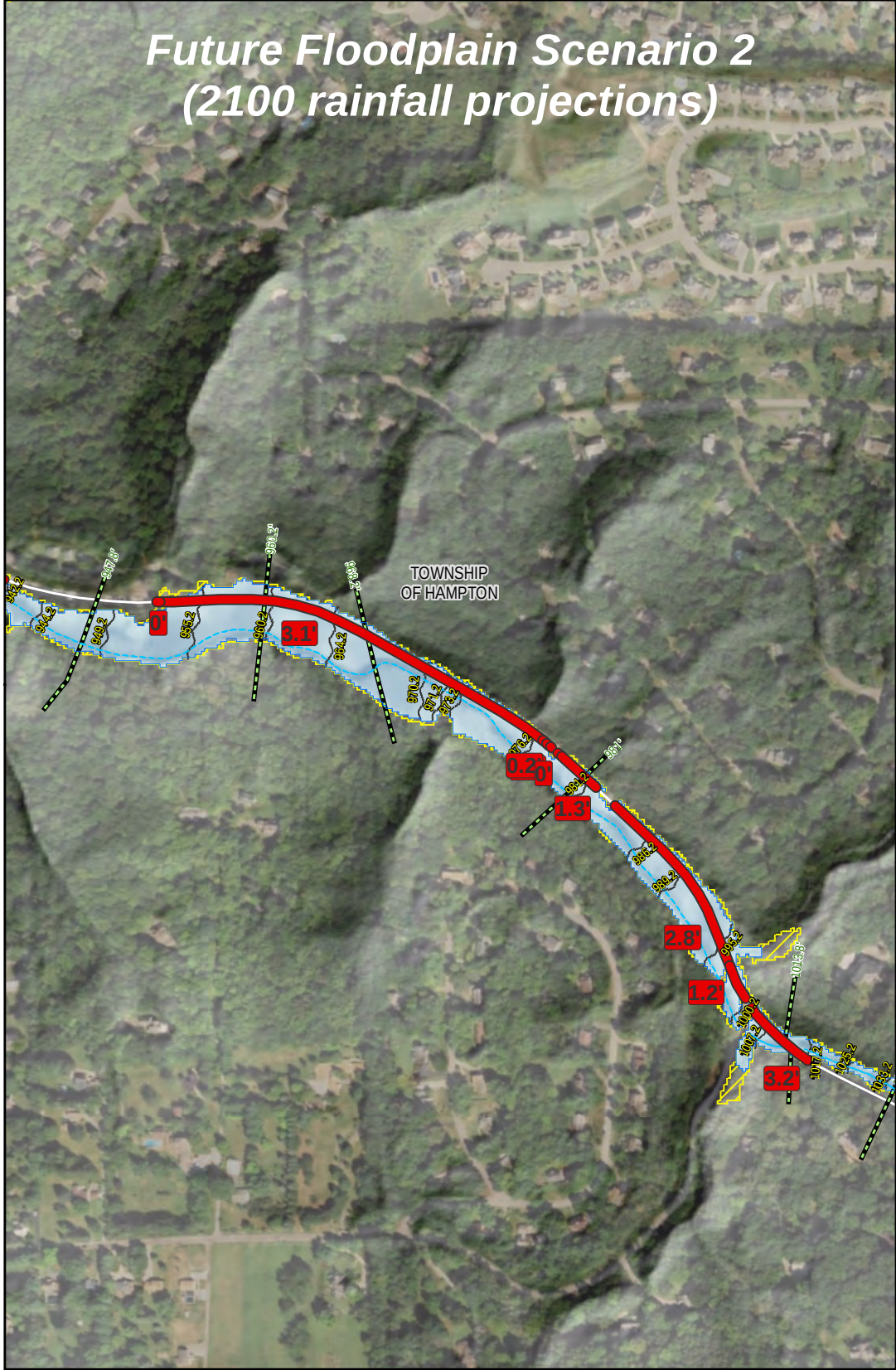
FEMA 100-Year Floodplain
(Regulatory SFHA)



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'
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- 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

0 Feet 1,000

November 23, 2016



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

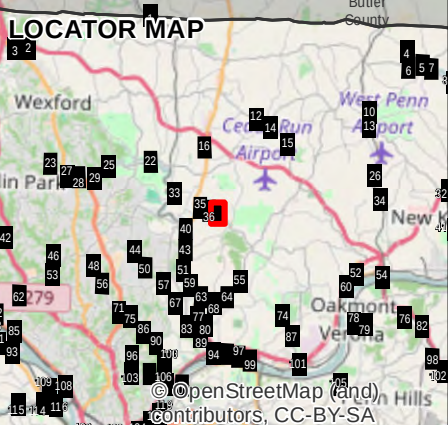
Sheet 37 of 265

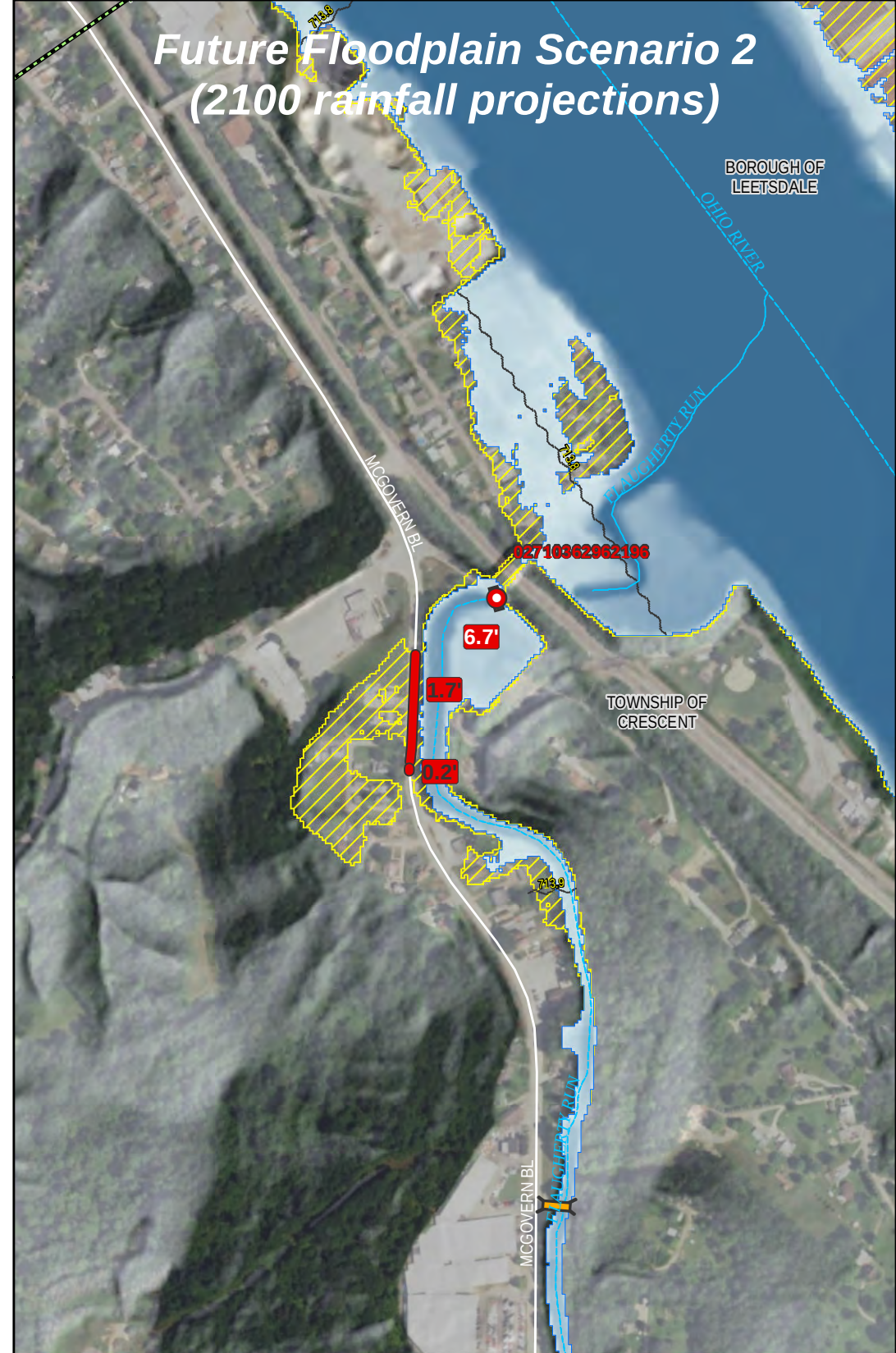


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. GOODY ST	FEMA REGULATORY SFHA	
Community Boundary		

Feet
0 1,000

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

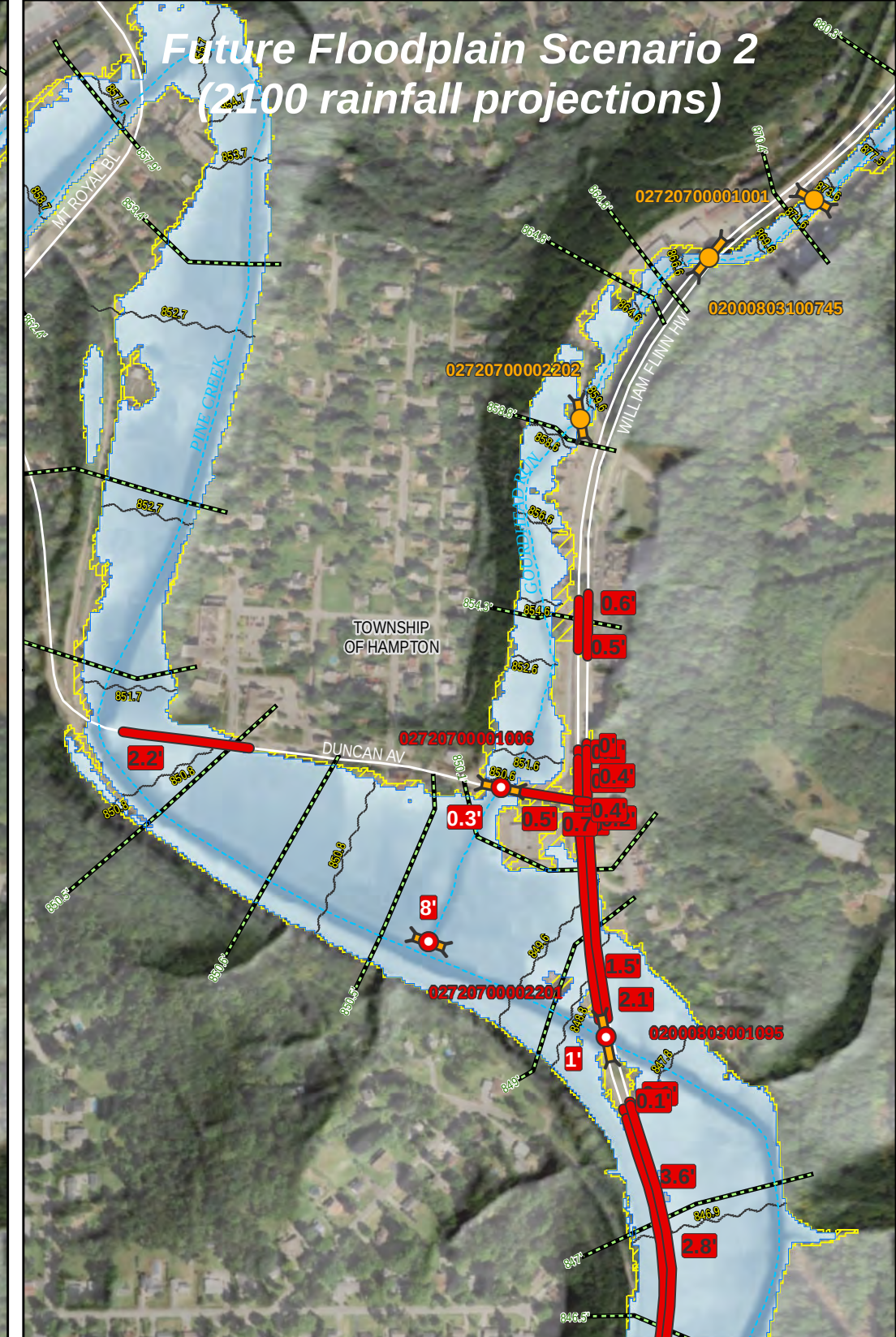
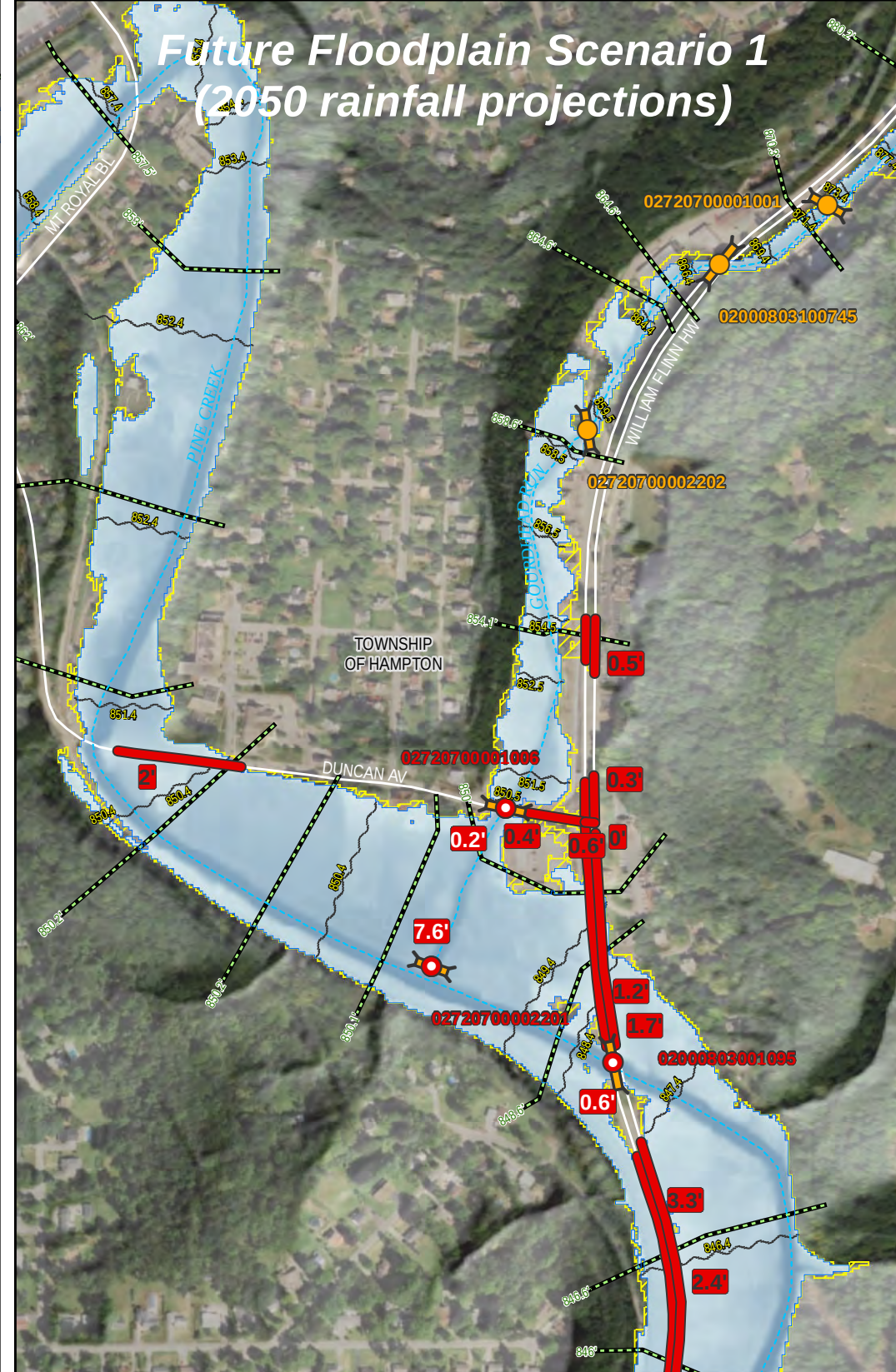
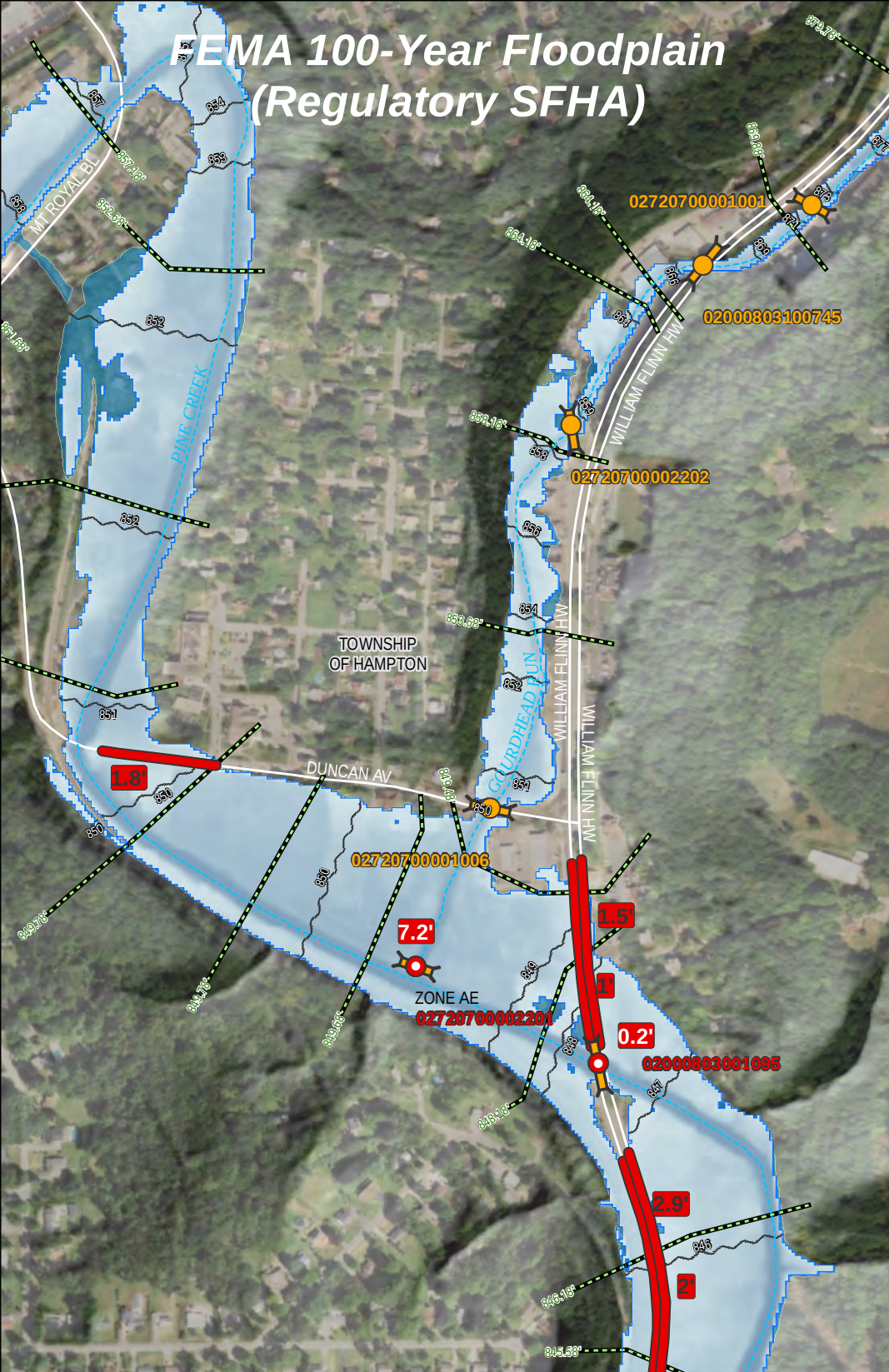
Sheet 39 of 265

DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

Center Township
Beaver County
Franklin Pa
Moon
Washington County
Butte County
We



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

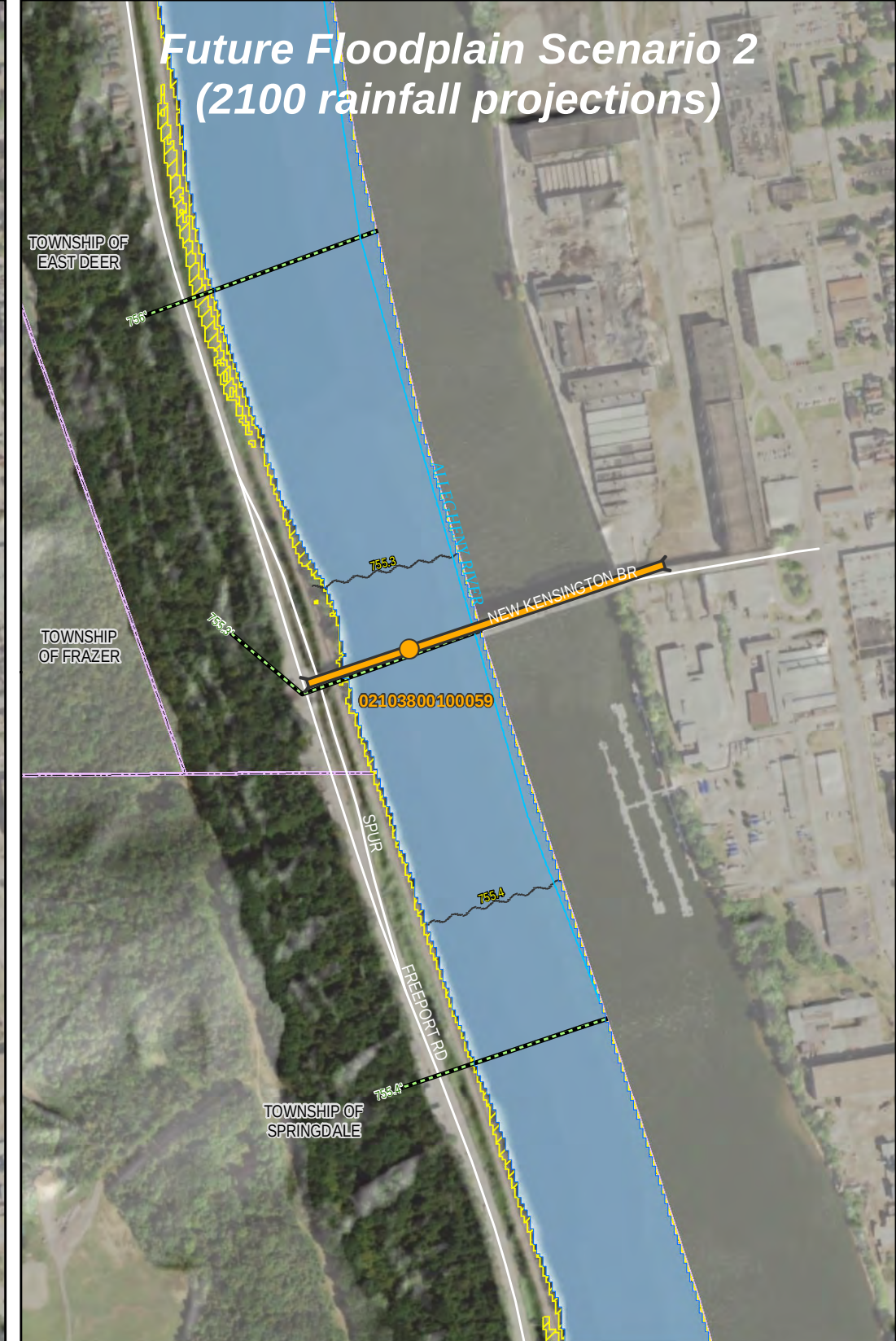
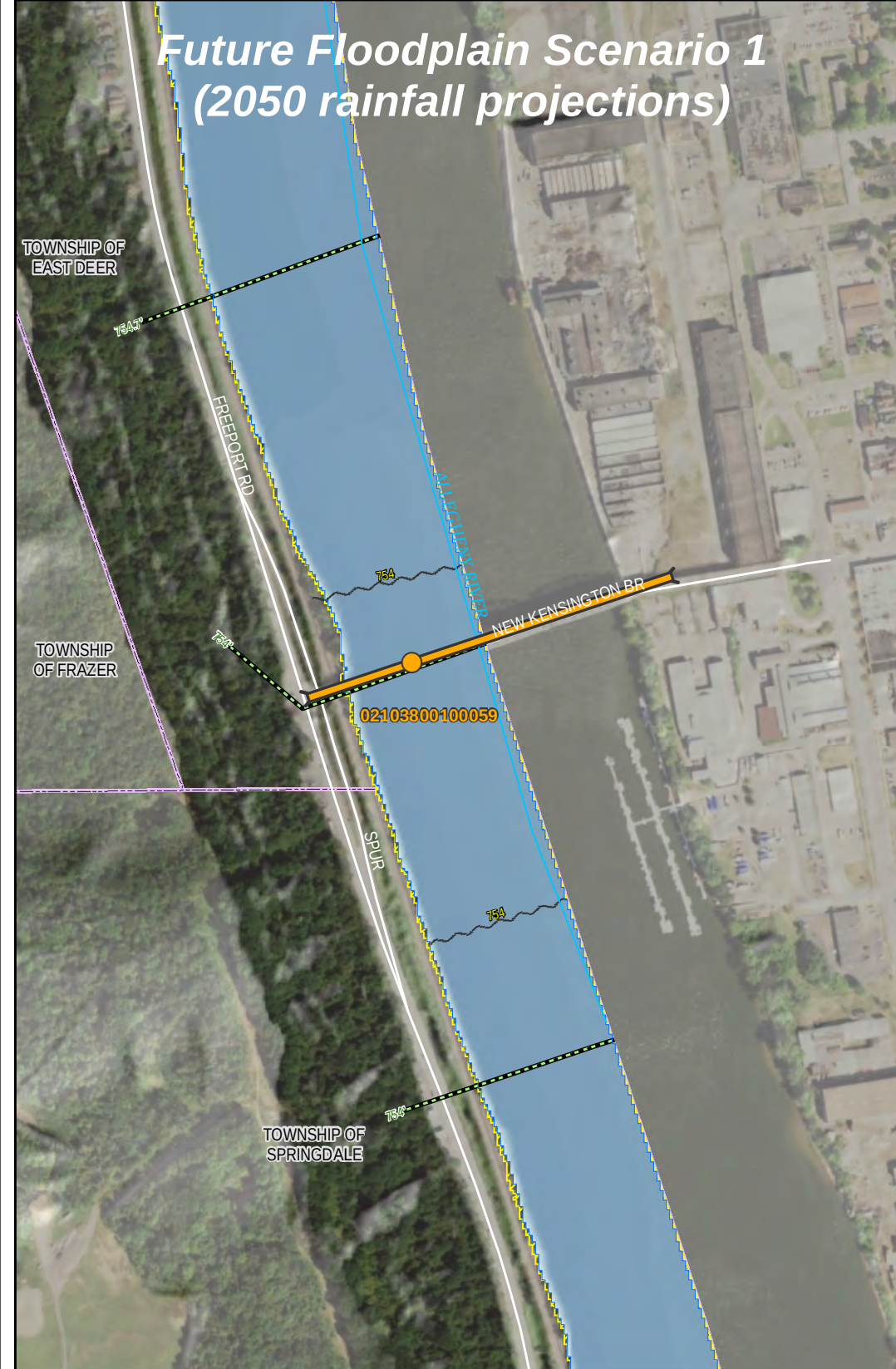
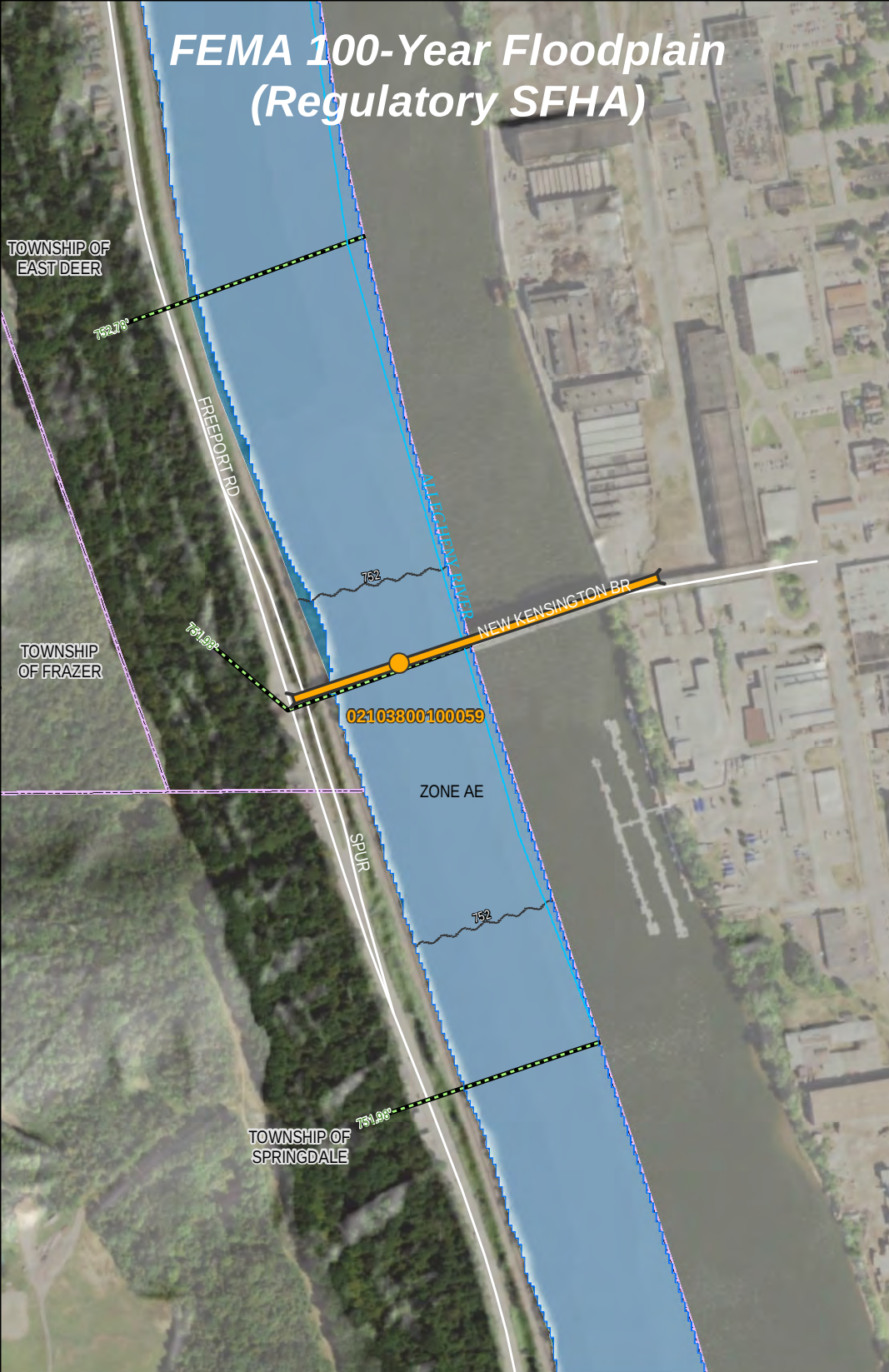
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

Sheet 41 of 265

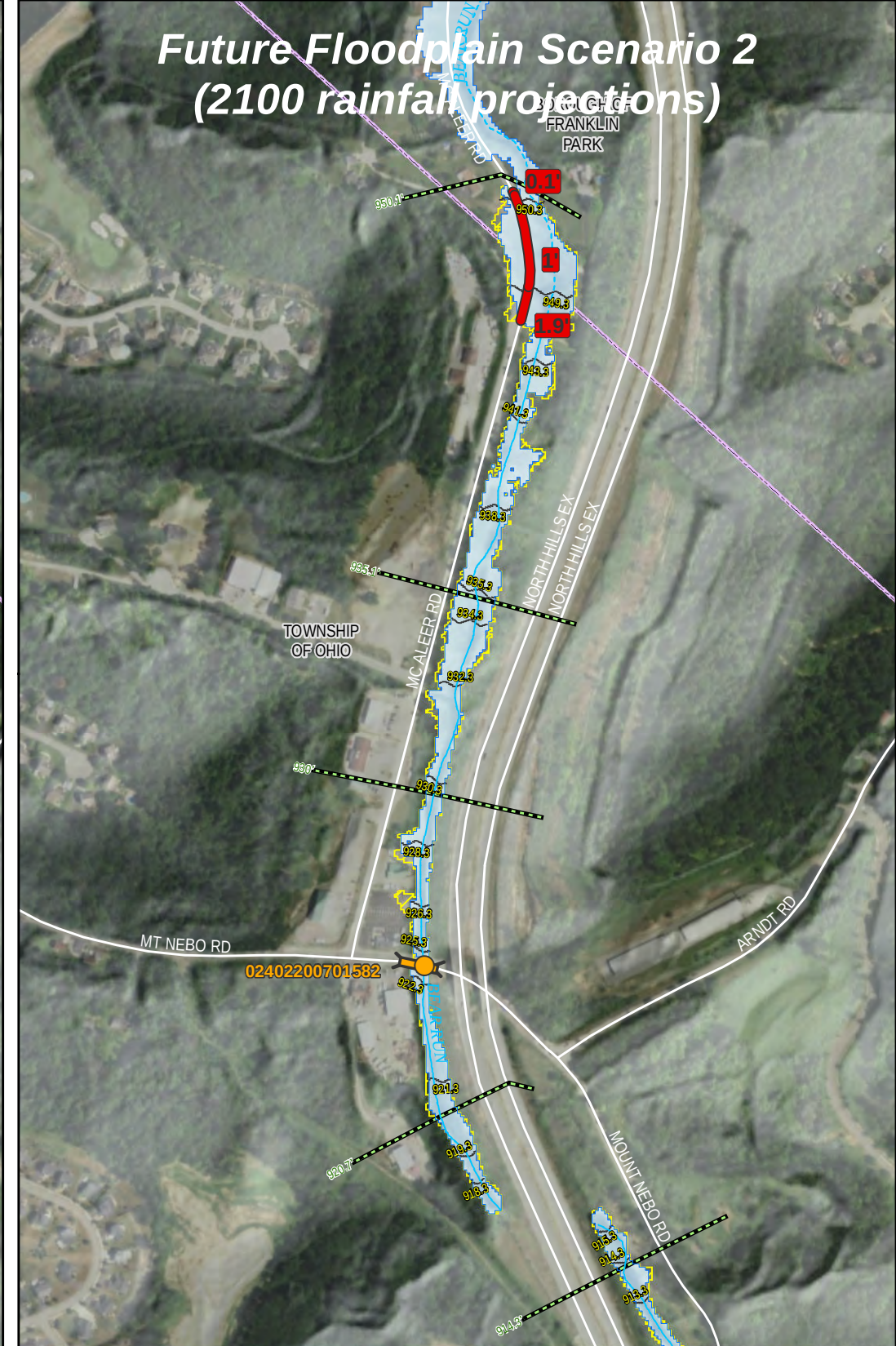
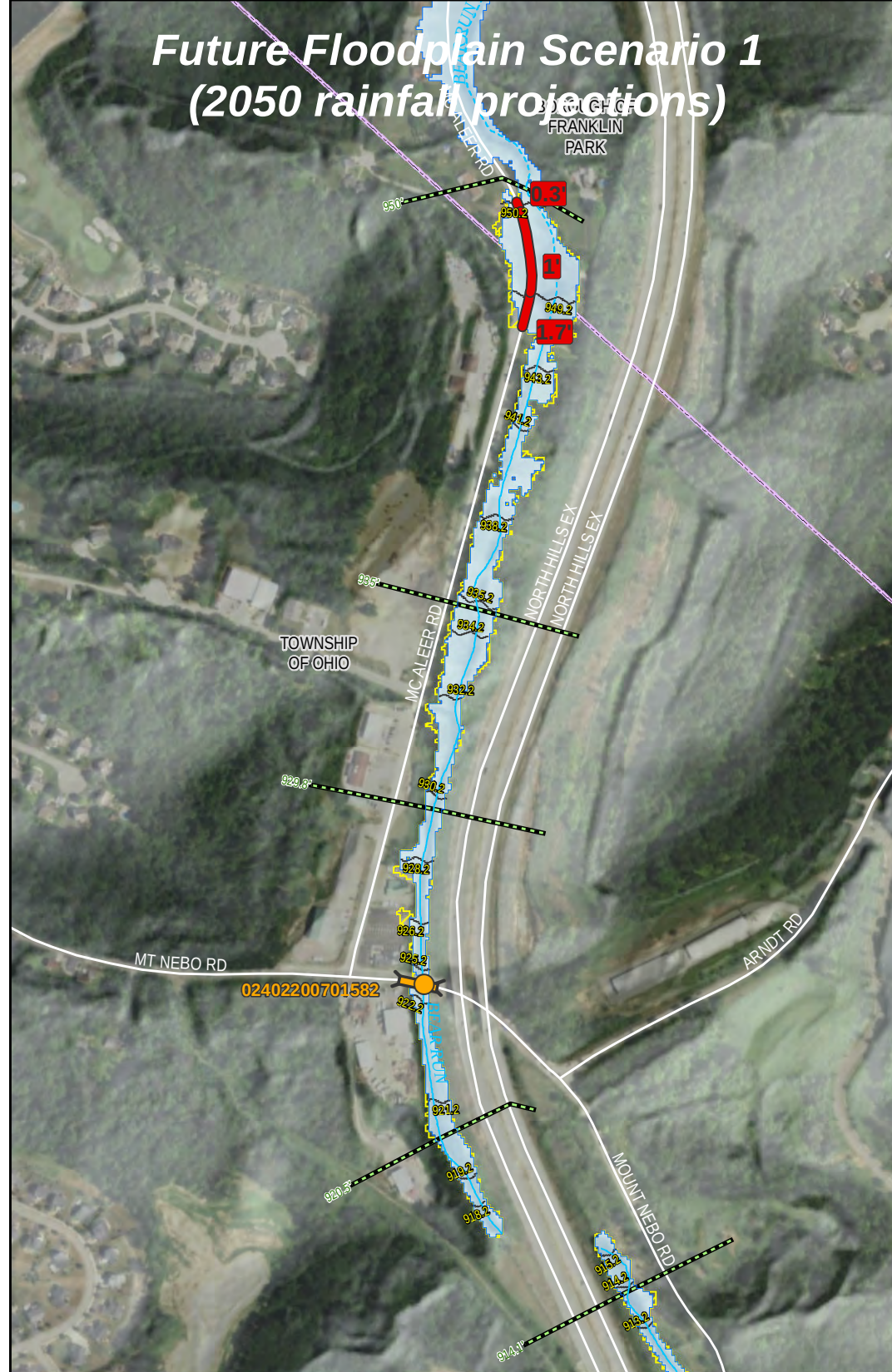
Michael Baker
INTERNATIONAL

LOCATOR MAP

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DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



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. **CODY ST**
- 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

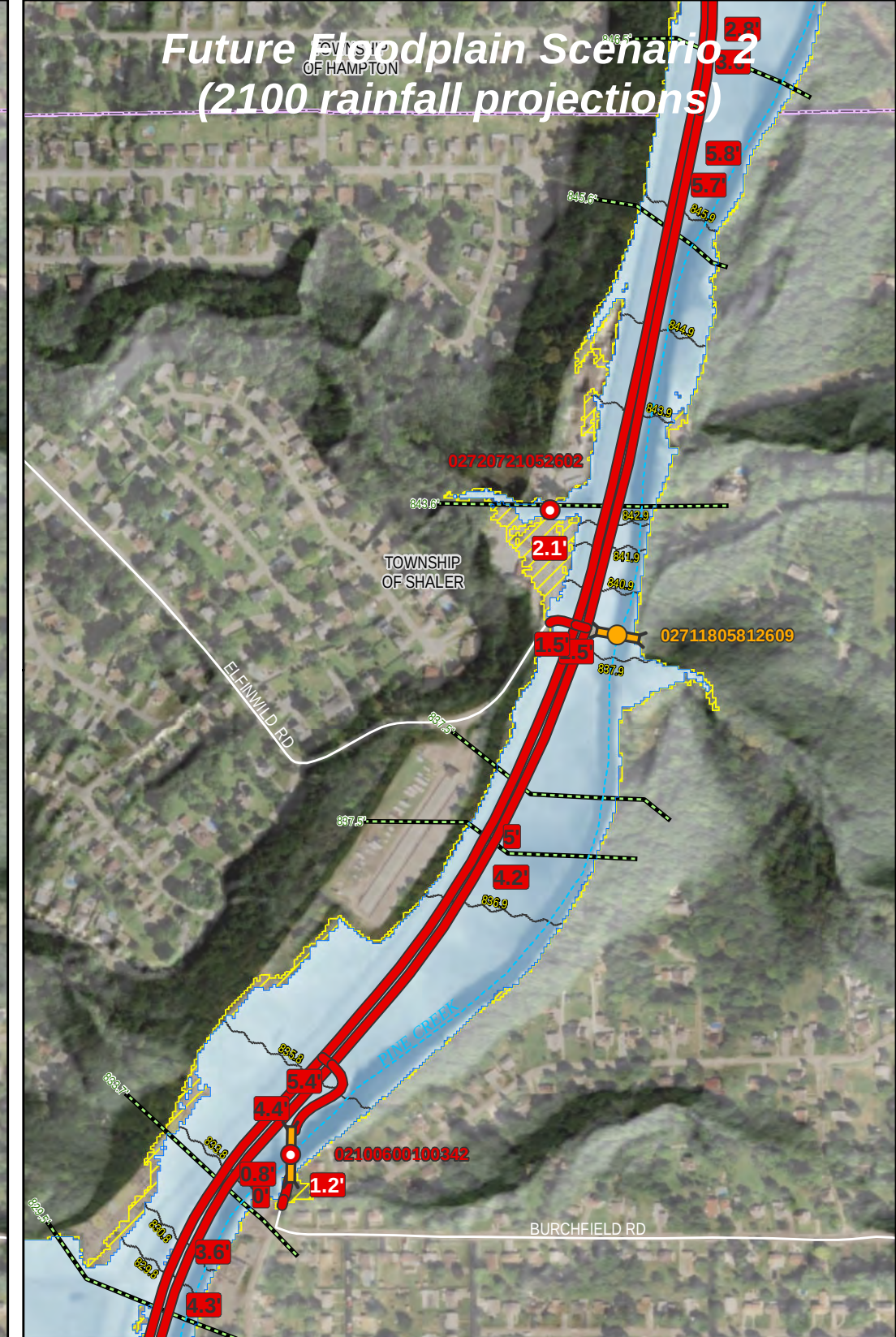
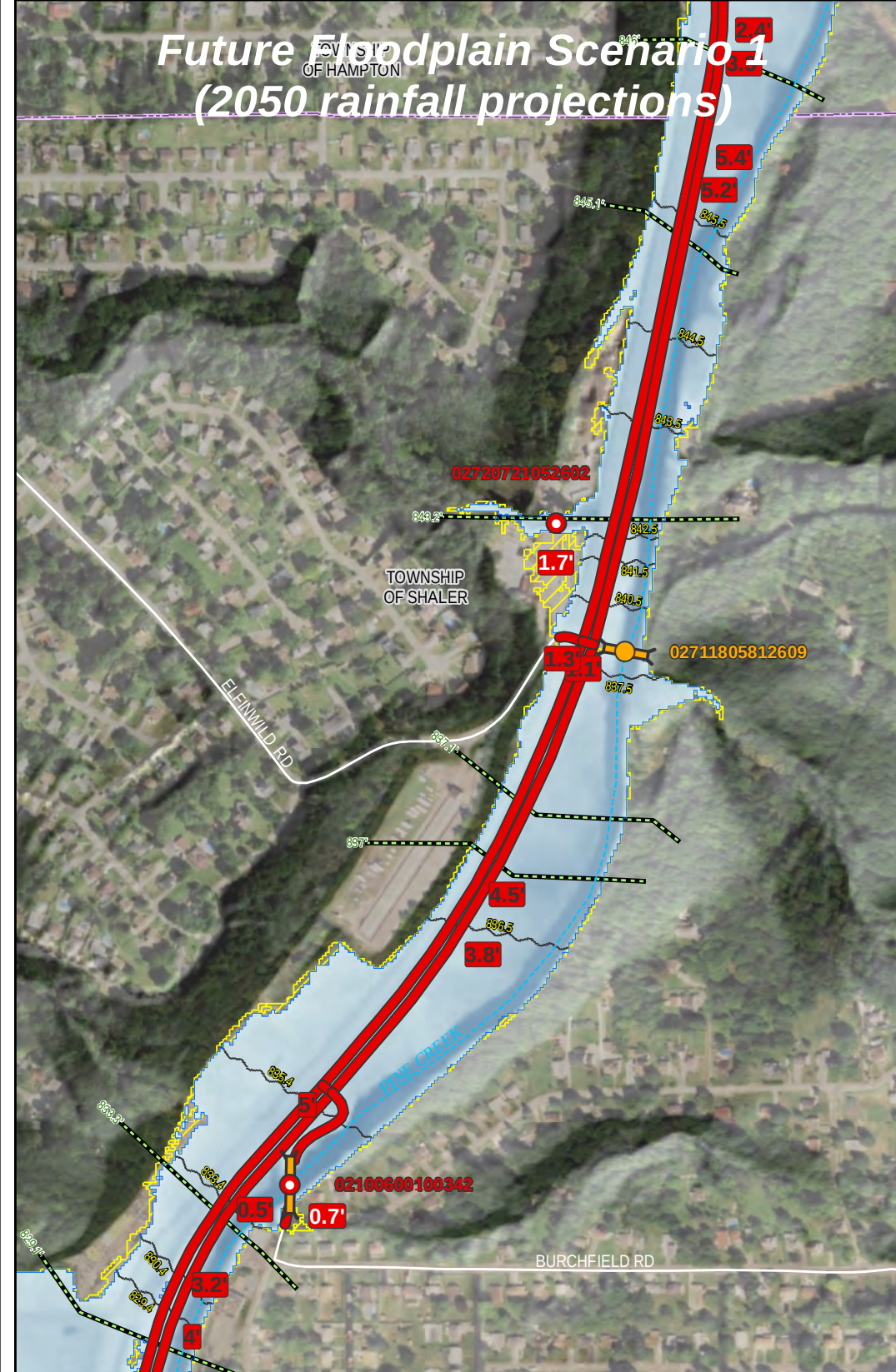
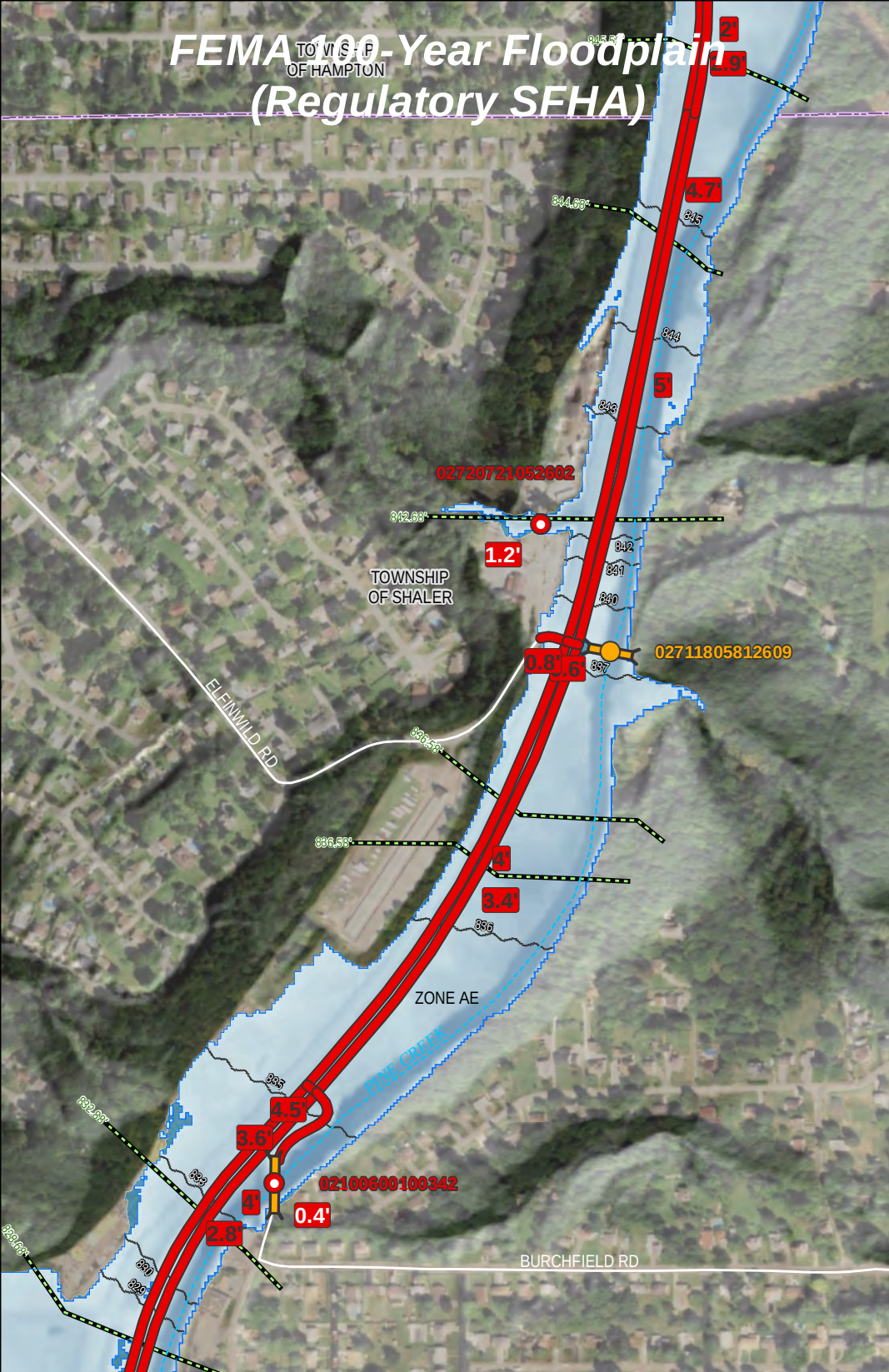
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 42 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
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Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. **3.28'**
- Bridge Points - BRIDGE ID i.e. **23100100301362**
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. **3.28'**
- Roadway - i.e. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

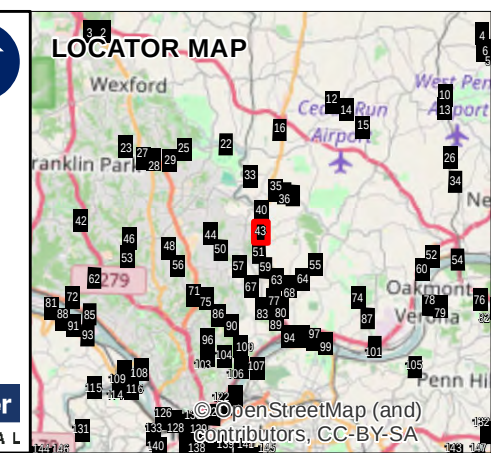
Sheet 43 of 265

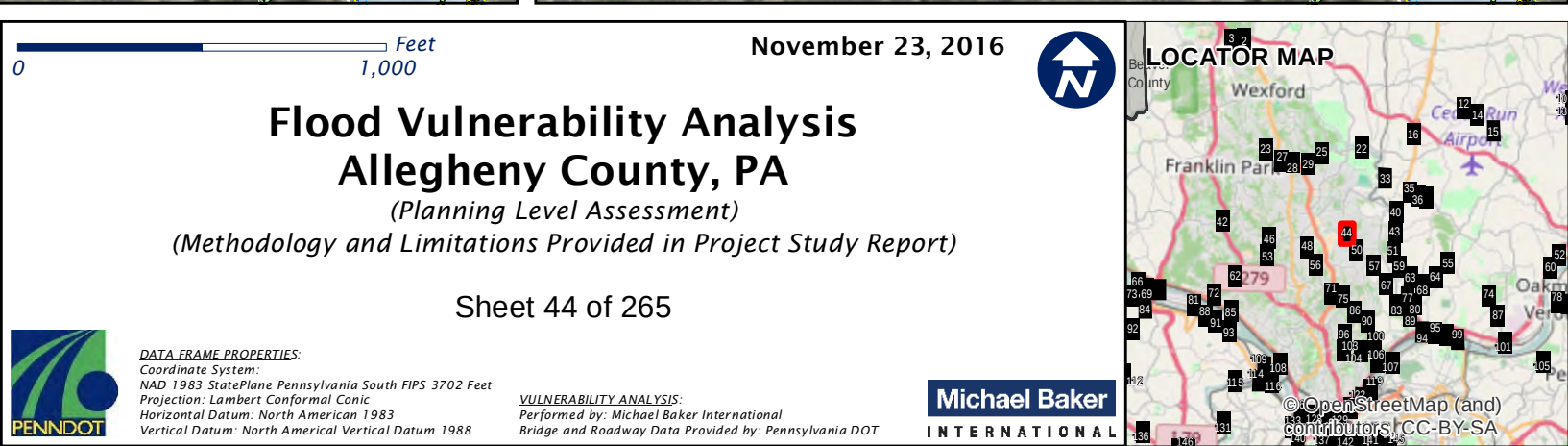
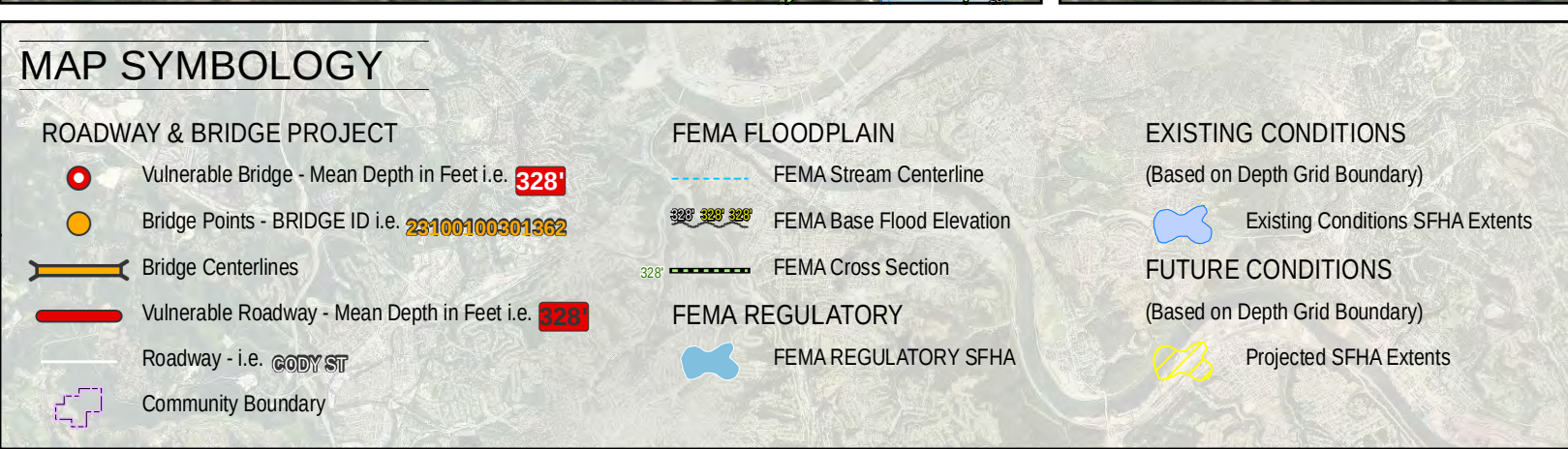
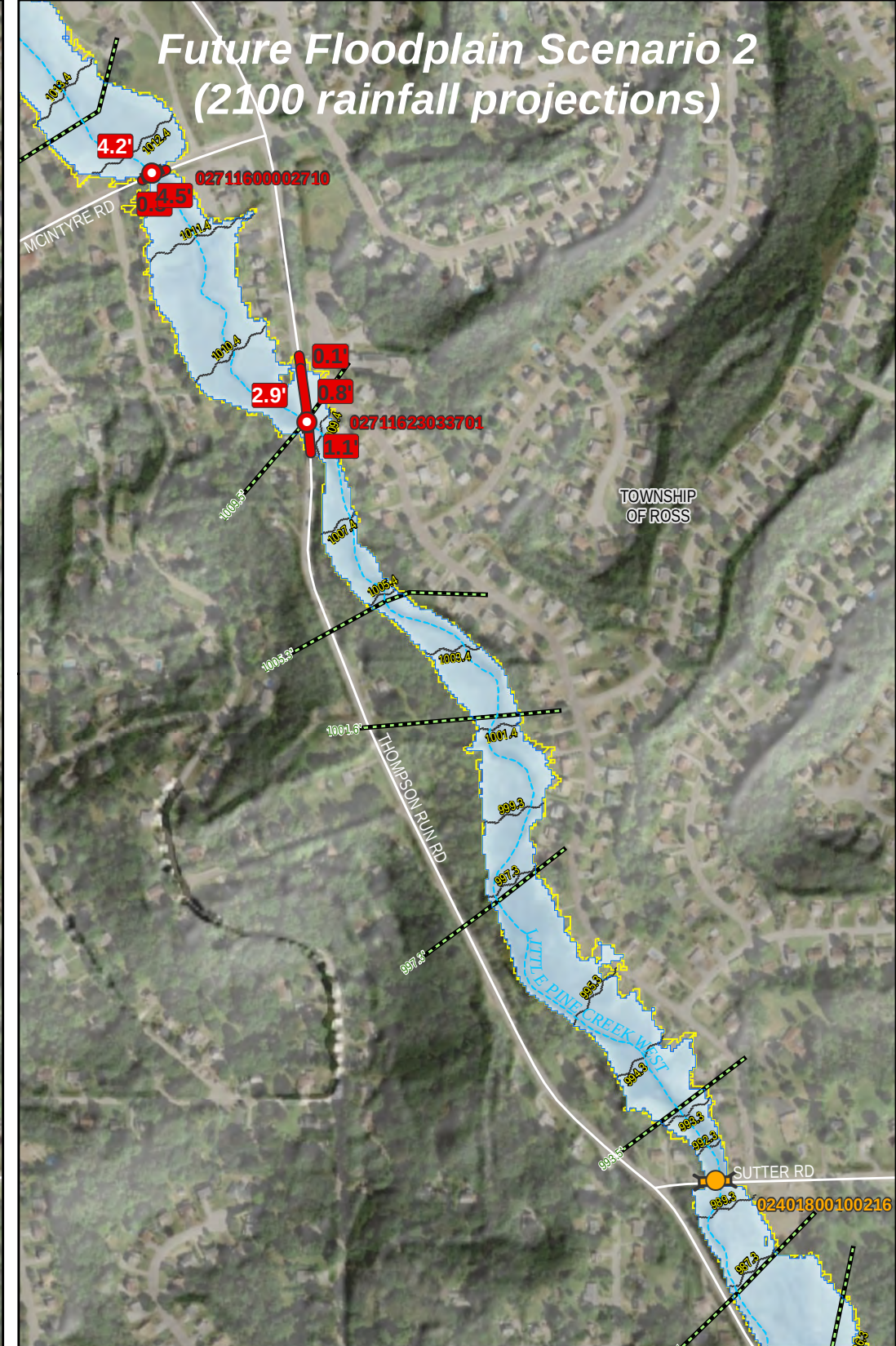
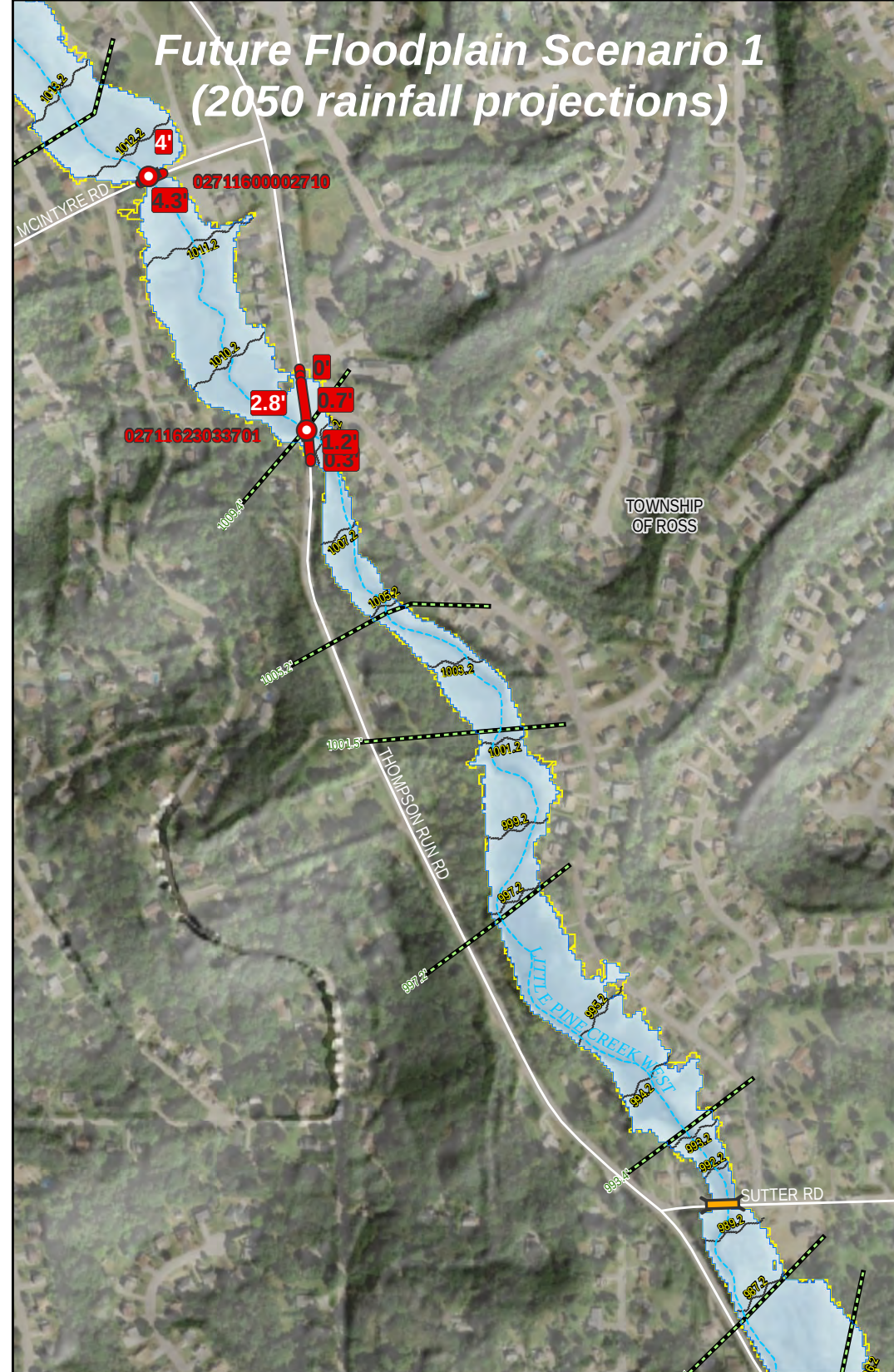
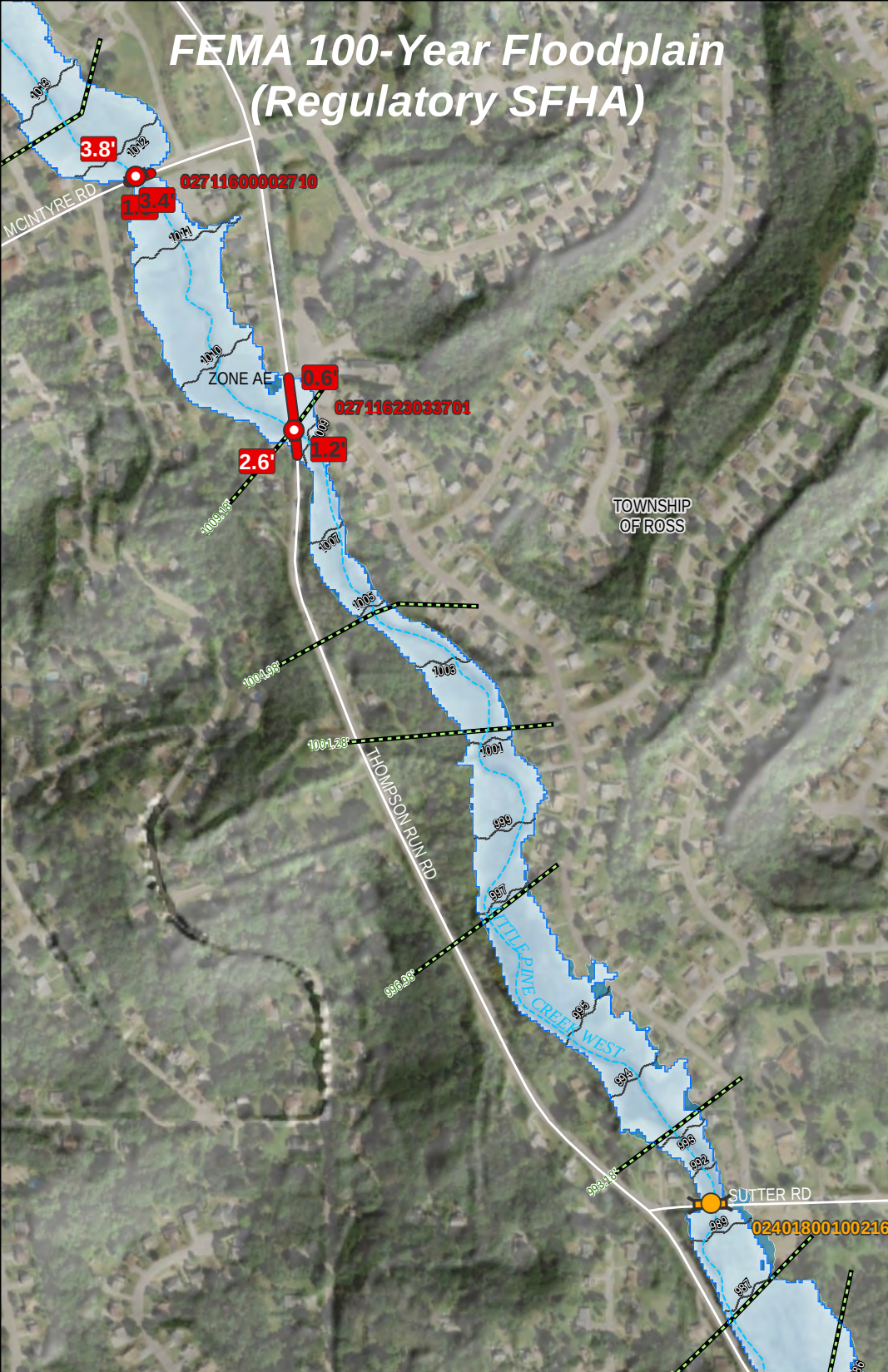


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**







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. **CODY ST**
- 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

Feet
0 1,000

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

Future Floodplain Scenario 2
(2100 rainfall projections)

02401101200415

TOWNSHIP OF ROSS

ROCHESTER RD

REIS RUN RD

SEWICKLEY OAKMONT RD

LOWRIES RUN

0.2'

0.3'

1.5'

0.4'

Elevation points: 924.1', 920.3', 919.3', 917.3', 915.3', 913.4', 910.3', 905.4', 904.4', 903.4', 902.4', 901.4', 900.4', 900.1', 899.4', 894.4', 892.4', 892.4', 892.4', 892.4'

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL



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. CODY ST
	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)

Sheet 47 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

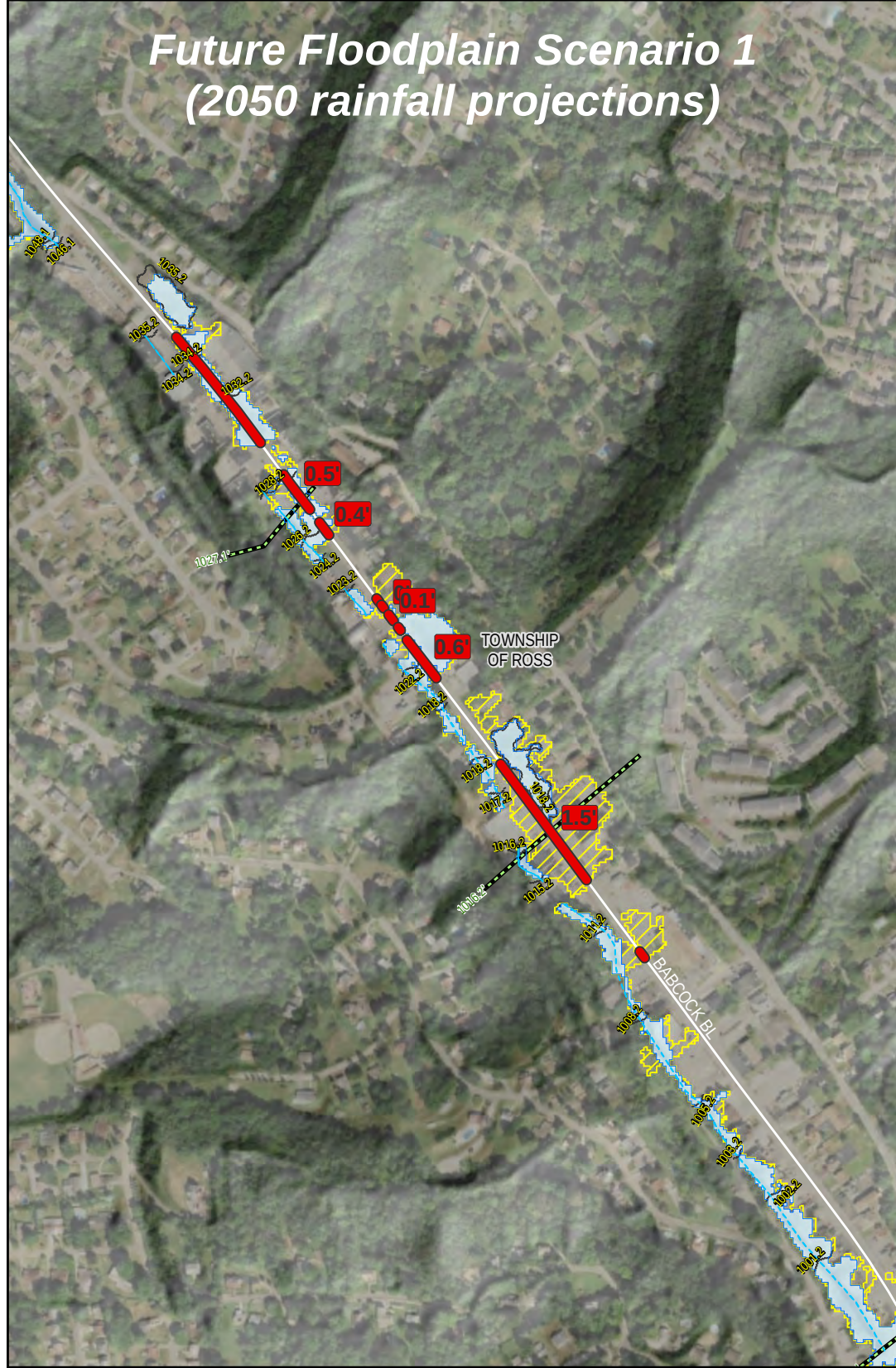
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

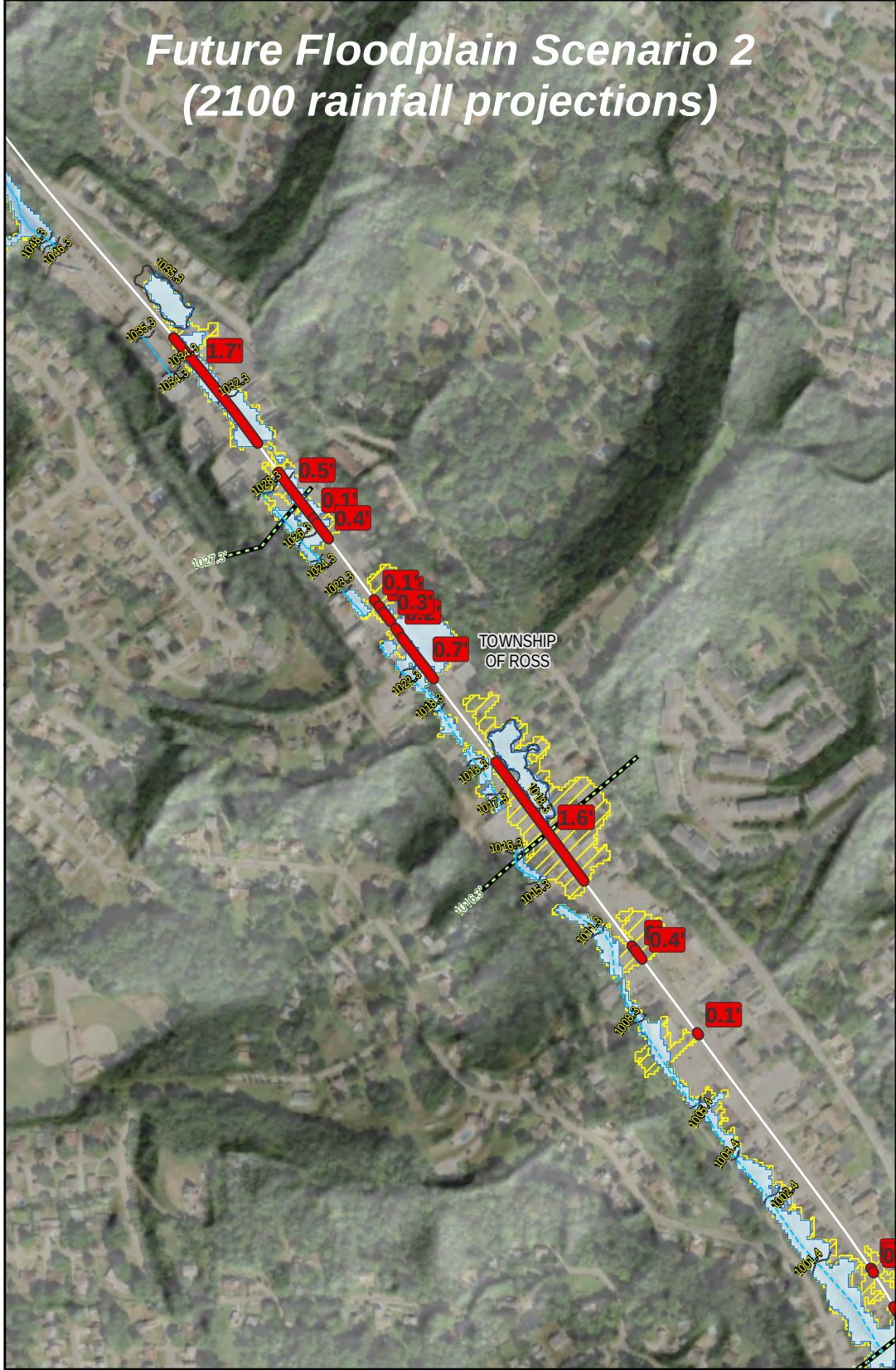
FEMA 100-Year Floodplain
(Regulatory SFHA)



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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

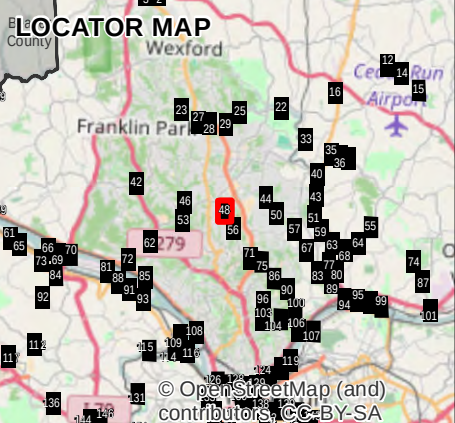
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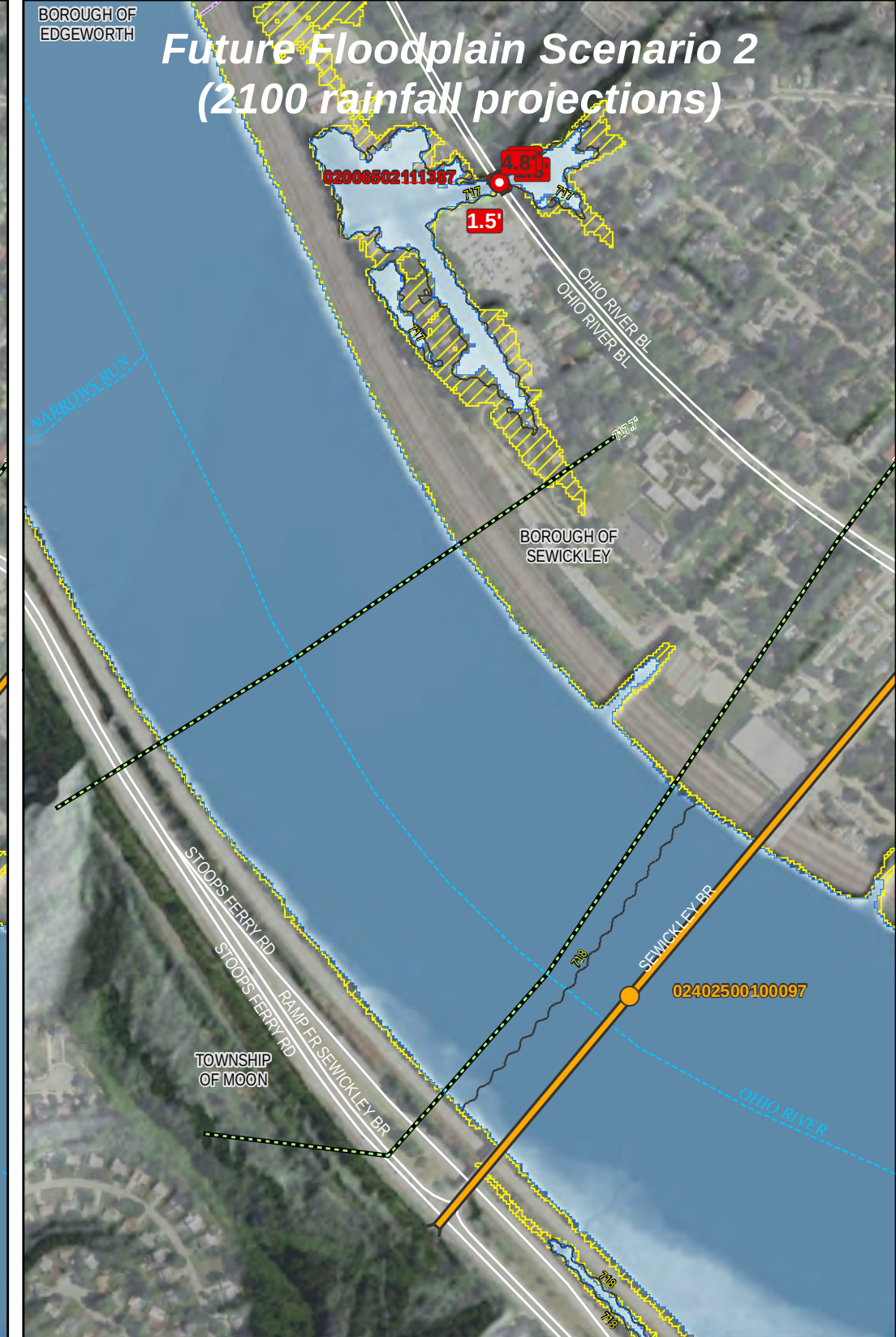


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL





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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016



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

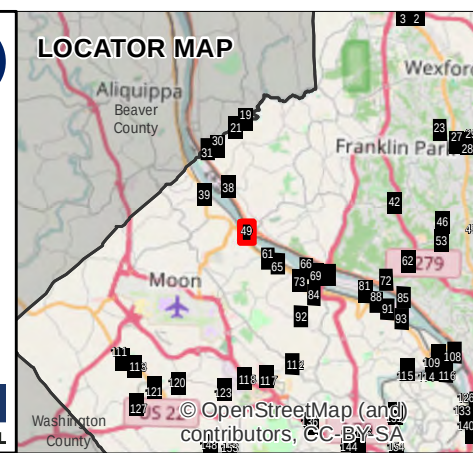
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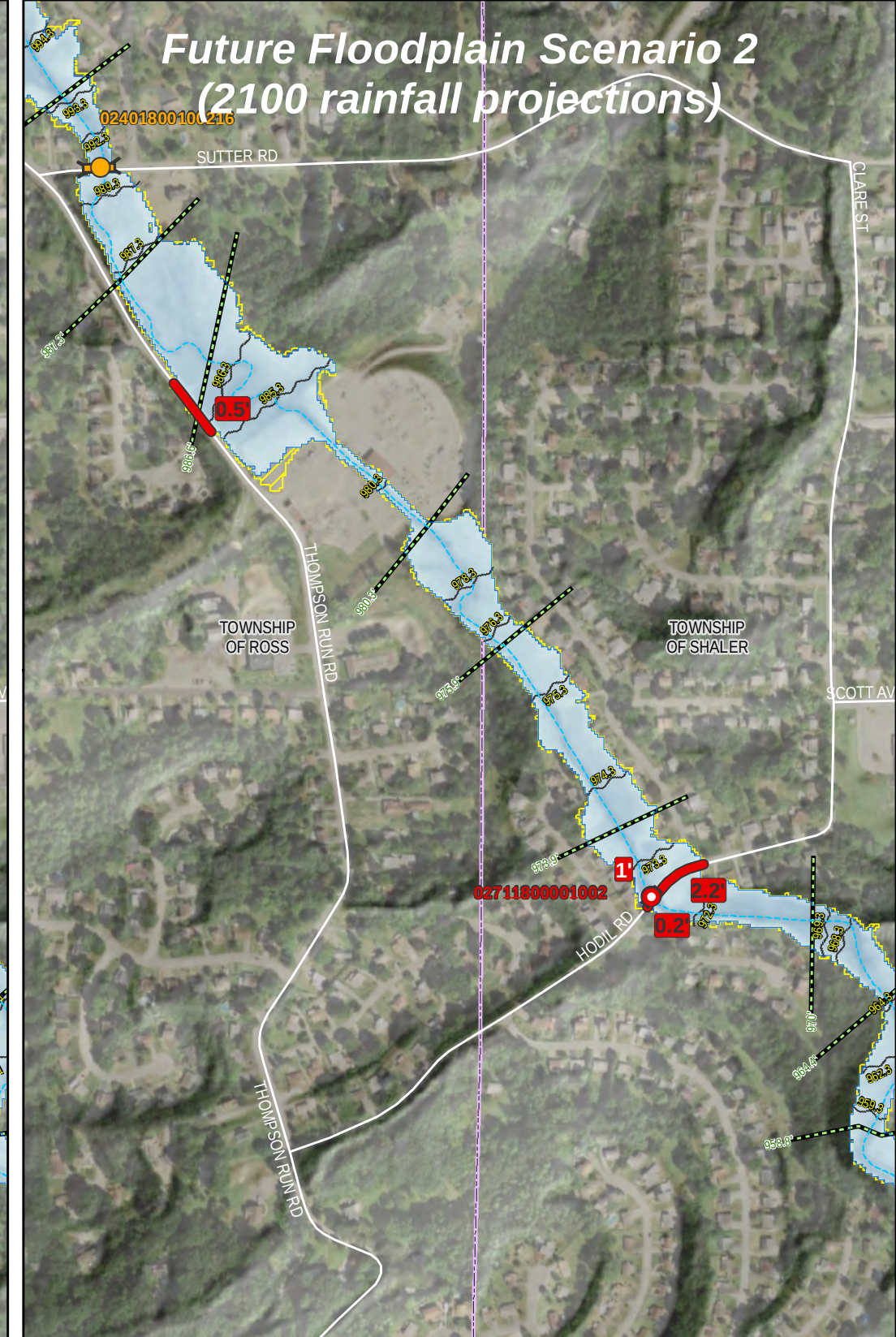
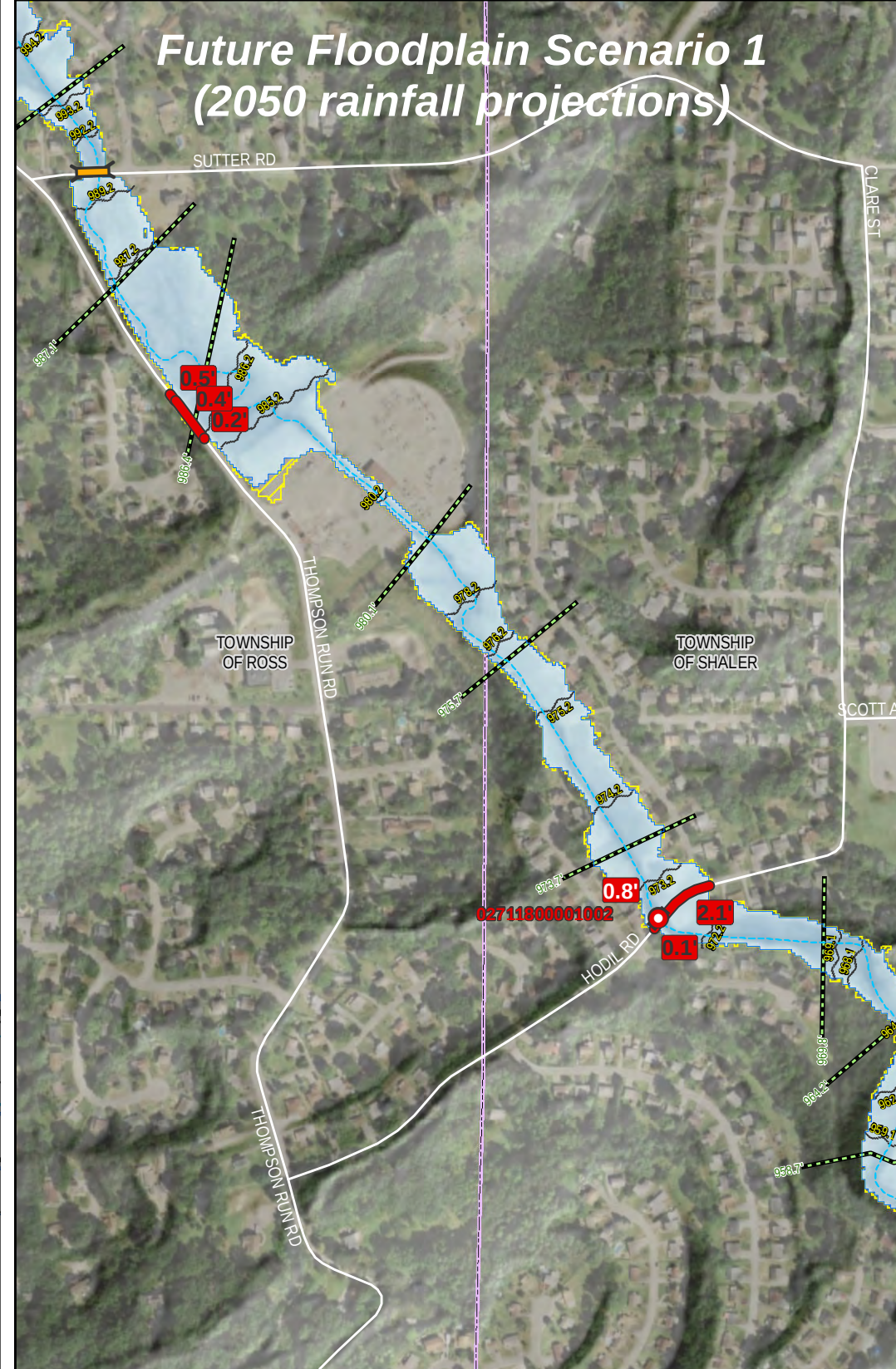
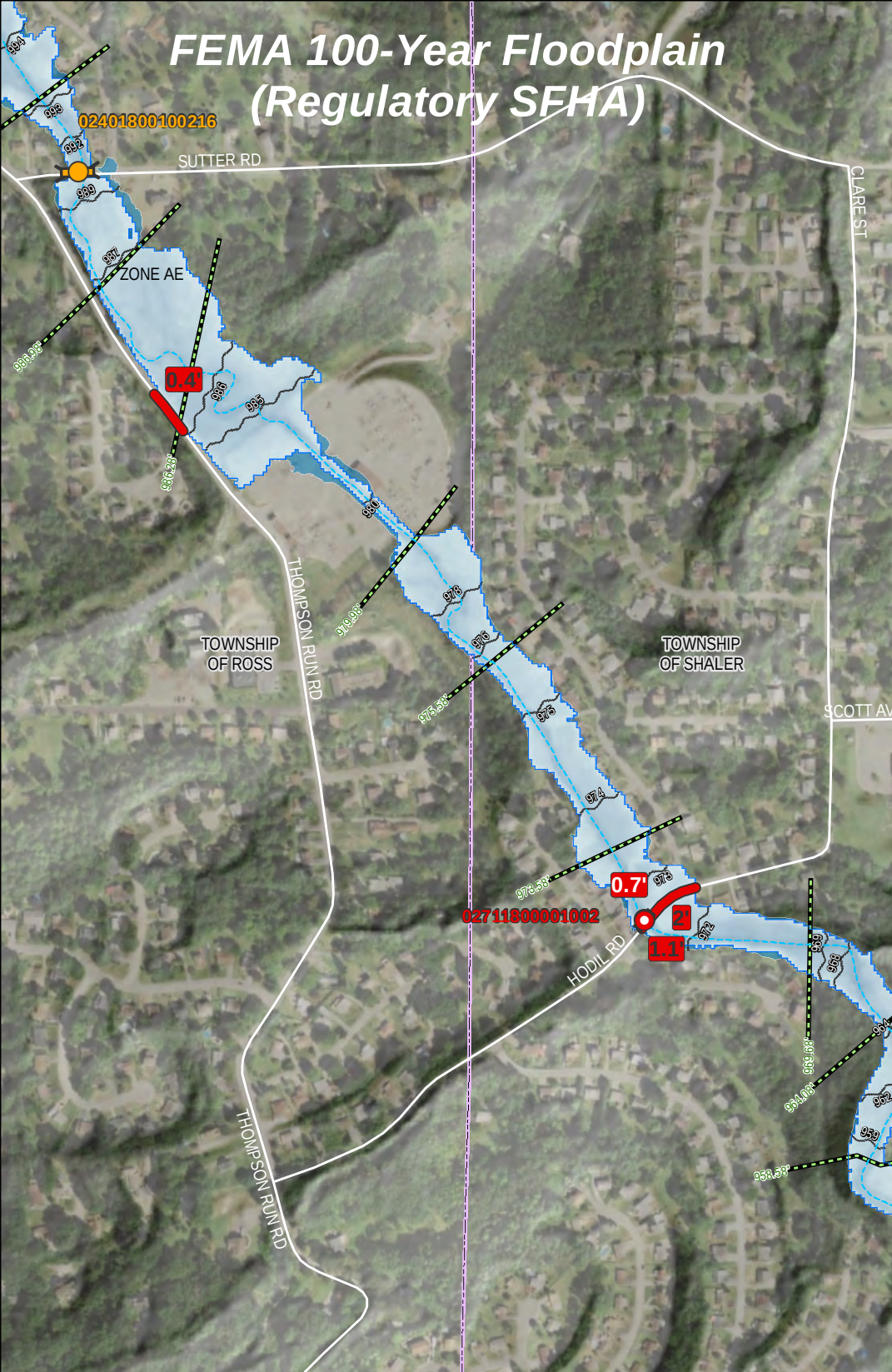


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL





MAP SYMBOLOGY

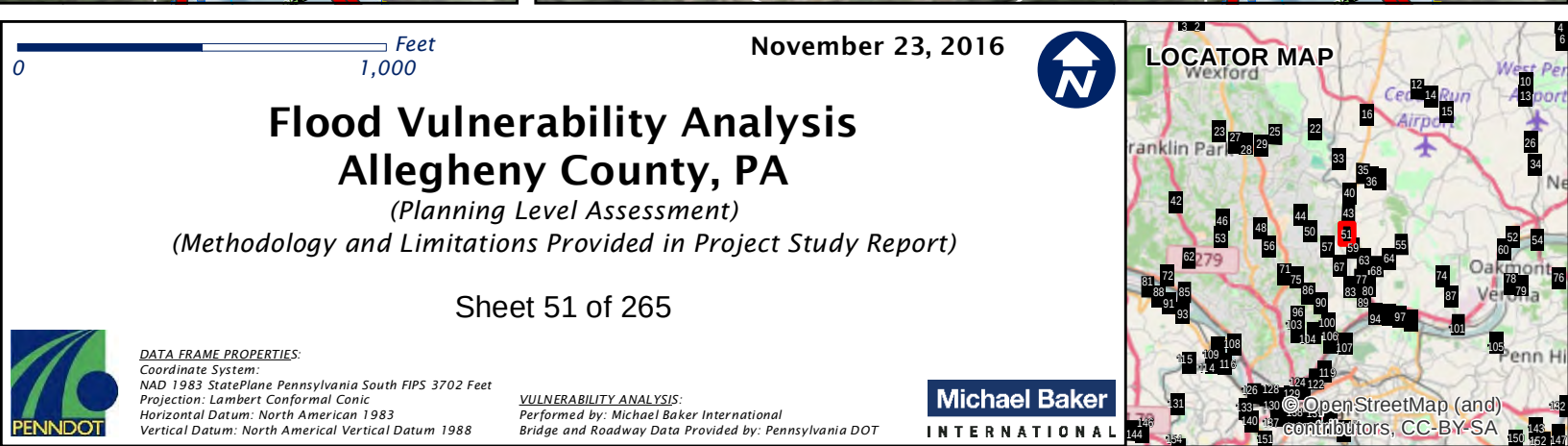
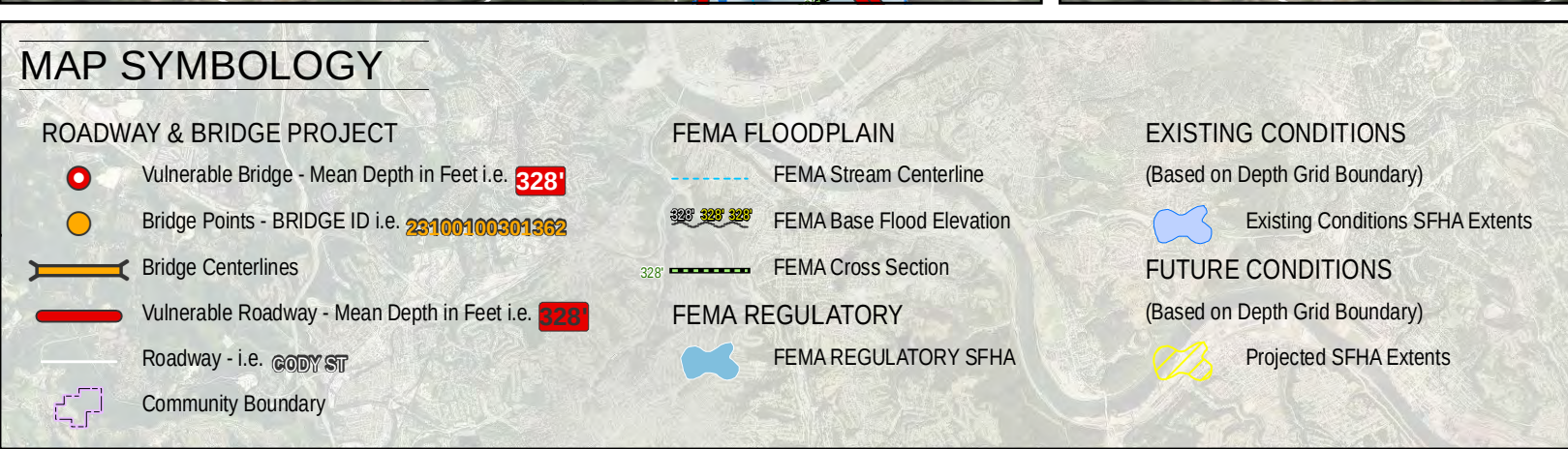
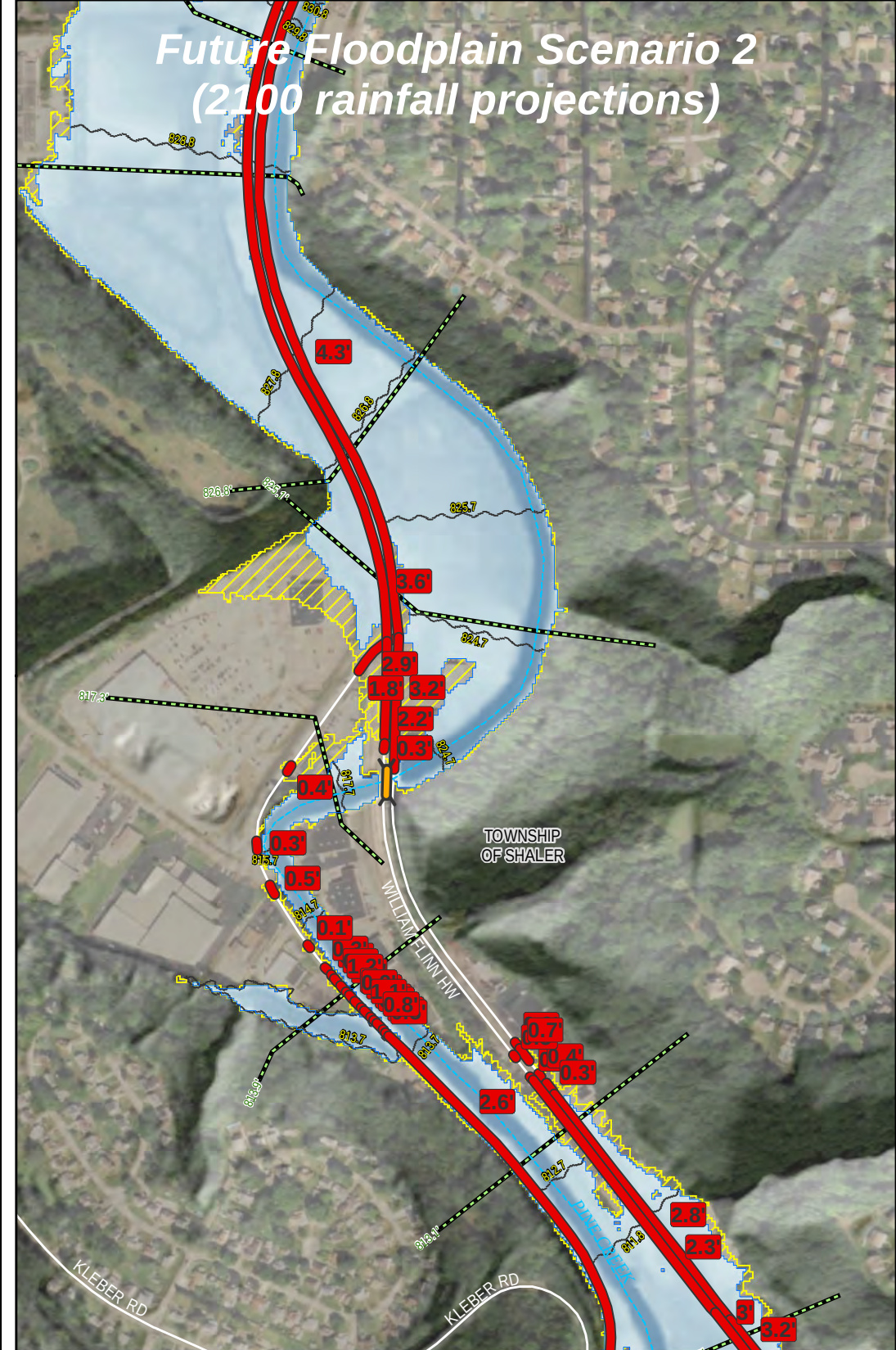
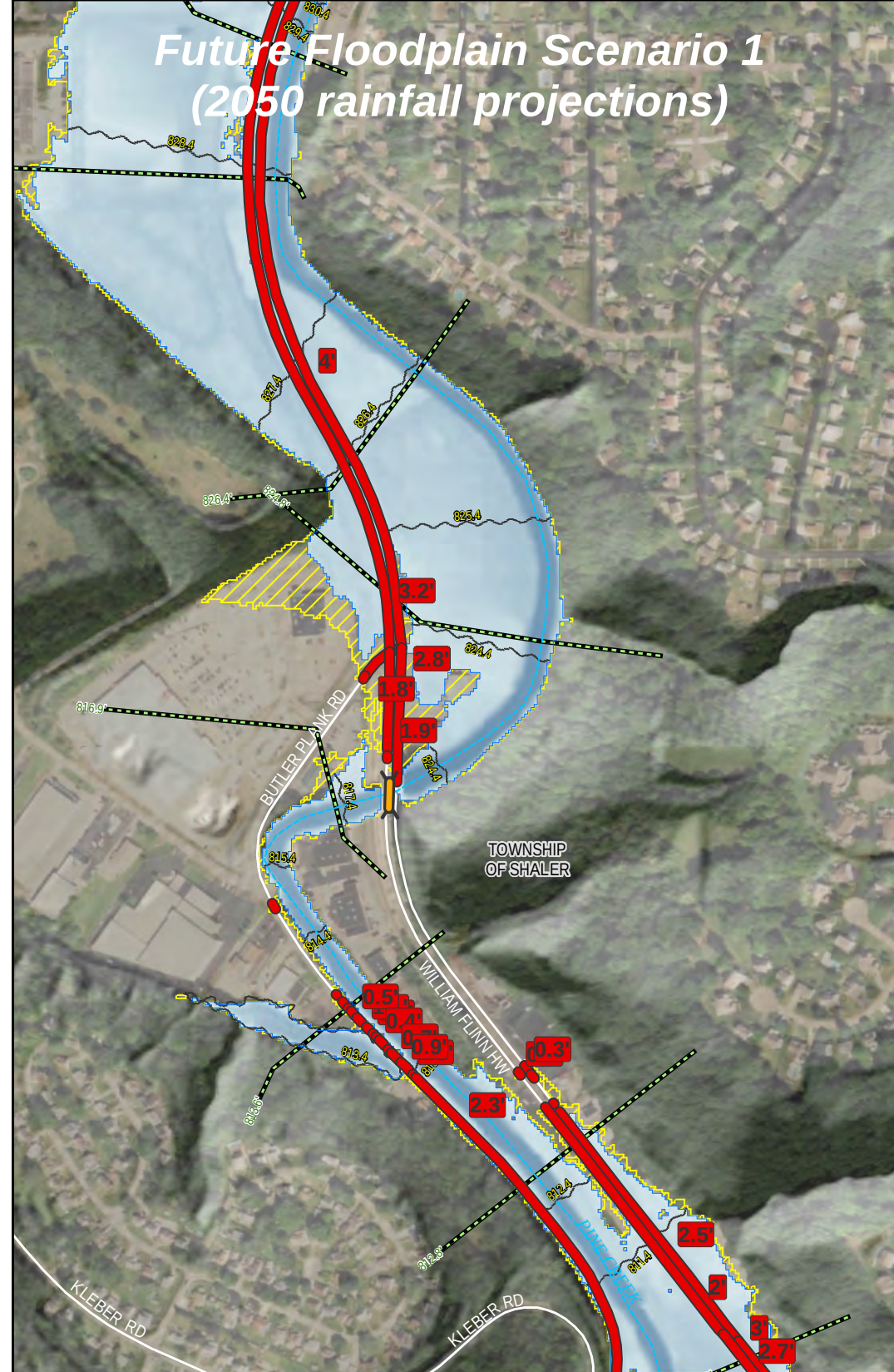
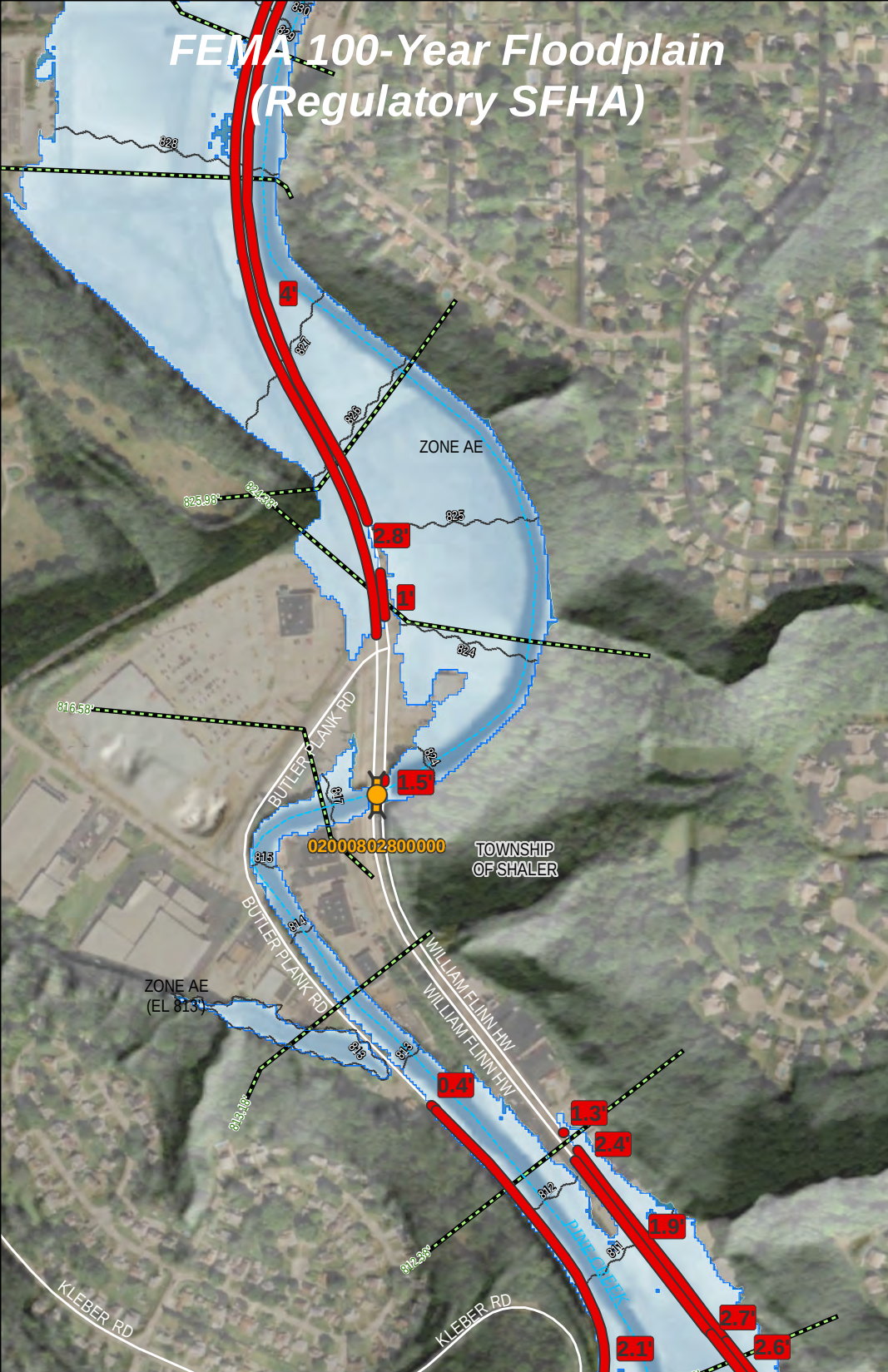
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	Future Conditions SFHA Extents
Bridge Centerlines	FEMA Cross Section	
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY SFHA	
Roadway - i.e. CODY ST		
Community Boundary		

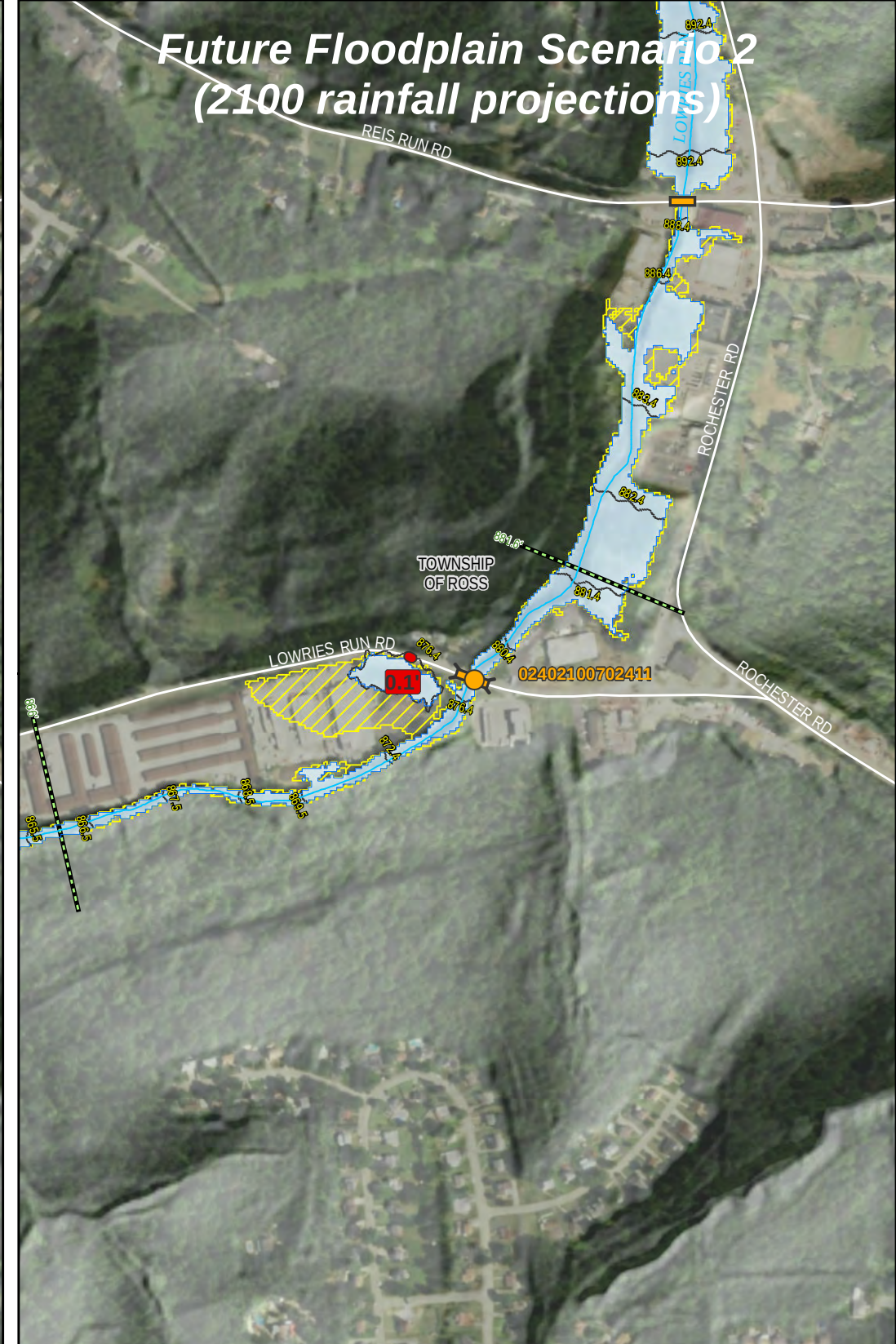
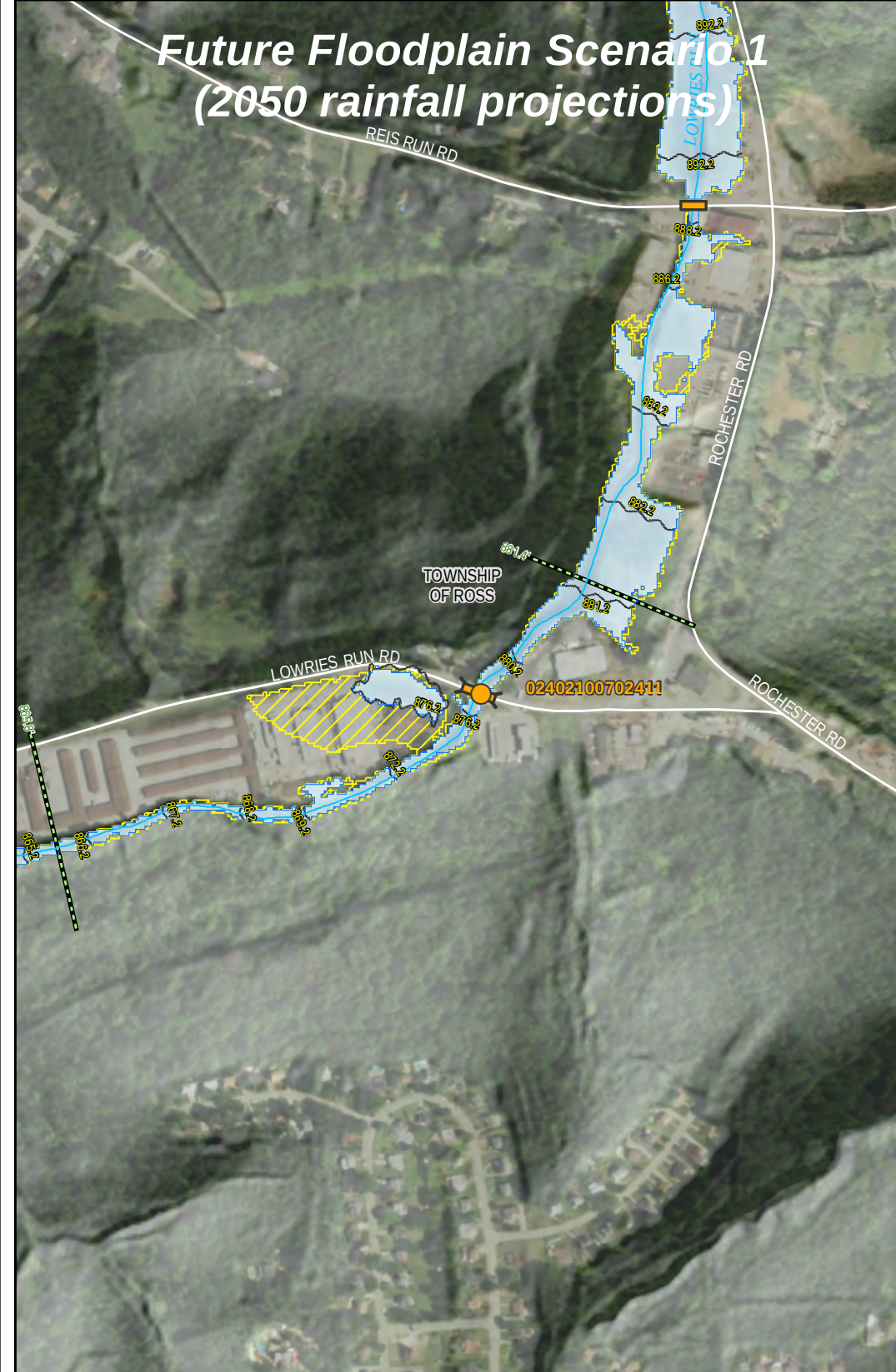
November 23, 2016

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. 328'
	Bridge Points - BRIDGE ID i.e. 23100100301362
	Bridge Centerlines
	Vulnerable Roadway - Mean Depth in Feet i.e. 328'
	Roadway - i.e. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

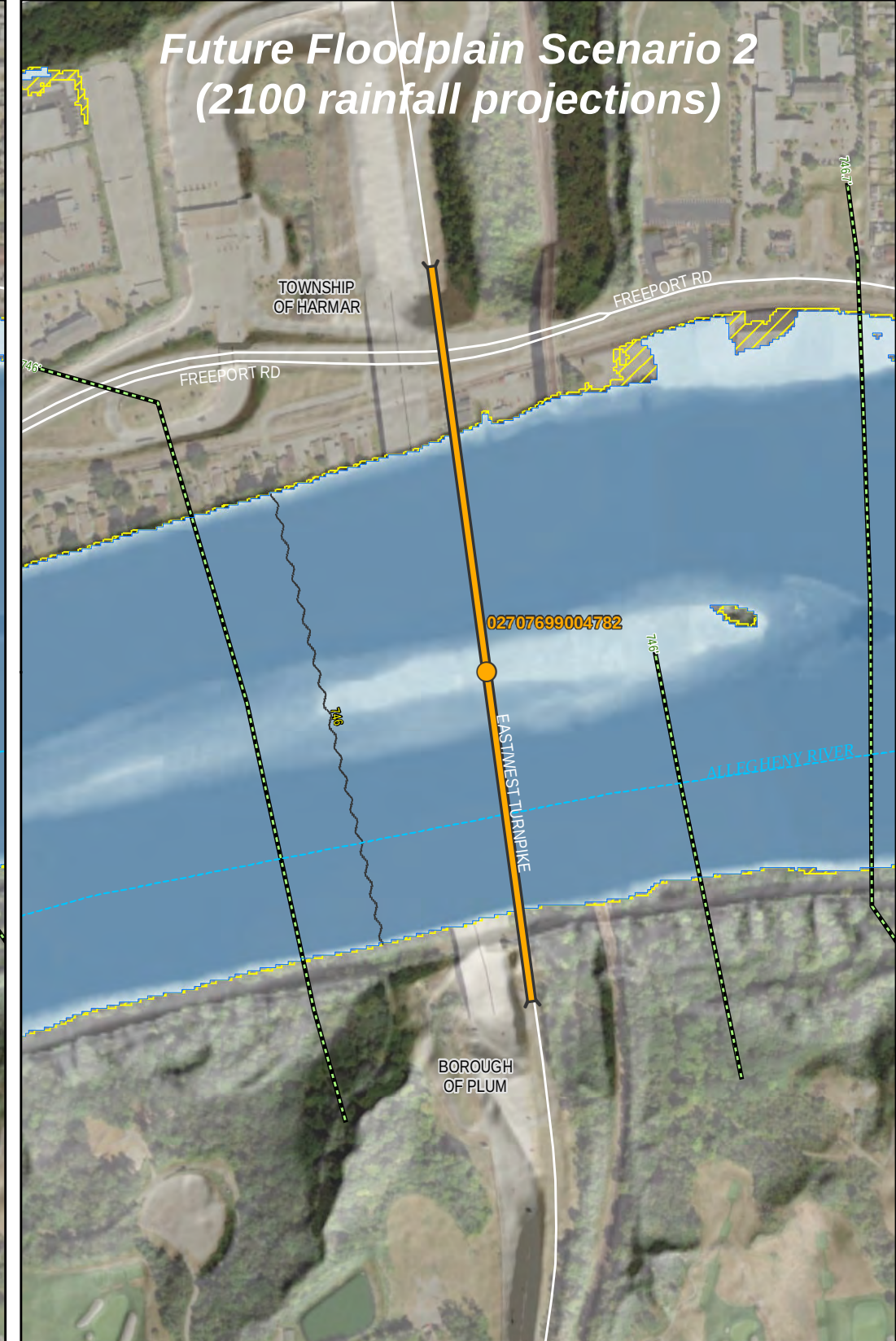
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA FLOODPLAIN	EXISTING CONDITIONS
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Stream Centerline	(Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Base Flood Elevation	Existing Conditions SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA Cross Section	FUTURE CONDITIONS
Roadway - i.e. CODY ST	FEMA REGULATORY	(Based on Depth Grid Boundary)
Community Boundary	FEMA REGULATORY SFHA	Projected SFHA Extents

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

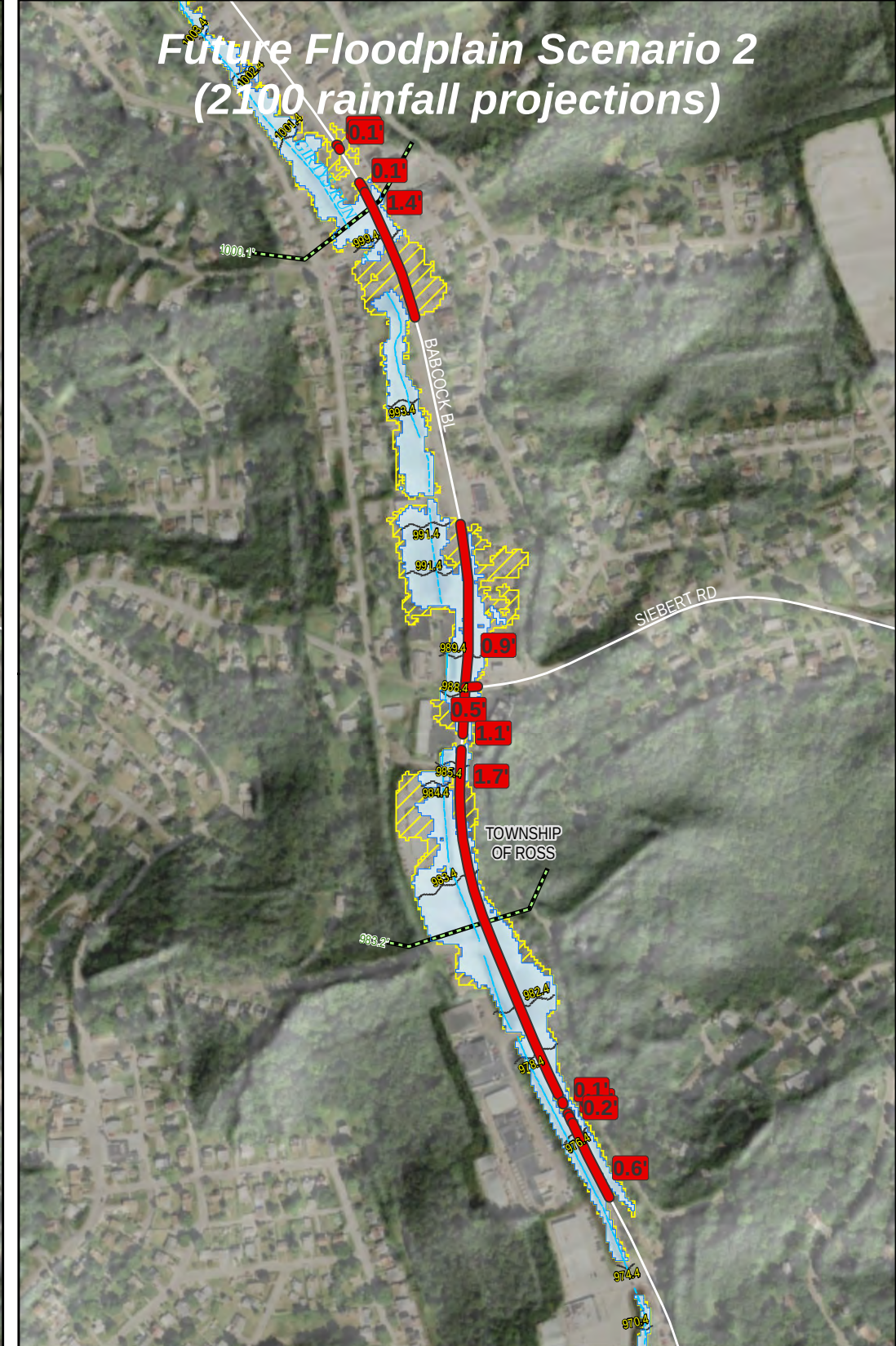
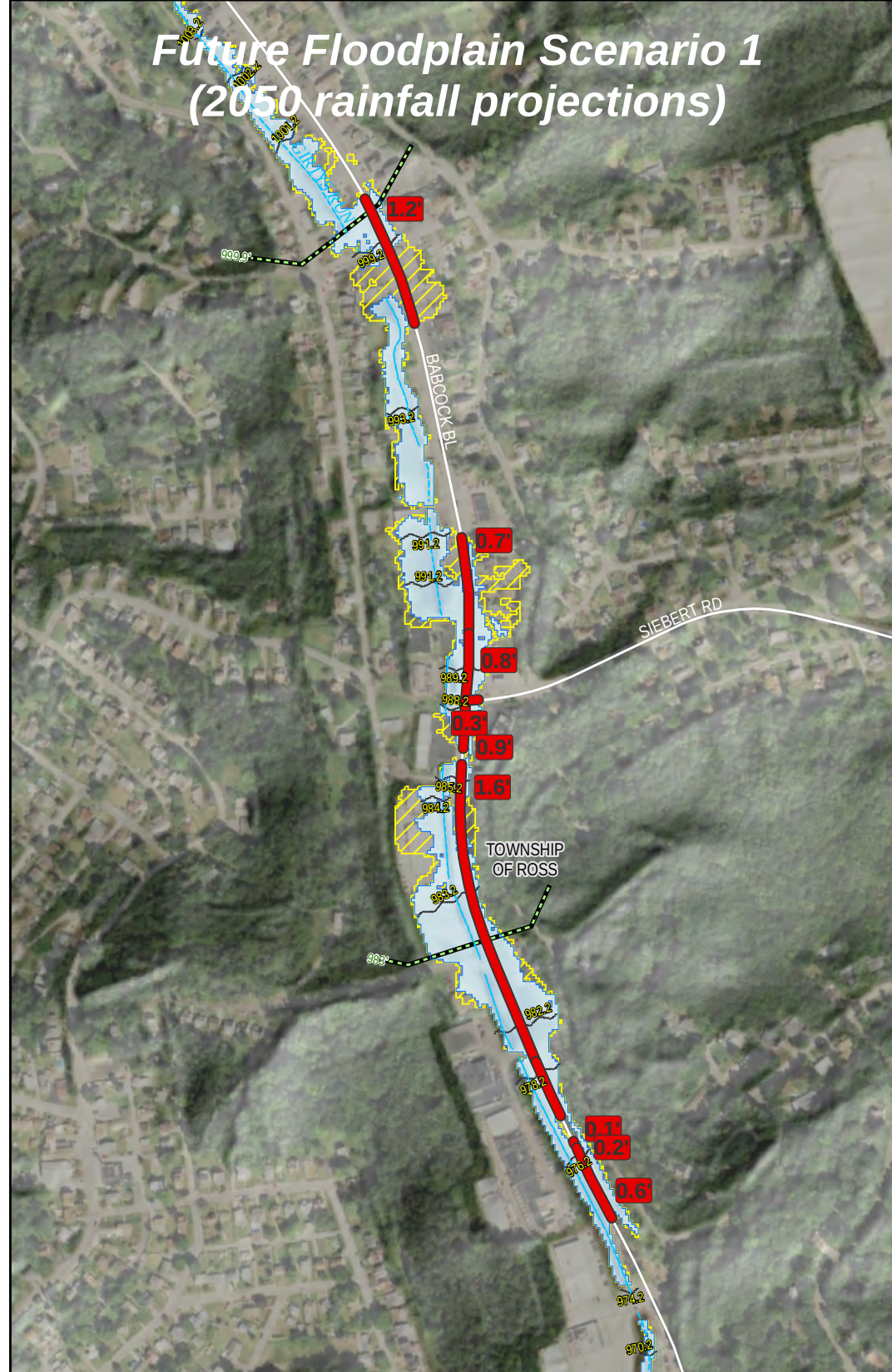
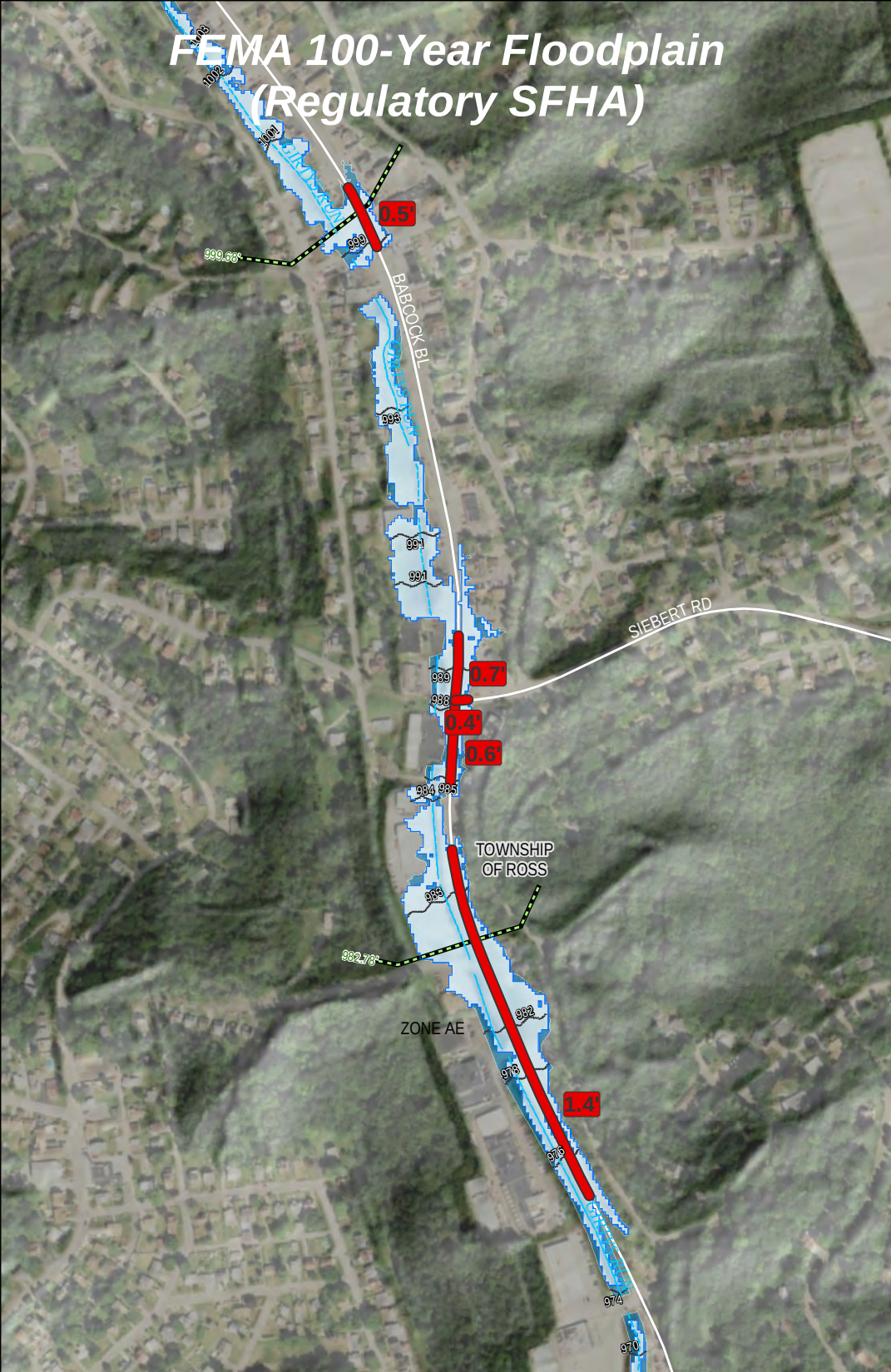
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

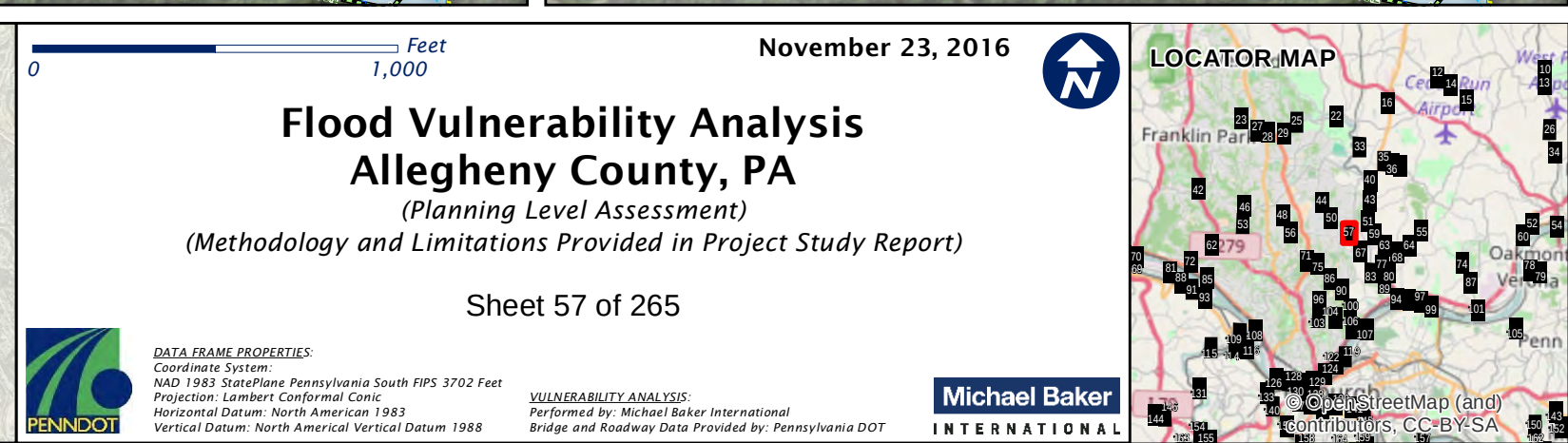
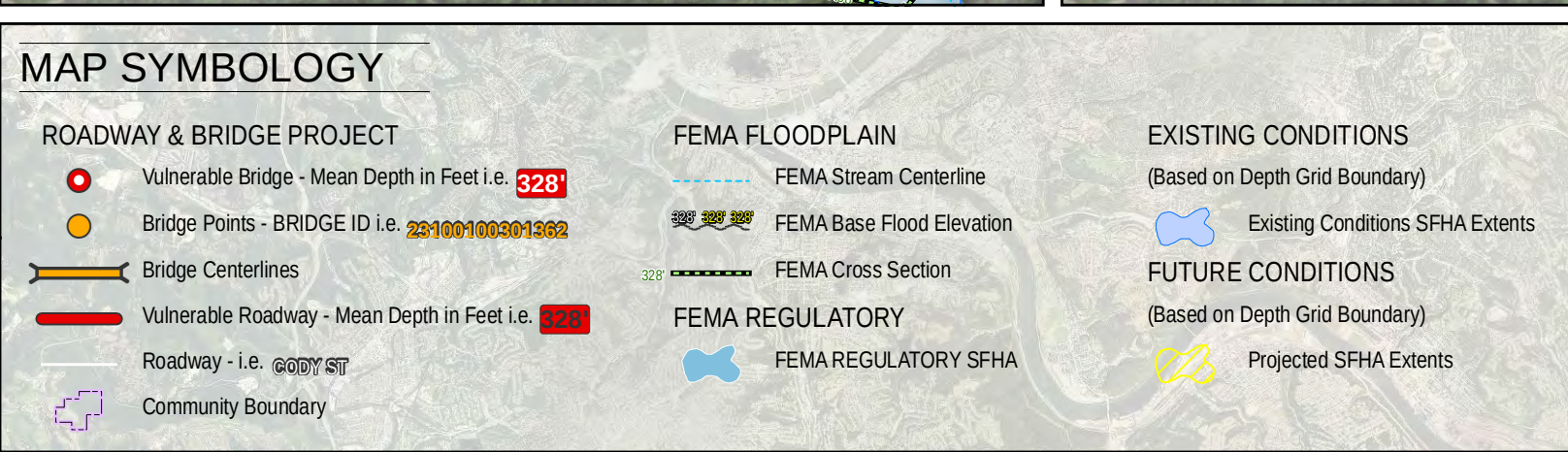
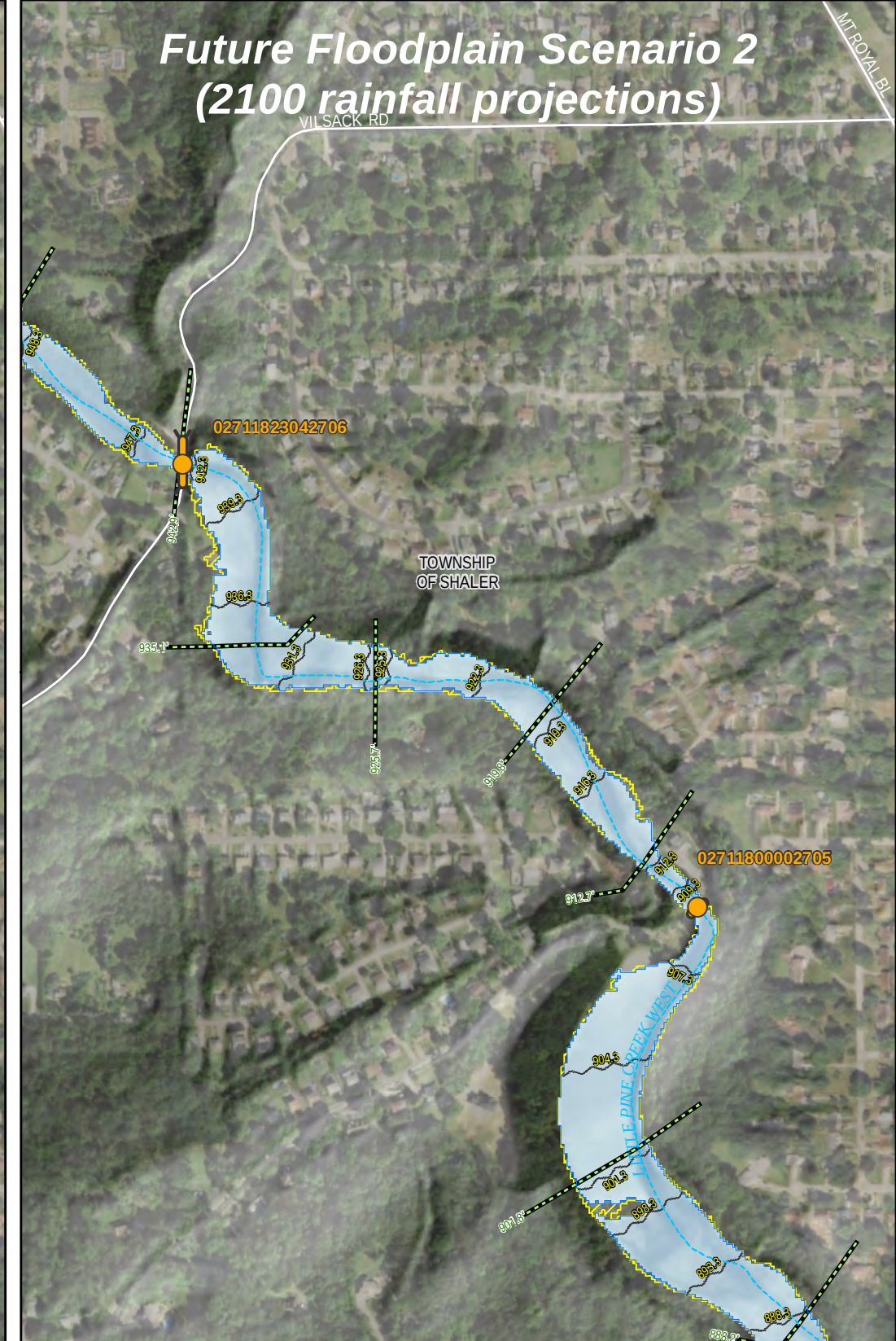
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(Methodology and Limitations Provided in Project Study Report)

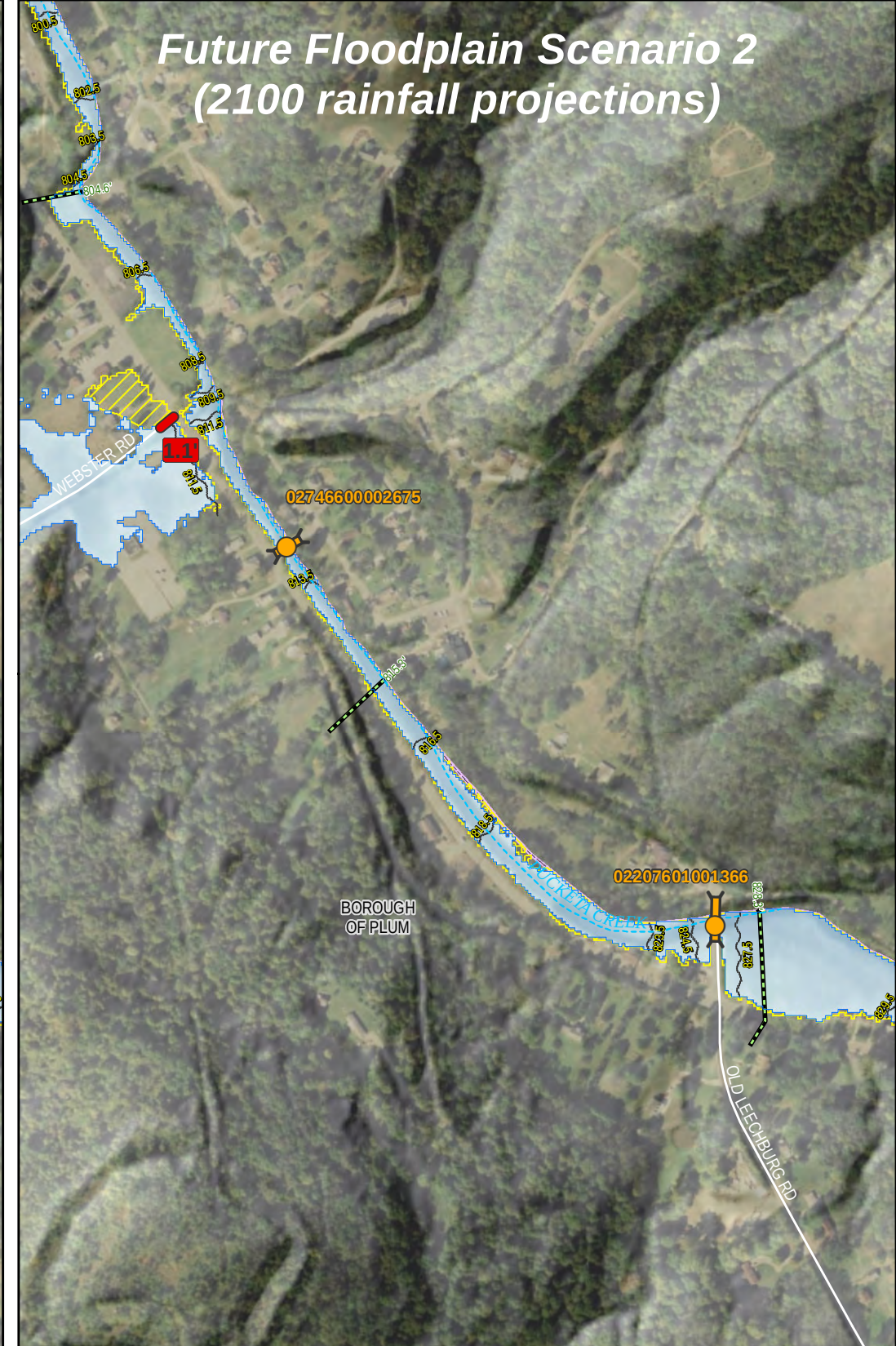
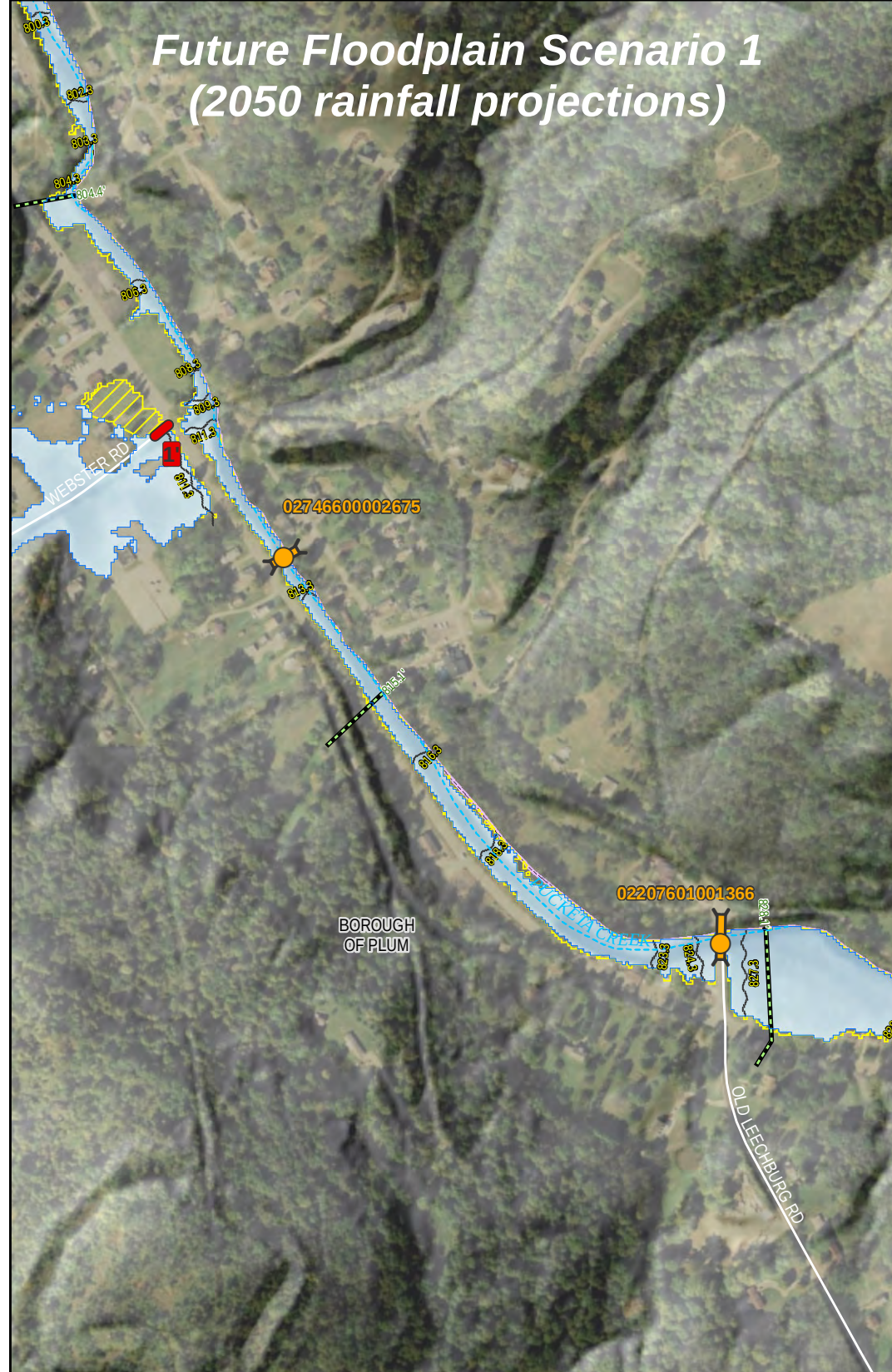
Sheet 56 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

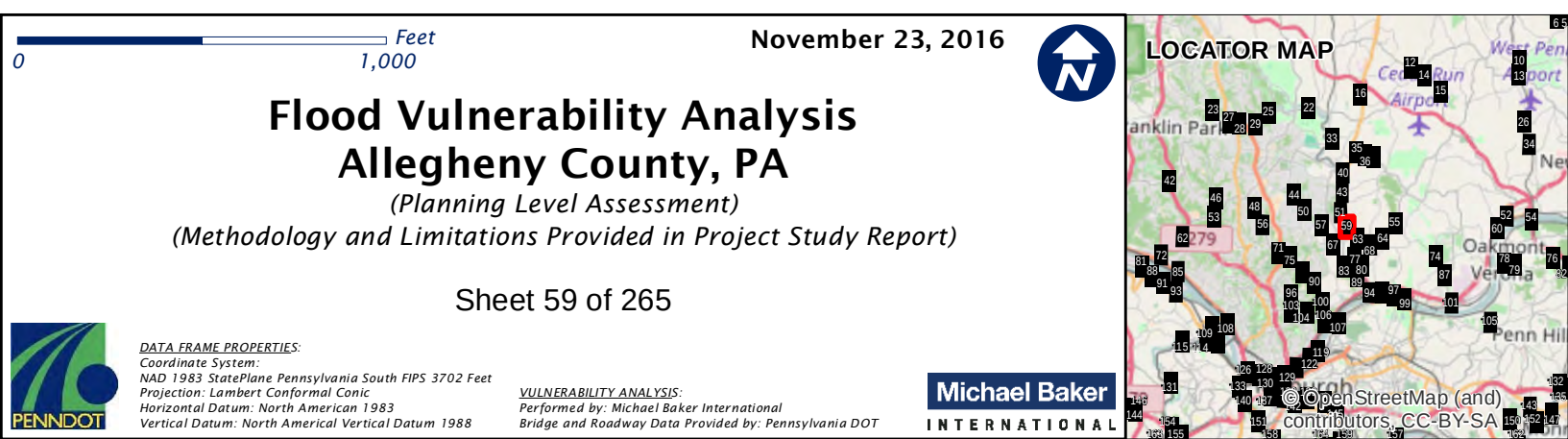
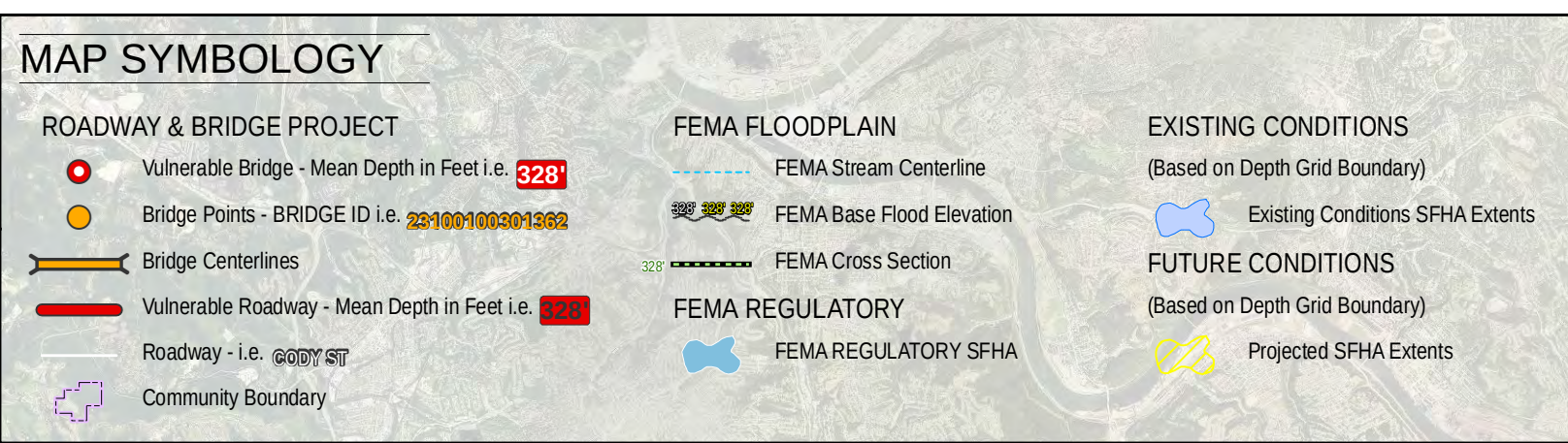
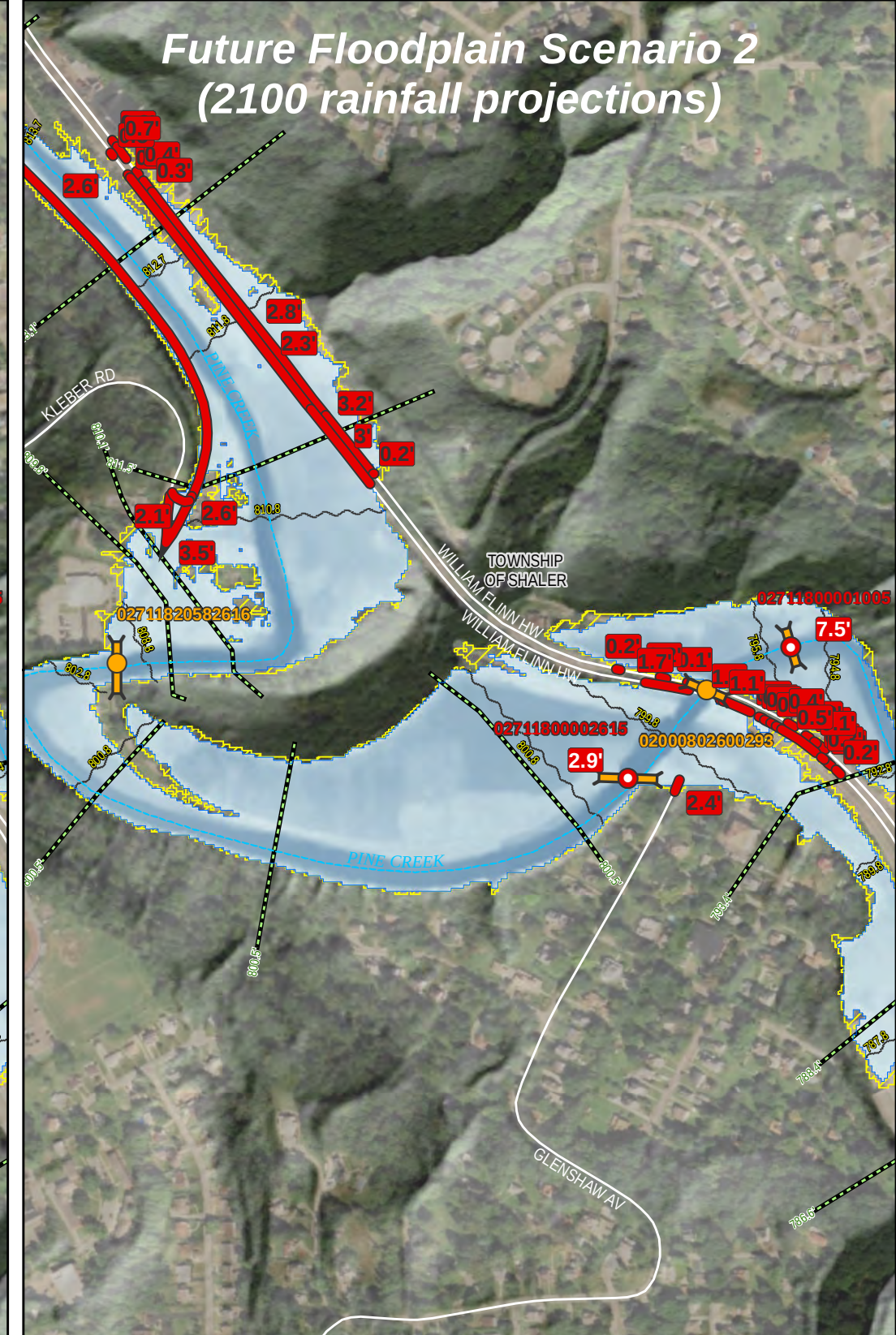
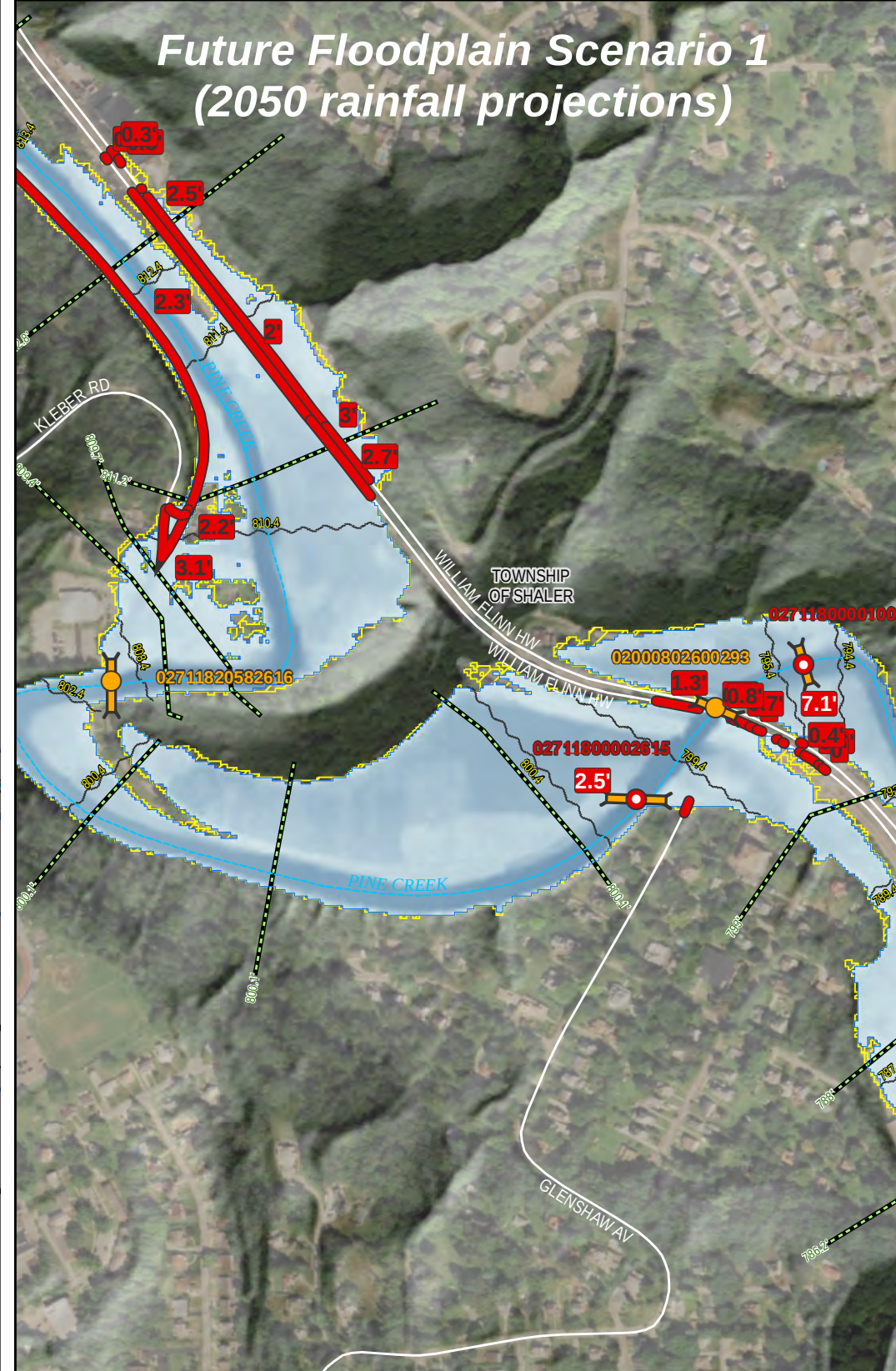
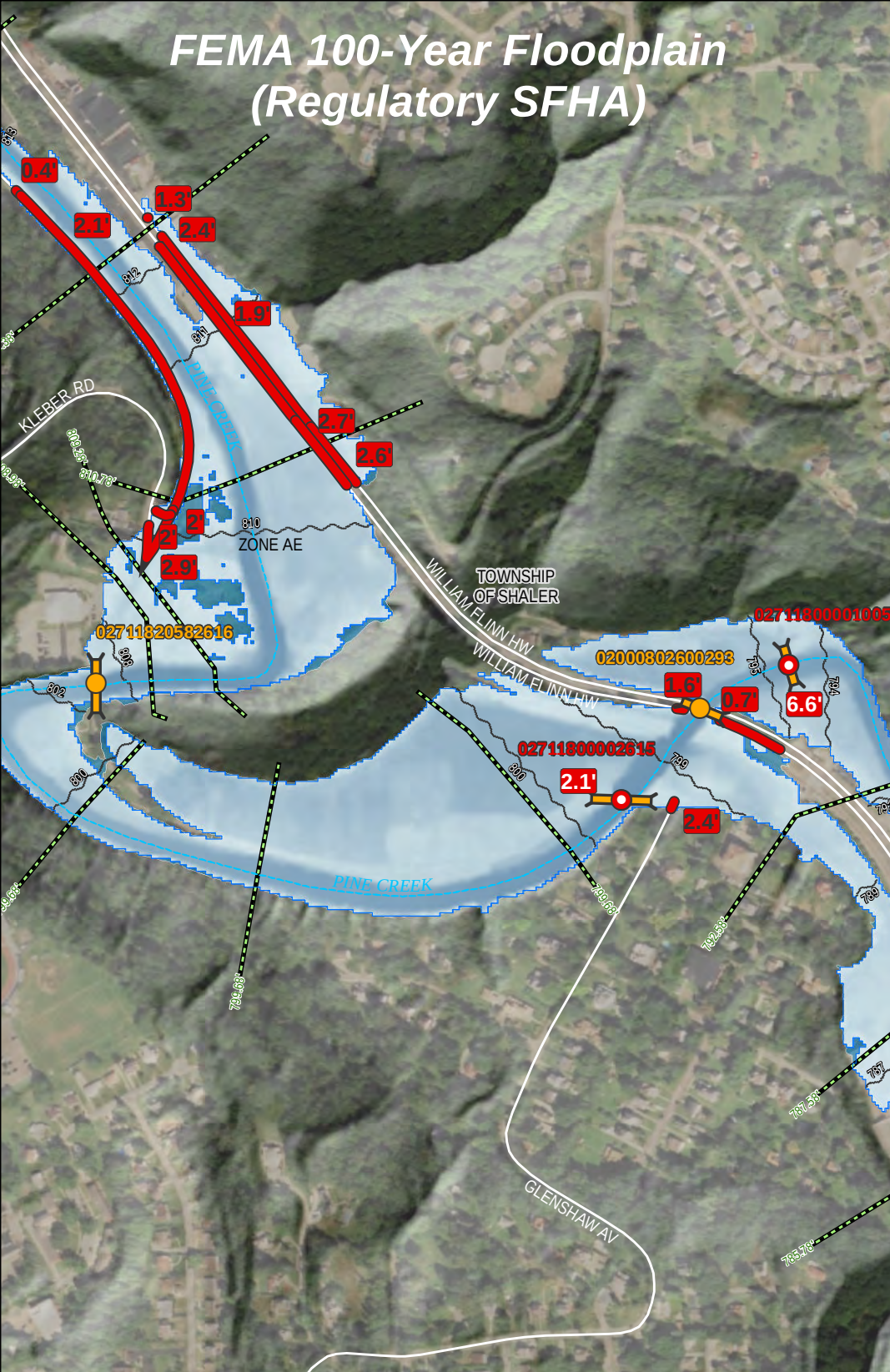
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(Methodology and Limitations Provided in Project Study Report)

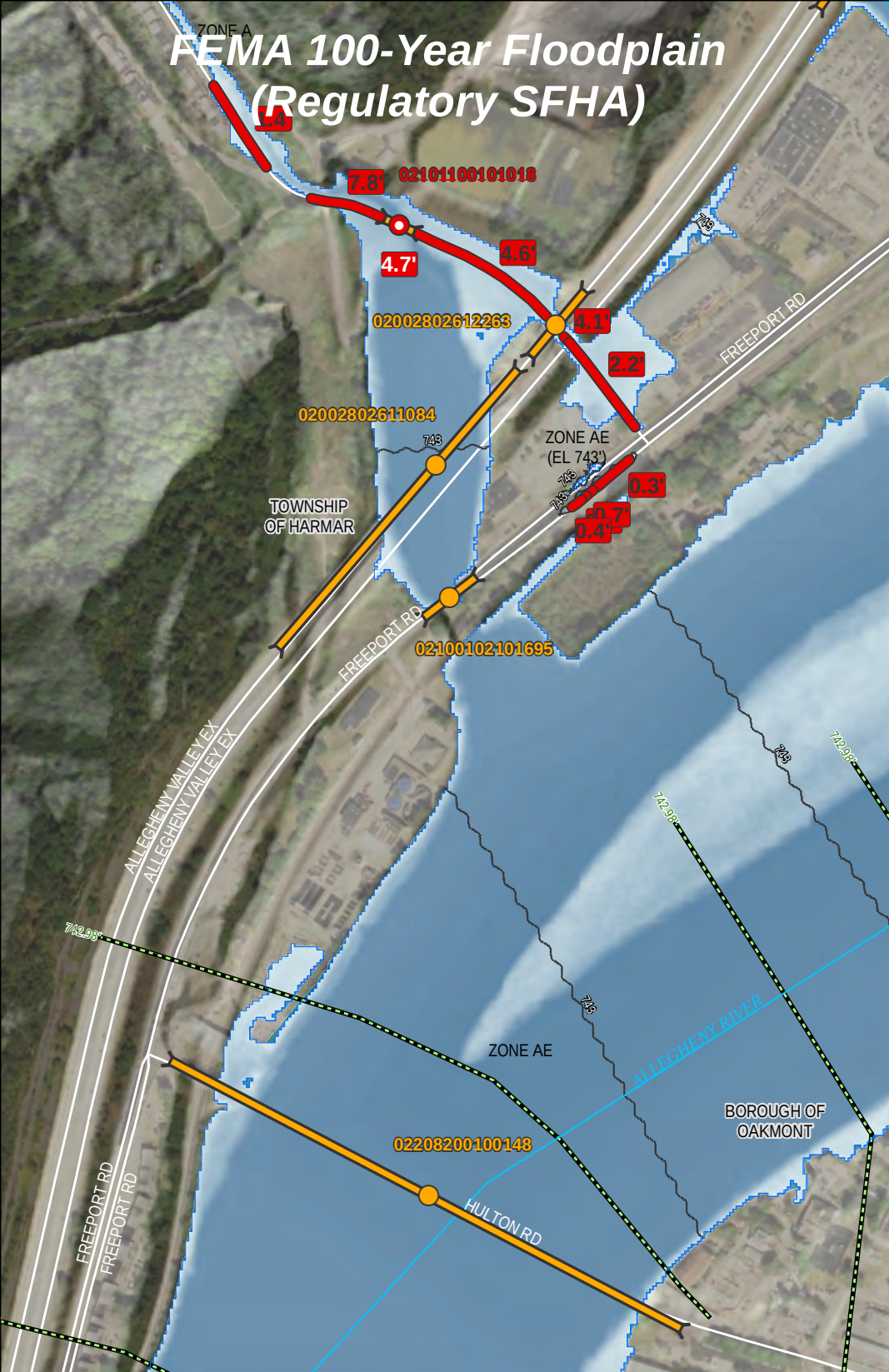
Sheet 58 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

Feet
0 1,000

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

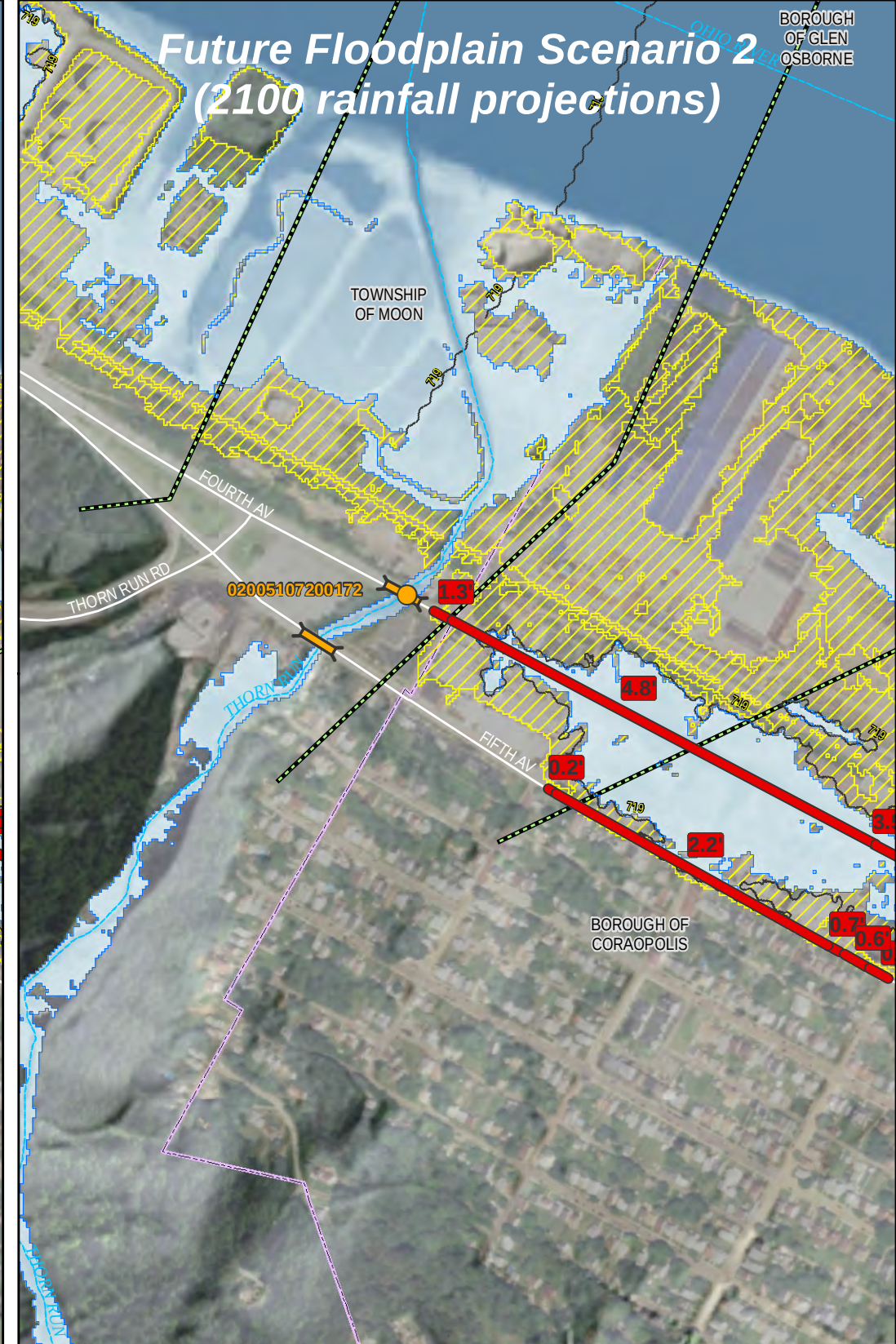
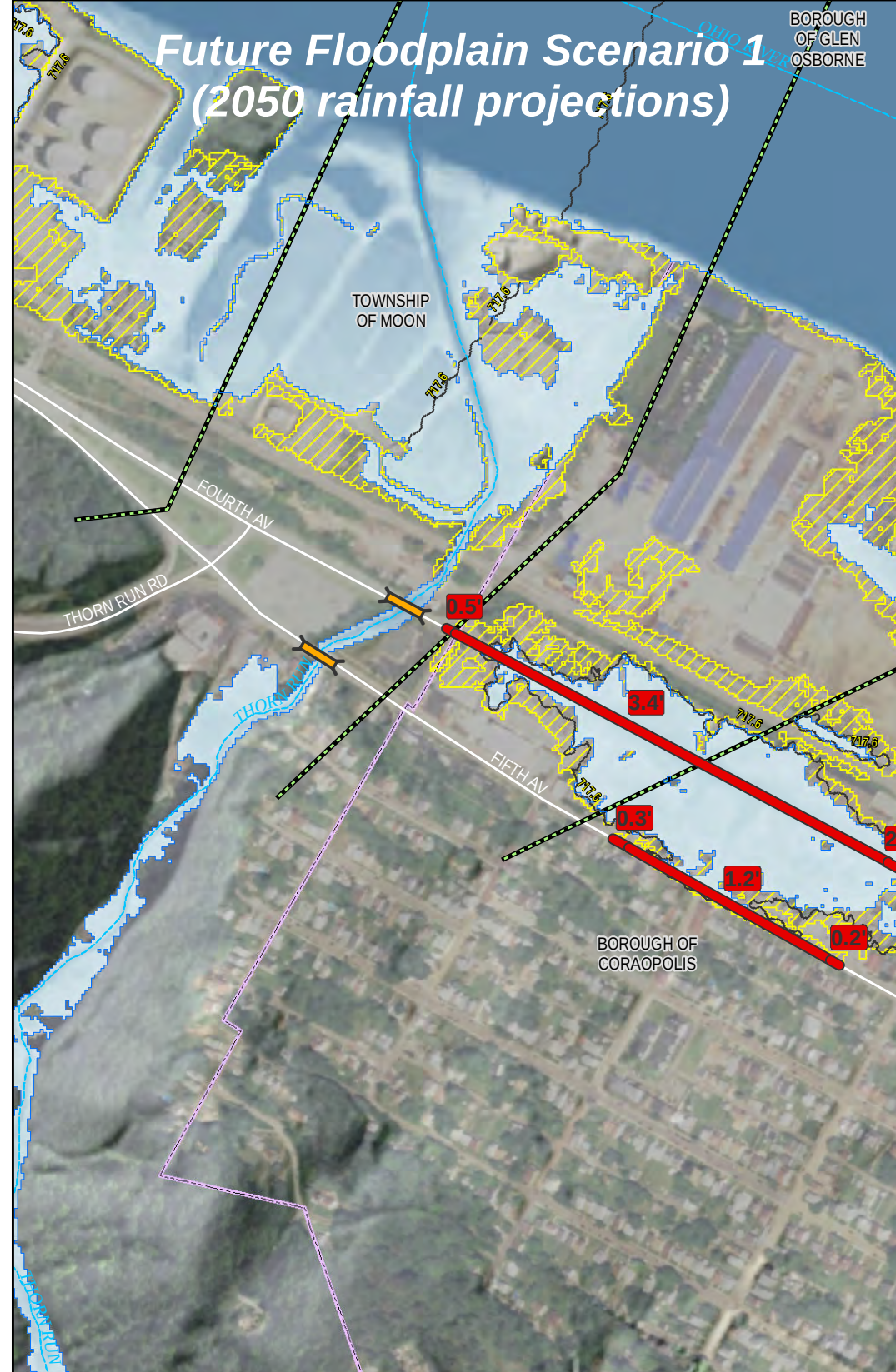
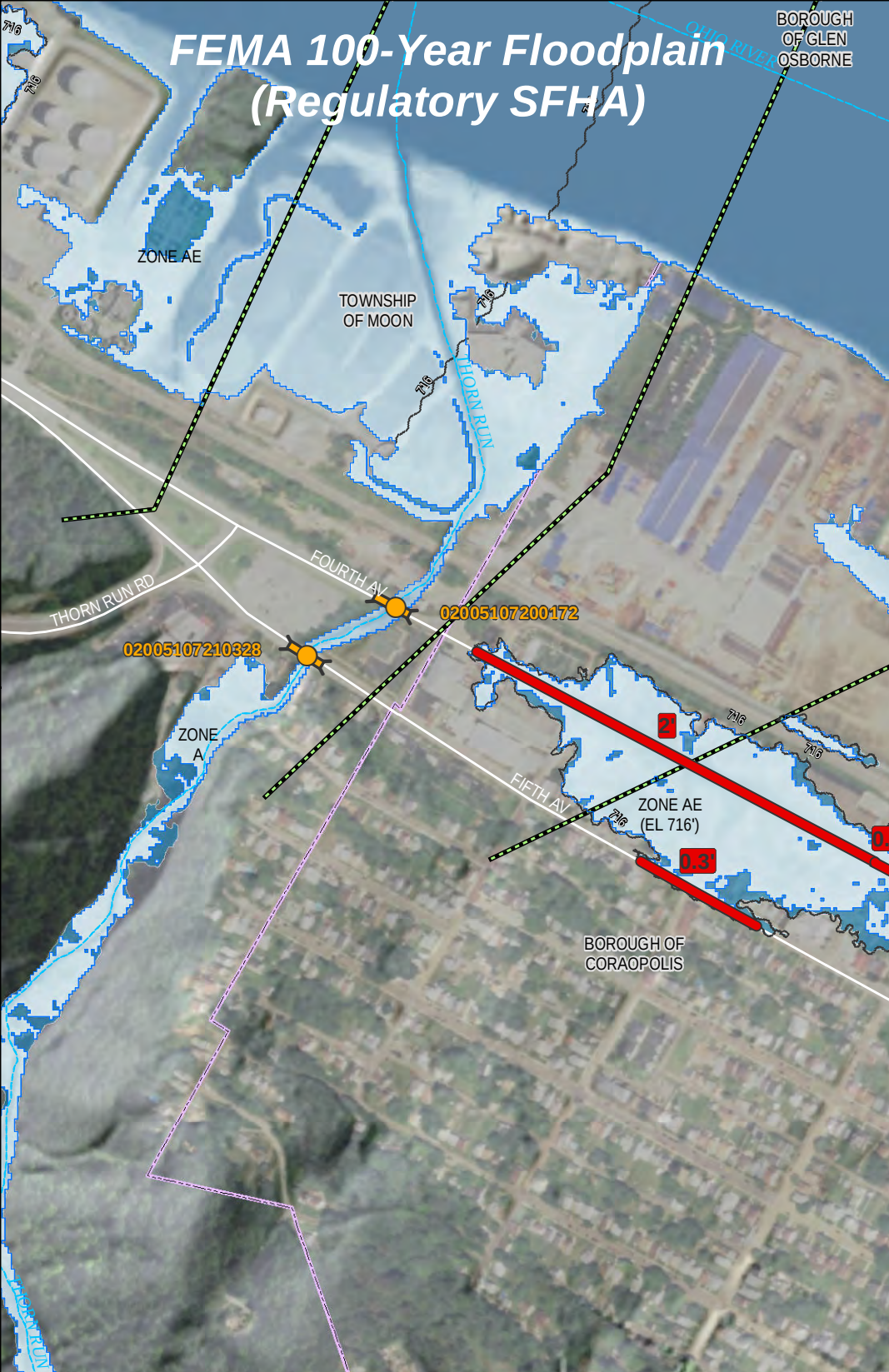
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(Methodology and Limitations Provided in Project Study Report)

Sheet 60 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	
	Vulnerable Bridge - Mean Depth in Feet i.e. 3.28'
	Bridge Points - BRIDGE ID i.e. 23100100301362
	Bridge Centerlines
	Vulnerable Roadway - Mean Depth in Feet i.e. 3.28'
	Roadway - i.e. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

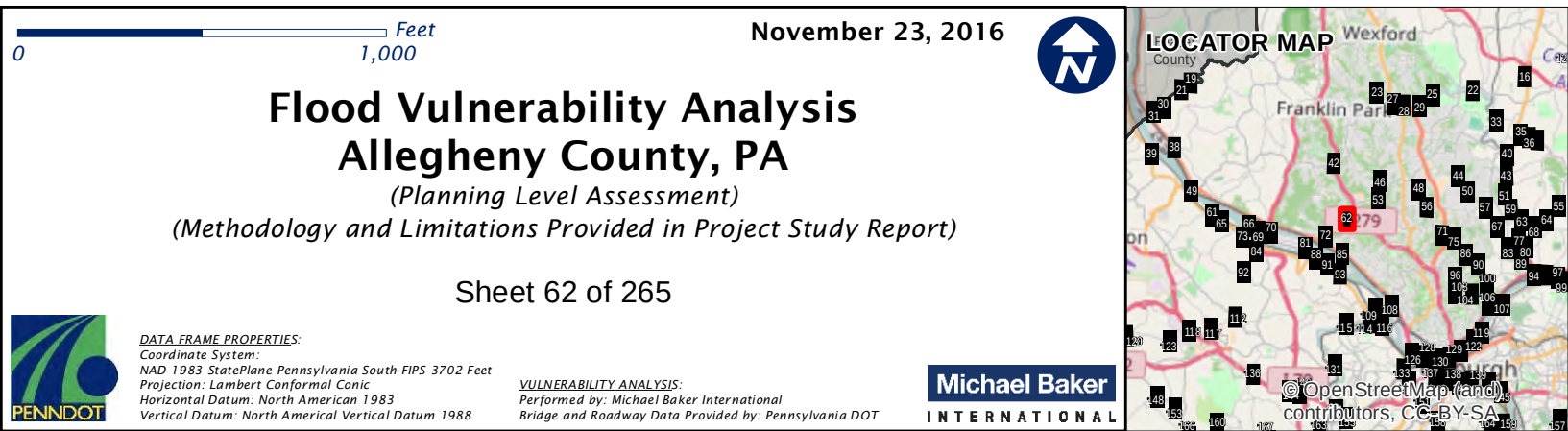
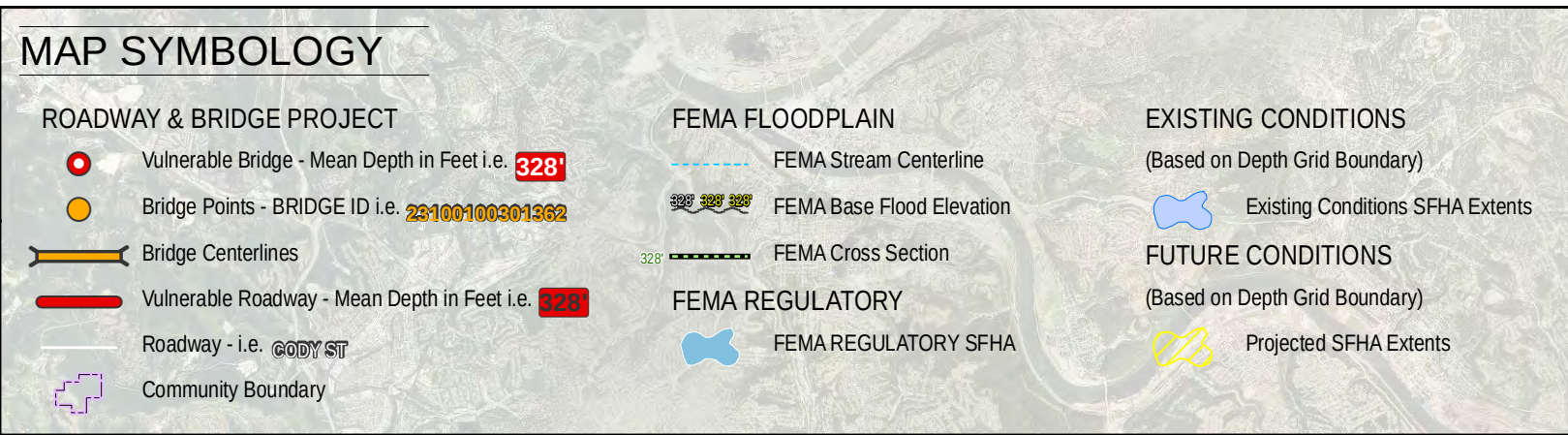
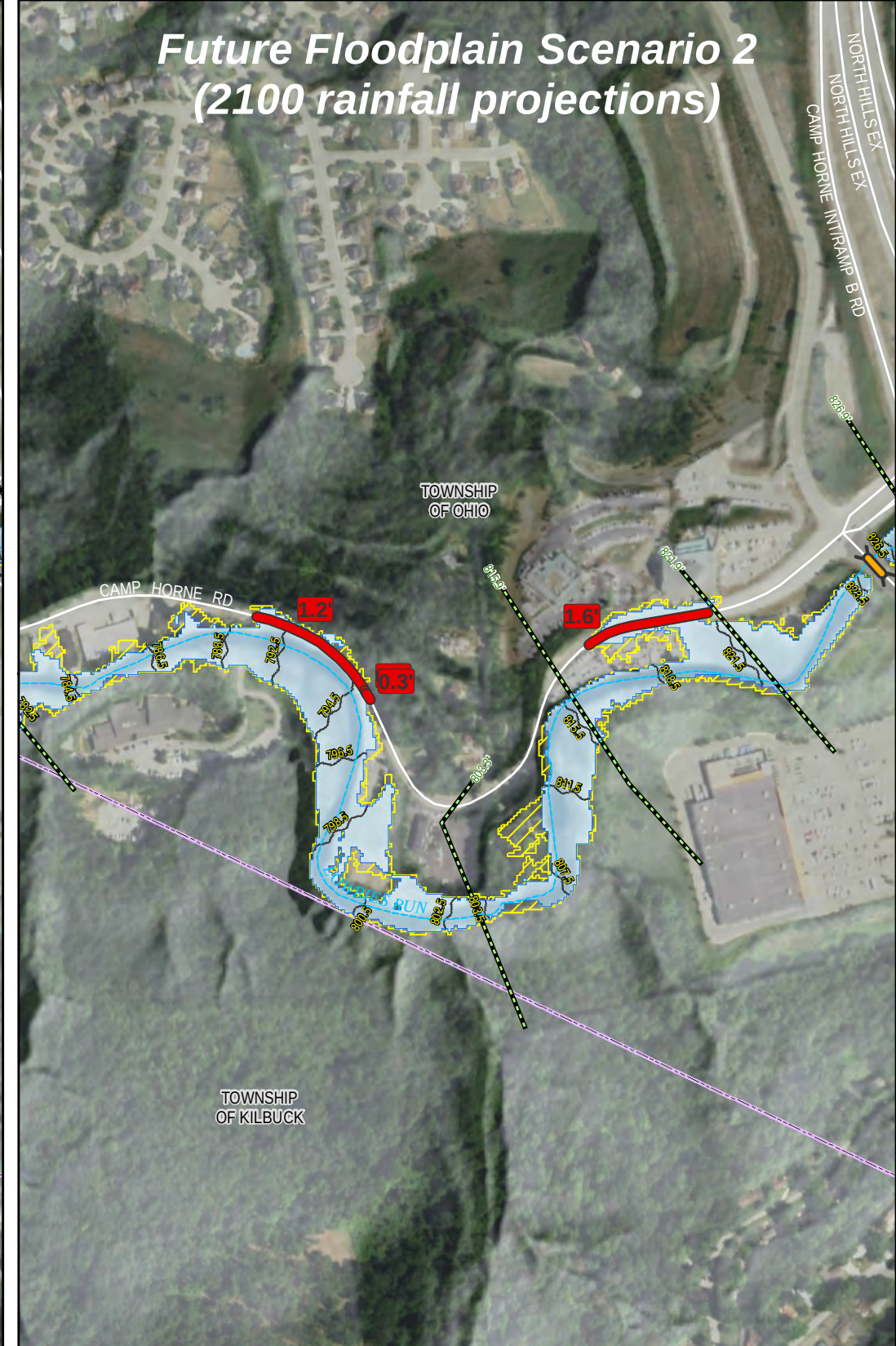
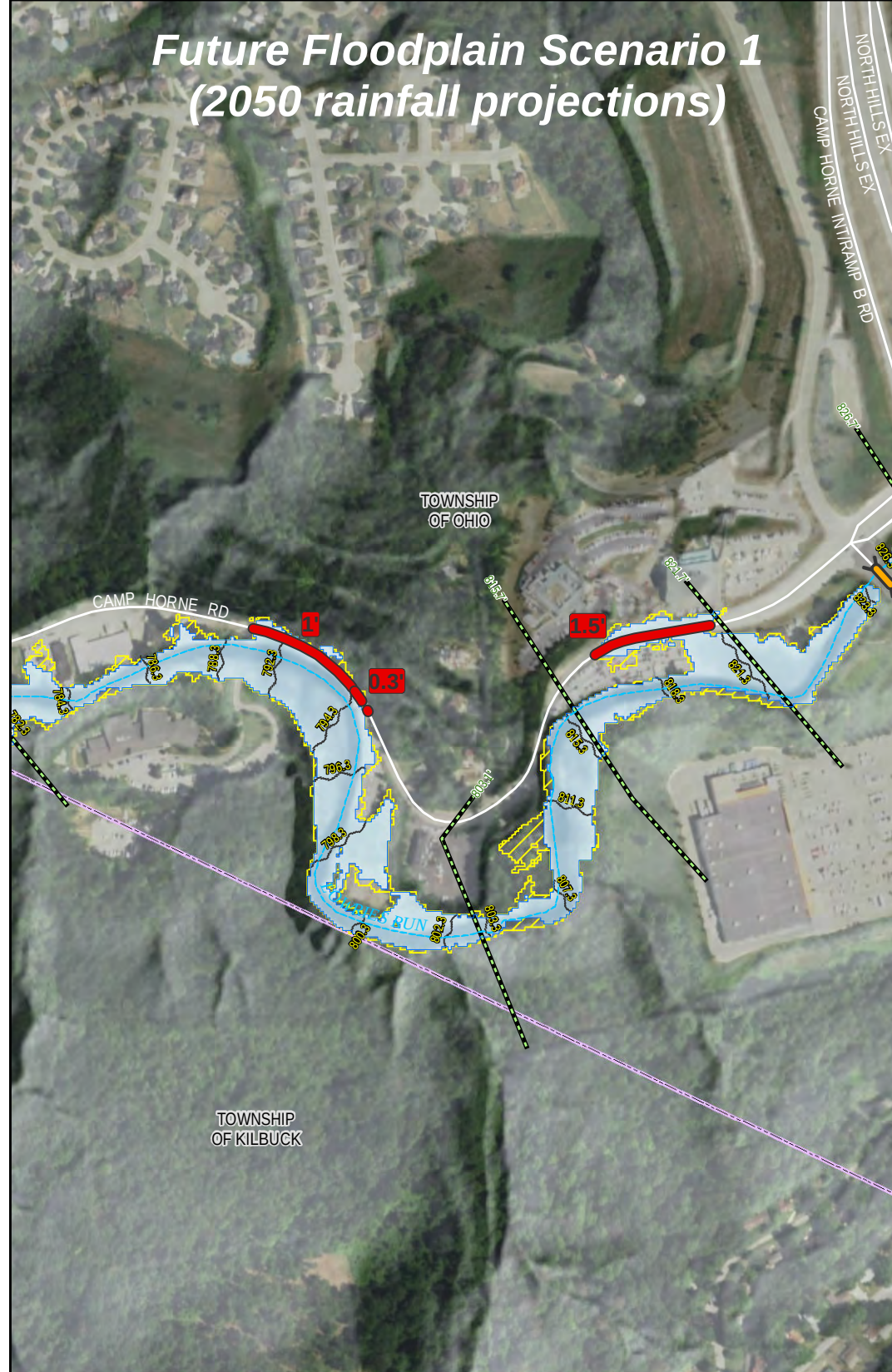
Sheet 61 of 265

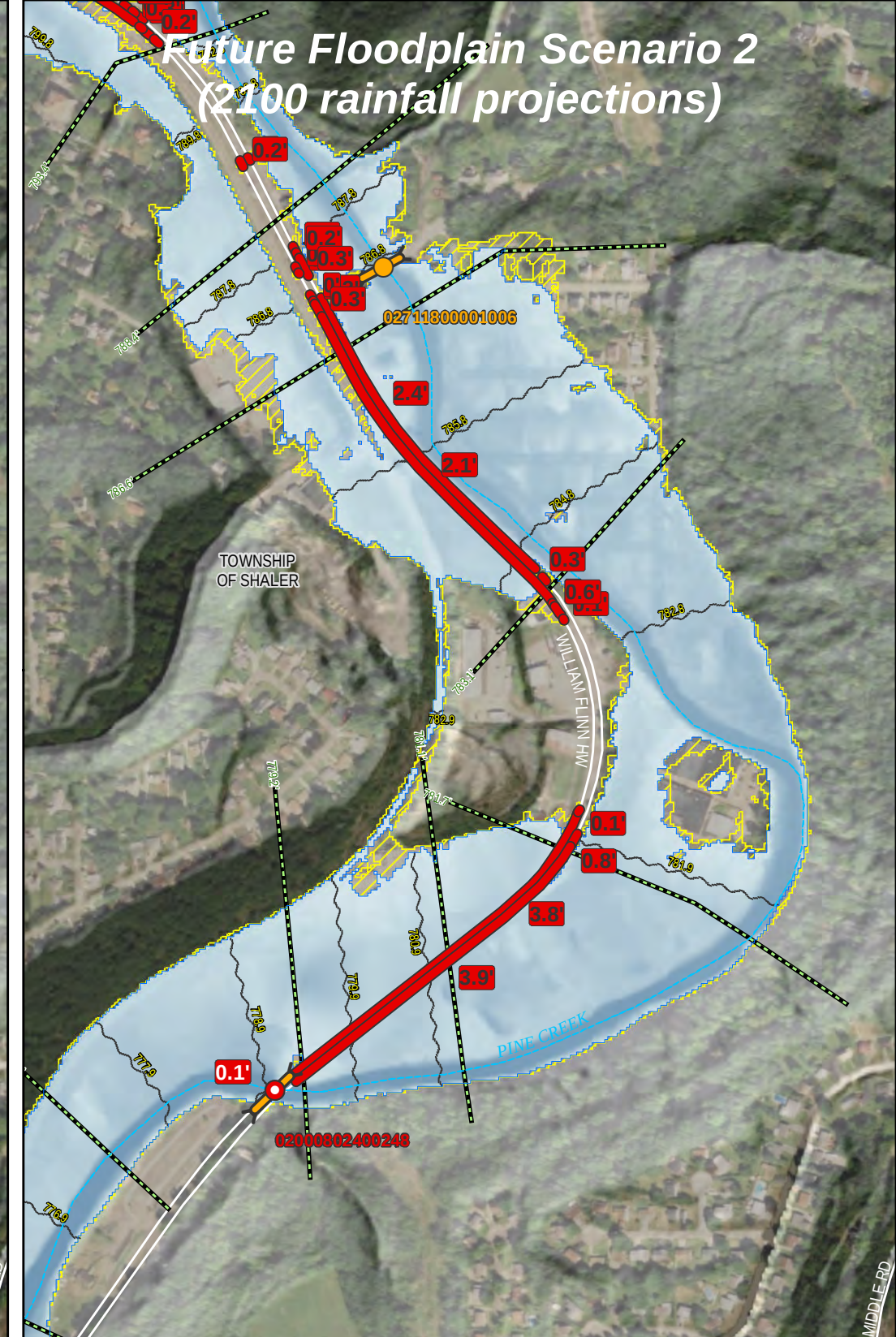
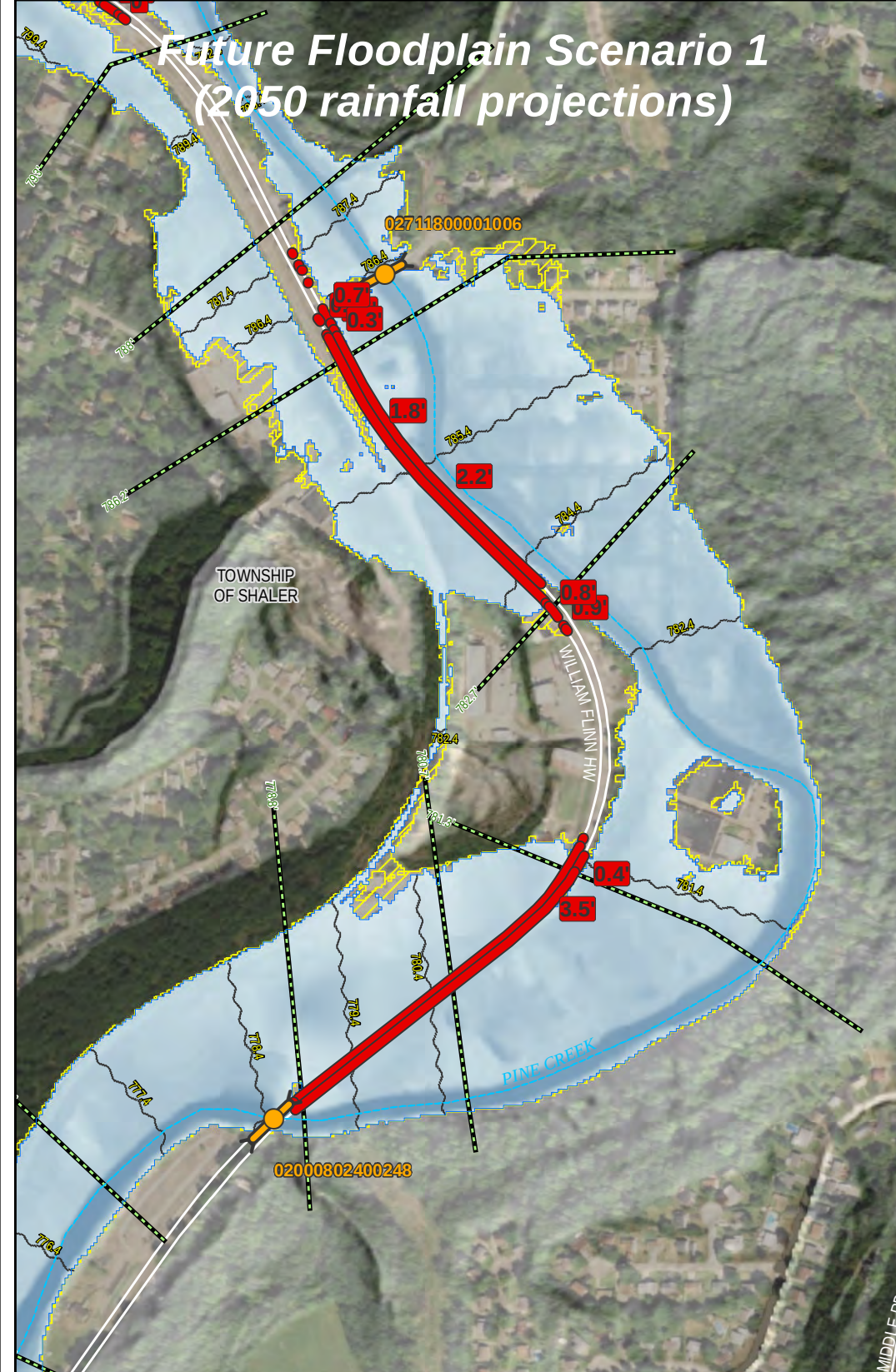
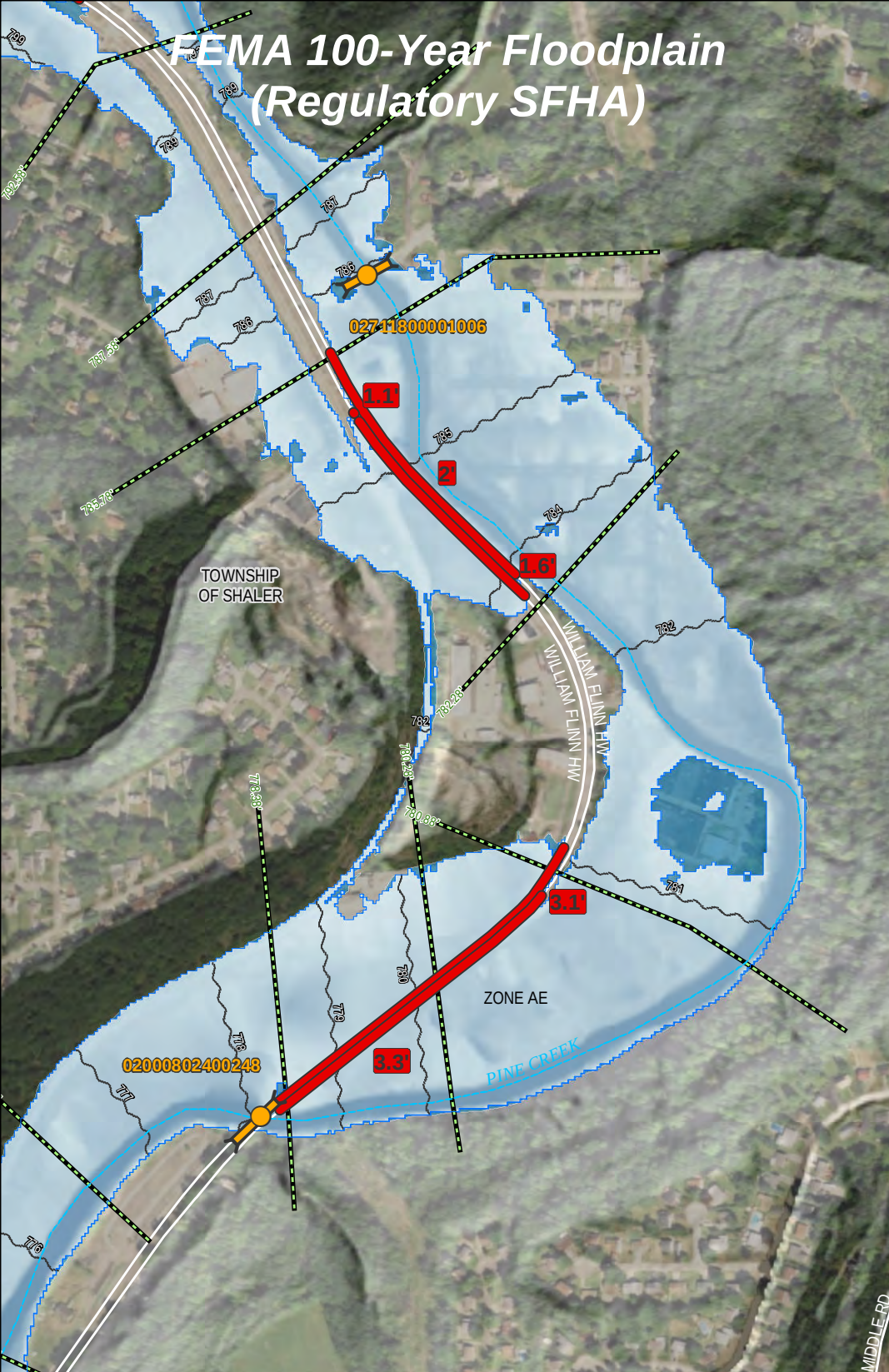
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL

LOCATOR MAP





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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

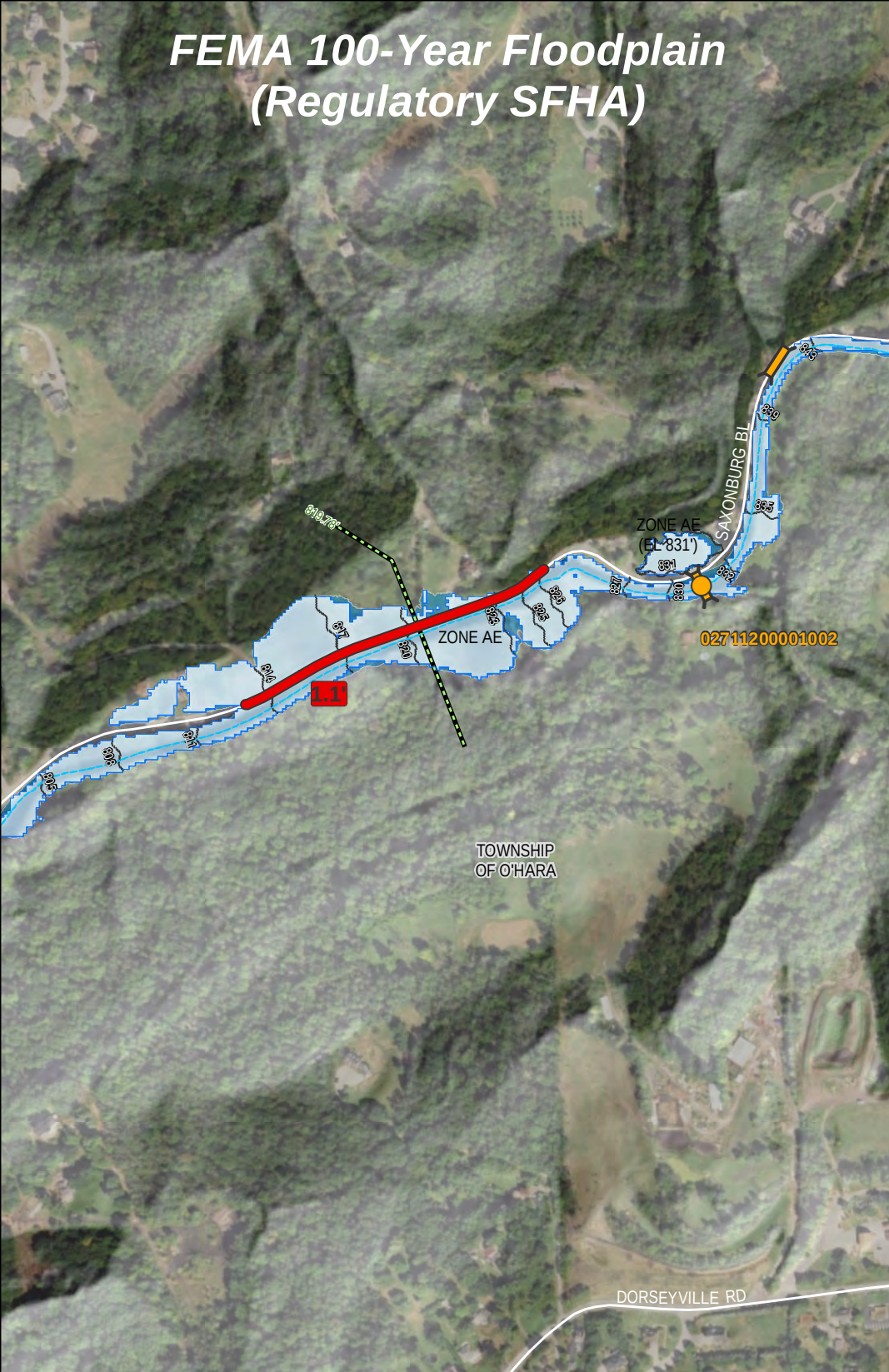
Sheet 63 of 265

DATA FRAME PROPERTIES:
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Vertical Datum: North American Vertical Datum 1988

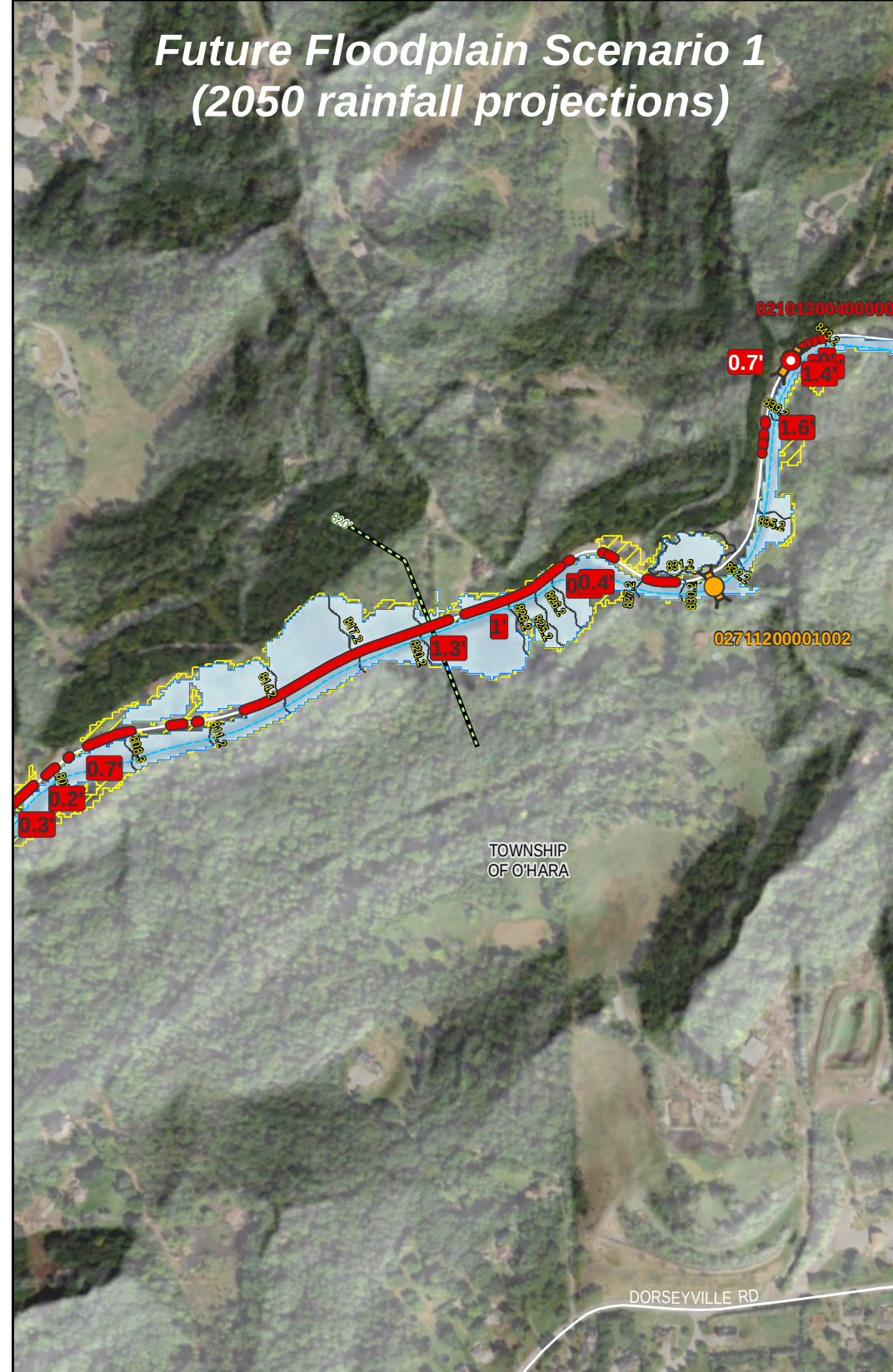
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

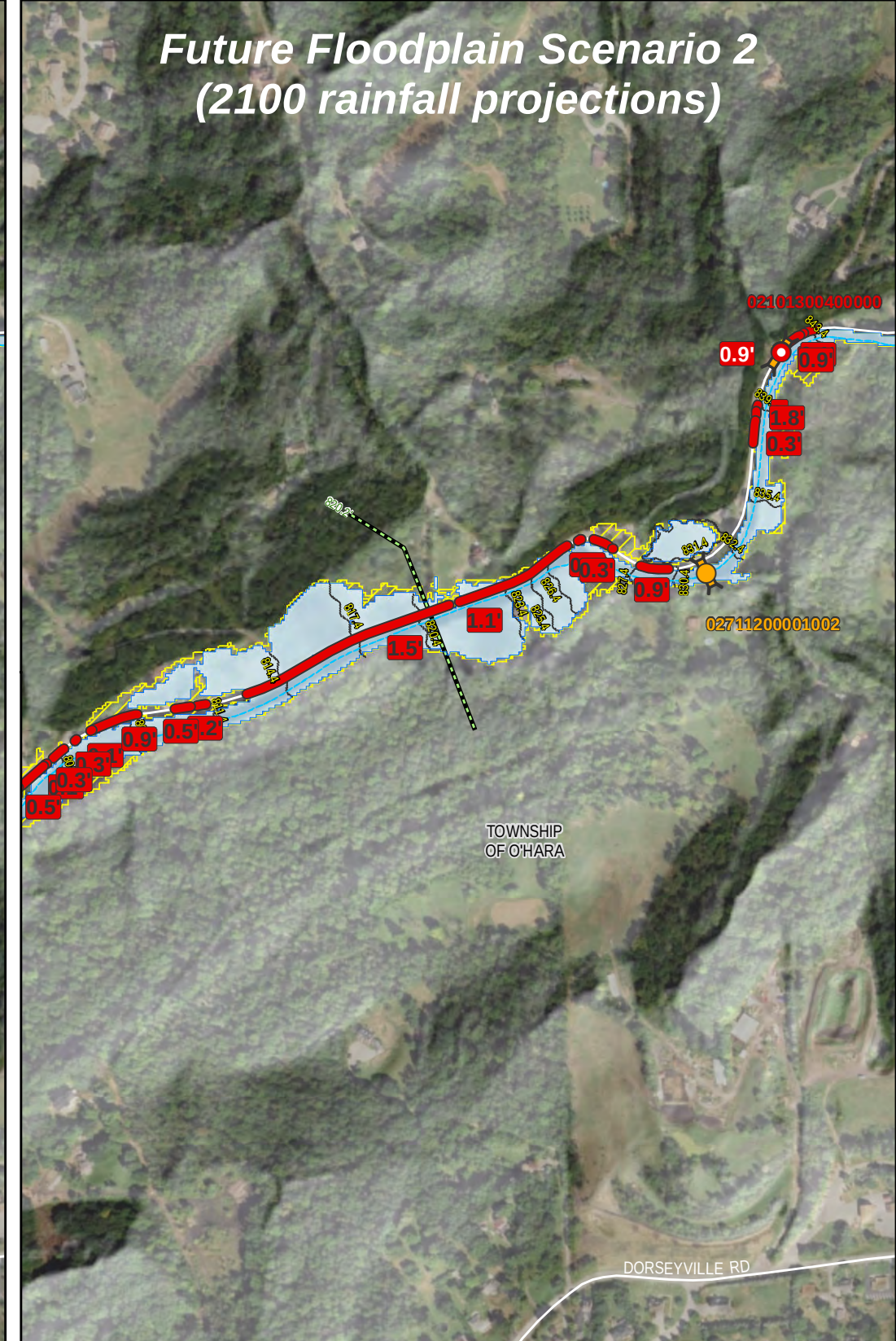
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

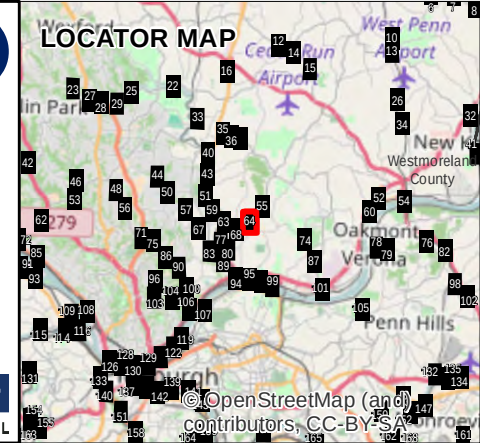
Sheet 64 of 265

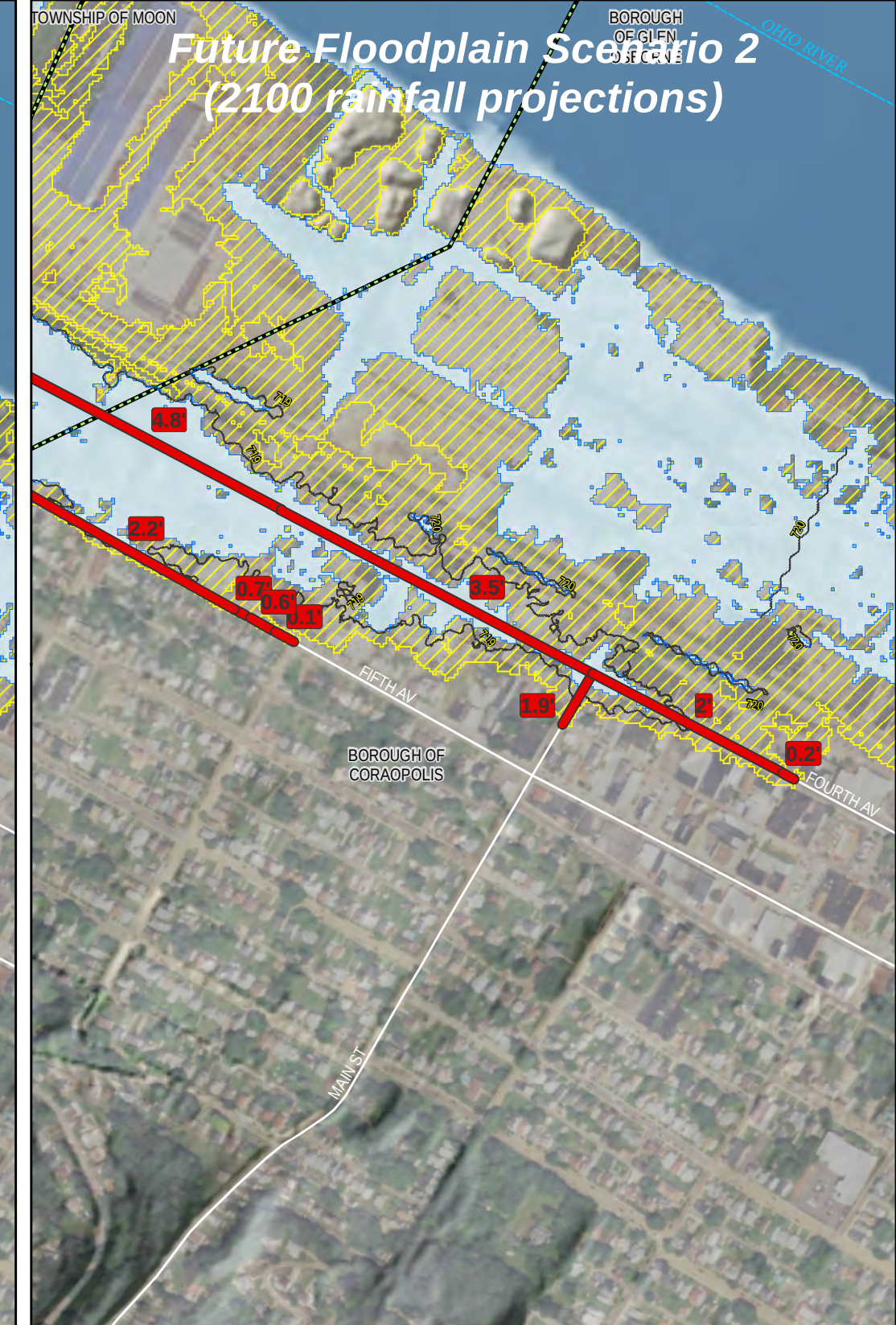
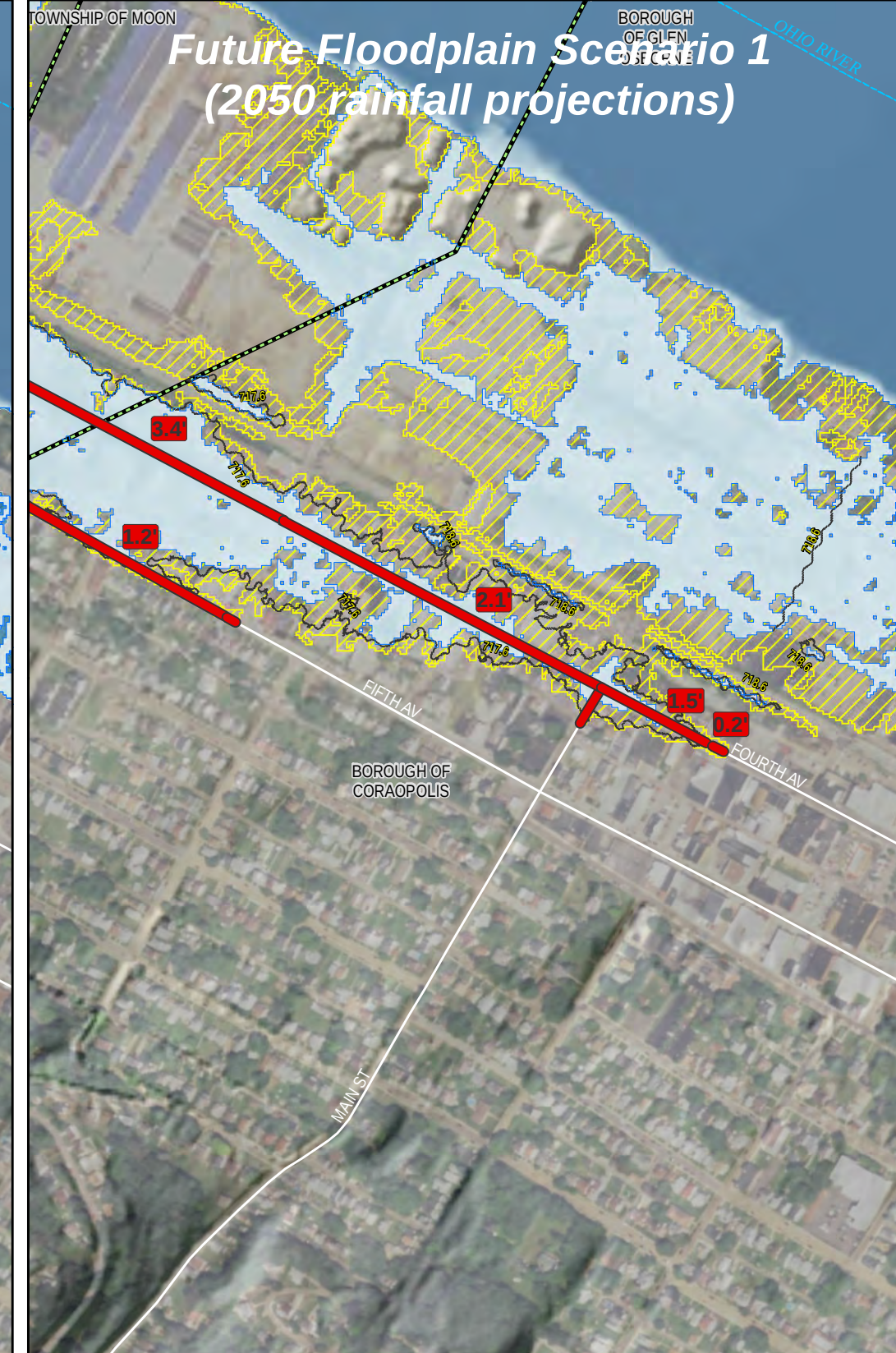
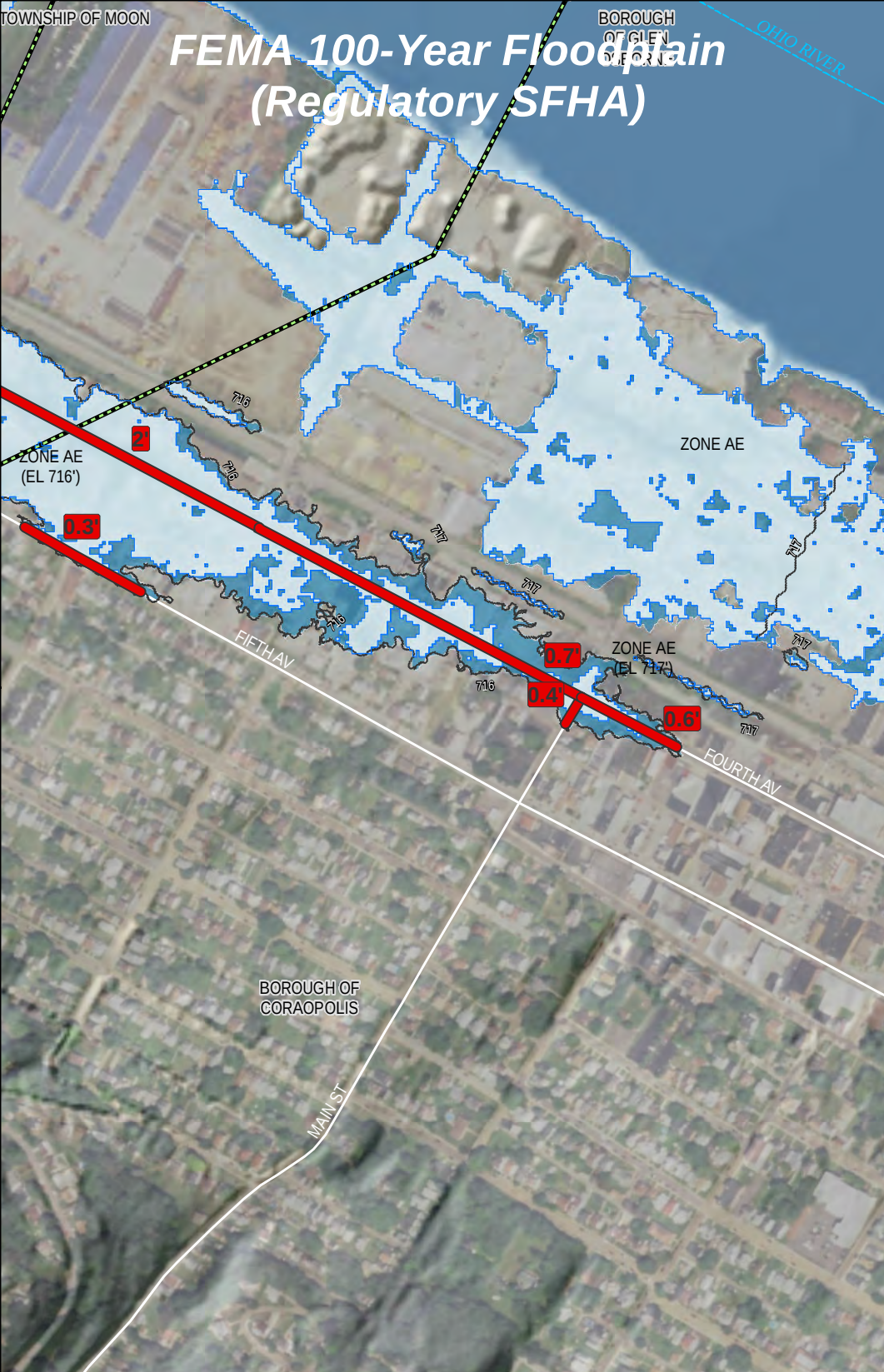


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**





MAP SYMBOLOLOGY

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. **CODY ST**
- 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

0

1,000

Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

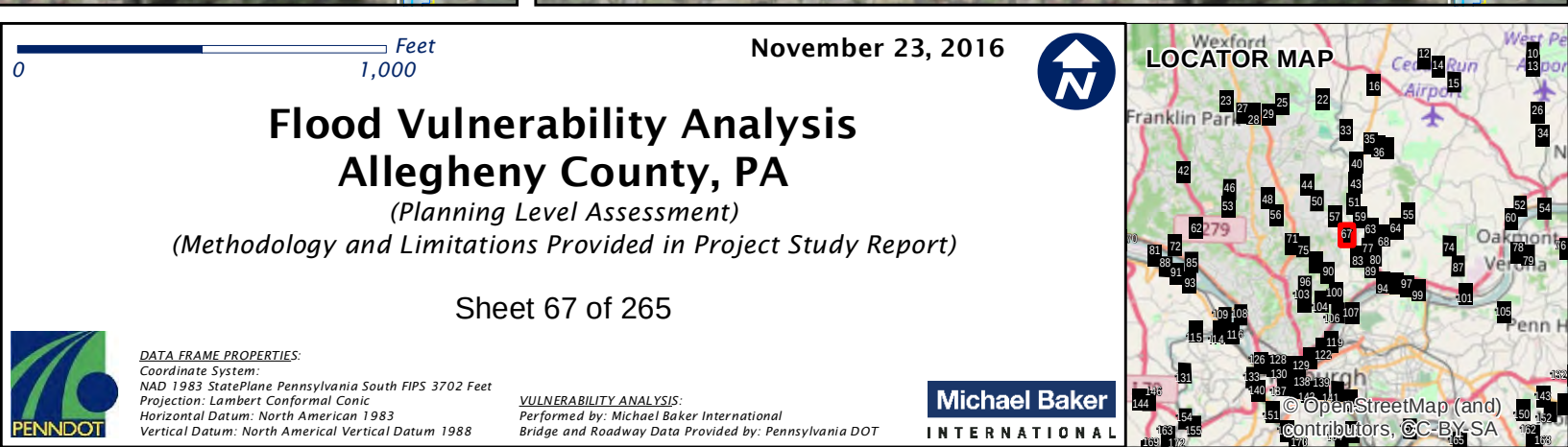
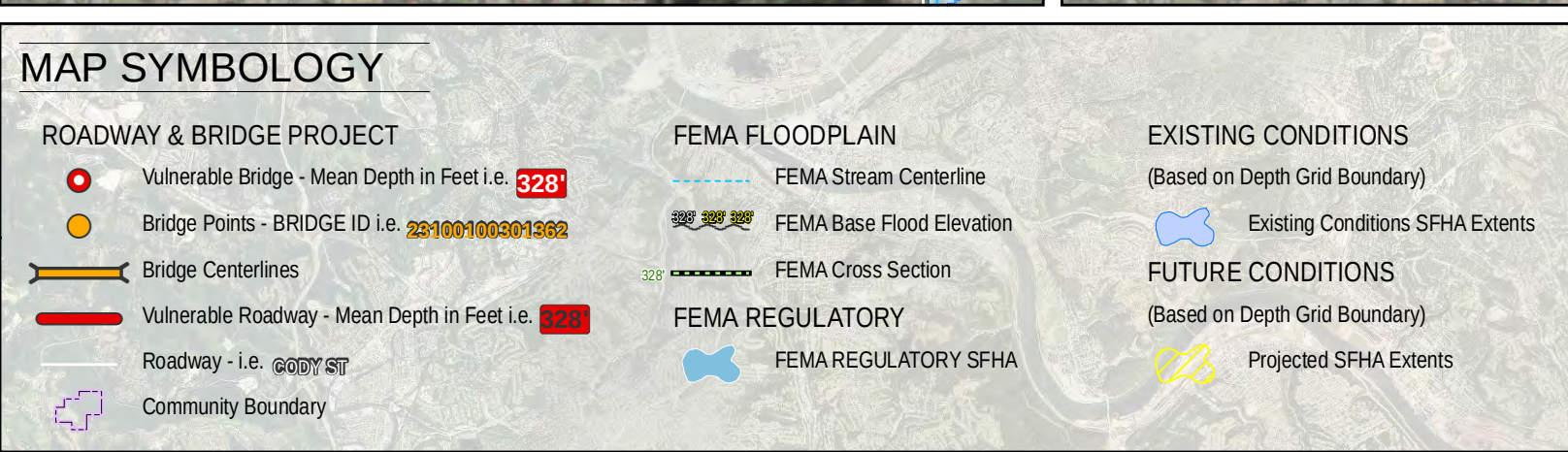
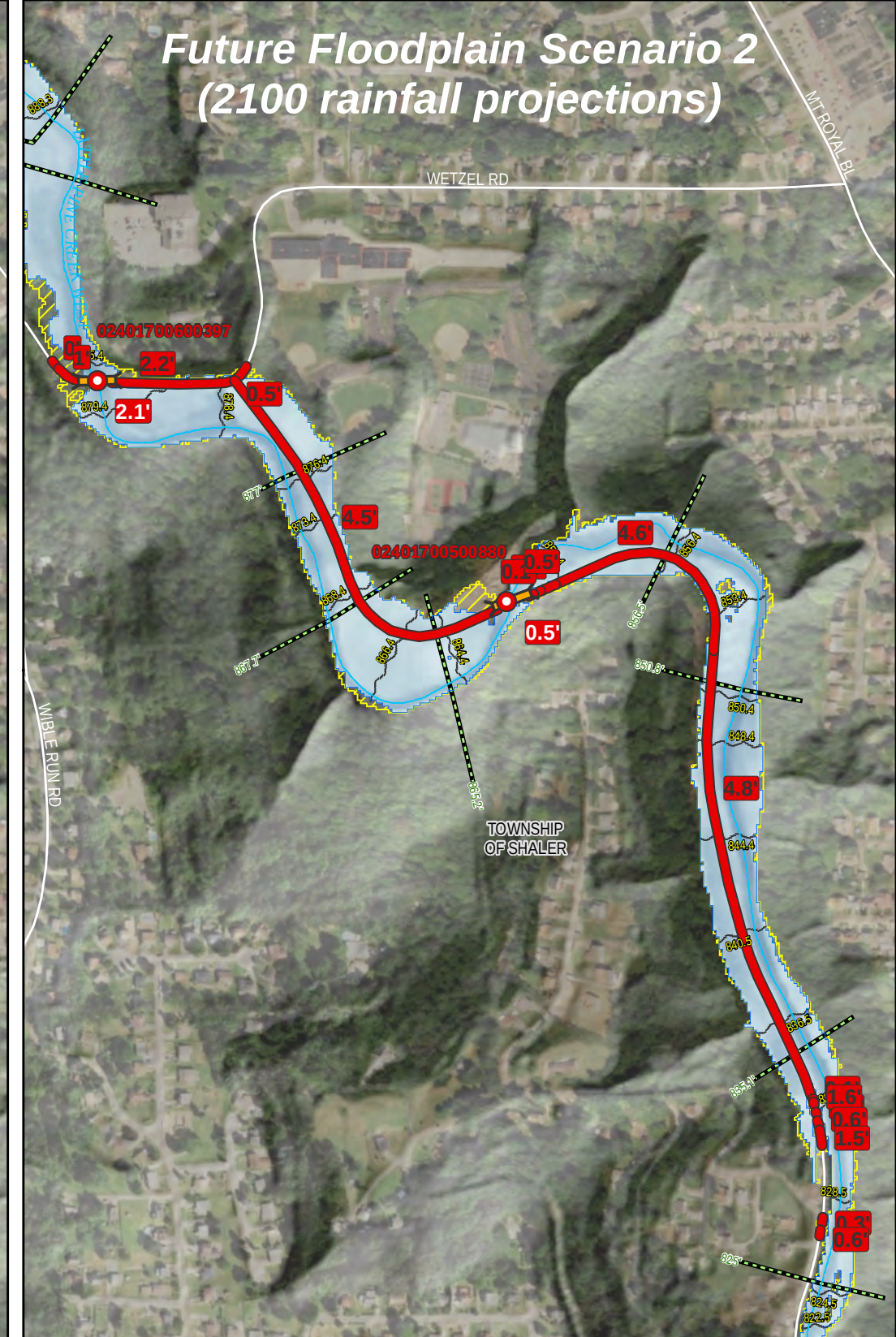
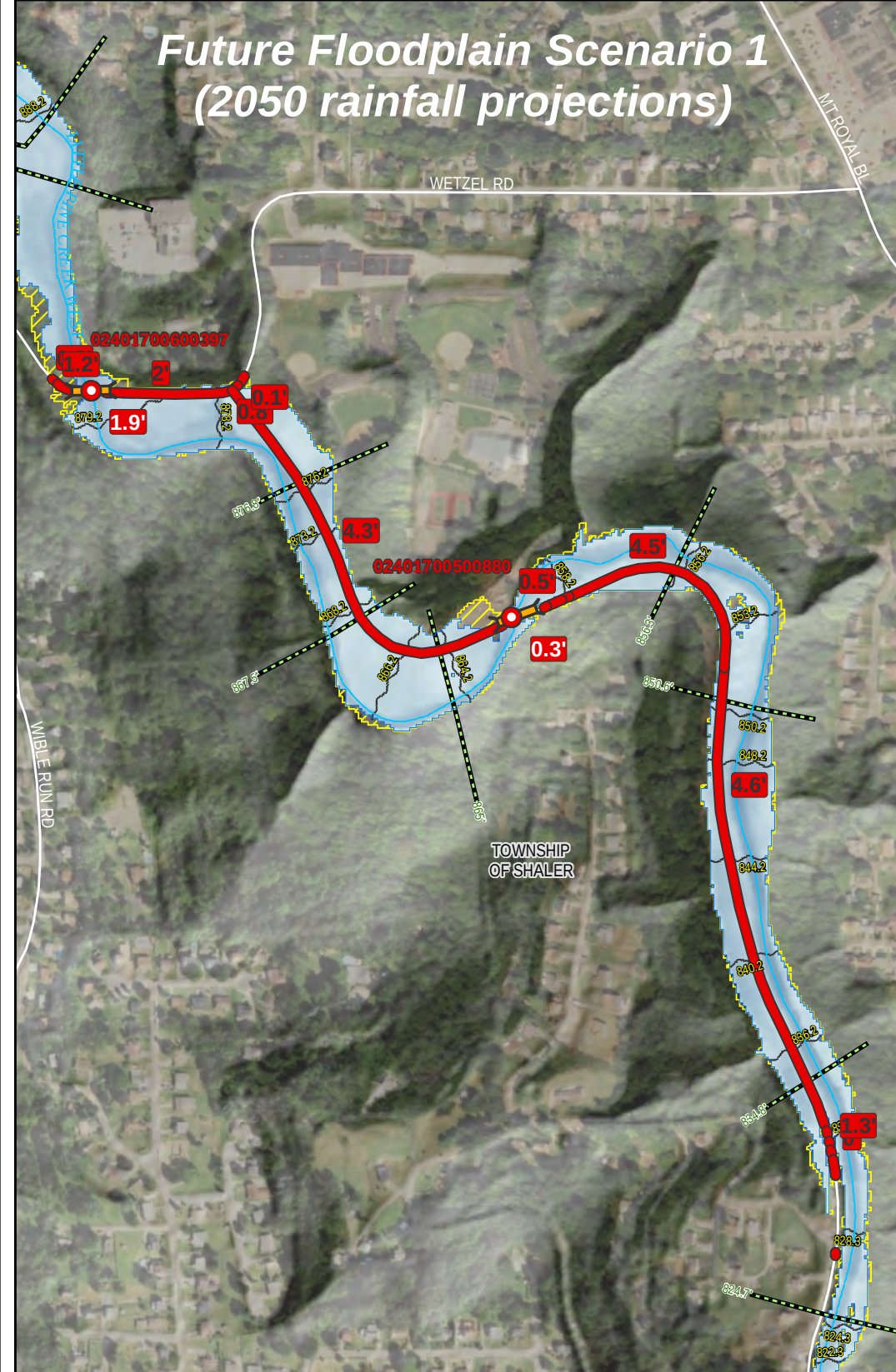
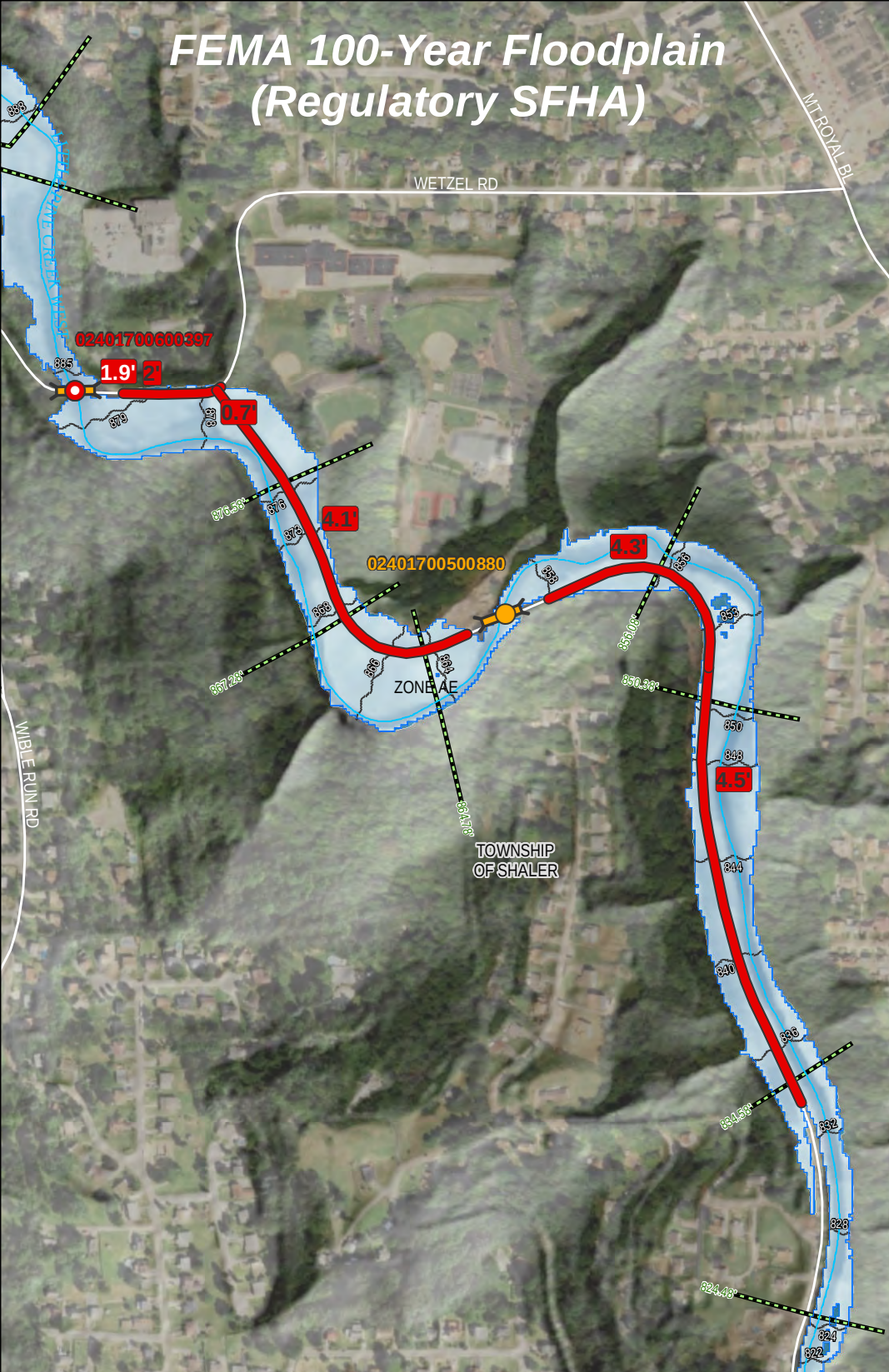
Sheet 65 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL

LOCATOR MAP





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. **CODY ST**
 - 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

0

Feet

1,000

November 23, 2016

N

Flood Vulnerability Analysis

Allegheny County, PA

(Planning Level Assessment)

(Methodology and Limitations Provided in Project Study Report)

Sheet 69 of 265

PENNDOT

DATA FRAME PROPERTIES:

Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:

Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL

LOCATOR MAP

Beaver County

Franklin Park

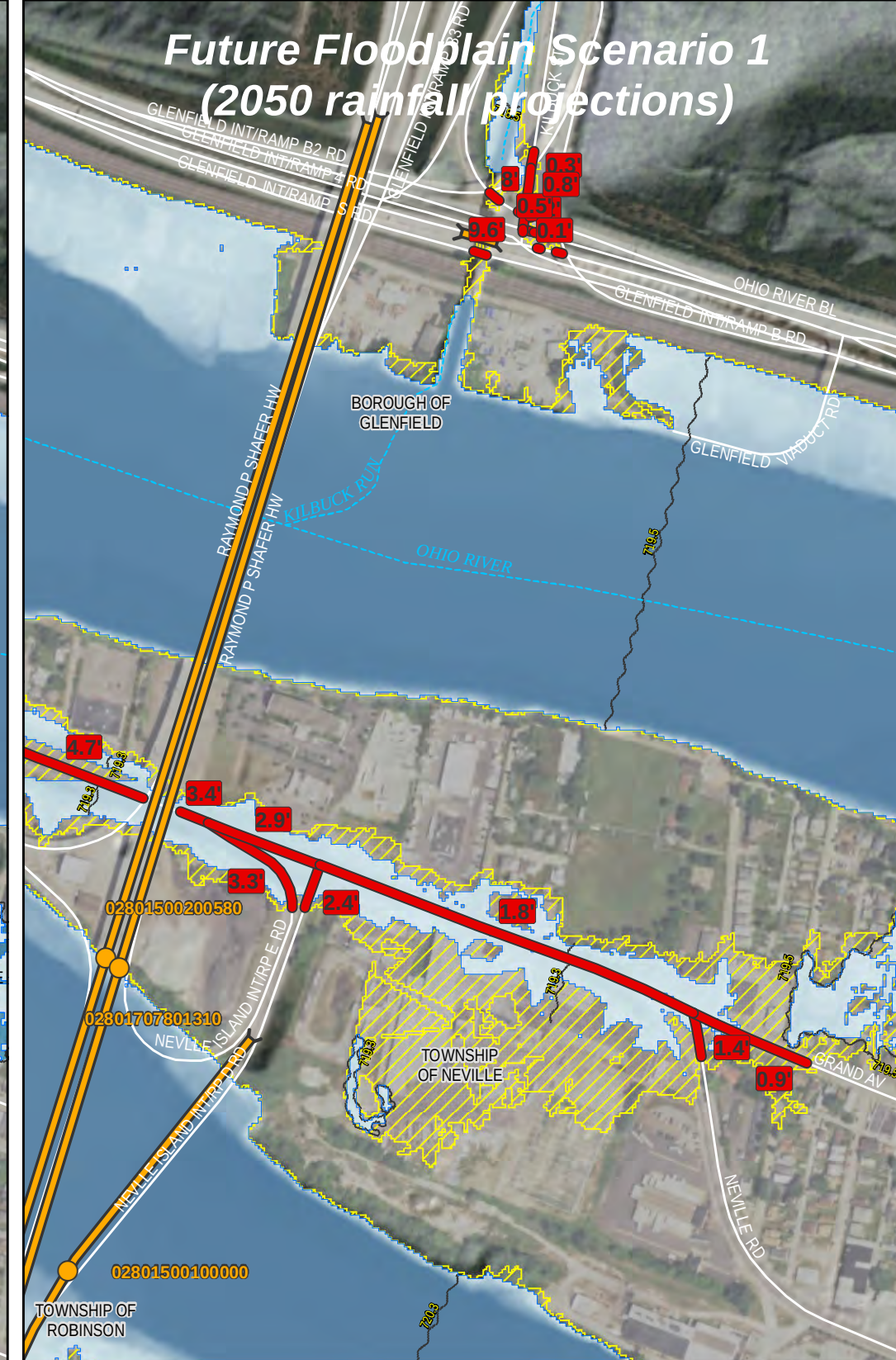
Moon

Washington County

Wexford

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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. **CODY ST**
- 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

0

1,000

Feet

November 23, 2016

N

Flood Vulnerability Analysis

Allegheny County, PA

(Planning Level Assessment)

(Methodology and Limitations Provided in Project Study Report)

Sheet 70 of 265

PENNDOT

DATA FRAME PROPERTIES:

Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

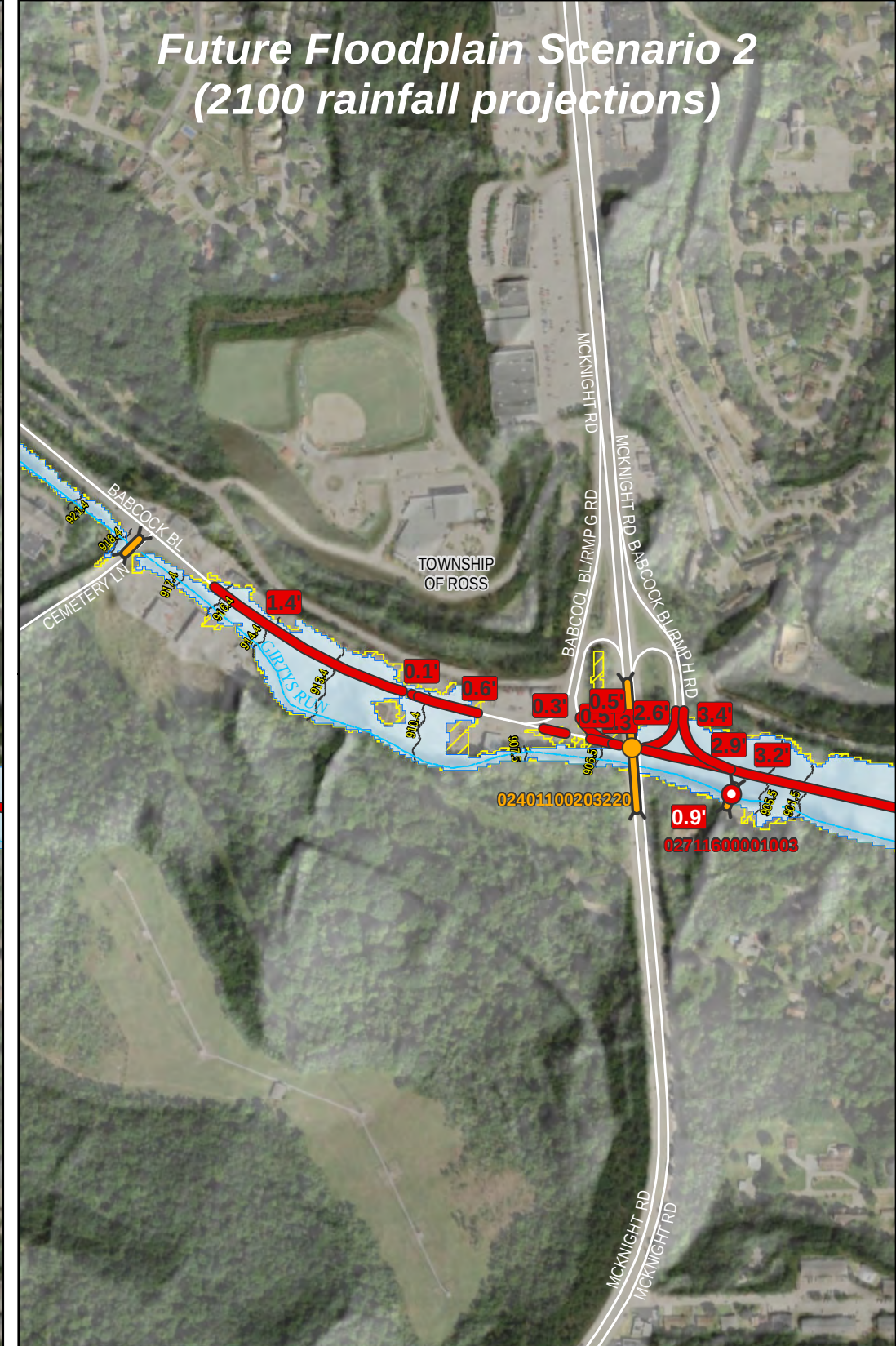
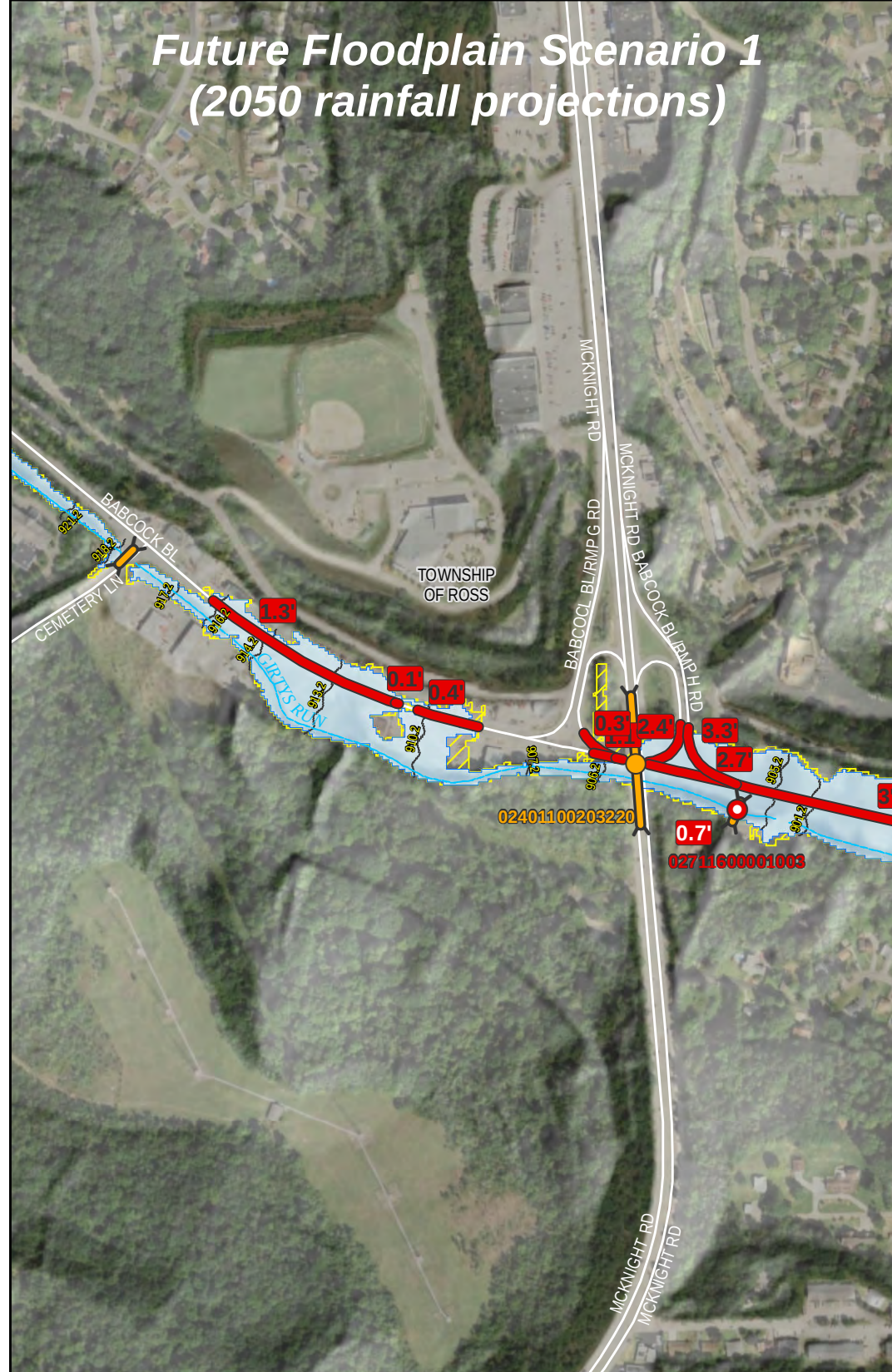
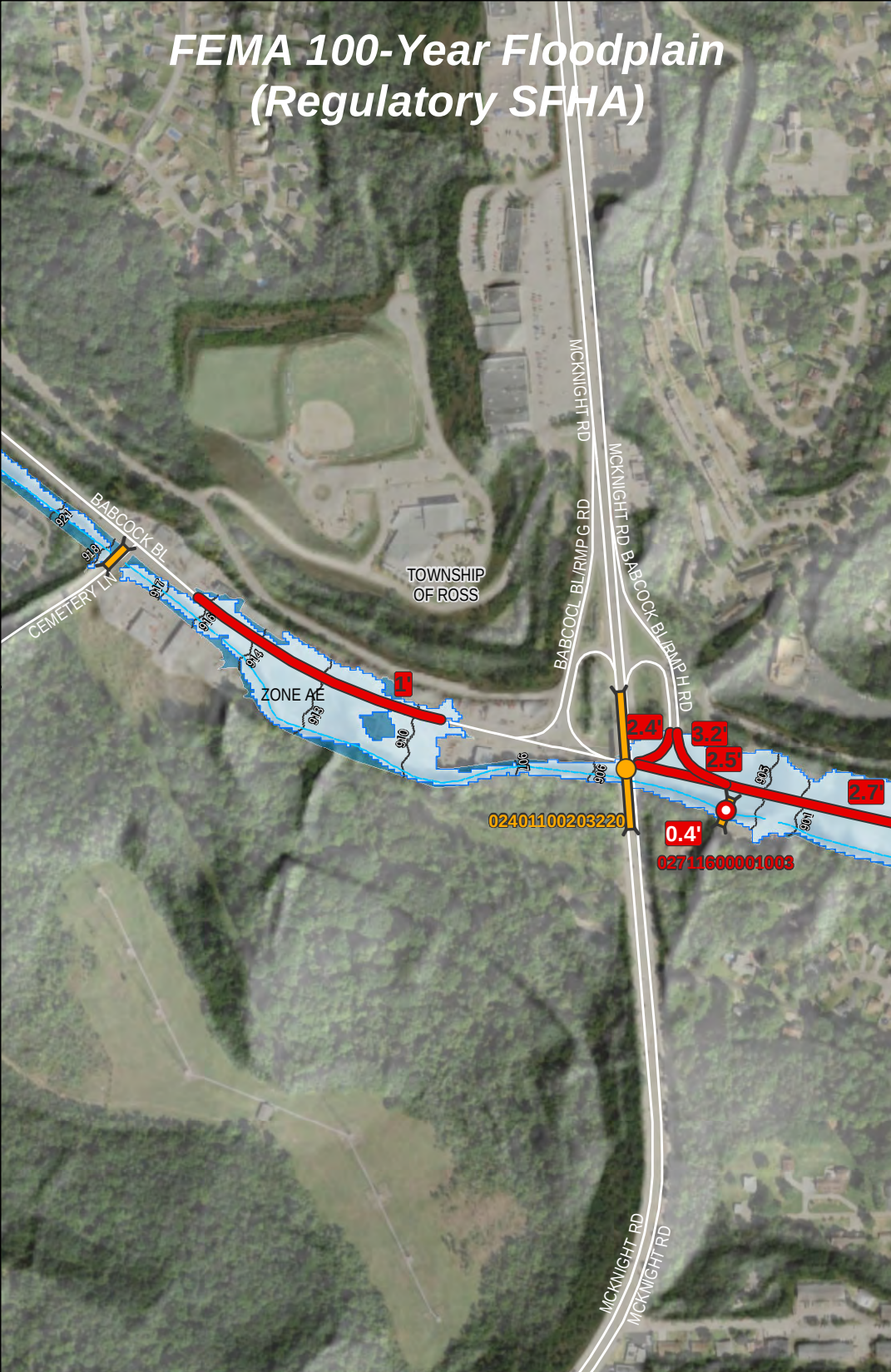
VULNERABILITY ANALYSIS:

Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker

INTERNATIONAL

LOCATOR MAP



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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

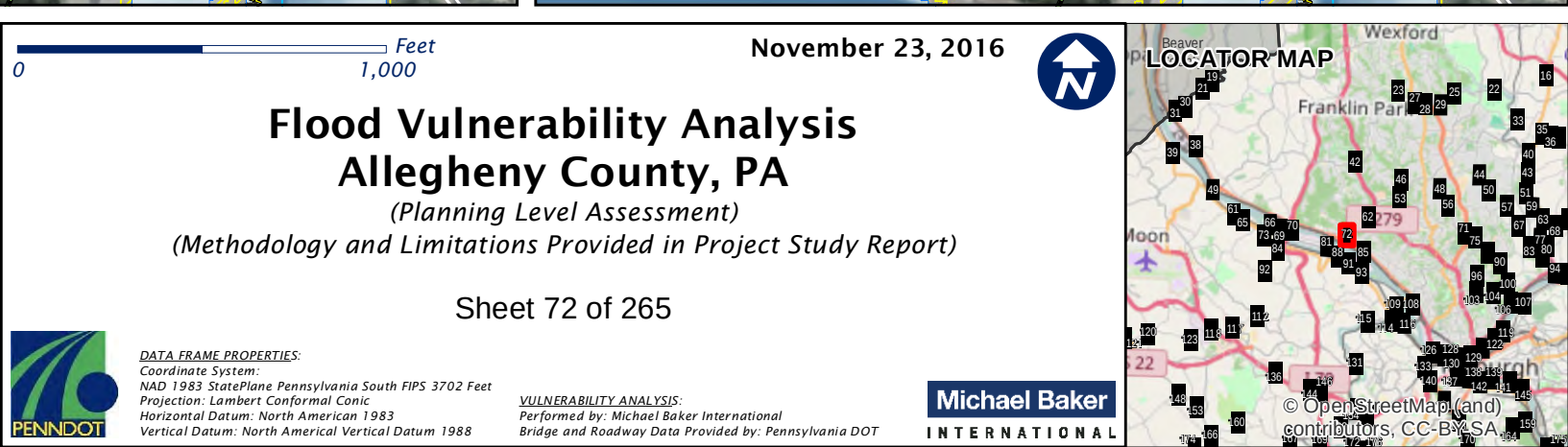
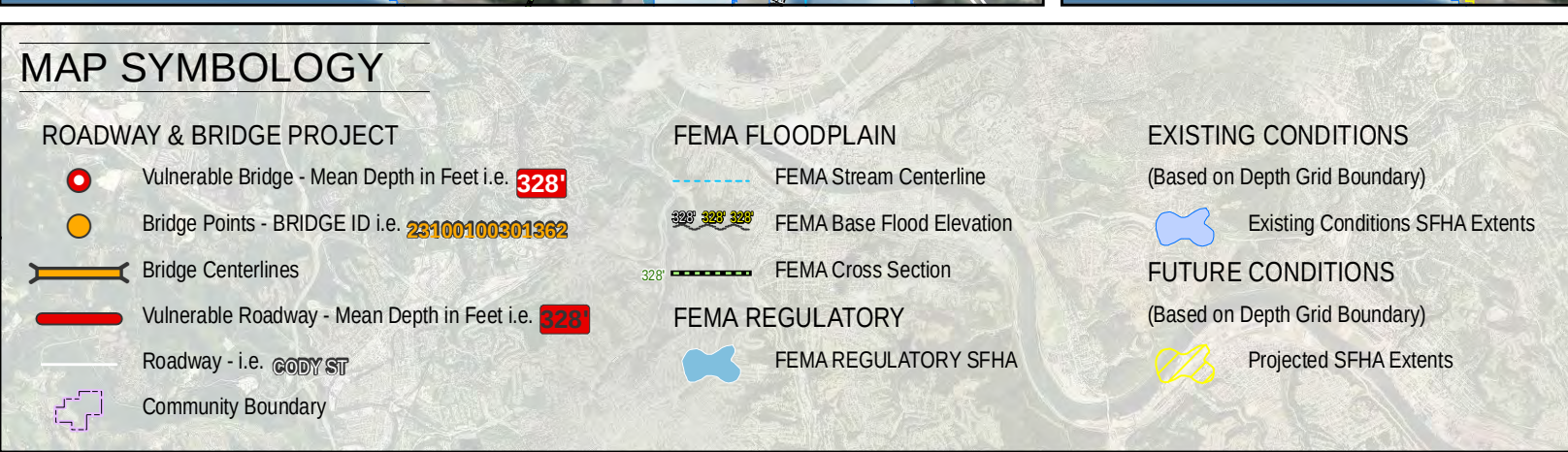
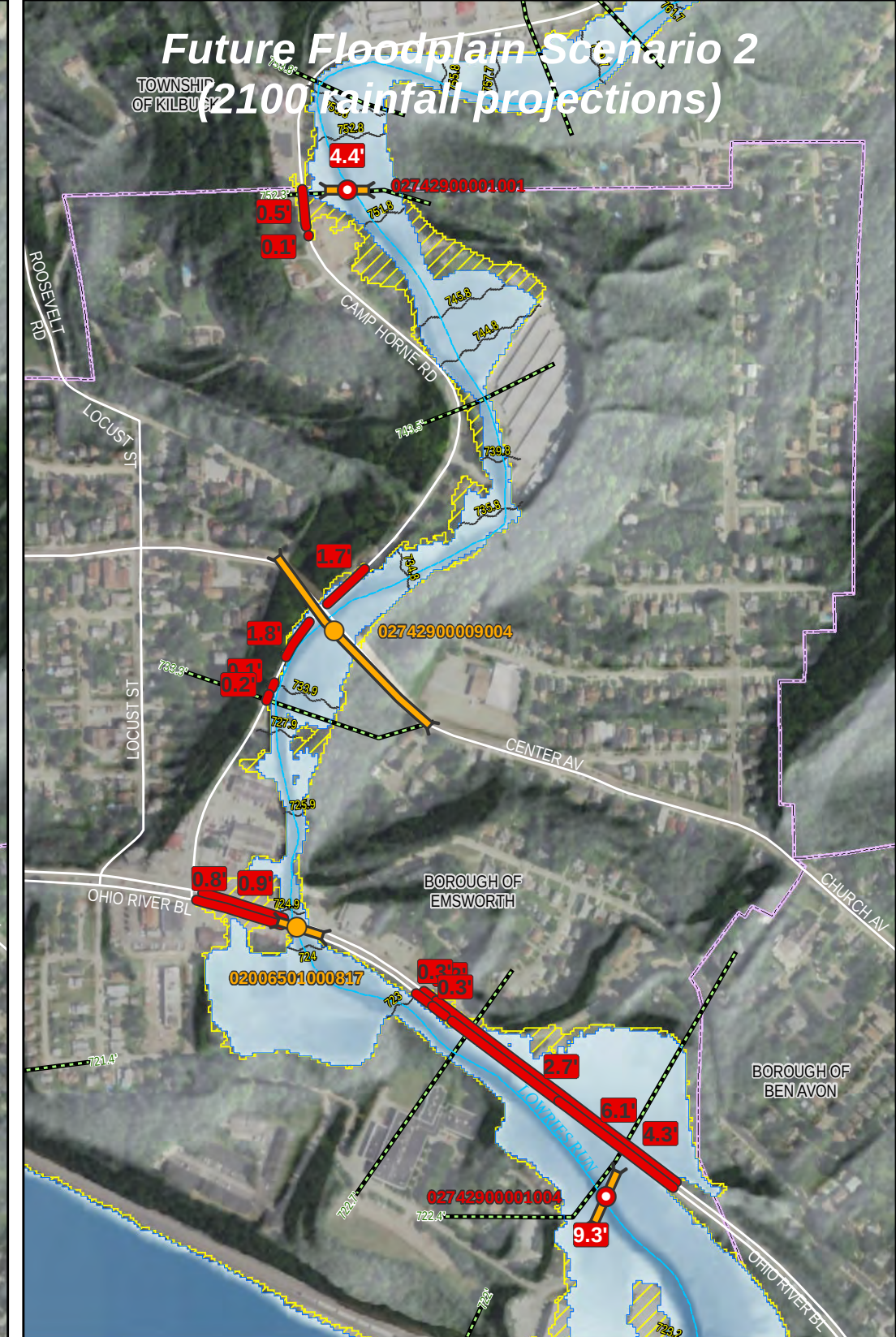
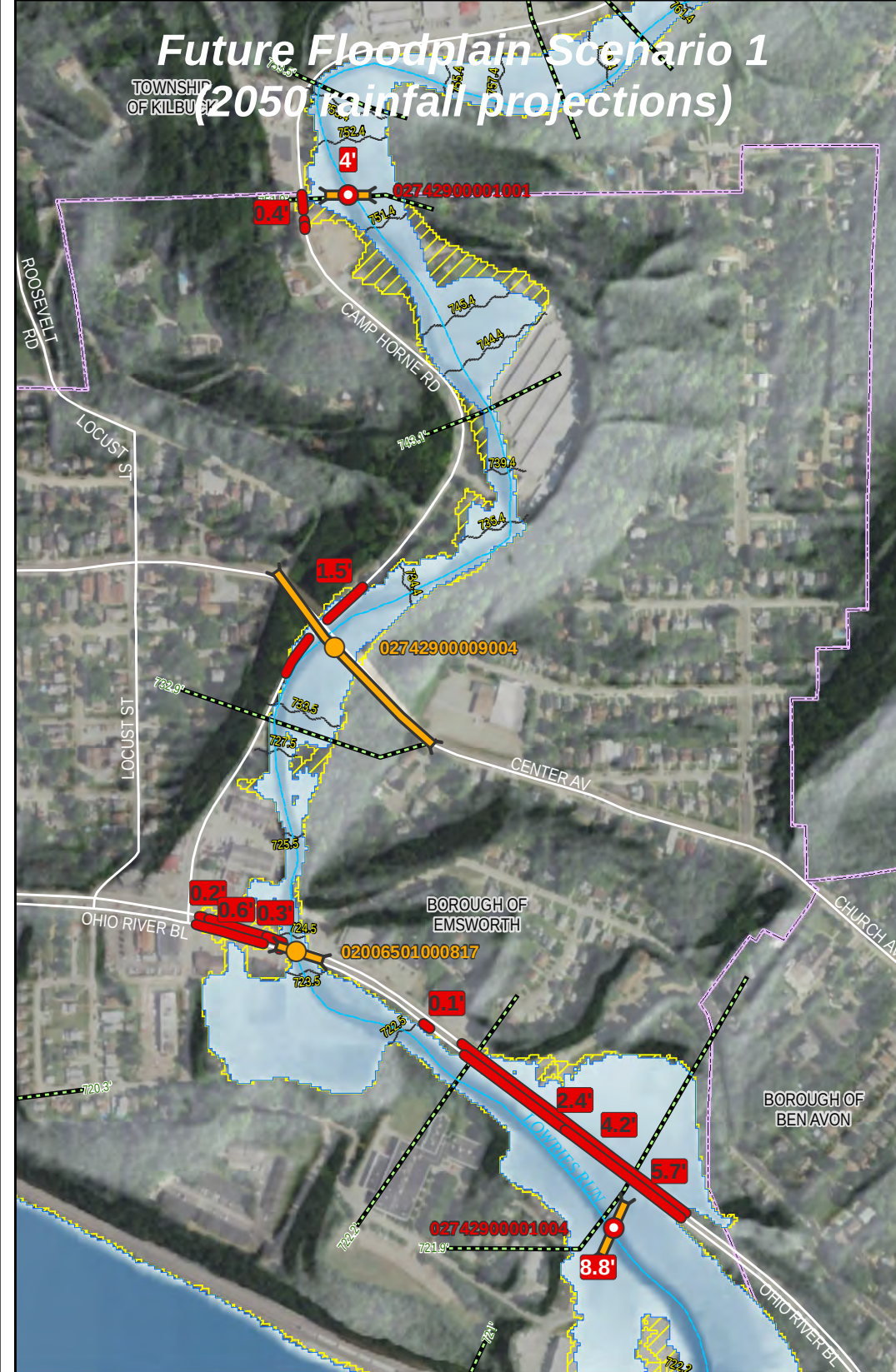
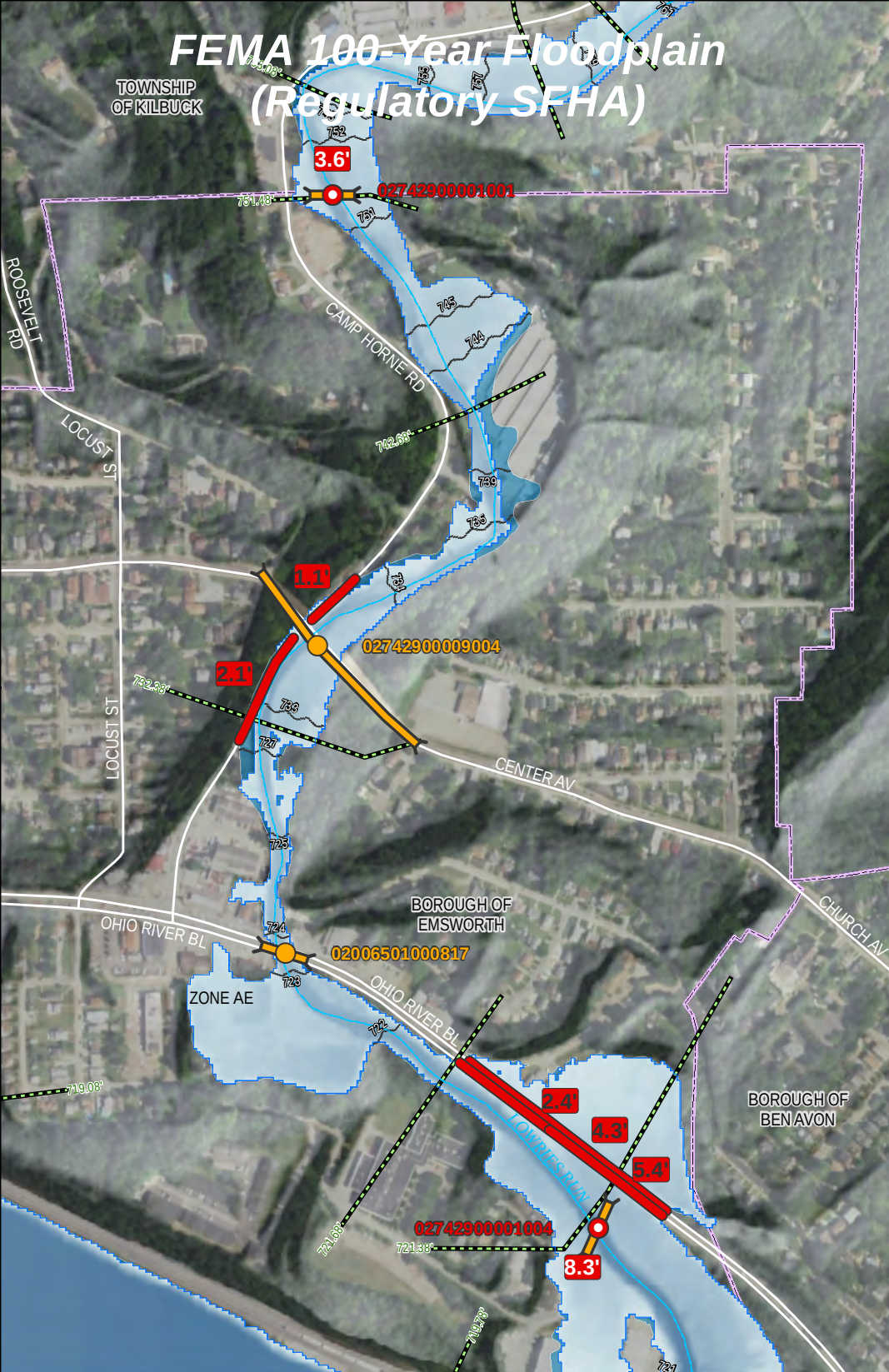
Allegheny County, PA

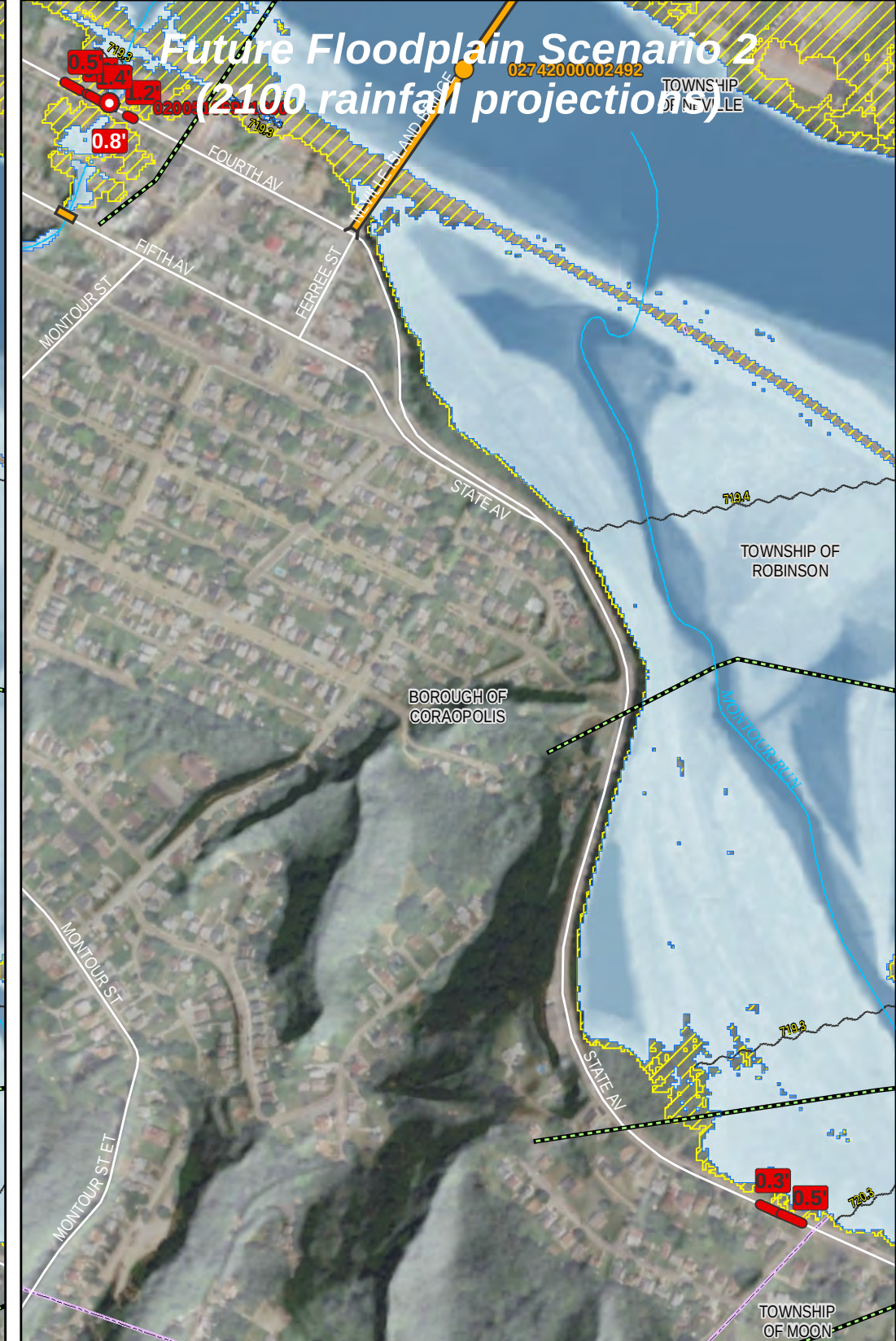
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 71 of 265

DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT





MAP SYMBOLOLOGY

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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

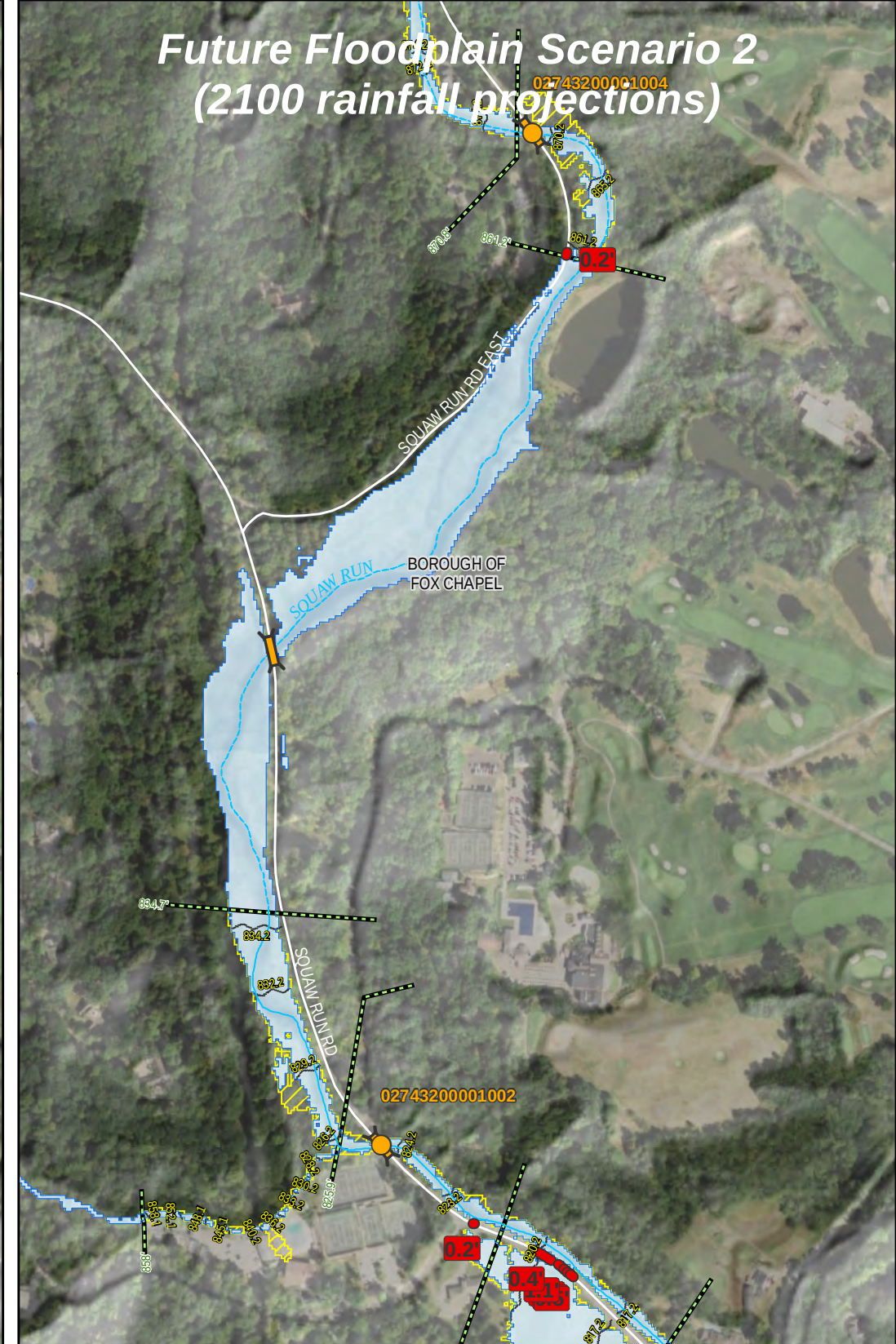
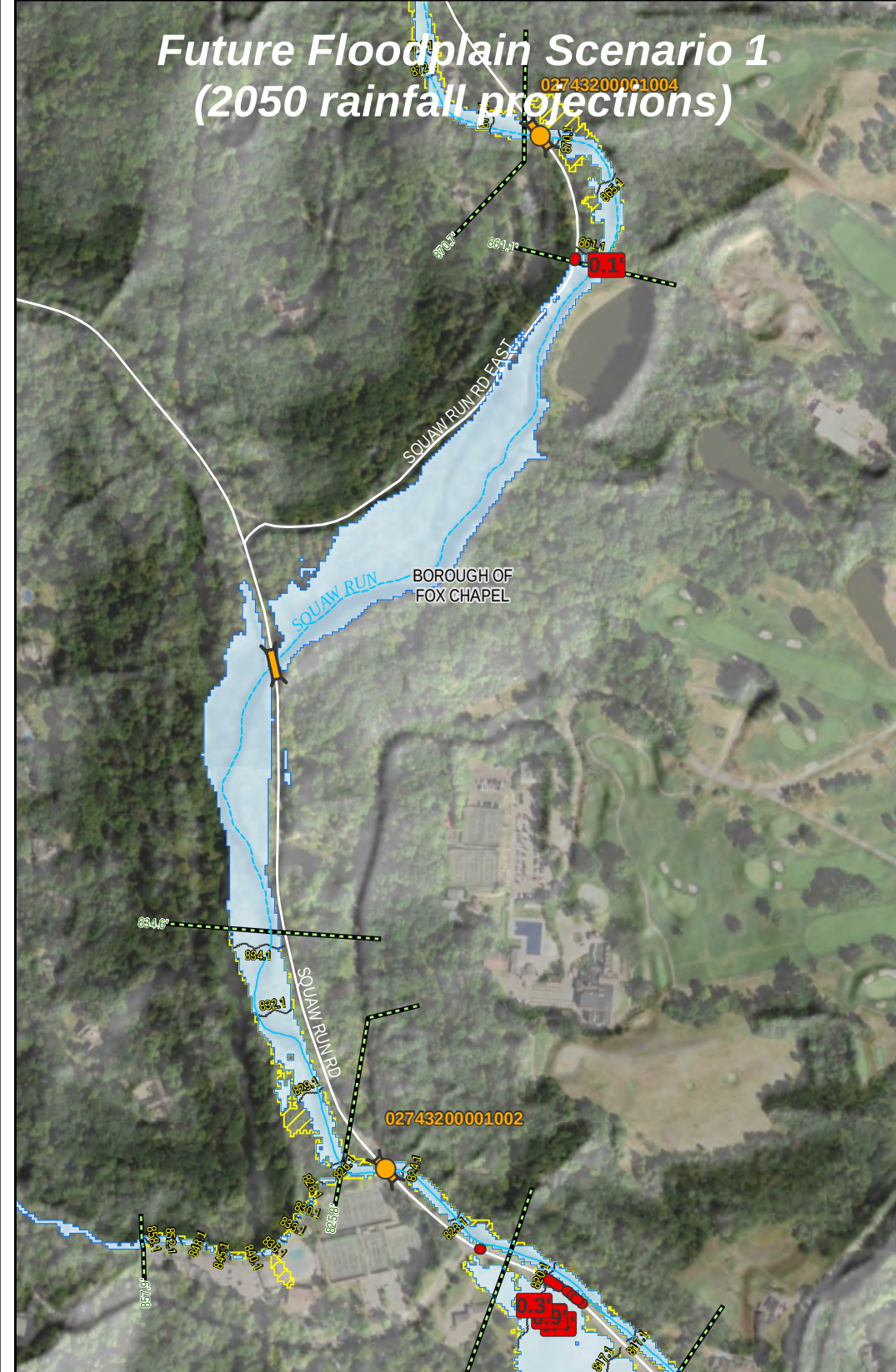
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(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

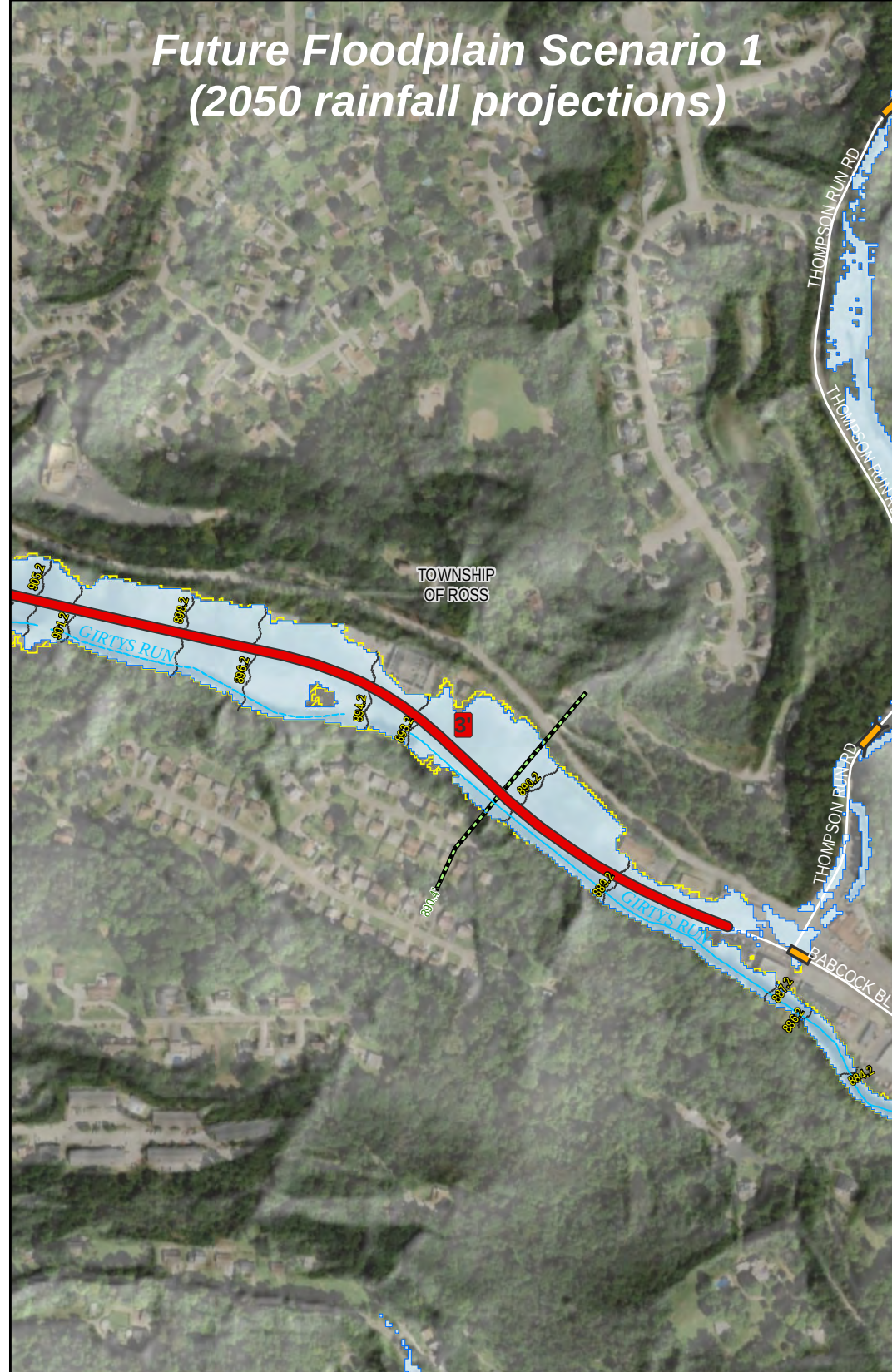
Sheet 74 of 265

Michael Baker INTERNATIONAL

LOCATOR MAP

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



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. **CODY ST**
 - 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

0 1,000 Feet

November 23, 2016



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

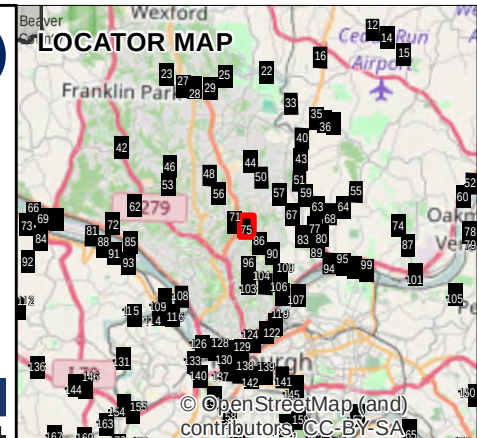
Sheet 75 of 265



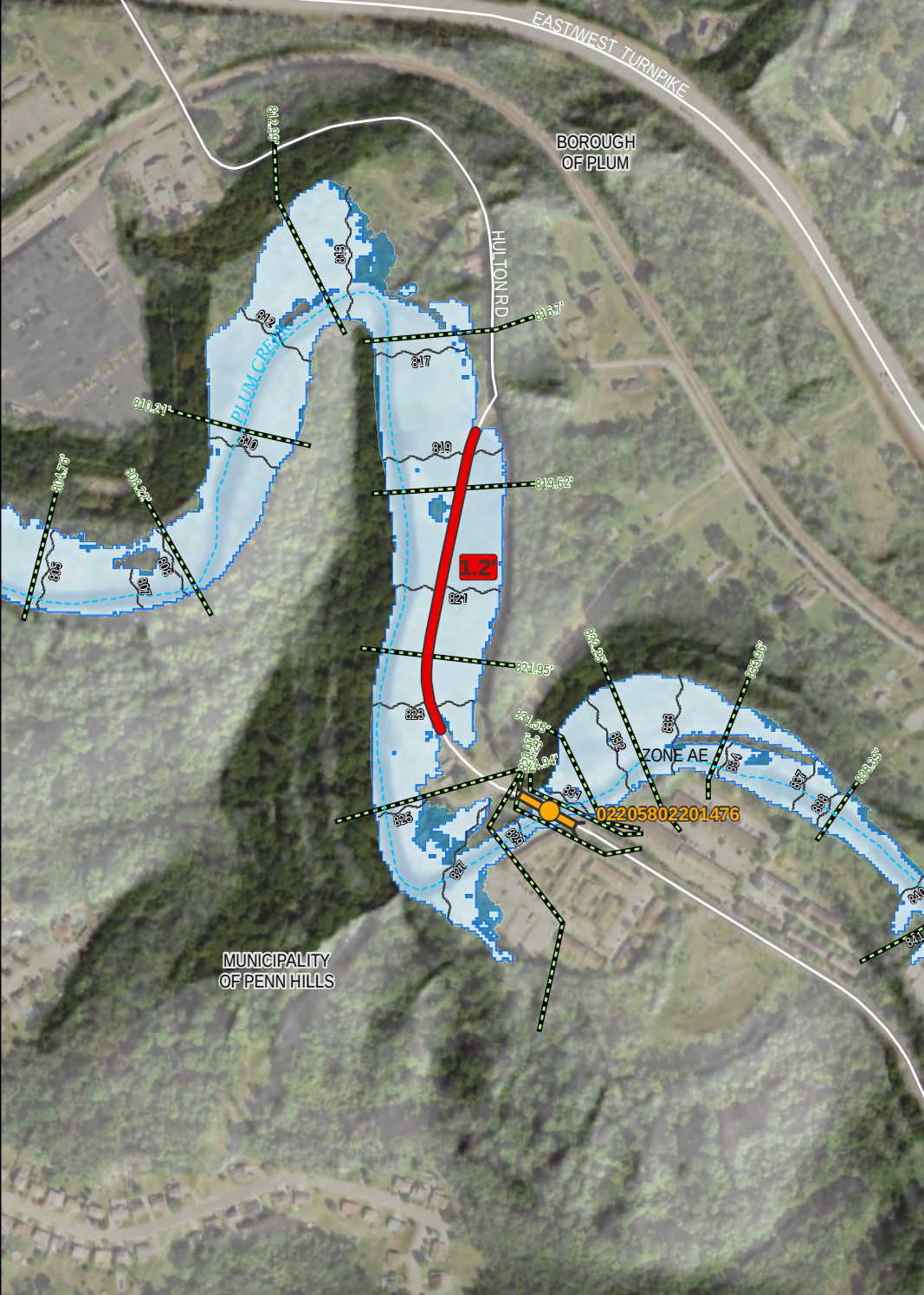
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NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

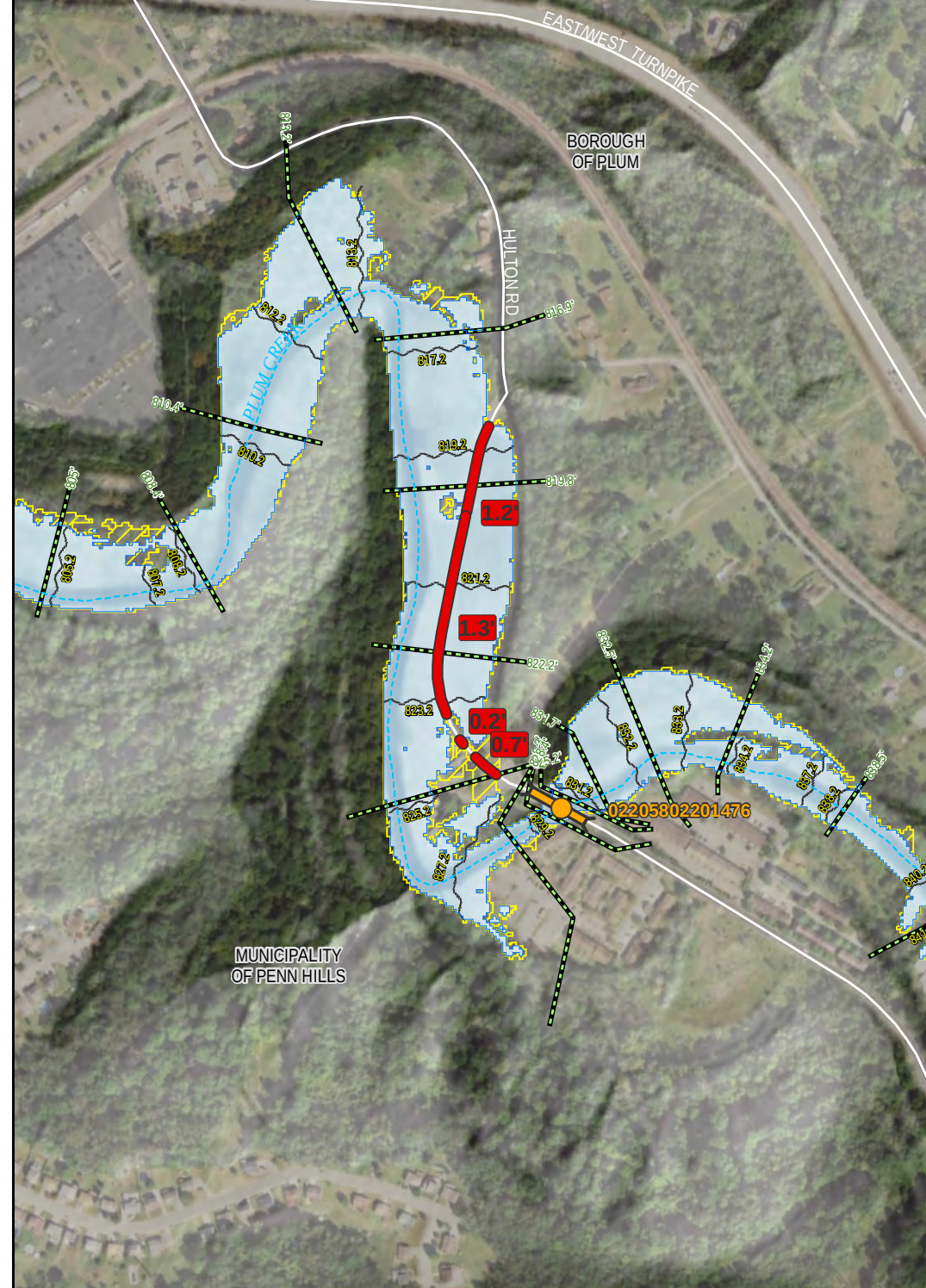
**Michael Baker
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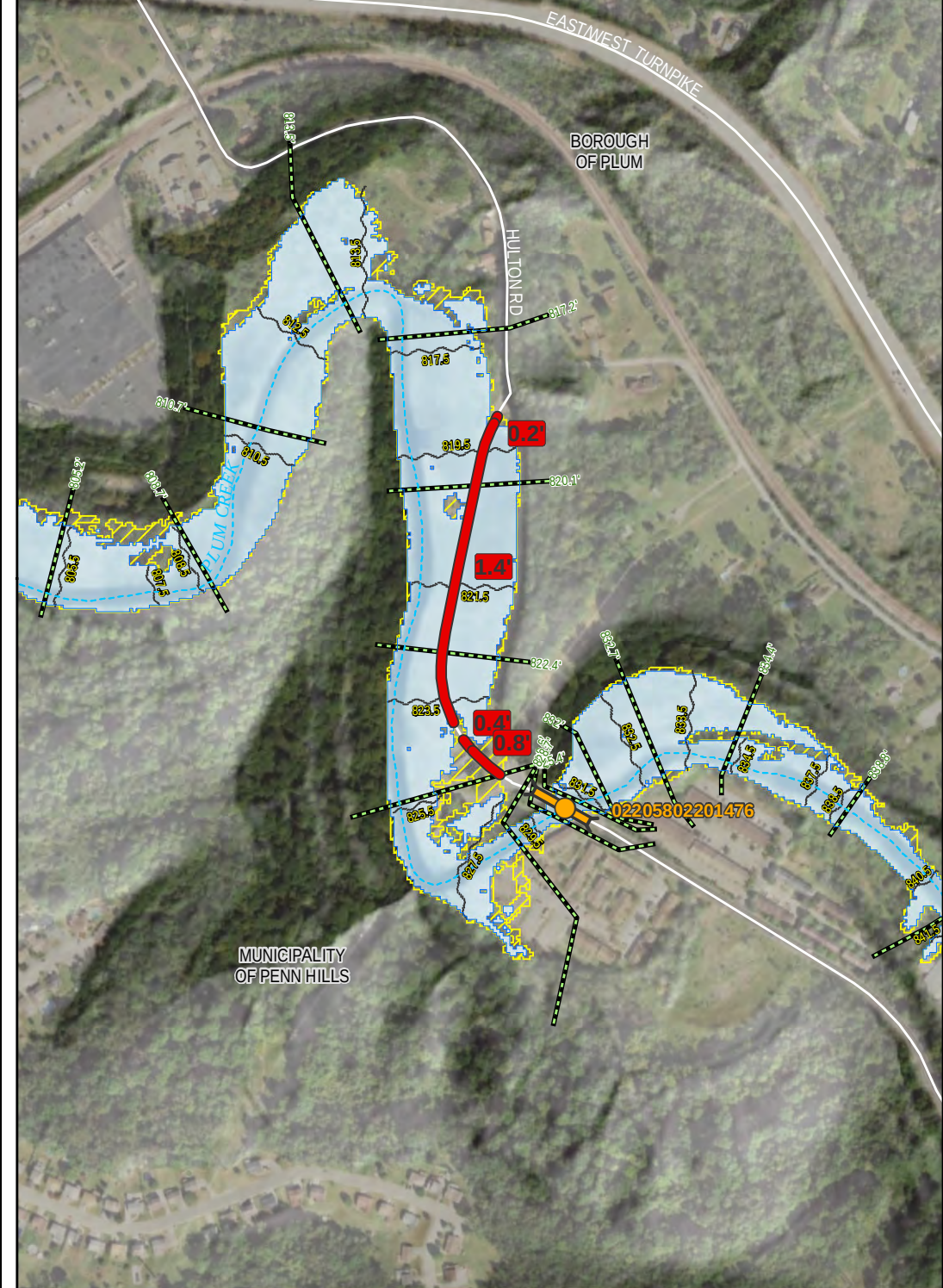
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

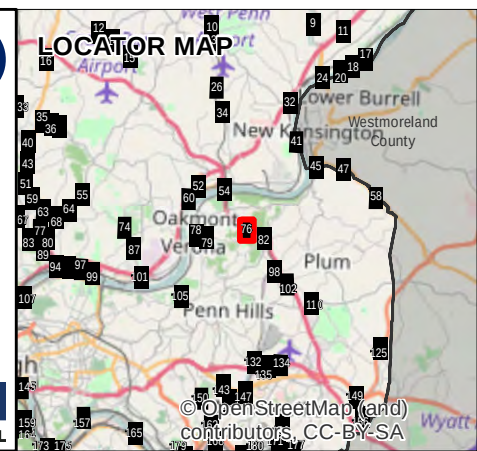
Sheet 76 of 265

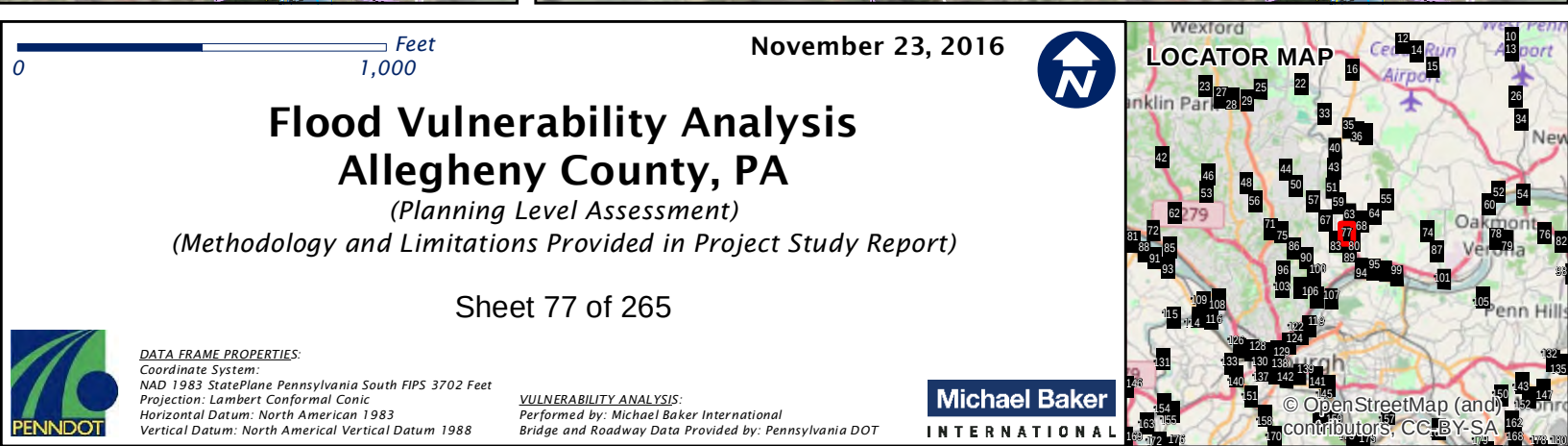
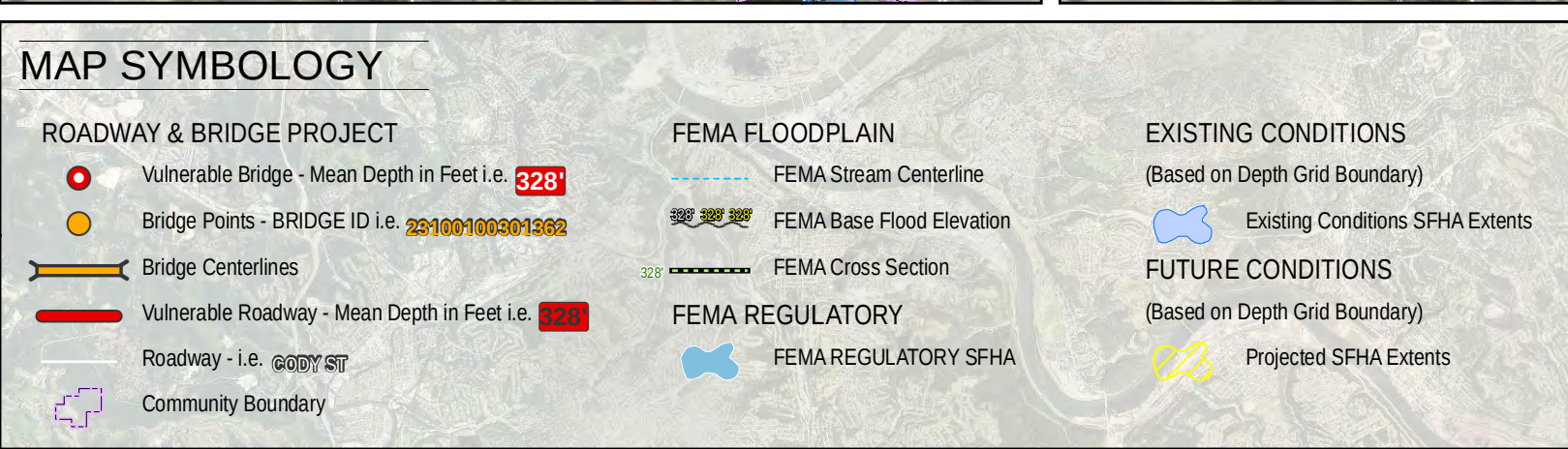
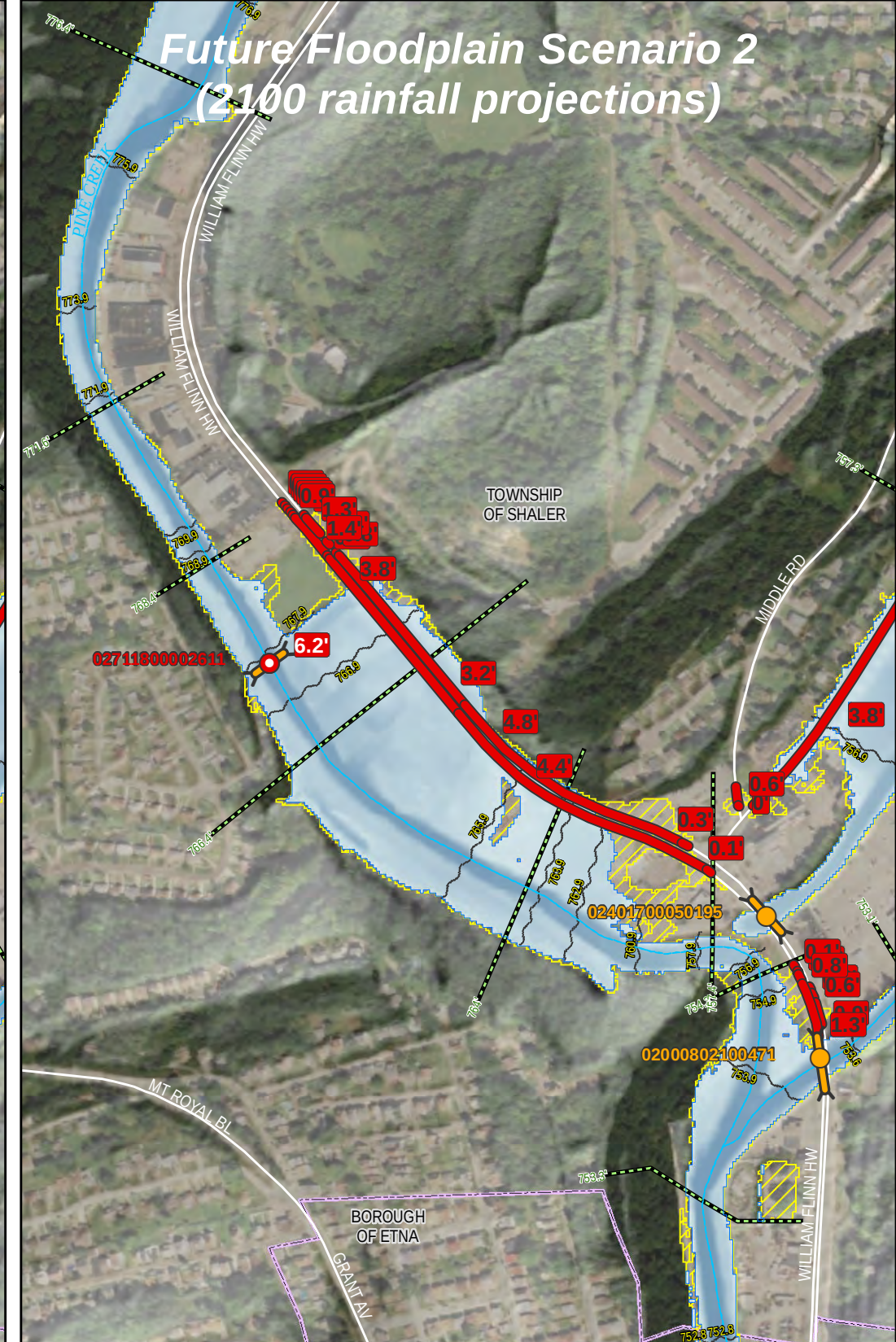
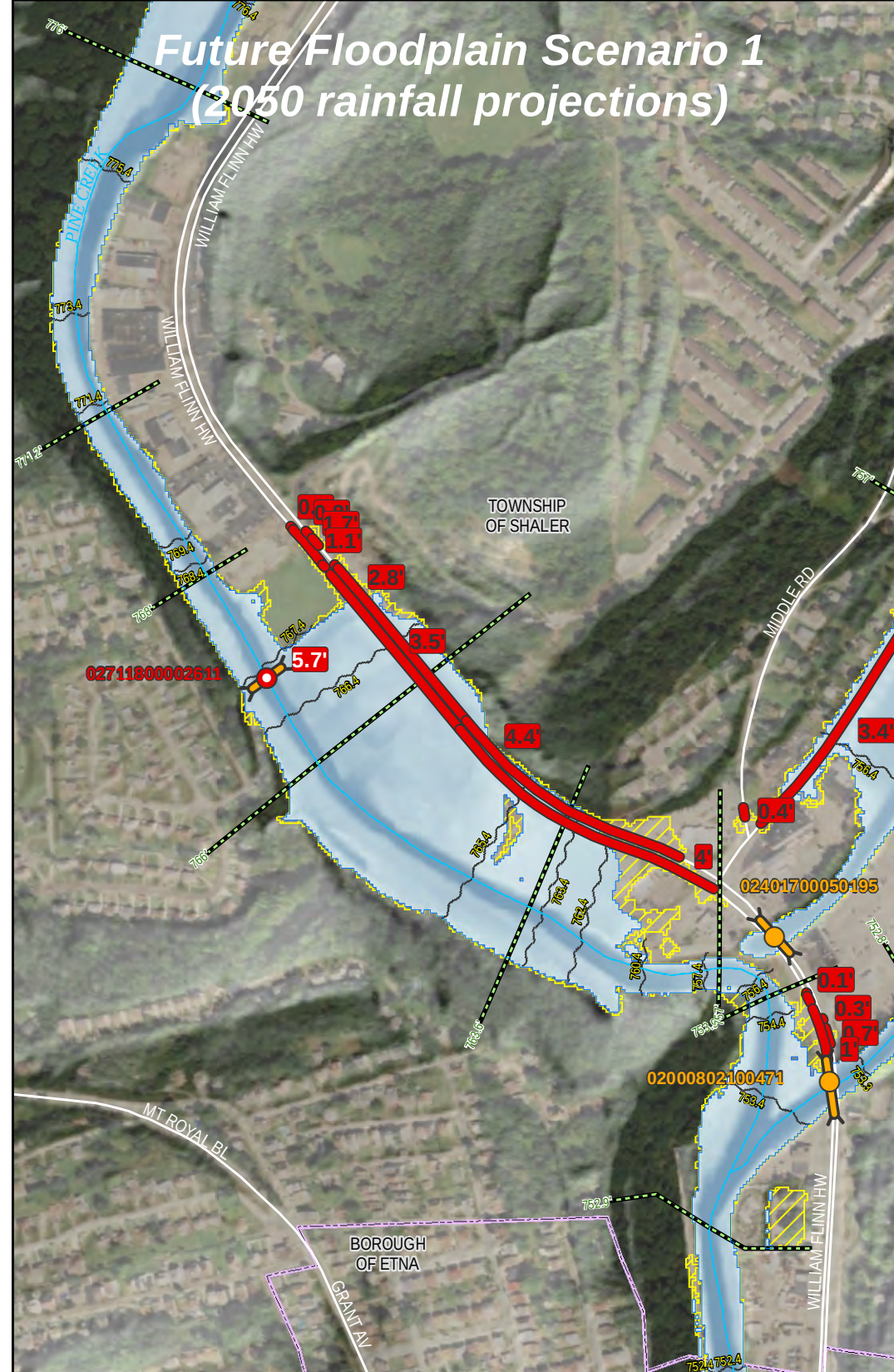
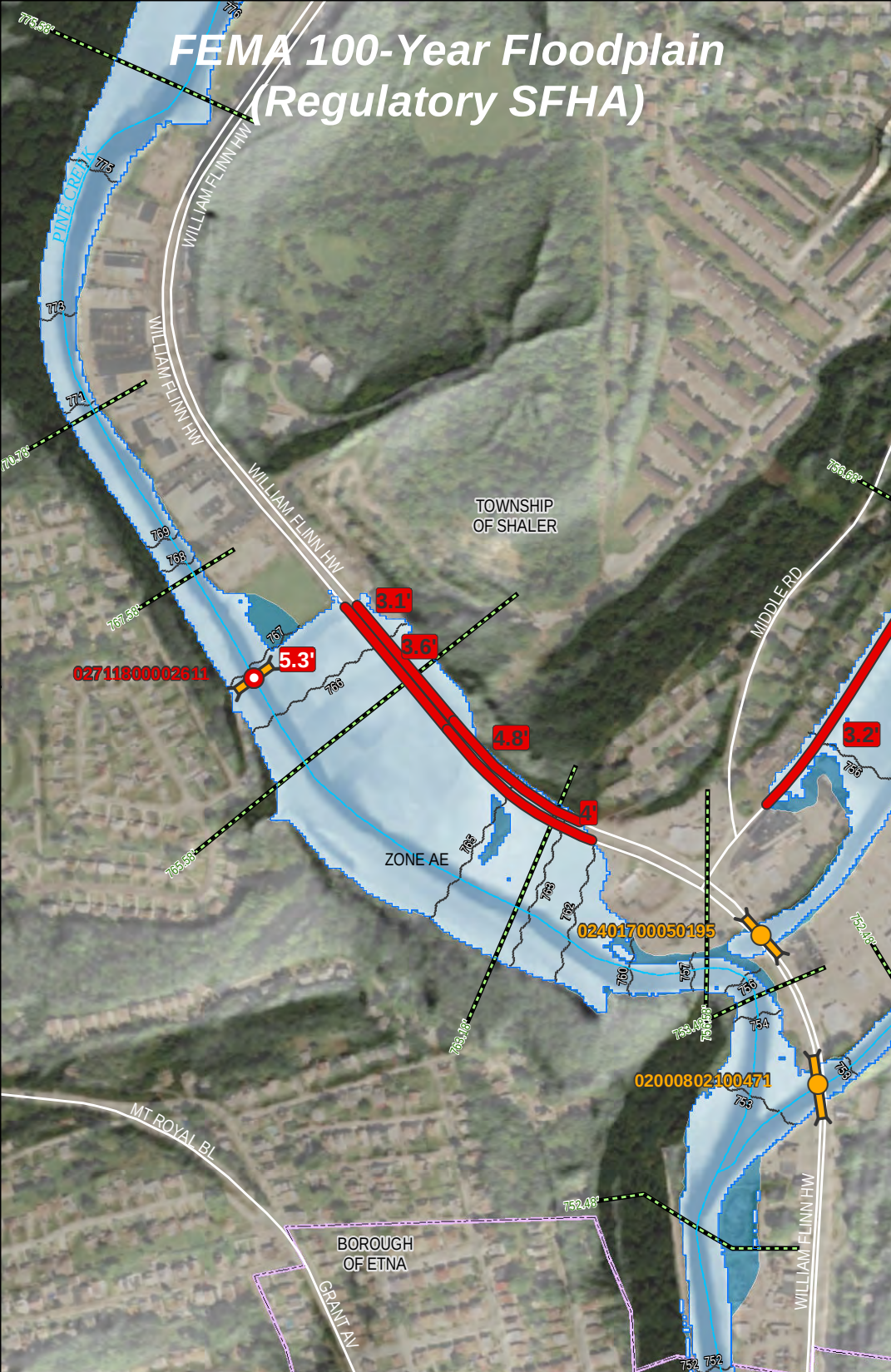


DATA FRAME PROPERTIES:
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Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

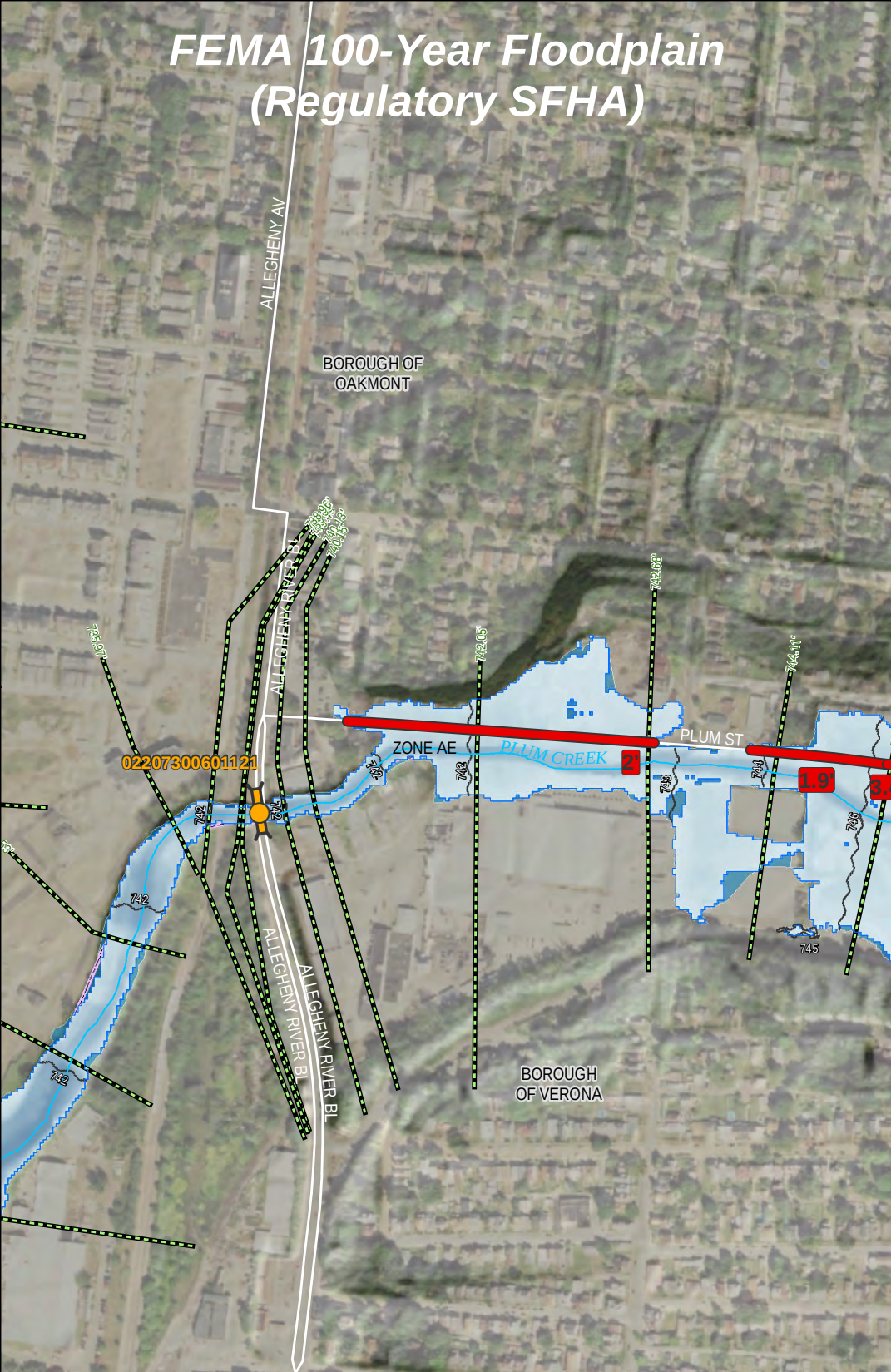
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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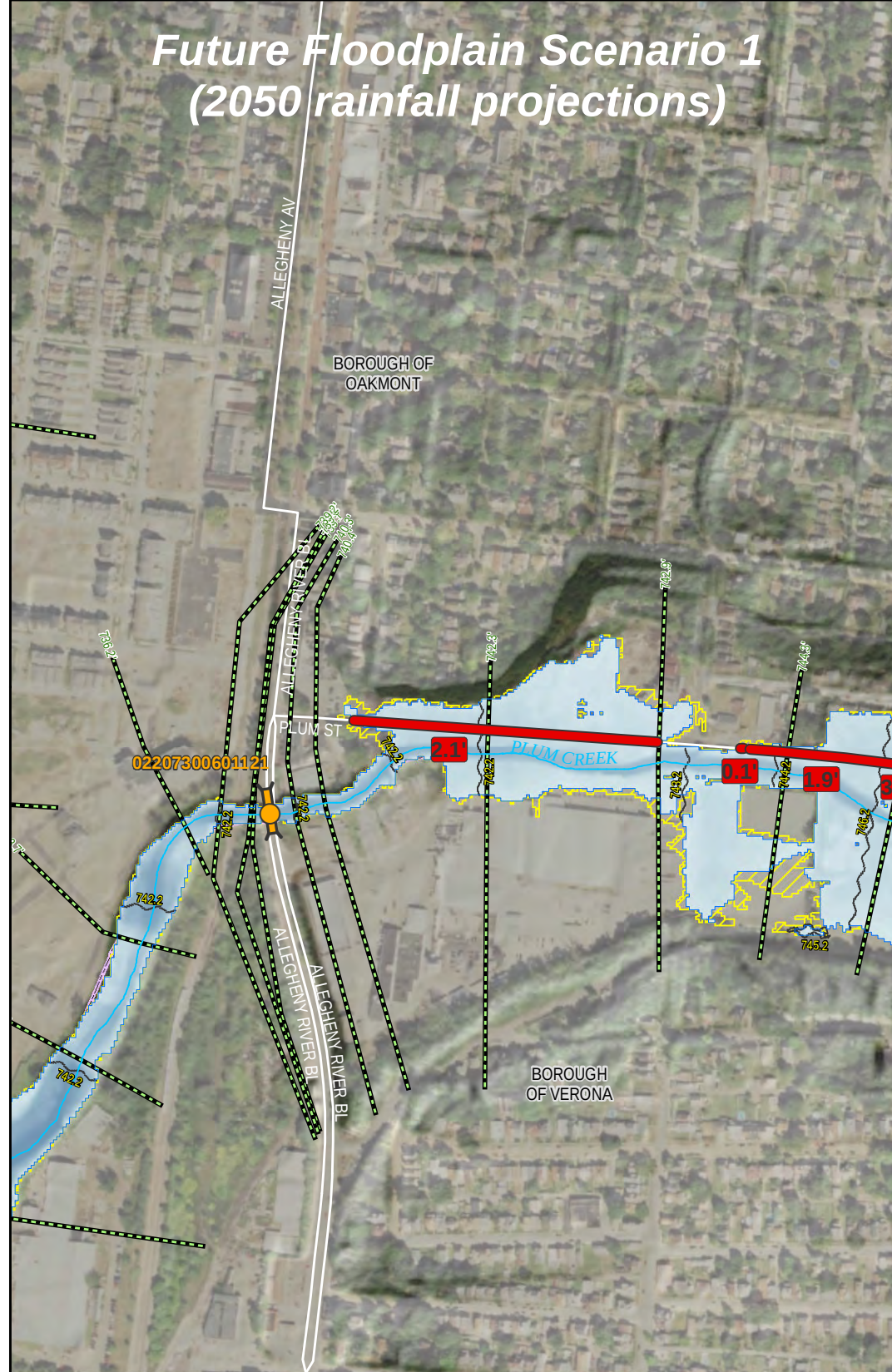




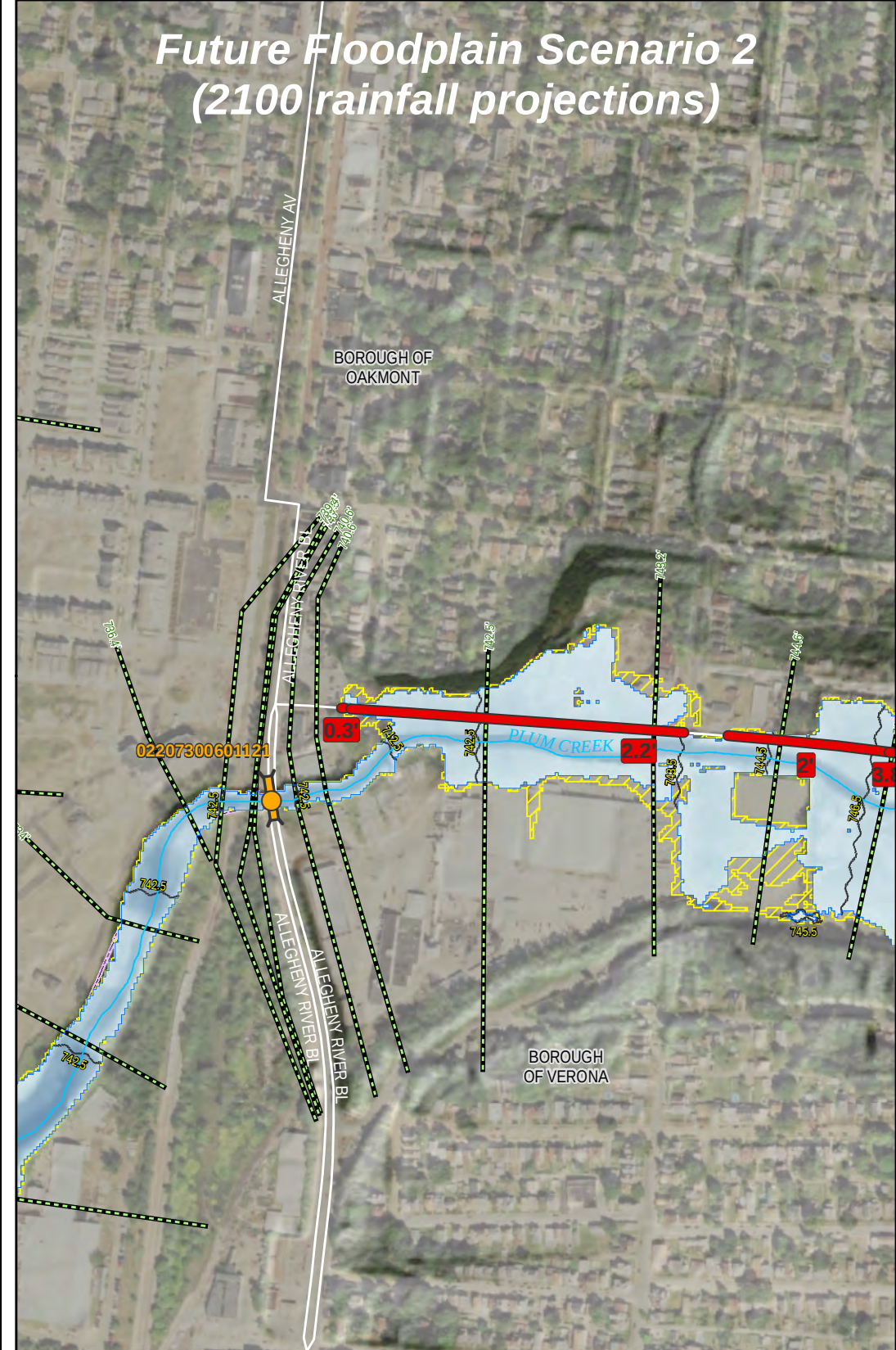
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **3.28'**
-  Bridge Points - BRIDGE ID i.e. **23100100301362**
-  Bridge Centerlines
-  Vulnerable Roadway - Mean Depth in Feet i.e. **3.28'**
-  Roadway - i.e. **CODY ST**
-  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

0 1,000 Feet

November 23, 2016



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

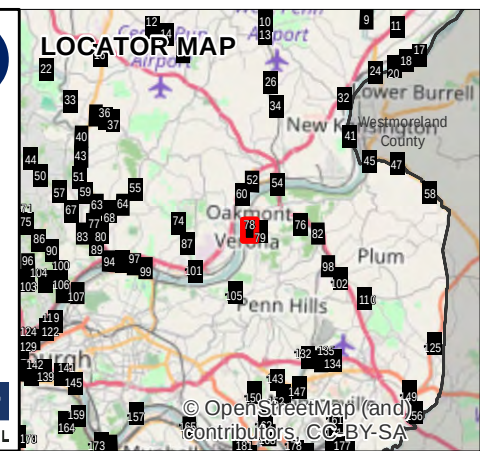
Sheet 78 of 265



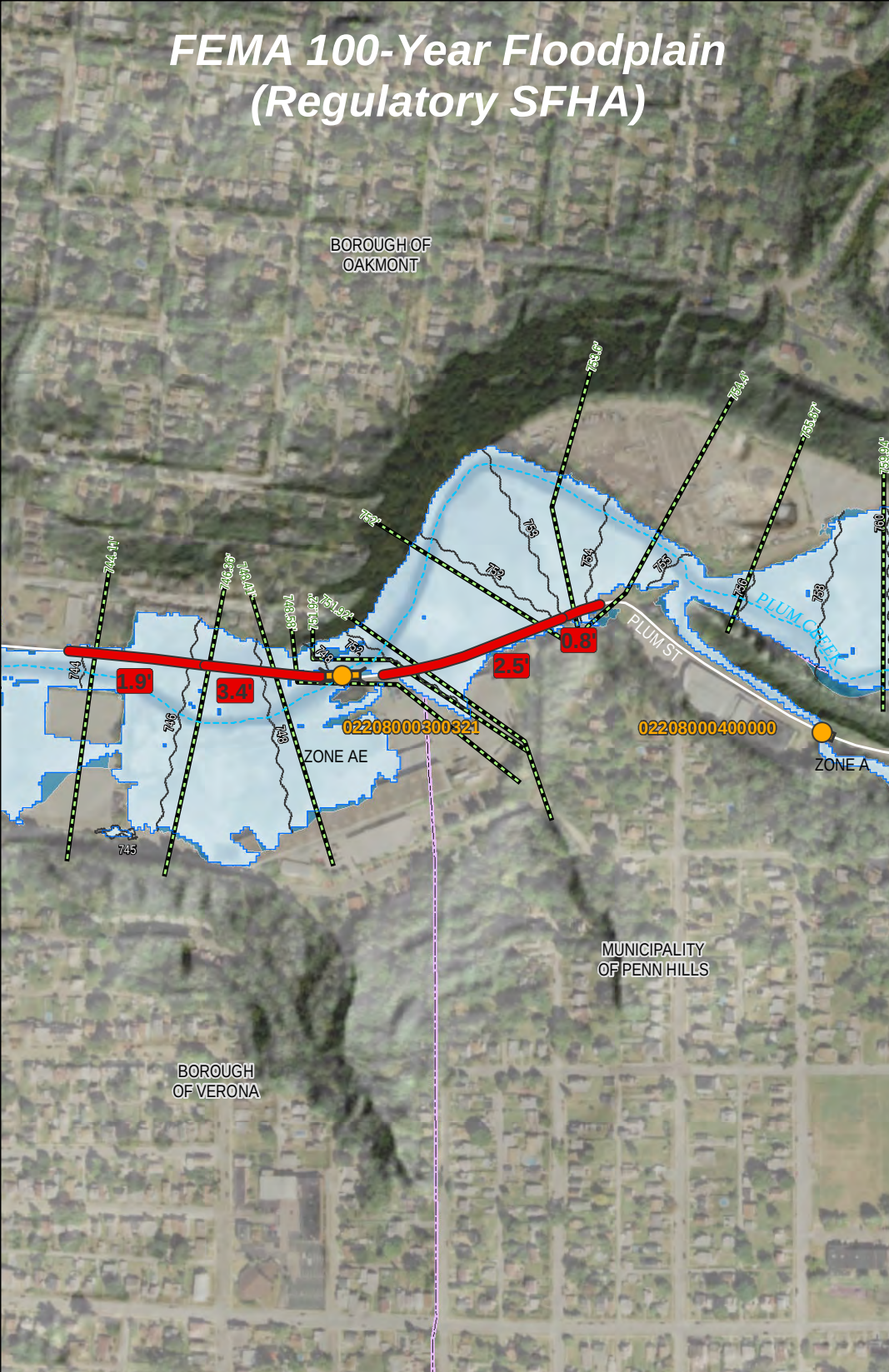
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

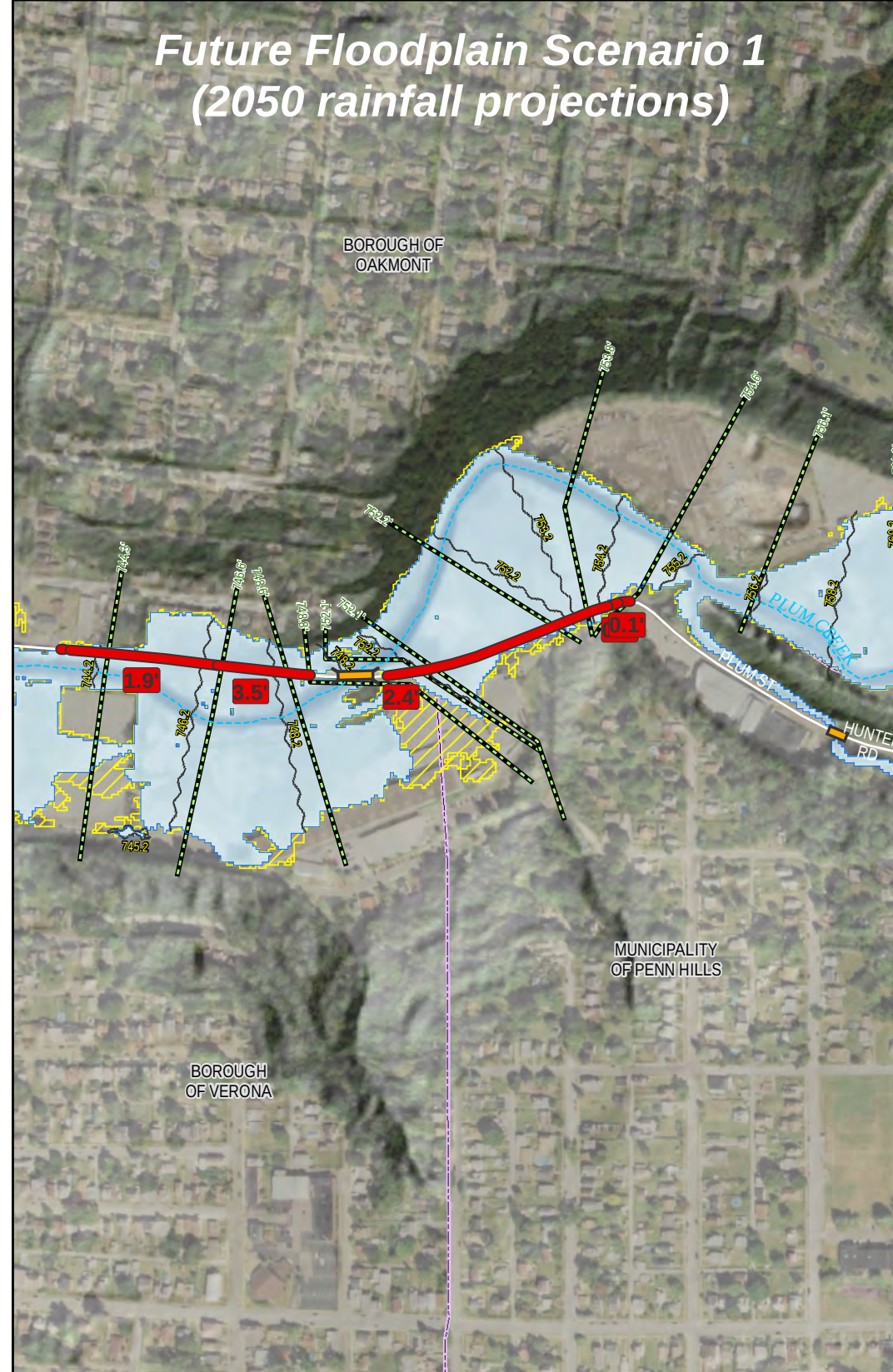
**Michael Baker
INTERNATIONAL**



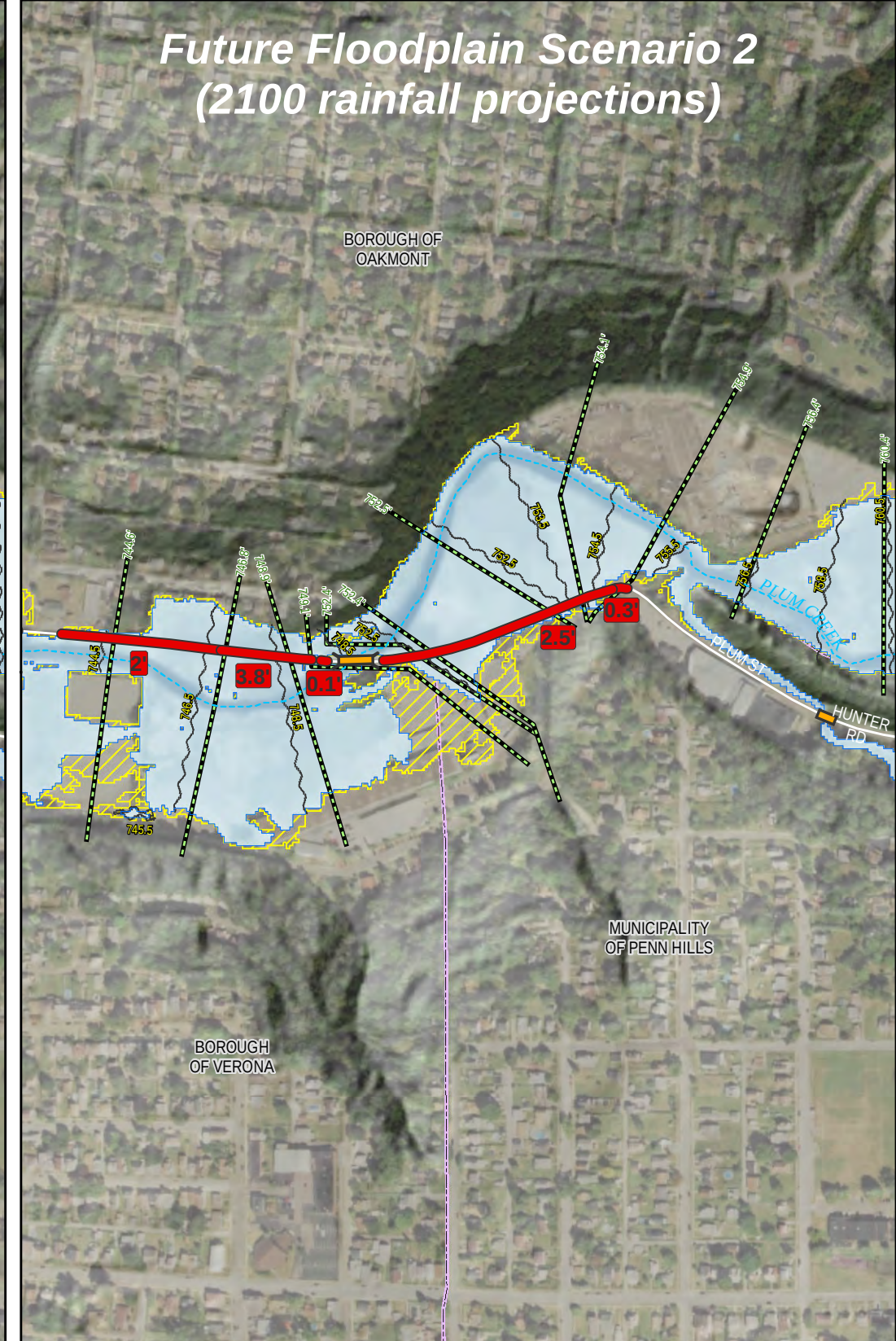
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOGY

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. **60th ST**
- 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

0 Feet
1,000

November 23, 2016



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

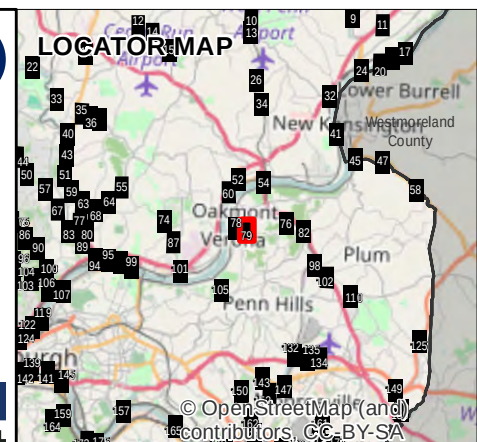
Sheet 79 of 265

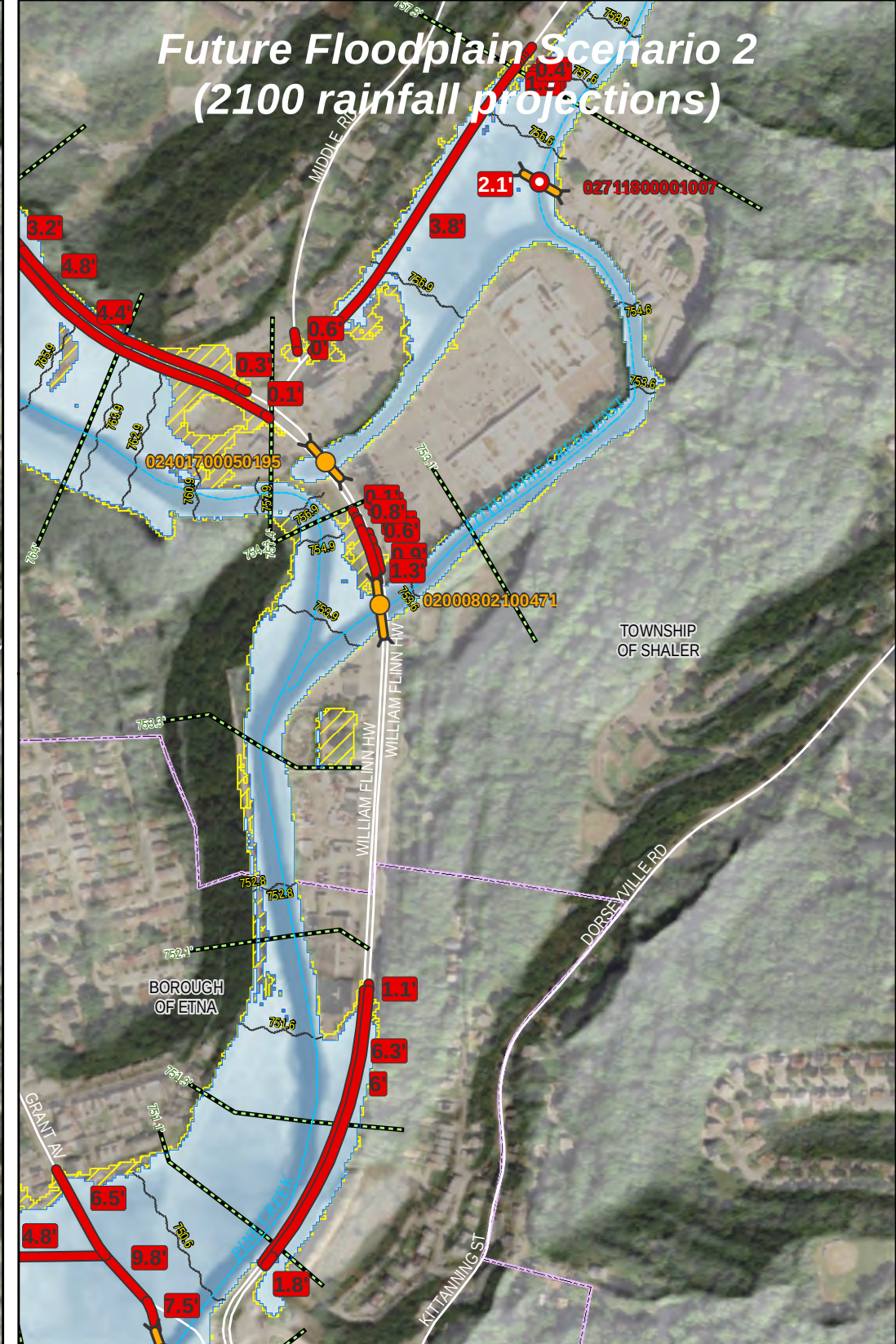
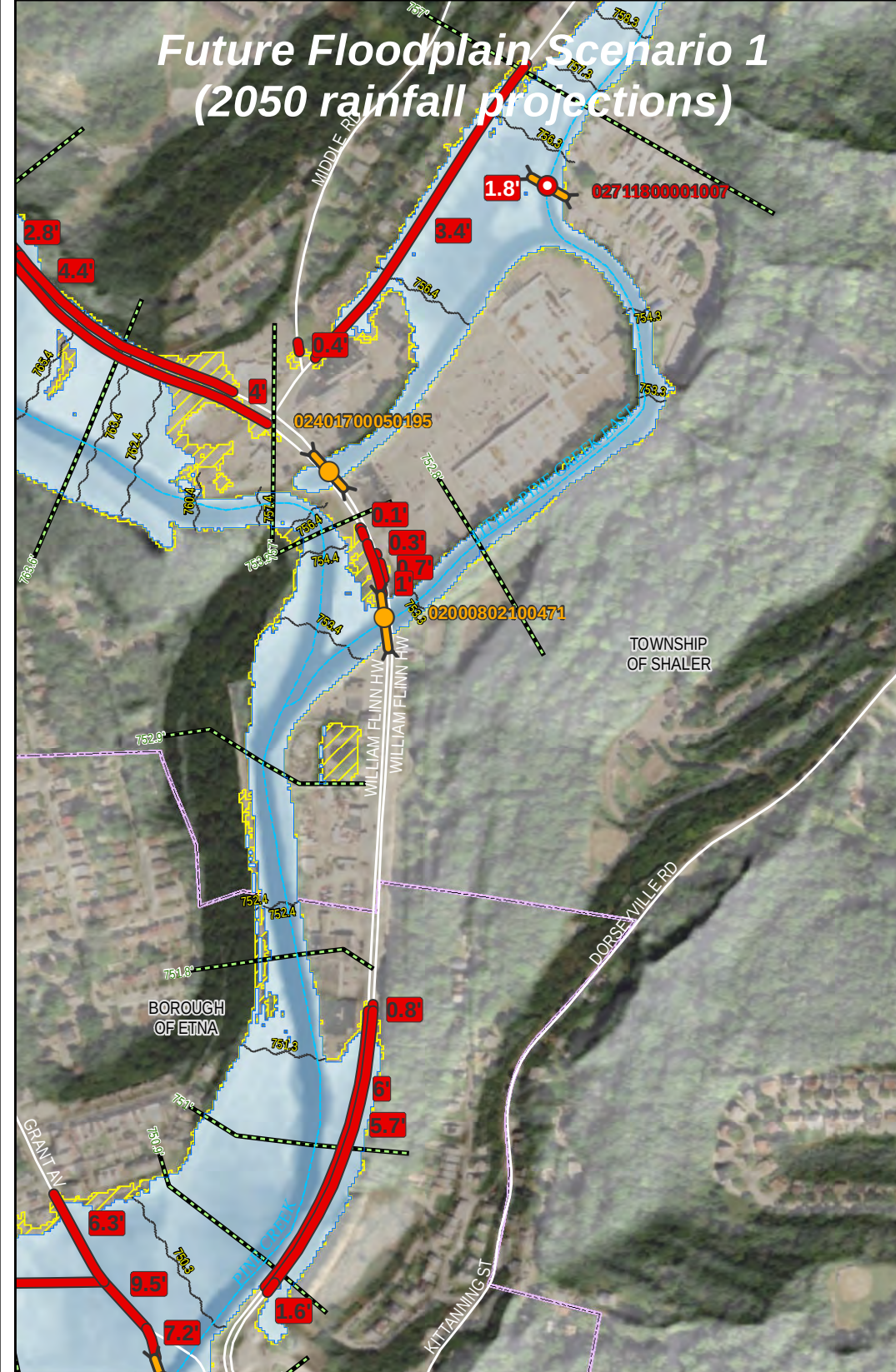
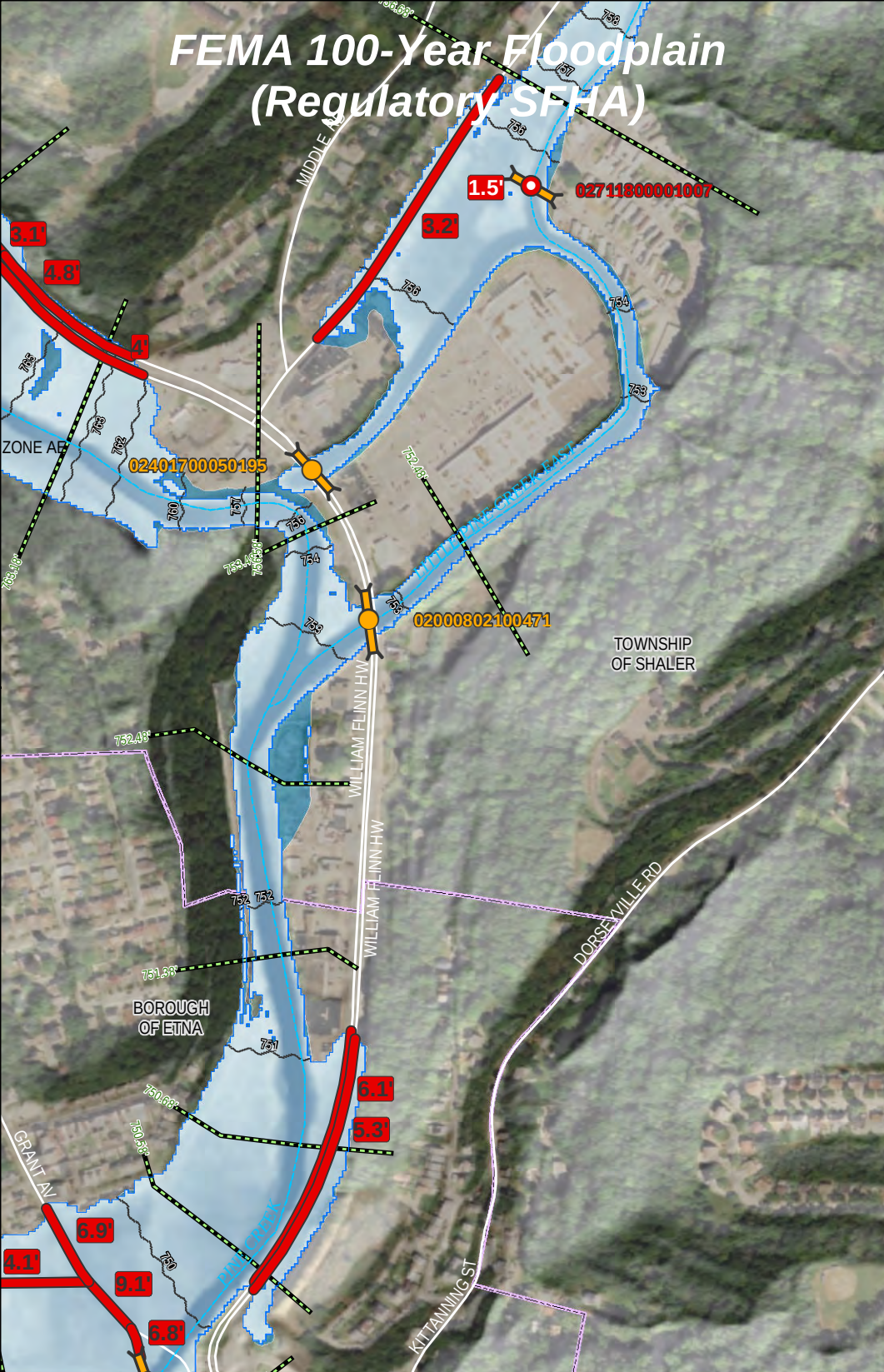


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

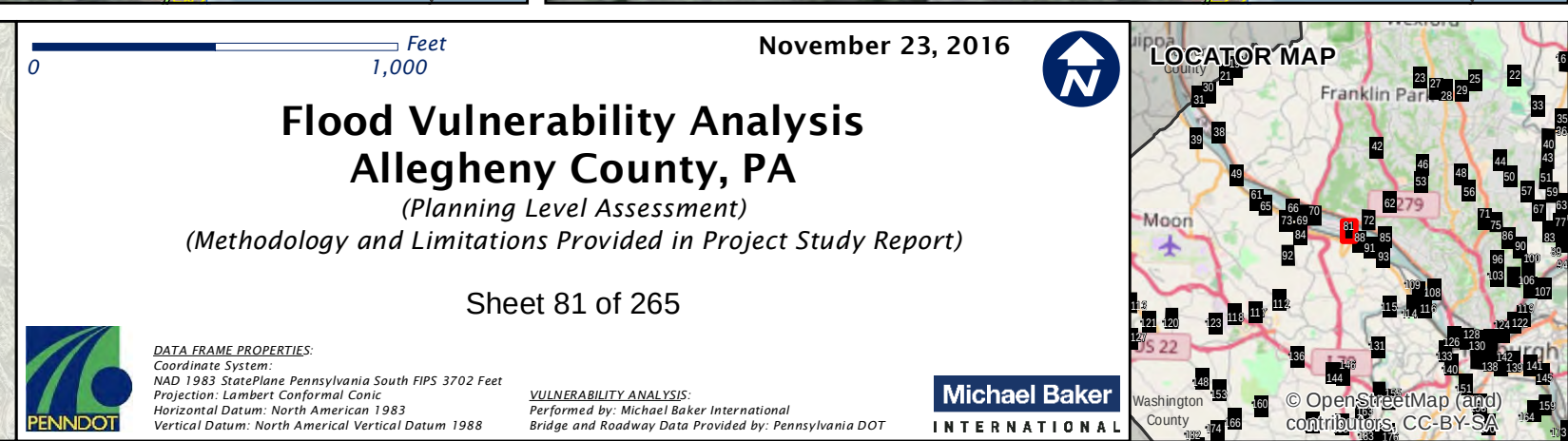
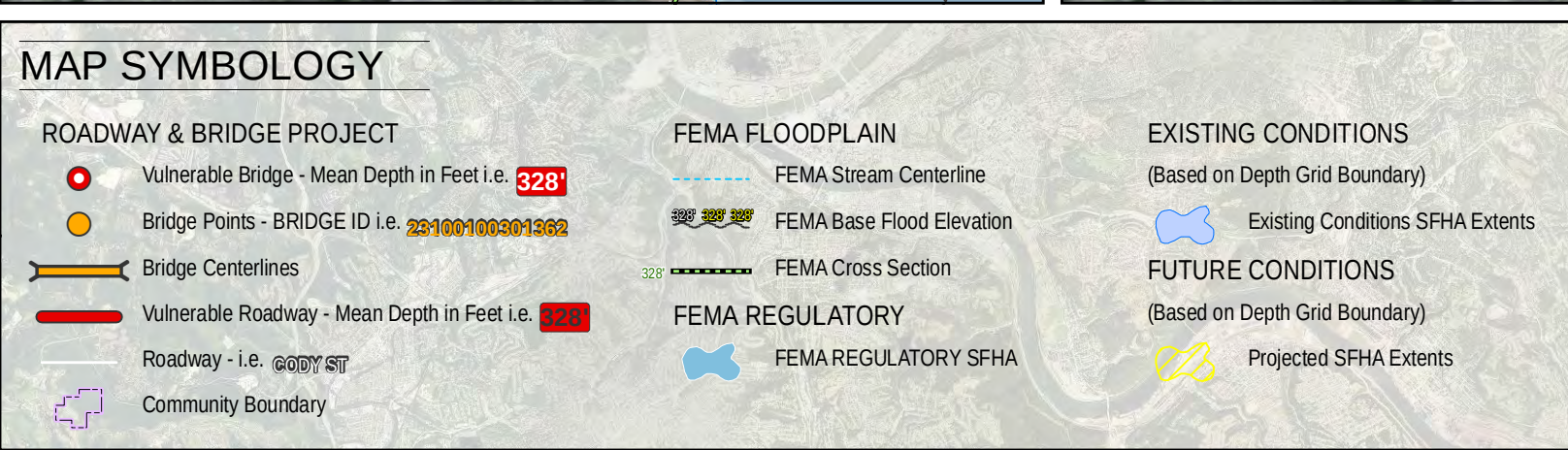
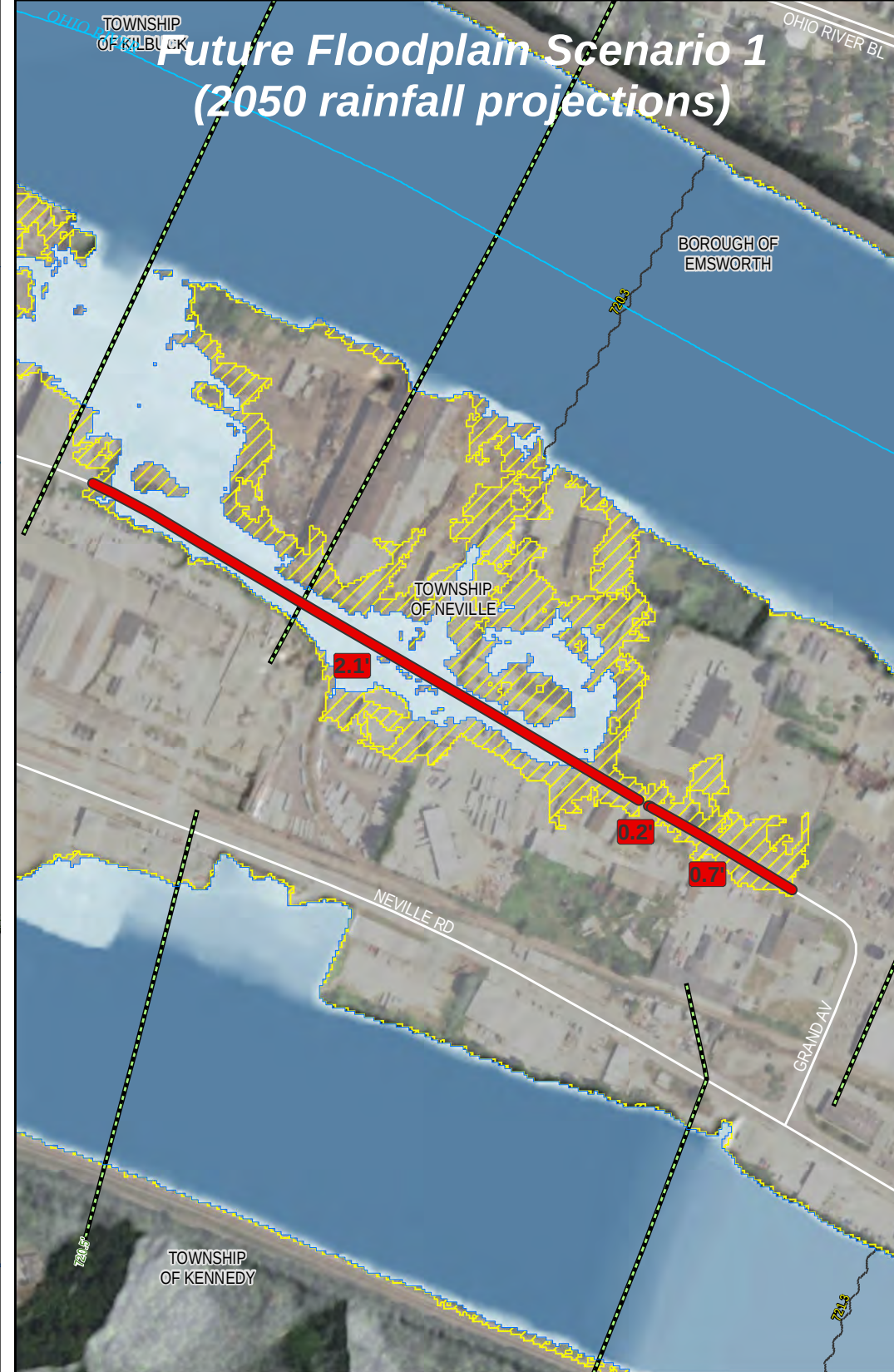
Allegheny County, PA

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

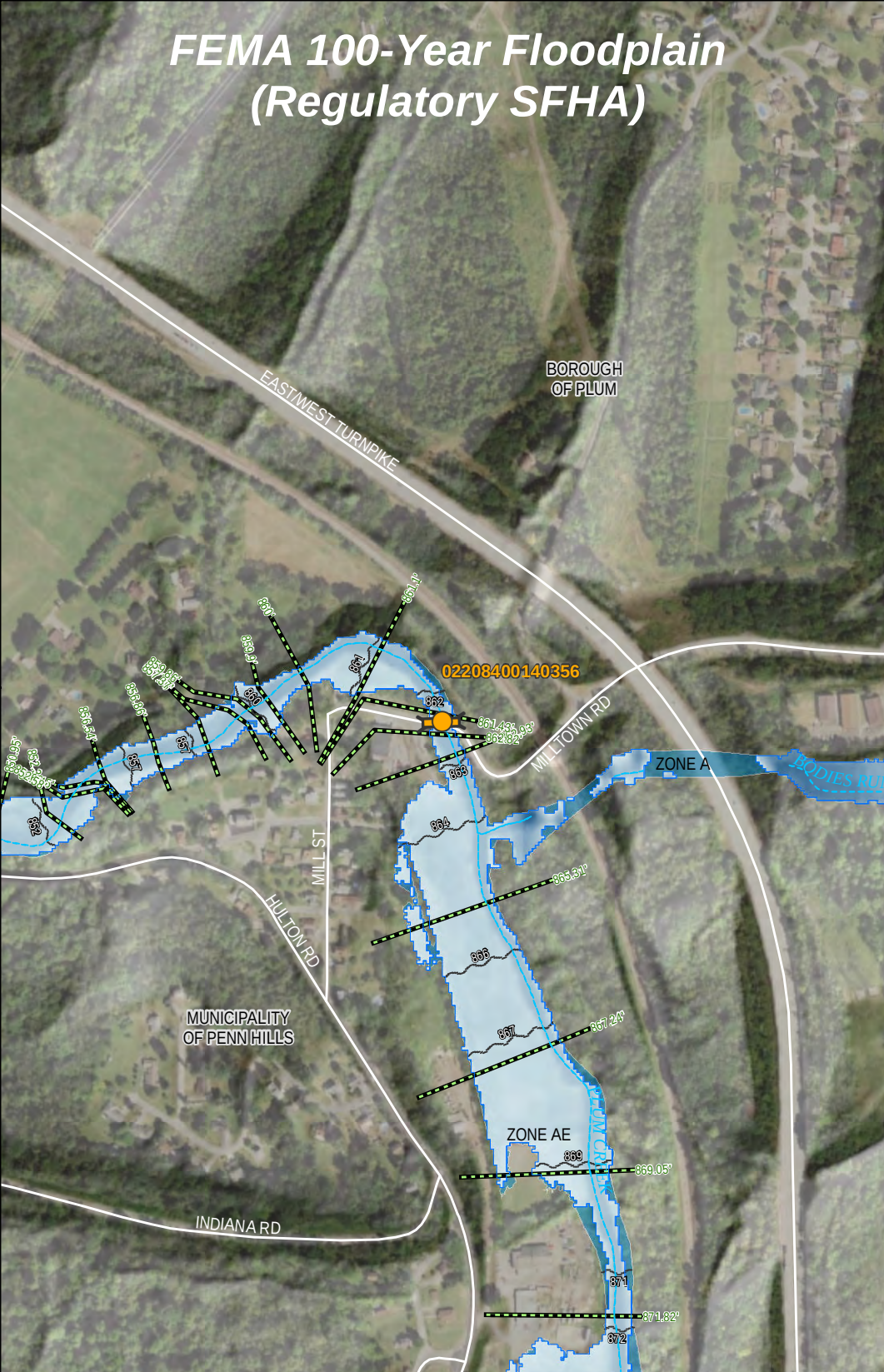
Sheet 80 of 265

DATA FRAME PROPERTIES:
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Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

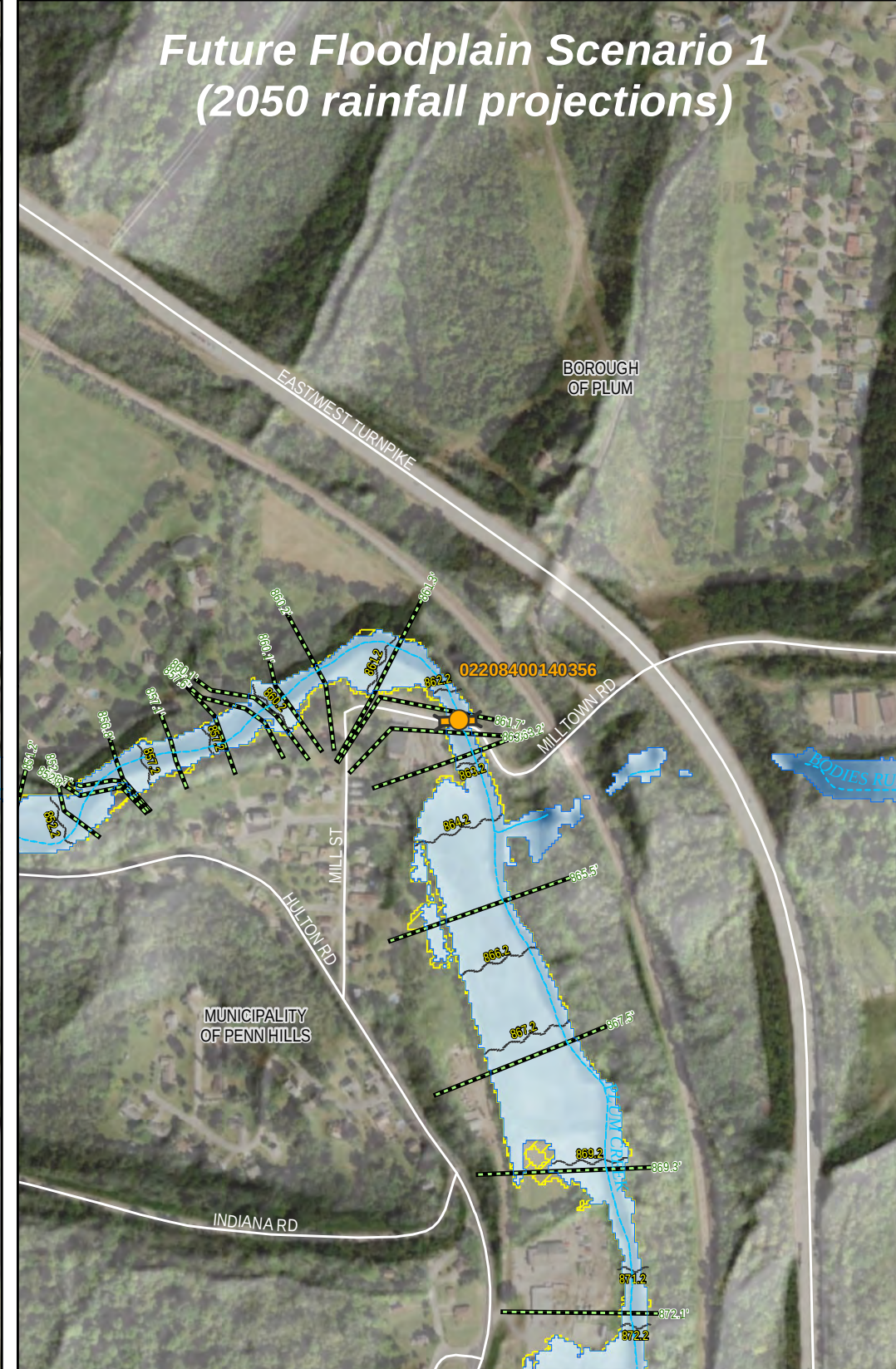
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

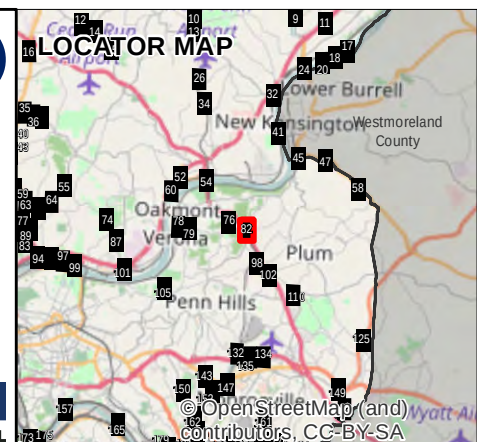
Sheet 82 of 265

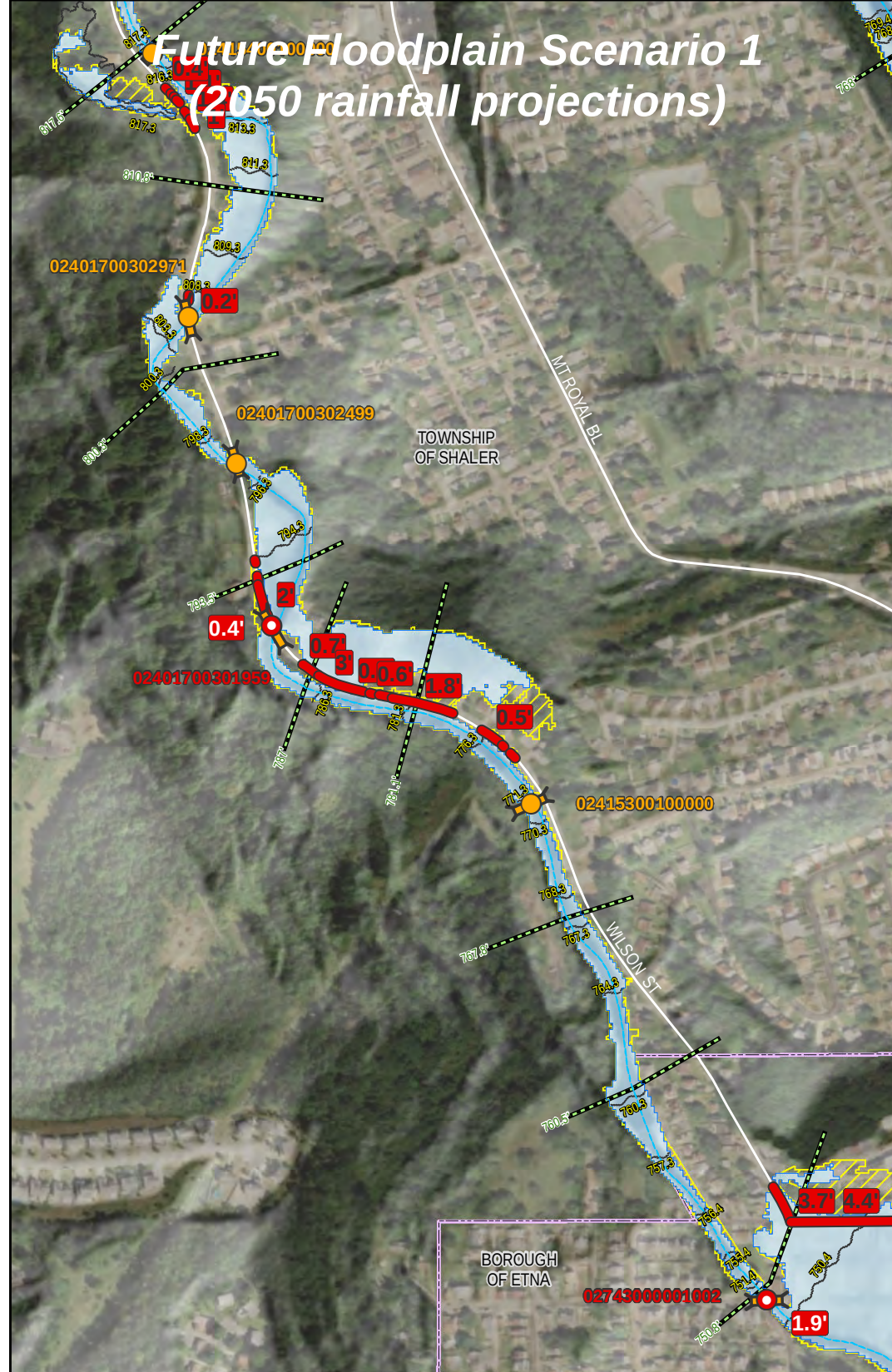


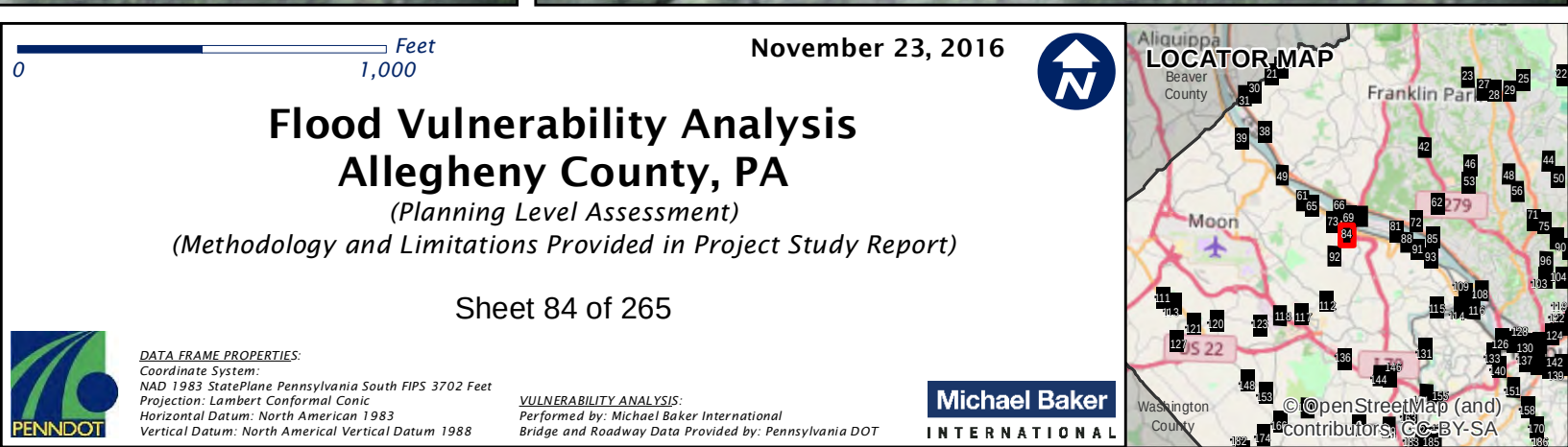
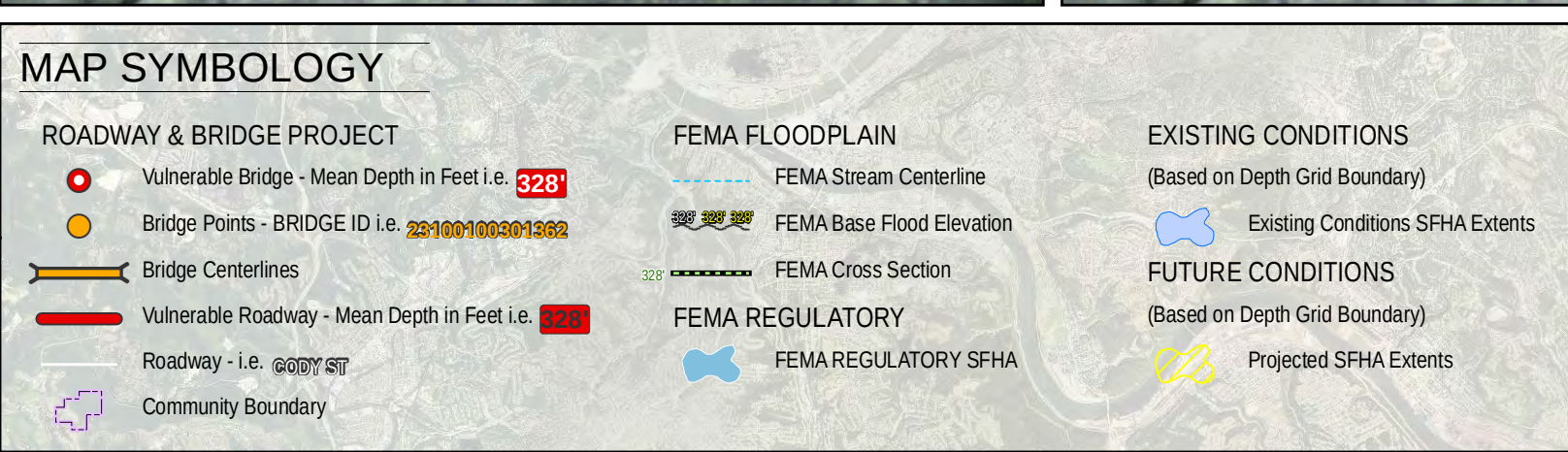
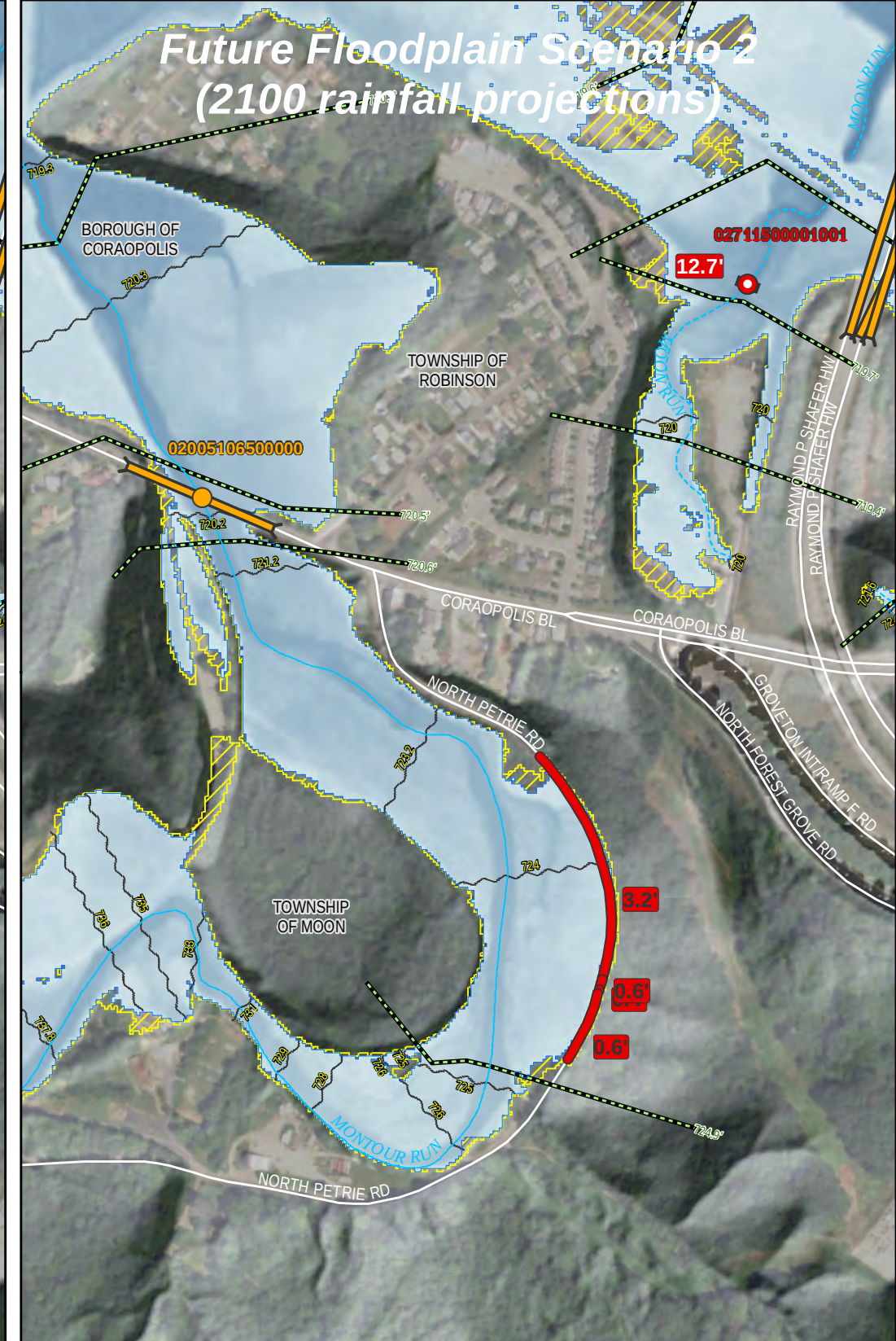
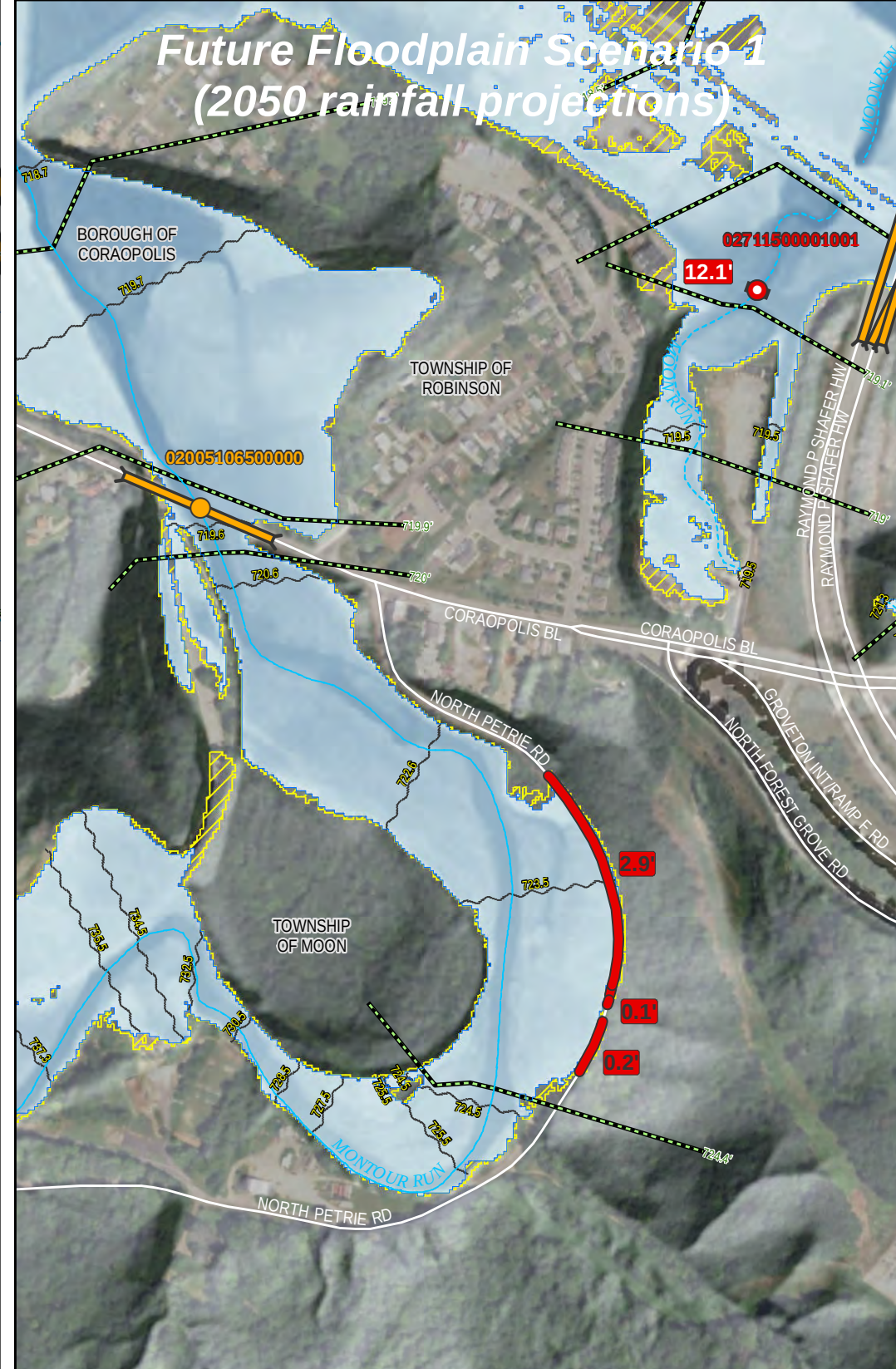
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Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

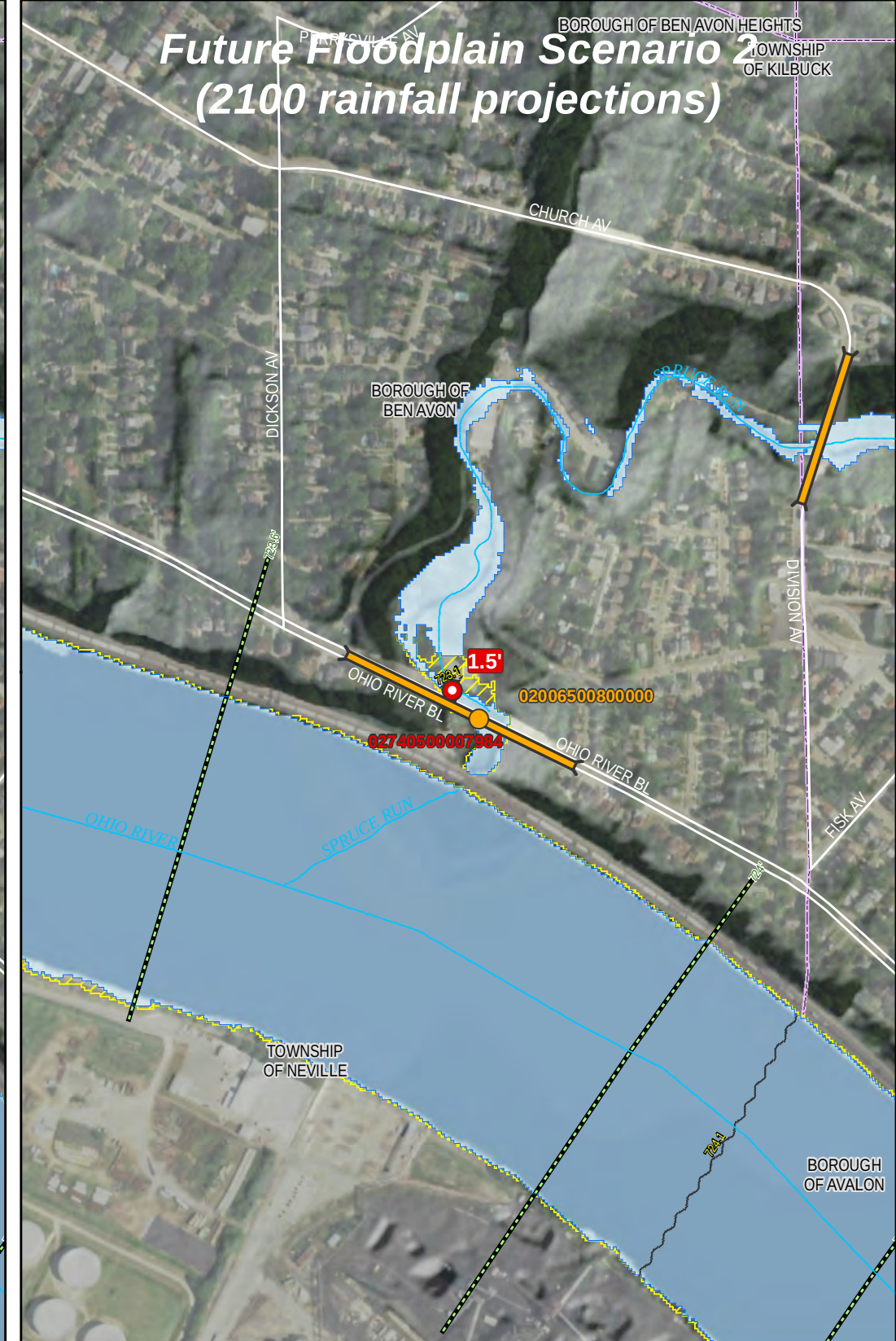
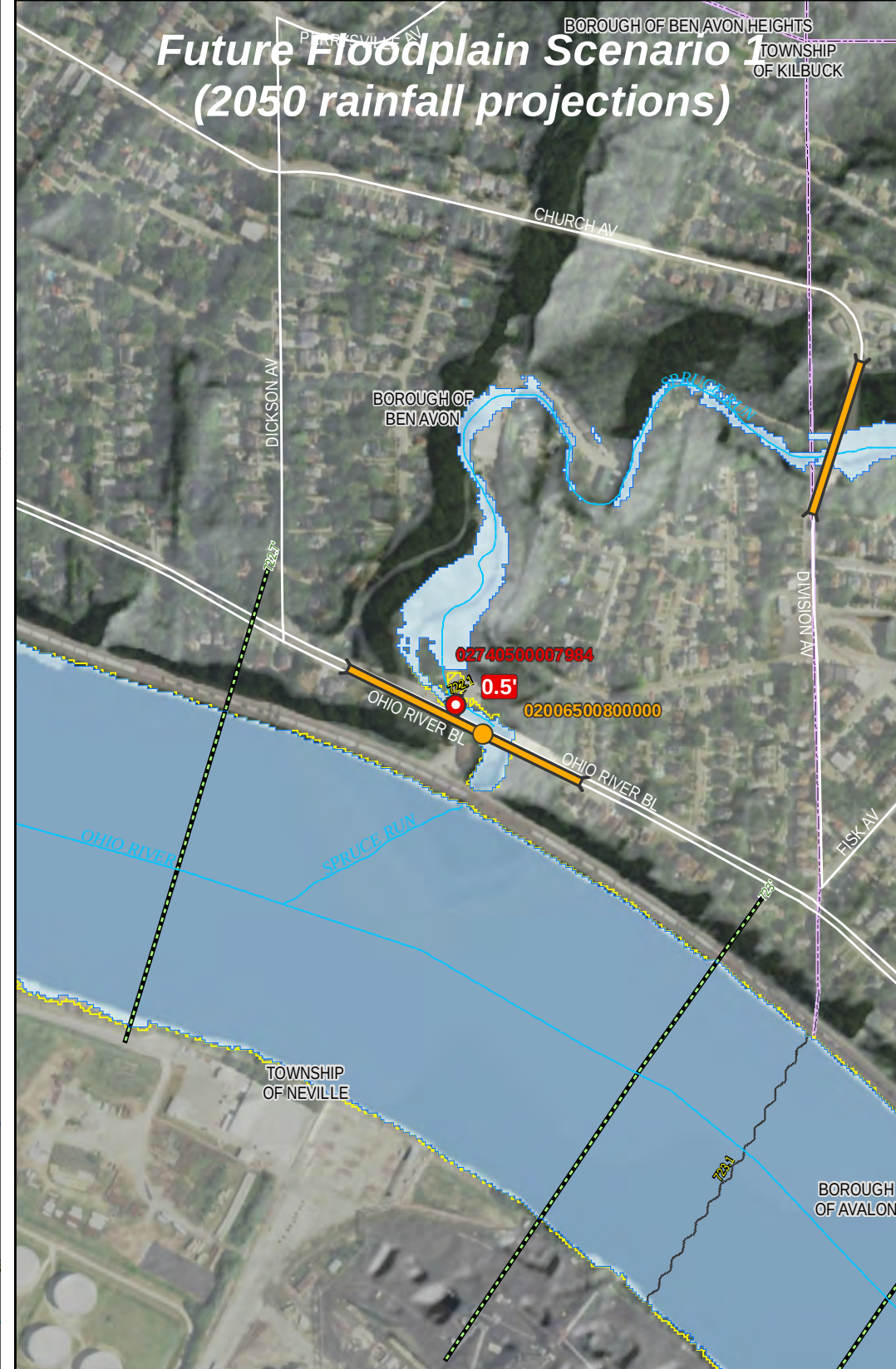
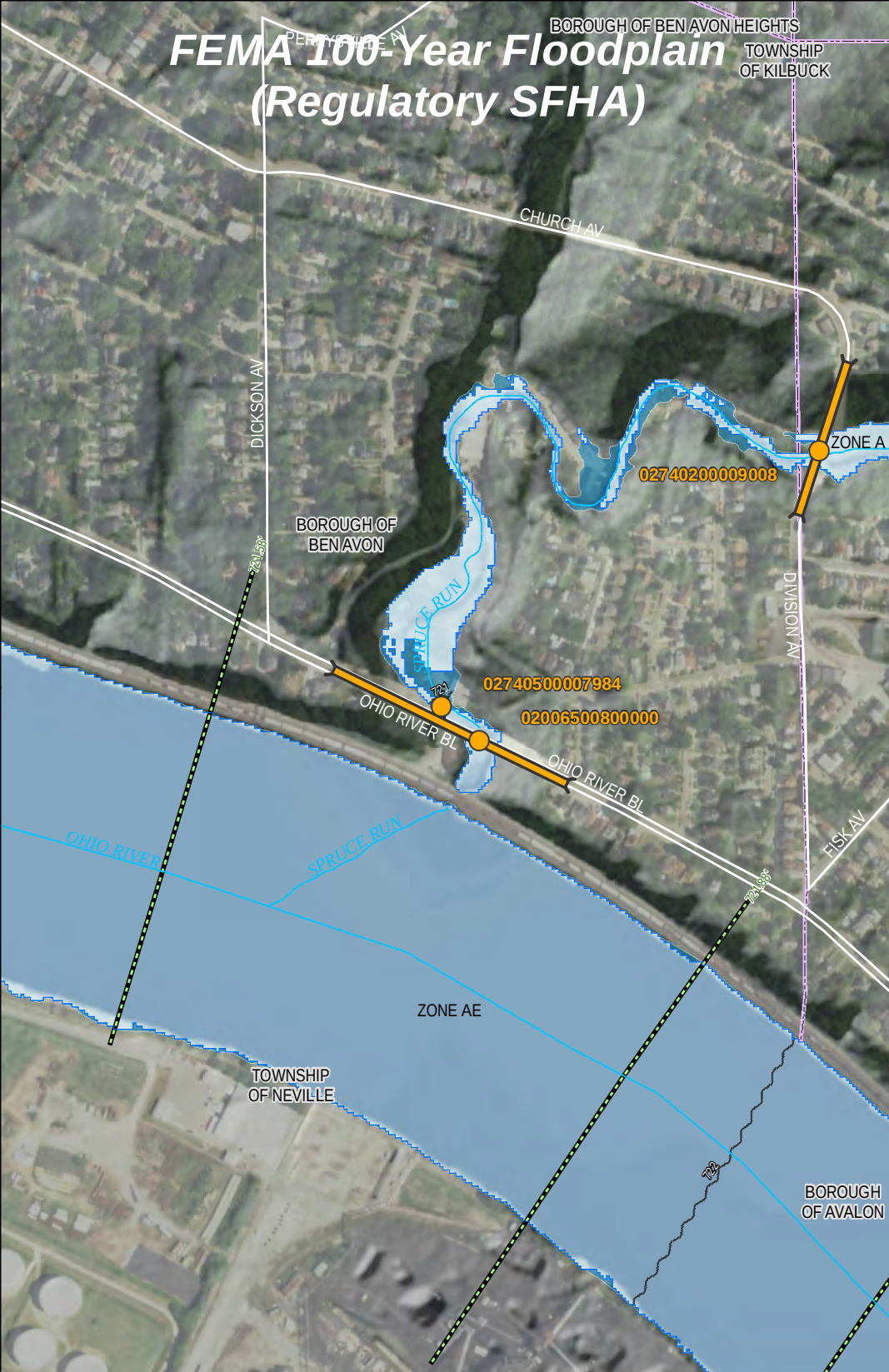
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

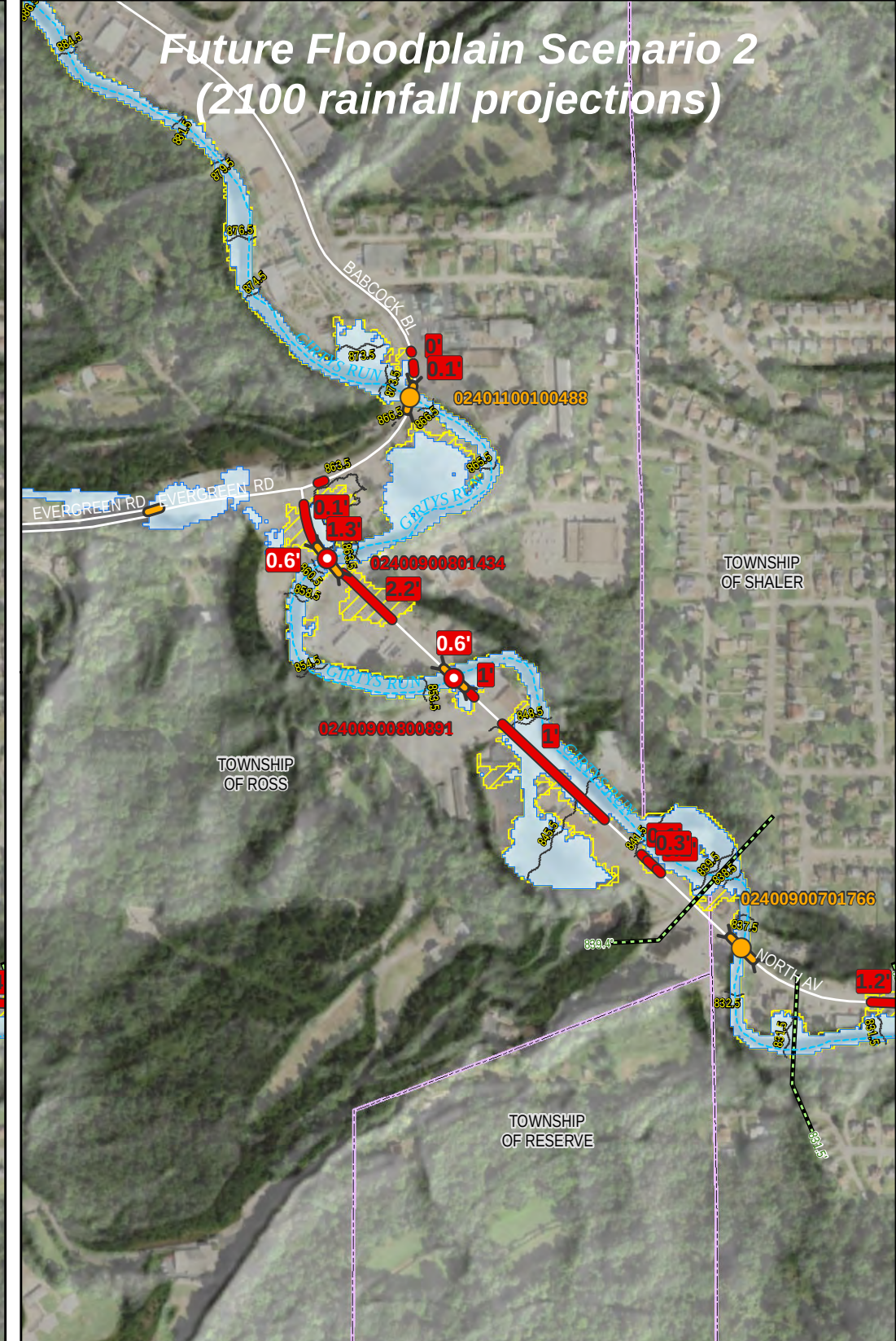
Sheet 85 of 265

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LOCATOR MAP

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

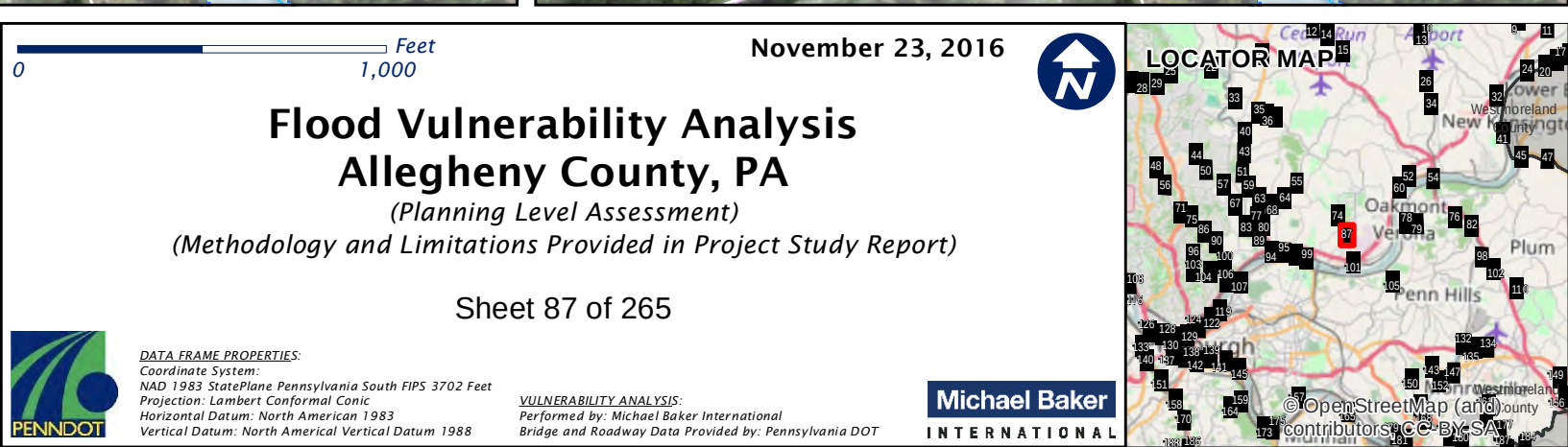
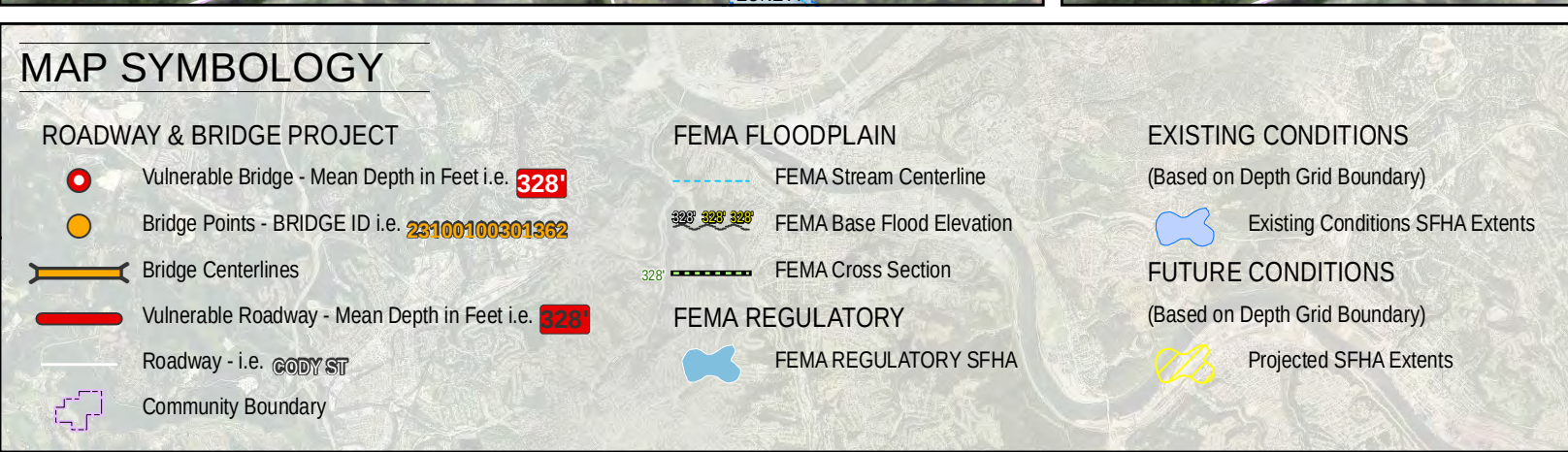
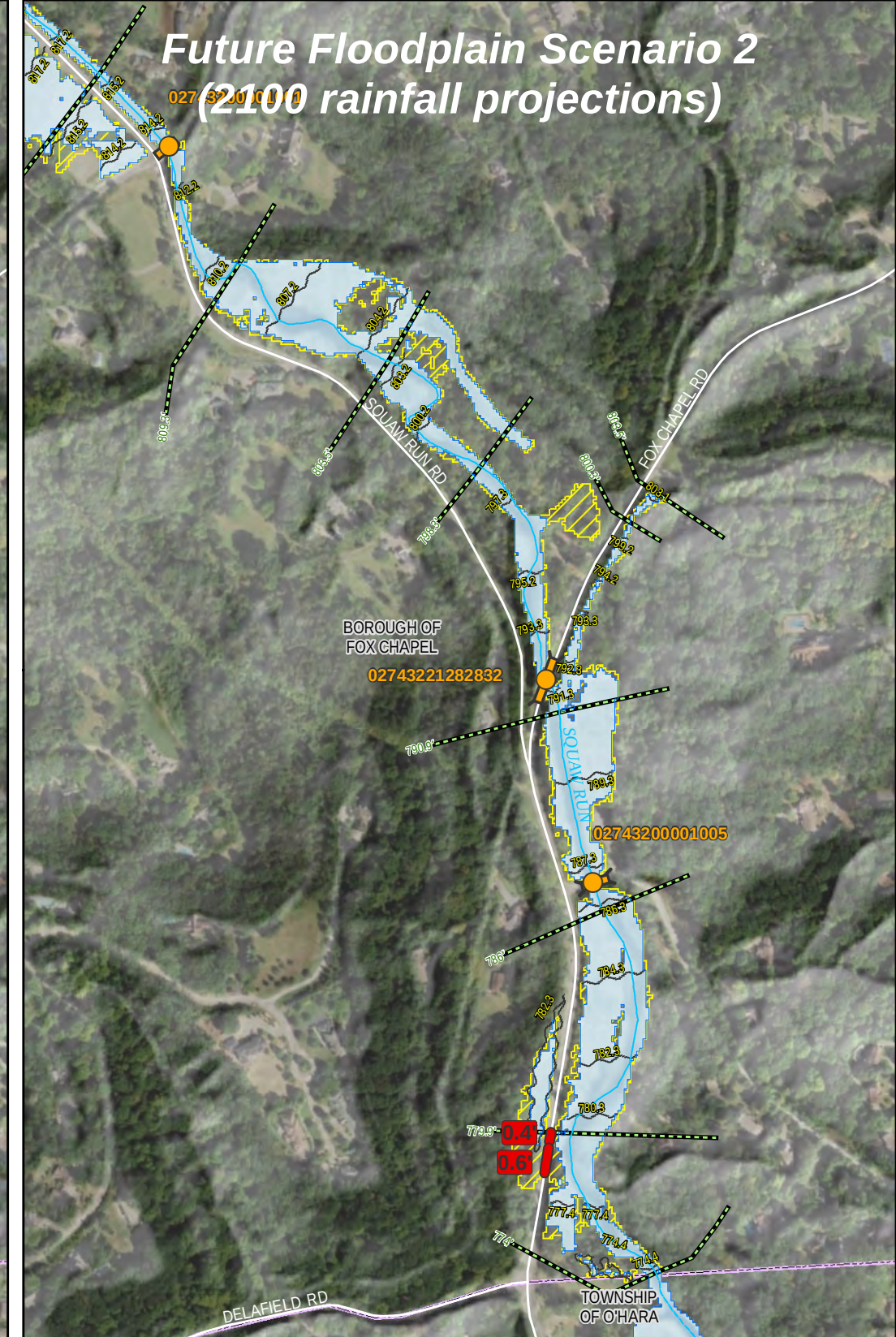
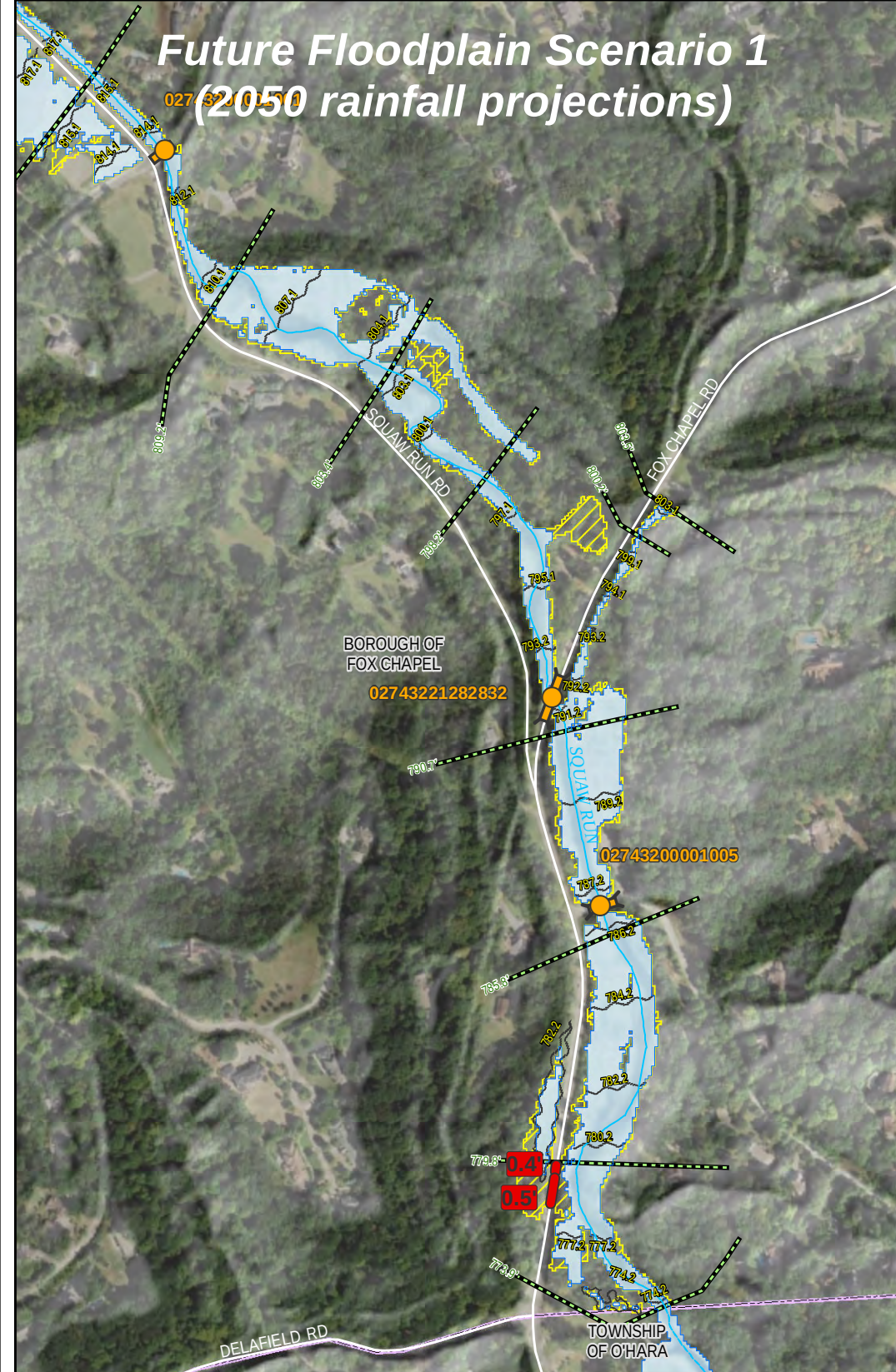
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

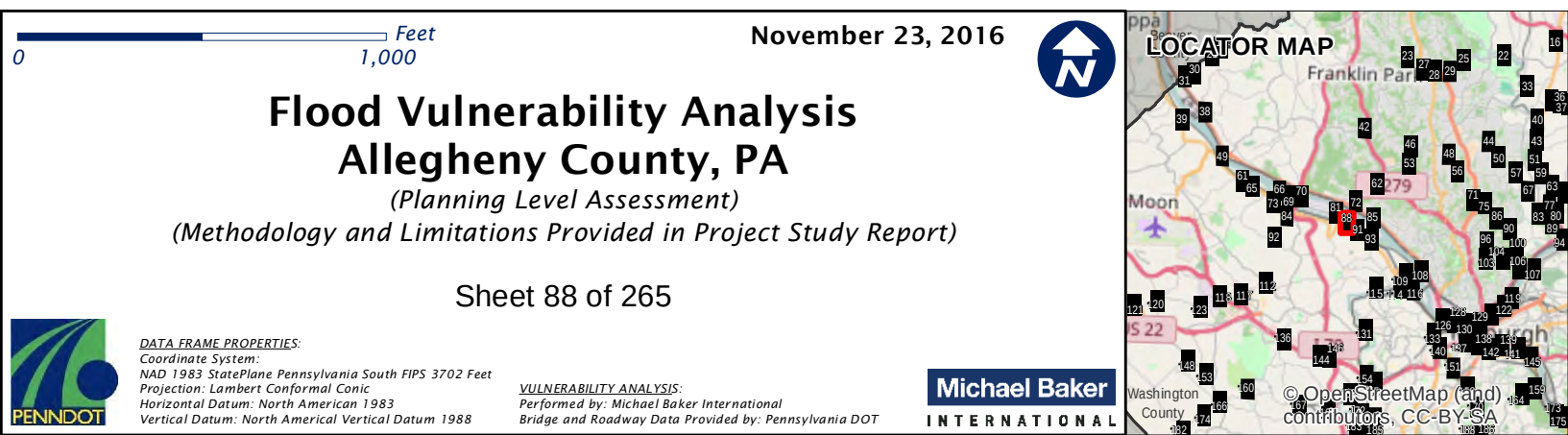
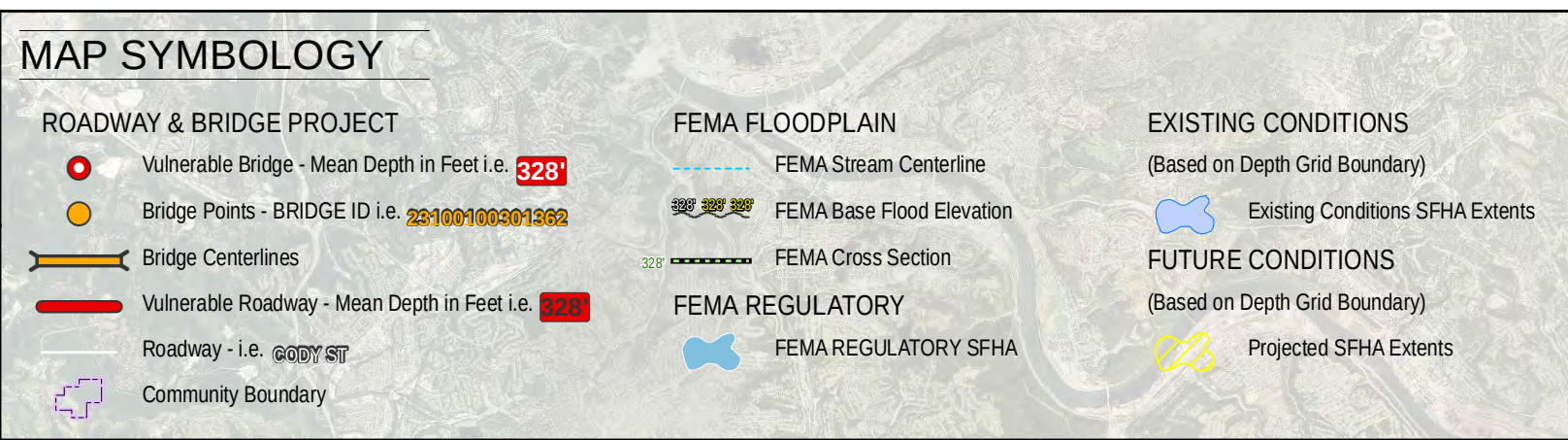
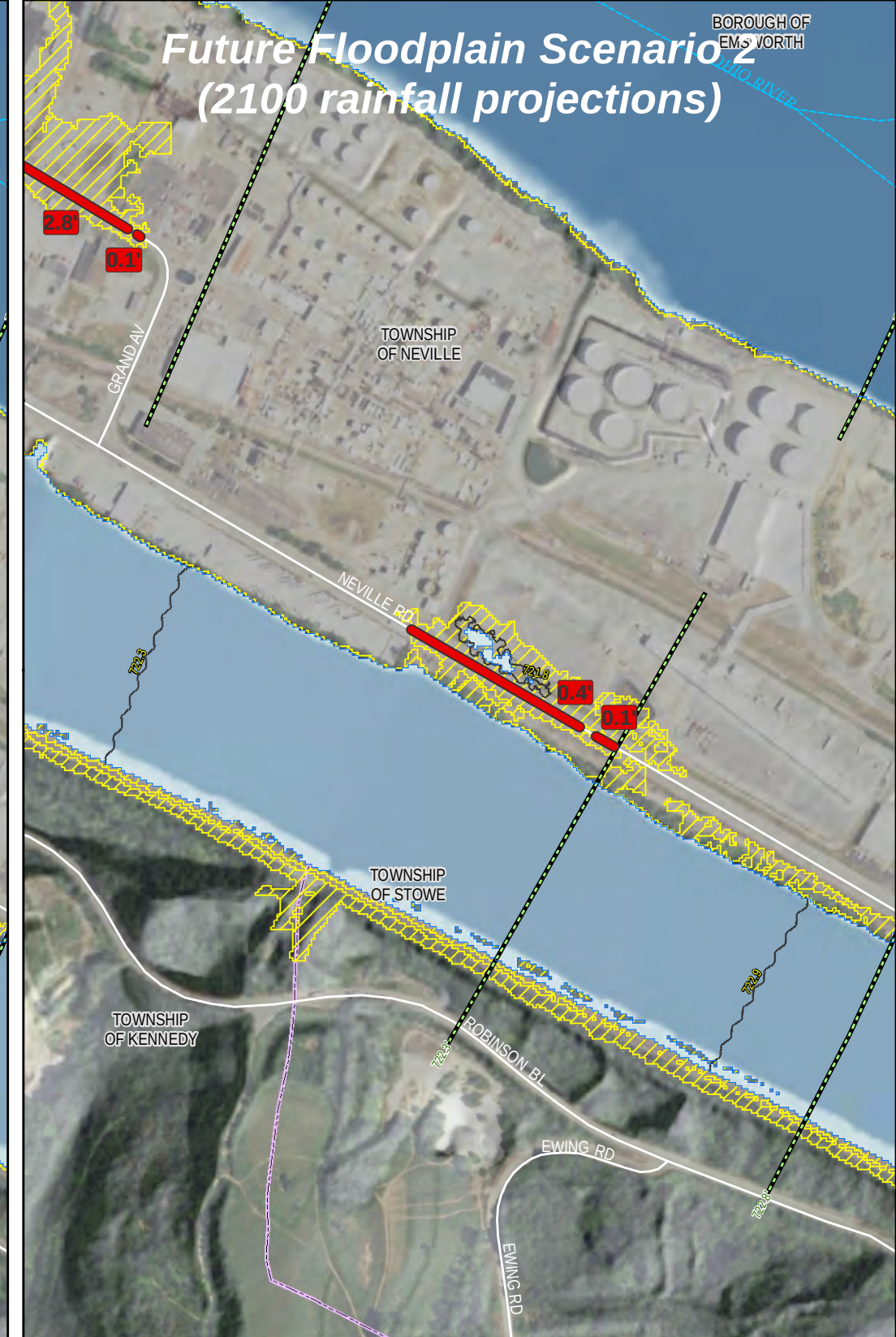
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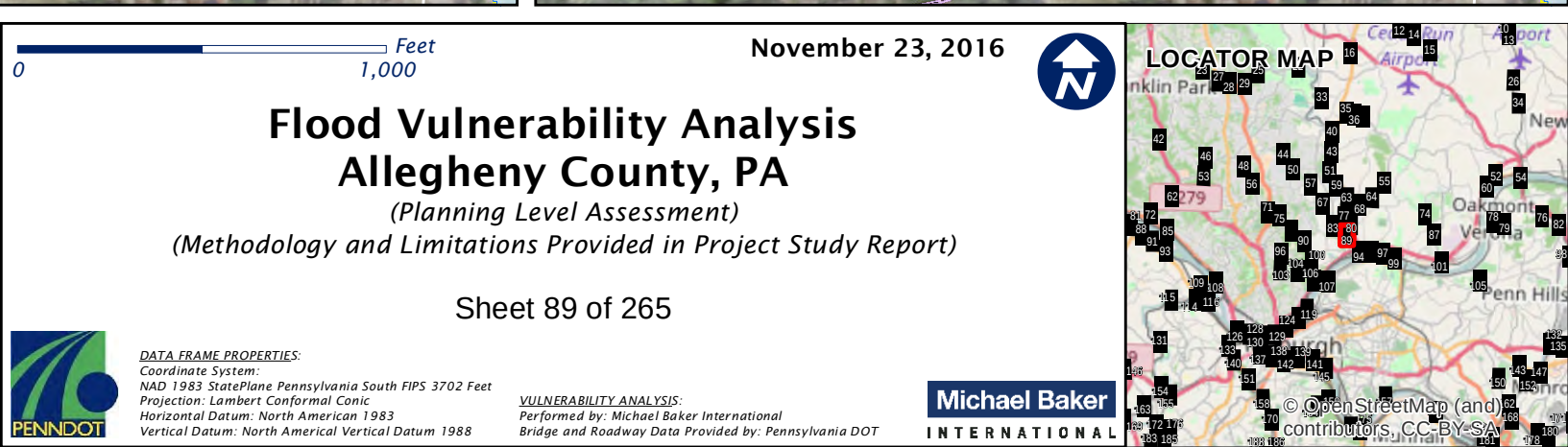
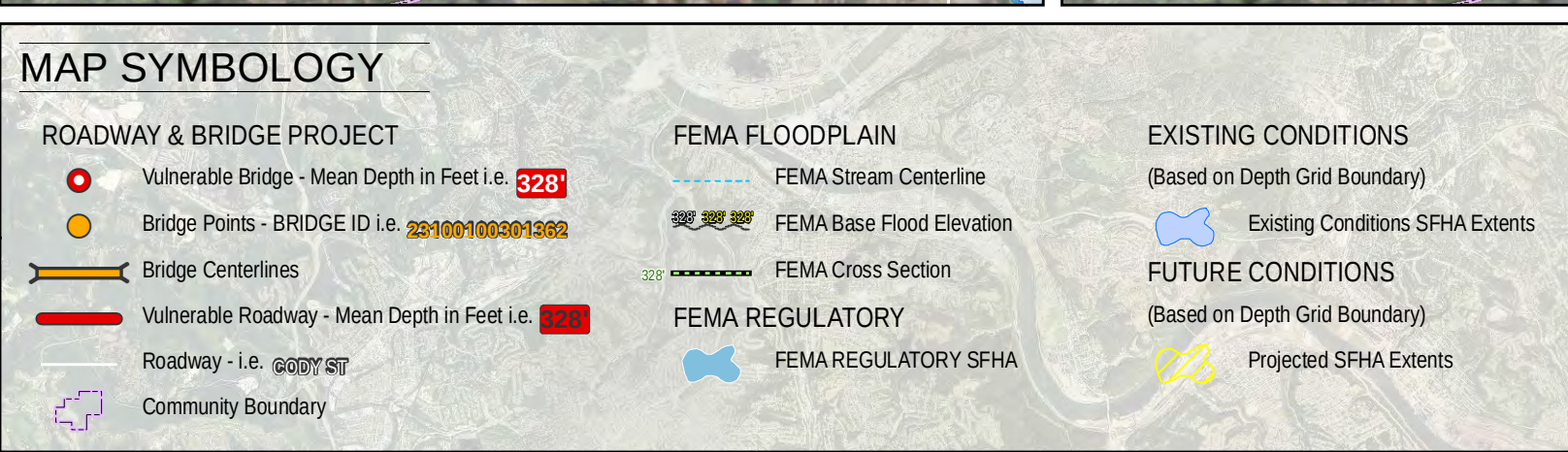
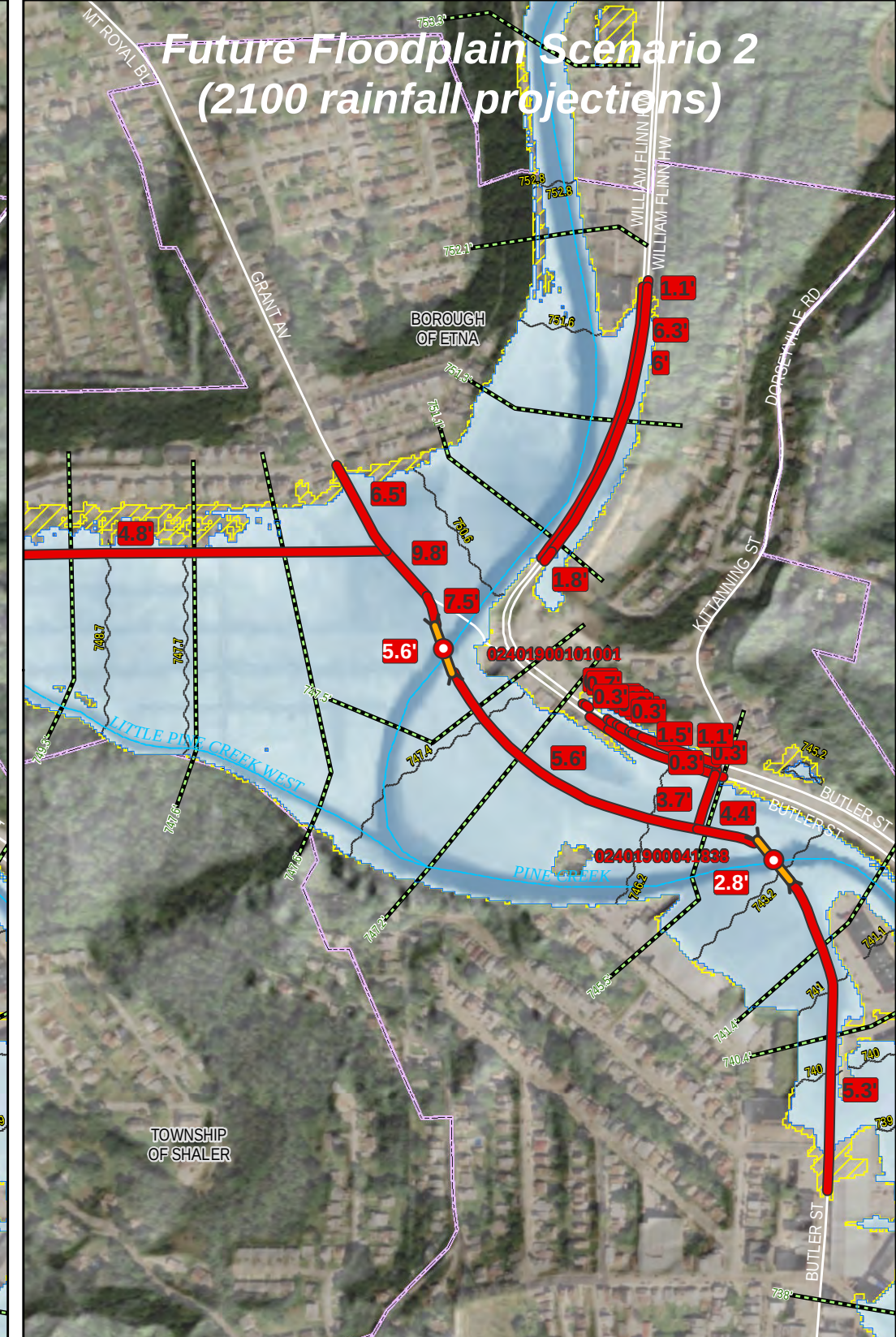
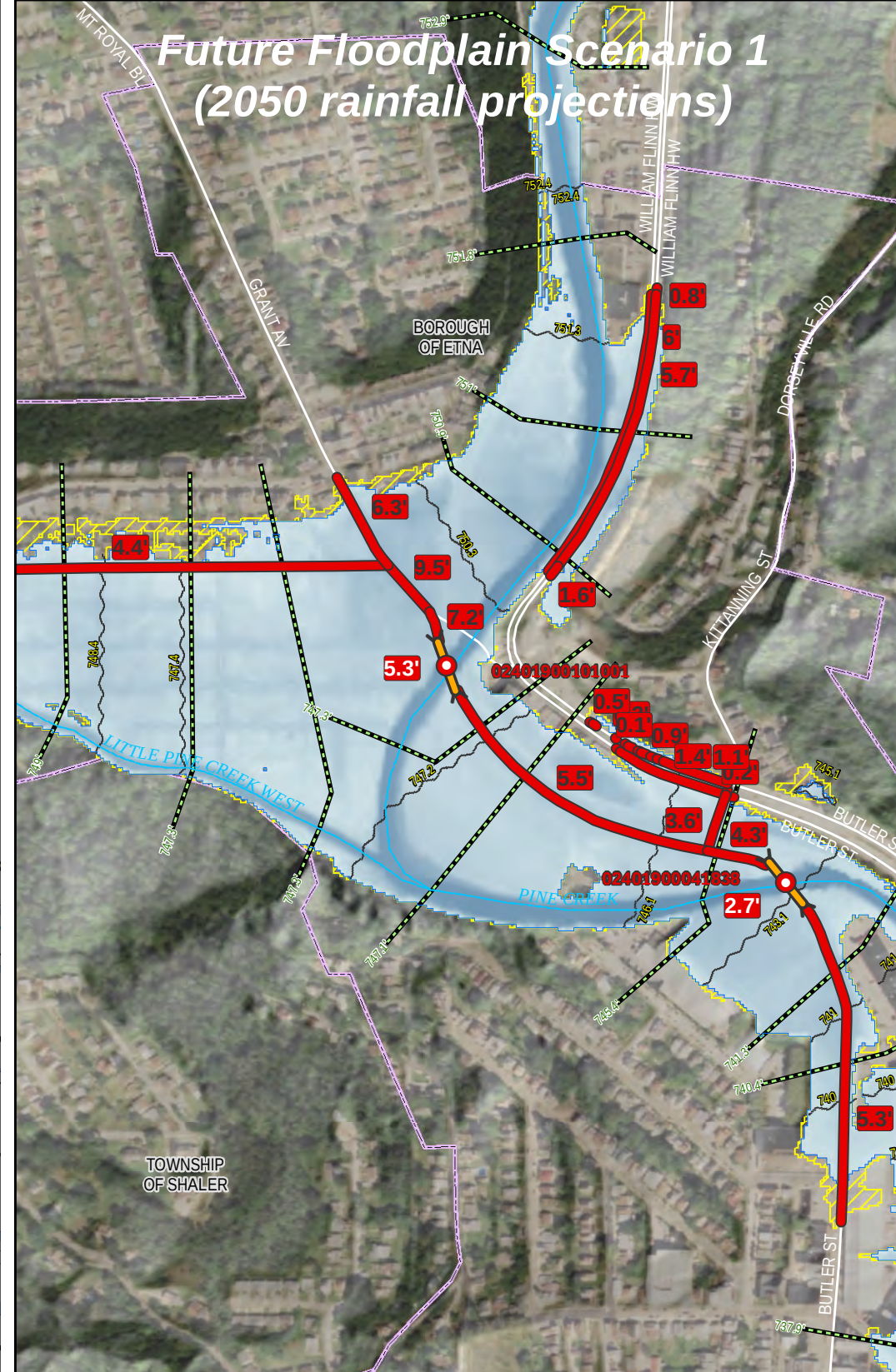
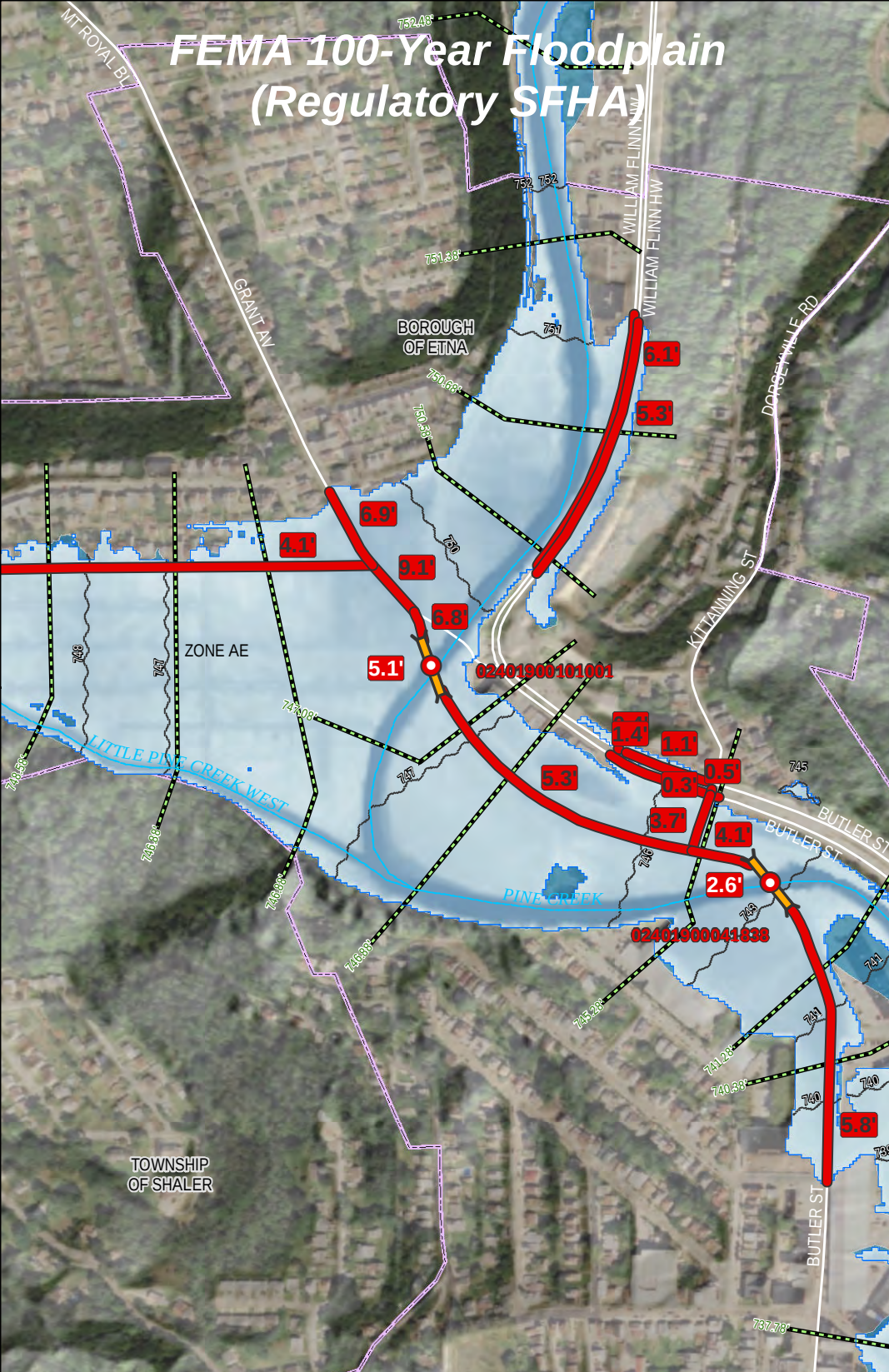
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

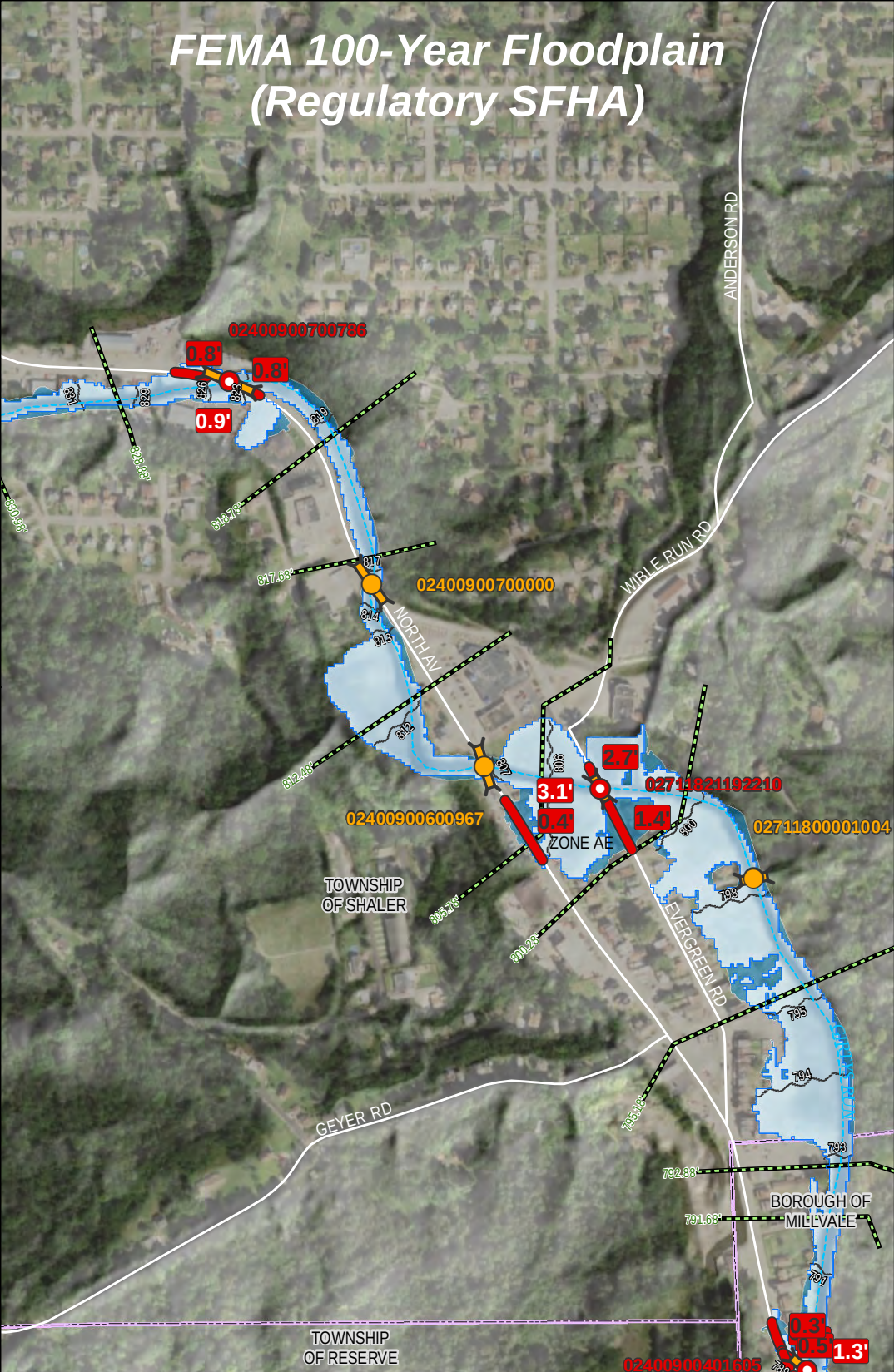
LOCATOR MAP



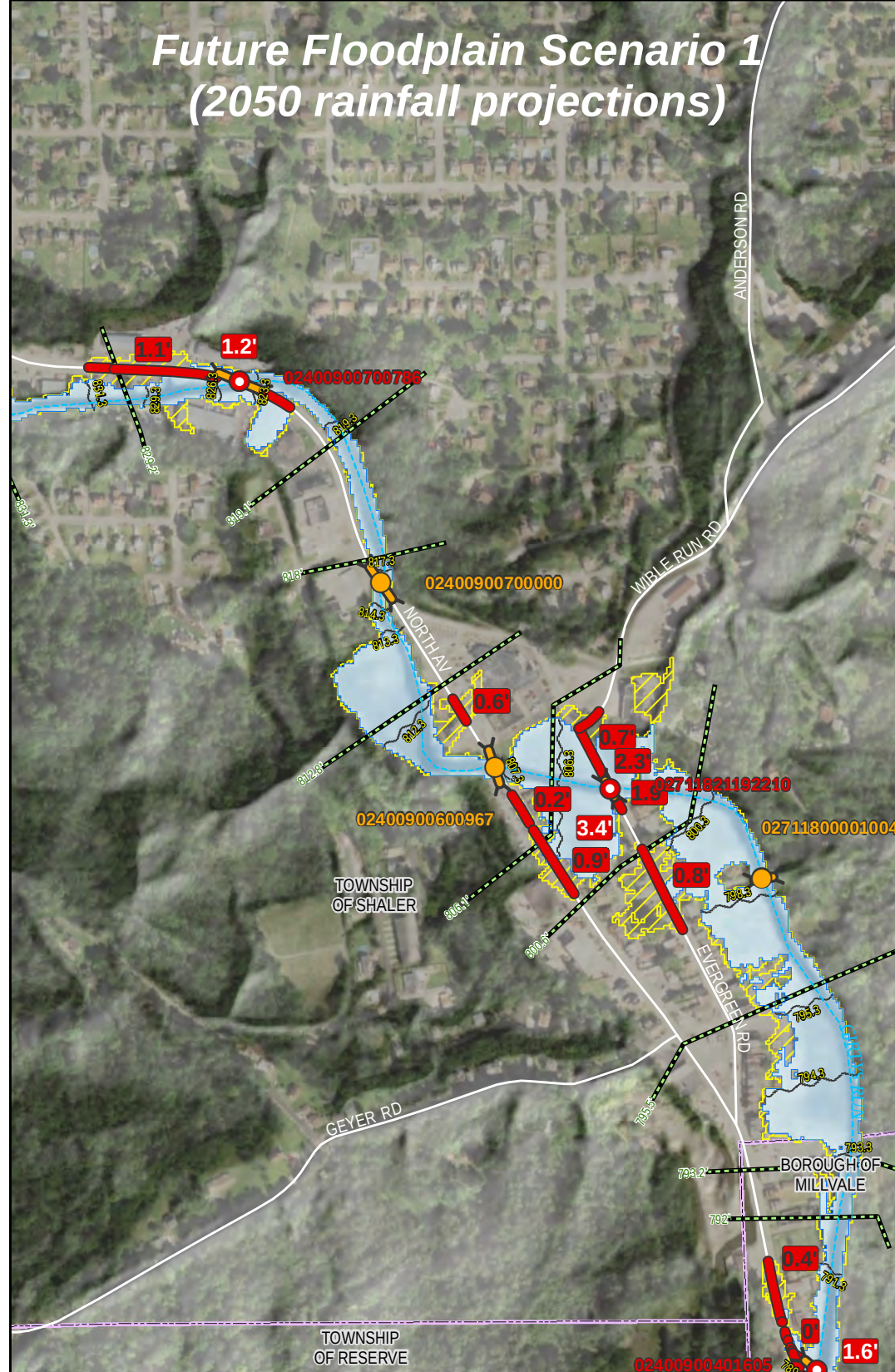




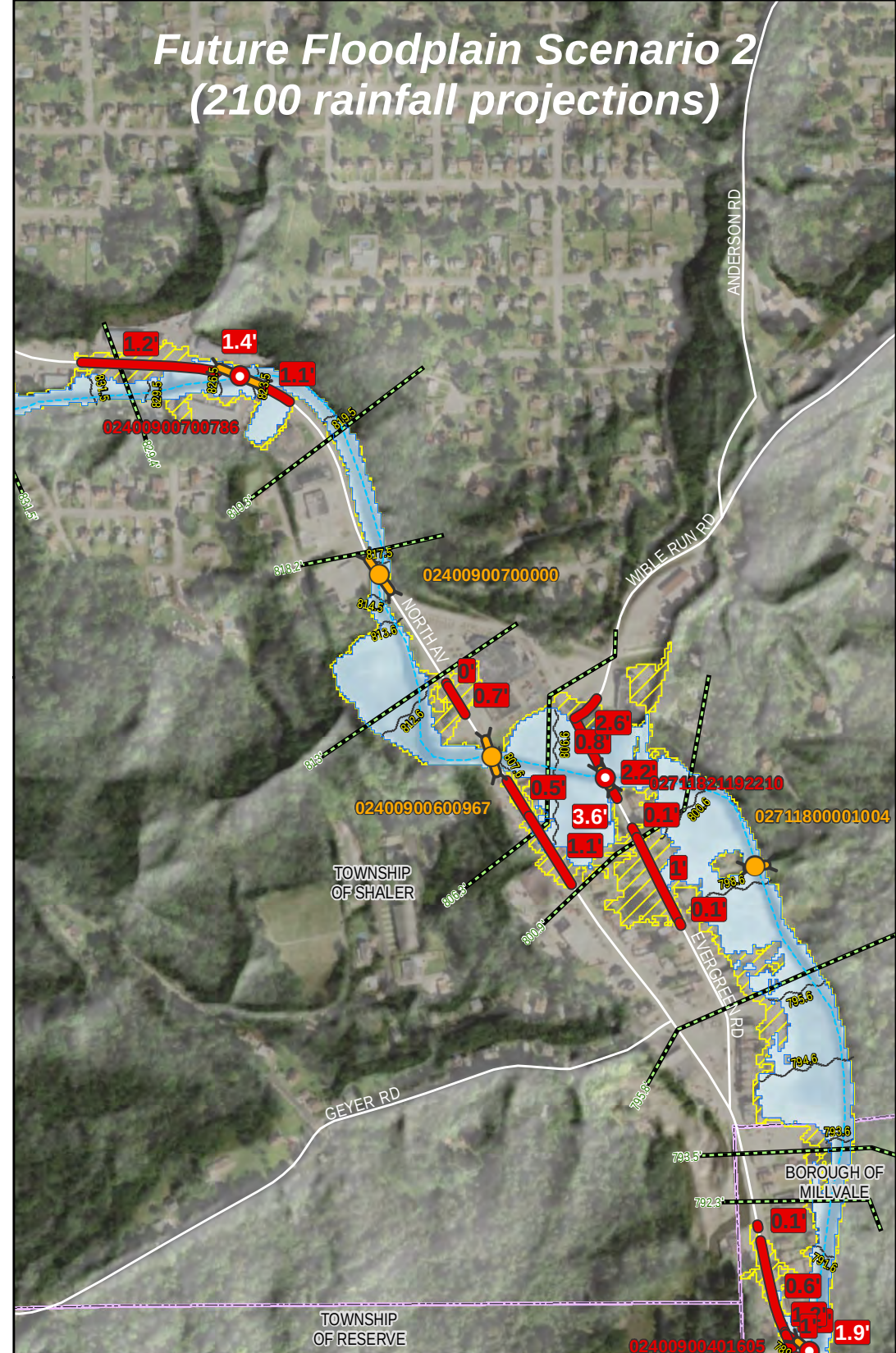
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOLOGY

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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

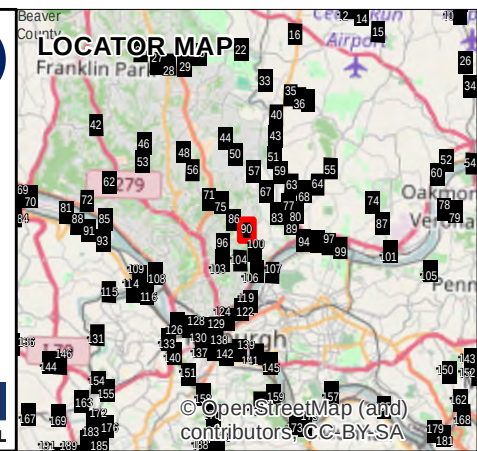
Sheet 90 of 265

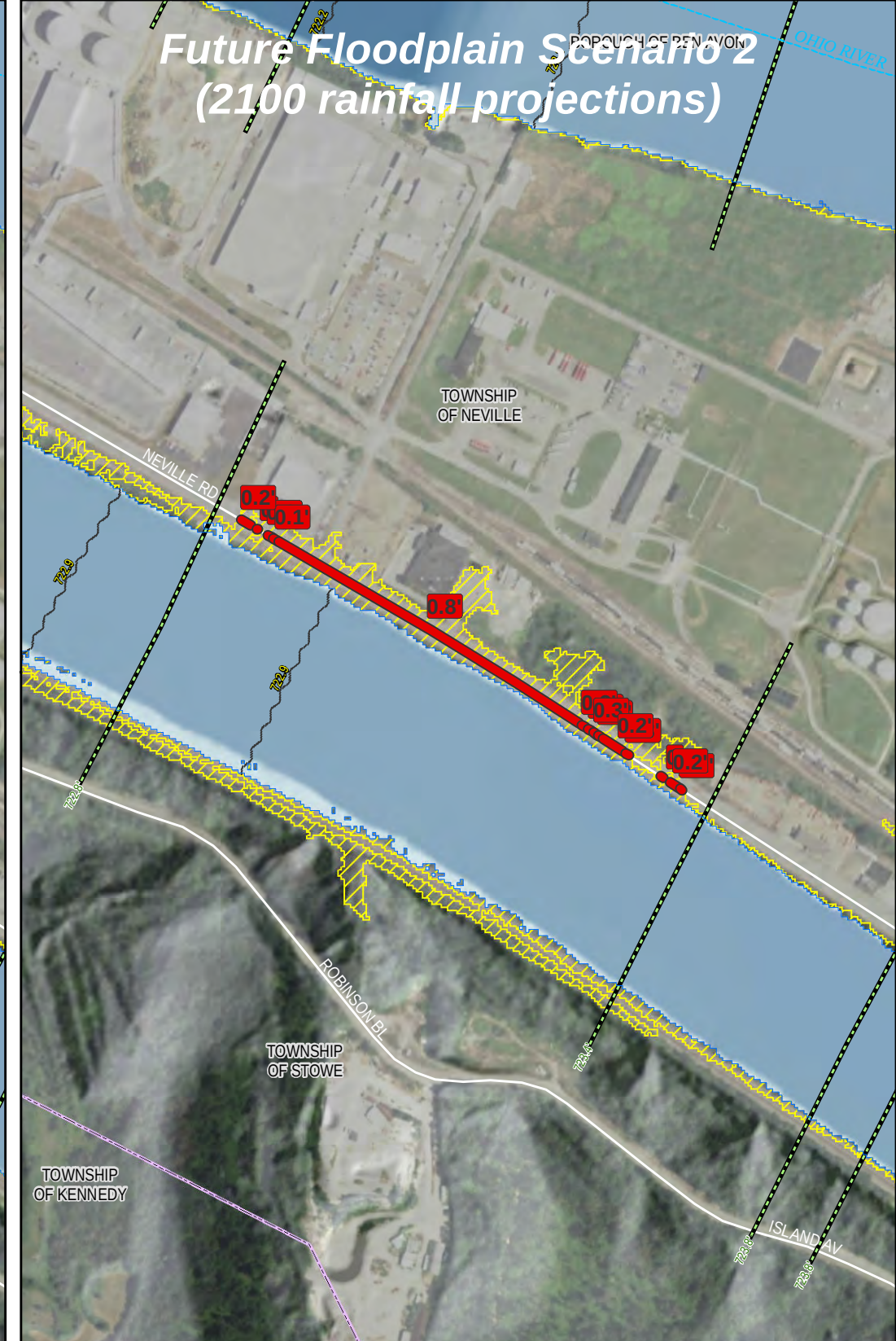
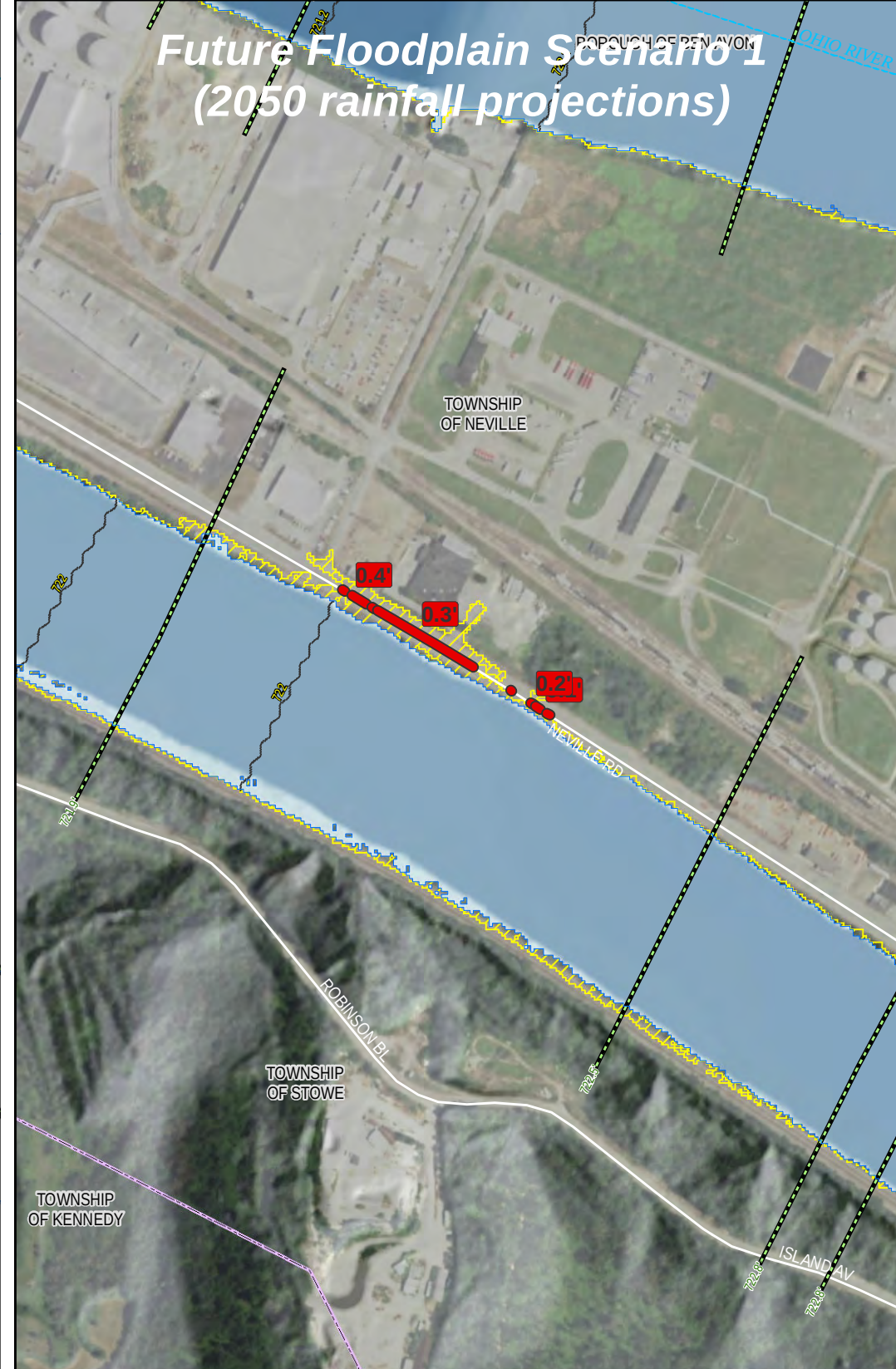
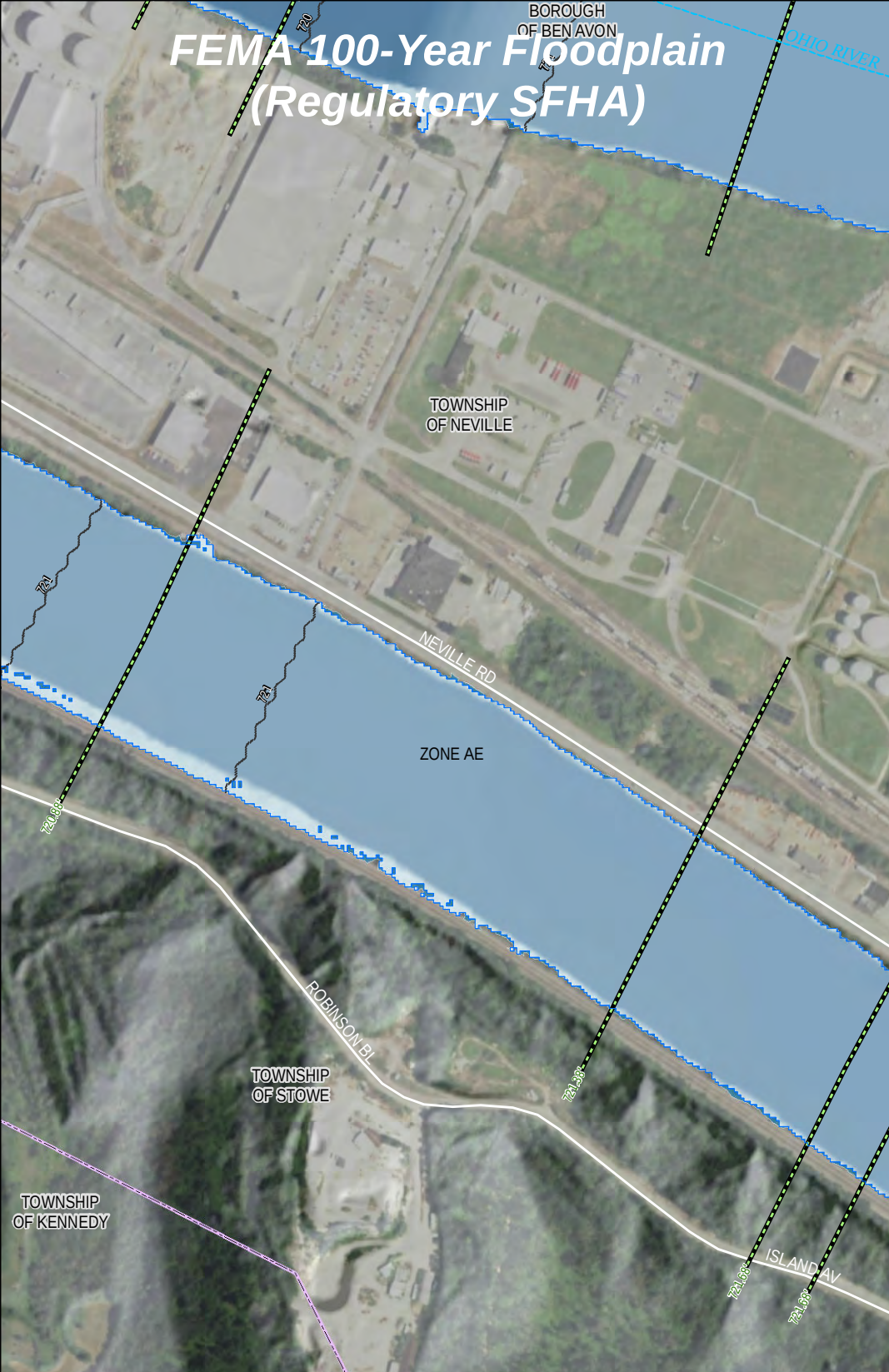


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

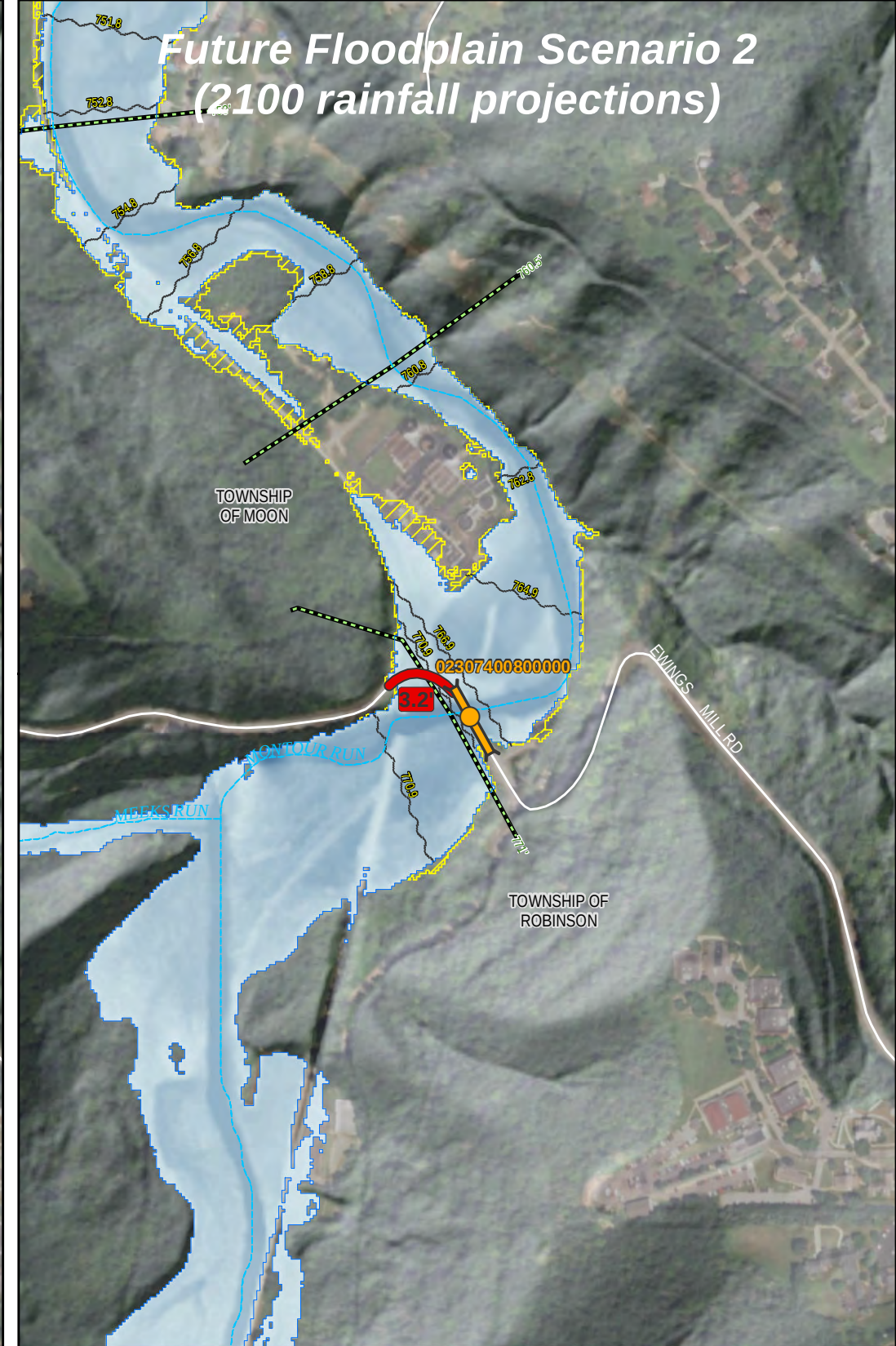
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 91 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 92 of 265

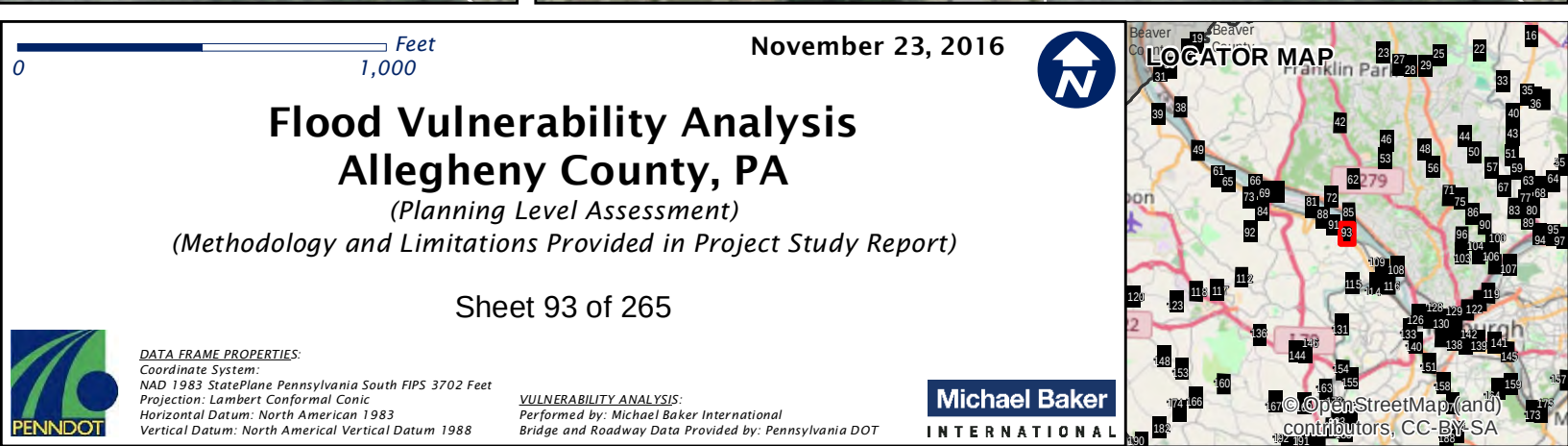
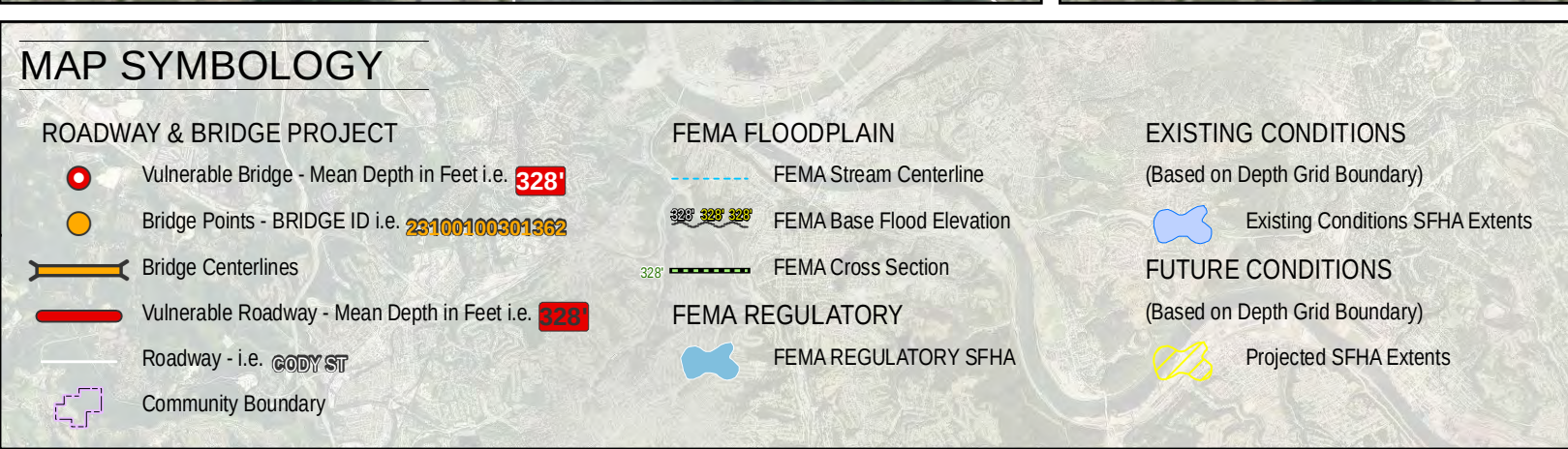
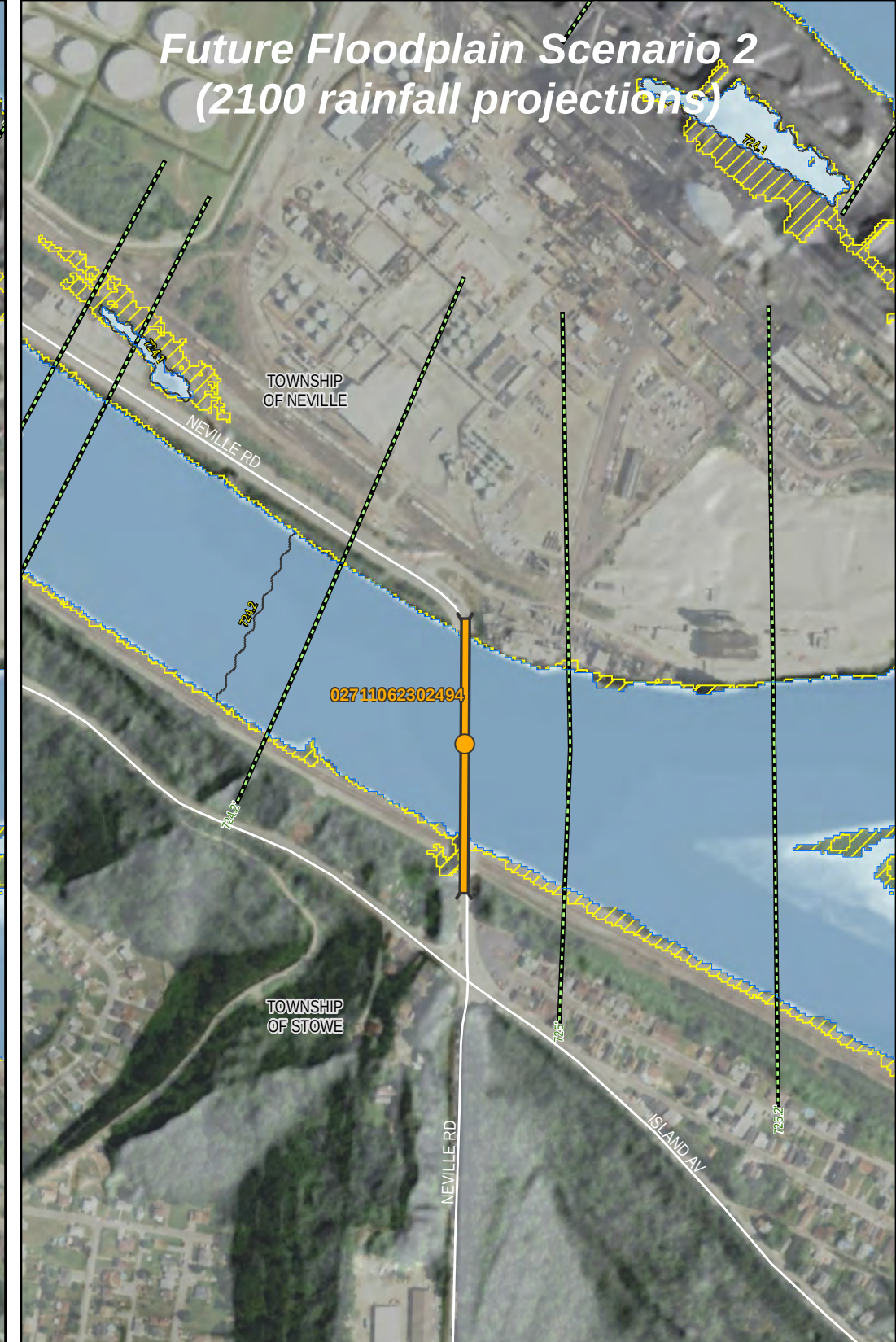
**Michael Baker
INTERNATIONAL**

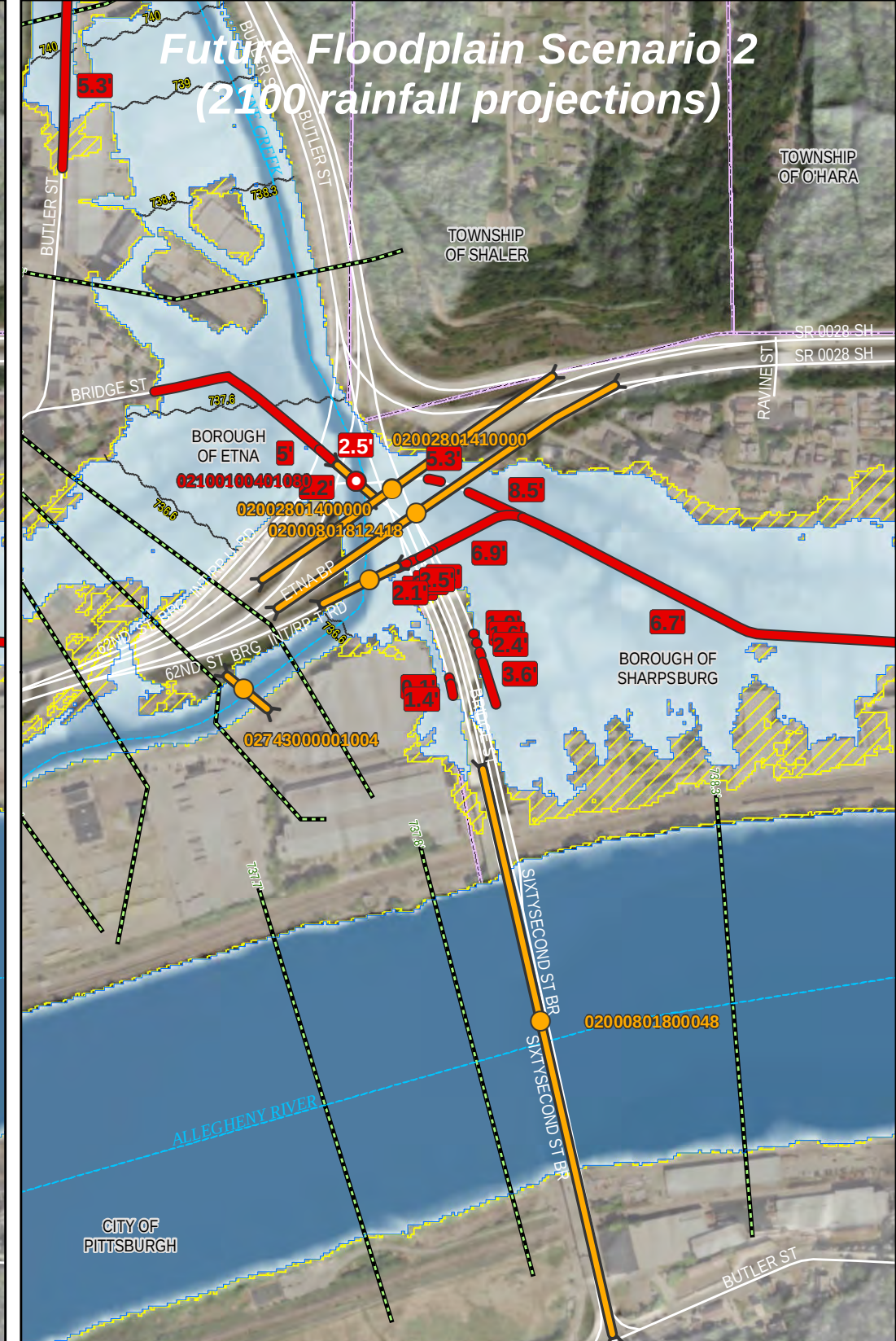
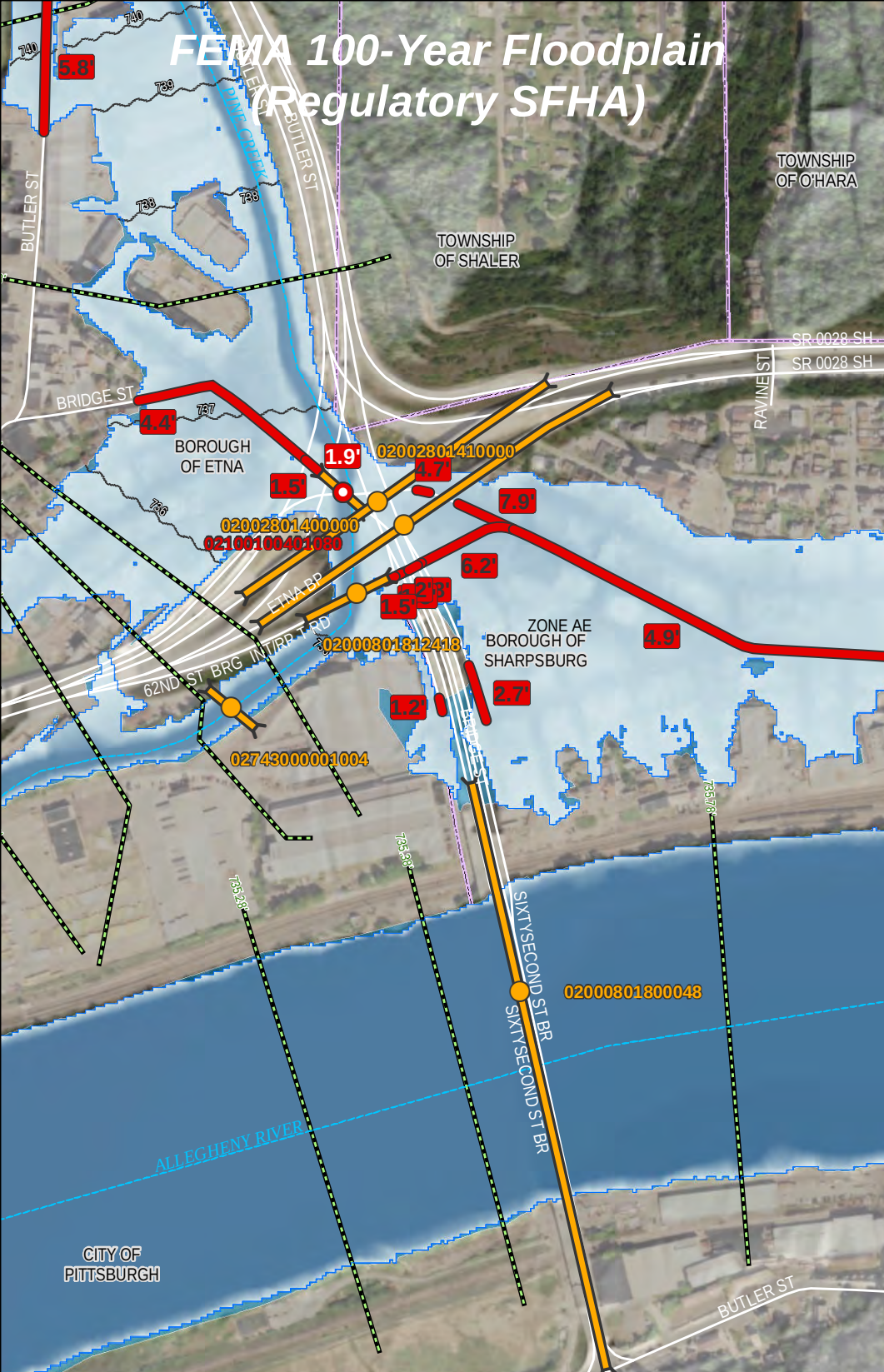
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VULNERABILITY ANALYSIS:
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LOCATOR MAP

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

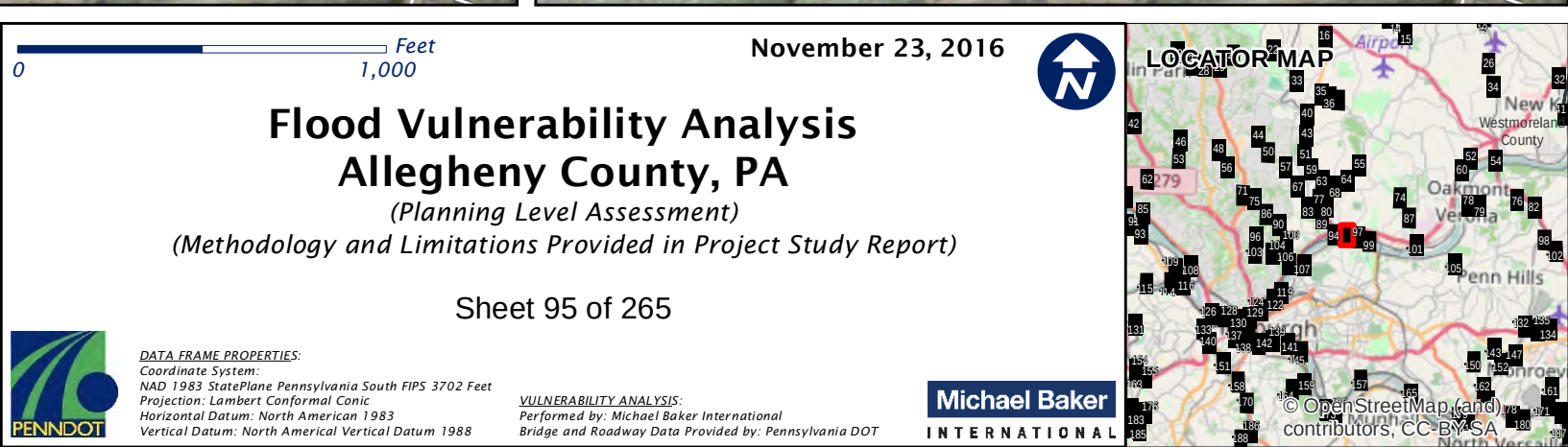
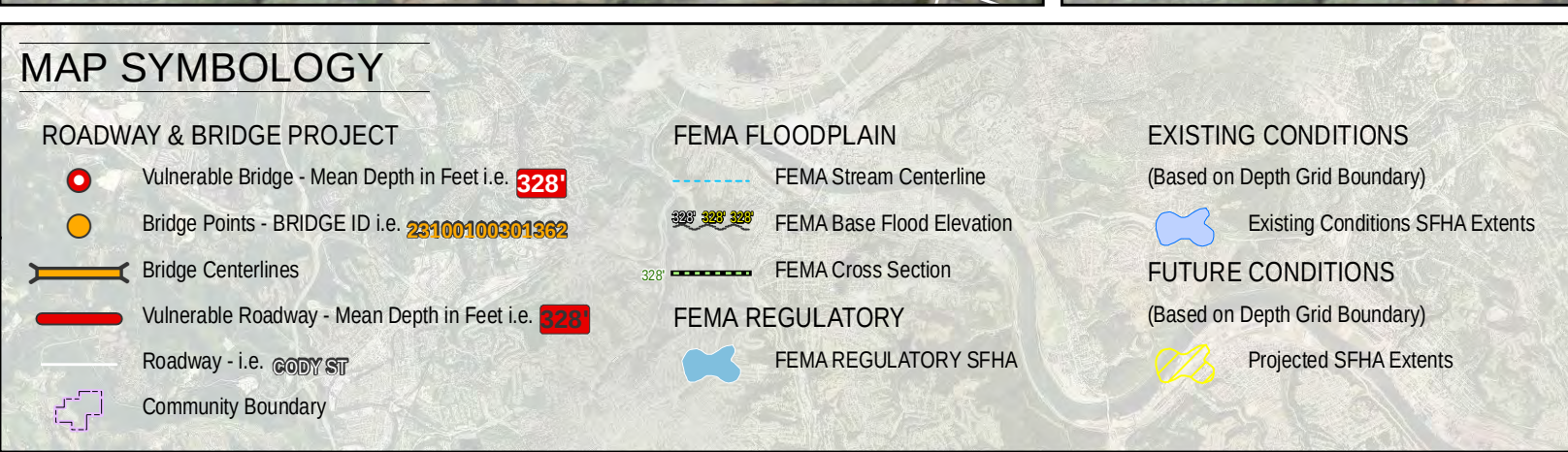
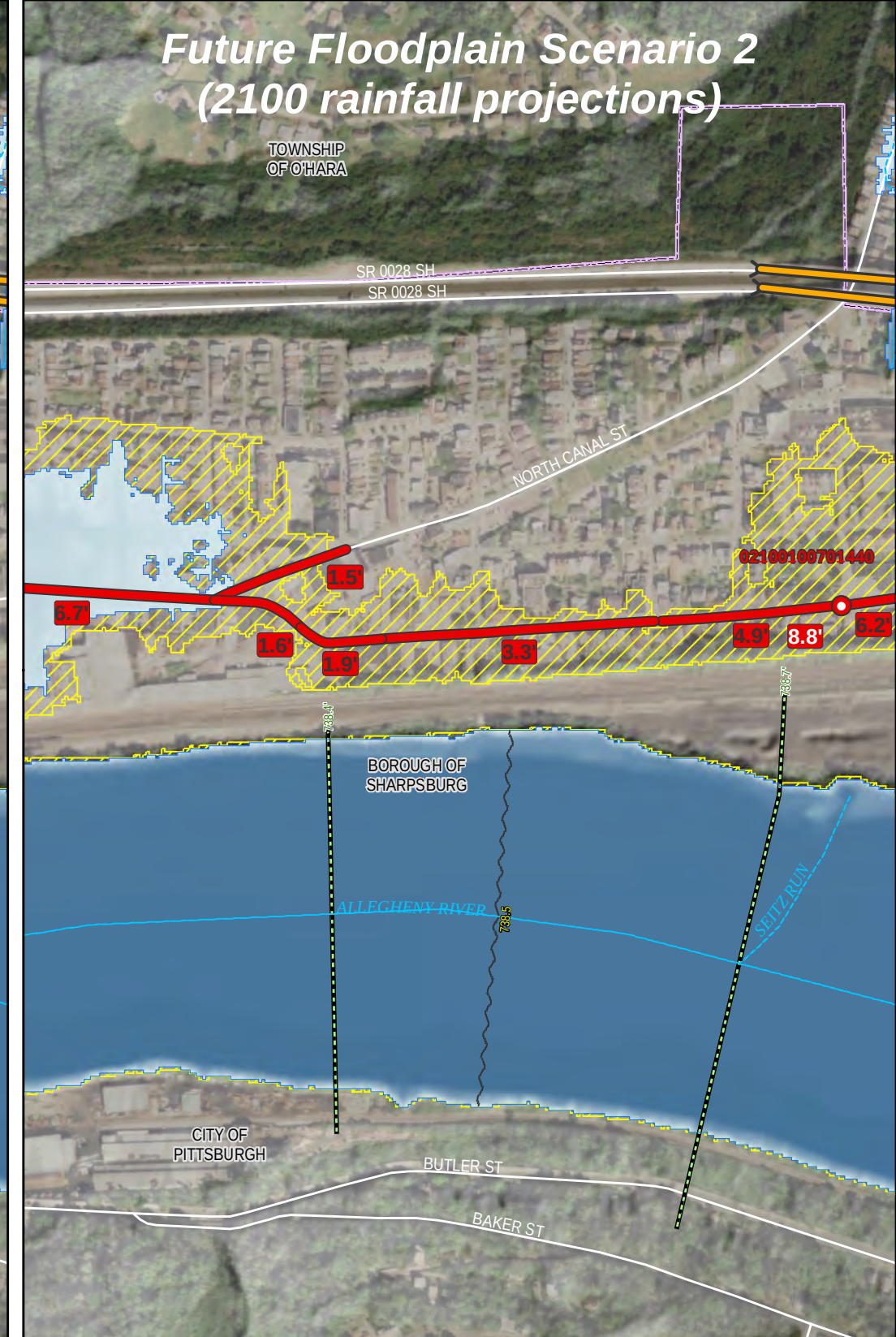
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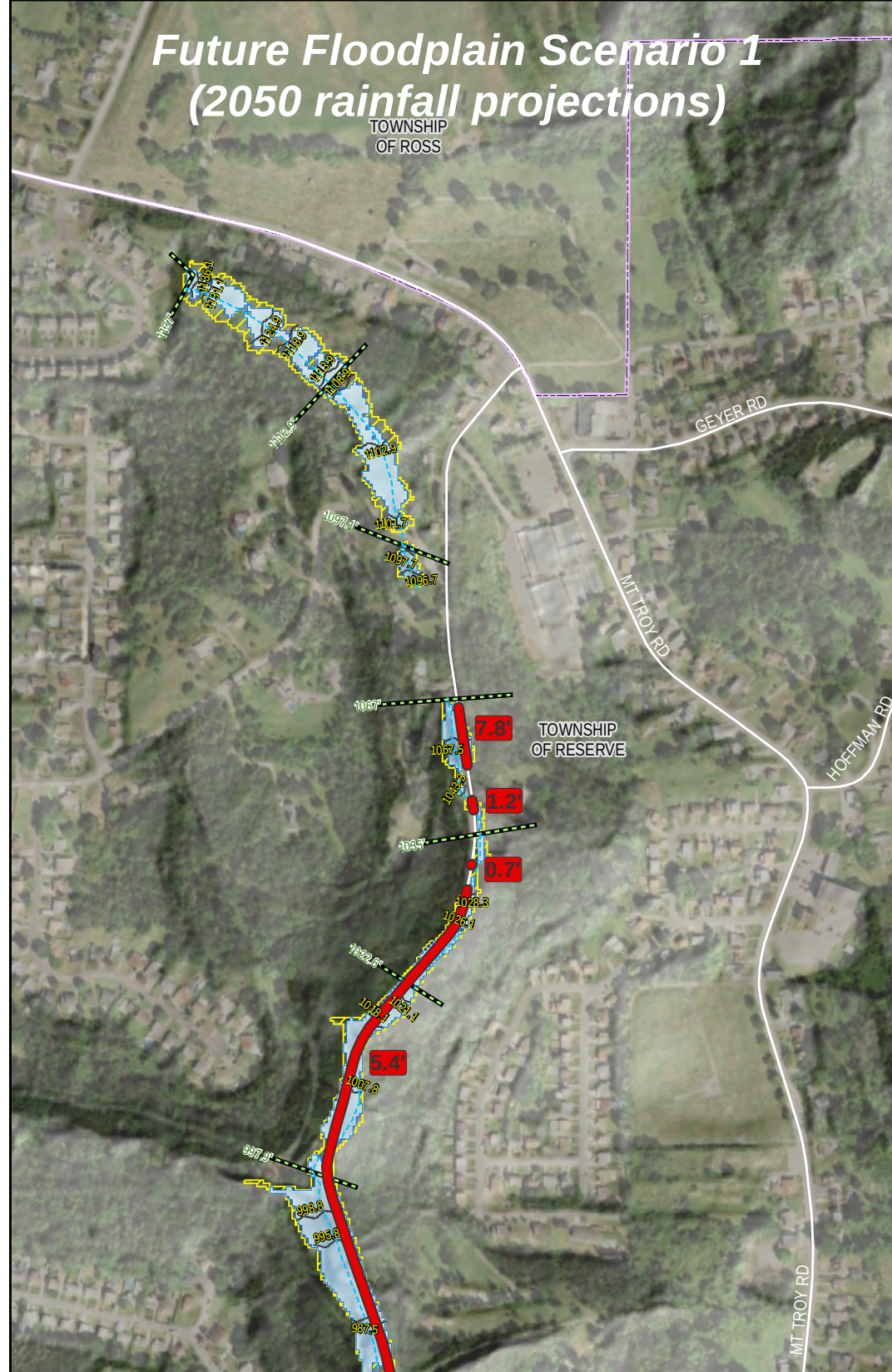
Michael Baker INTERNATIONAL

LOCATOR MAP

DATA FRAME PROPERTIES:
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Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 3.28'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 3.28'	FEMA REGULATORY	
Roadway - i.e. GODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

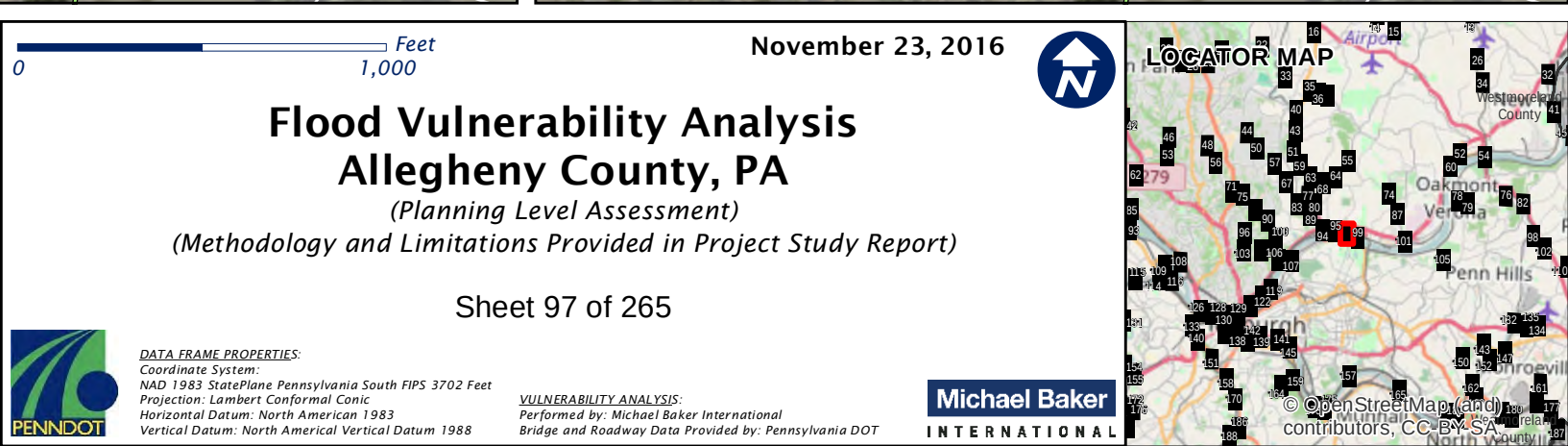
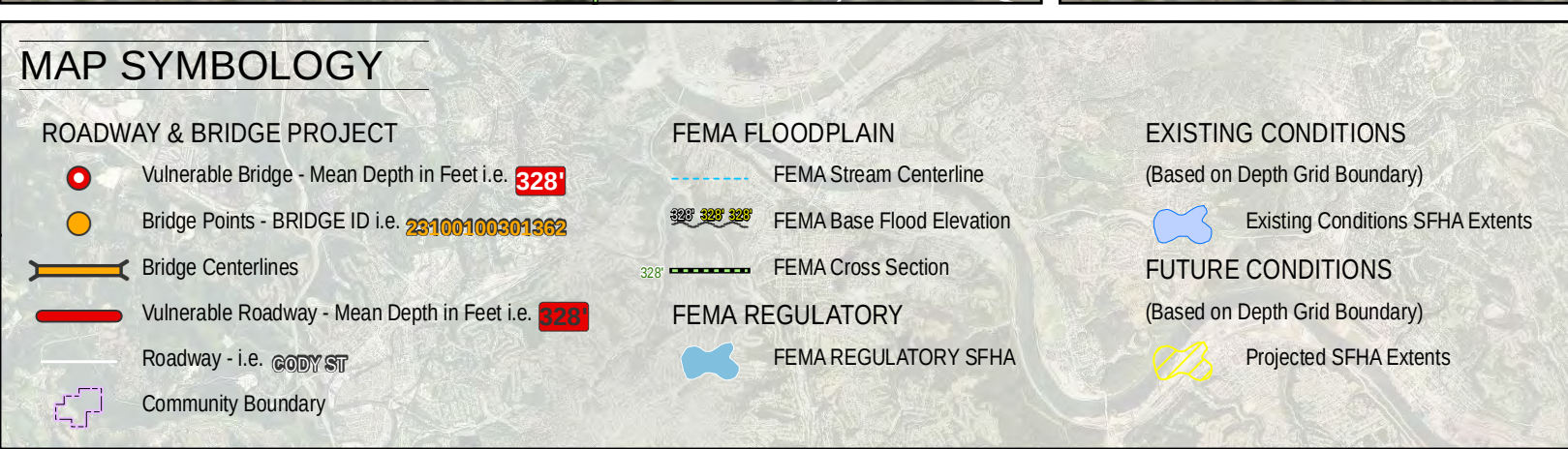
Allegheny County, PA

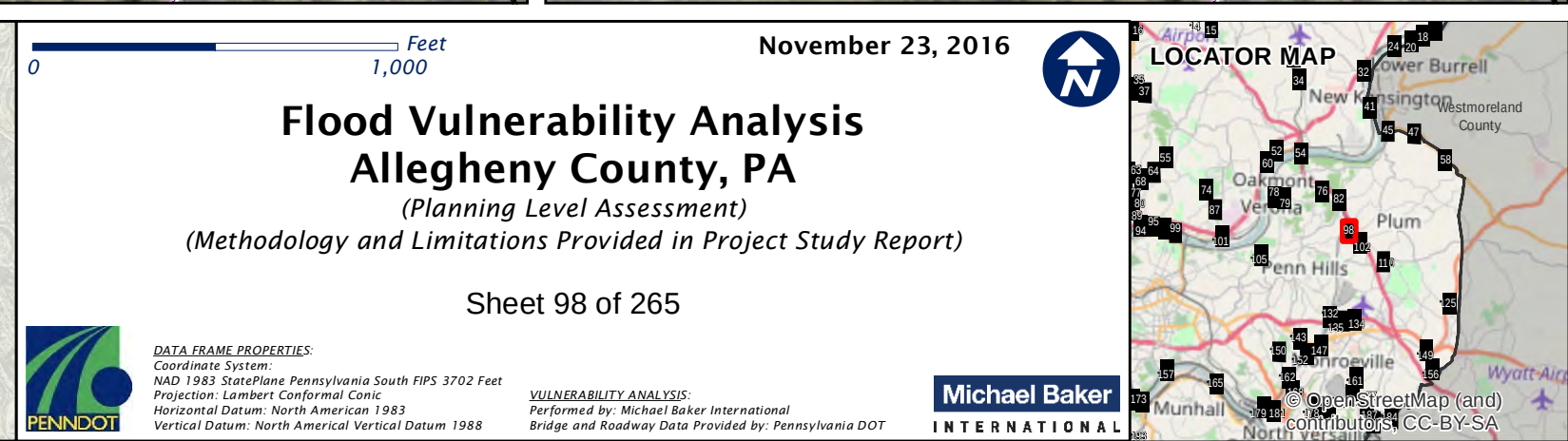
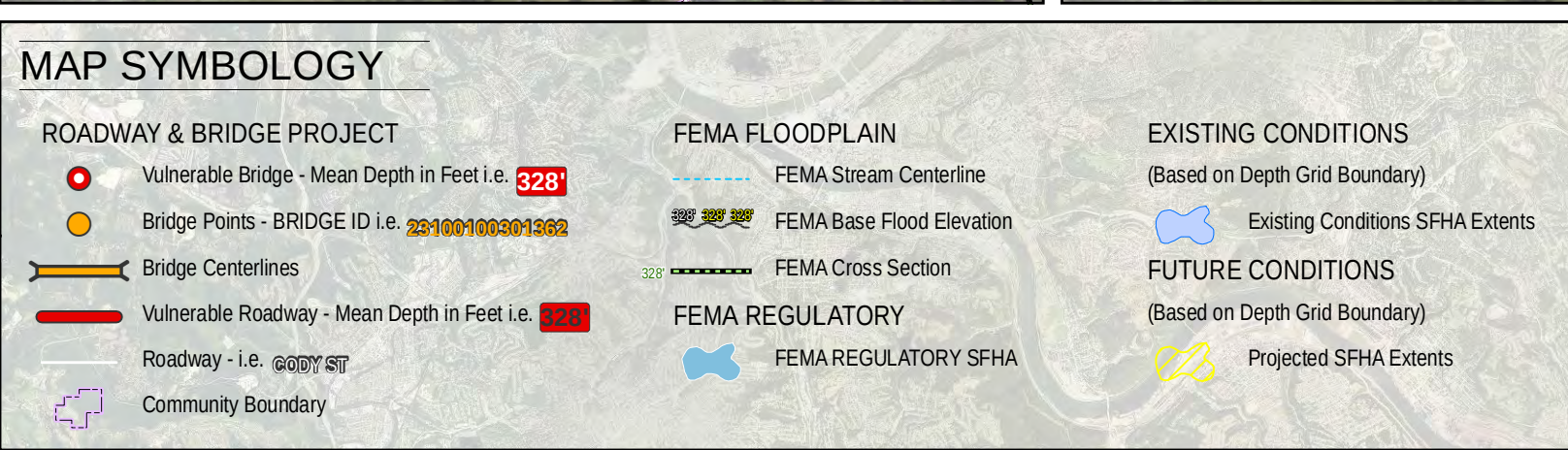
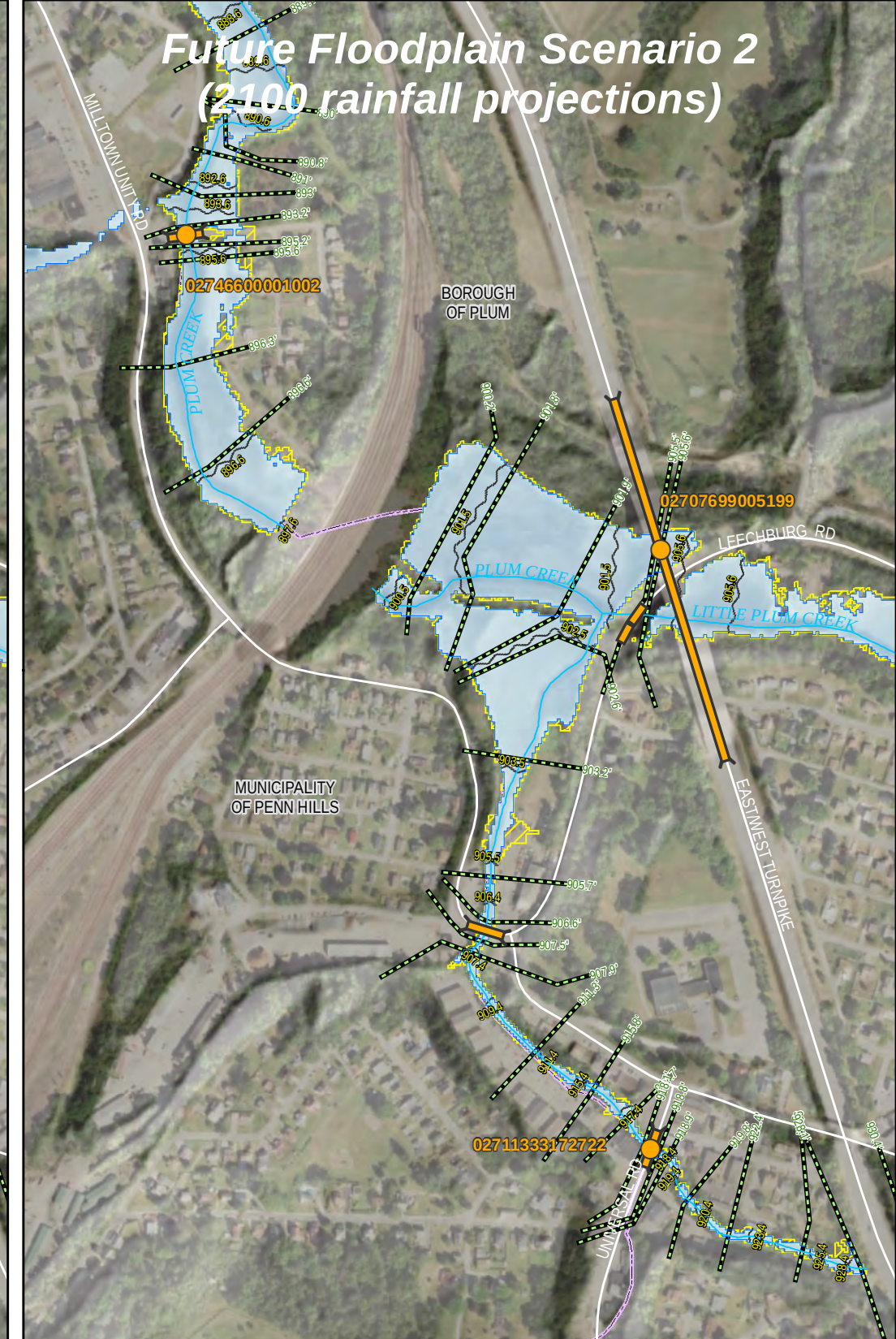
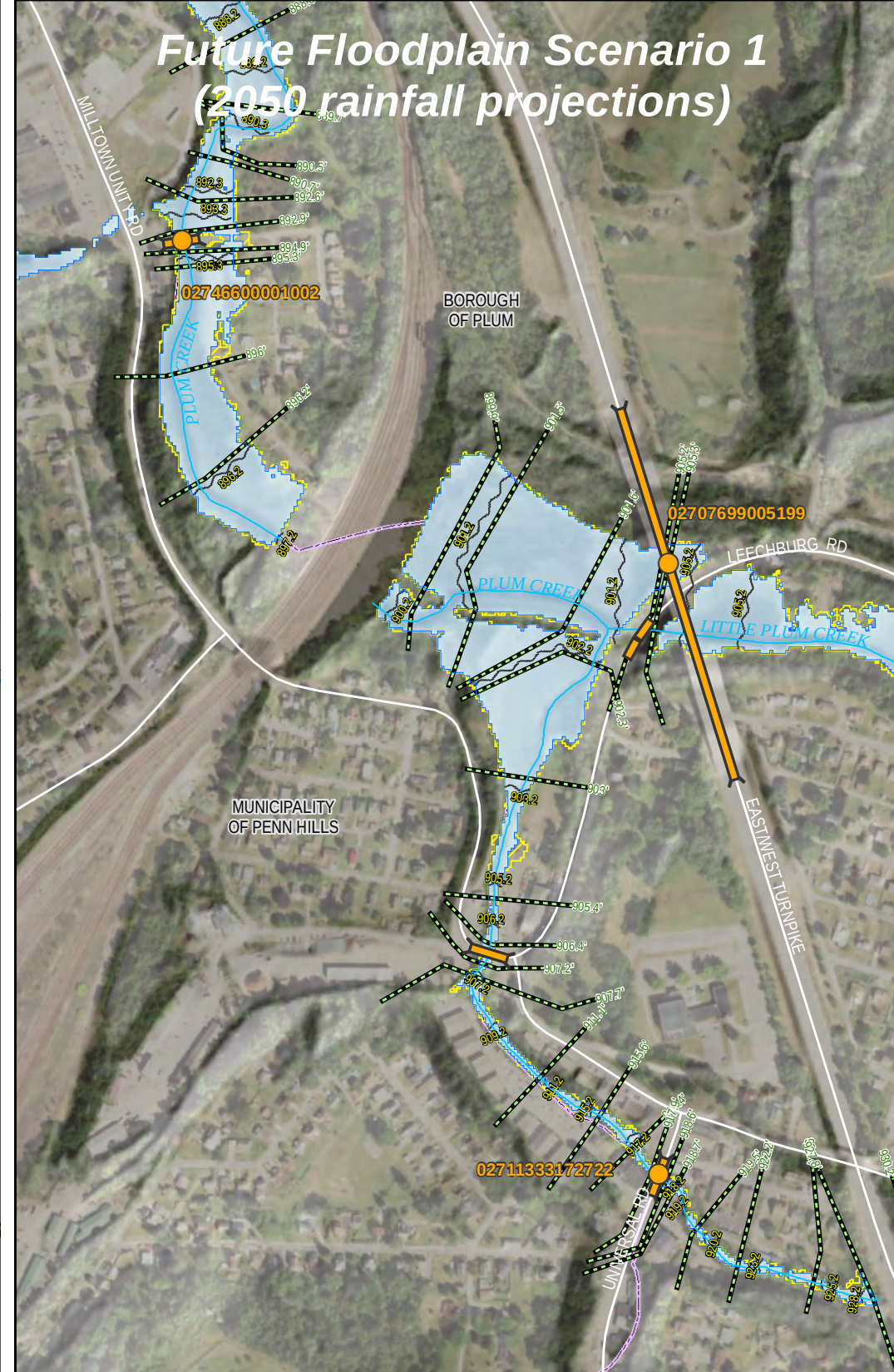
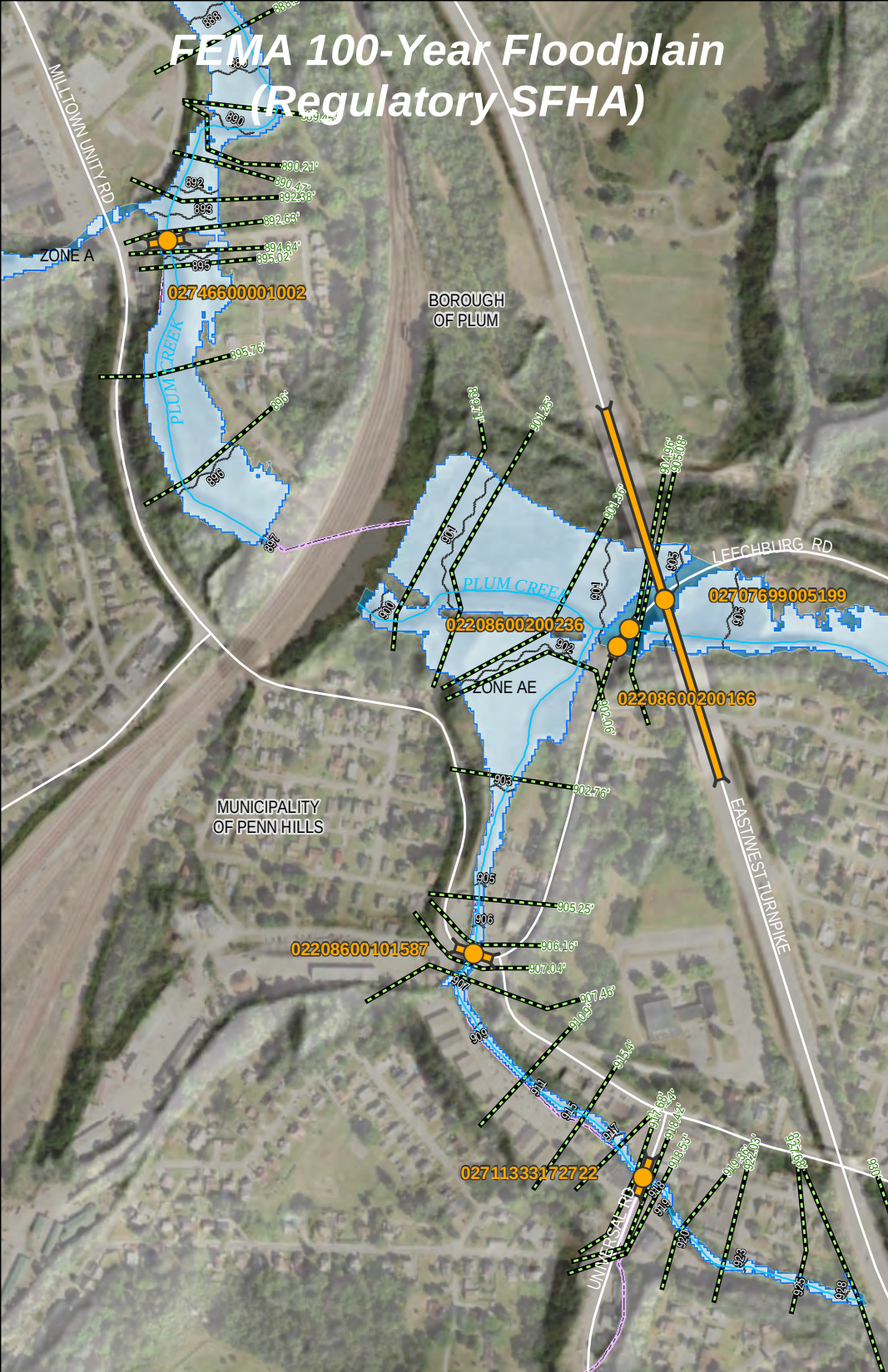
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(Methodology and Limitations Provided in Project Study Report)

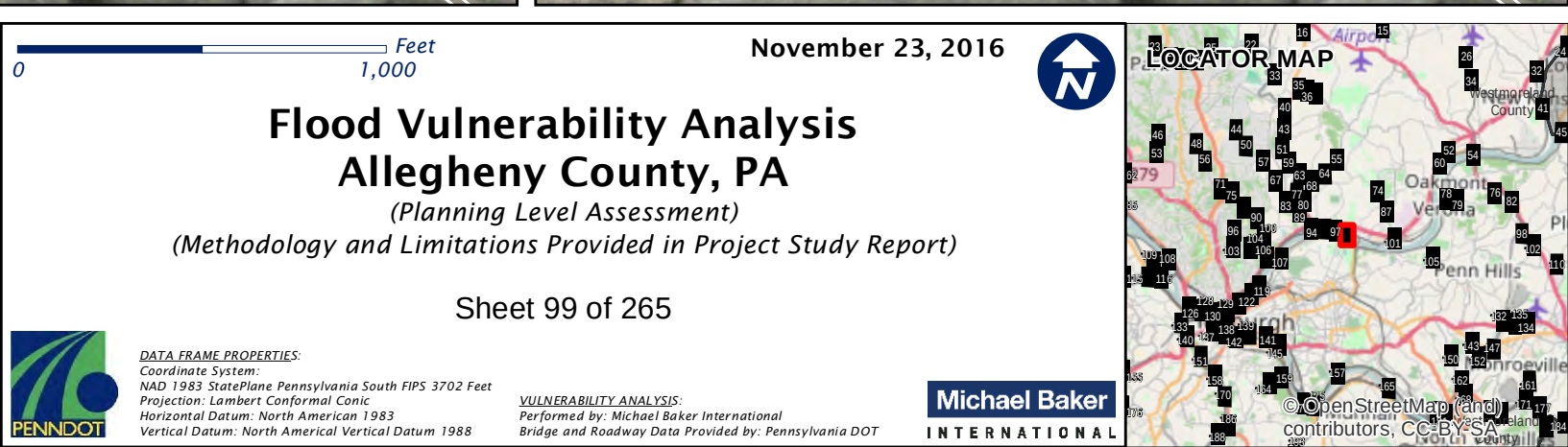
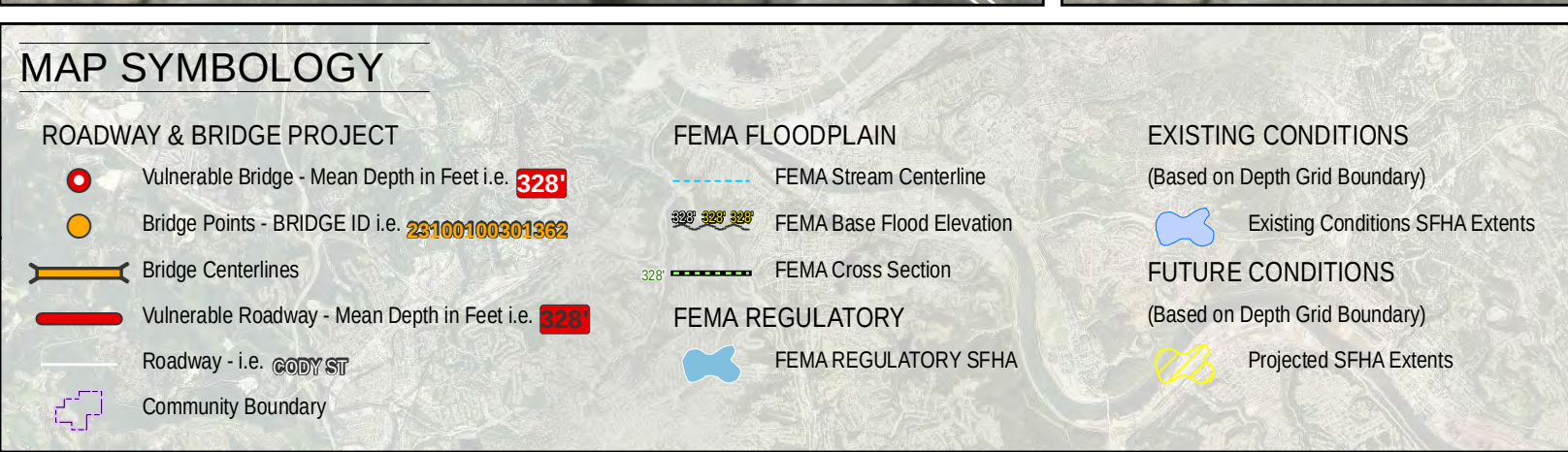
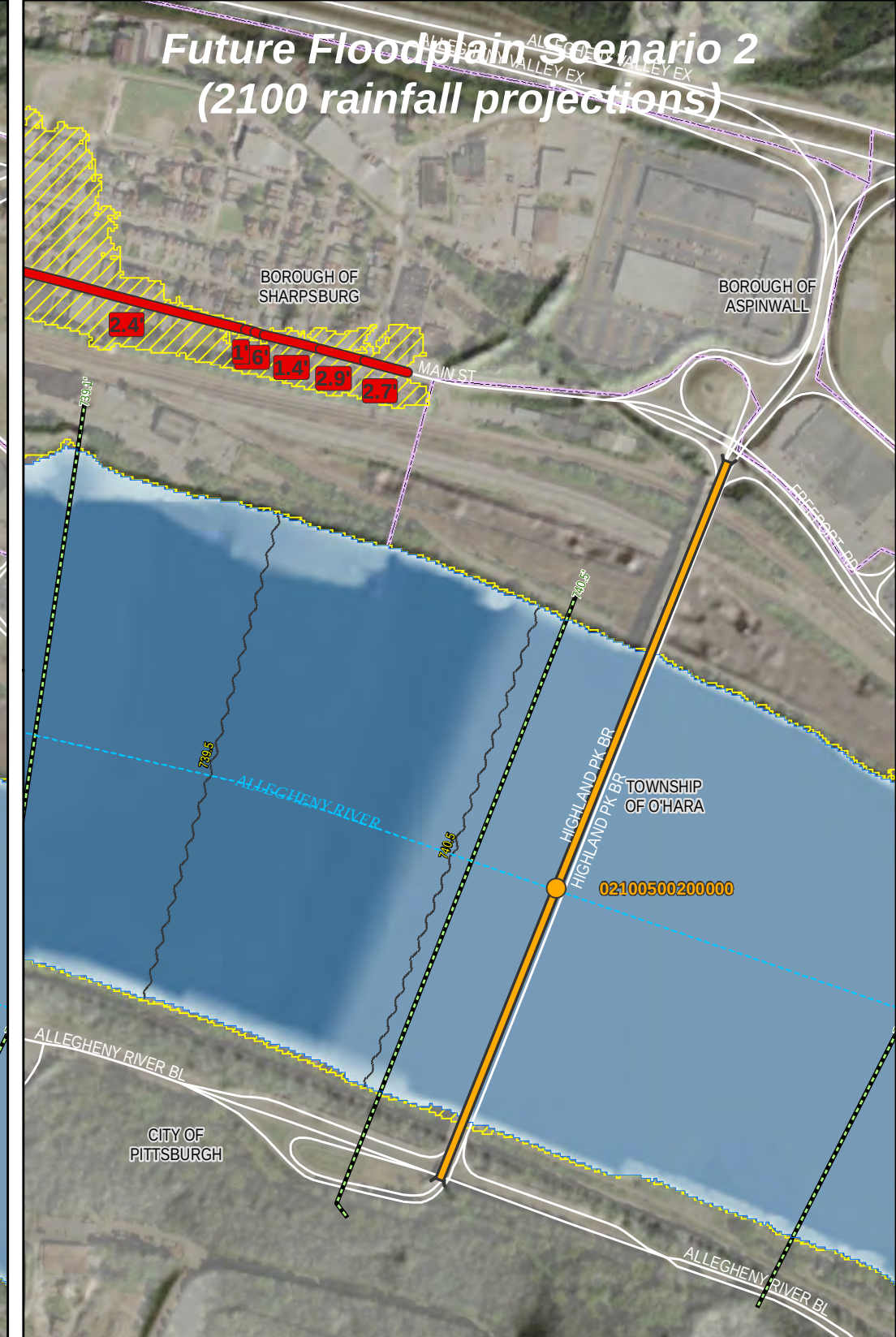
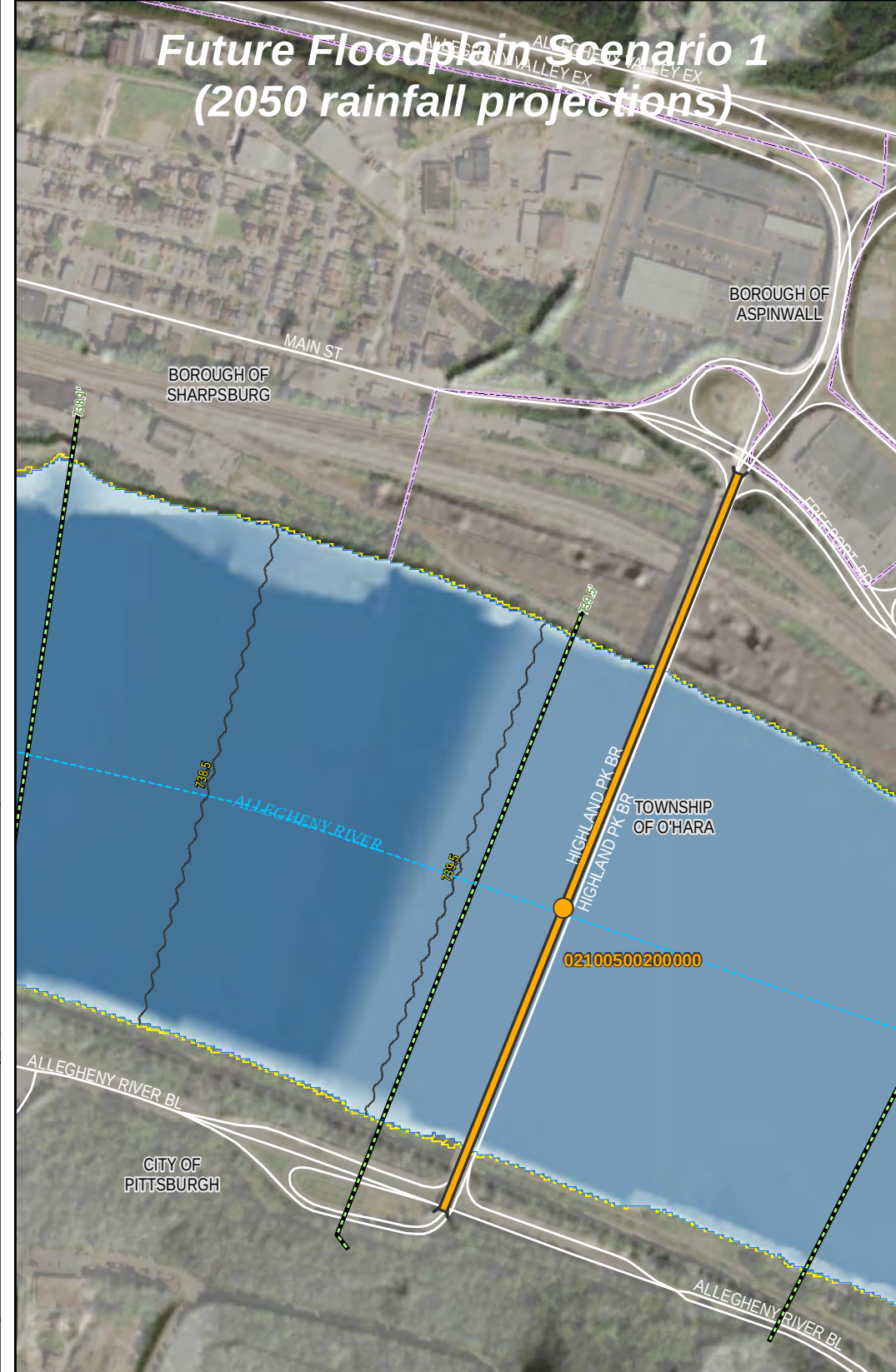
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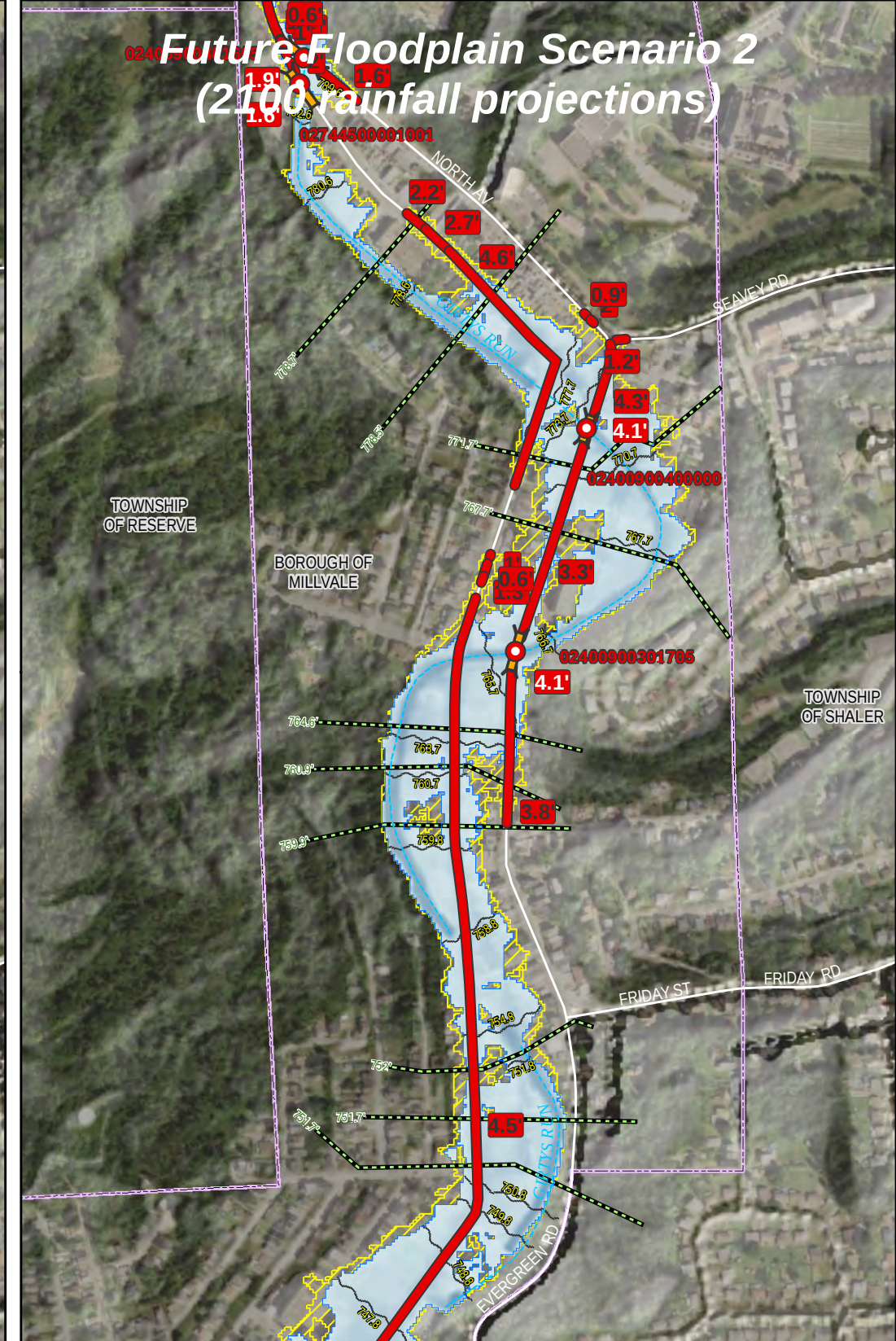
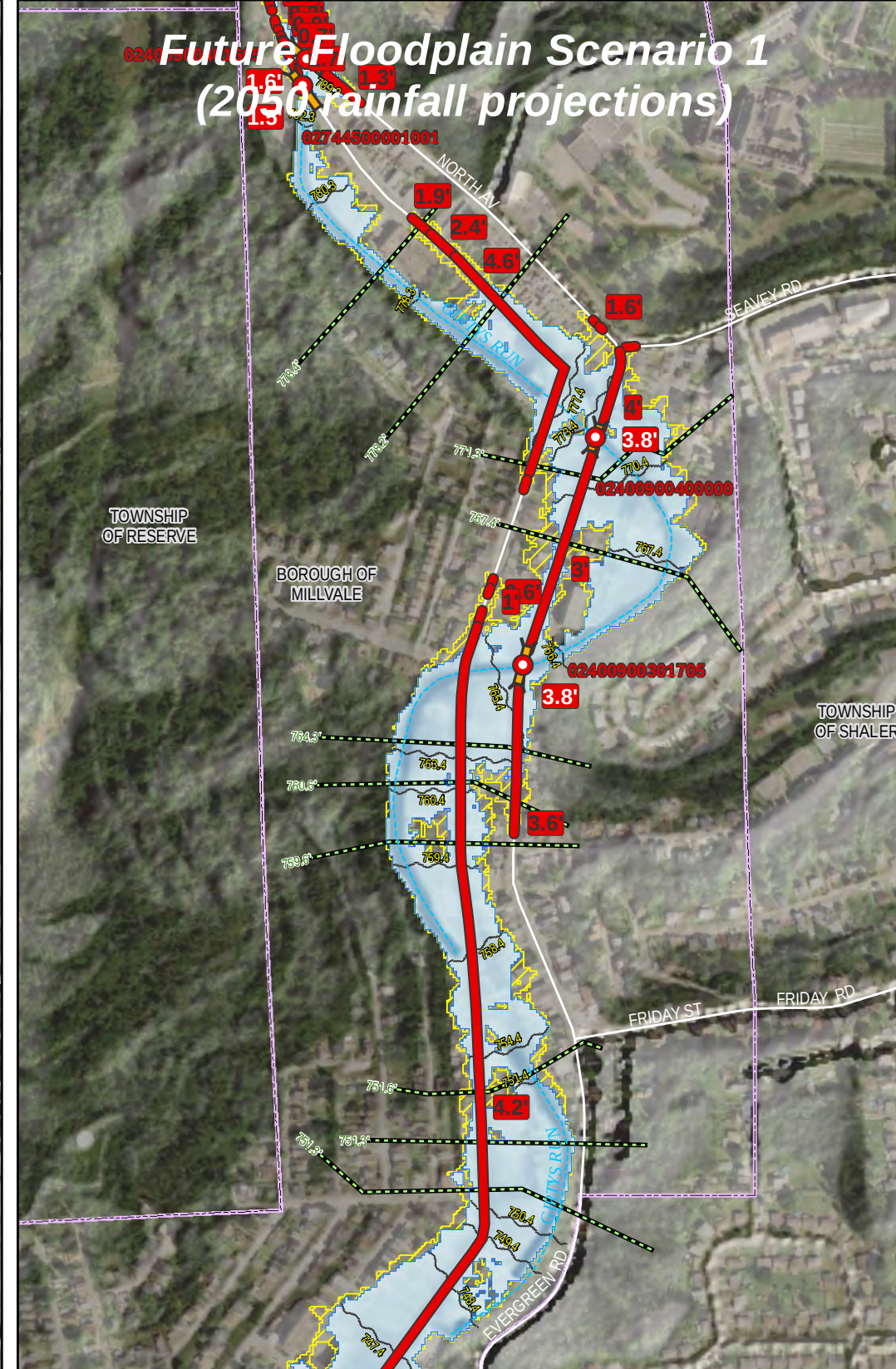
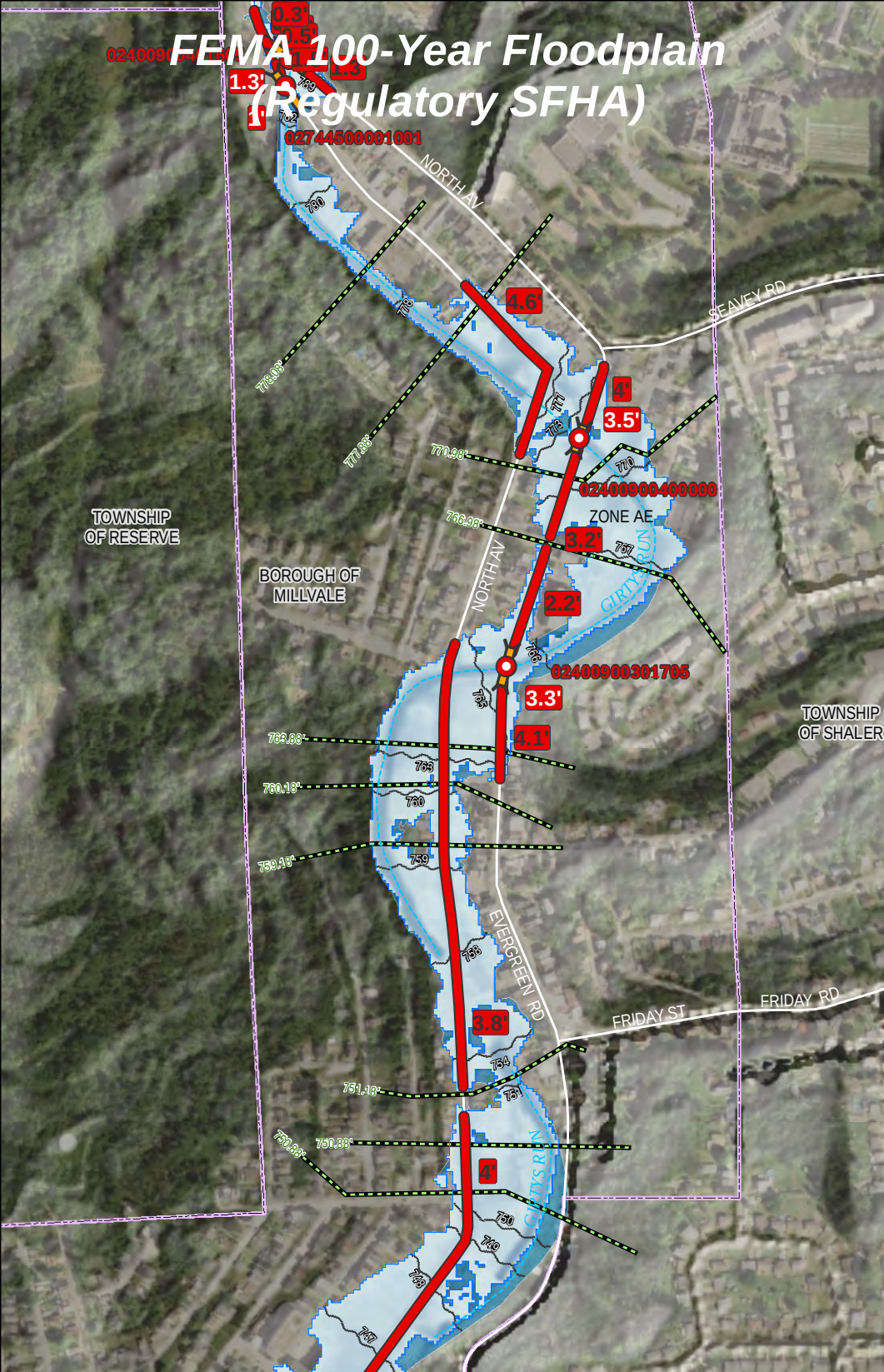
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Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT









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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

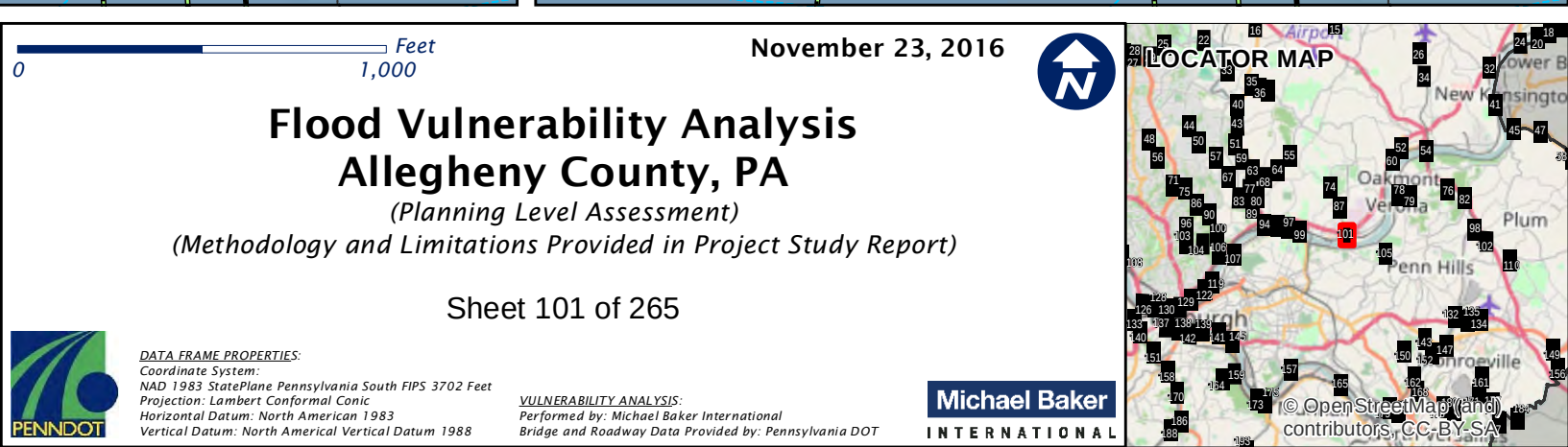
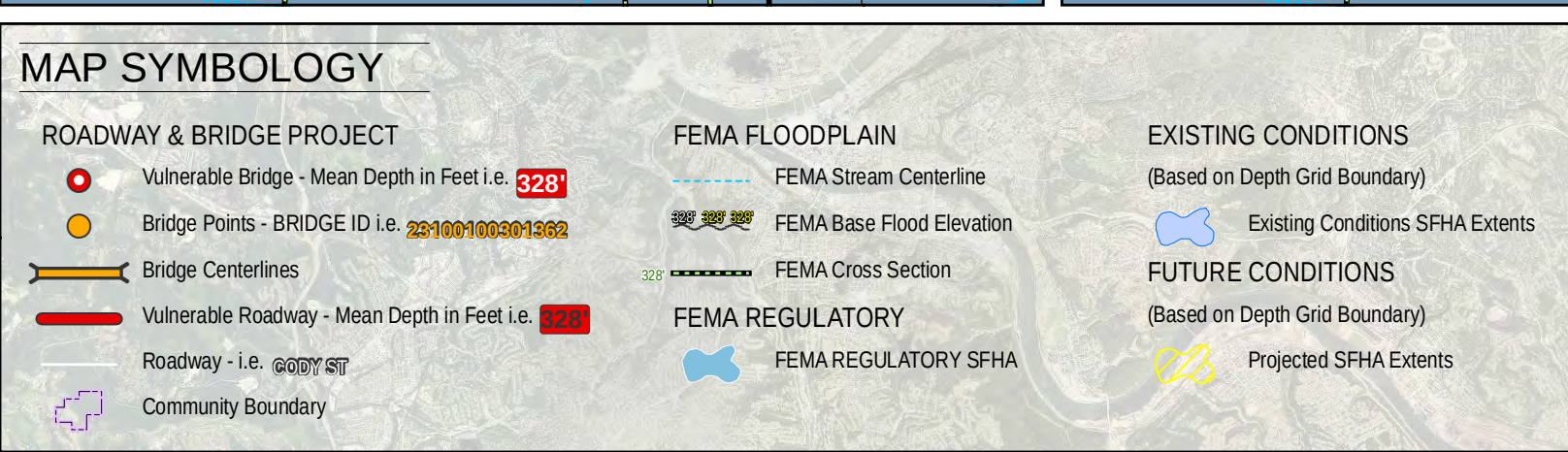
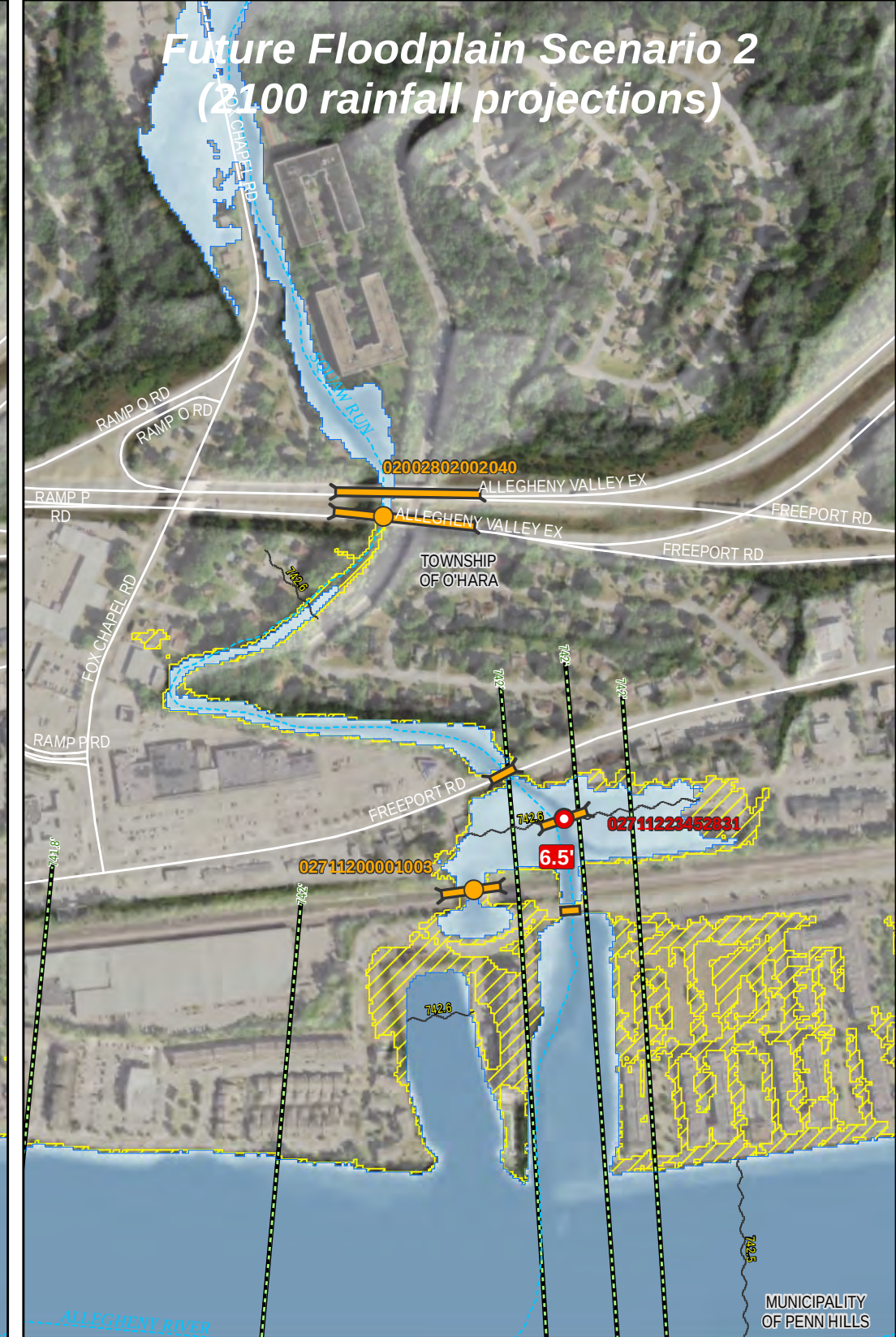
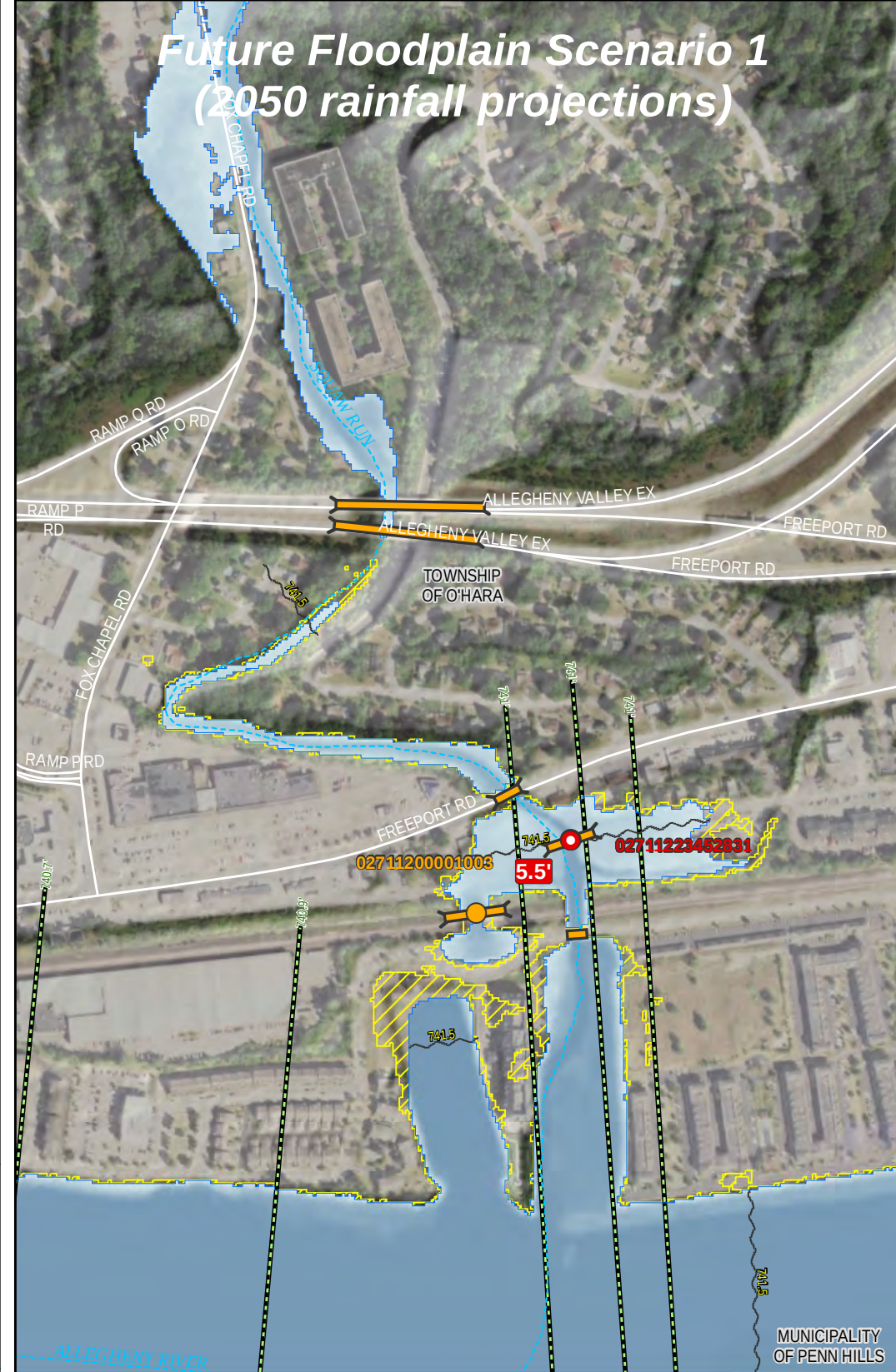
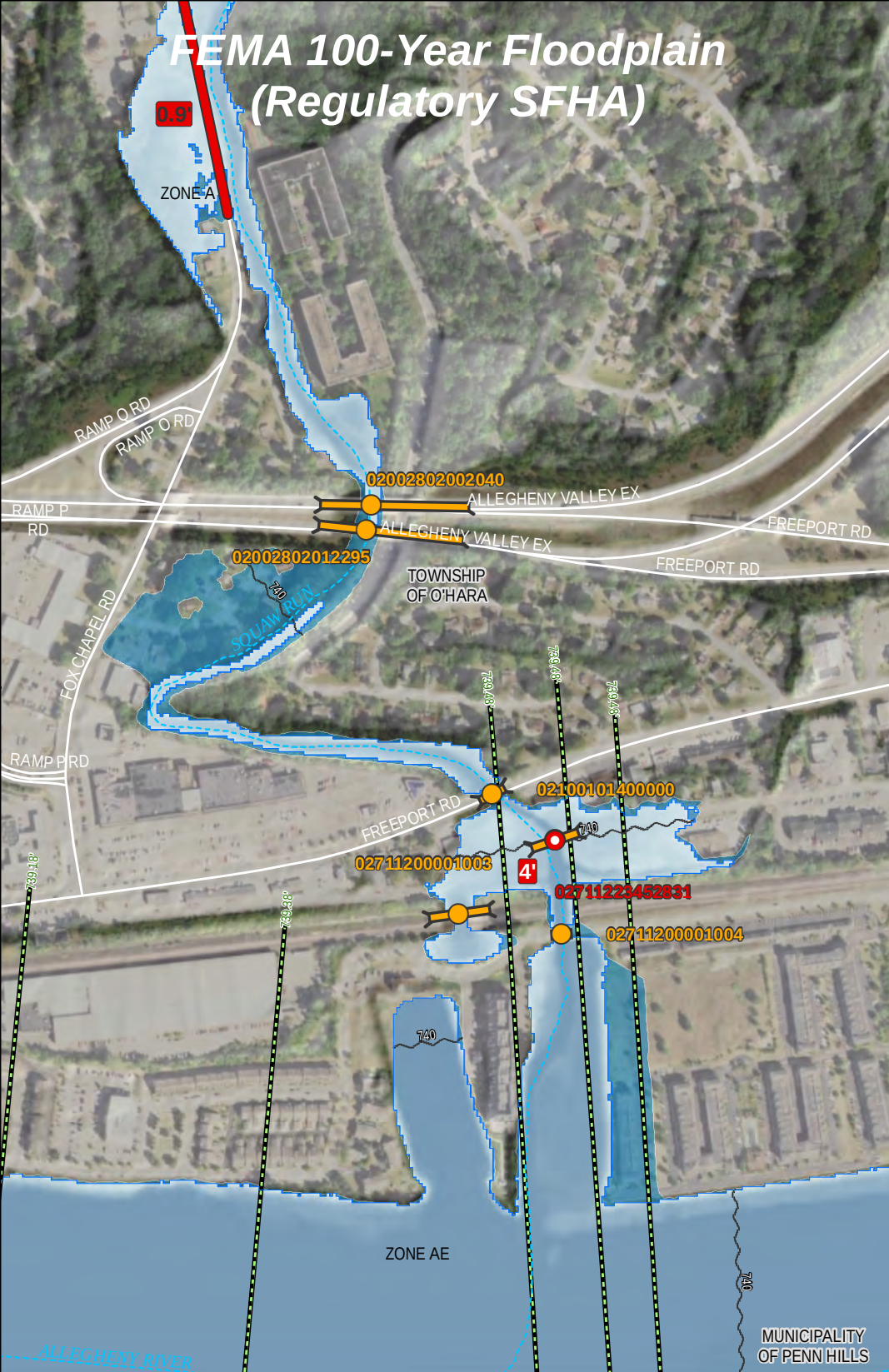
Allegheny County, PA

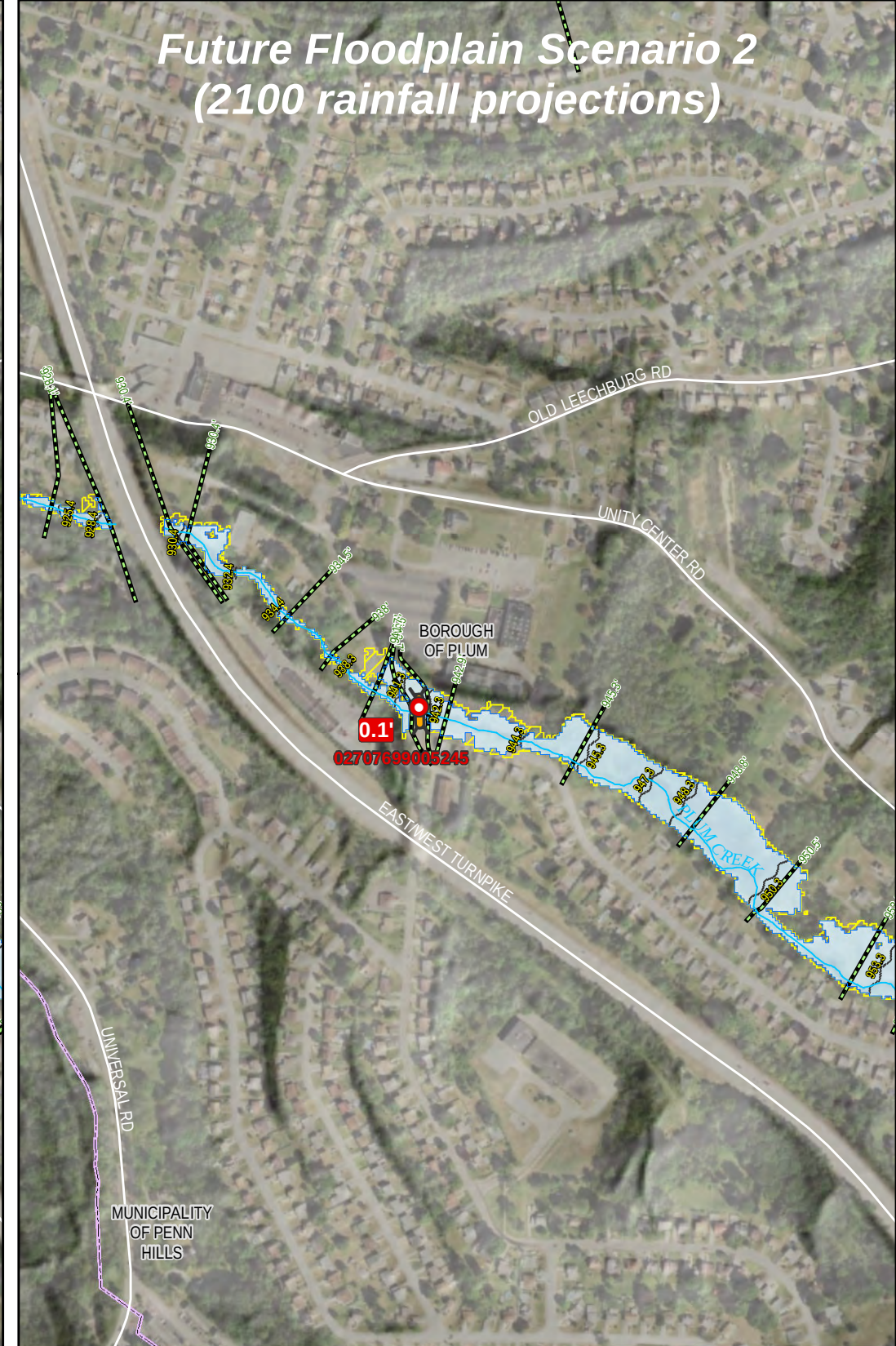
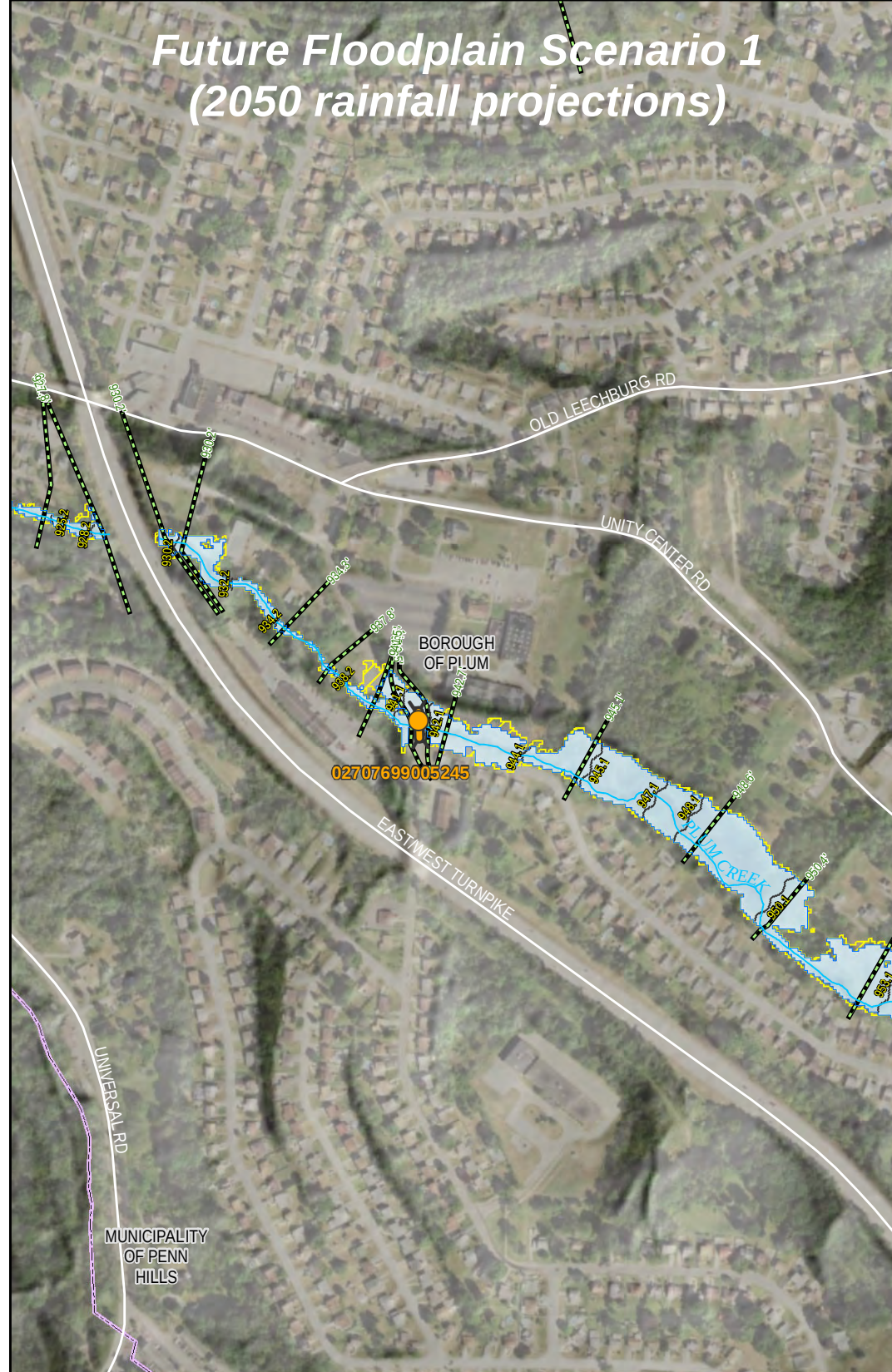
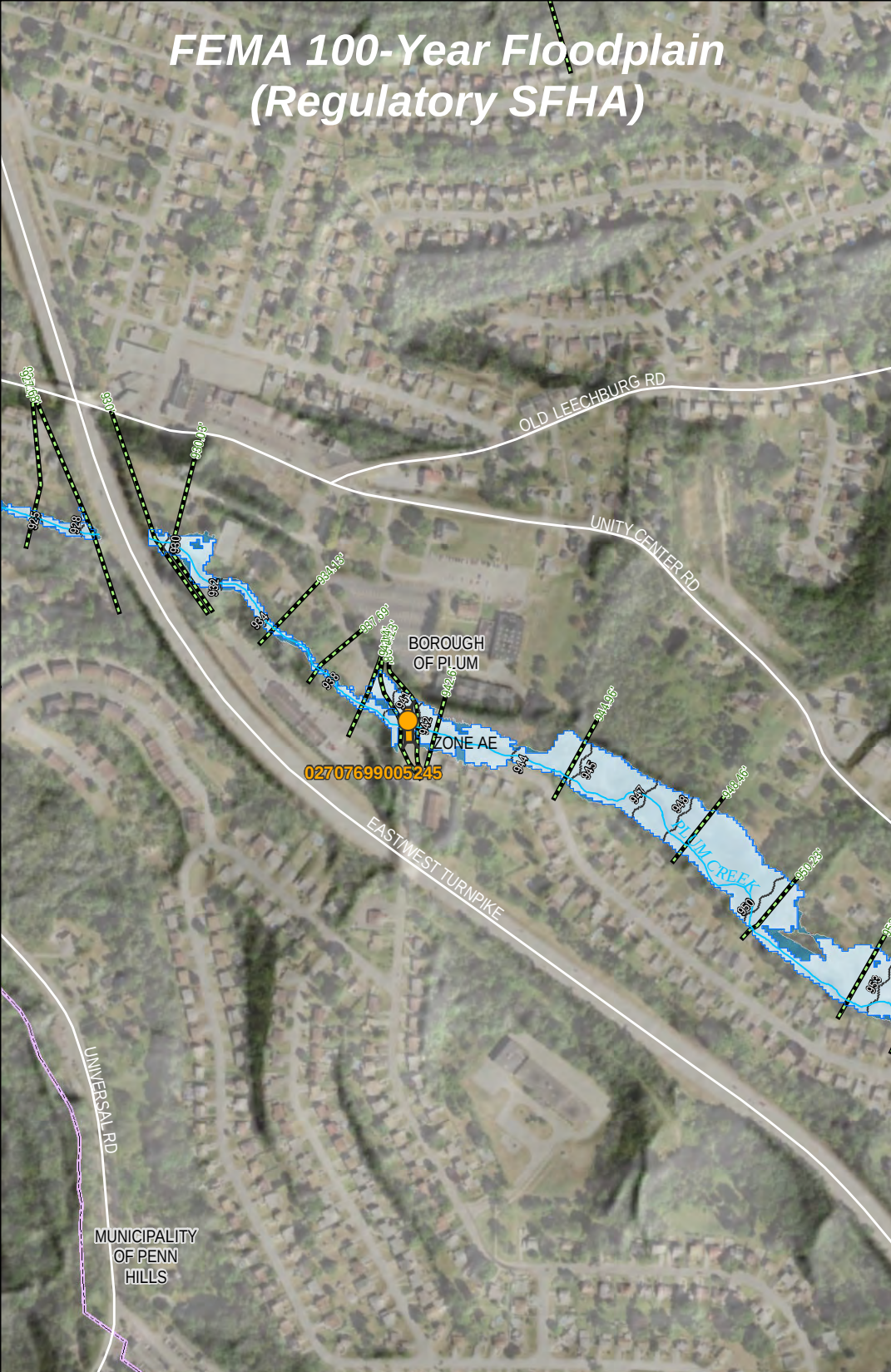
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 100 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT





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. **CODY ST**
- 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

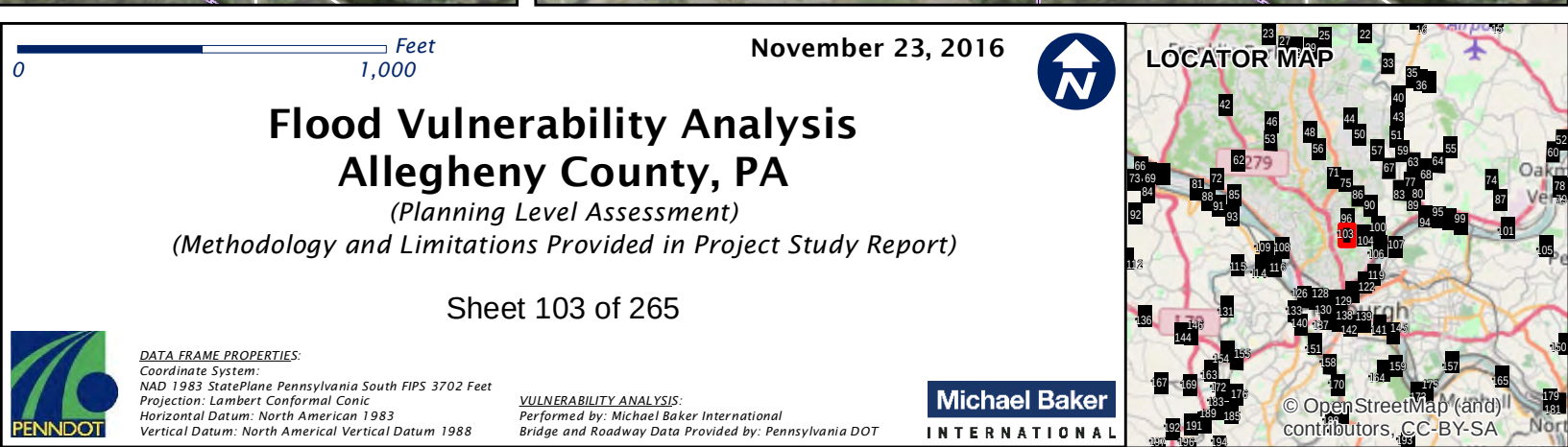
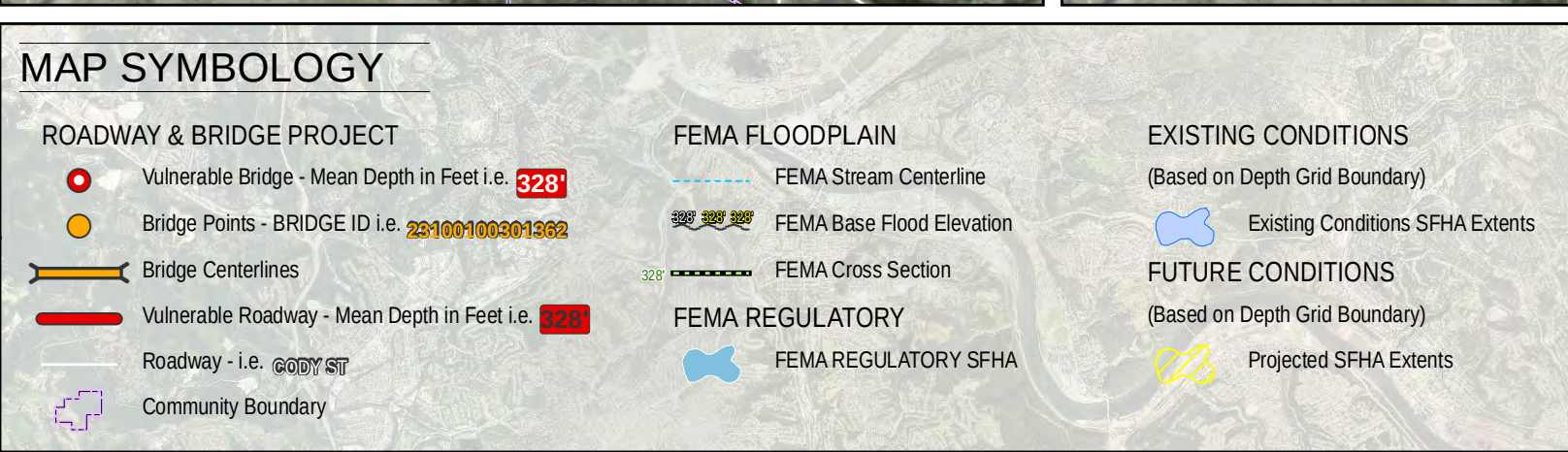
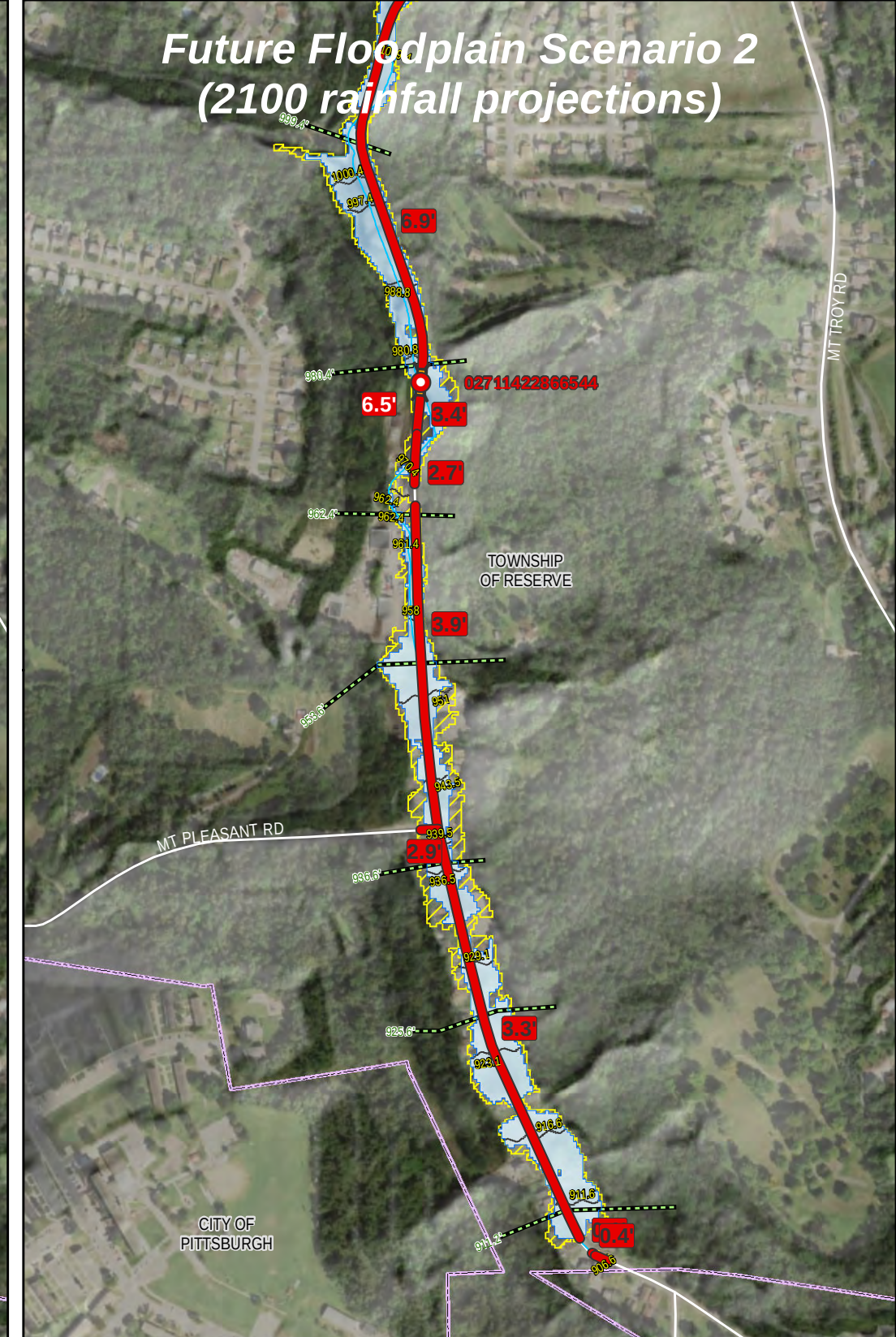
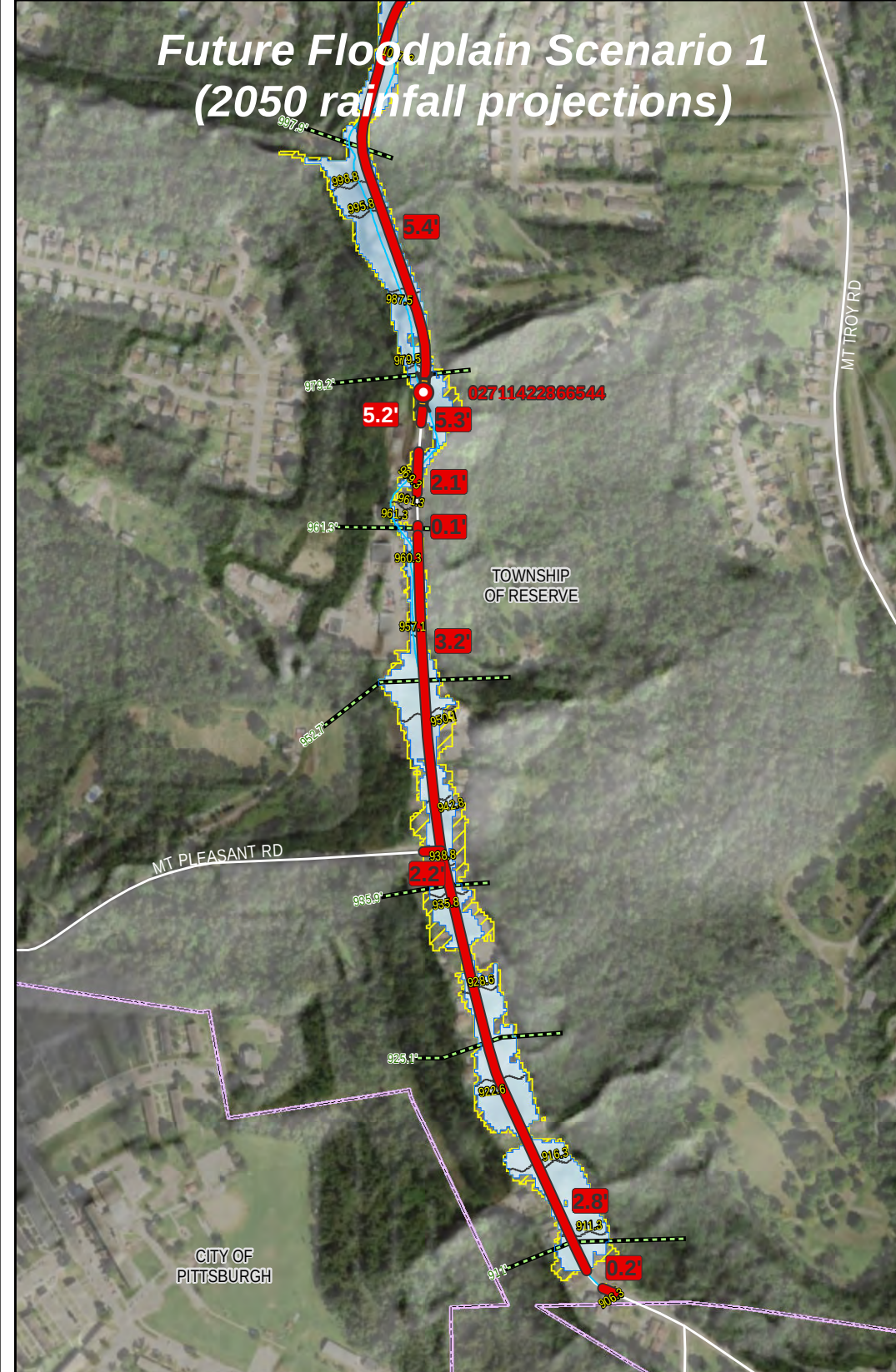
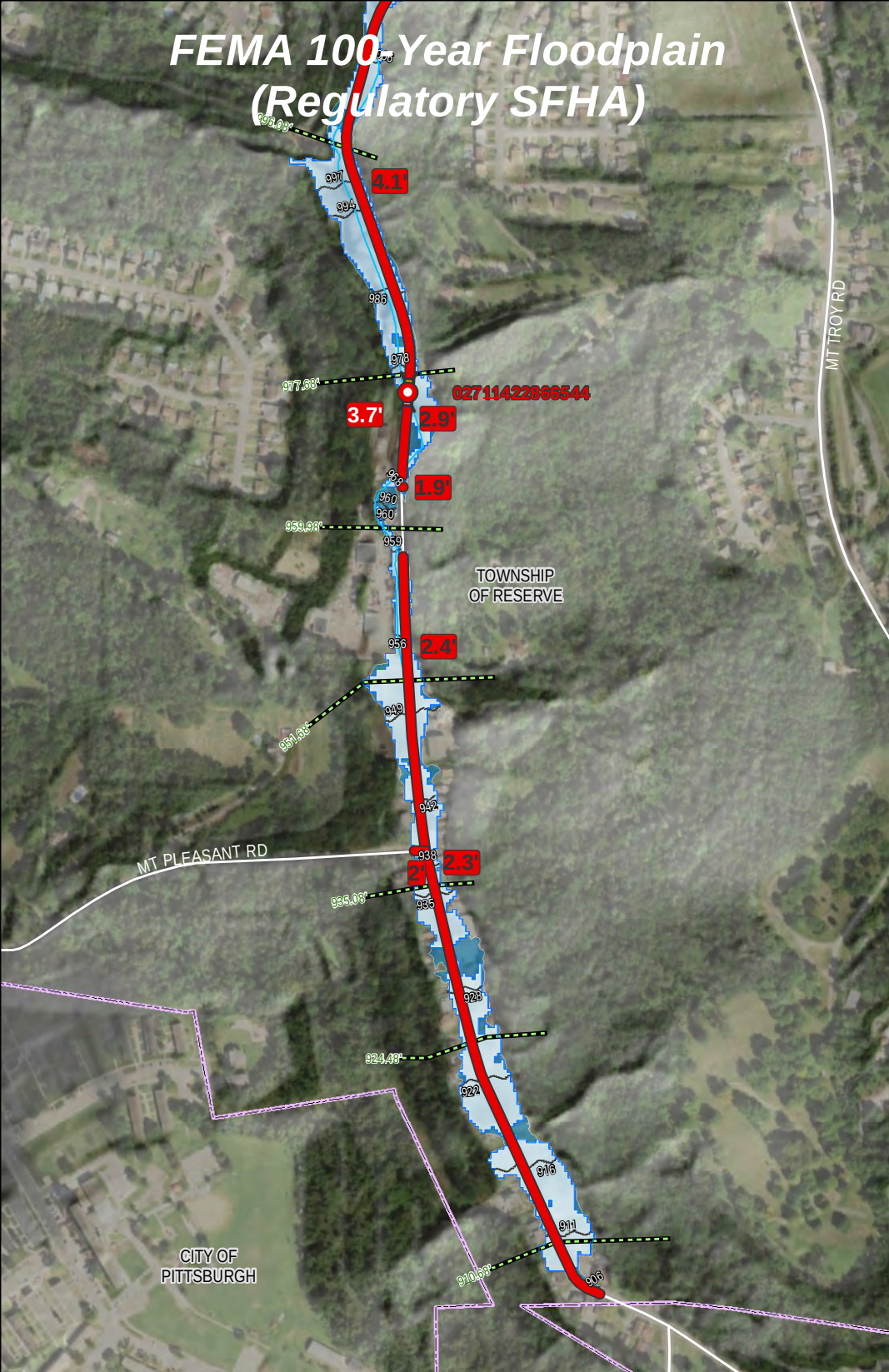
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(Methodology and Limitations Provided in Project Study Report)

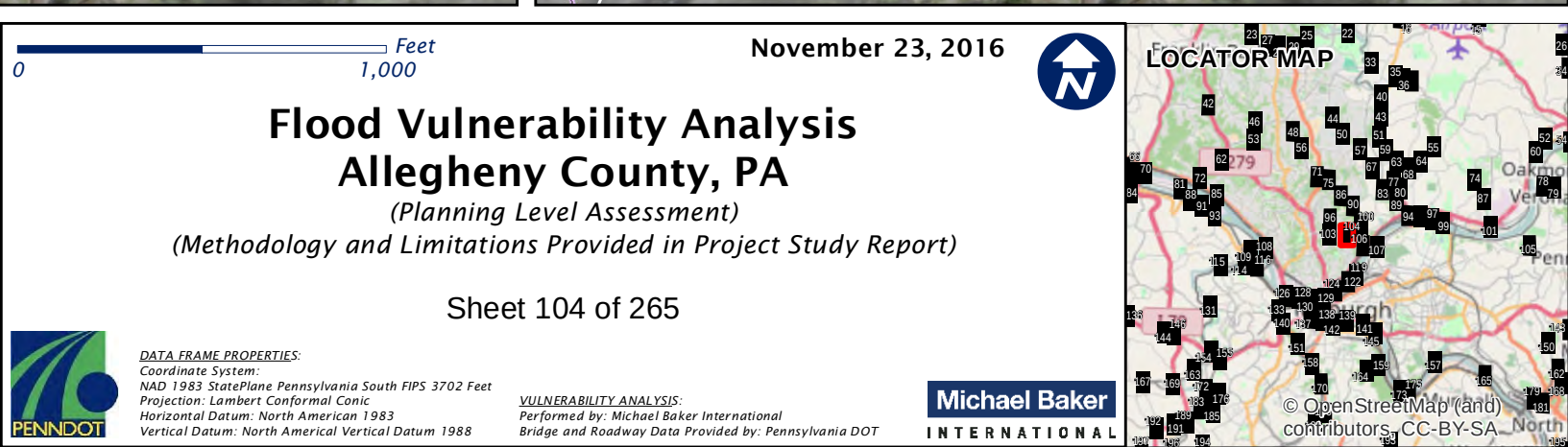
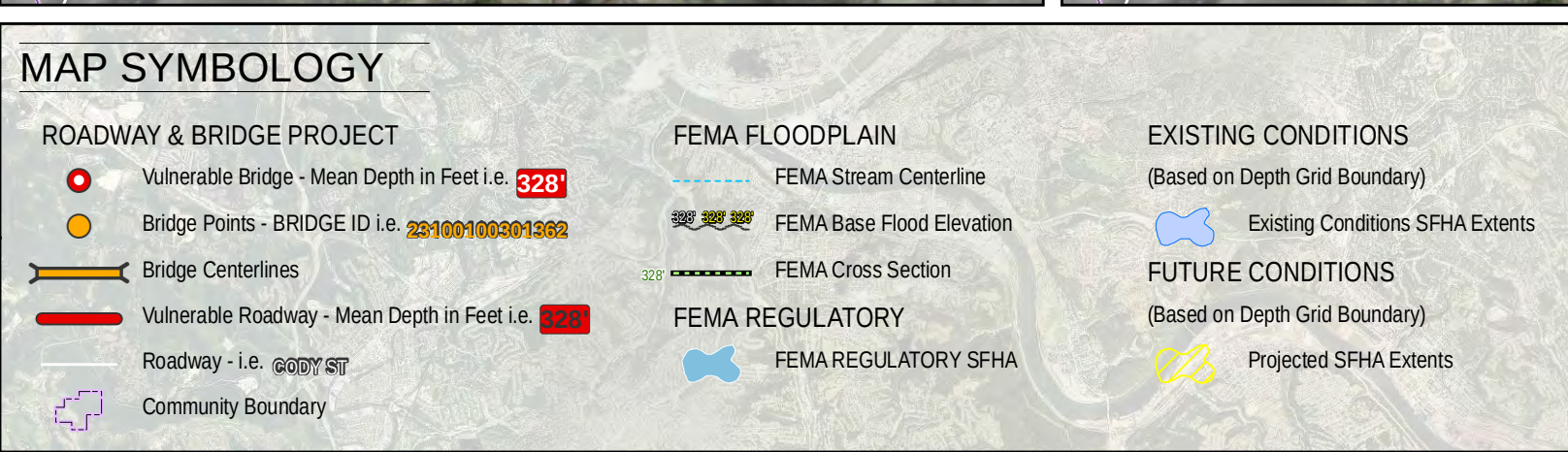
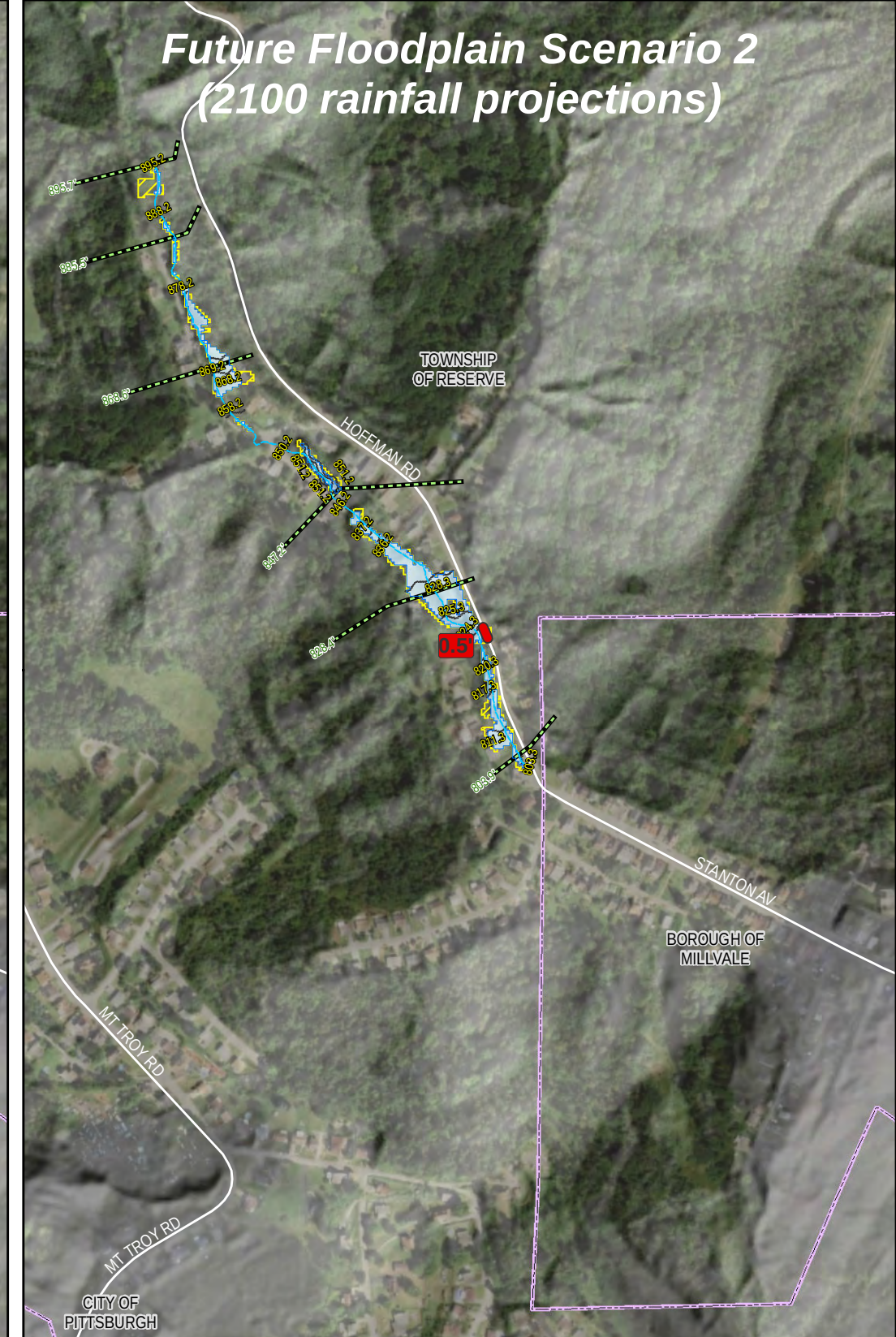
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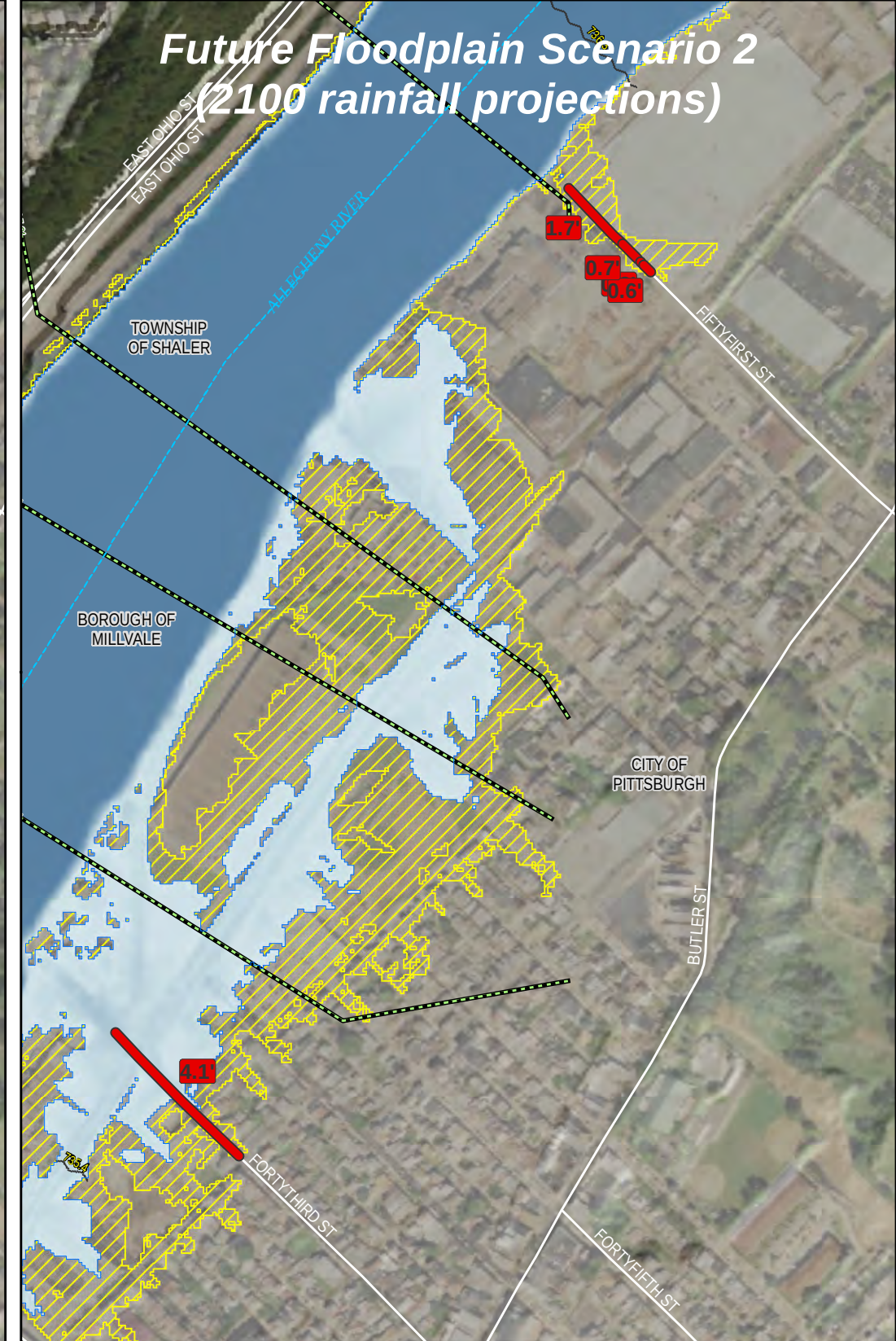
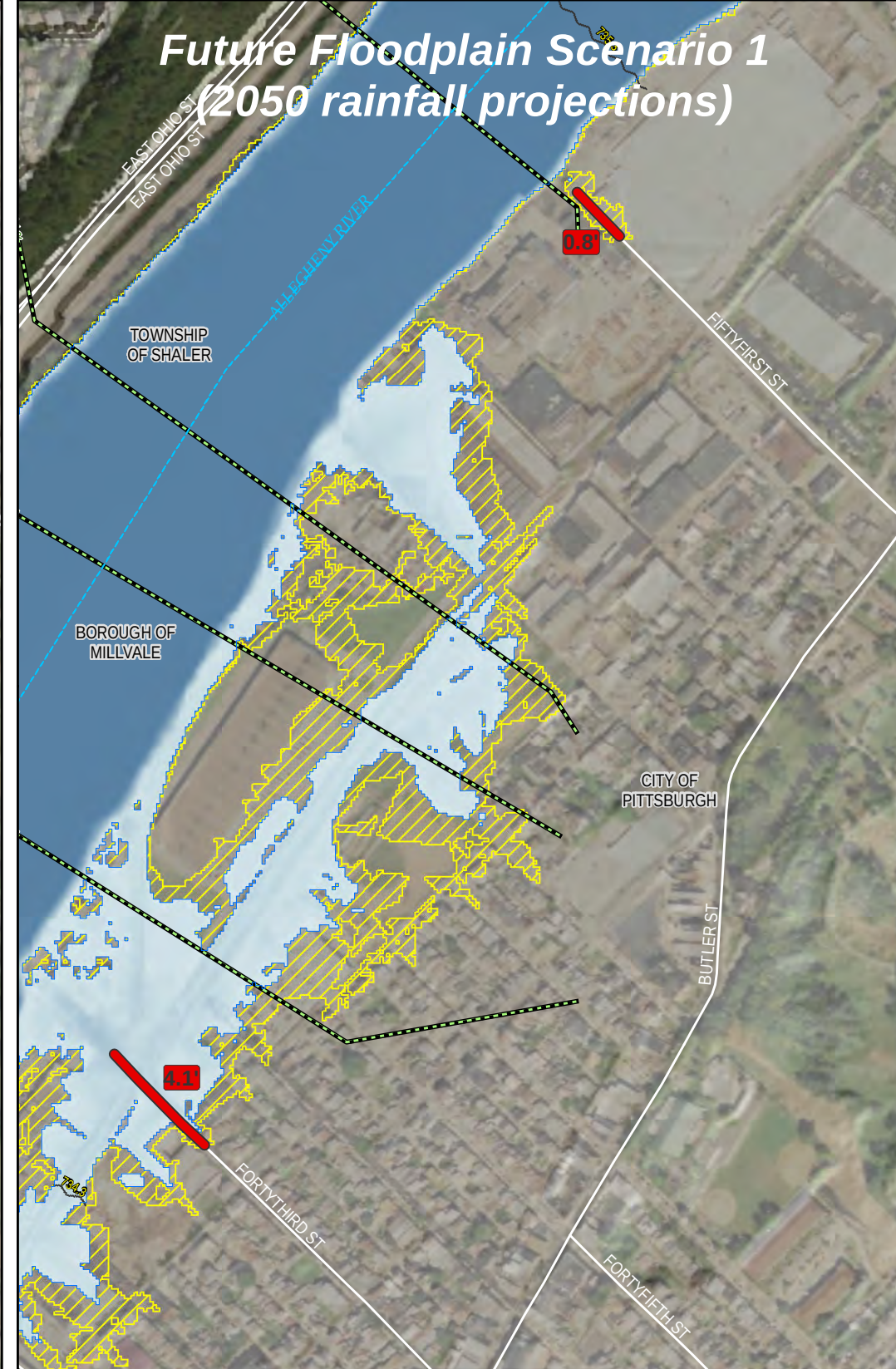
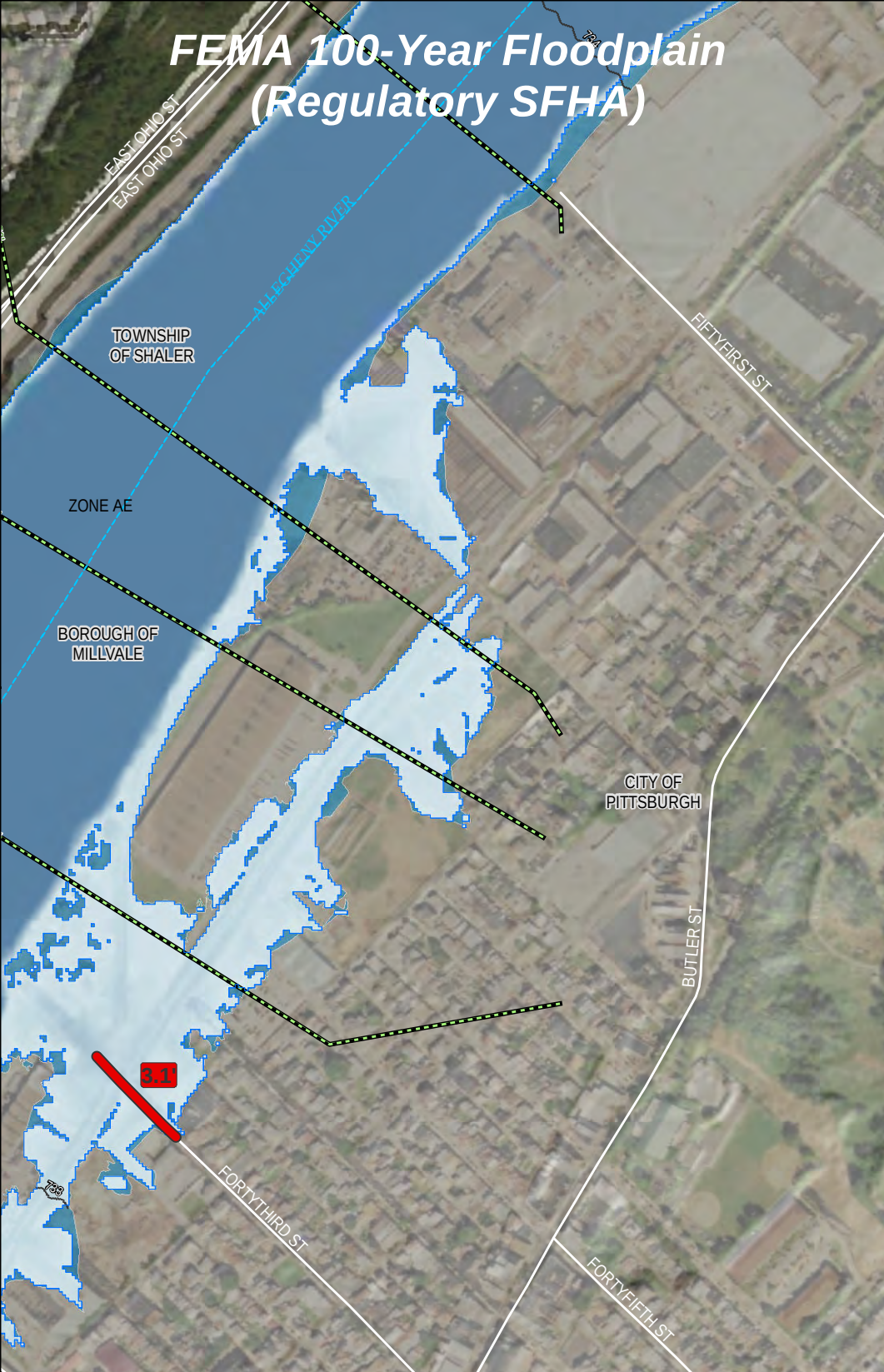
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP







MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

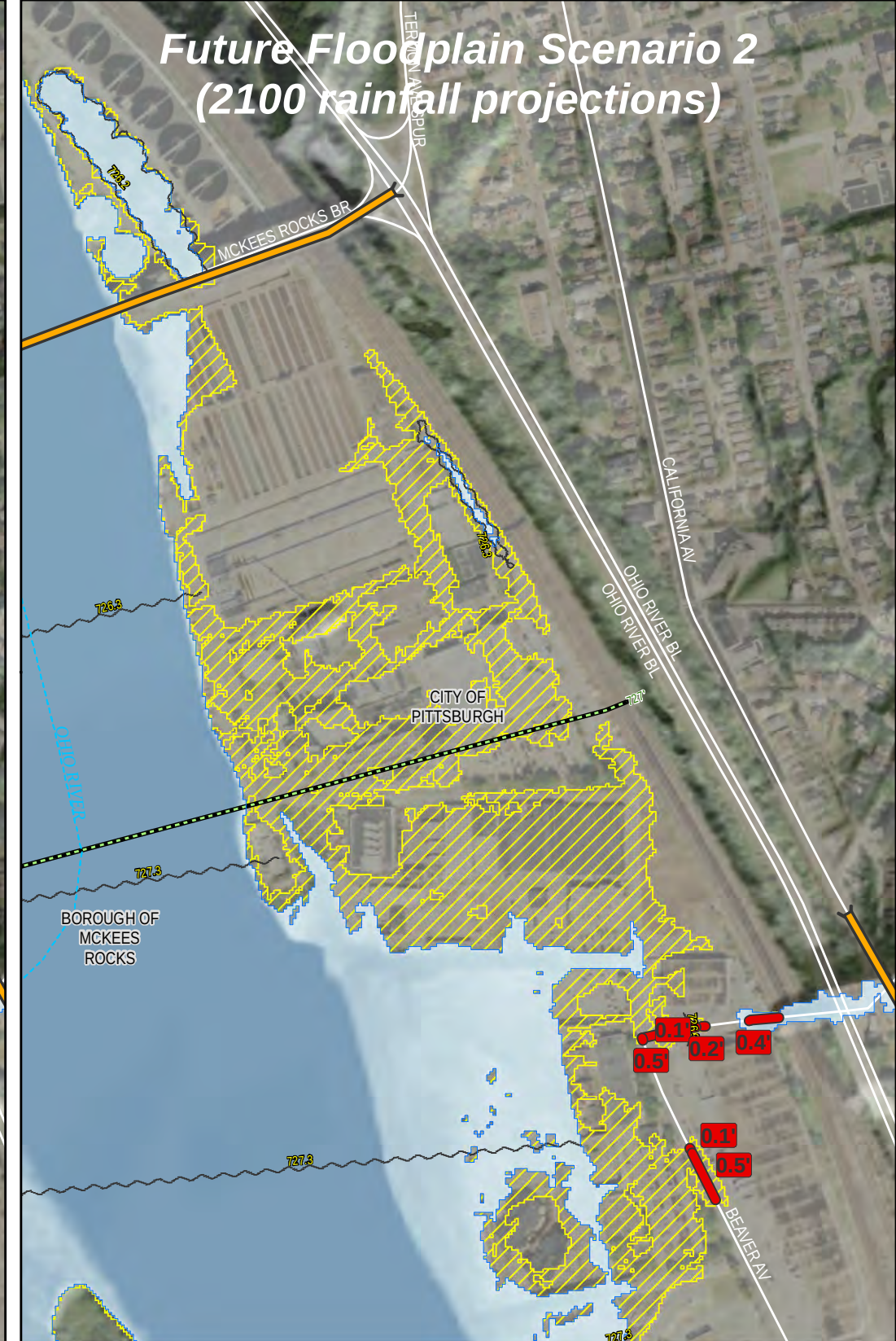
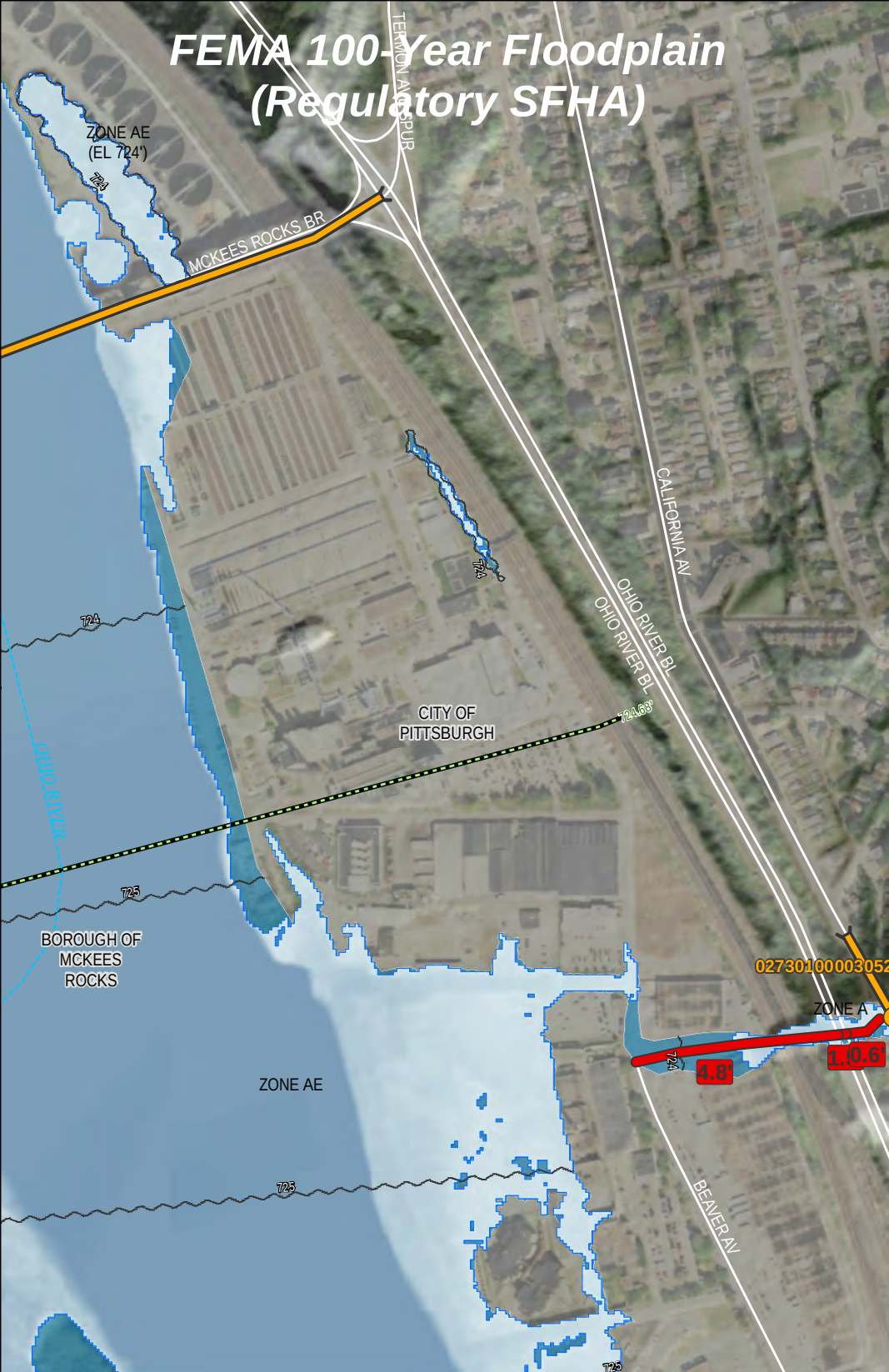
Allegheny County, PA

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

Sheet 107 of 265

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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

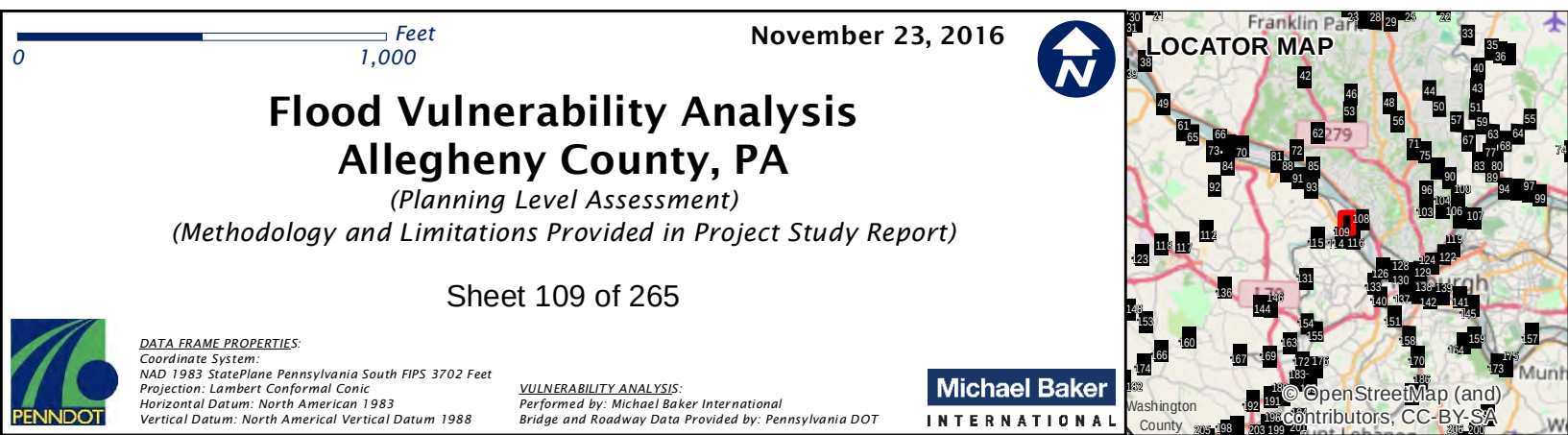
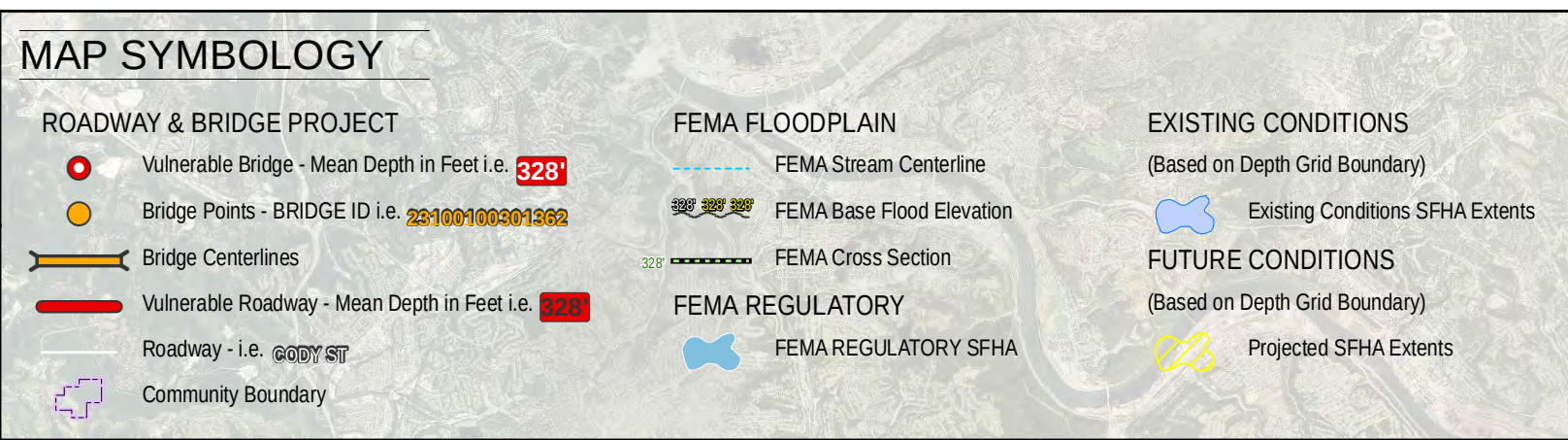
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(Methodology and Limitations Provided in Project Study Report)

Sheet 108 of 265

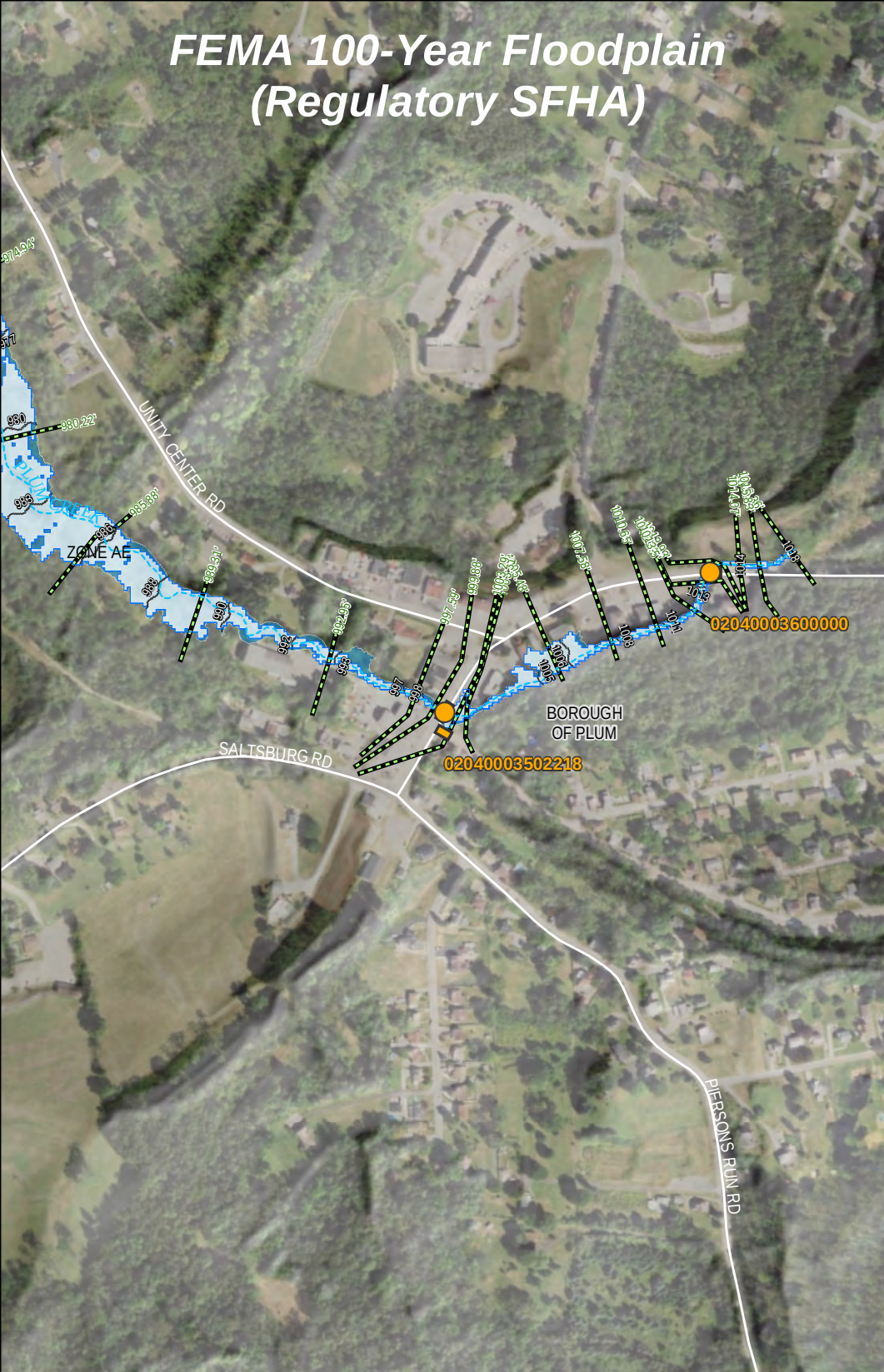
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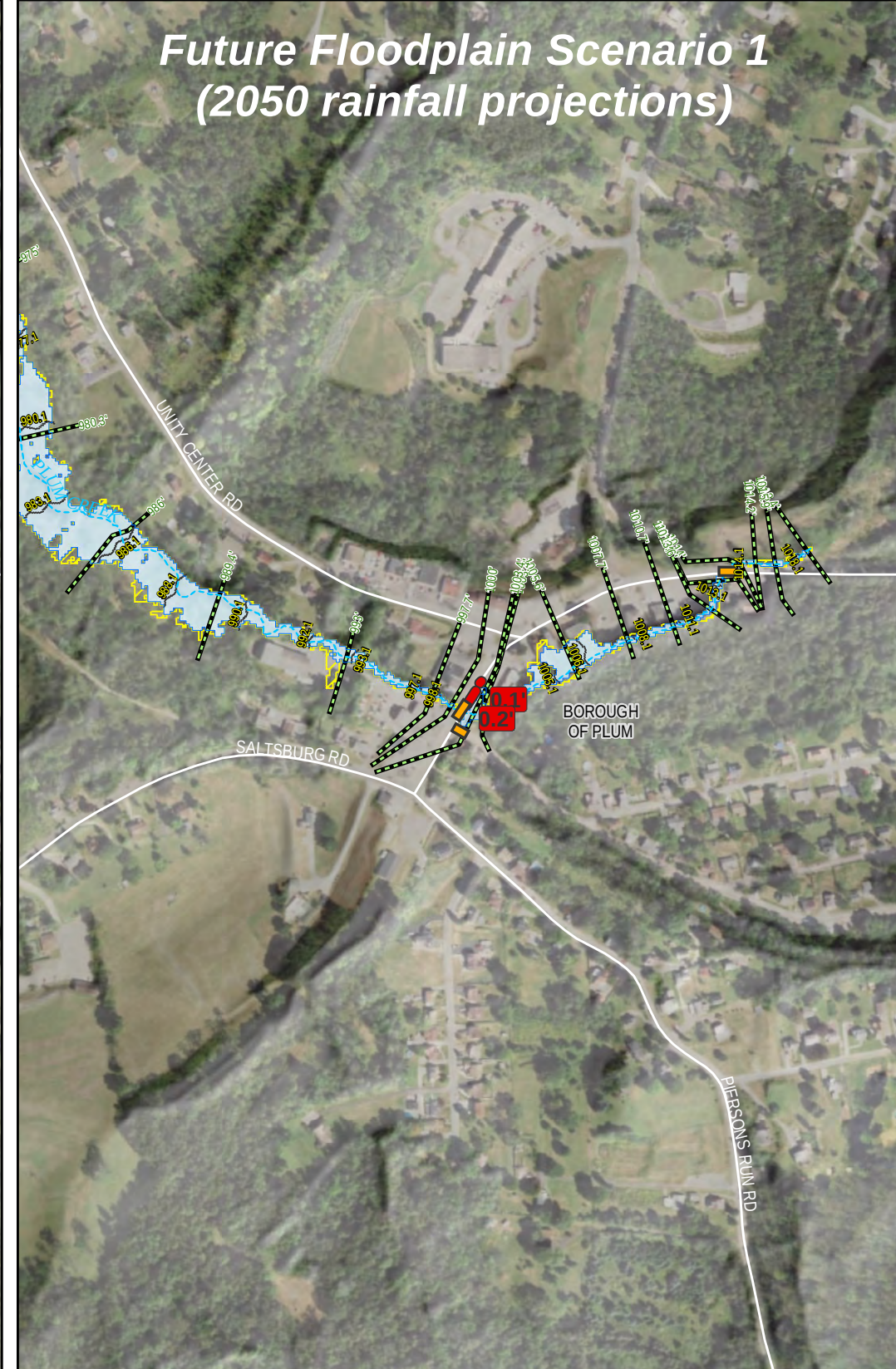
LOCATOR MAP



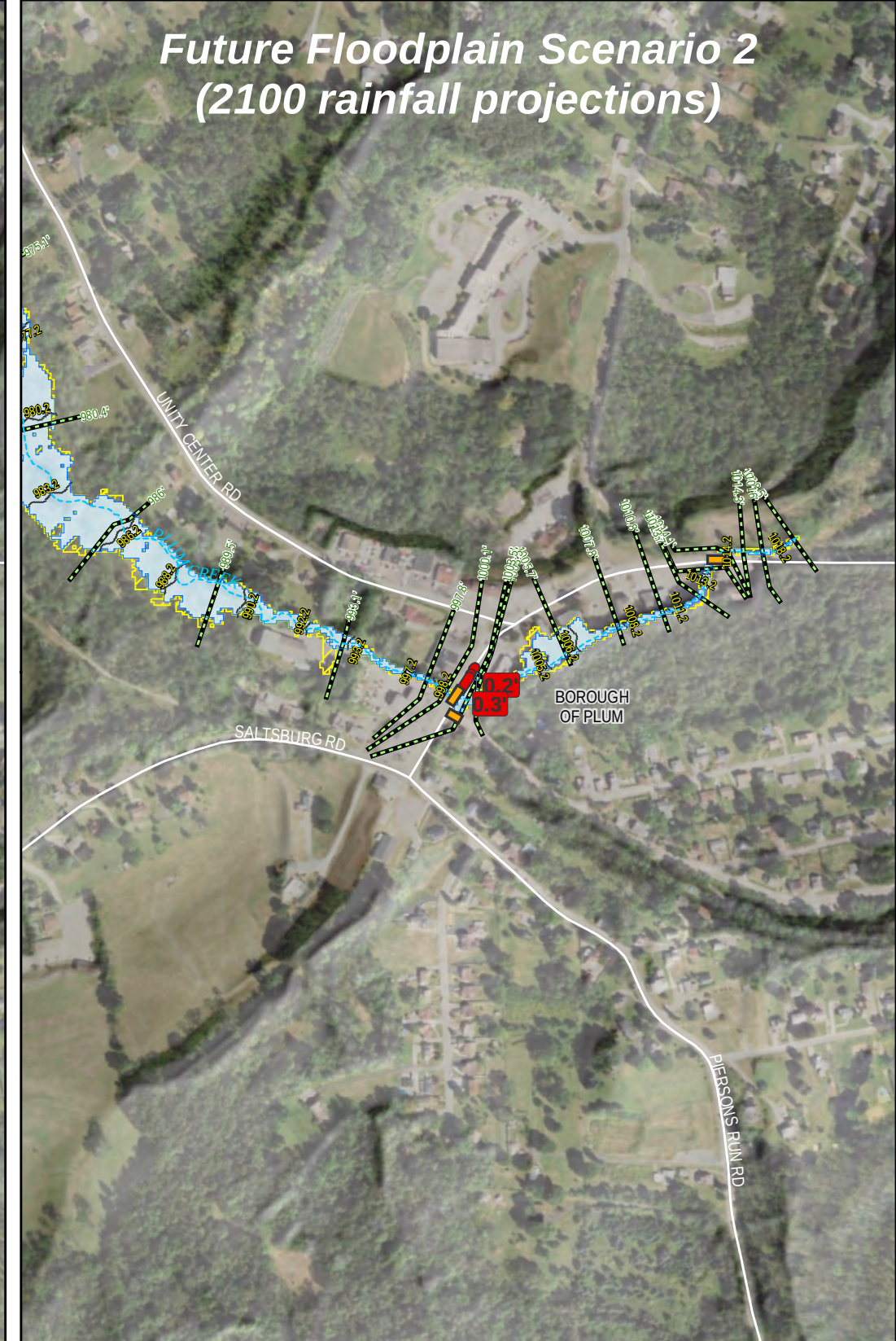
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOGY

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- FEMA REGULATORY SFHA

EXISTING CONDITIONS

(Based on Depth Grid Boundary)

- Existing Conditions SFHA Extents

FUTURE CONDITIONS

(Based on Depth Grid Boundary)

- Projected SFHA Extents

0 Feet
1,000

November 23, 2016



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

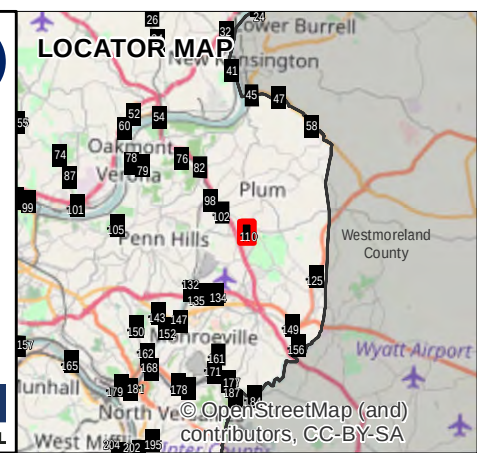
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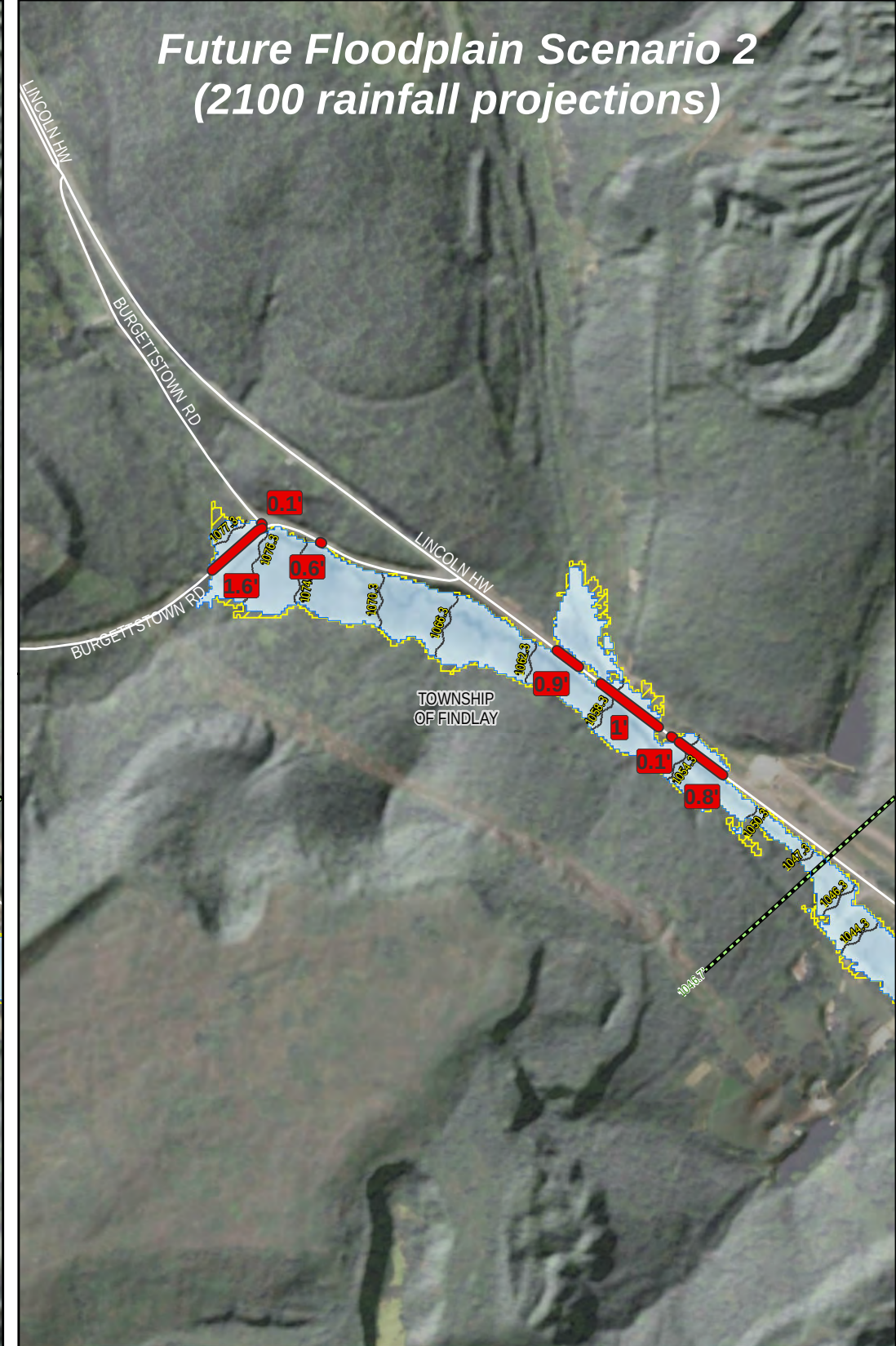
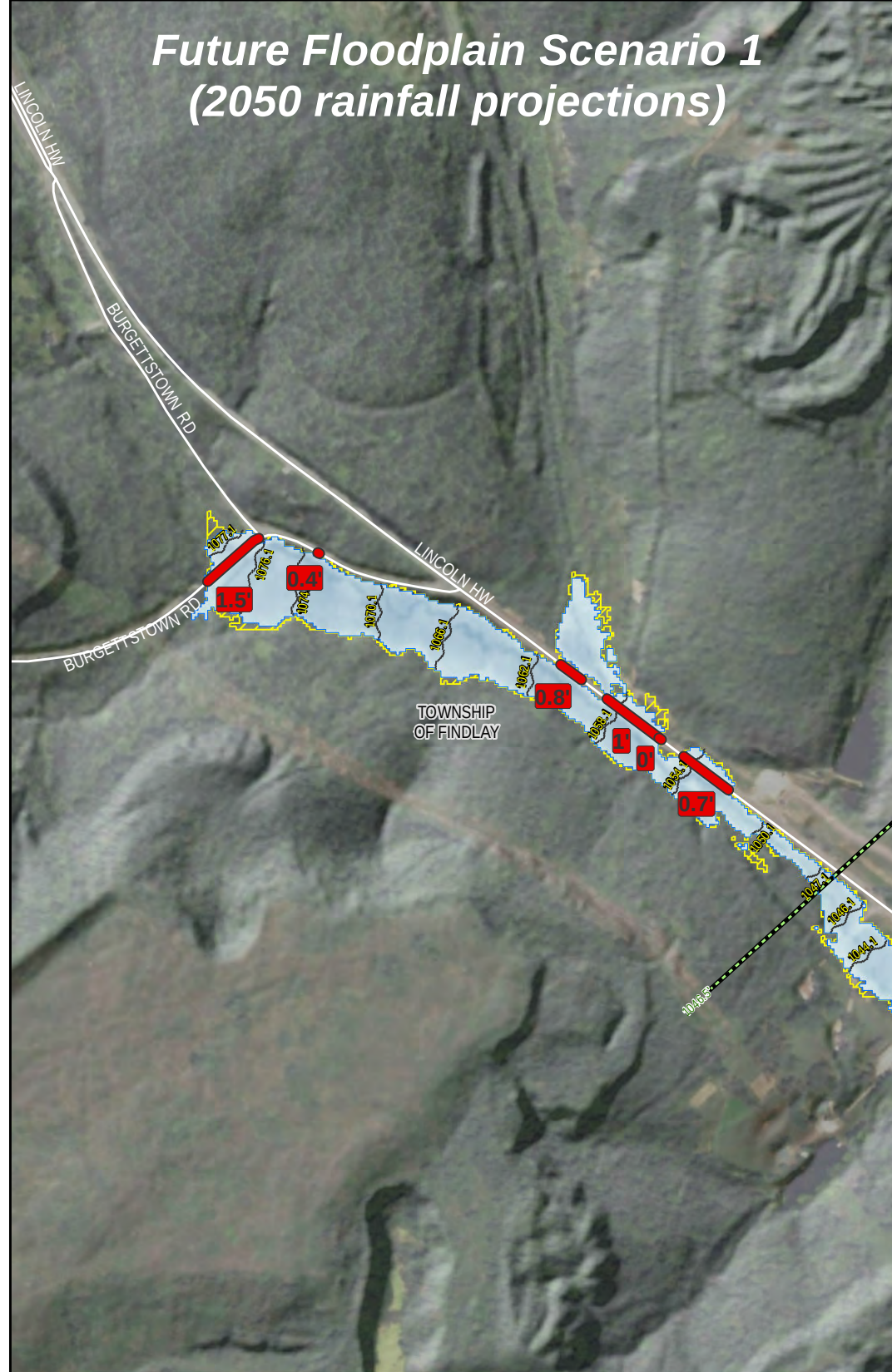


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**Michael Baker
INTERNATIONAL**





MAP SYMBOLOGY

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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

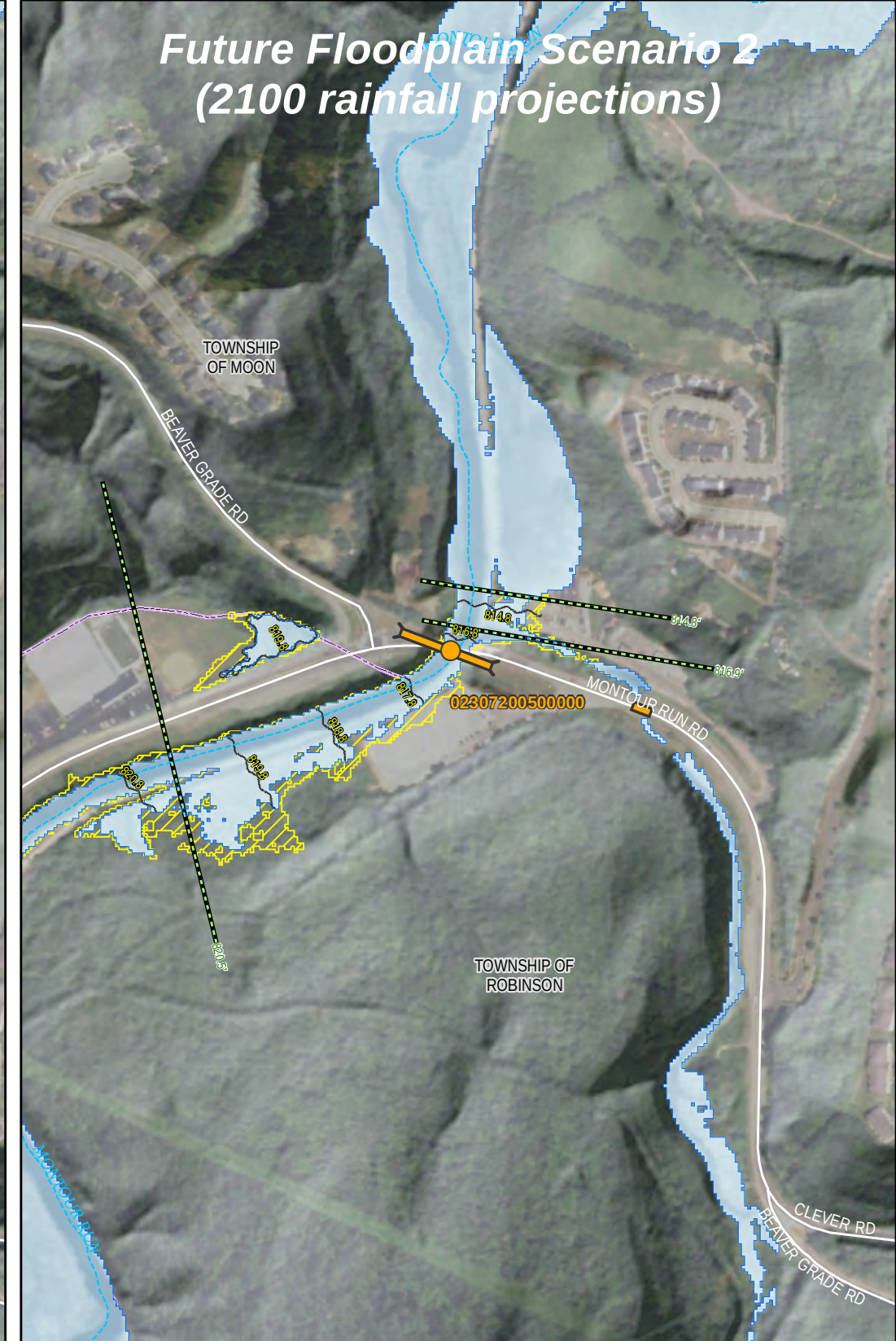
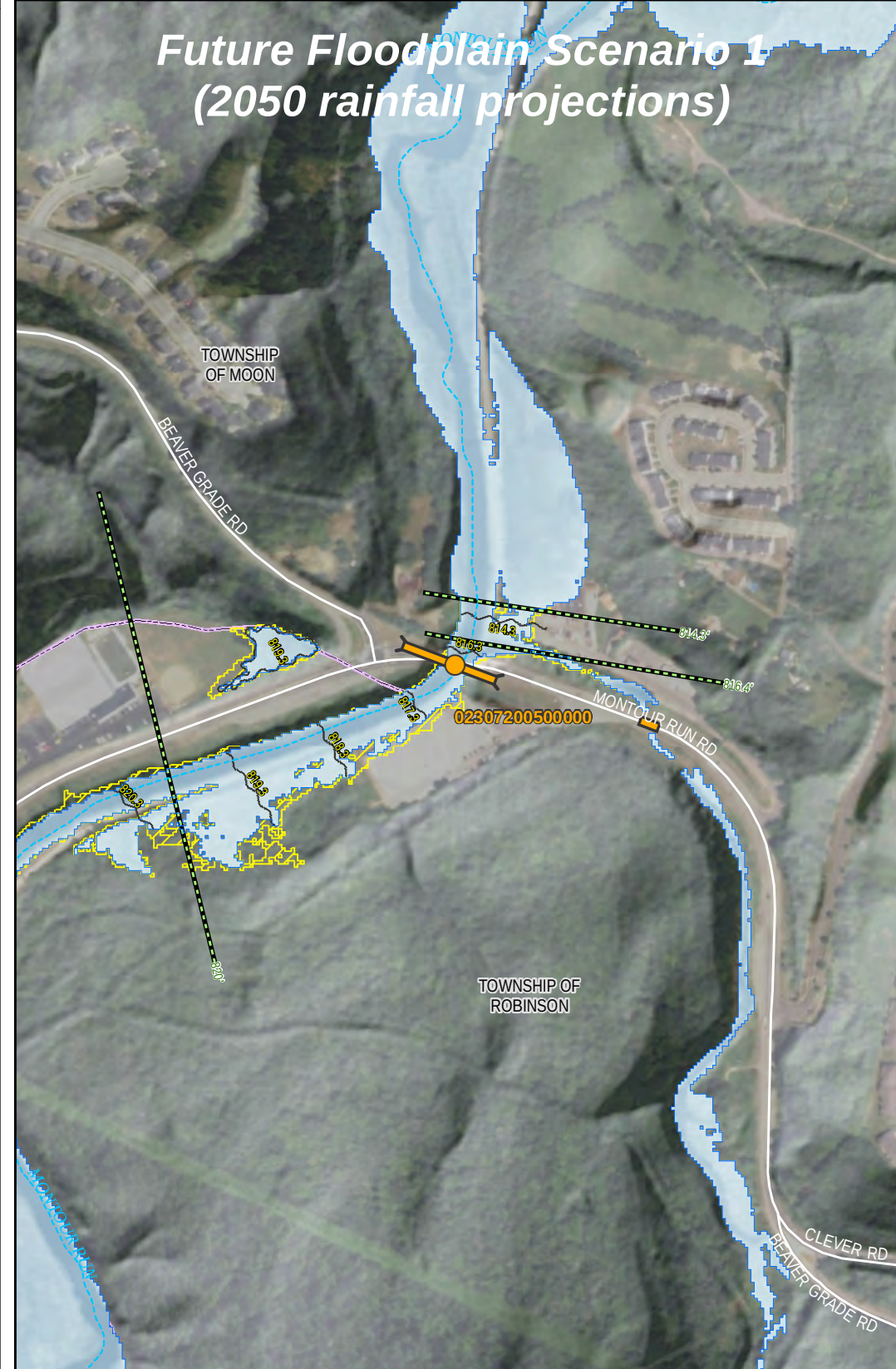
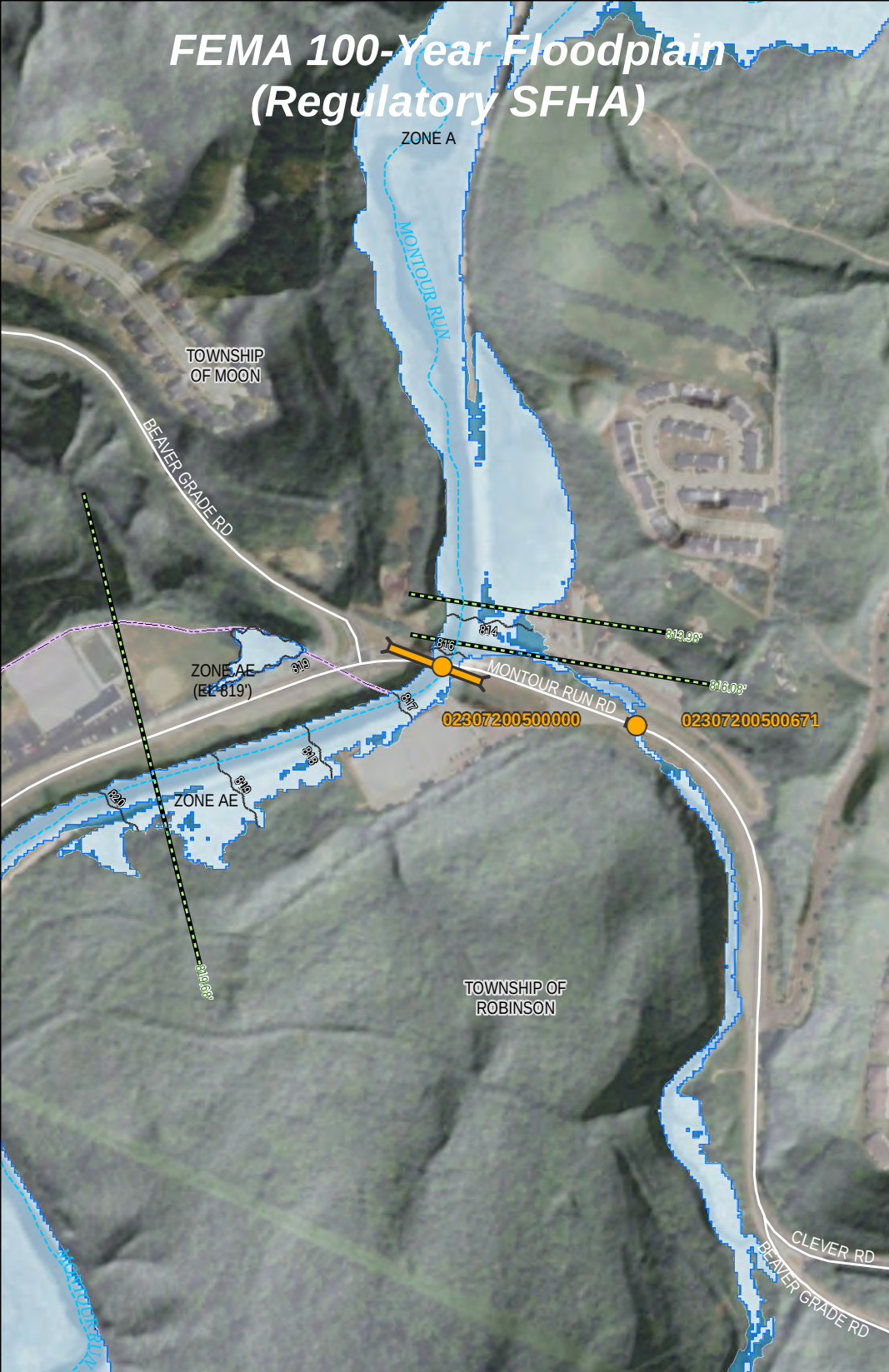
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 111 of 265

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LOCATOR MAP



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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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

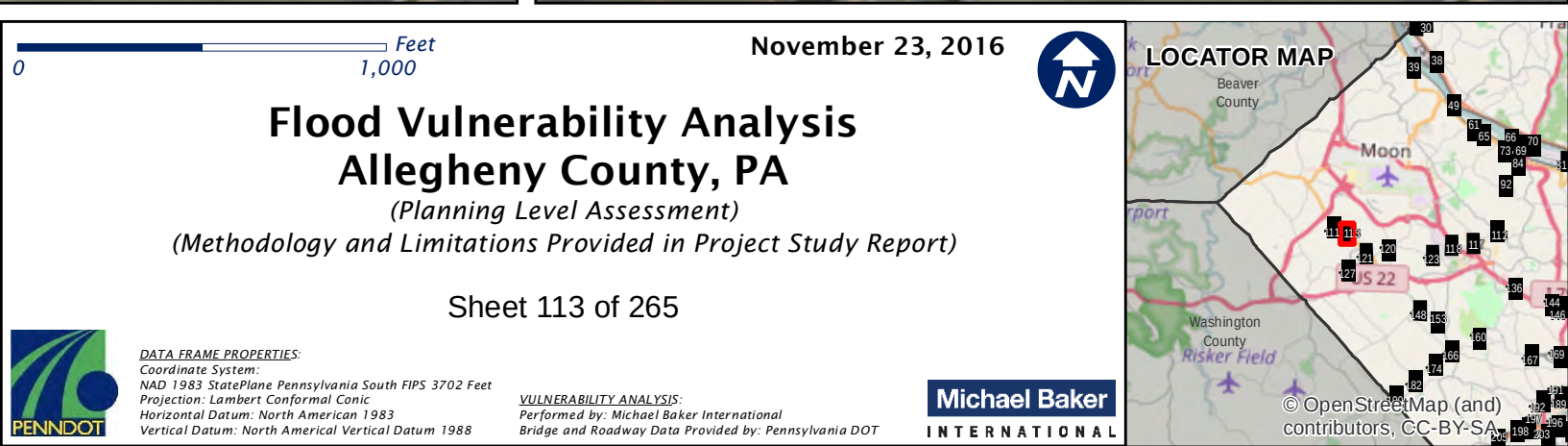
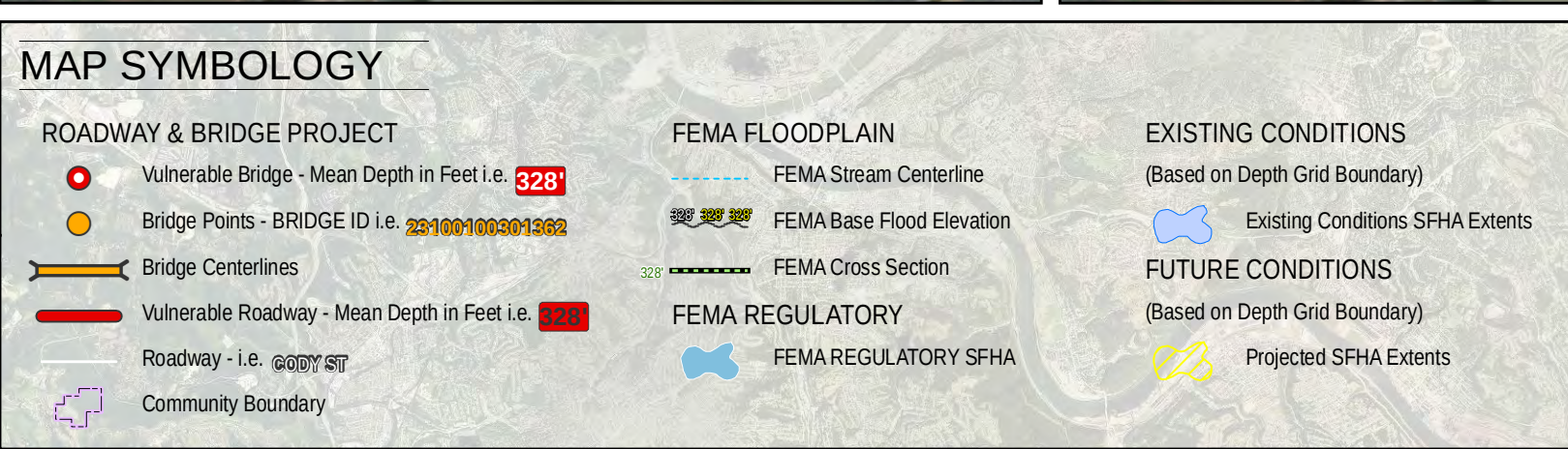
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(Methodology and Limitations Provided in Project Study Report)

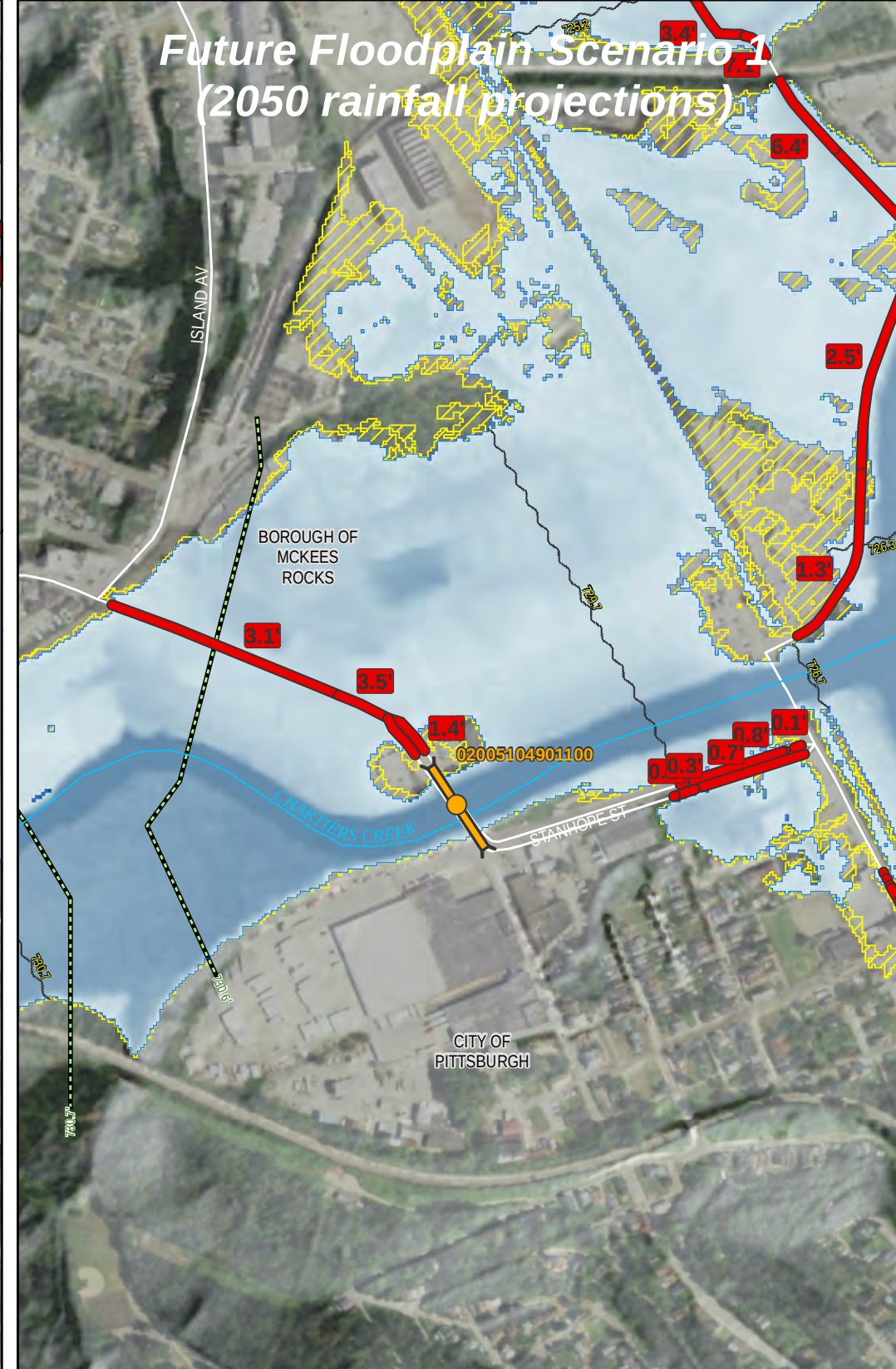
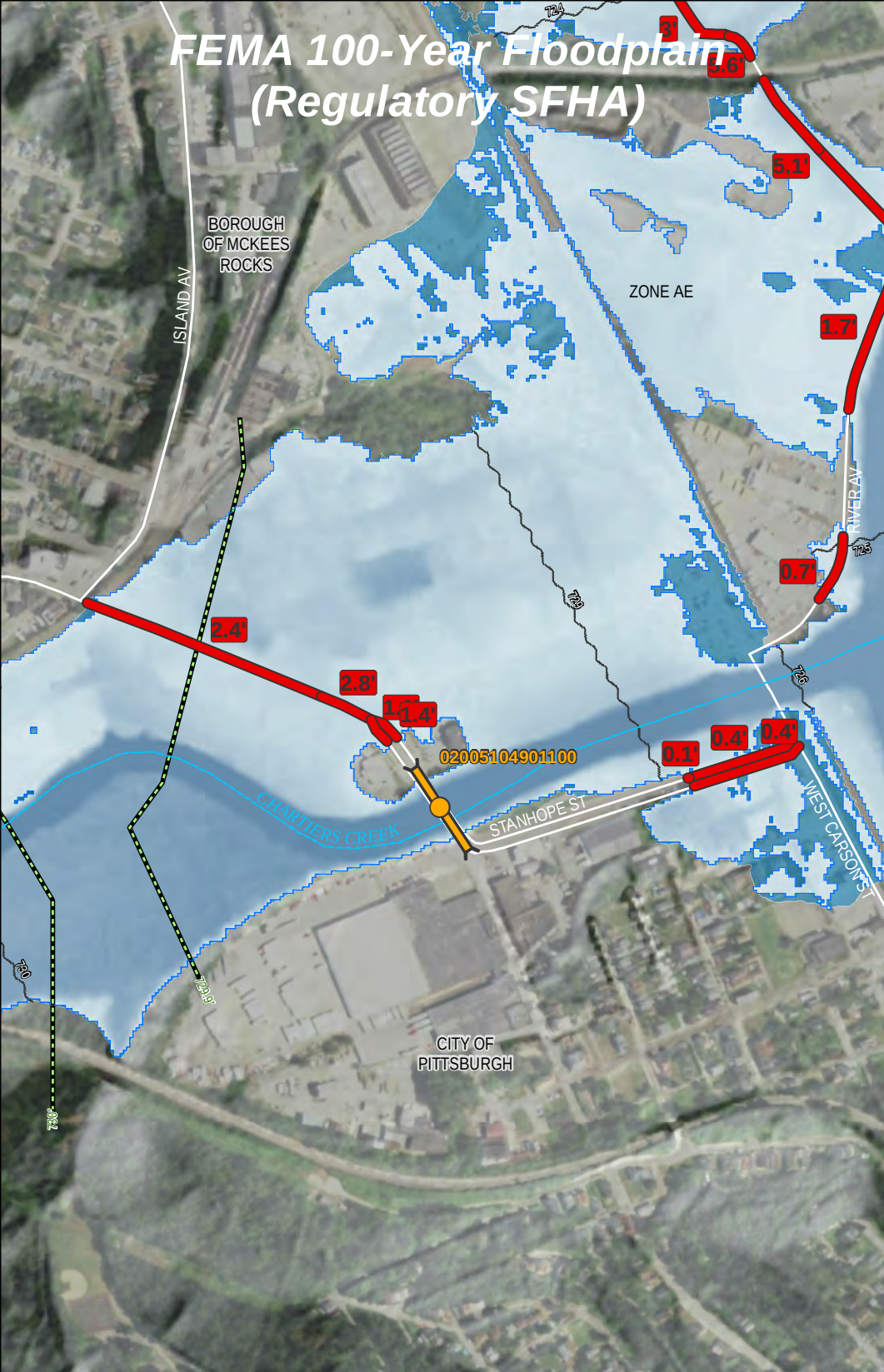
Sheet 112 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

0 1,000 Feet

Flood Vulnerability Analysis

Allegheny County, PA

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

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November 23, 2016

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PENNDOT

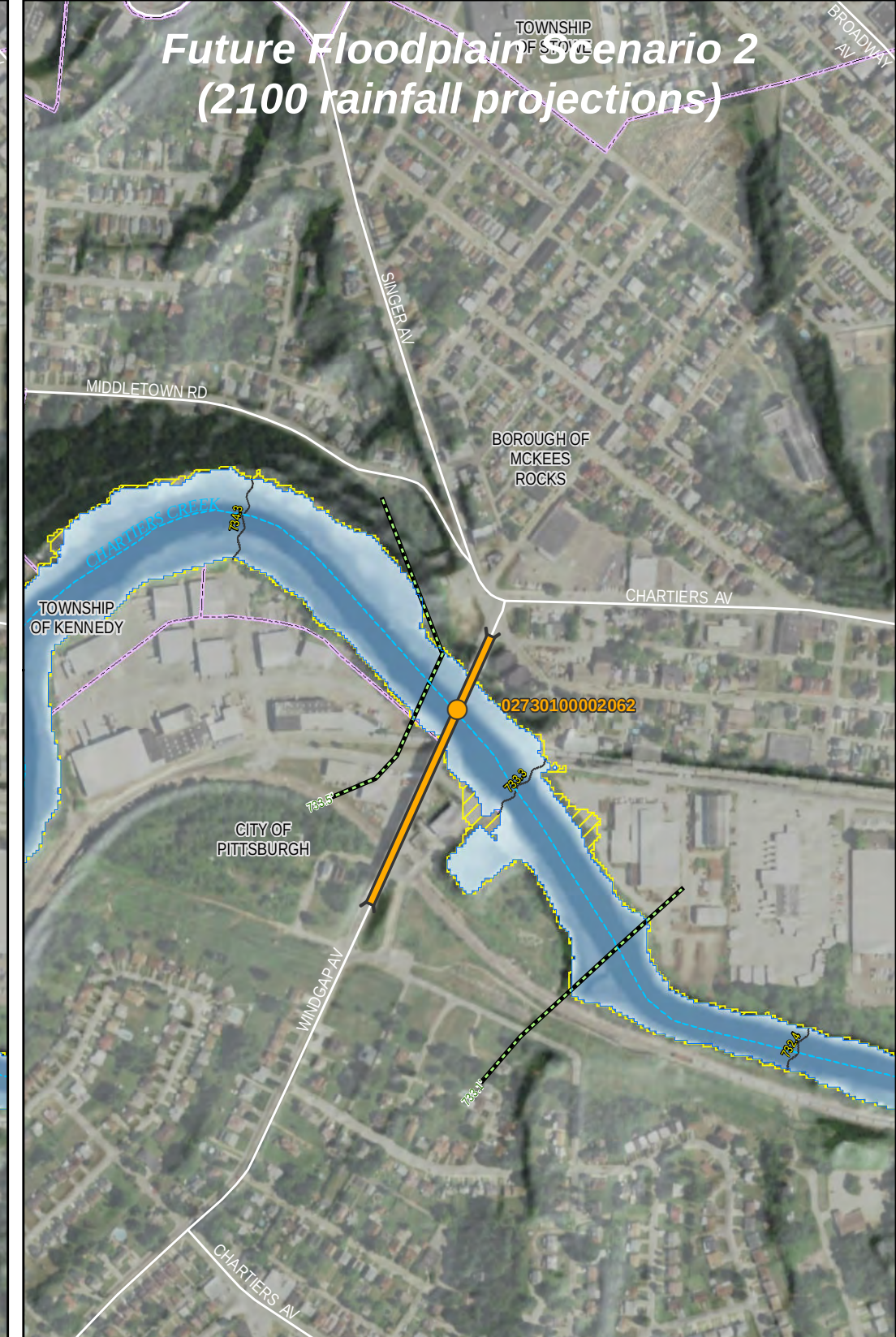
LOCATOR MAP

Washington County

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DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

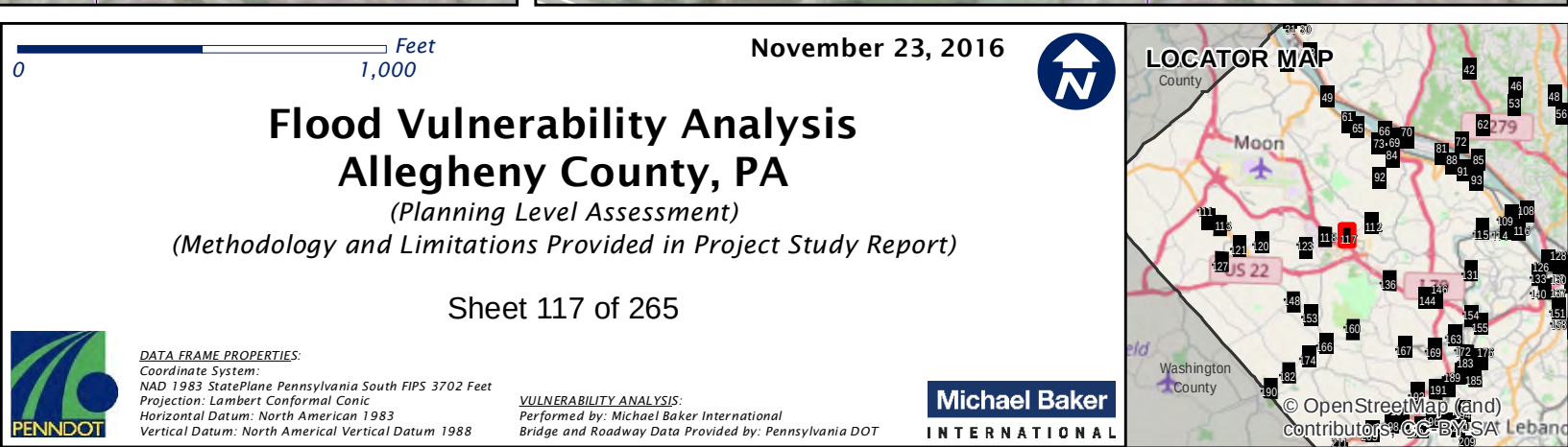
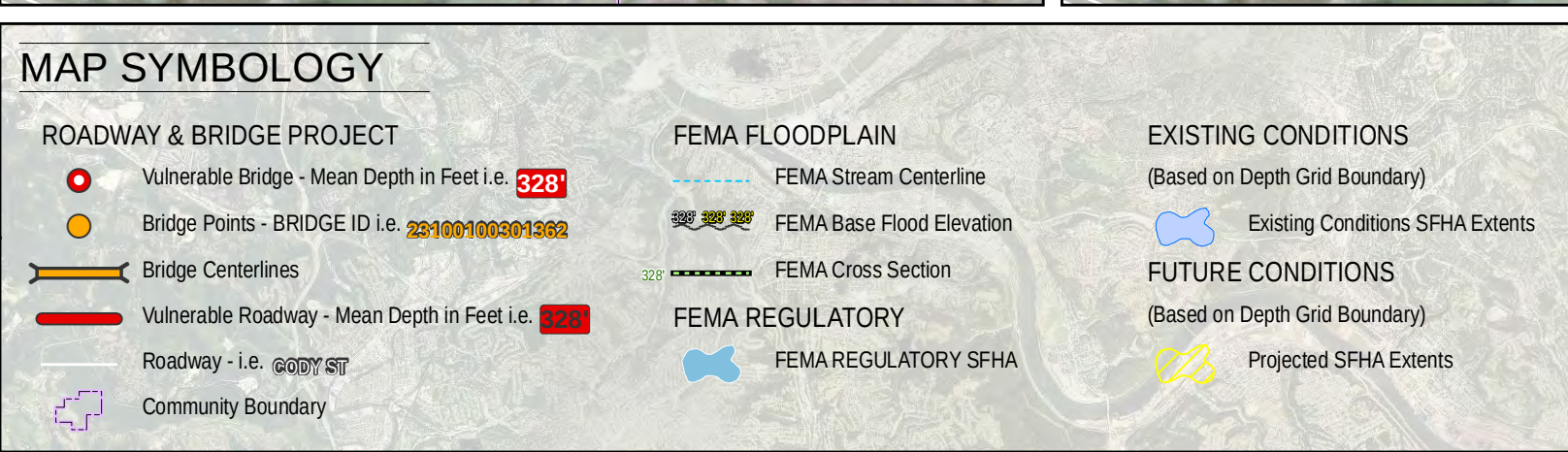
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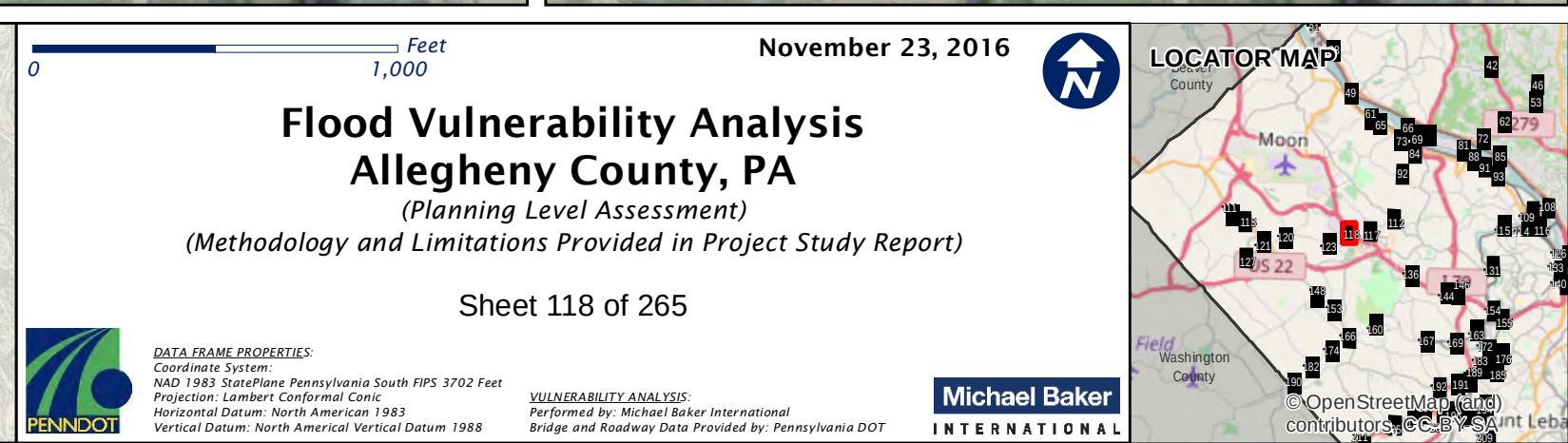
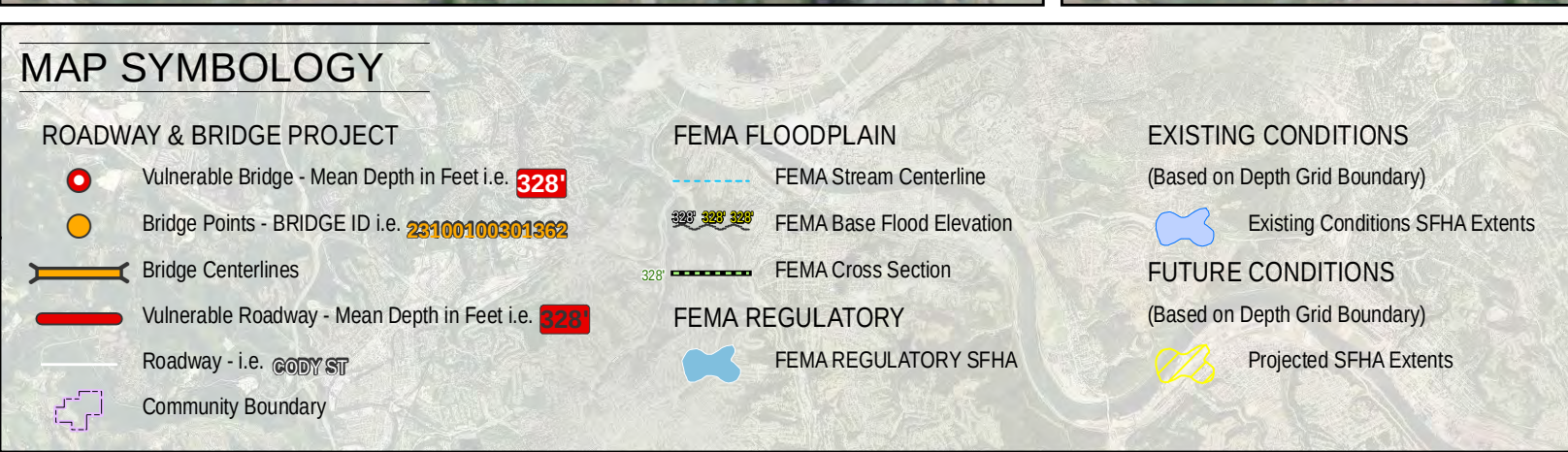
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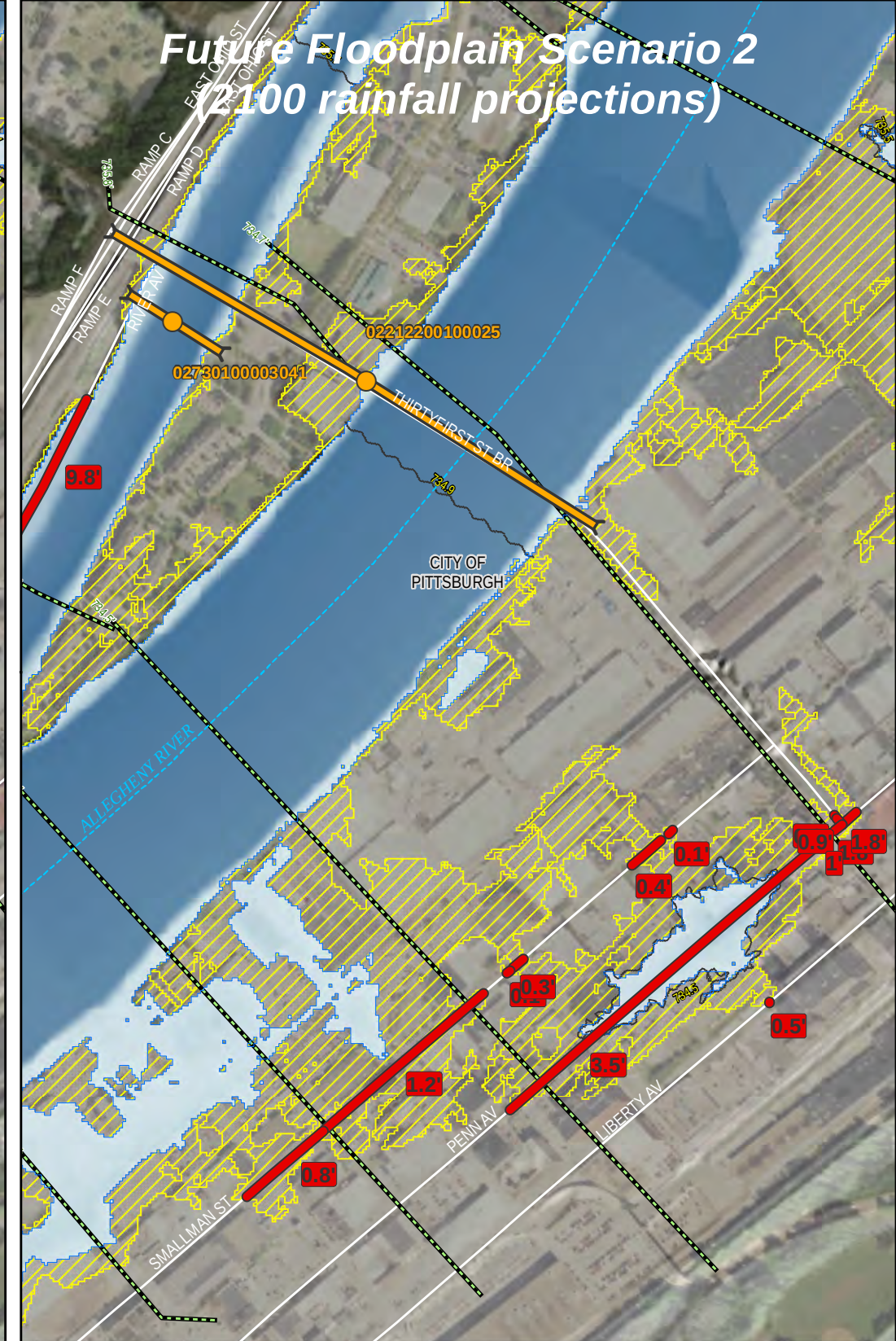
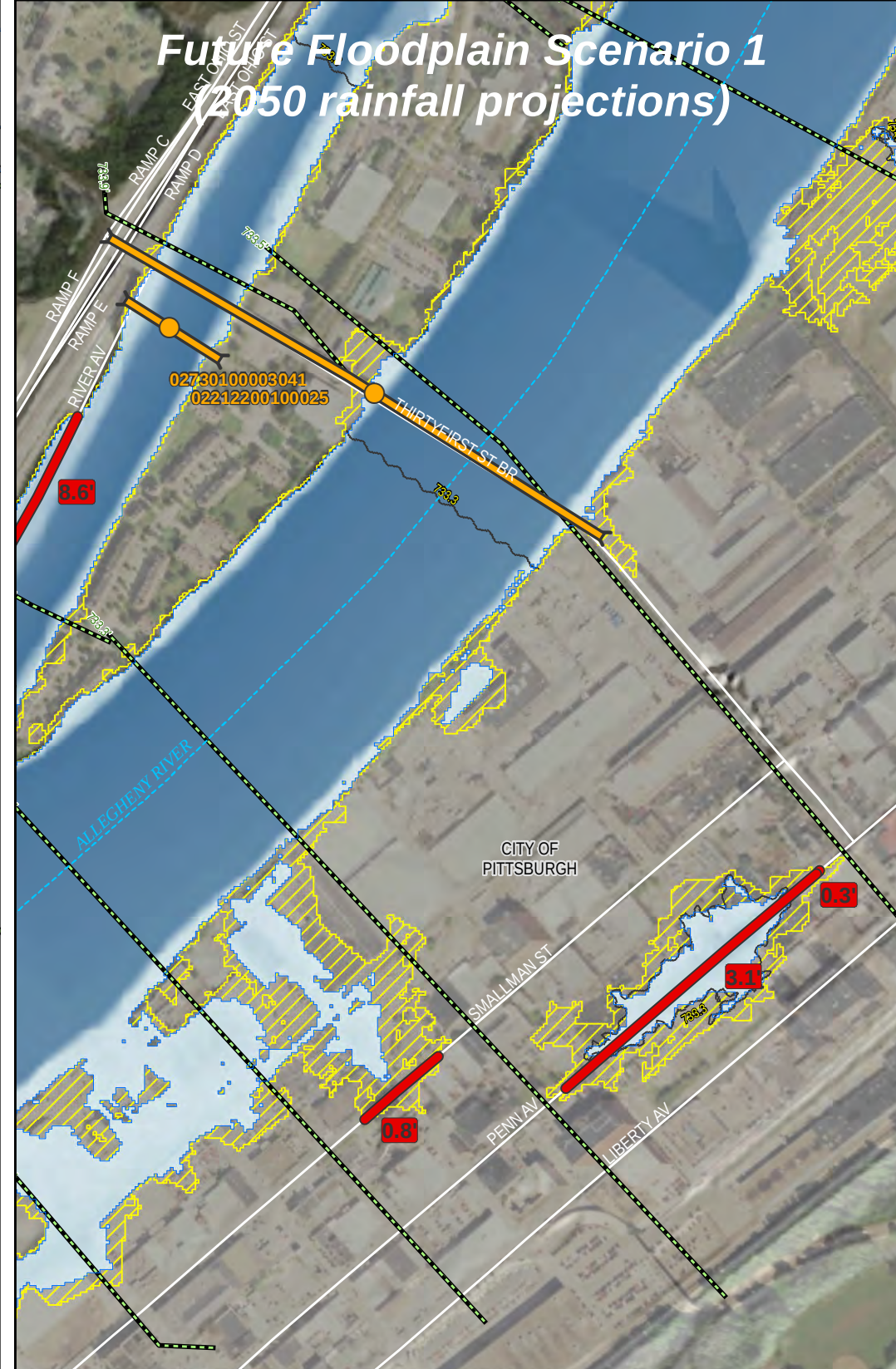
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Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP







MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
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Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

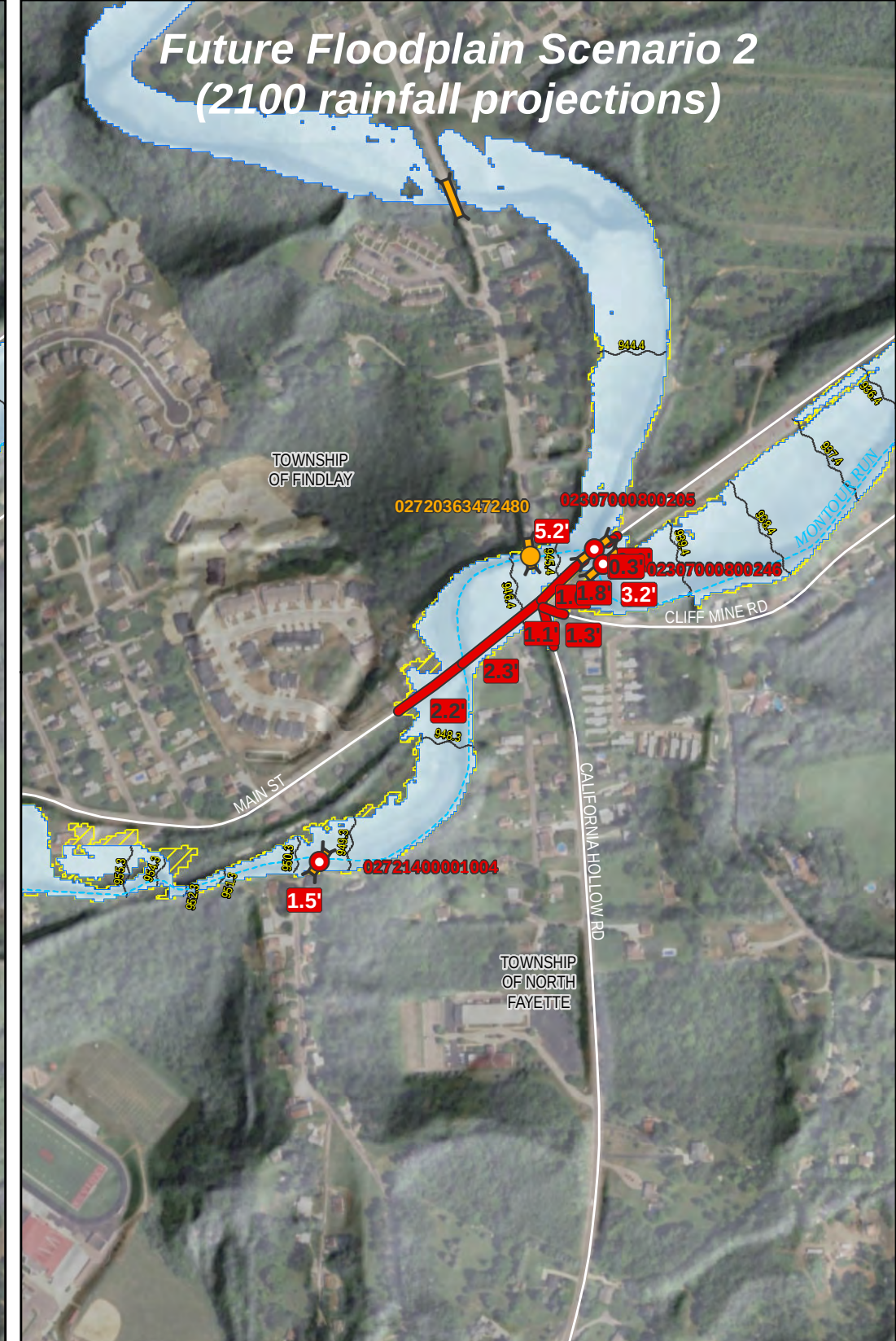
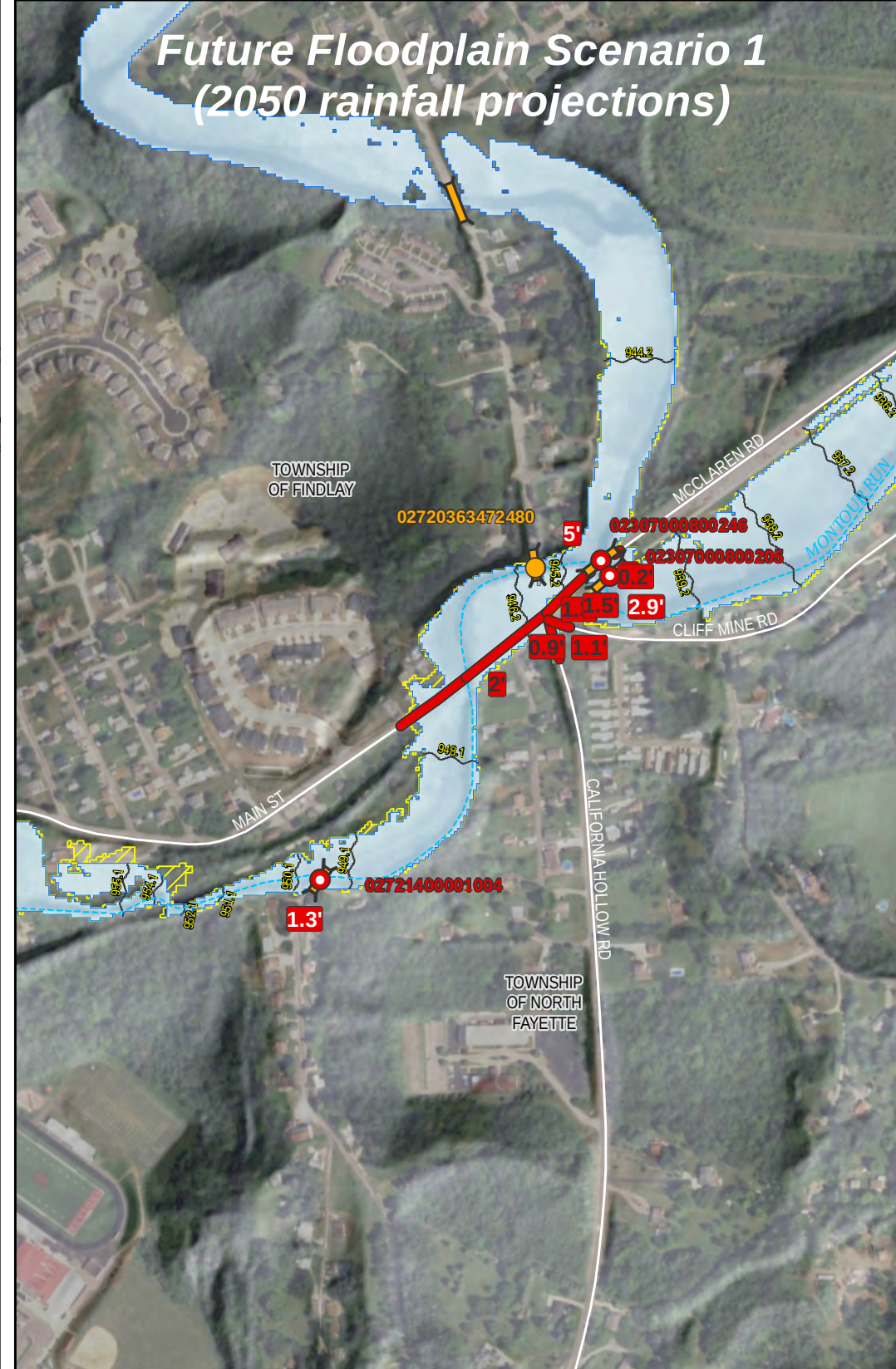
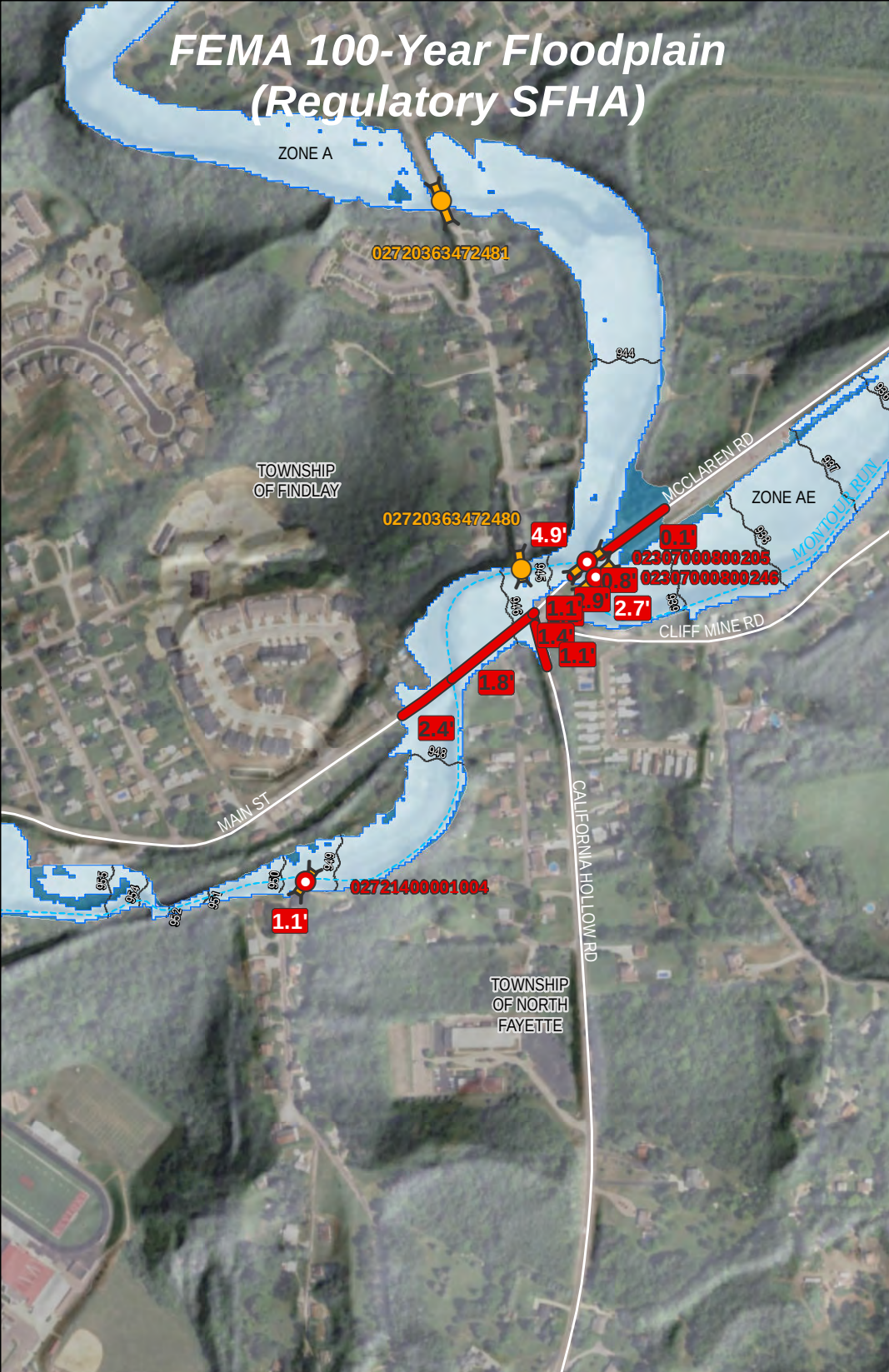
Sheet 119 of 265

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LOCATOR MAP

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

Sheet 120 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

Beaver County
Moon
Washington County
Risky County

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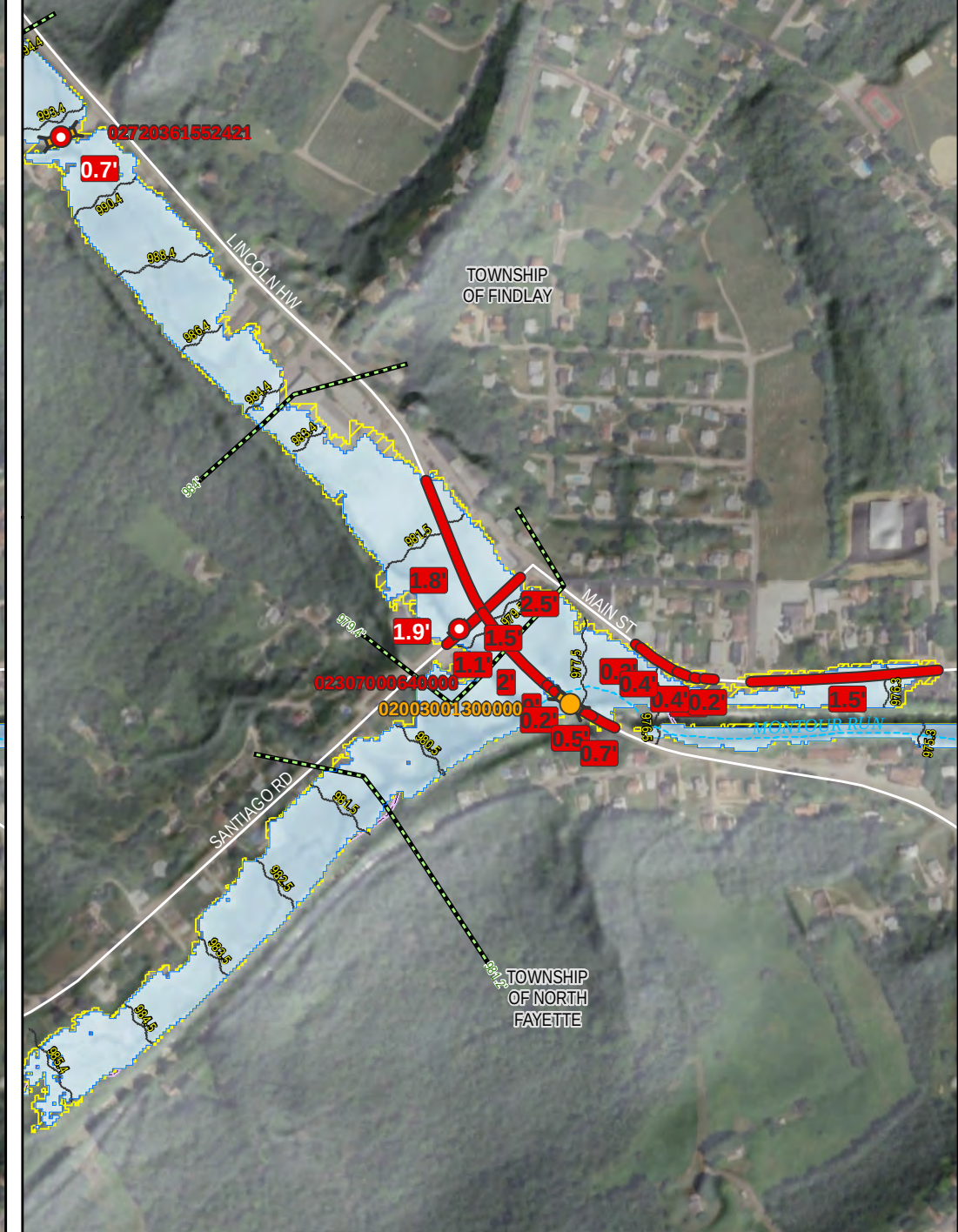
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016



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

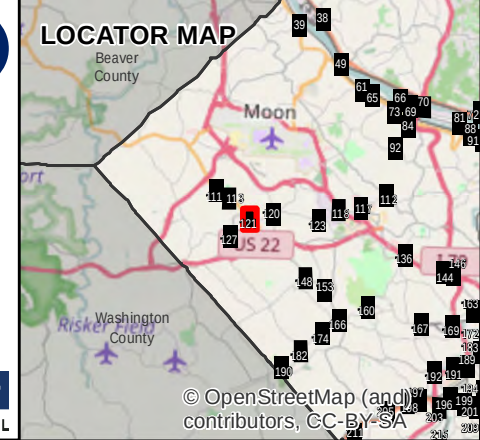
Sheet 121 of 265

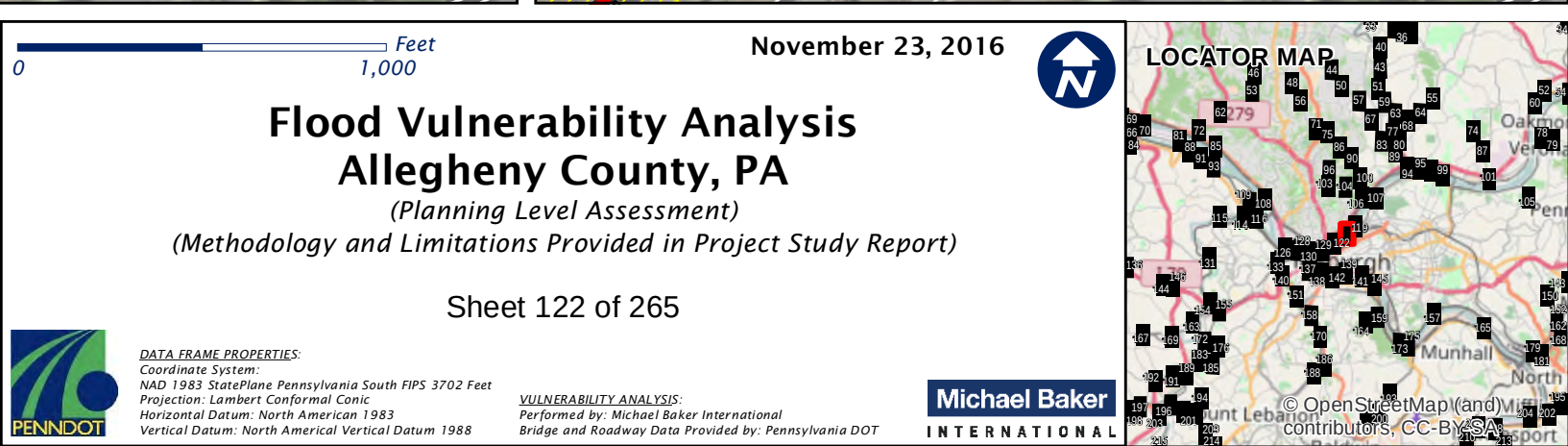
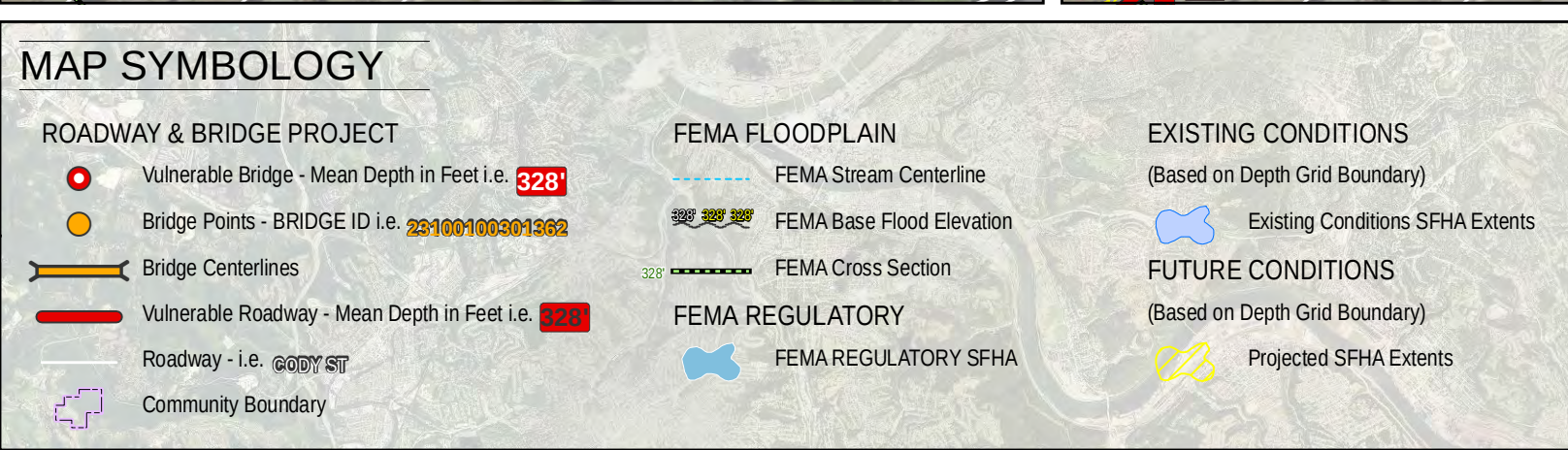
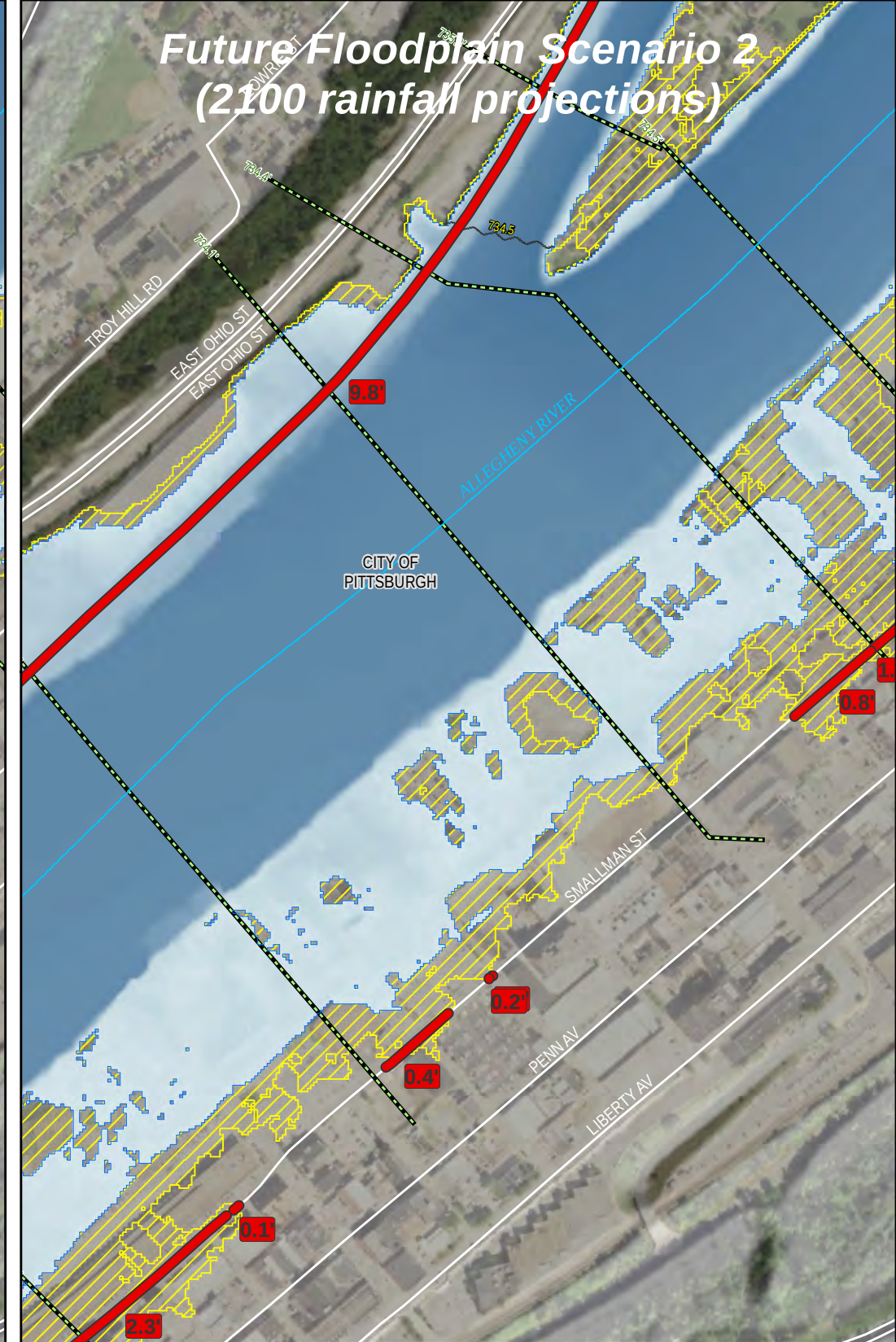
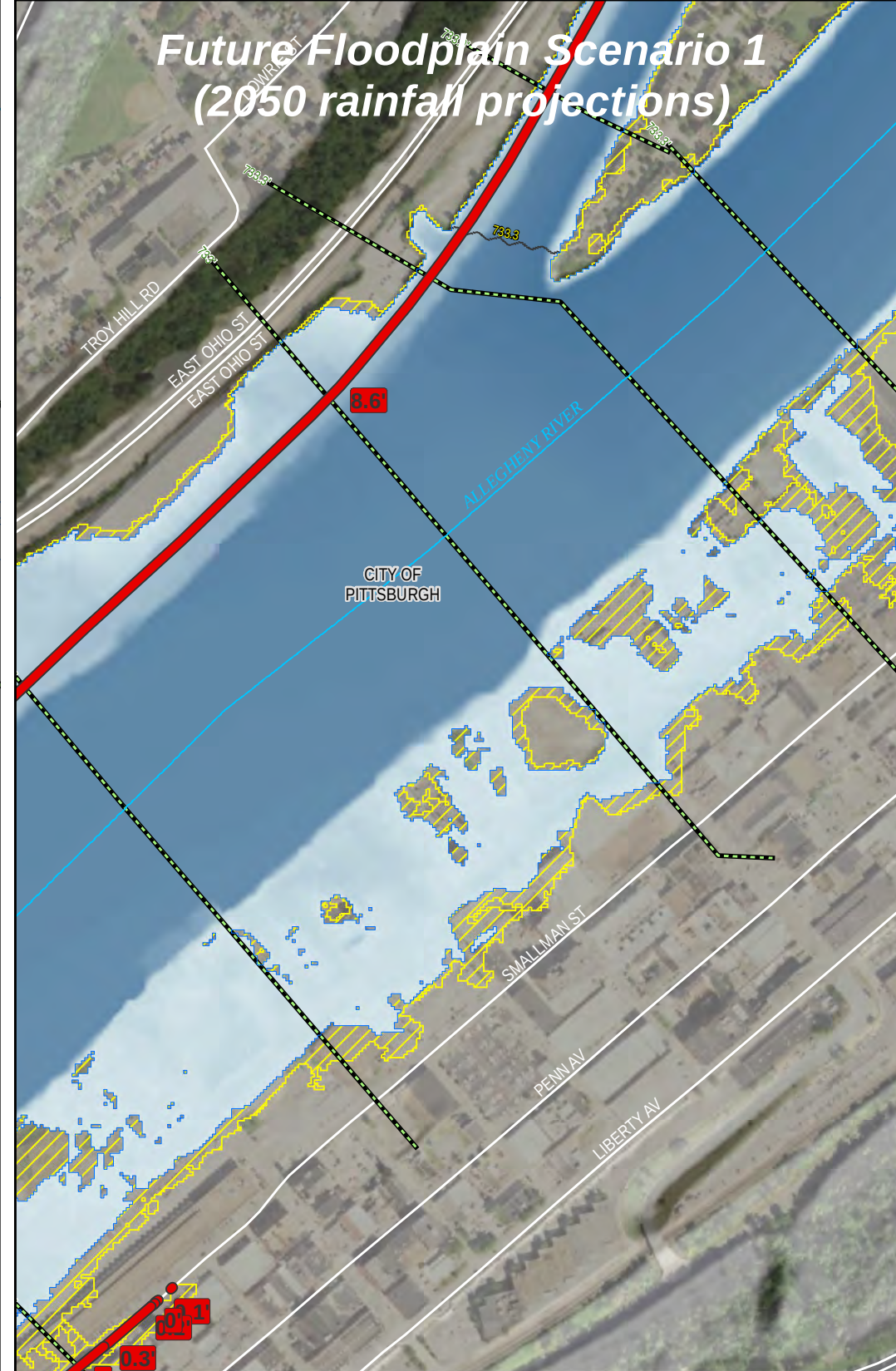
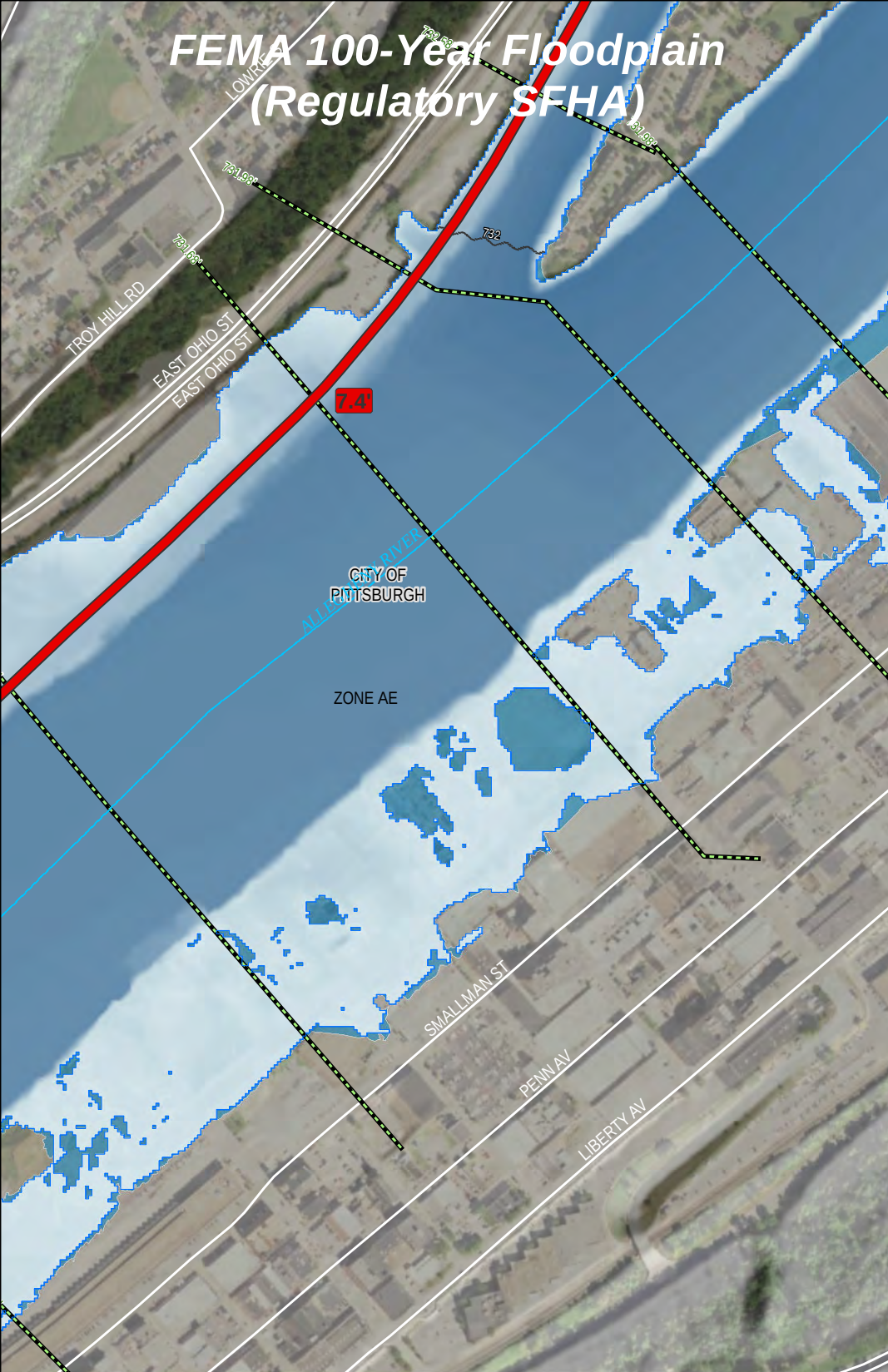


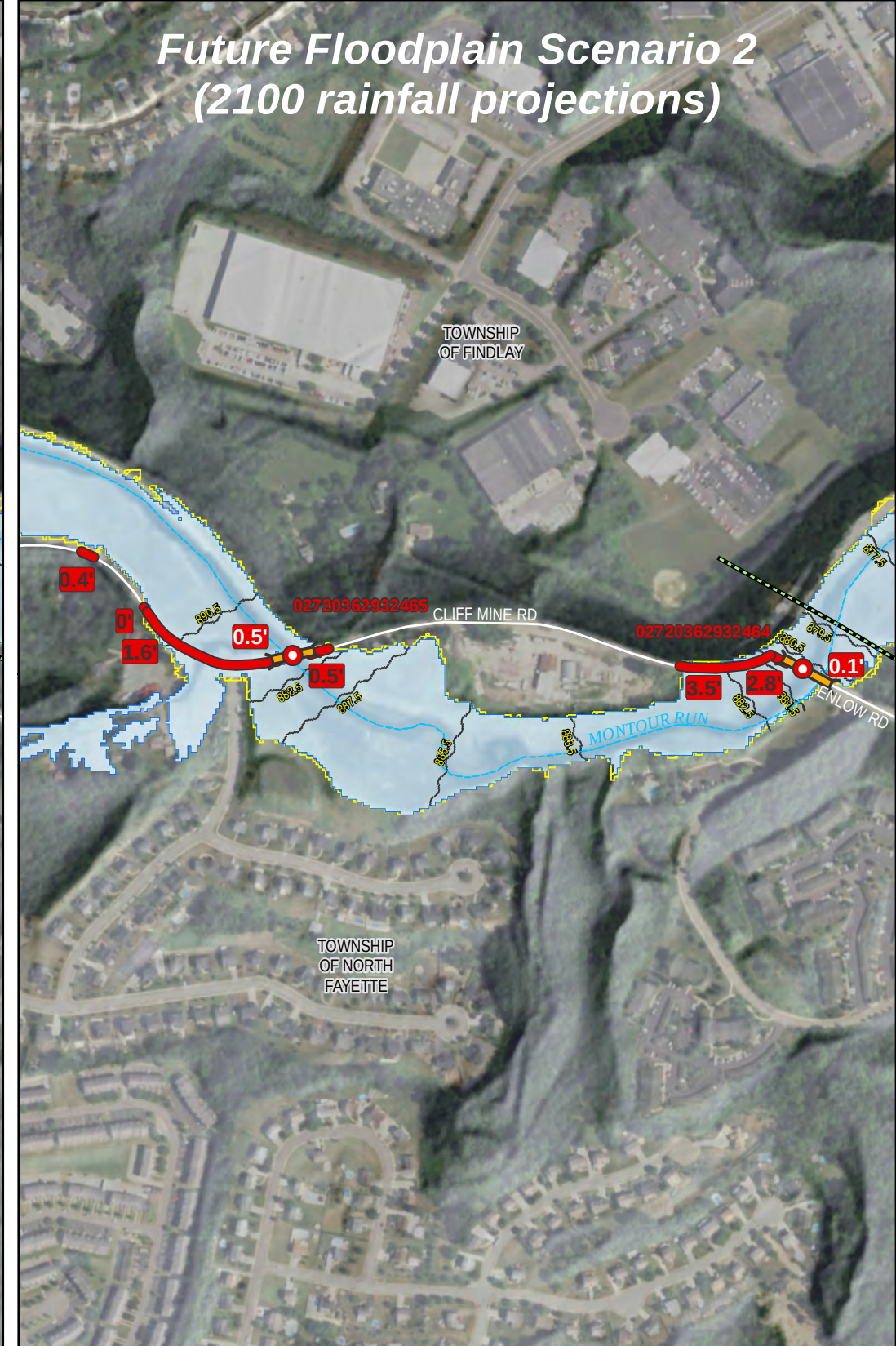
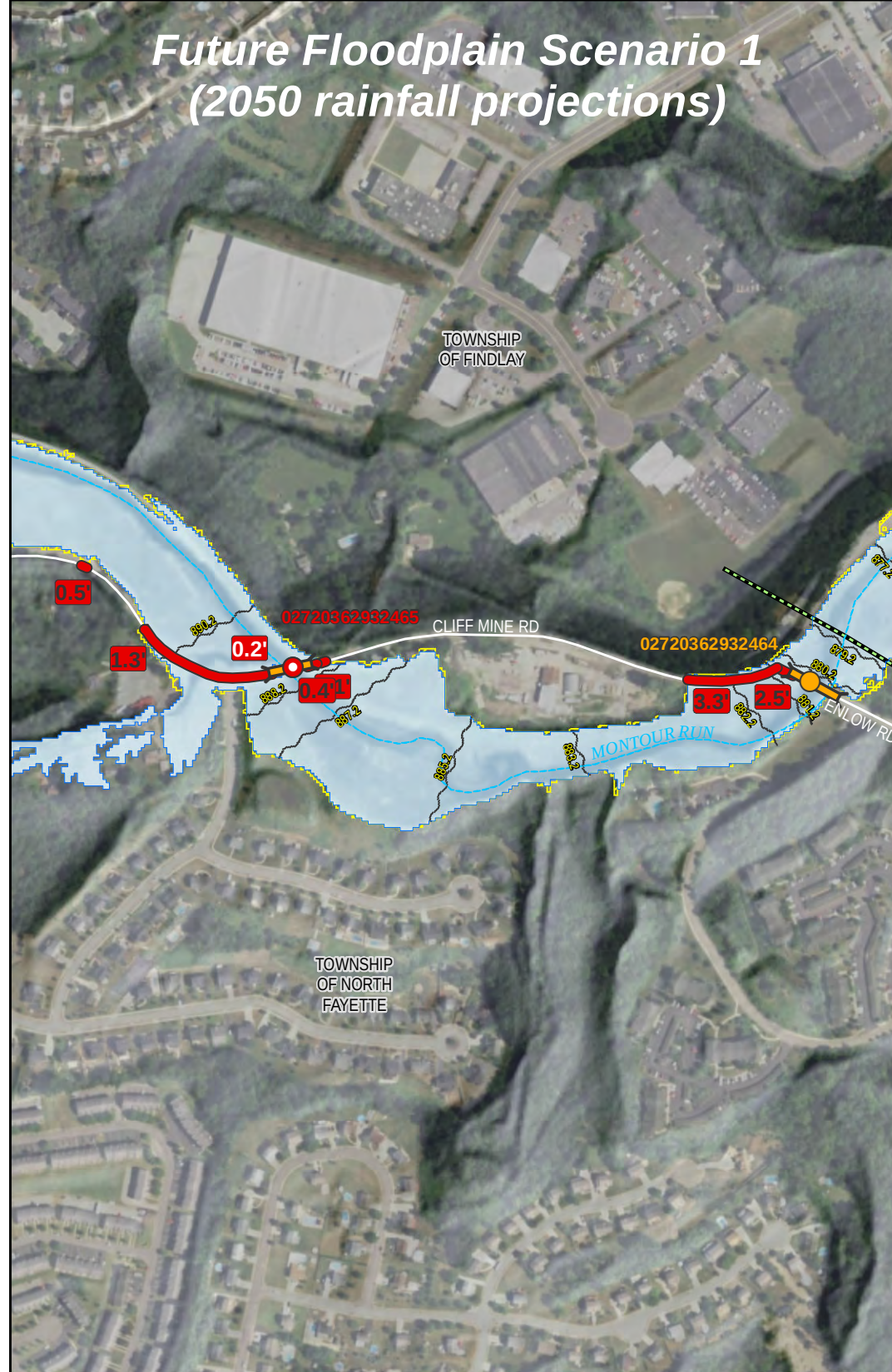
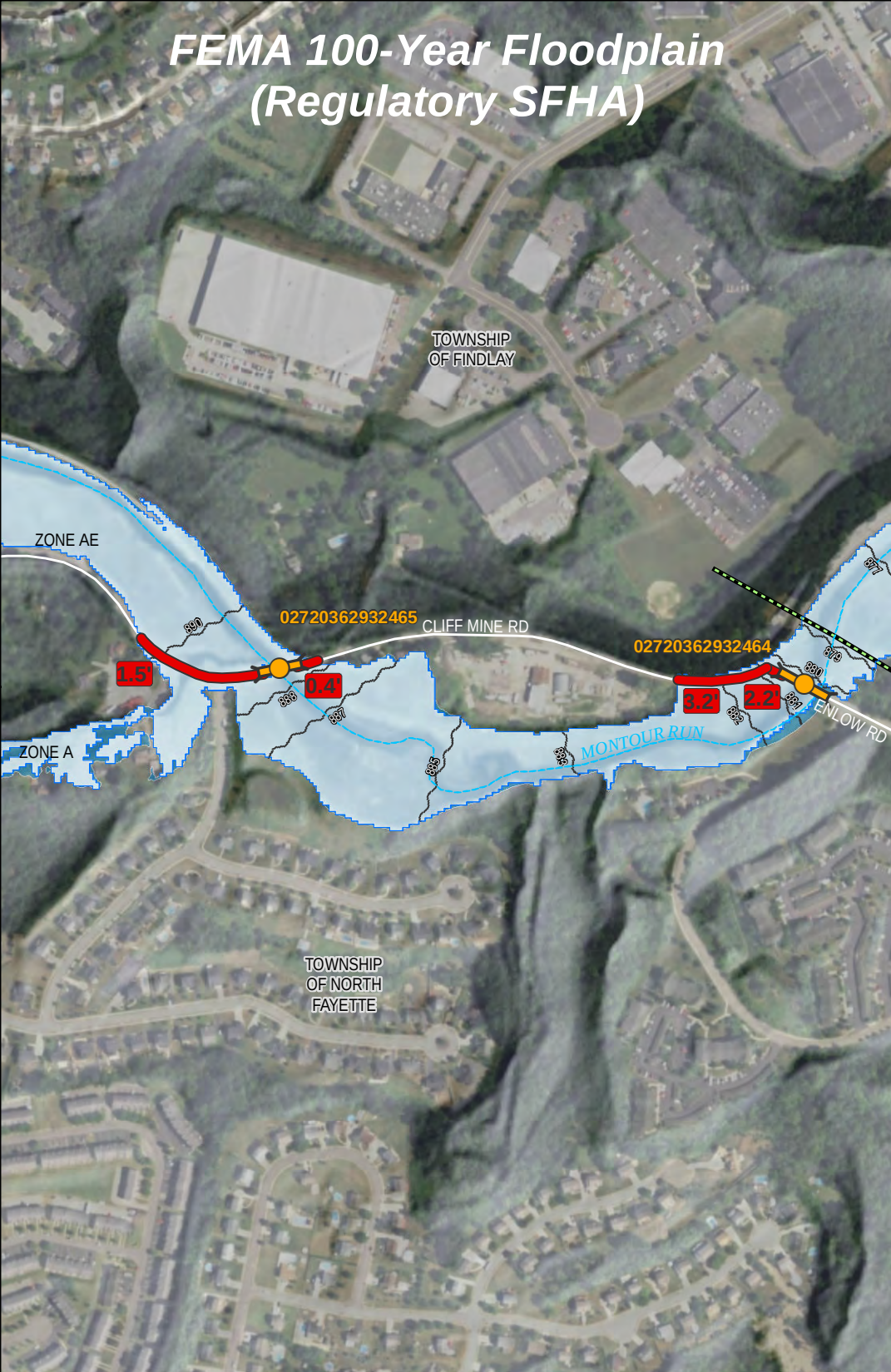
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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INTERNATIONAL







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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

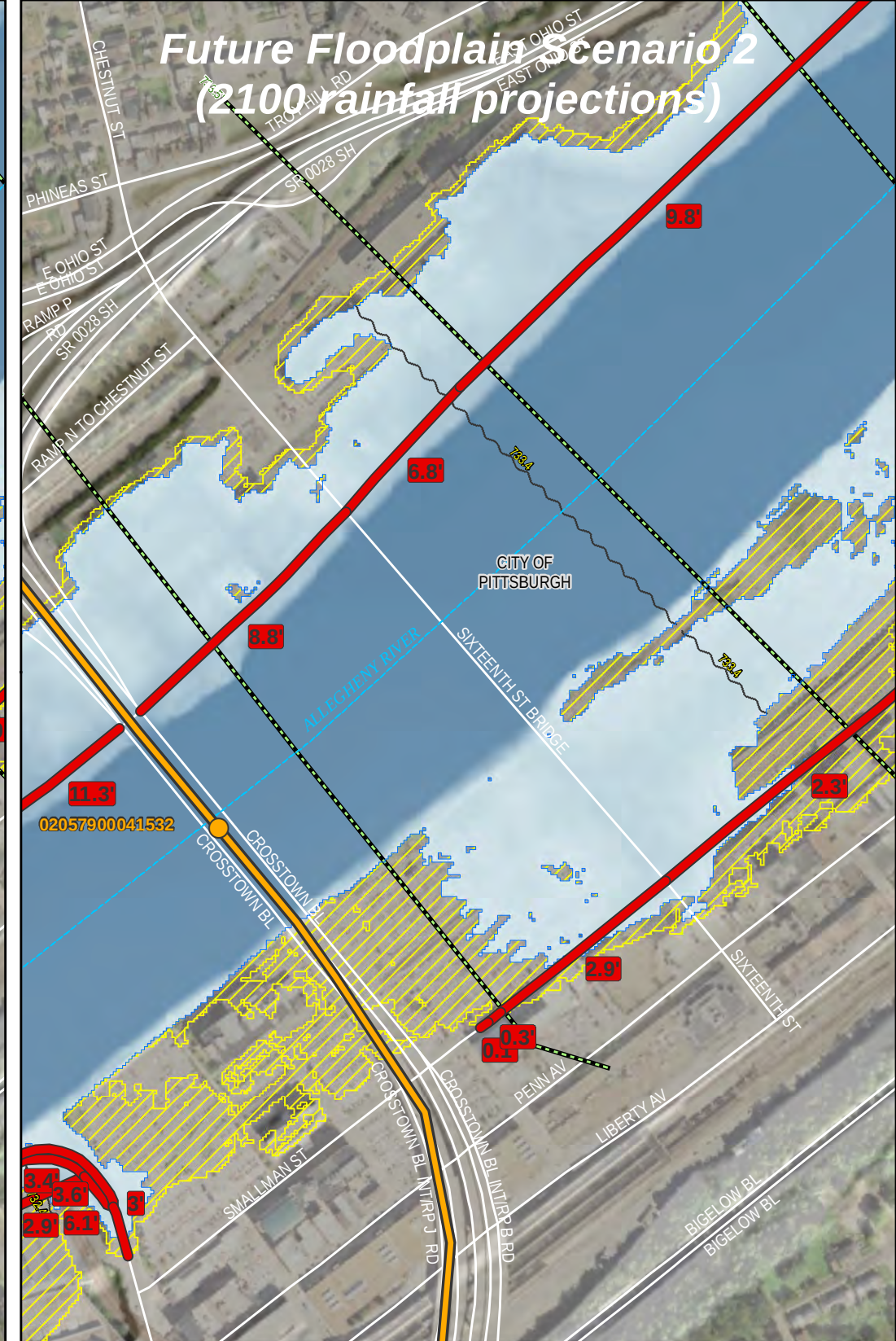
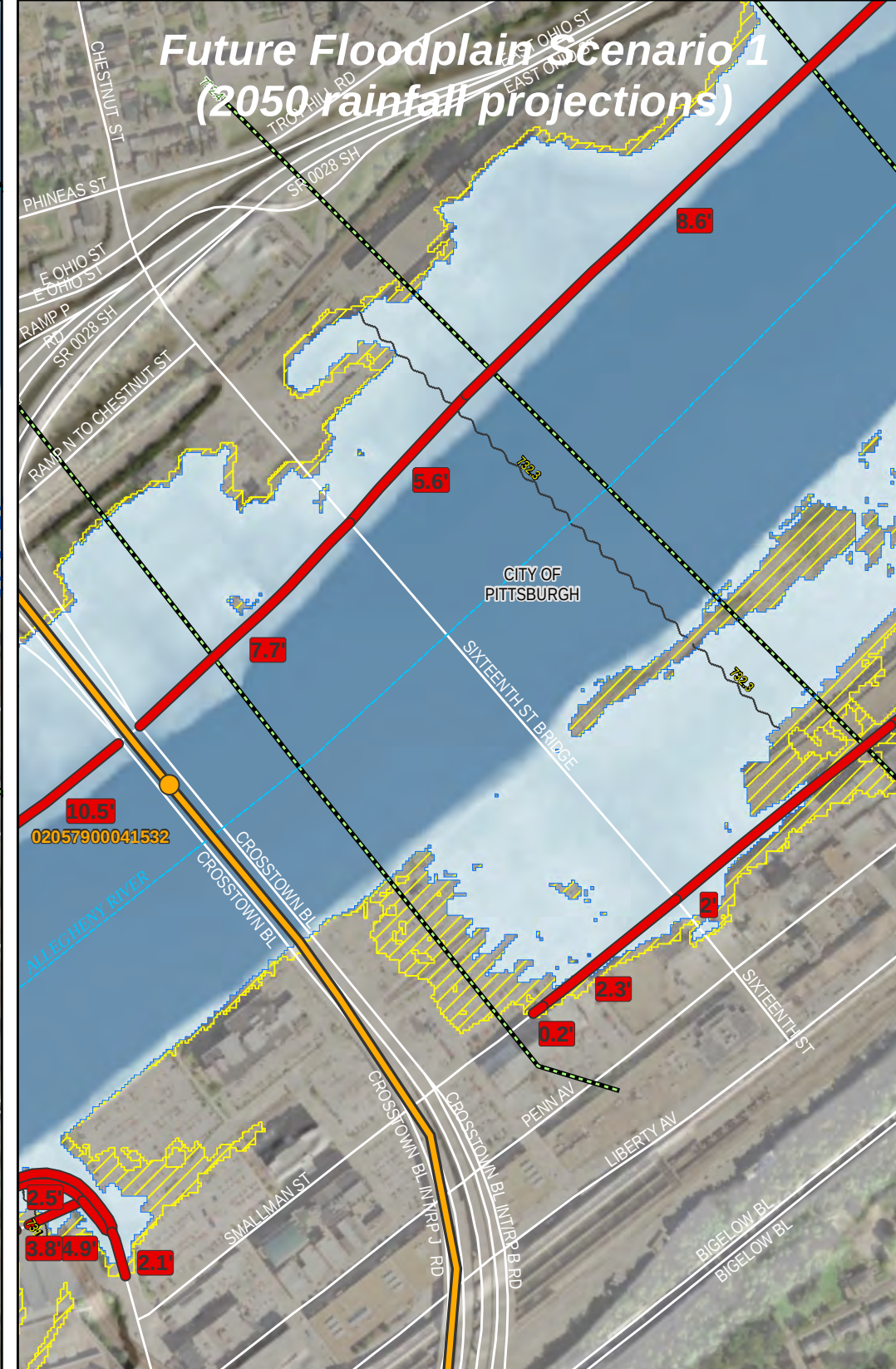
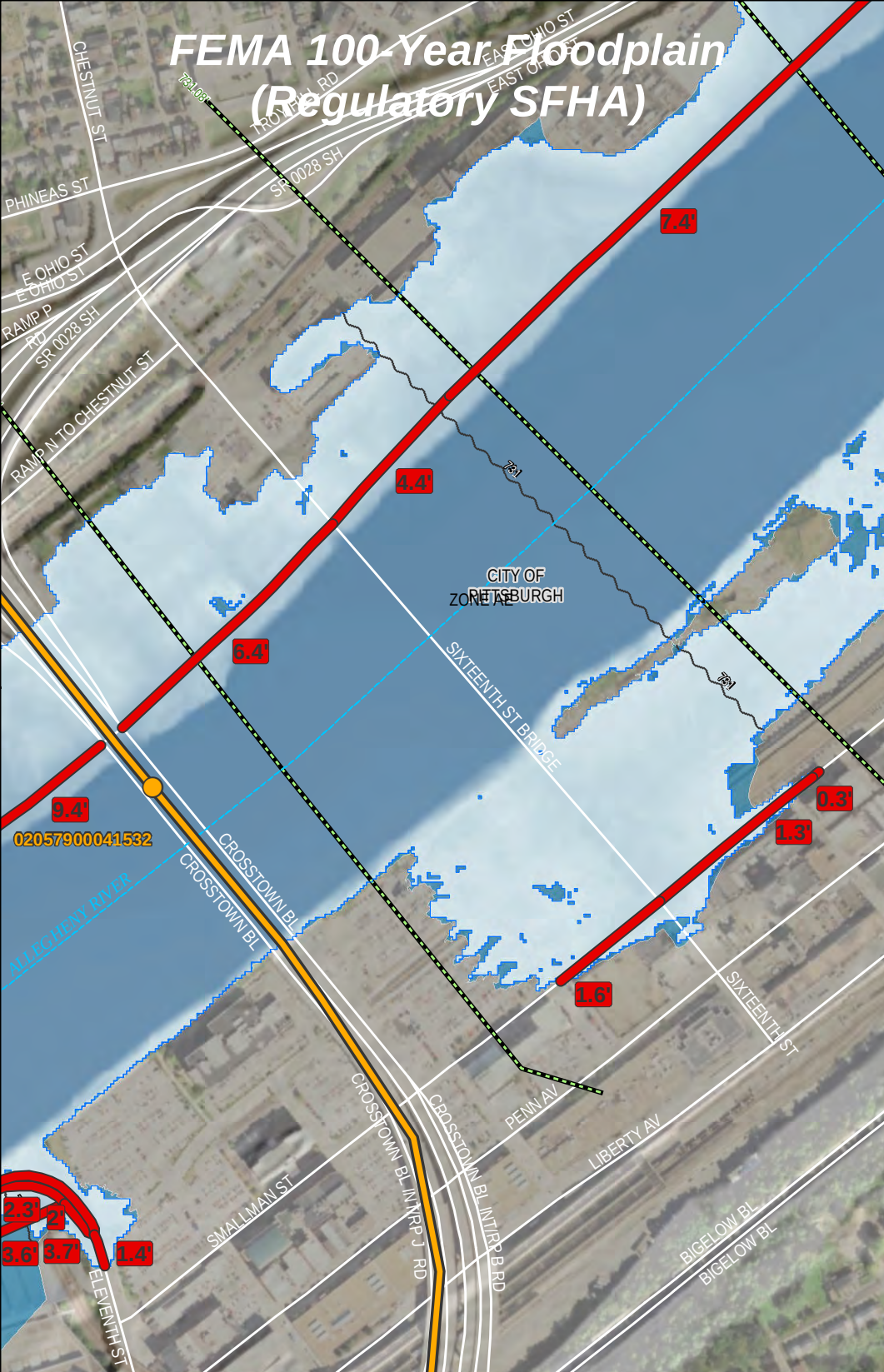
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



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. **GODY ST**
-  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)

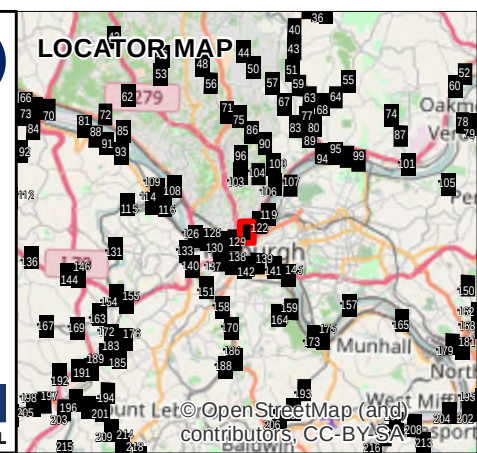
Sheet 124 of 265

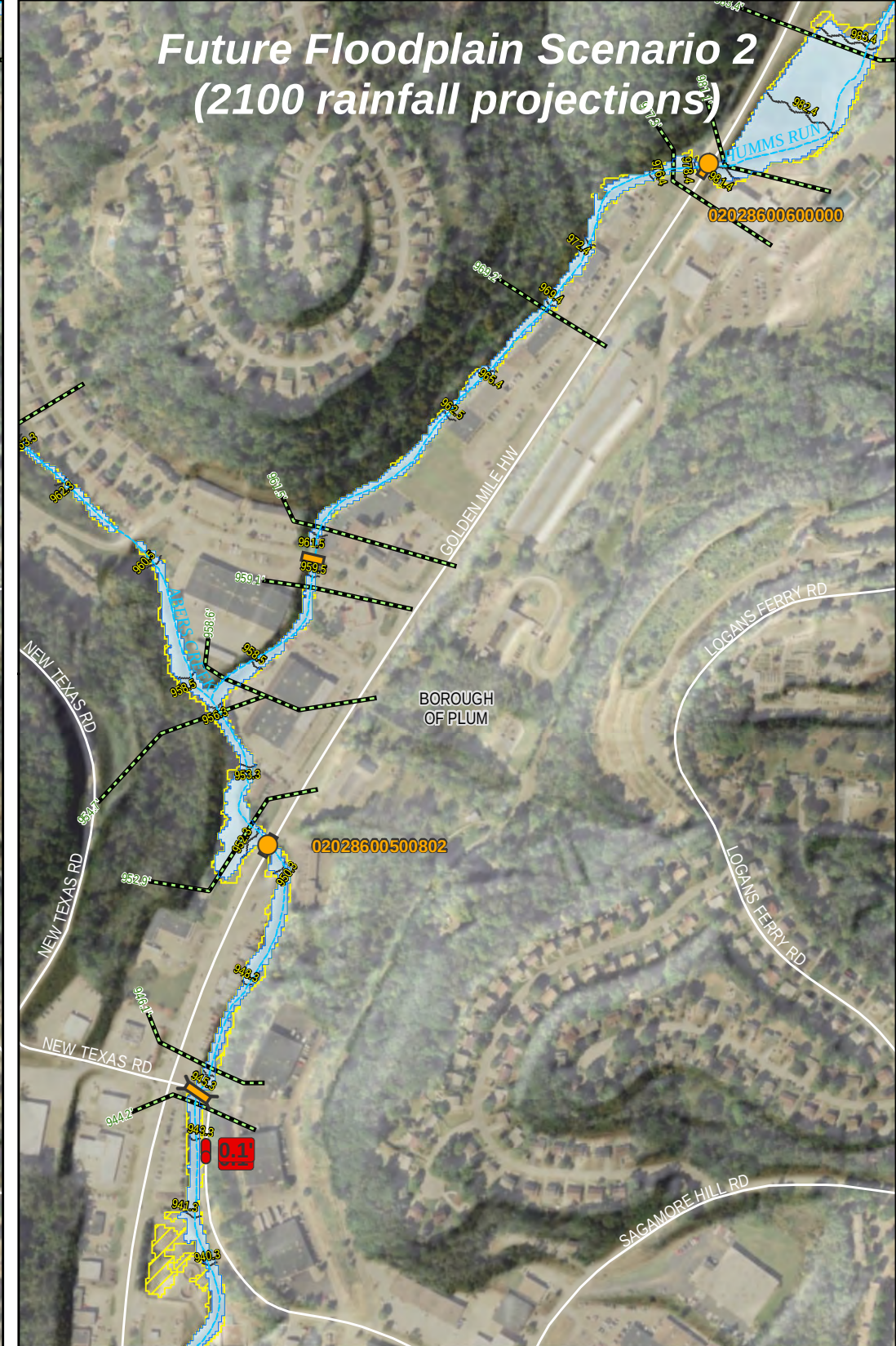
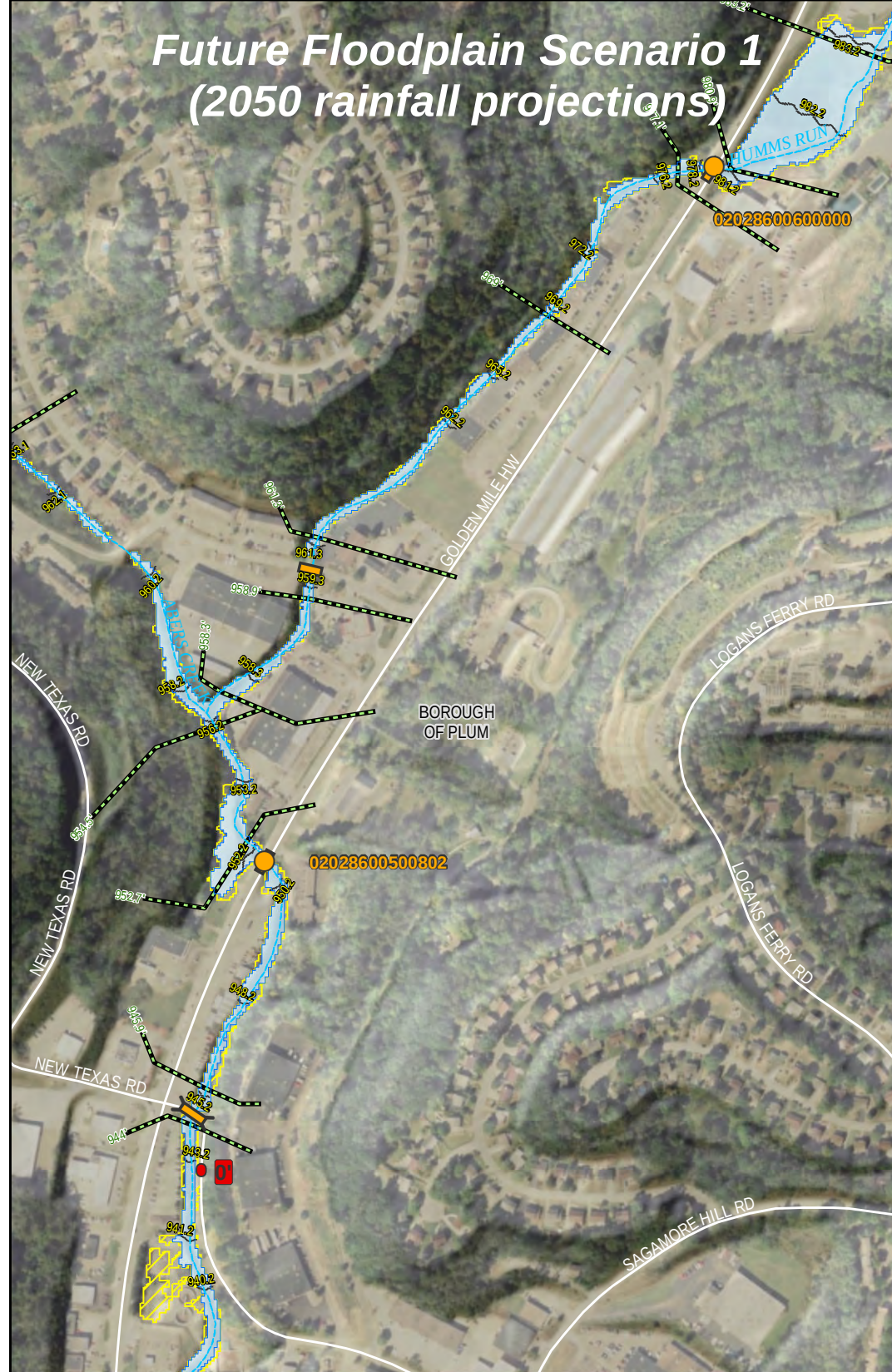
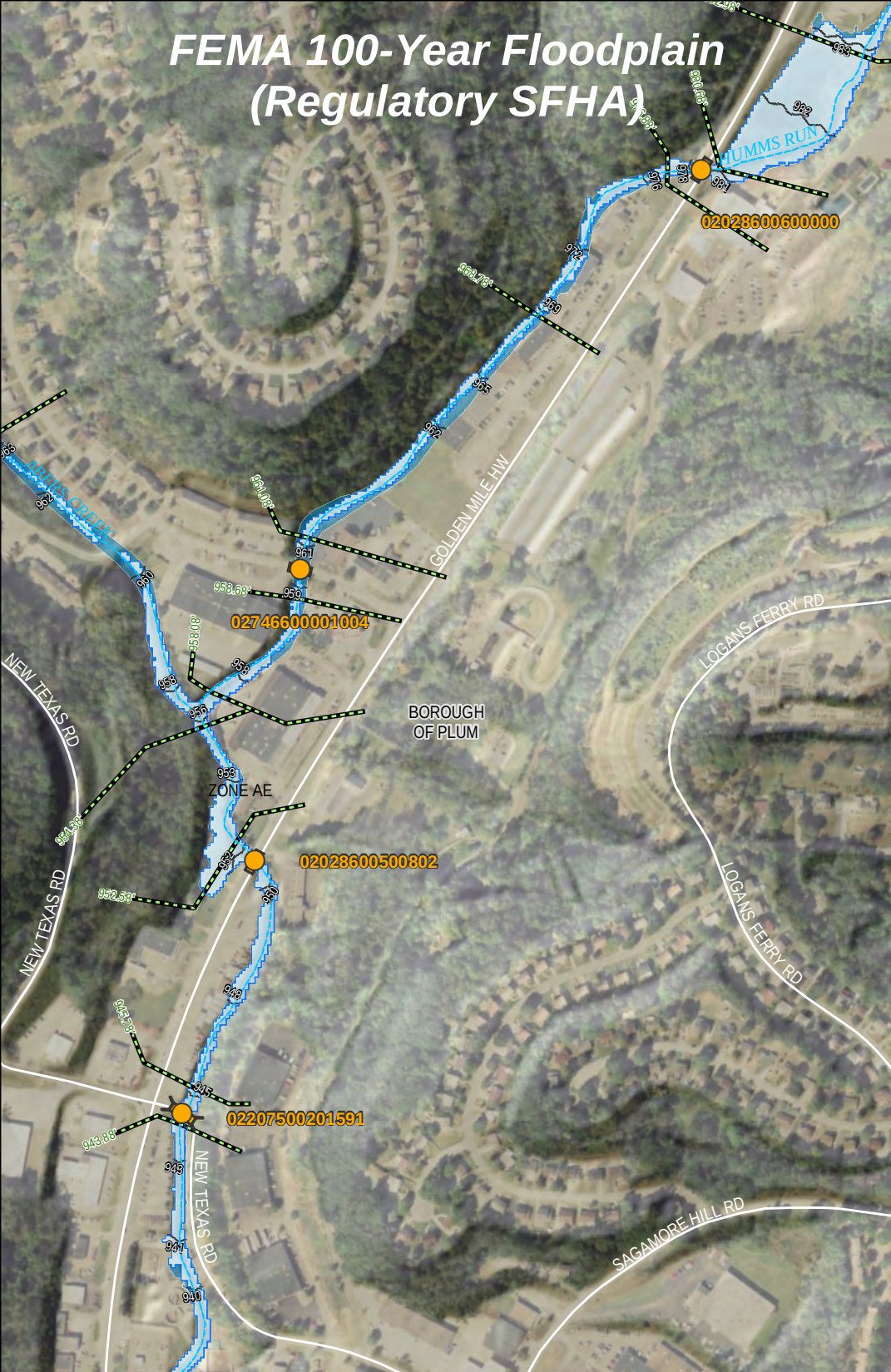


DATA FRAME PROPERTIES:
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 Projection: Lambert Conformal Conic
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. **328'**
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- Roadway - i.e. **GODY ST**
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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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

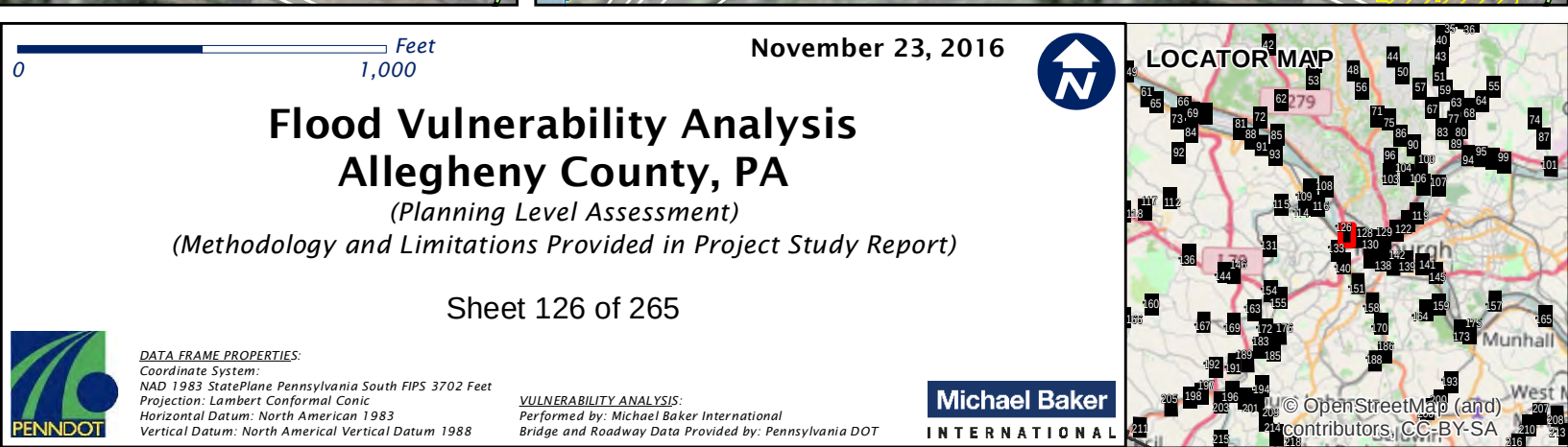
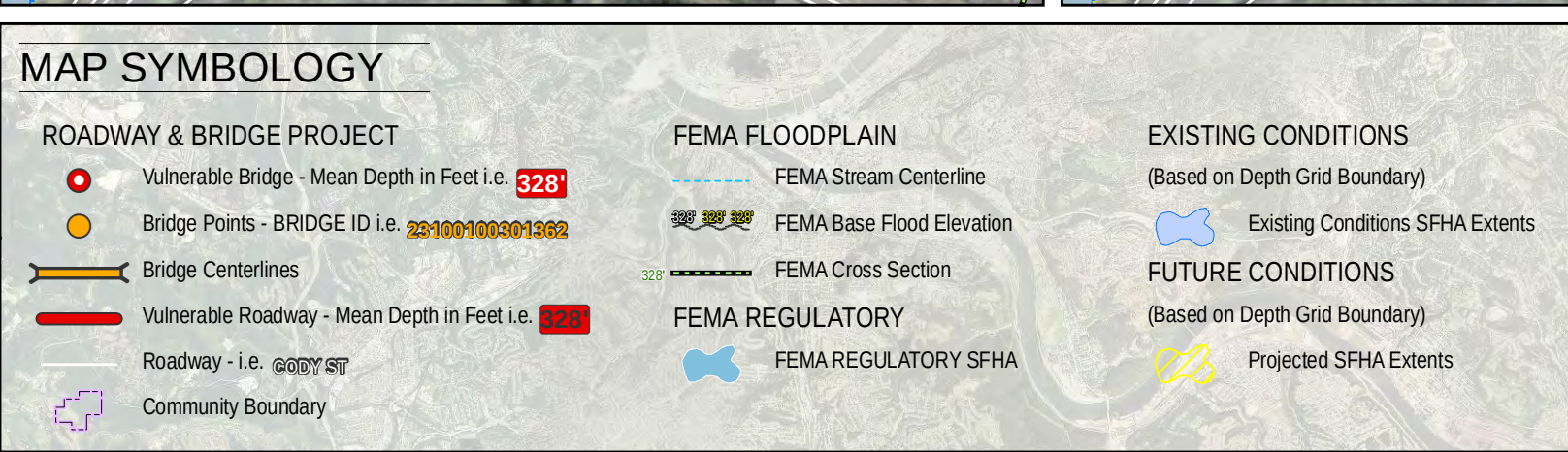
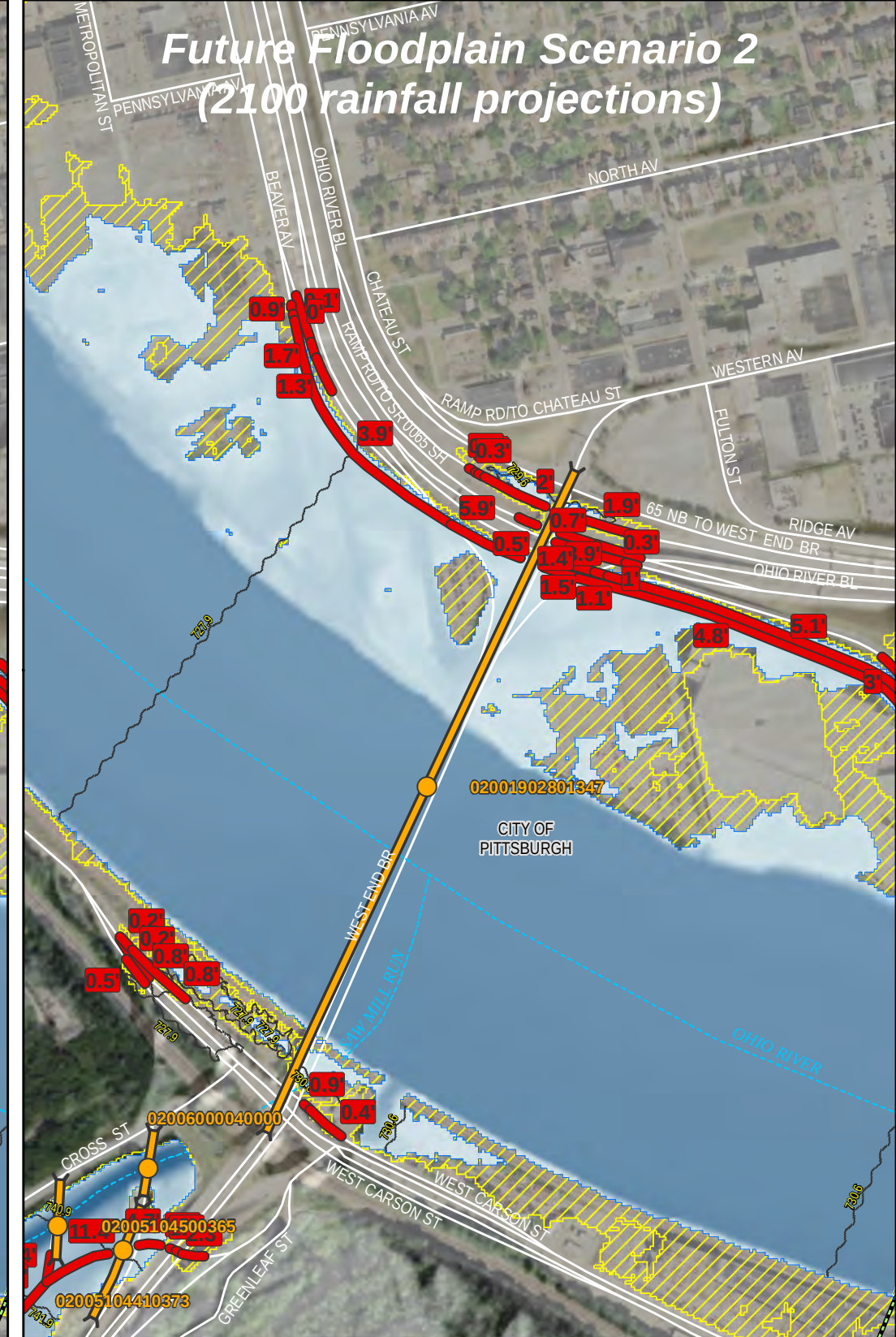
Sheet 125 of 265

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LOCATOR MAP

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016



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

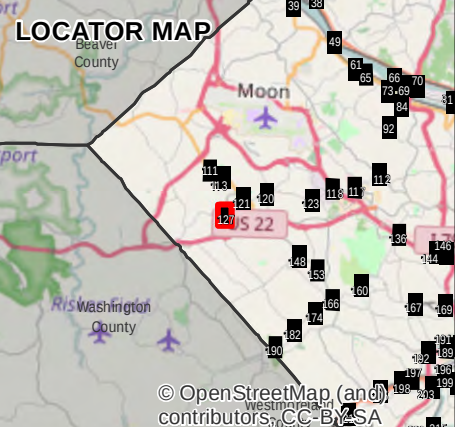
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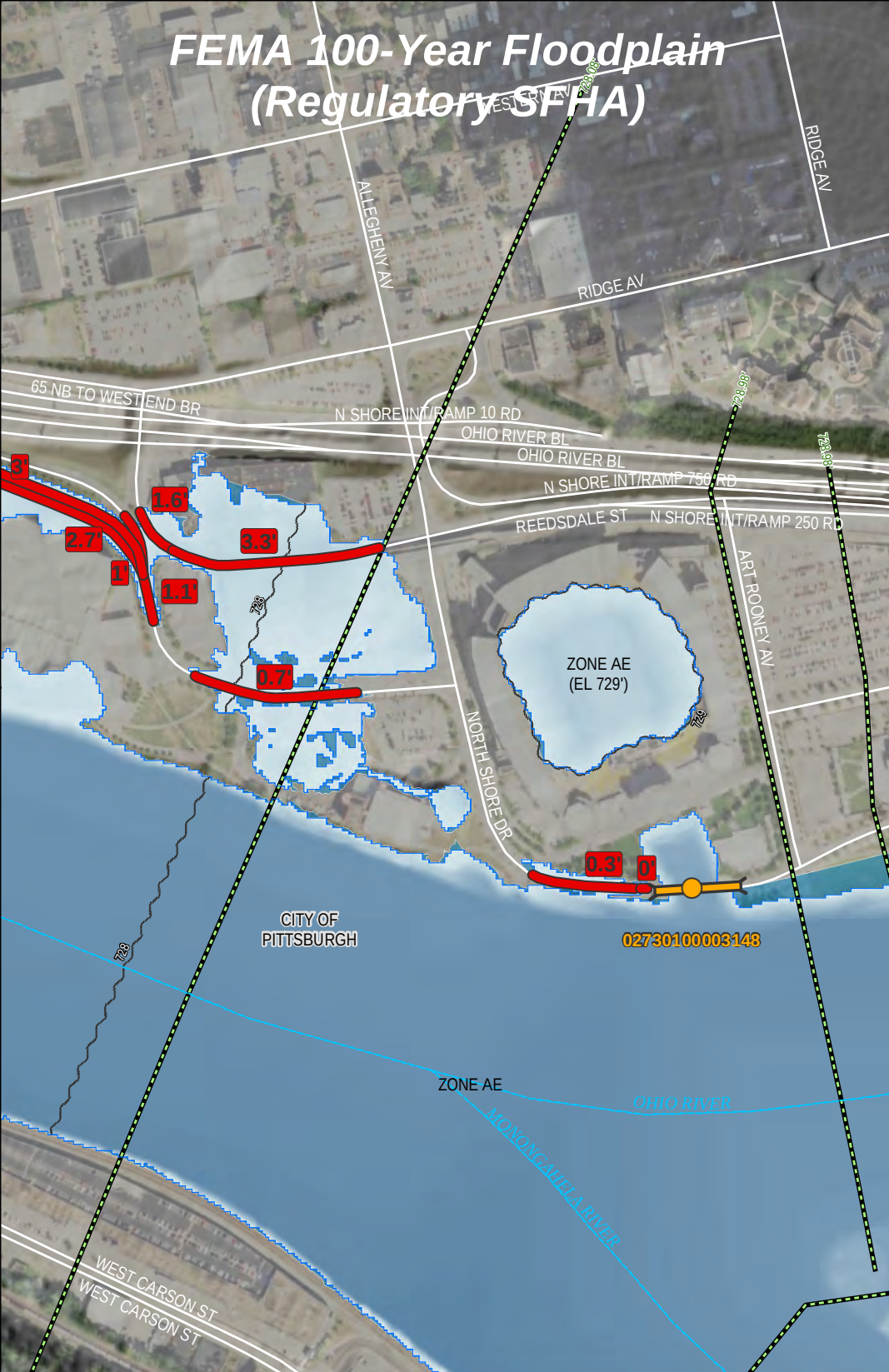


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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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INTERNATIONAL





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
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Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

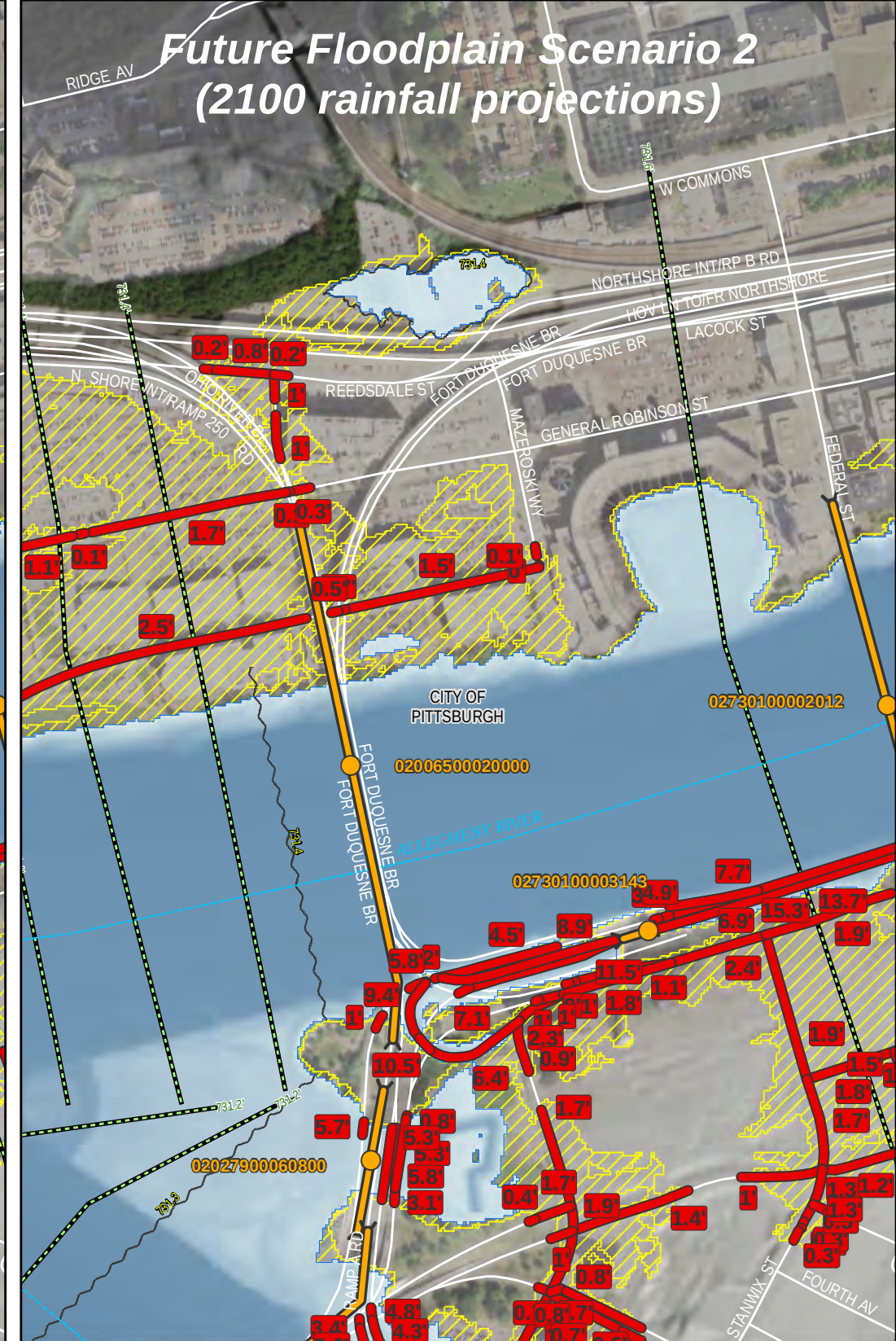
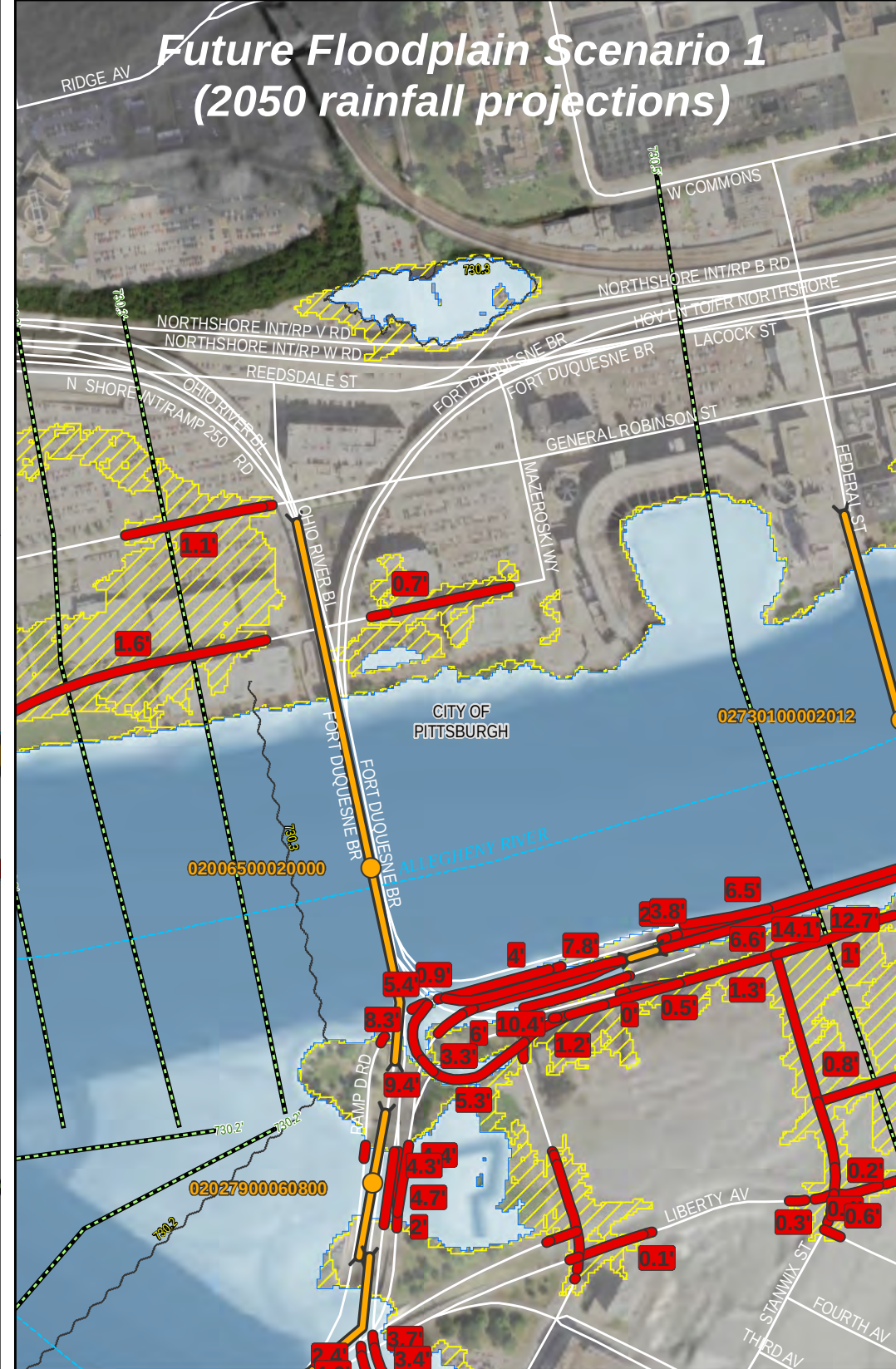
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(Methodology and Limitations Provided in Project Study Report)

Sheet 128 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



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. CODY ST
	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

0 1,000 Feet

Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 130 of 265

November 23, 2016

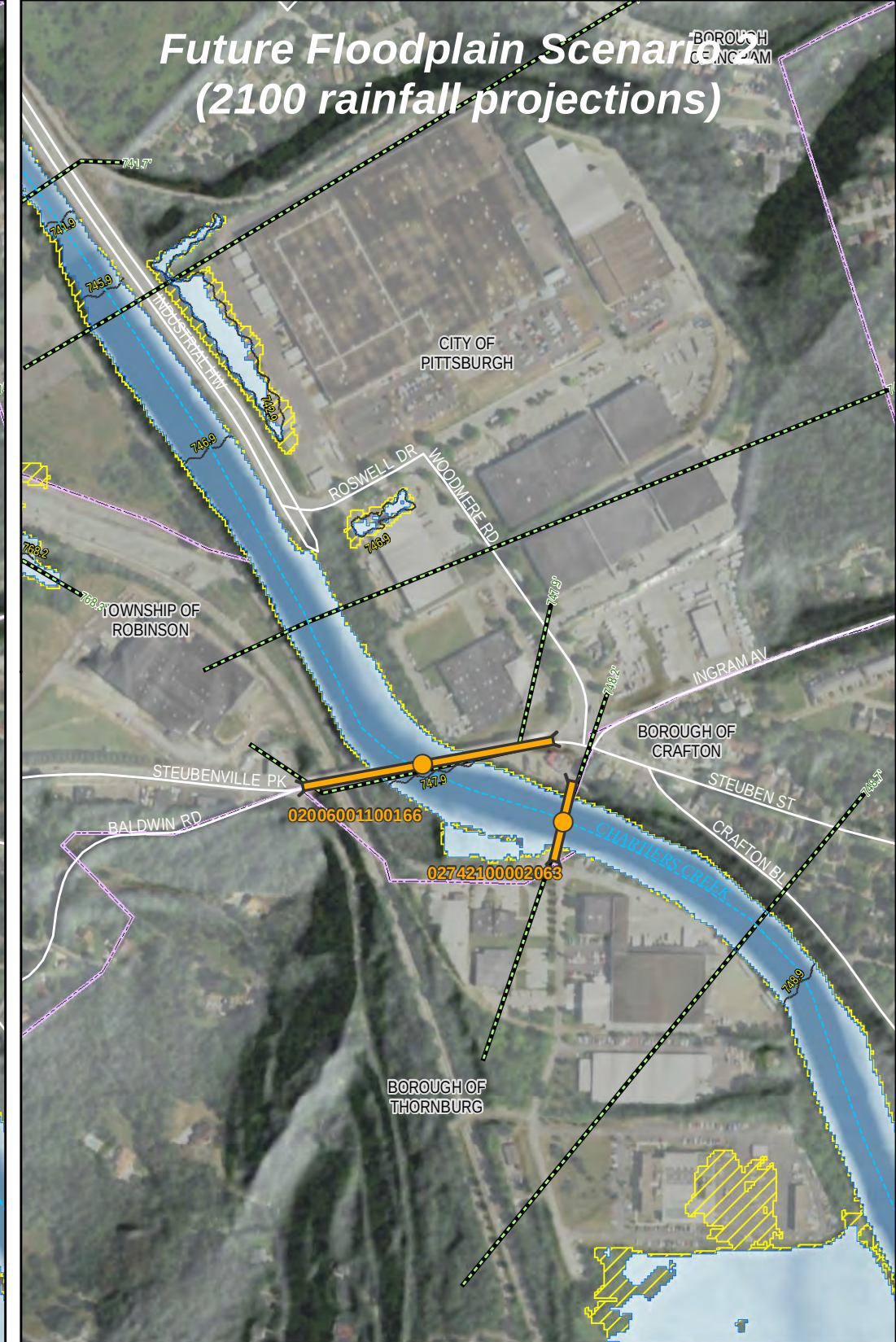
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DATA FRAME PROPERTIES:
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NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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Horizontal Datum: North American 1983
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

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MAP SYMBOLOLOGY

ROADWAY & BRIDGE PROJECT	
	Vulnerable Bridge - Mean Depth in Feet i.e. 328'
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FEMA FLOODPLAIN	
	FEMA Stream Centerline
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	FEMA Cross Section
FEMA REGULATORY	
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EXISTING CONDITIONS (Based on Depth Grid Boundary)	
	Existing Conditions SFHA Extents
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	Projected SFHA Extents

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

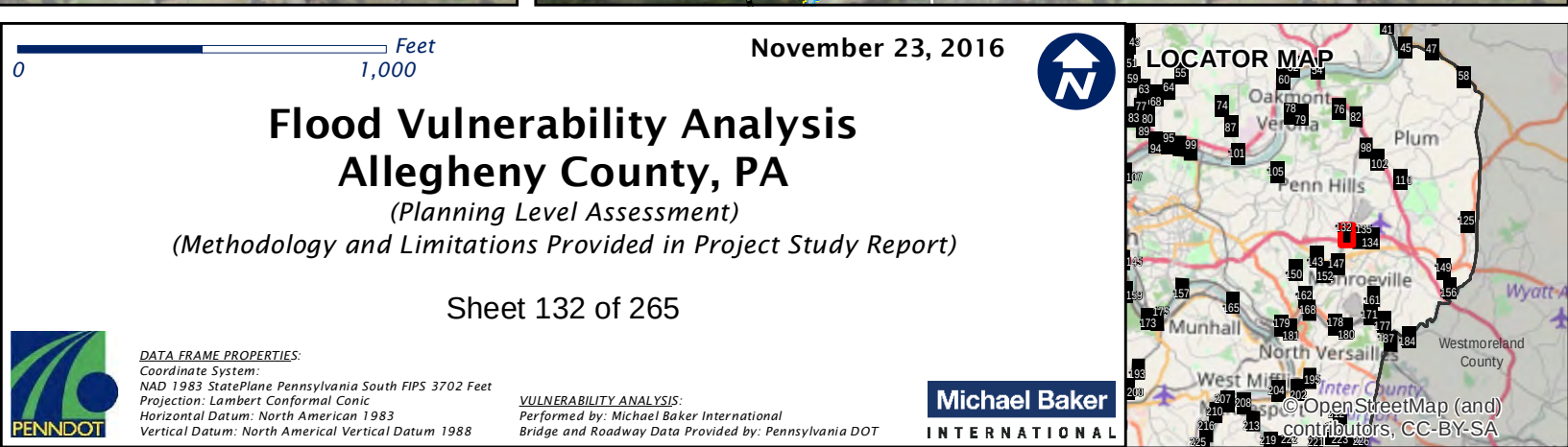
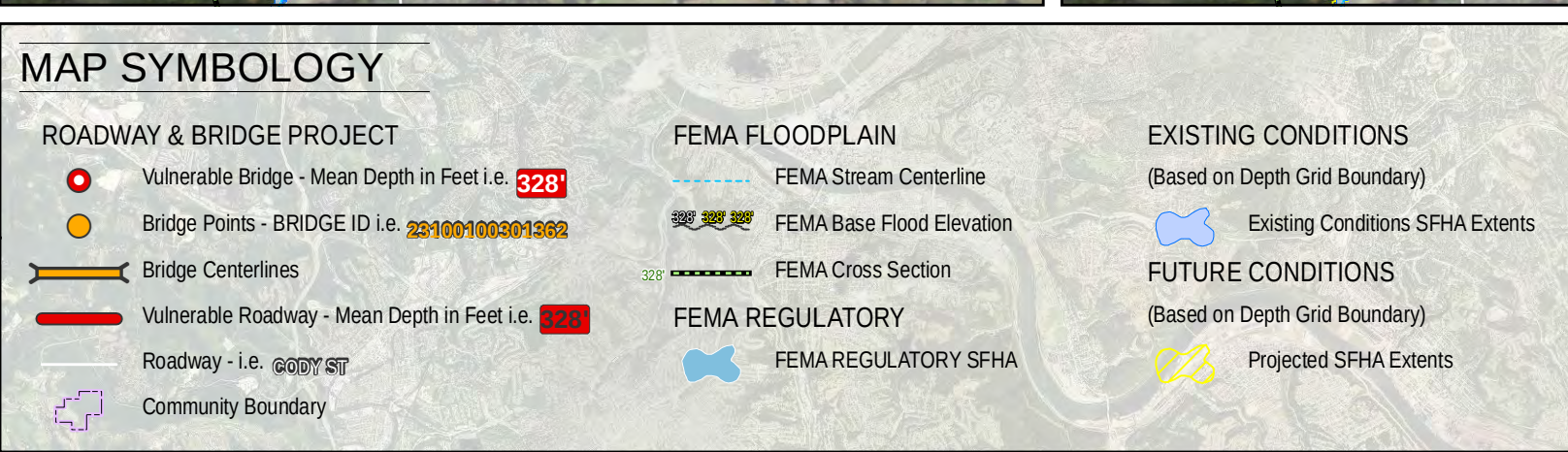
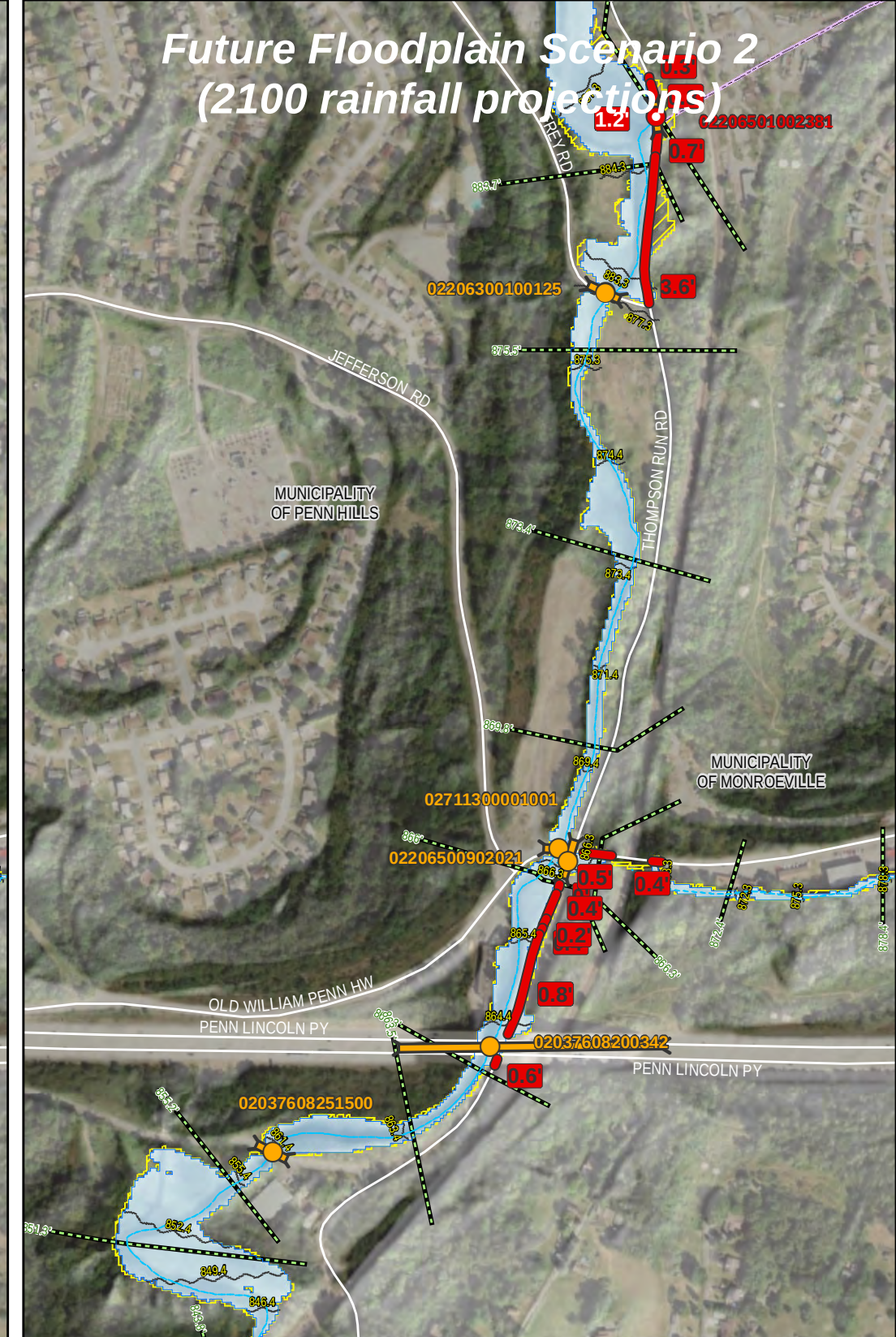
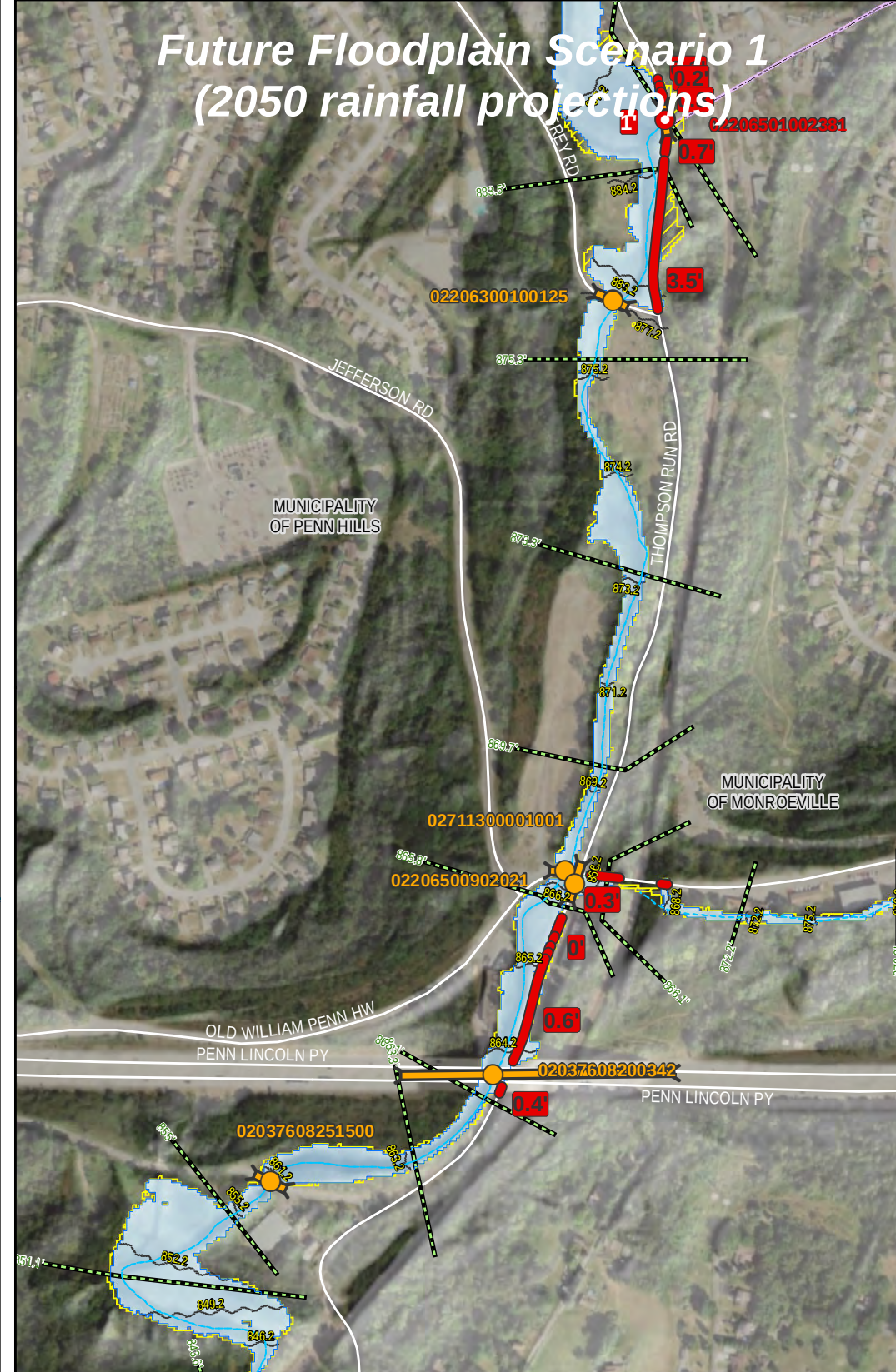
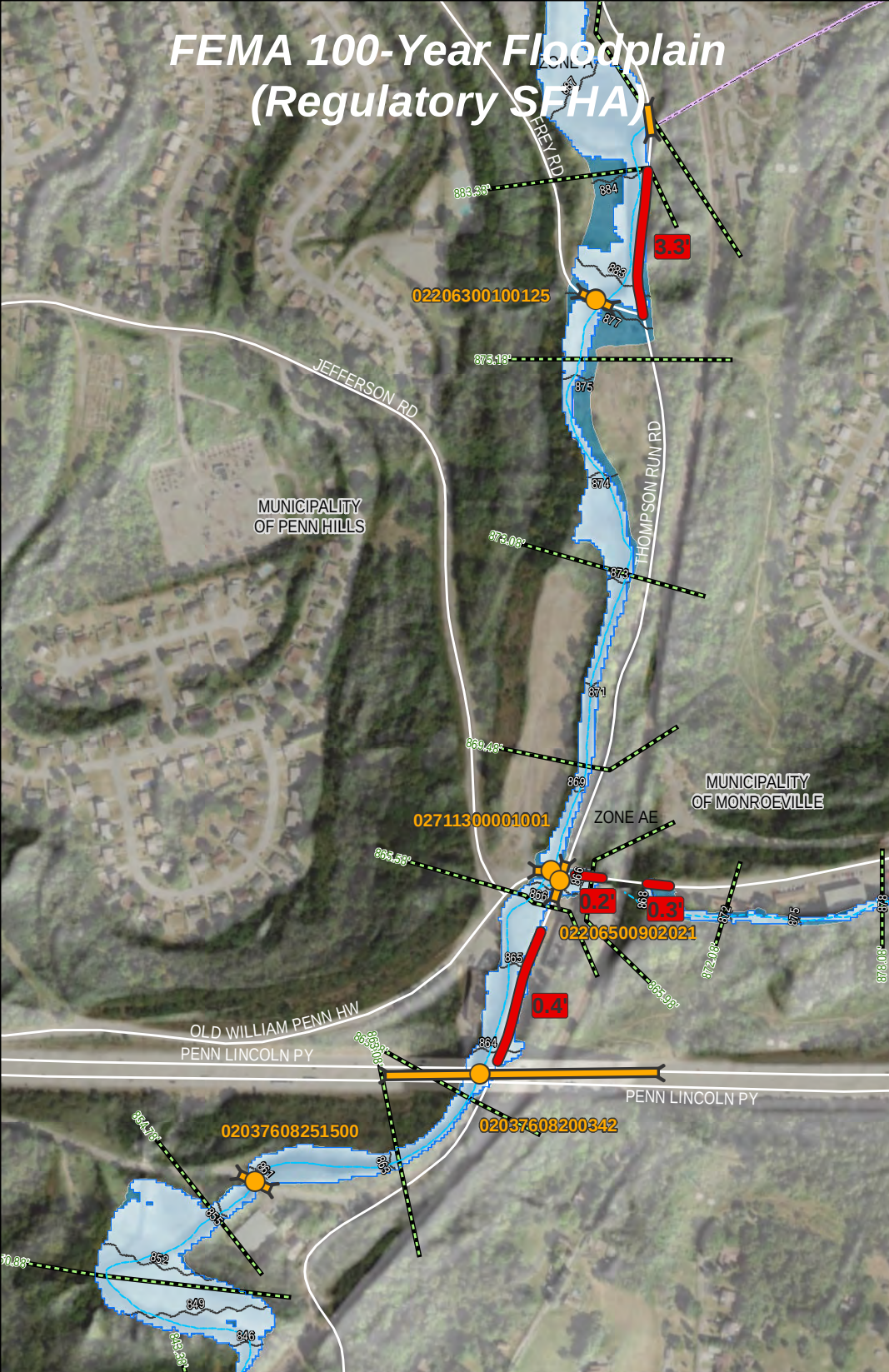
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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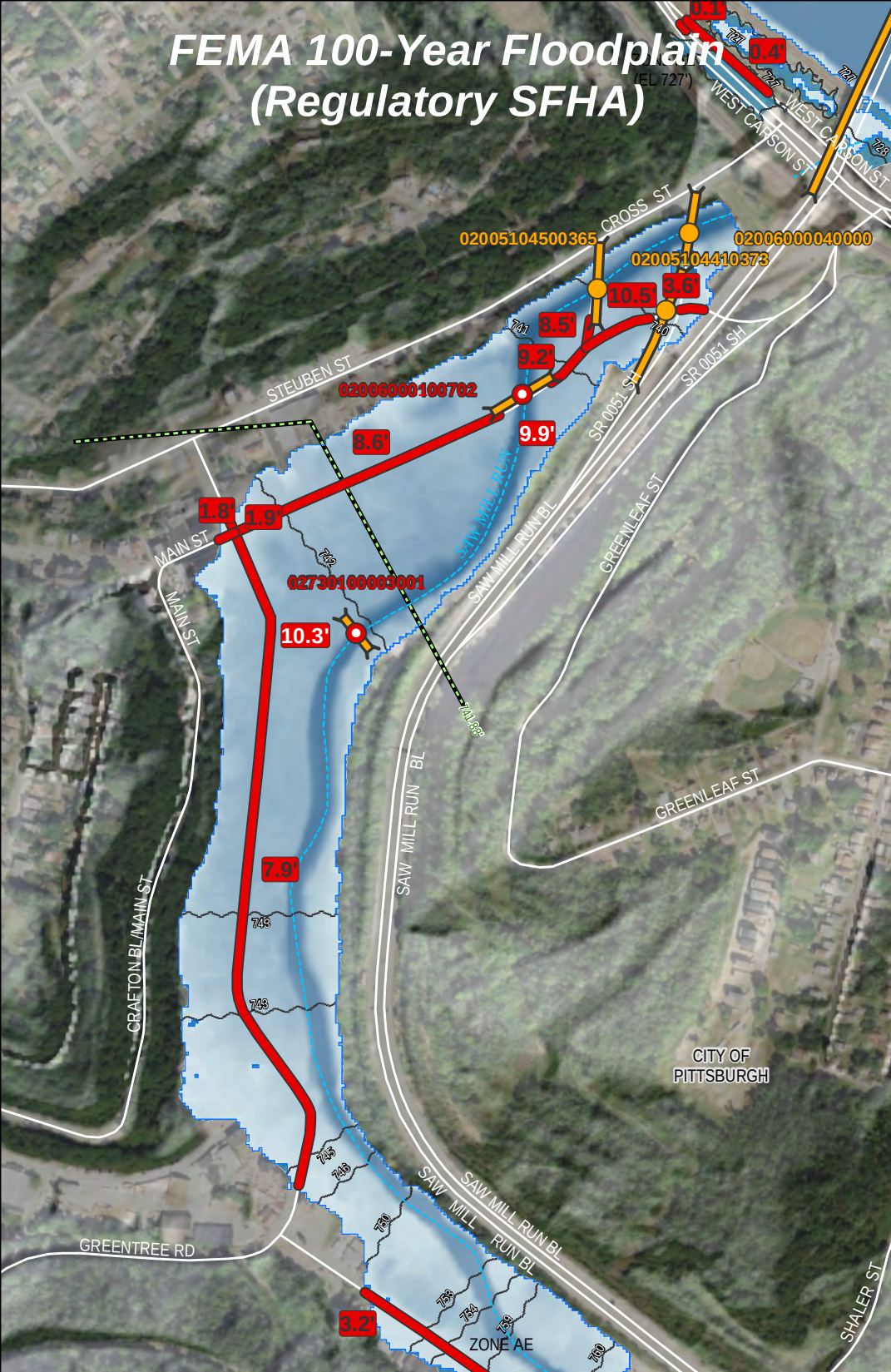
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Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

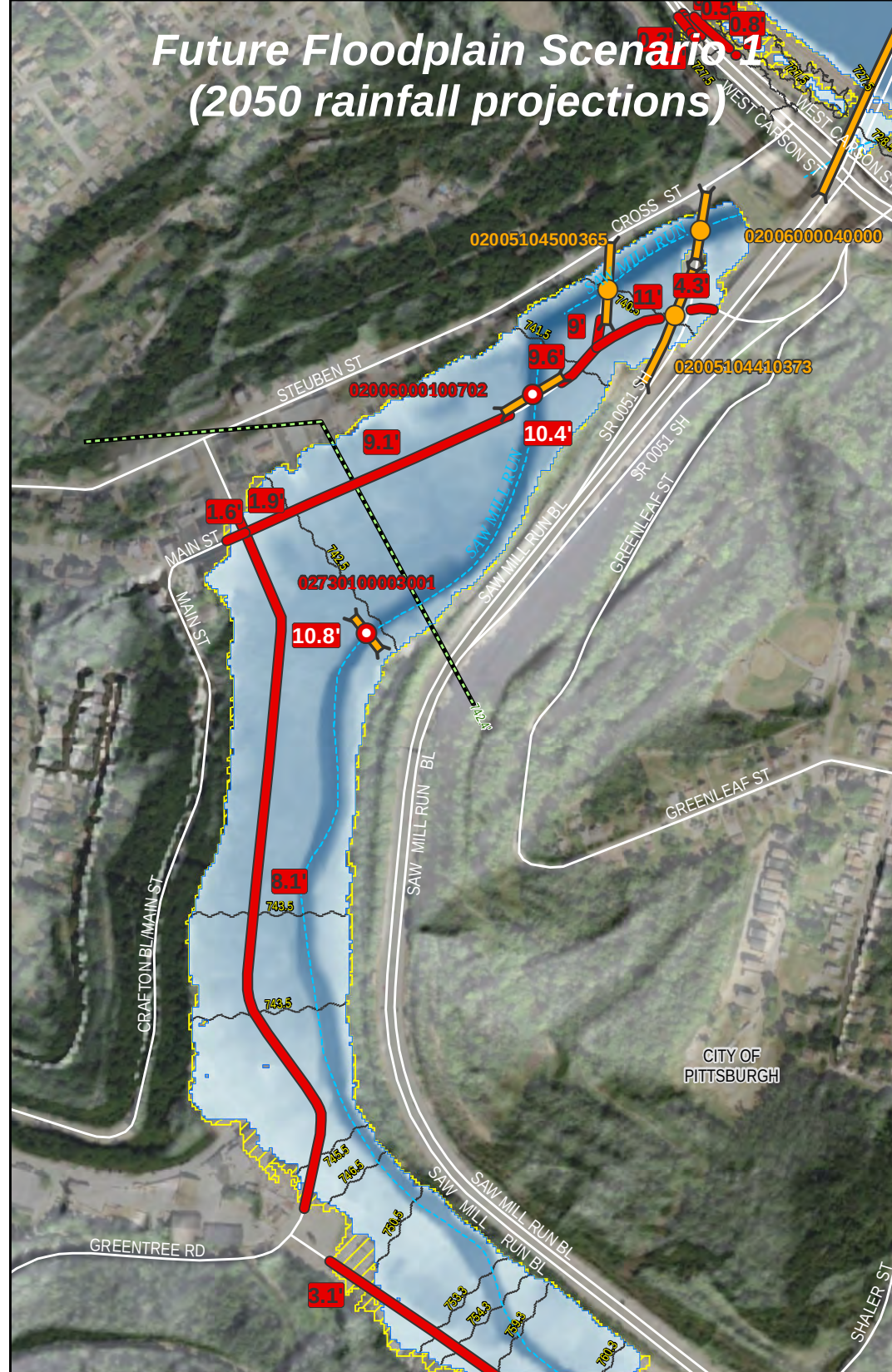
LOCATOR MAP



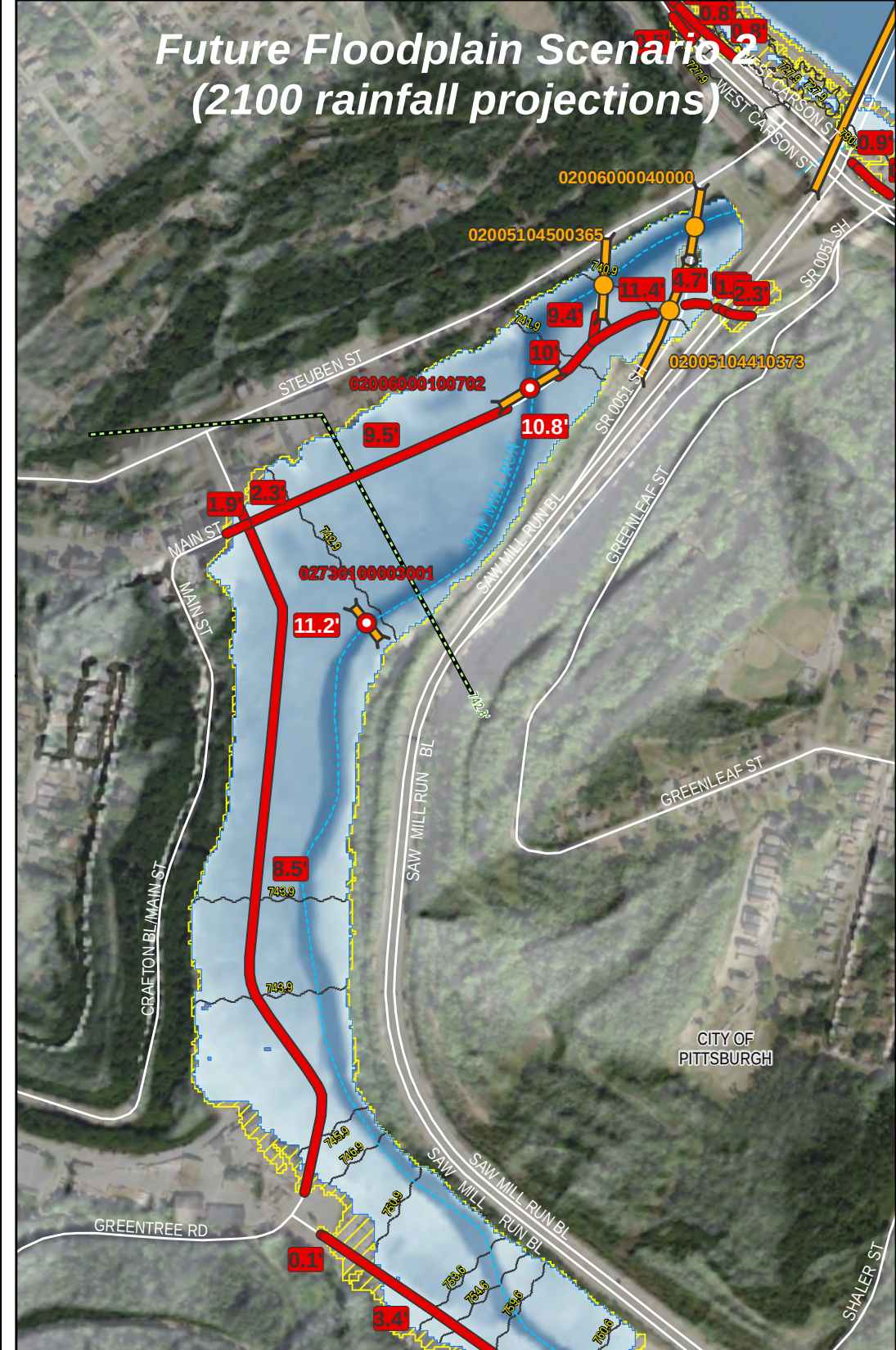
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOLOGY

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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

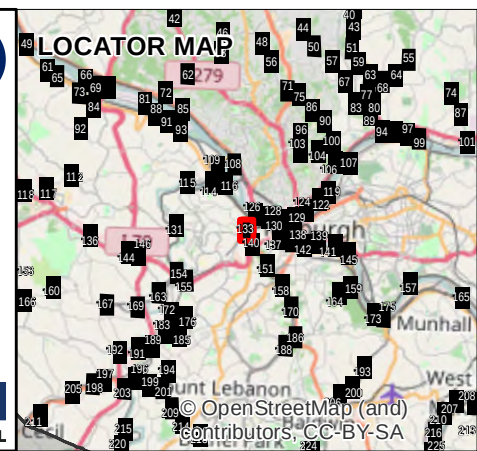
Sheet 133 of 265



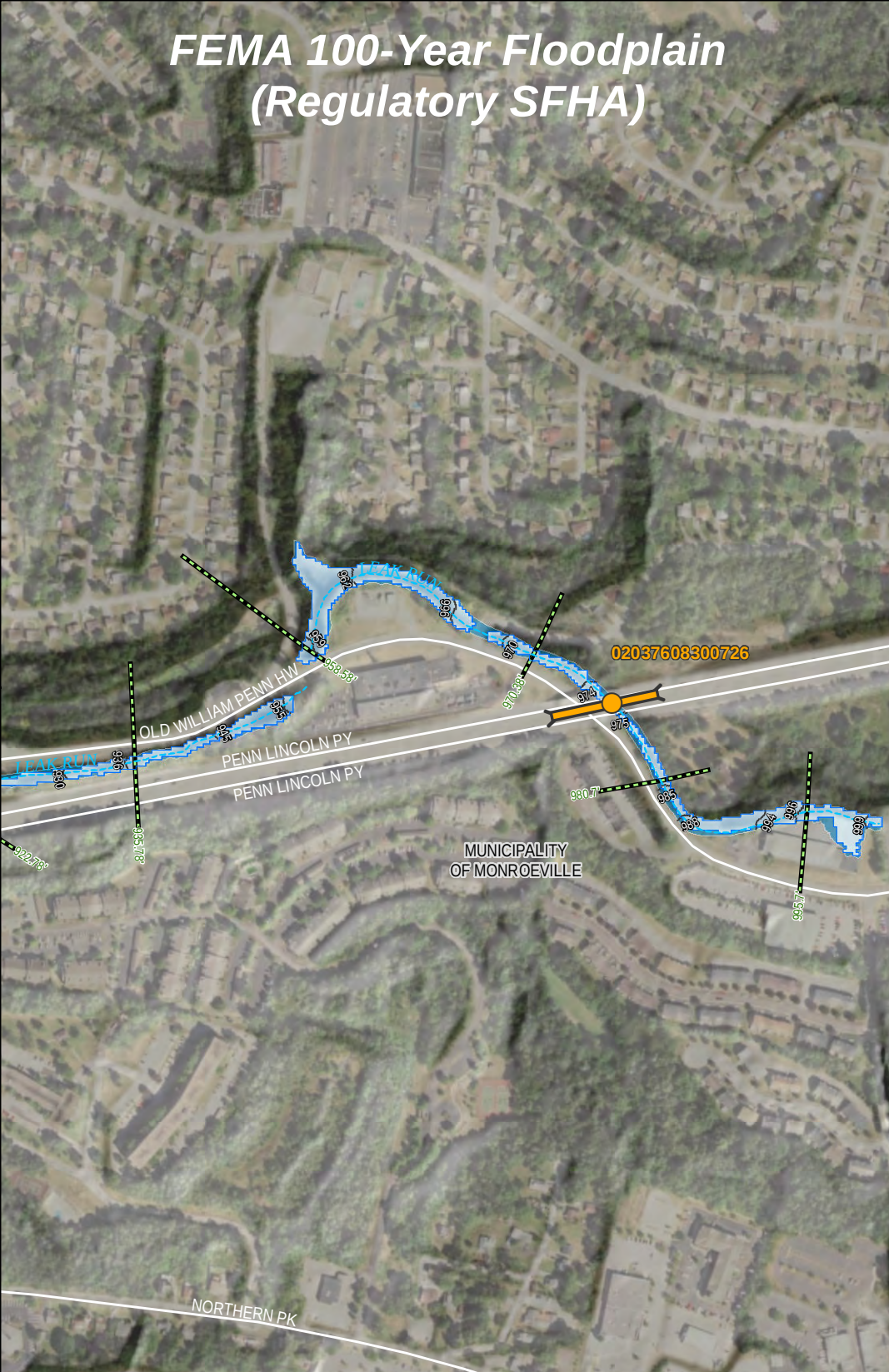
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Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

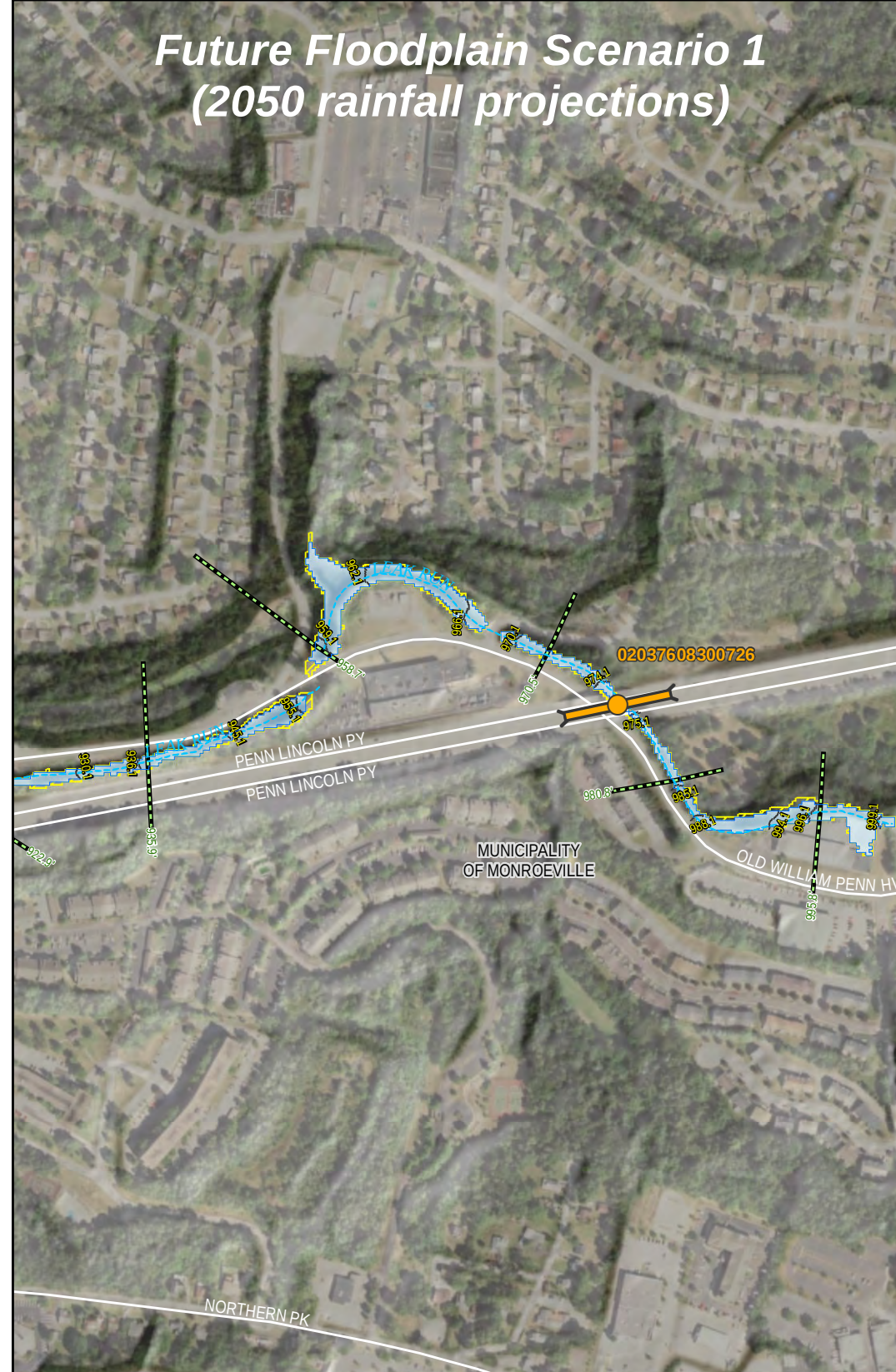
**Michael Baker
INTERNATIONAL**



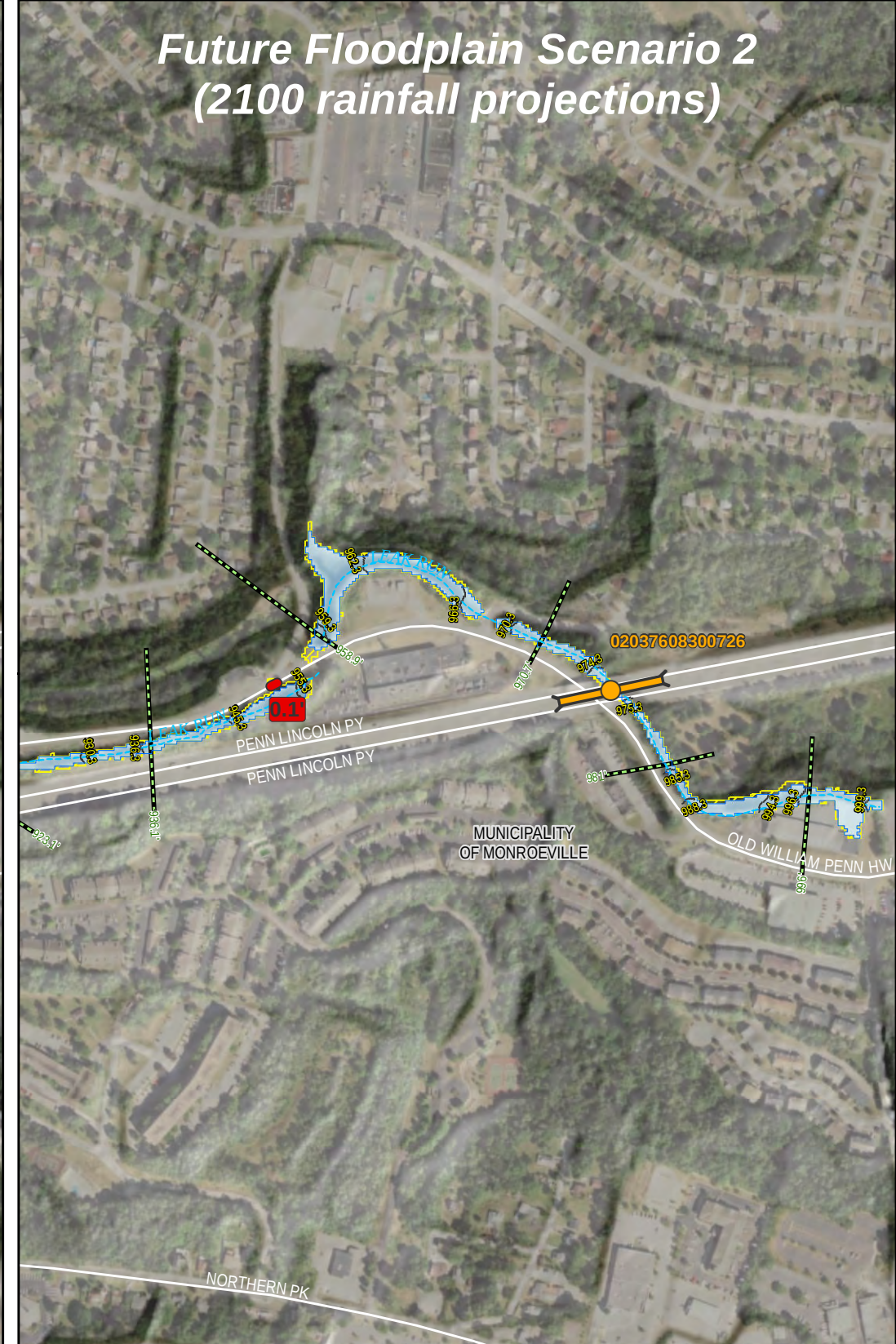
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. **328'**
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- Roadway - i.e. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

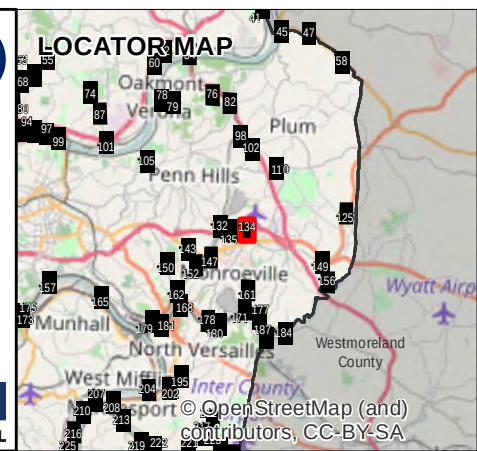
Sheet 134 of 265



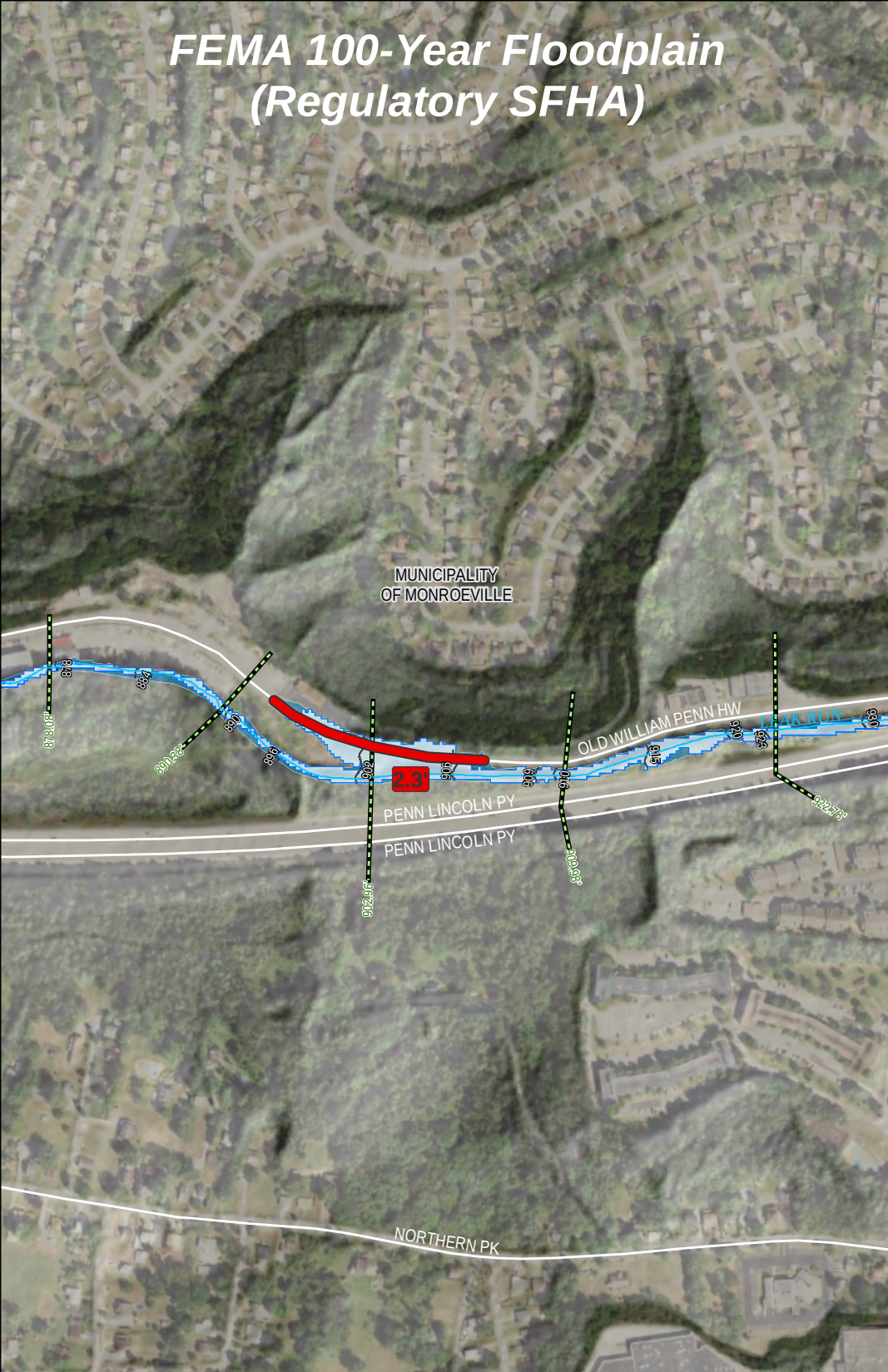
DATA FRAME PROPERTIES:
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VULNERABILITY ANALYSIS:
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Bridge and Roadway Data Provided by: Pennsylvania DOT

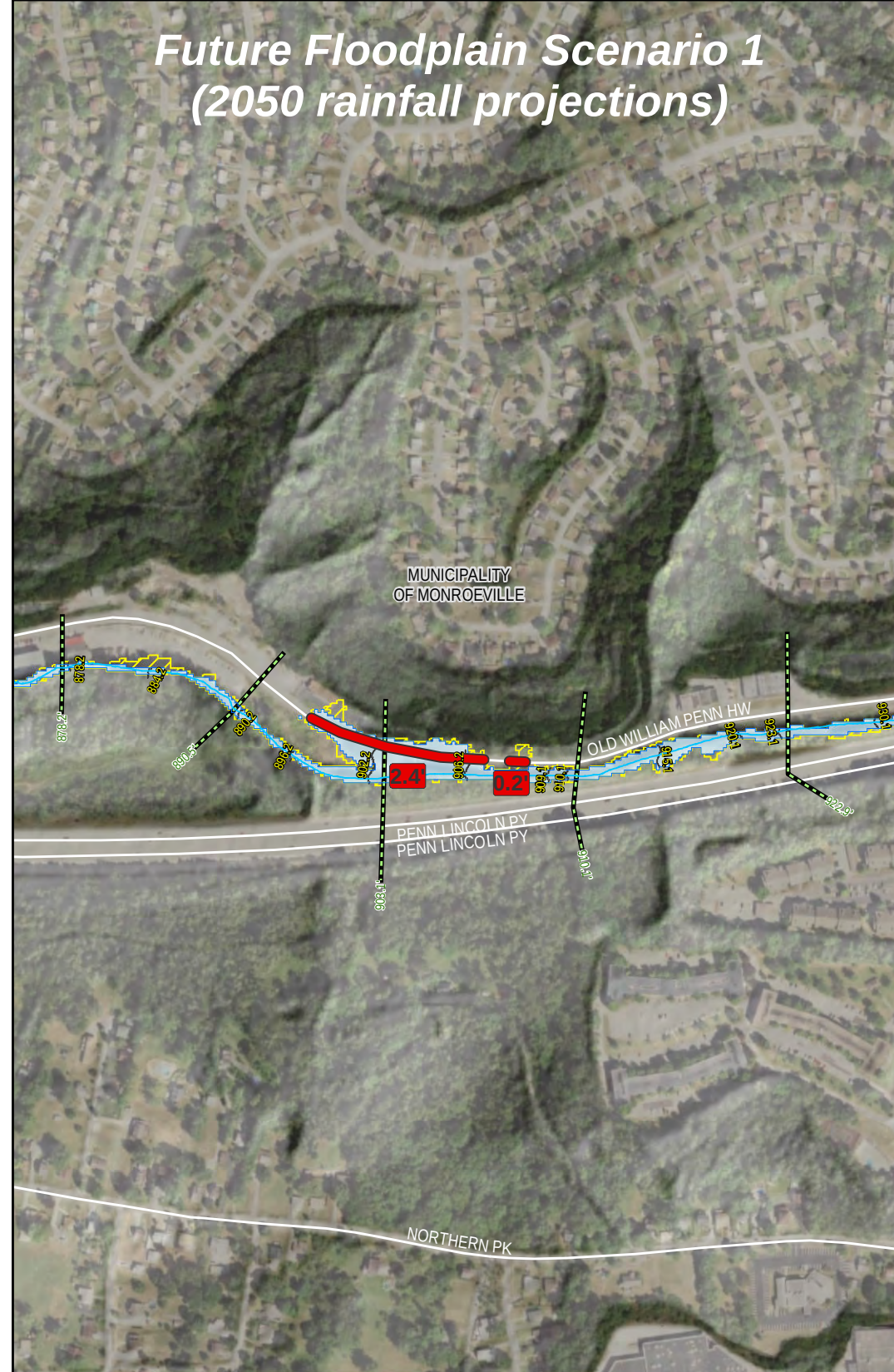
**Michael Baker
INTERNATIONAL**



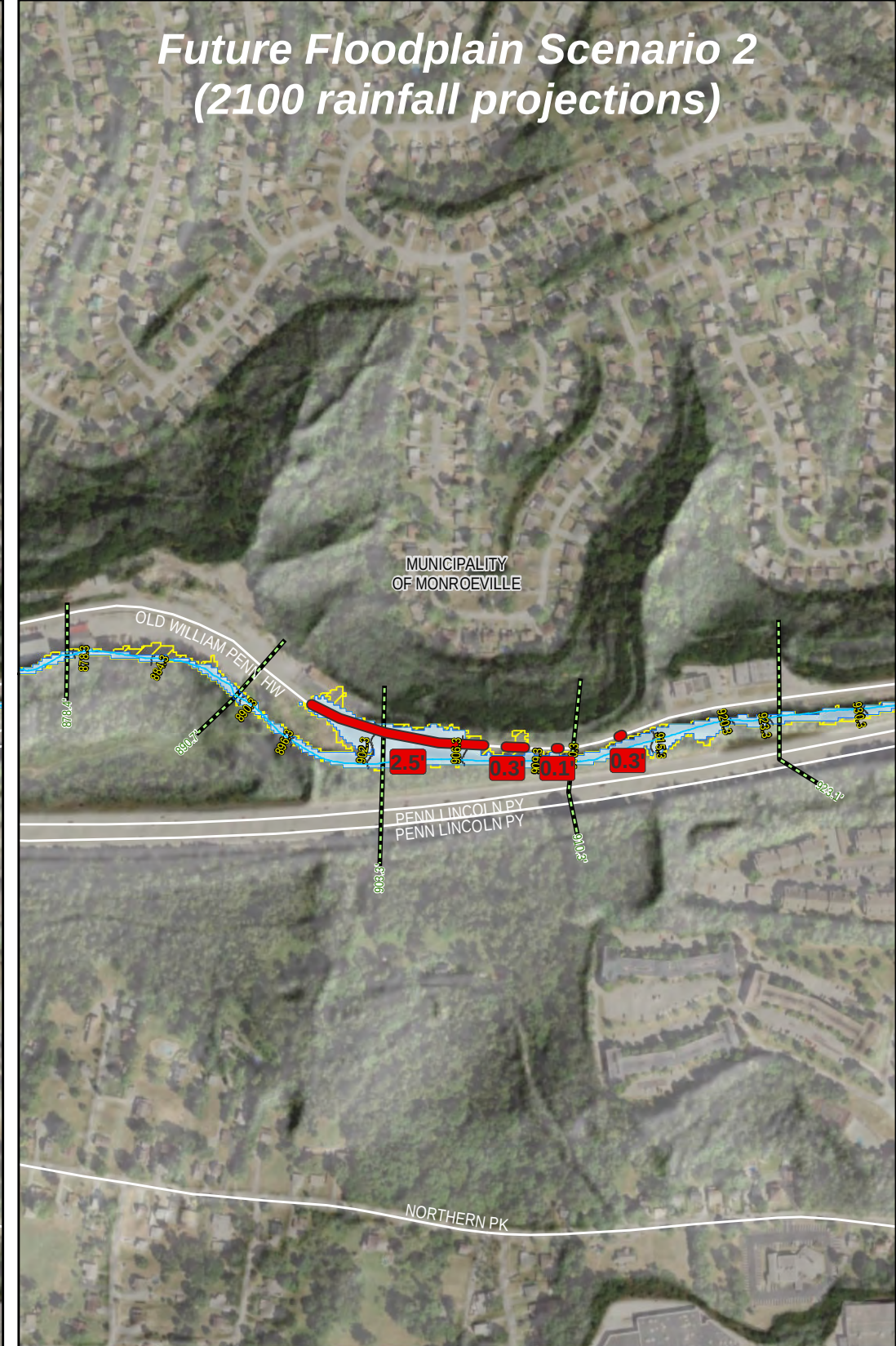
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOGY

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- Roadway - i.e. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

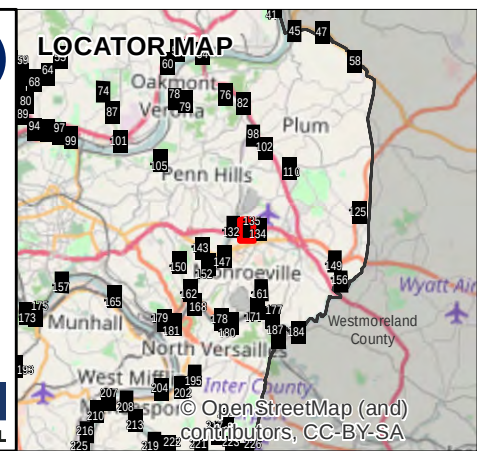
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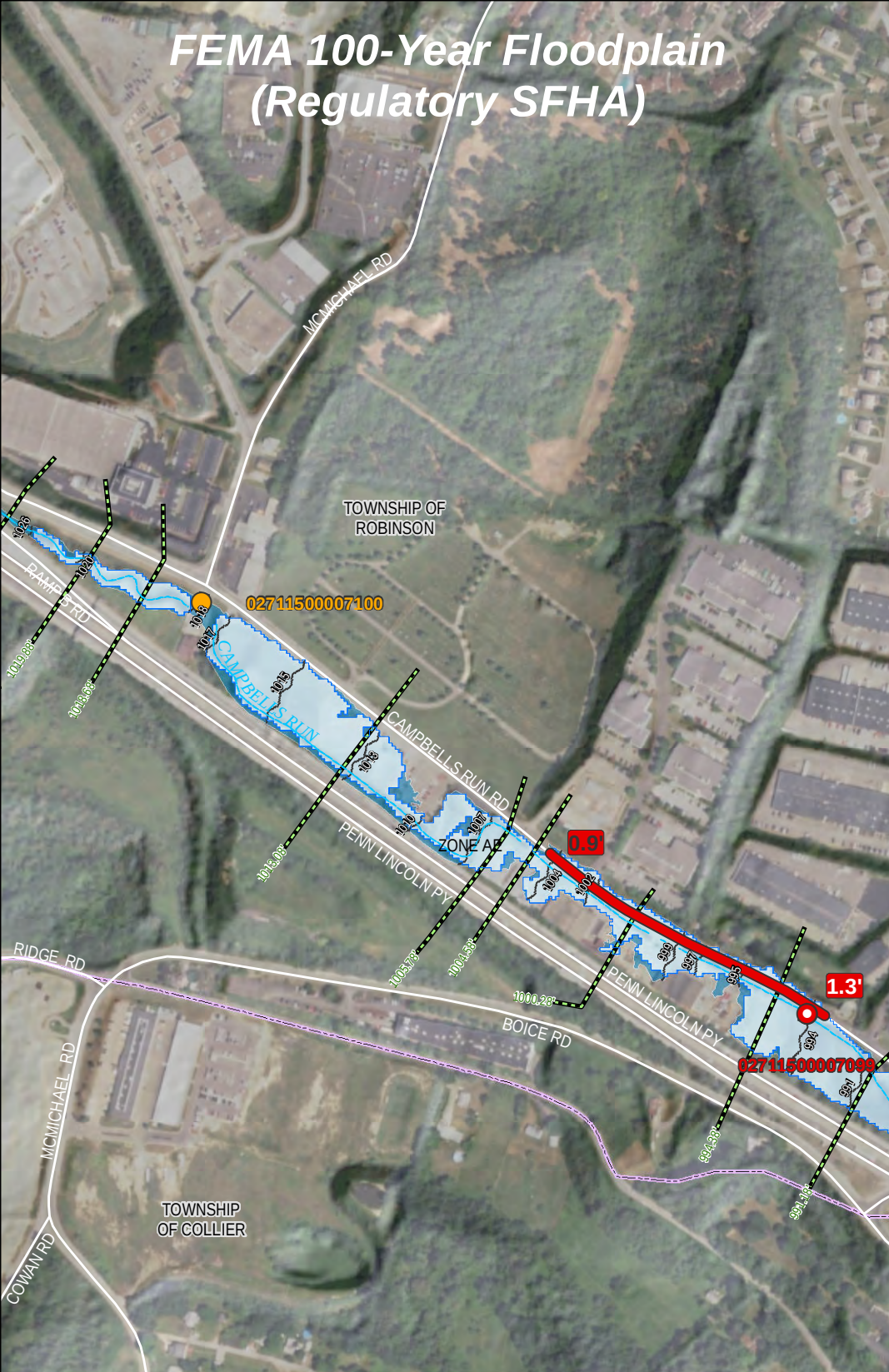
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VULNERABILITY ANALYSIS:
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Bridge and Roadway Data Provided by: Pennsylvania DOT

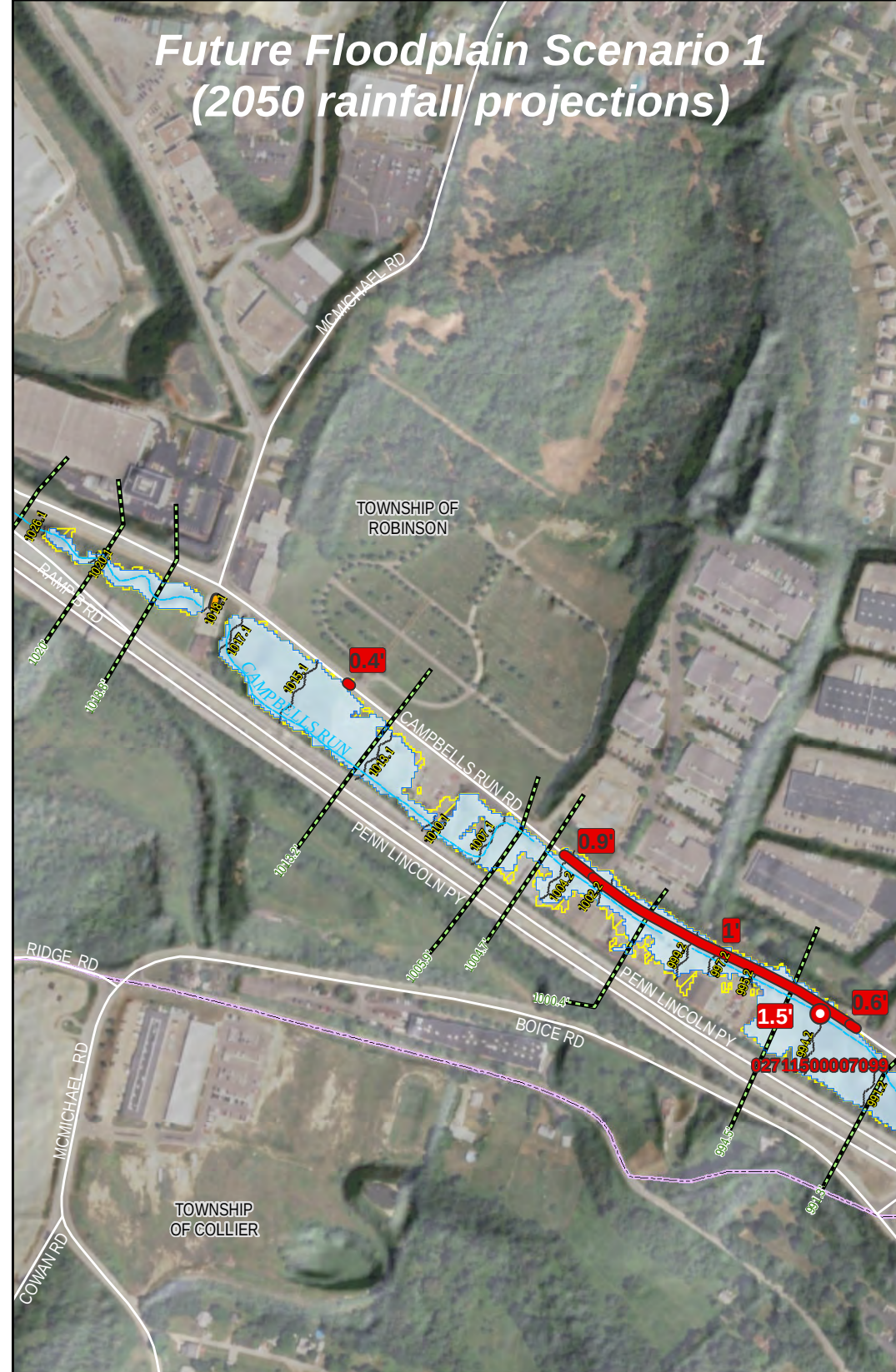
**Michael Baker
INTERNATIONAL**



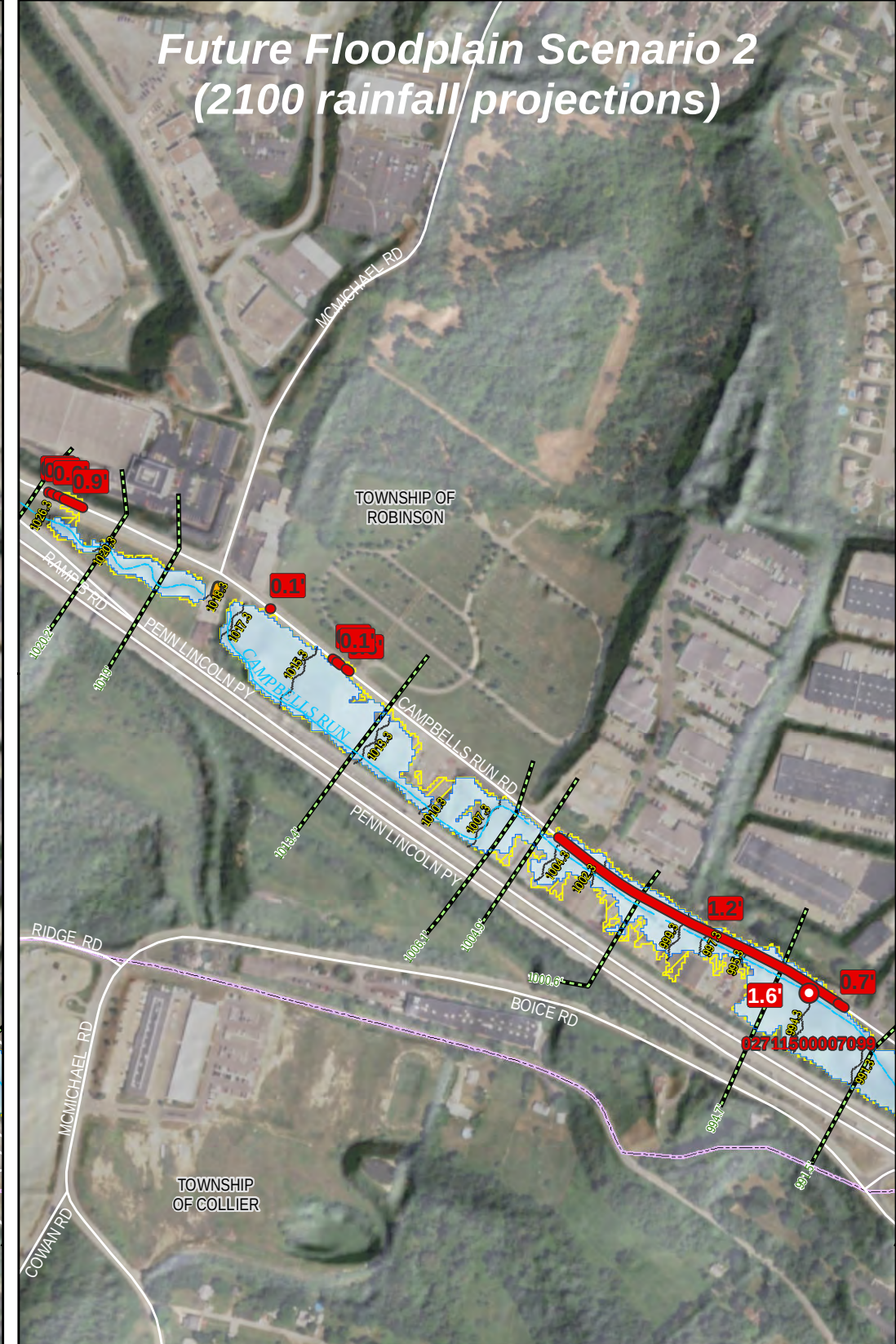
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. **3.28'**
- Bridge Points - BRIDGE ID i.e. **23100100301362**
- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. **3.28'**
- Roadway - i.e. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016



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

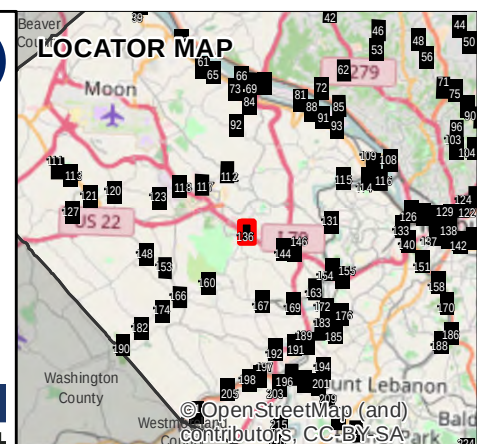
Sheet 136 of 265

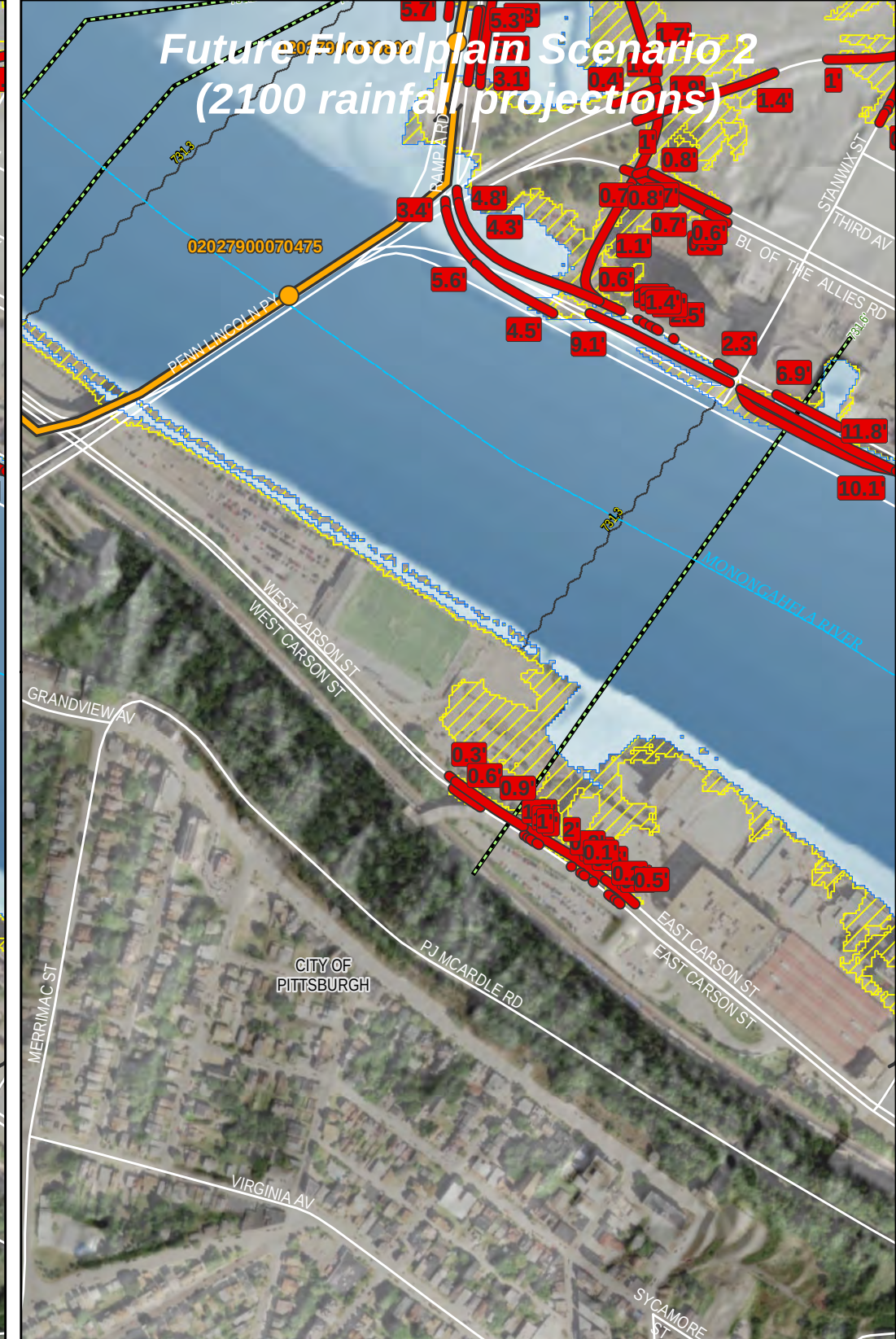
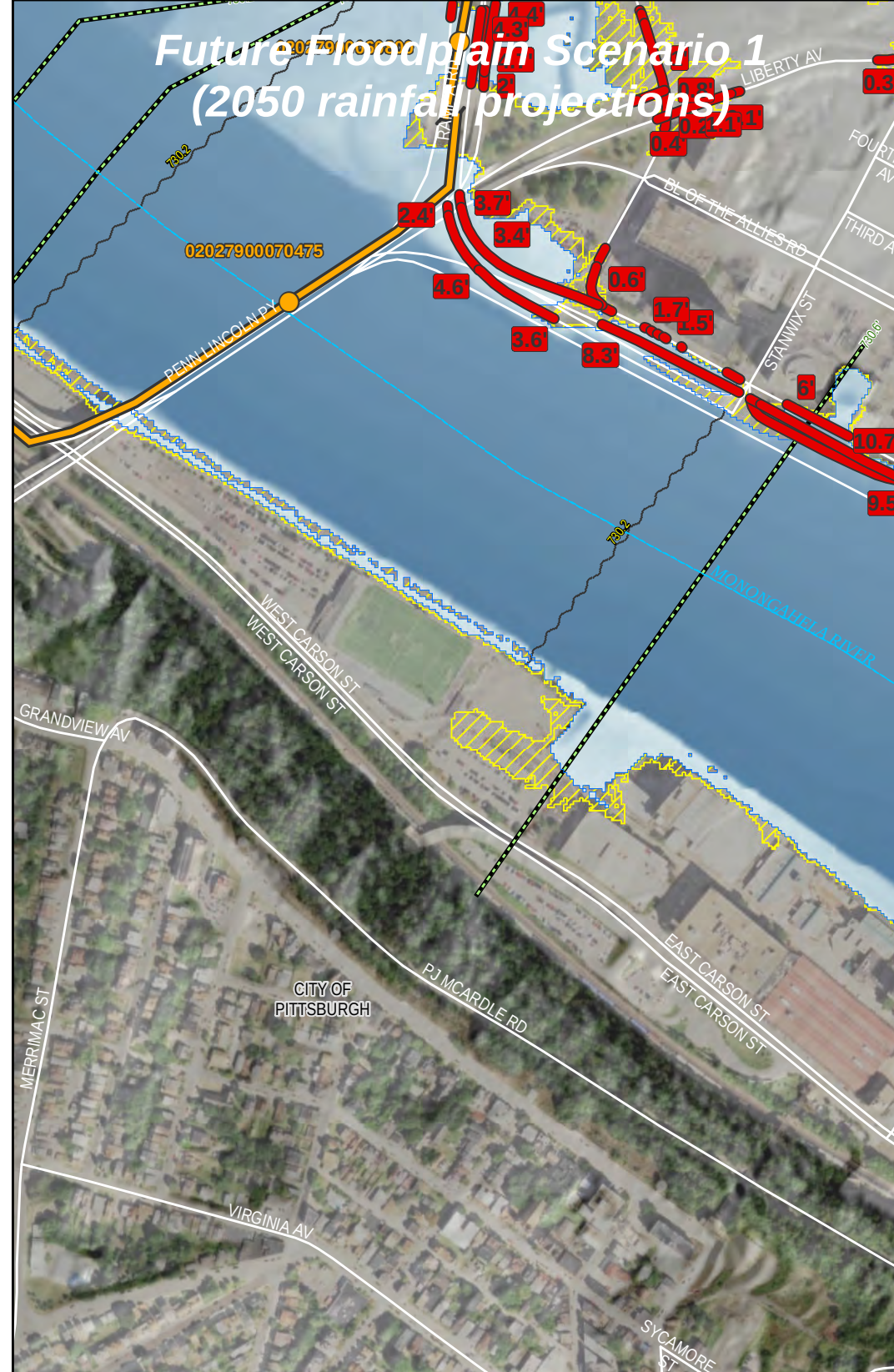
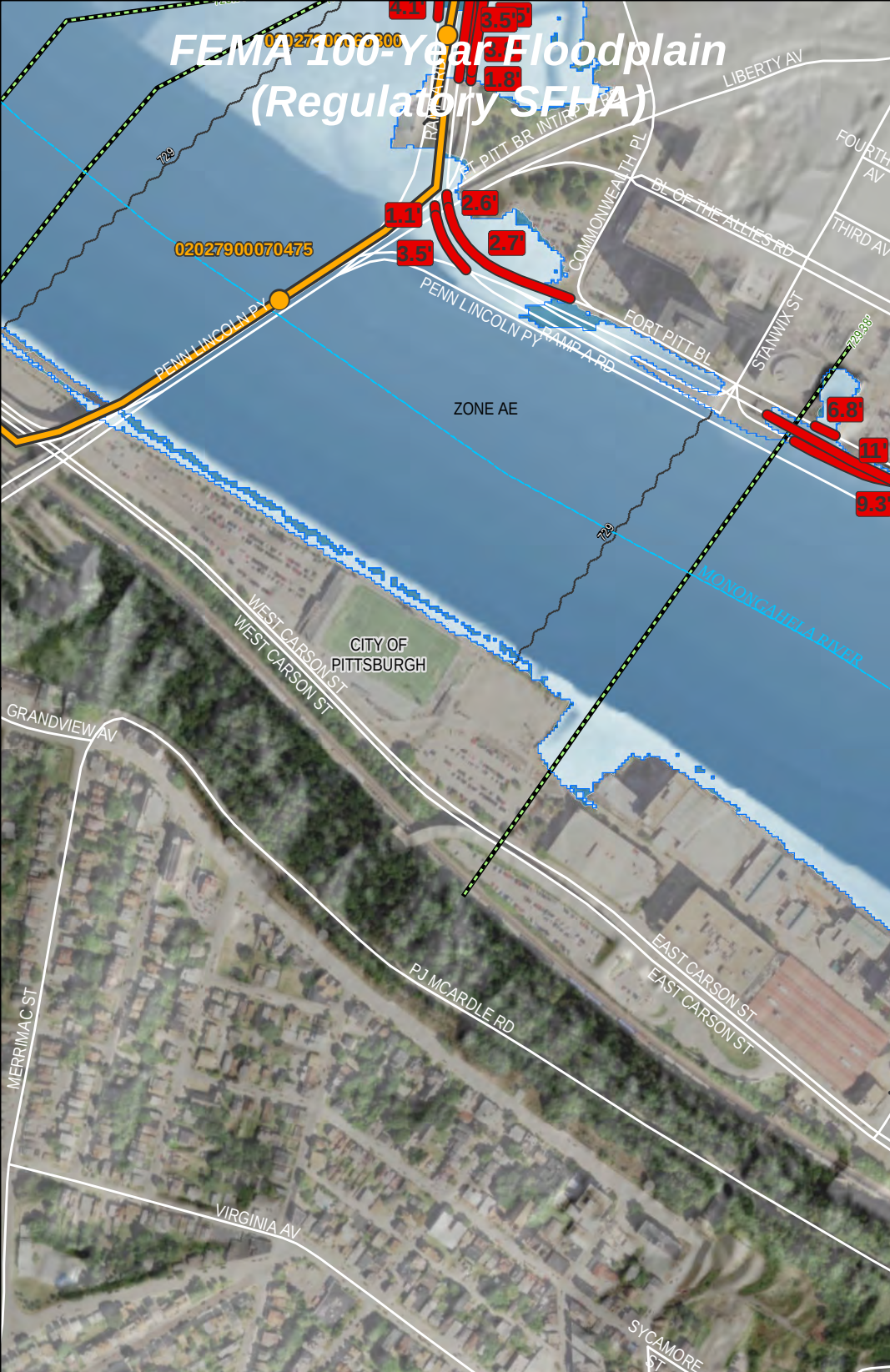


DATA FRAME PROPERTIES:
Coordinate System:
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Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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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. **GODY ST**
-  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)

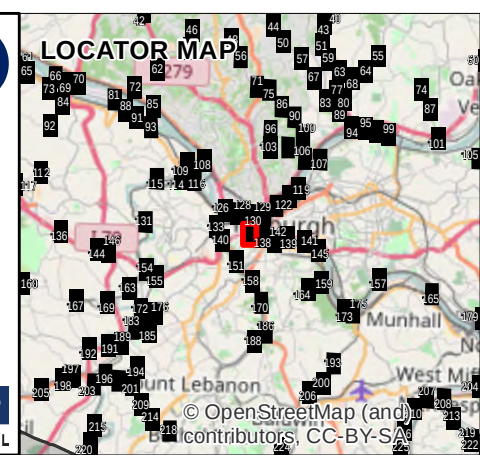
Sheet 137 of 265

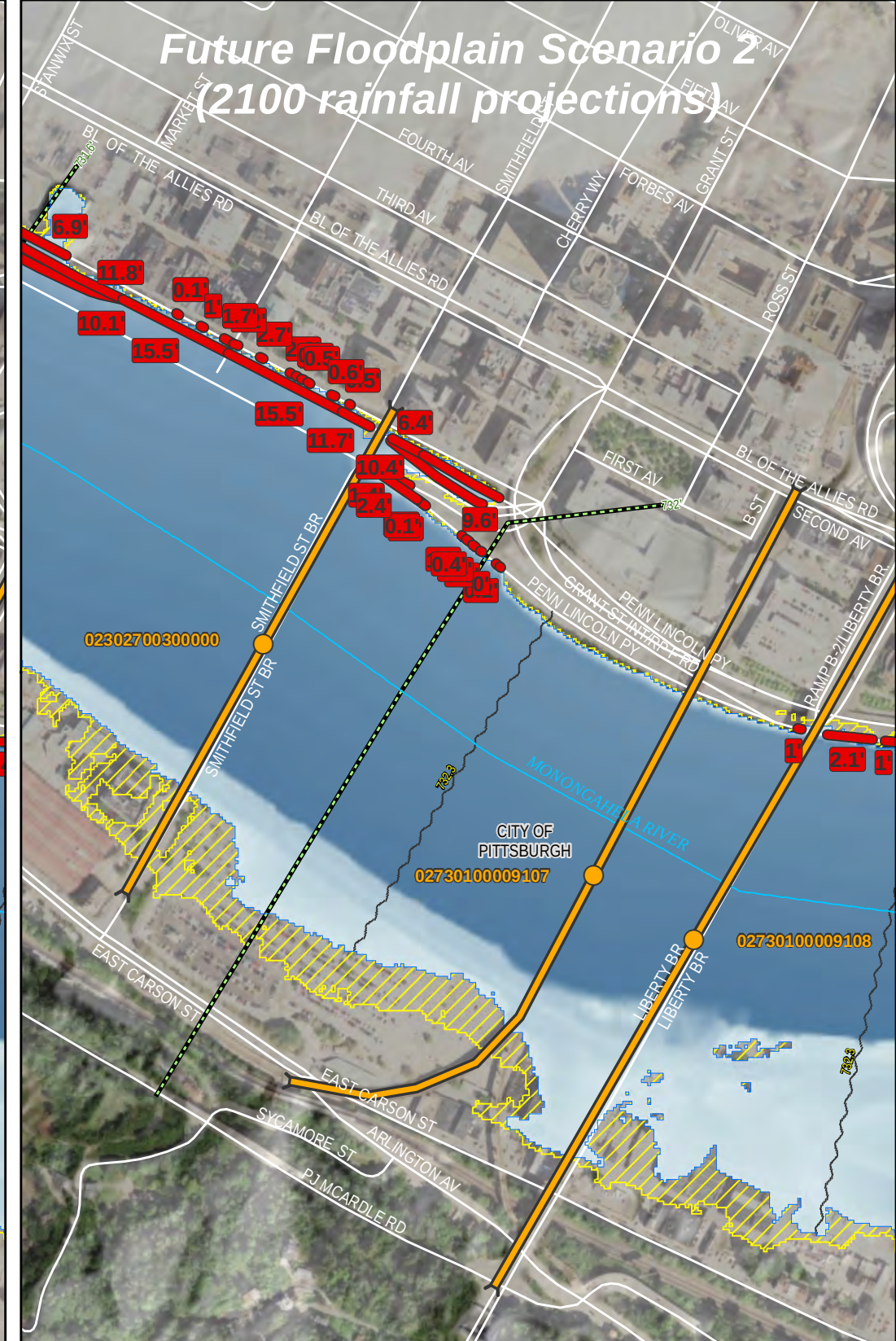
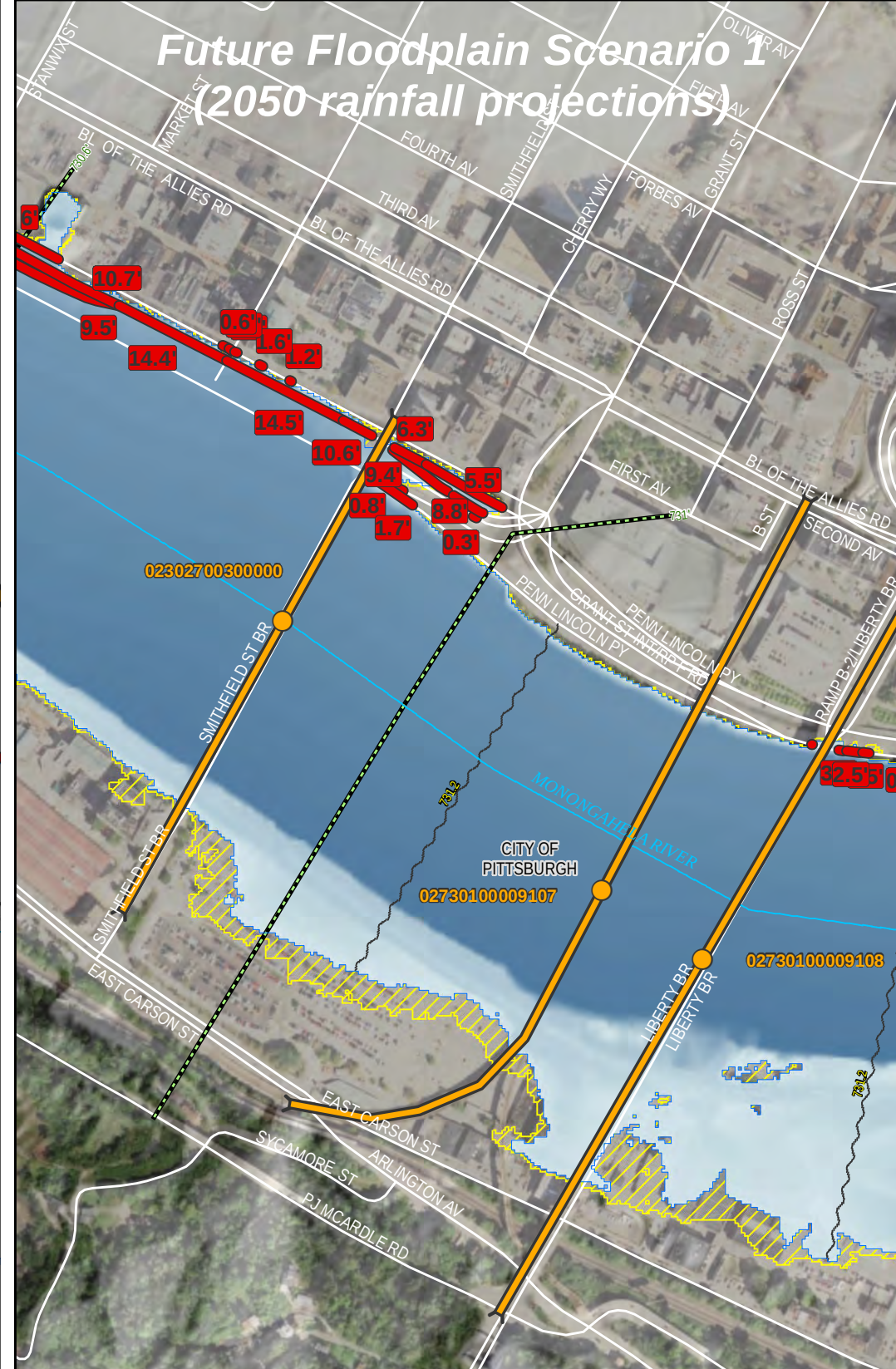


DATA FRAME PROPERTIES:
 Coordinate System:
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 Projection: Lambert Conformal Conic
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VULNERABILITY ANALYSIS:
 Performed by: Michael Baker International
 Bridge and Roadway Data Provided by: Pennsylvania DOT

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. **328'**
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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

0

1,000

Feet

November 23, 2016

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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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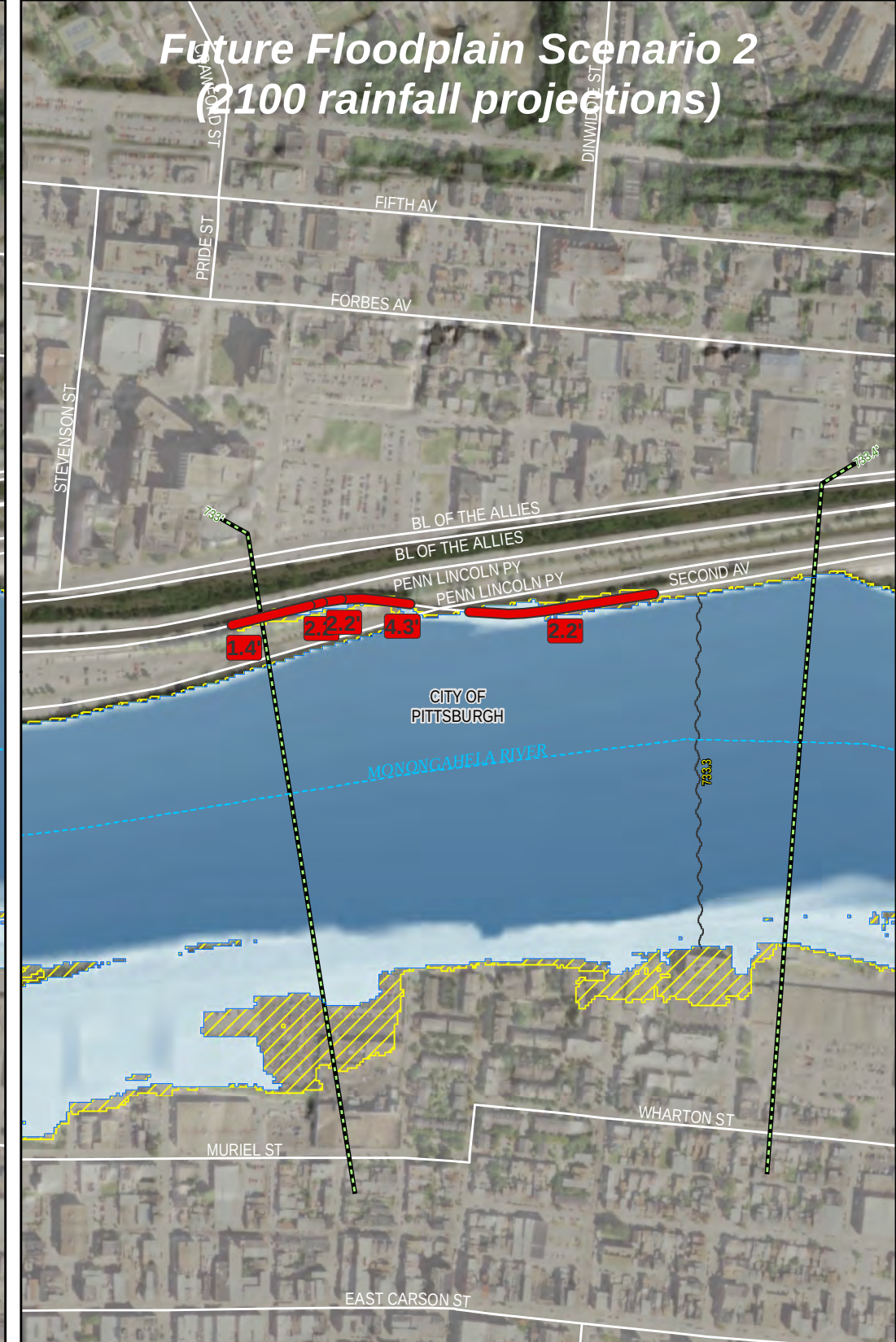
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Projection: Lambert Conformal Conic
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VULNERABILITY ANALYSIS:

Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL

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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. CODY ST
	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

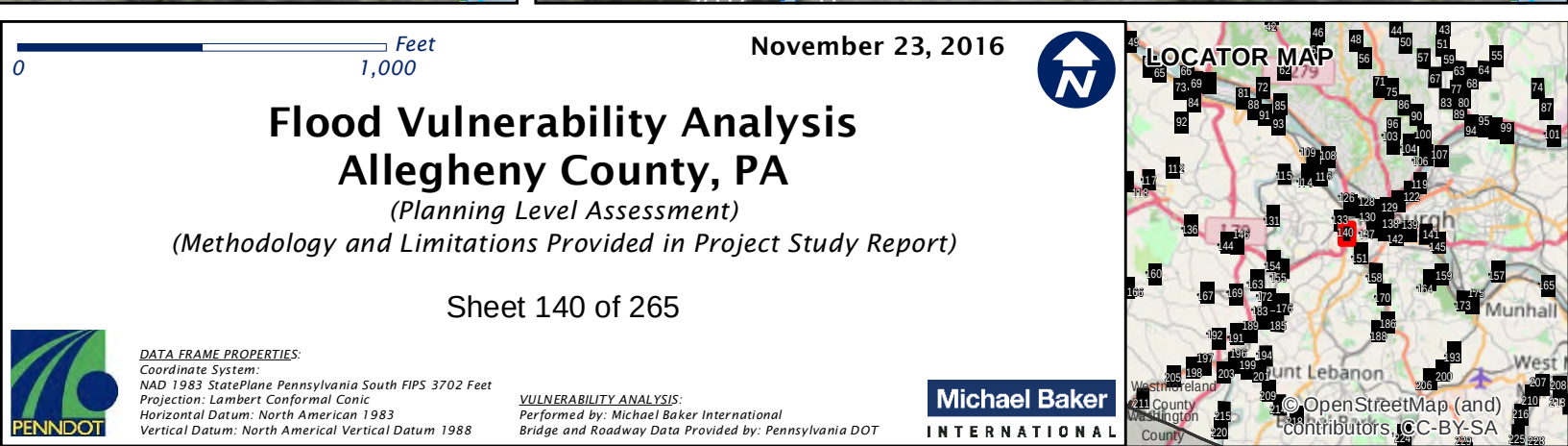
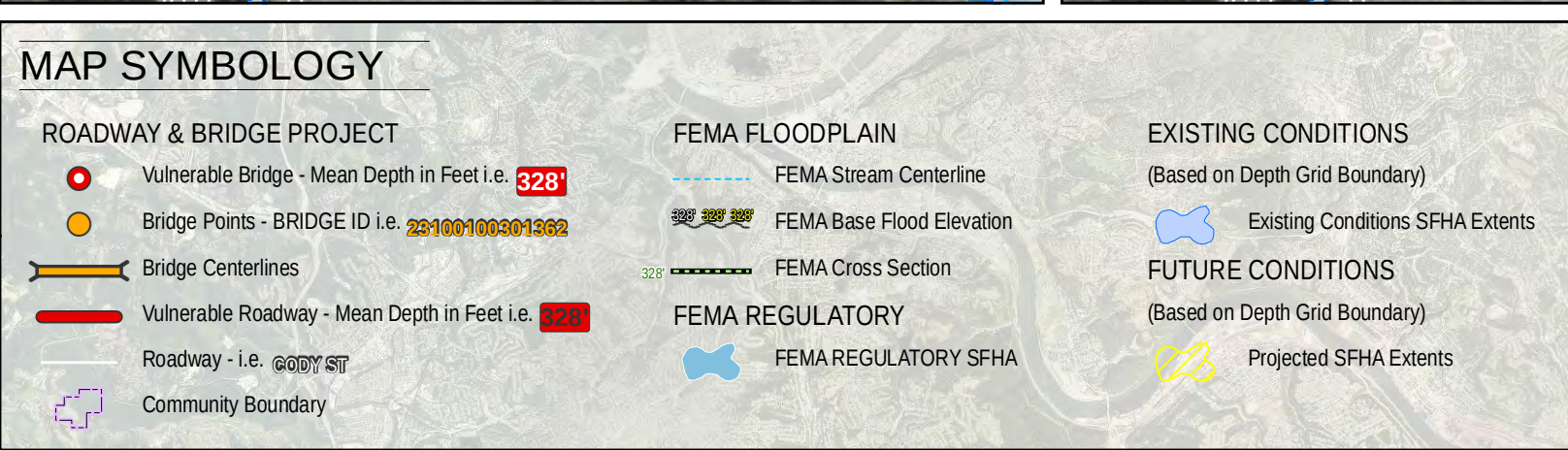
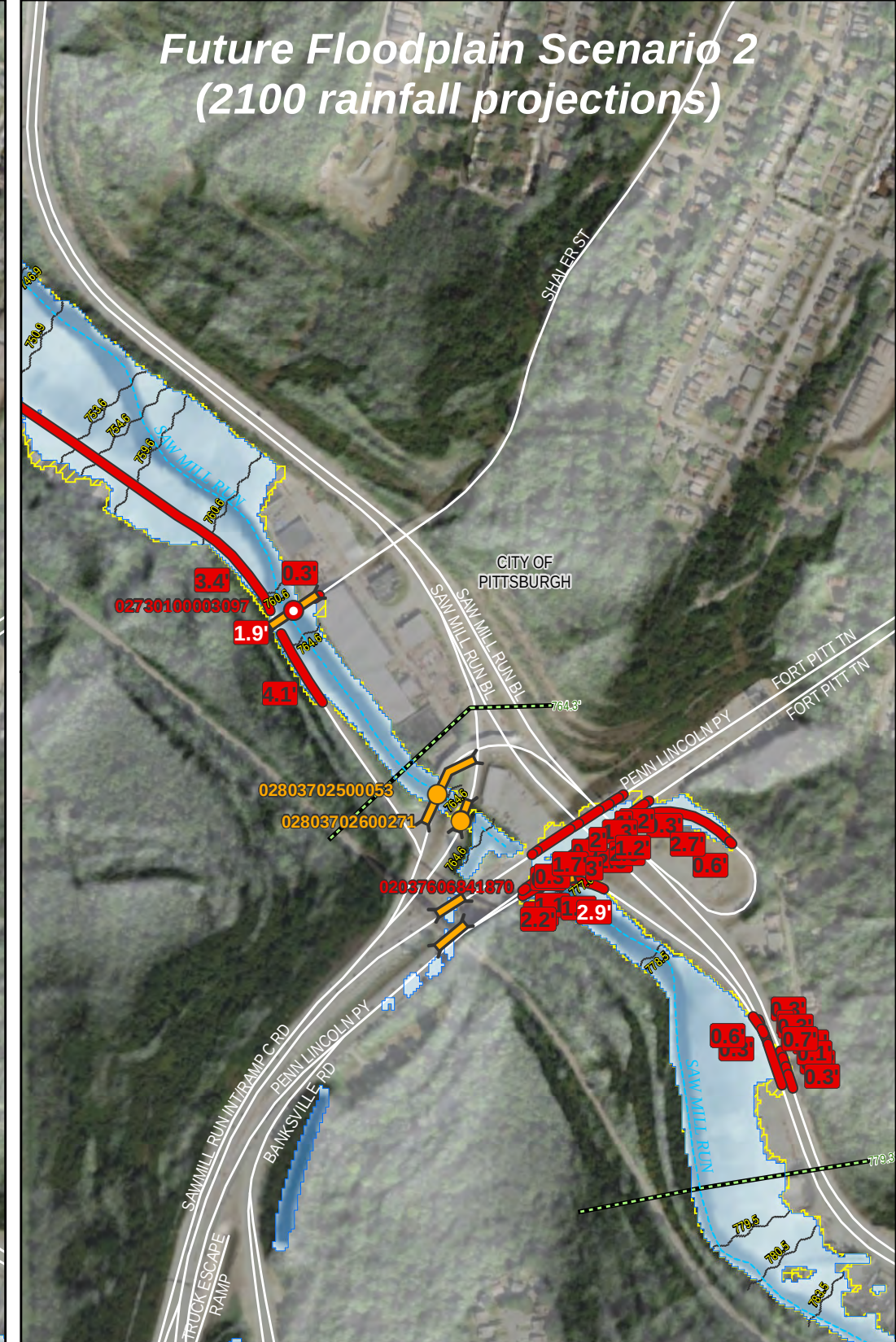
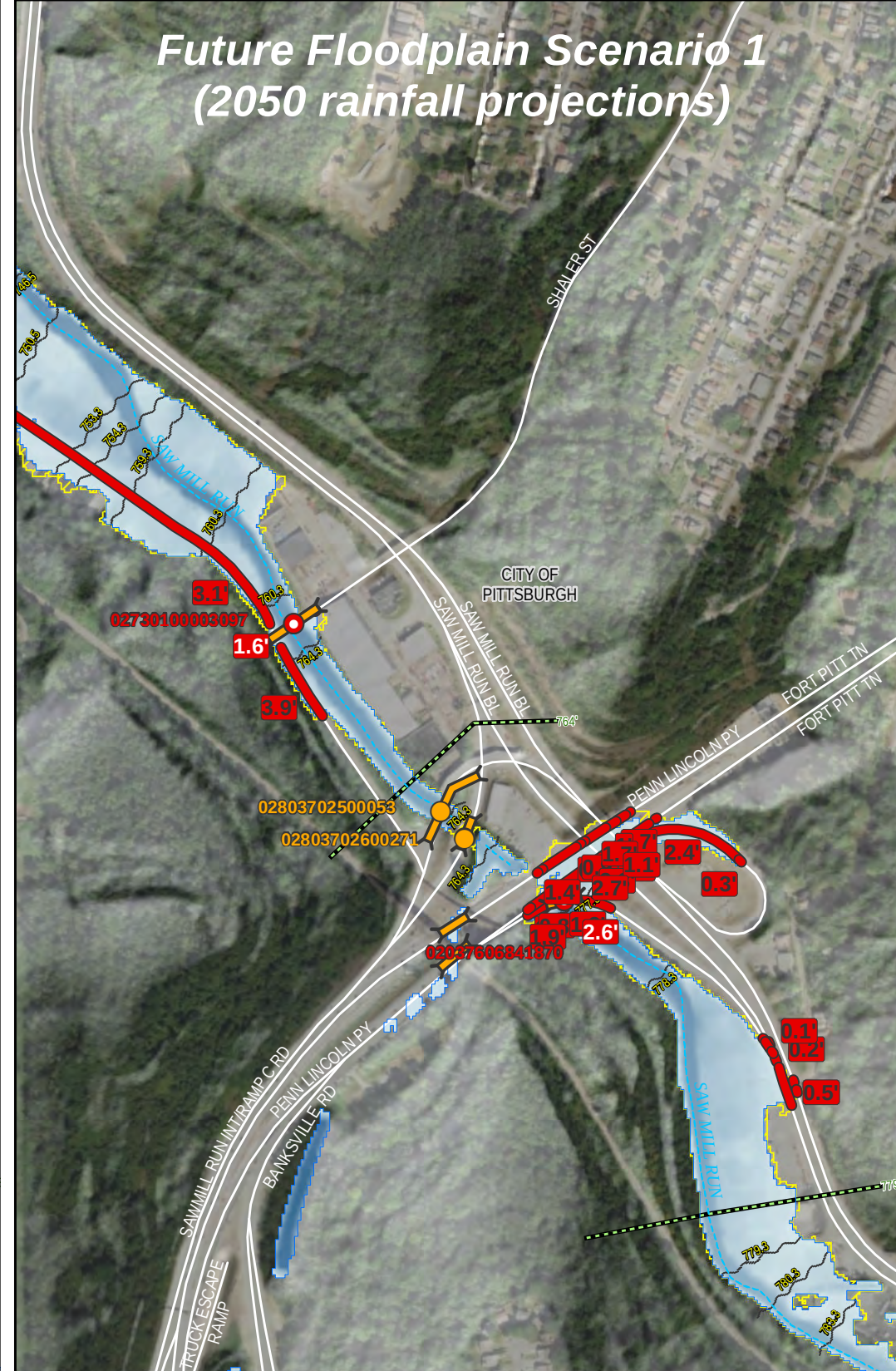
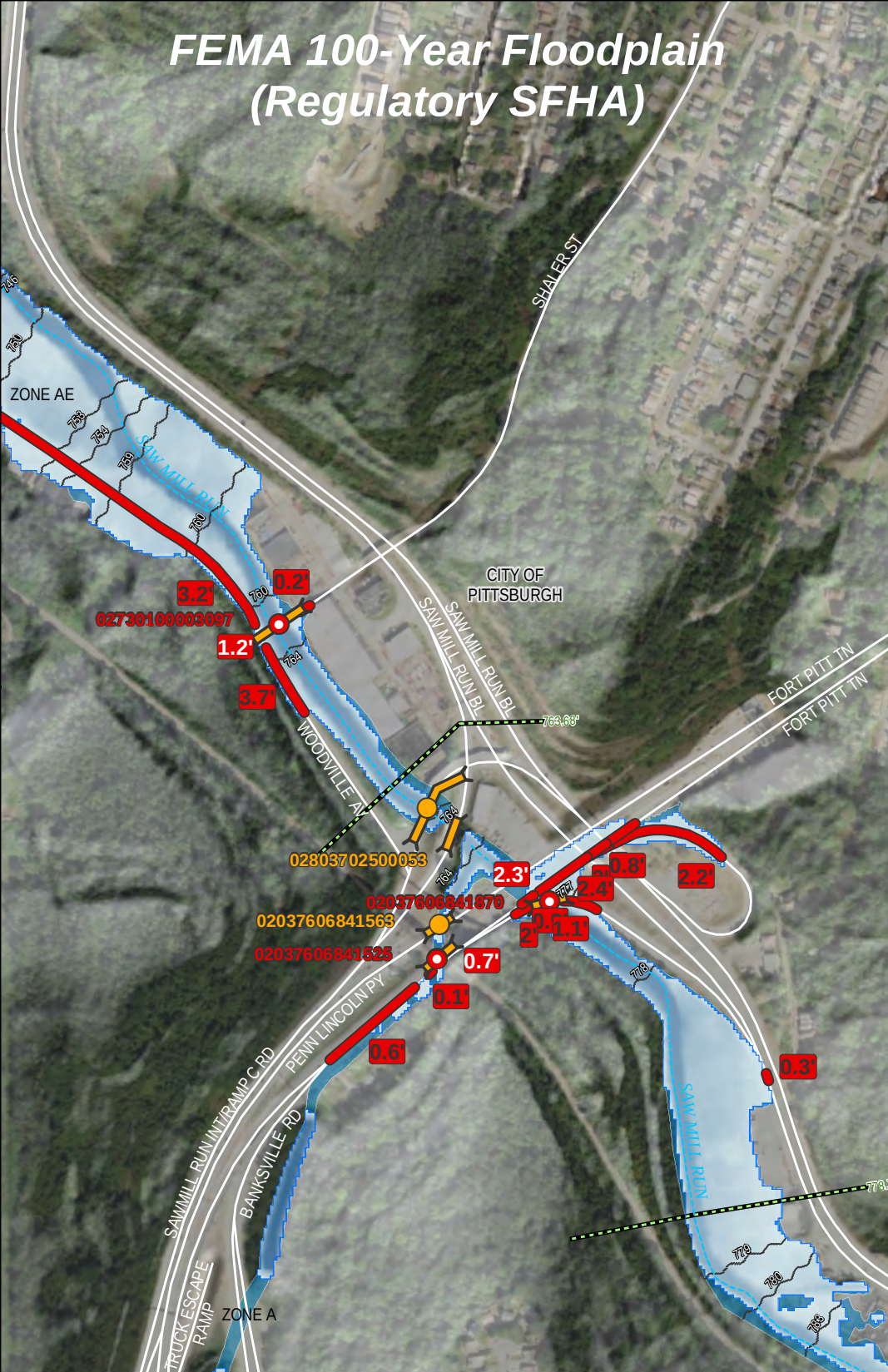
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

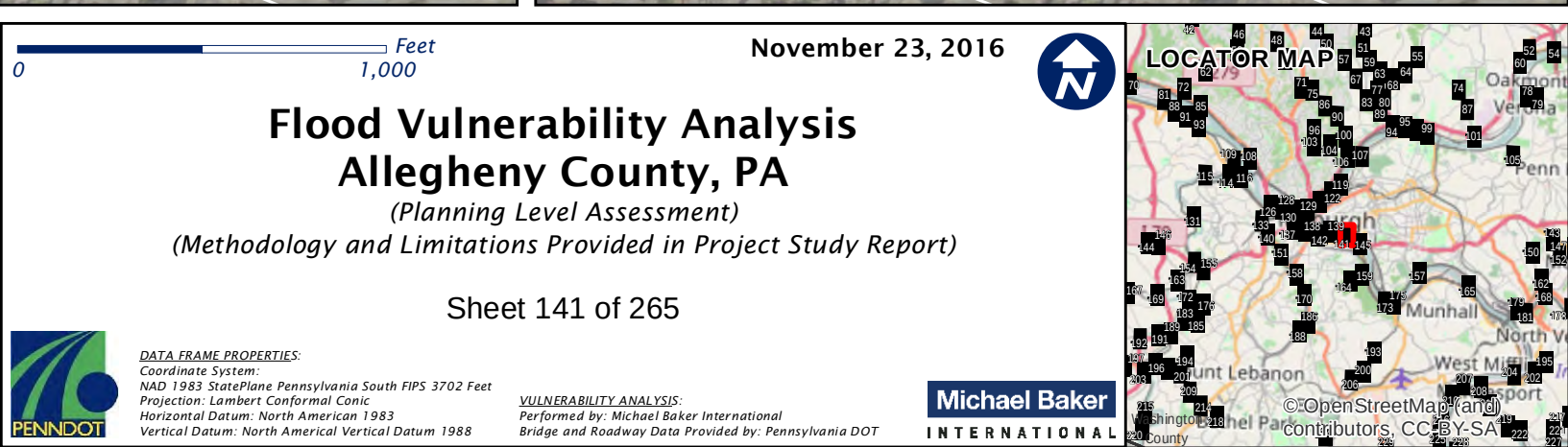
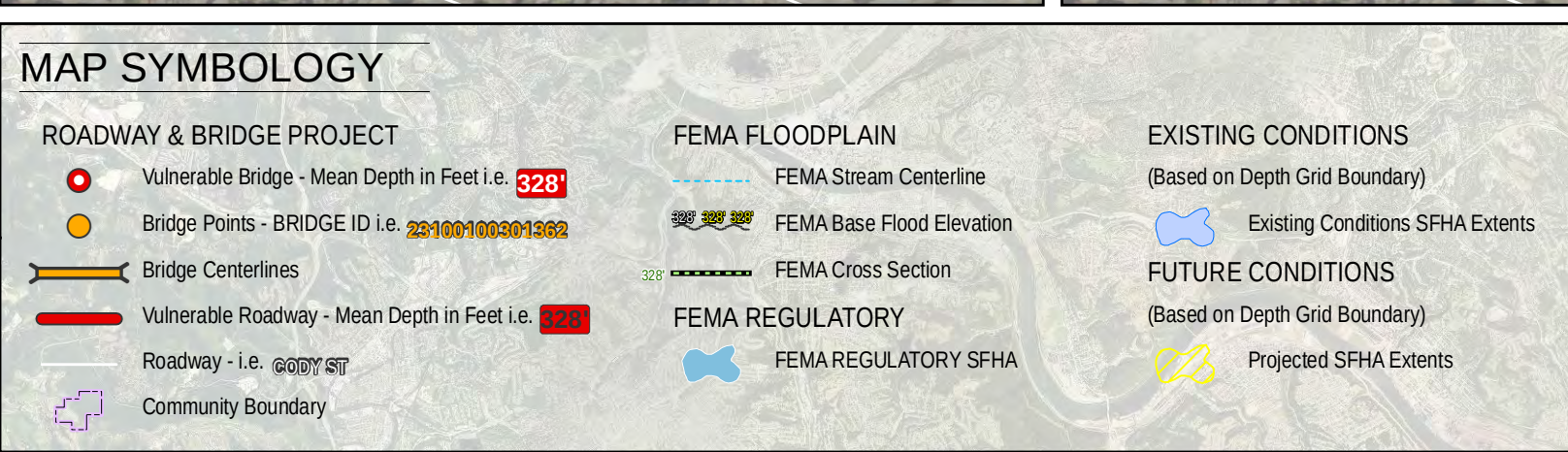
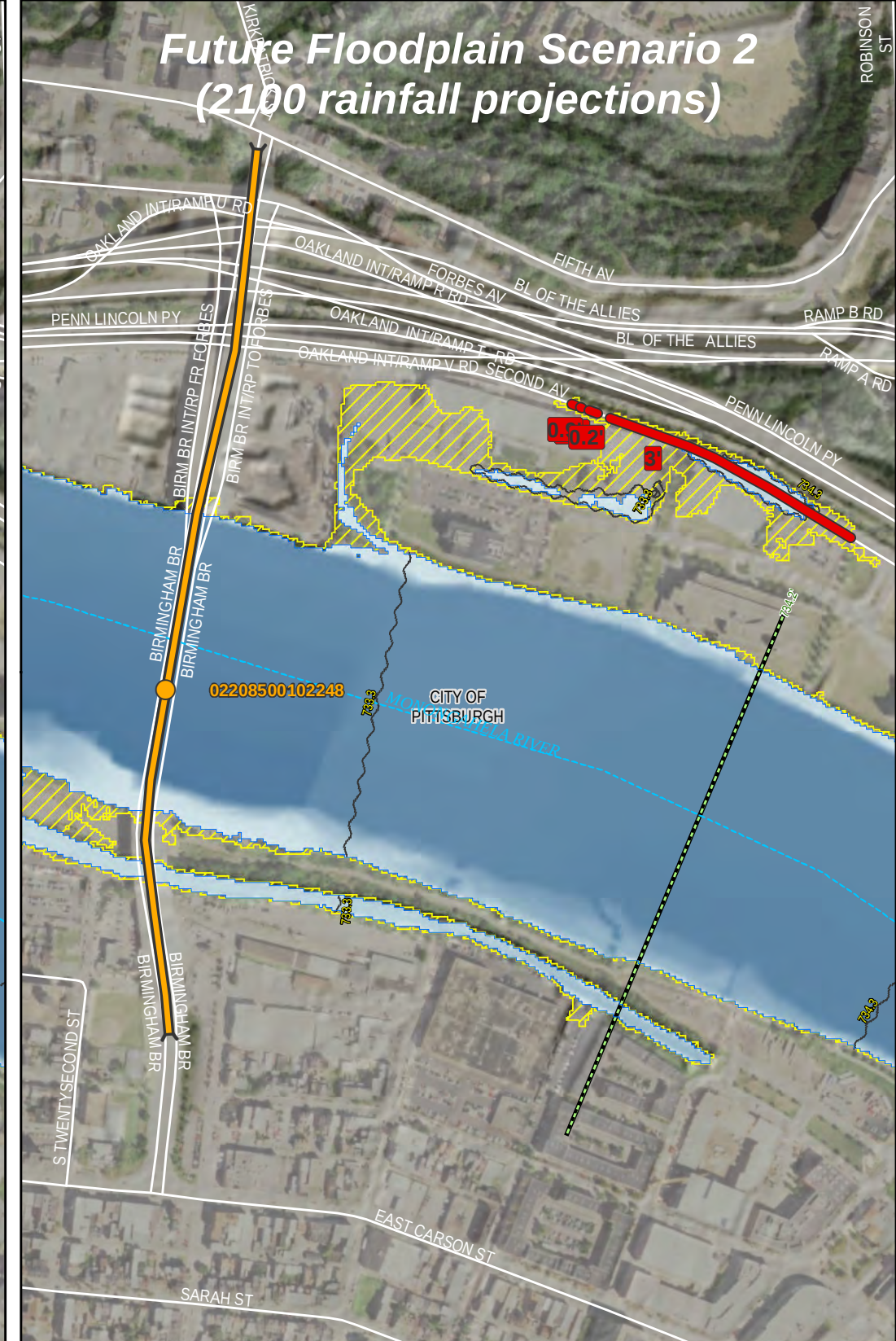
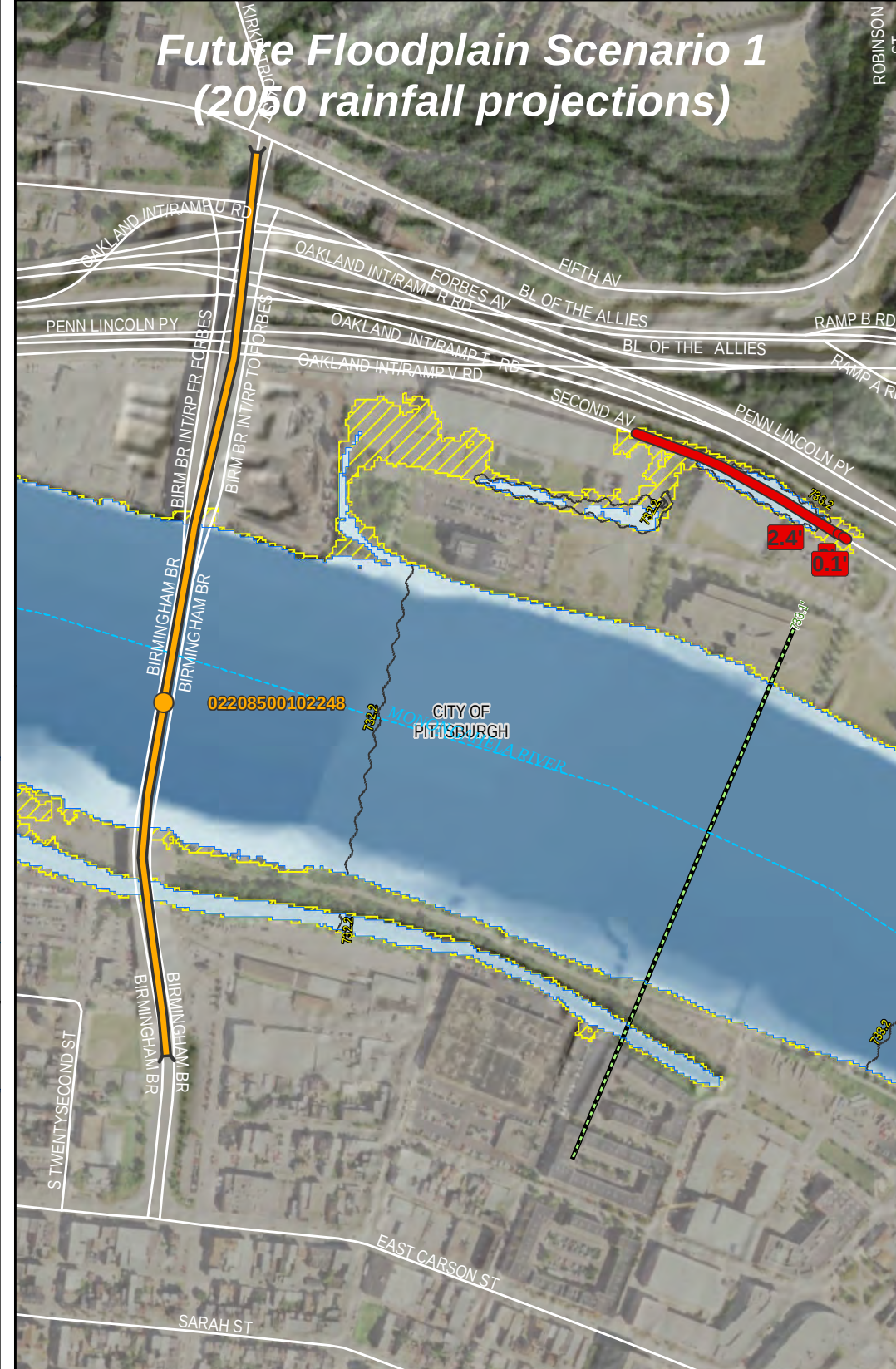
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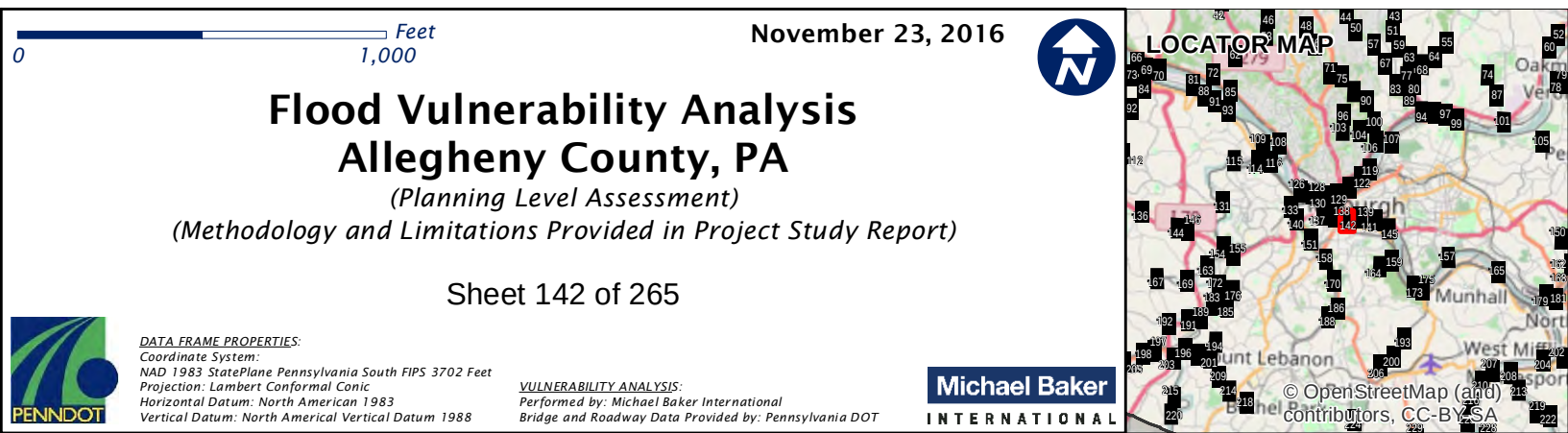
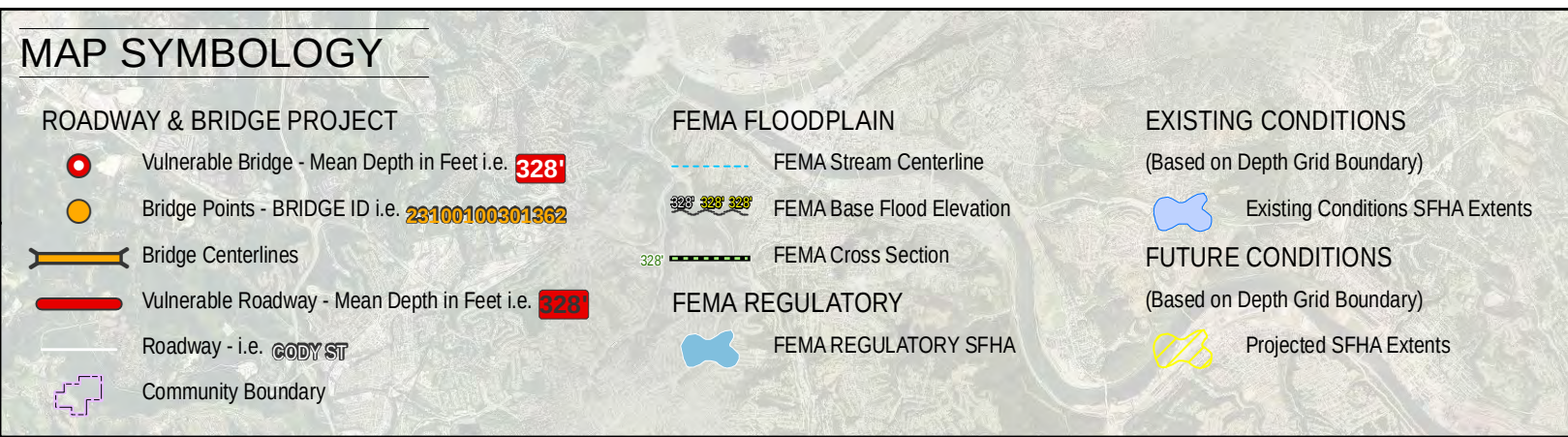
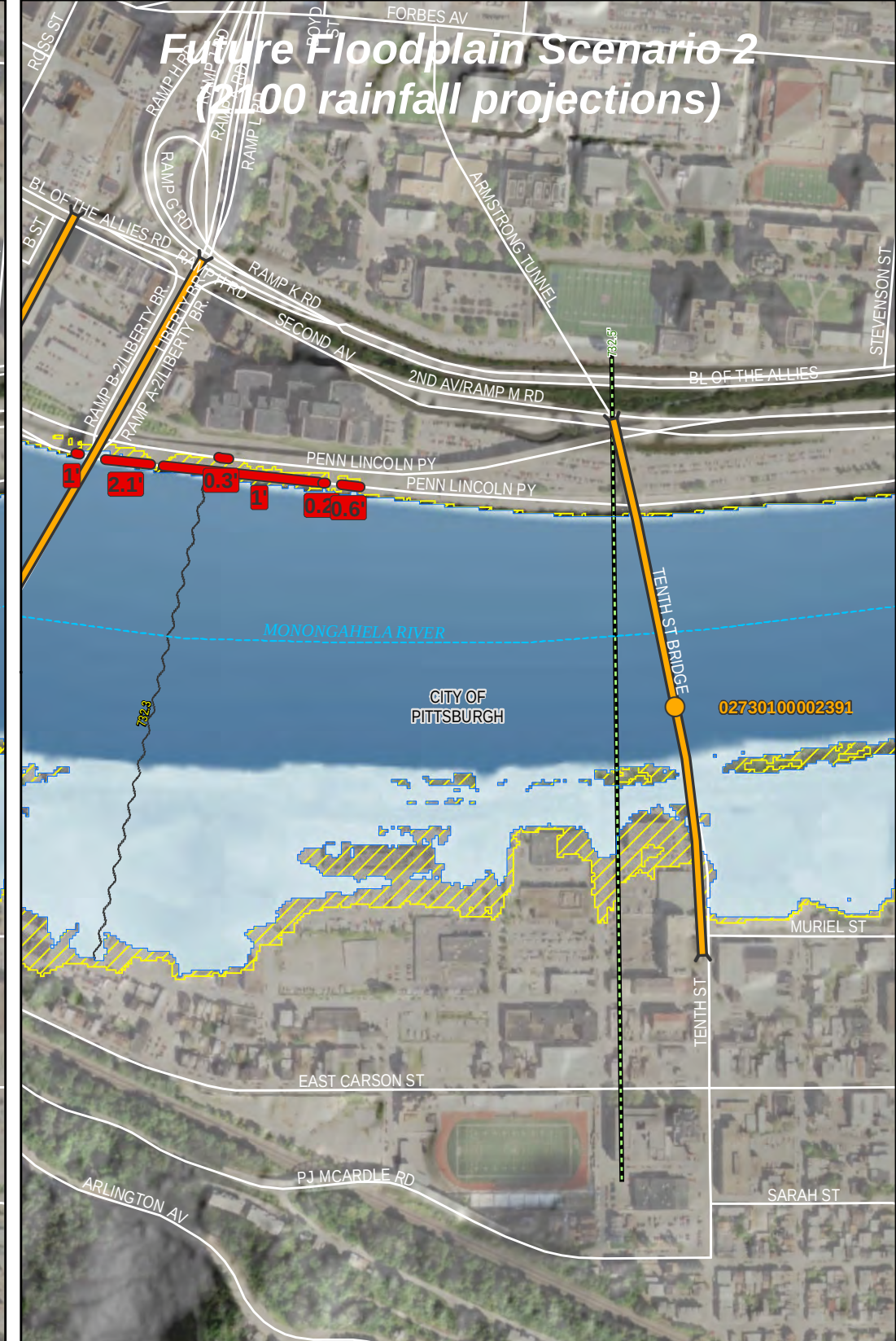
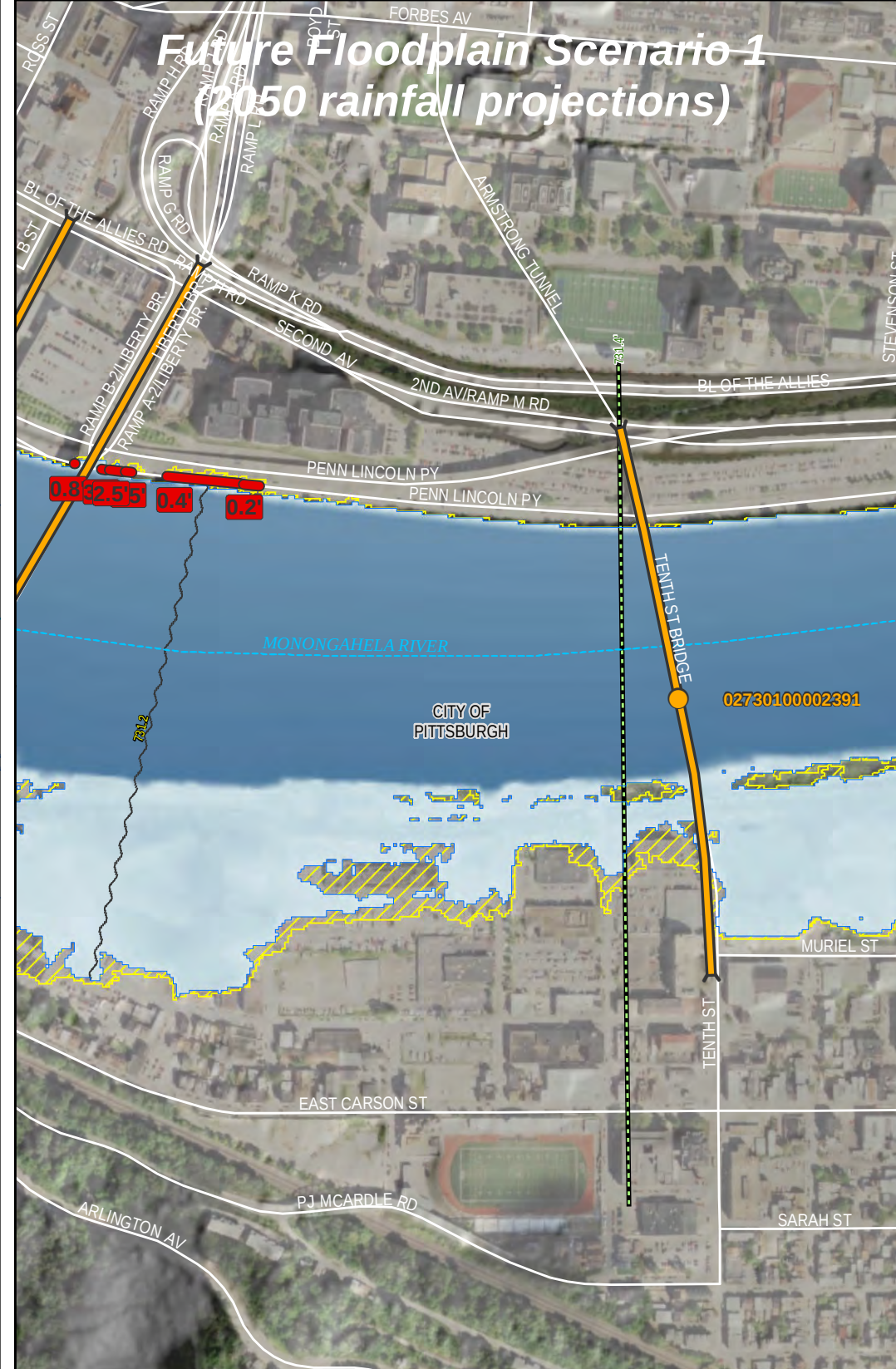
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

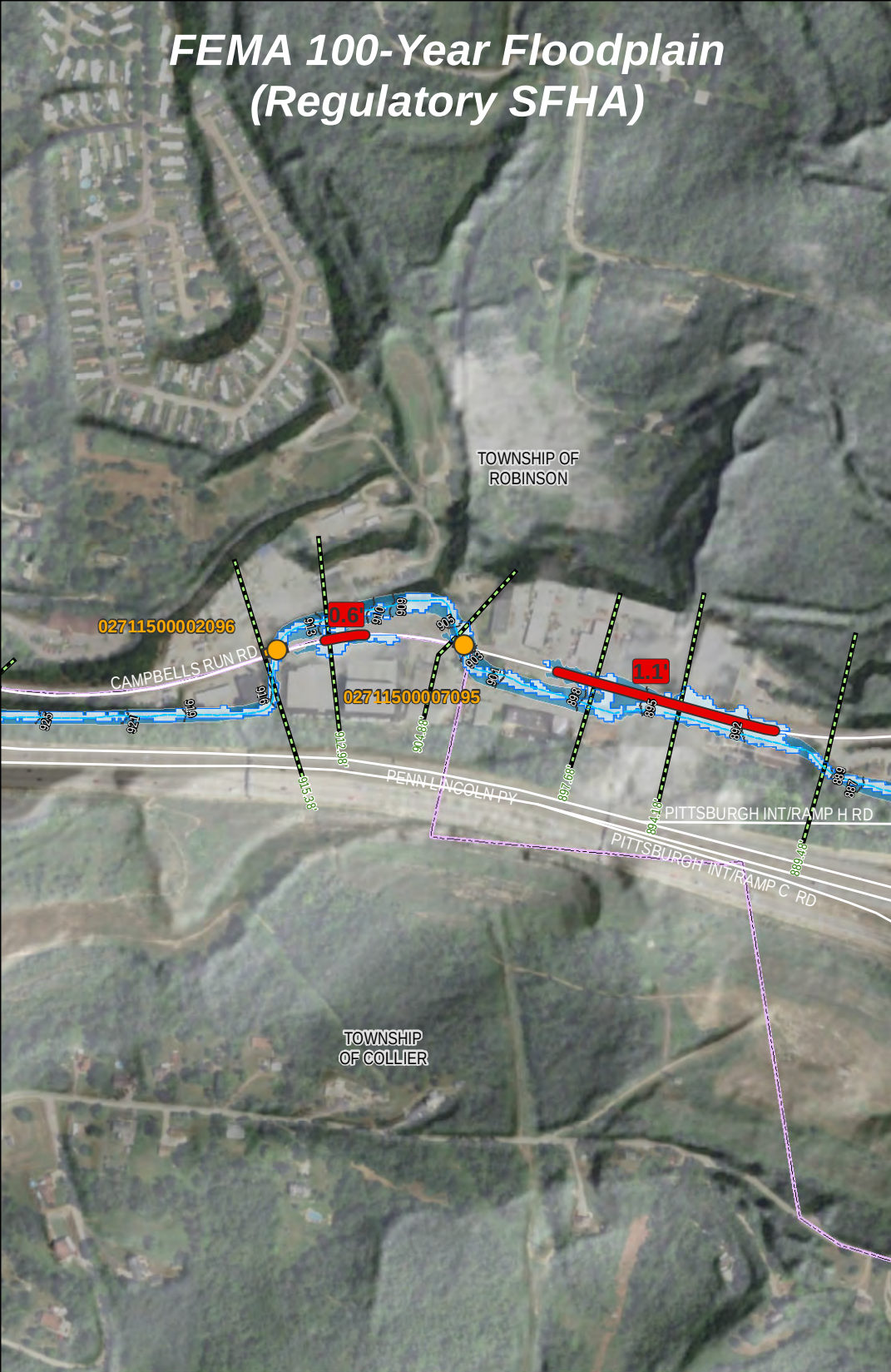
LOCATOR MAP



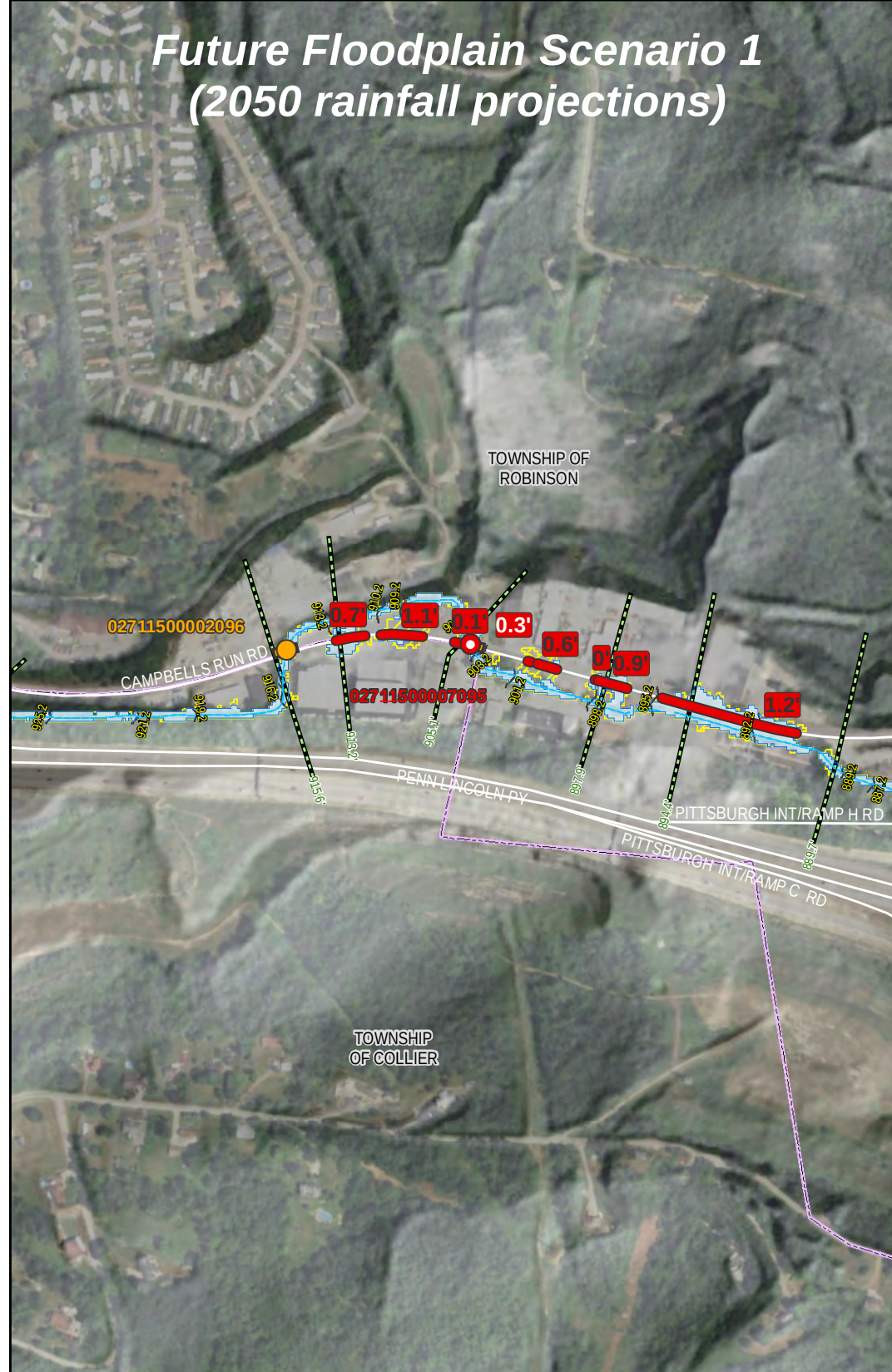




FEMA 100-Year Floodplain (Regulatory SFHA)



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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016



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

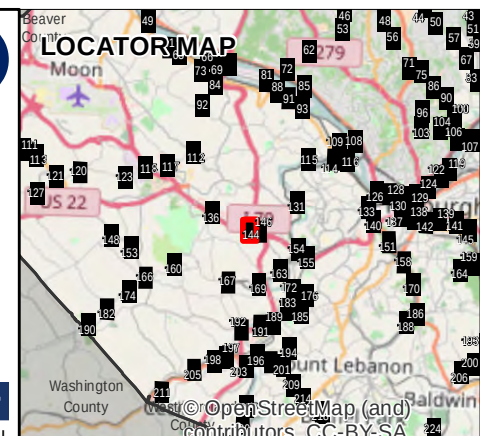
Sheet 144 of 265

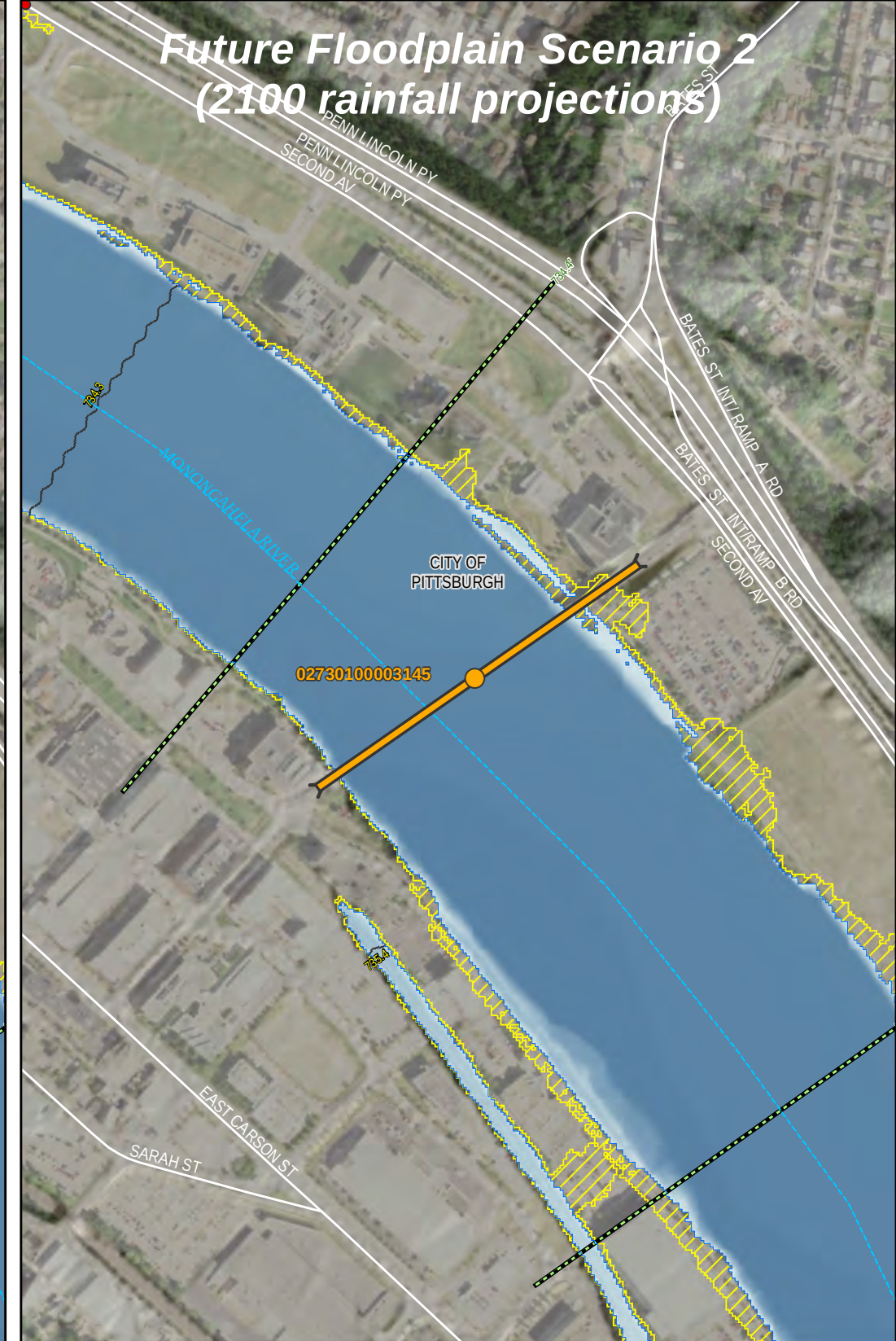


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Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL





MAP SYMBOLOGY

 Vulnerable Bridge - Mean Depth in Feet i.e. 328'	 FEMA Stream Centerline	 Existing Conditions SFHA Extents
 Bridge Points - BRIDGE ID i.e. 23100100301362	 FEMA Base Flood Elevation	 FUTURE CONDITIONS (Based on Depth Grid Boundary)
 Bridge Centerlines	 FEMA Cross Section	 Projected SFHA Extents
 Vulnerable Roadway - Mean Depth in Feet i.e. 328'	 FEMA REGULATORY	
 Roadway - i.e. CODY ST	 FEMA REGULATORY SFHA	
 Community Boundary		



0 1,000 Feet

November 23, 2016



Flood Vulnerability Analysis Allegheny County, PA

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

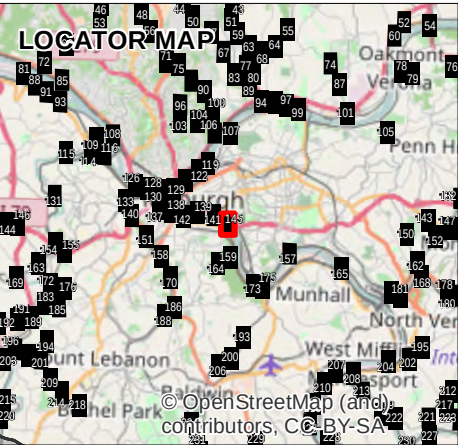
Sheet 145 of 265



DATA FRAME PROPERTIES:
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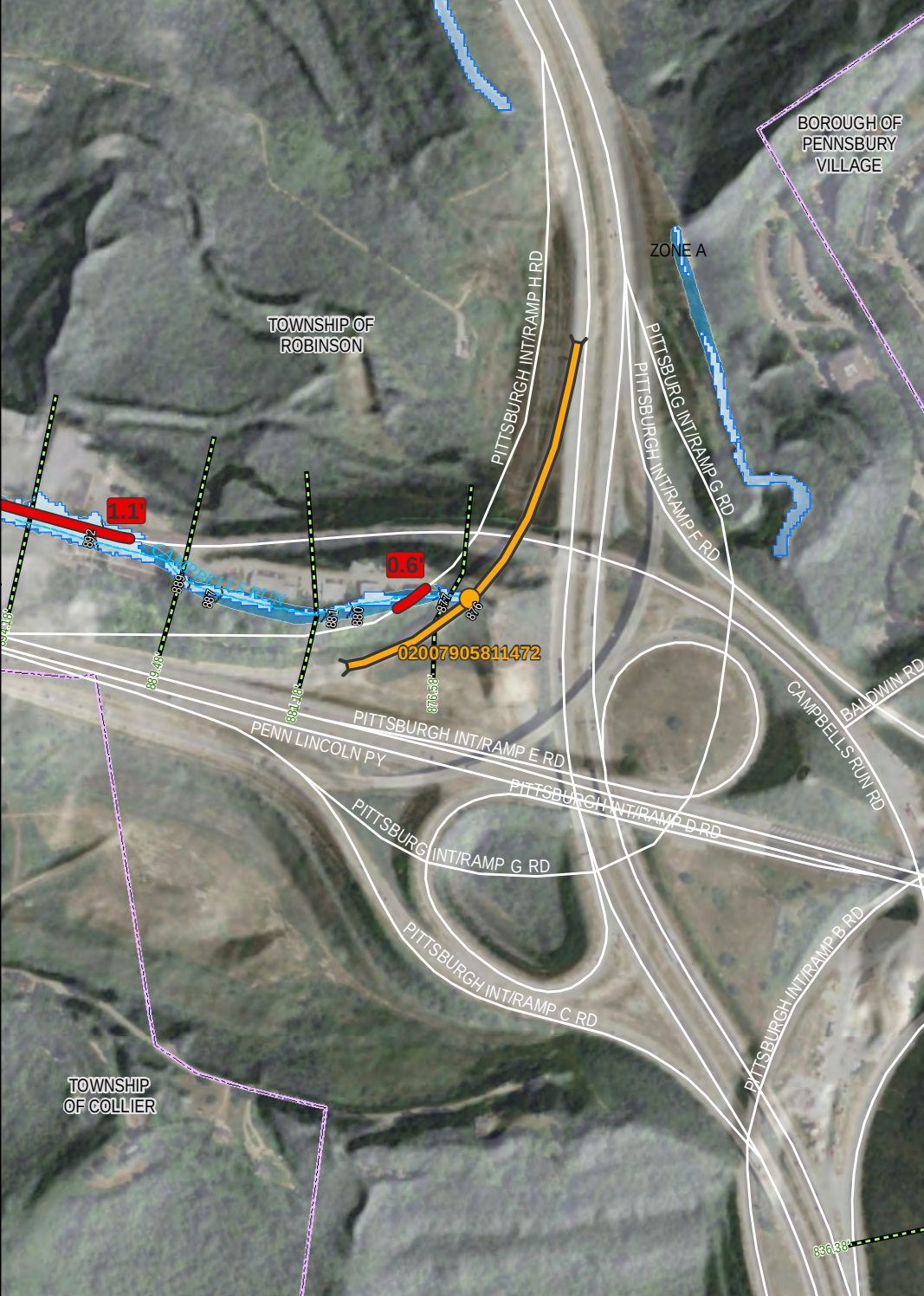




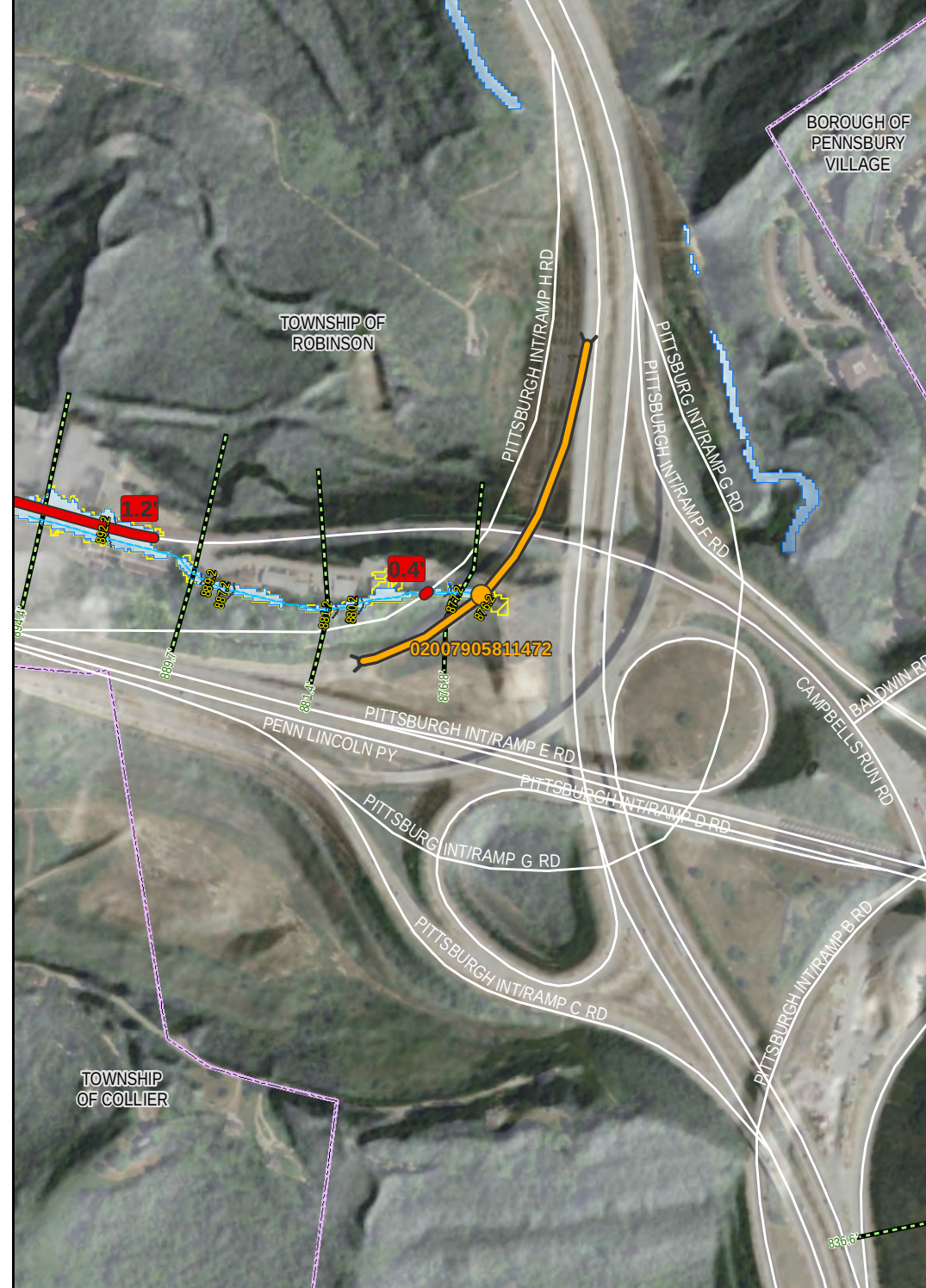
LOCATOR MAP

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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 SYMBOLOLOGY

ROADWAY & BRIDGE PROJECT

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FEMA FLOODPLAIN

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- 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

0 Feet
1,000

November 23, 2016



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

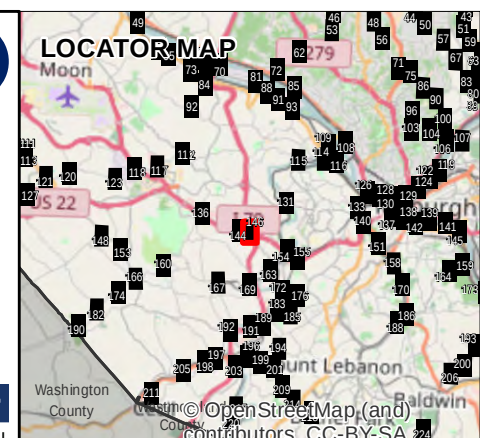
Sheet 146 of 265

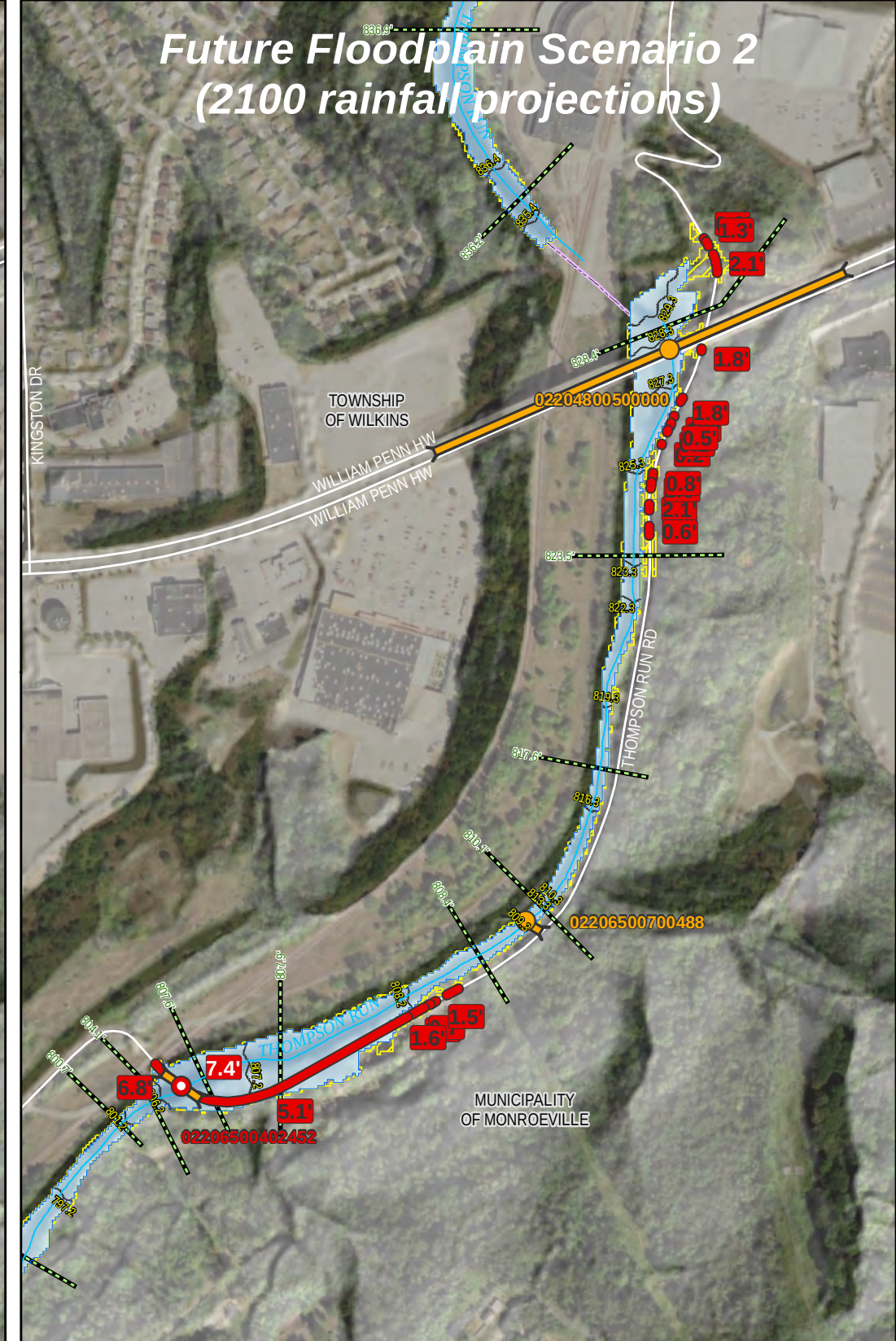
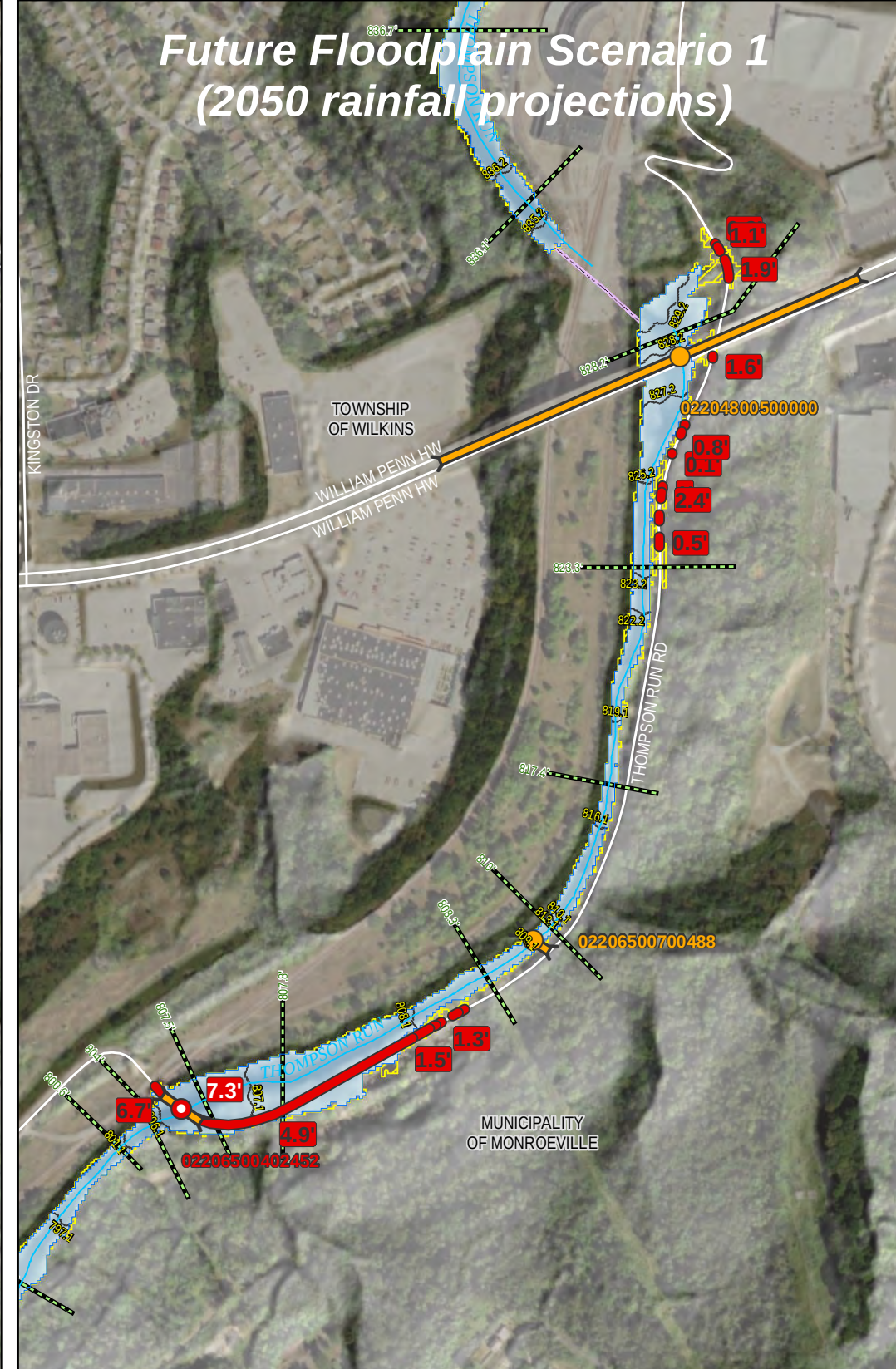
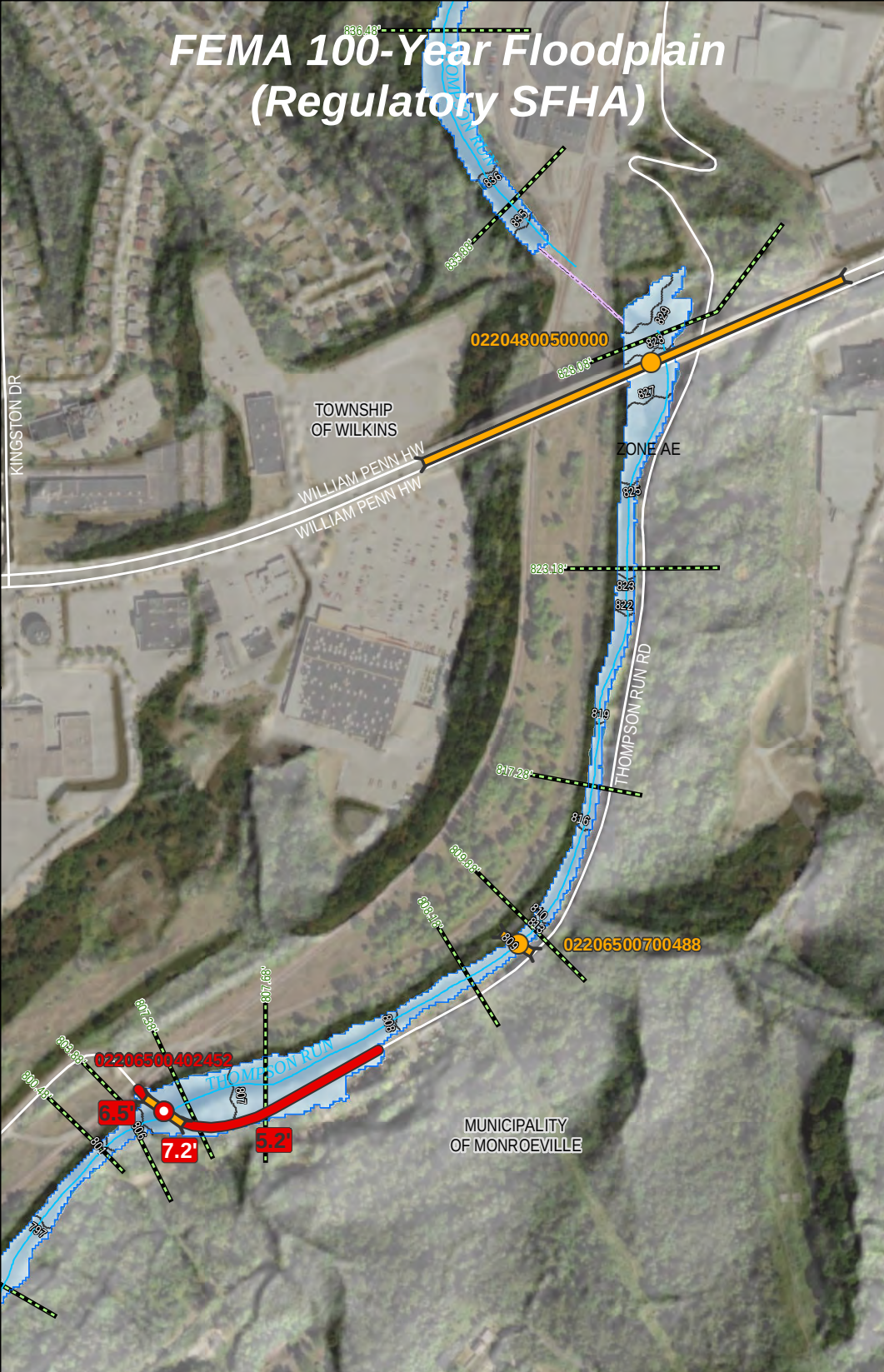


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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

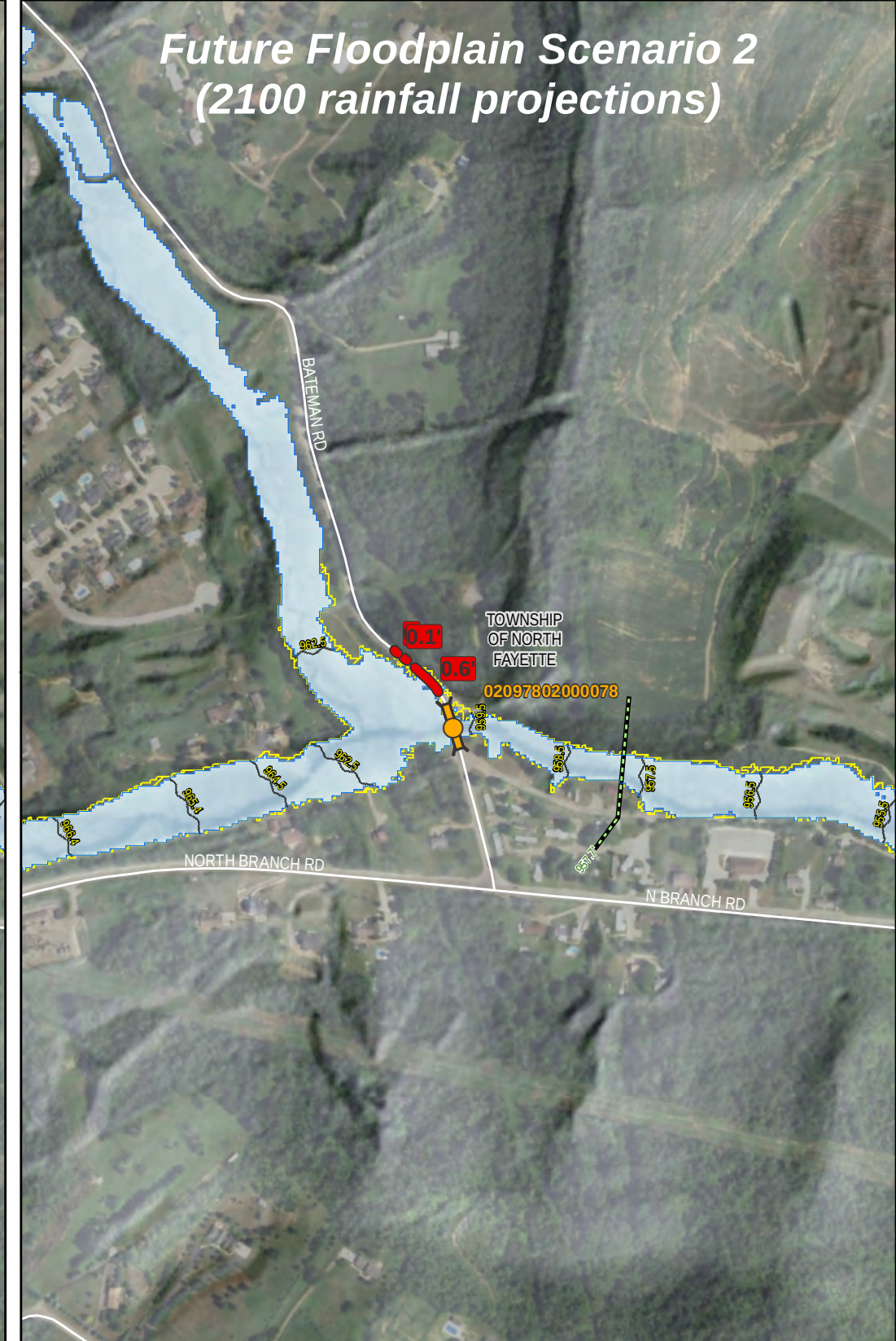
Sheet 147 of 265

Michael Baker INTERNATIONAL

LOCATOR MAP

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



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. **CODY ST**
- 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

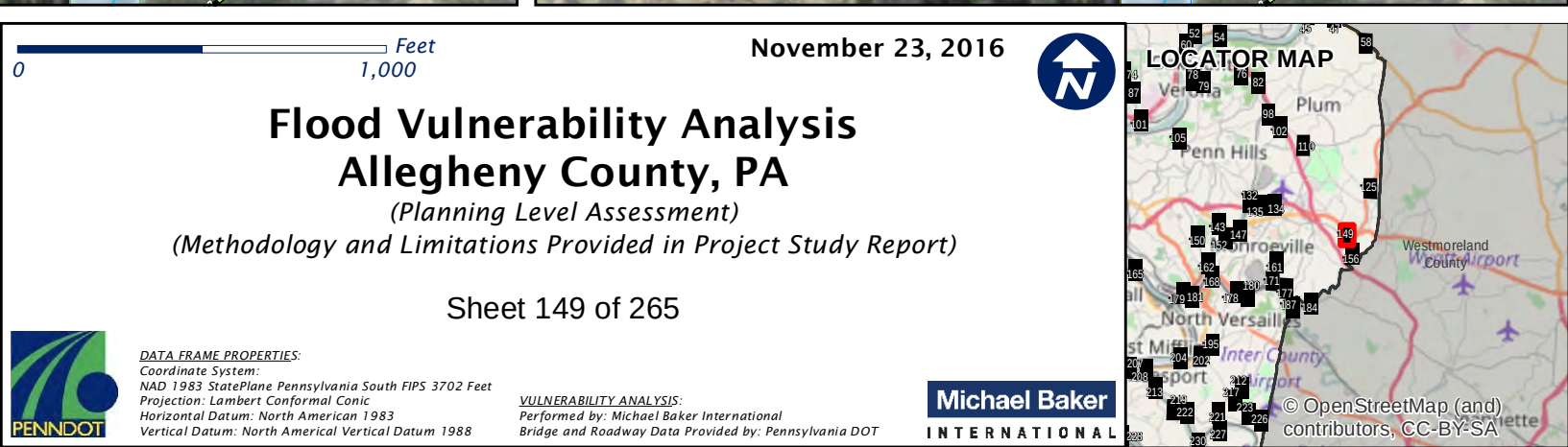
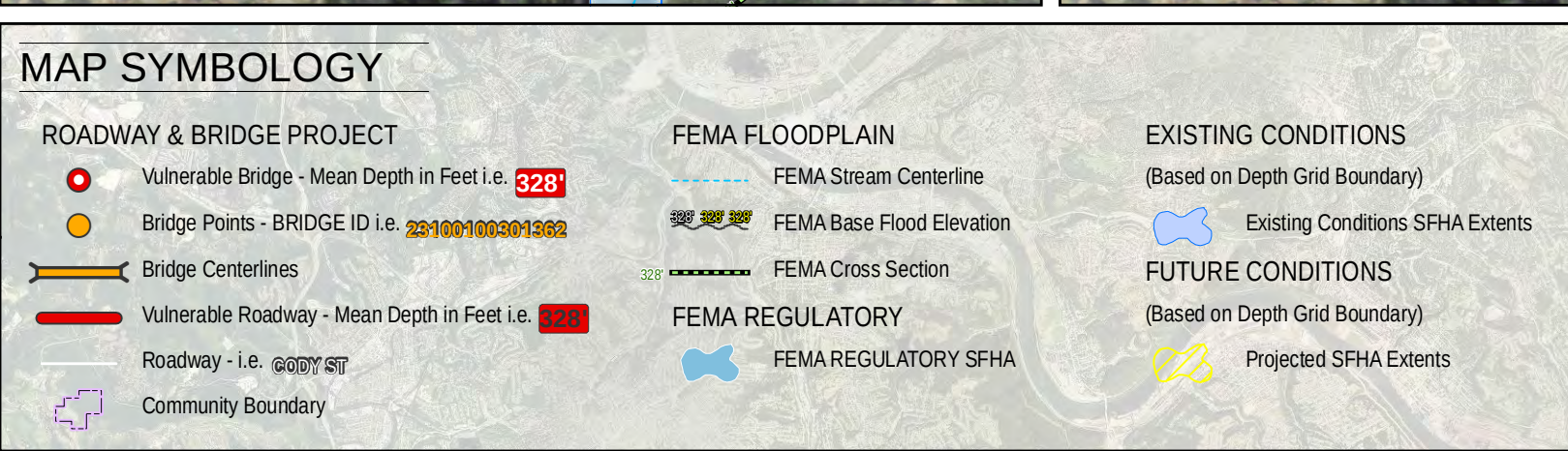
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

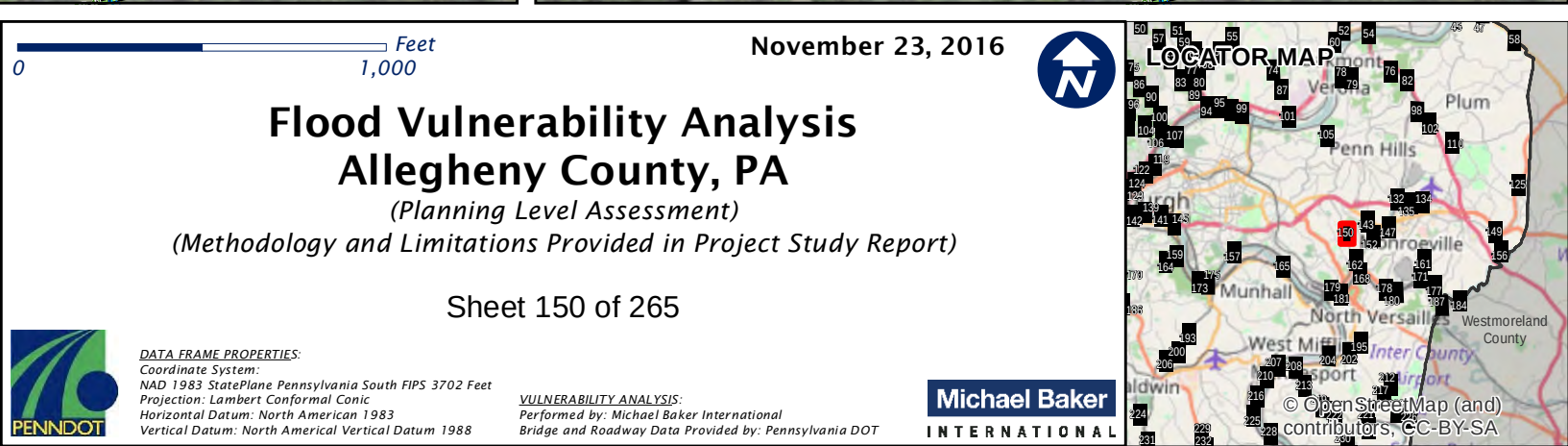
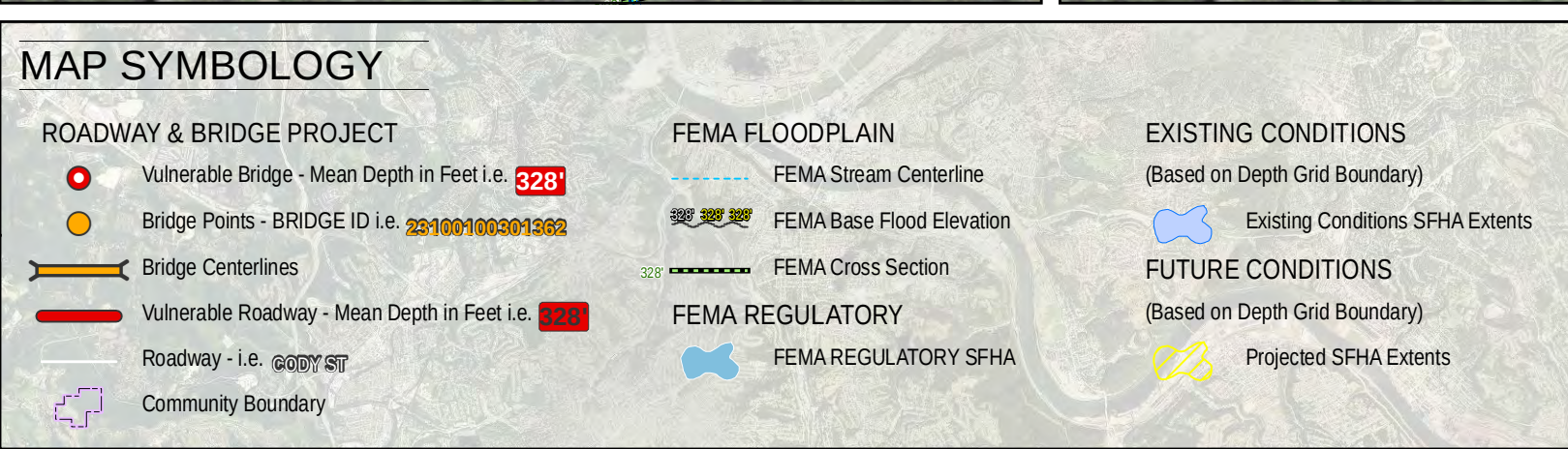
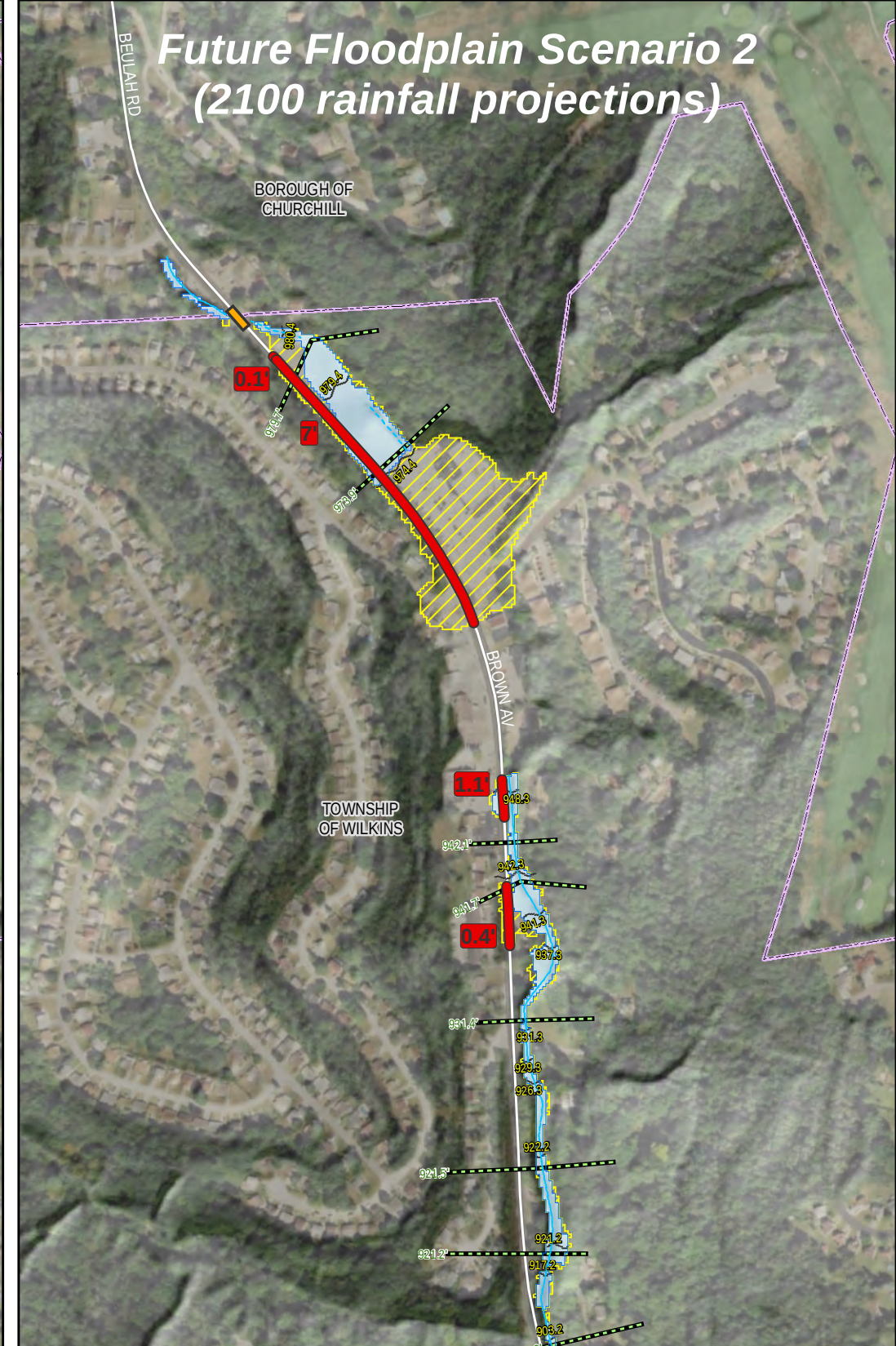
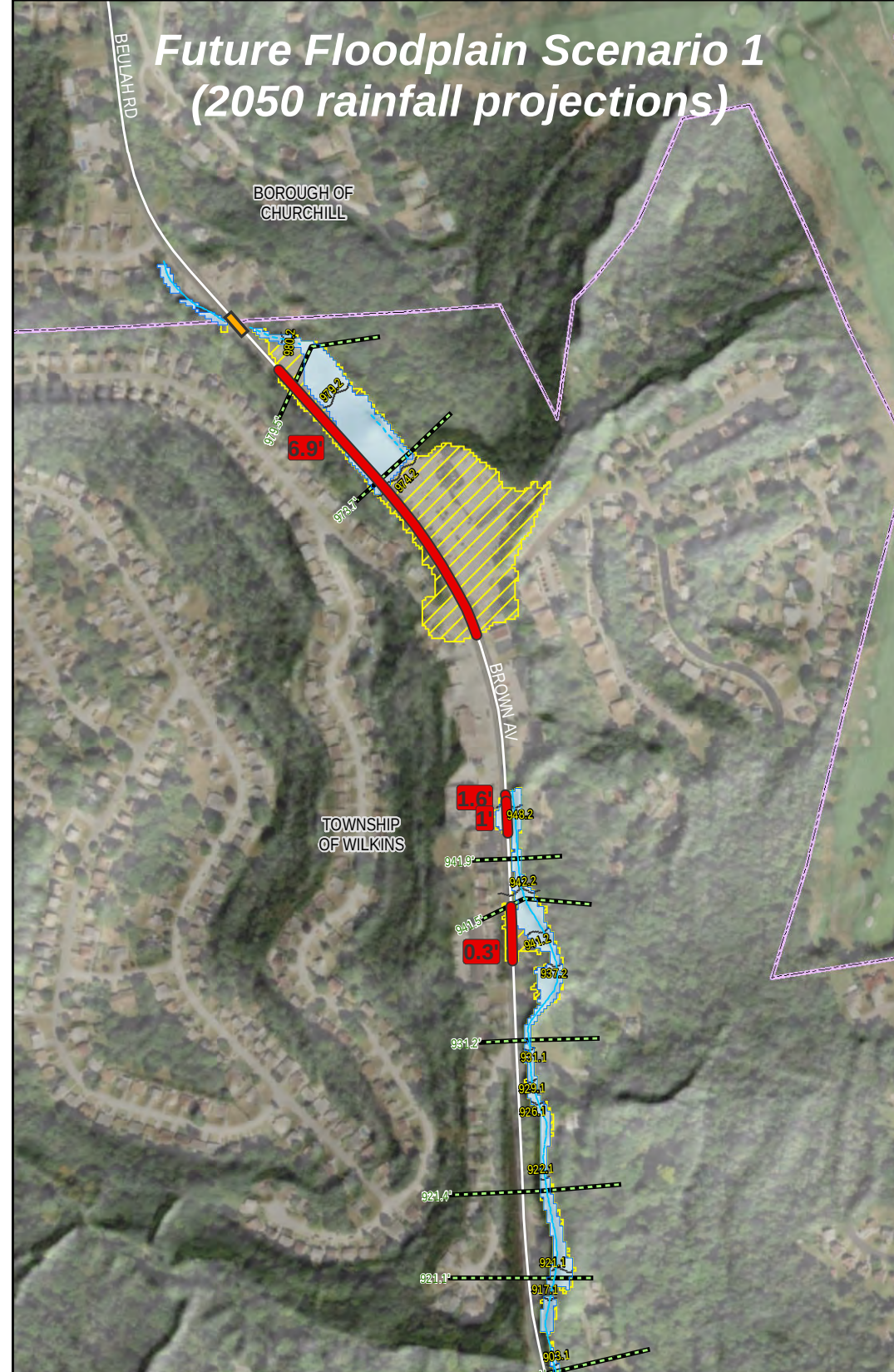
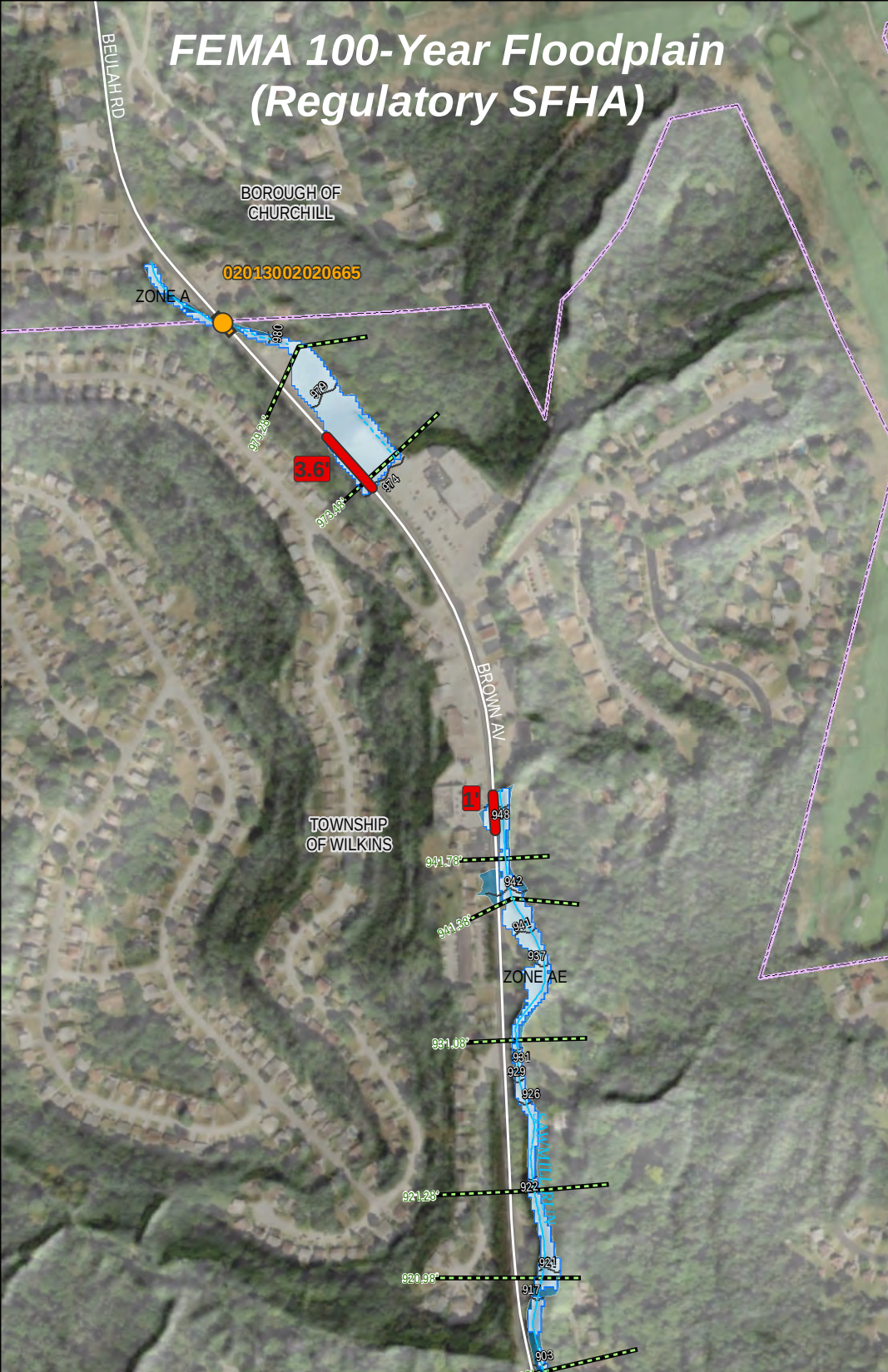
Sheet 148 of 265

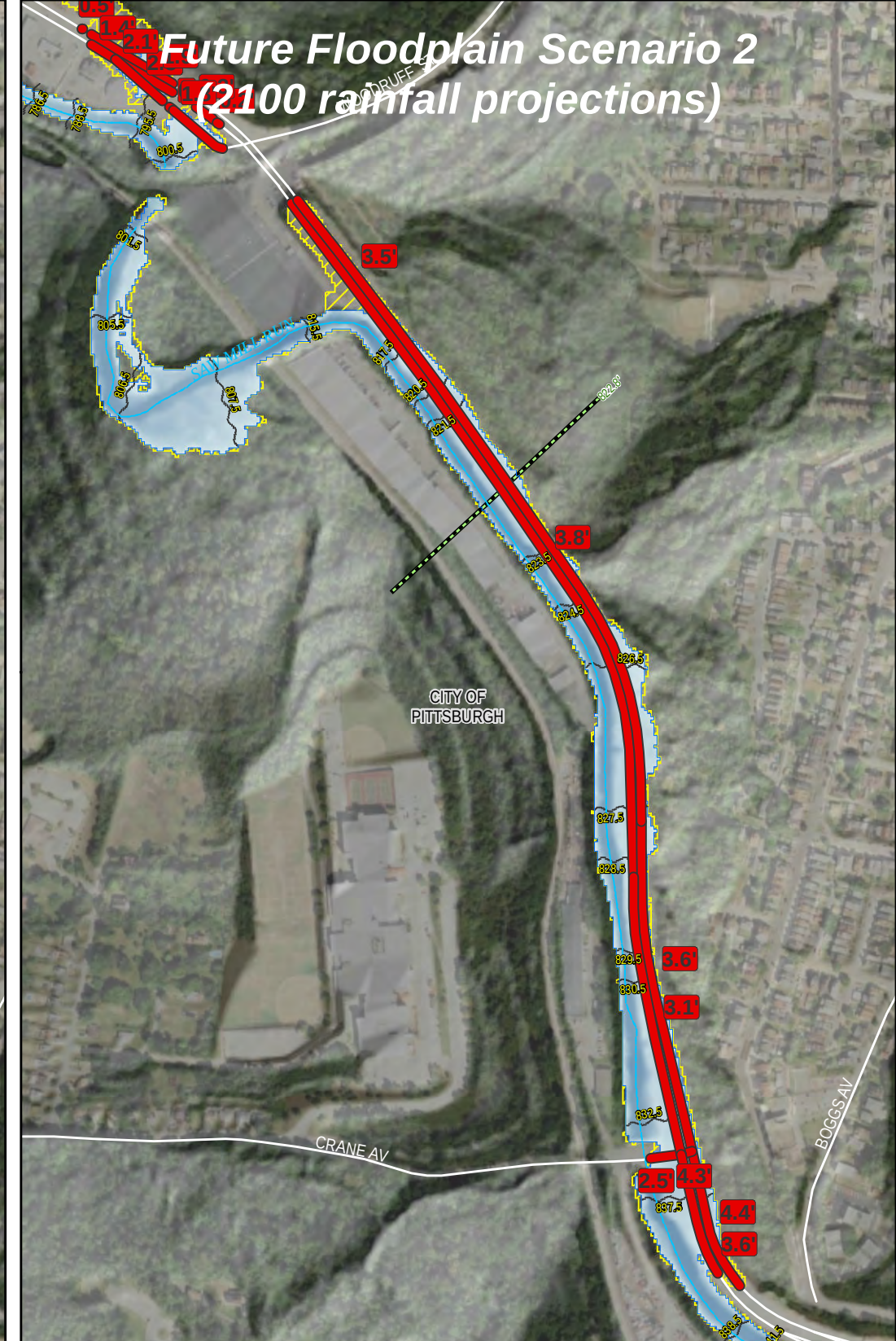
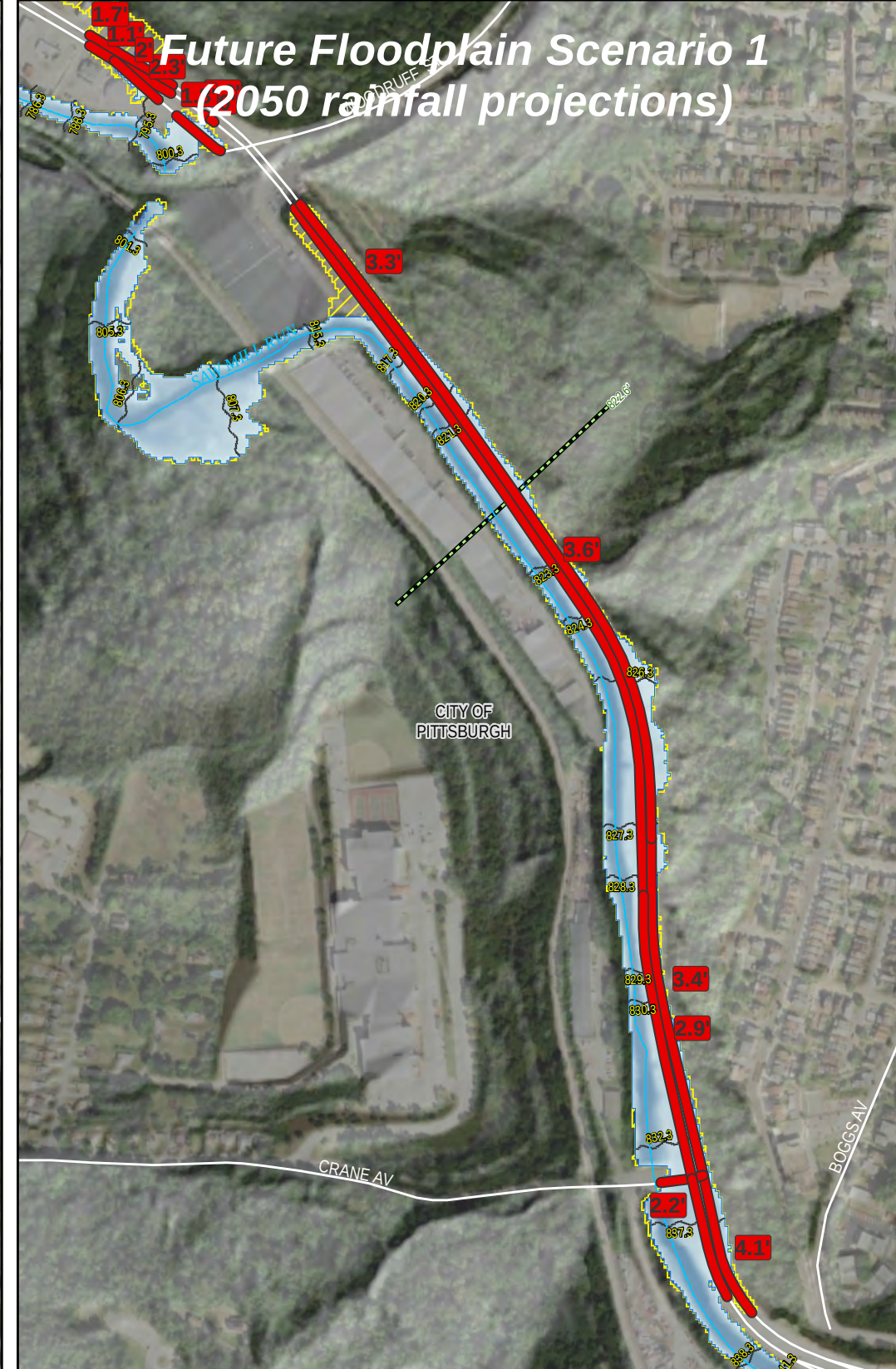
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP







MAP SYMBOLOGY

Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	Projected SFHA Extents
Bridge Centerlines	FEMA Cross Section	
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY SFHA	
Roadway - i.e. CODY ST		
Community Boundary		

November 23, 2016

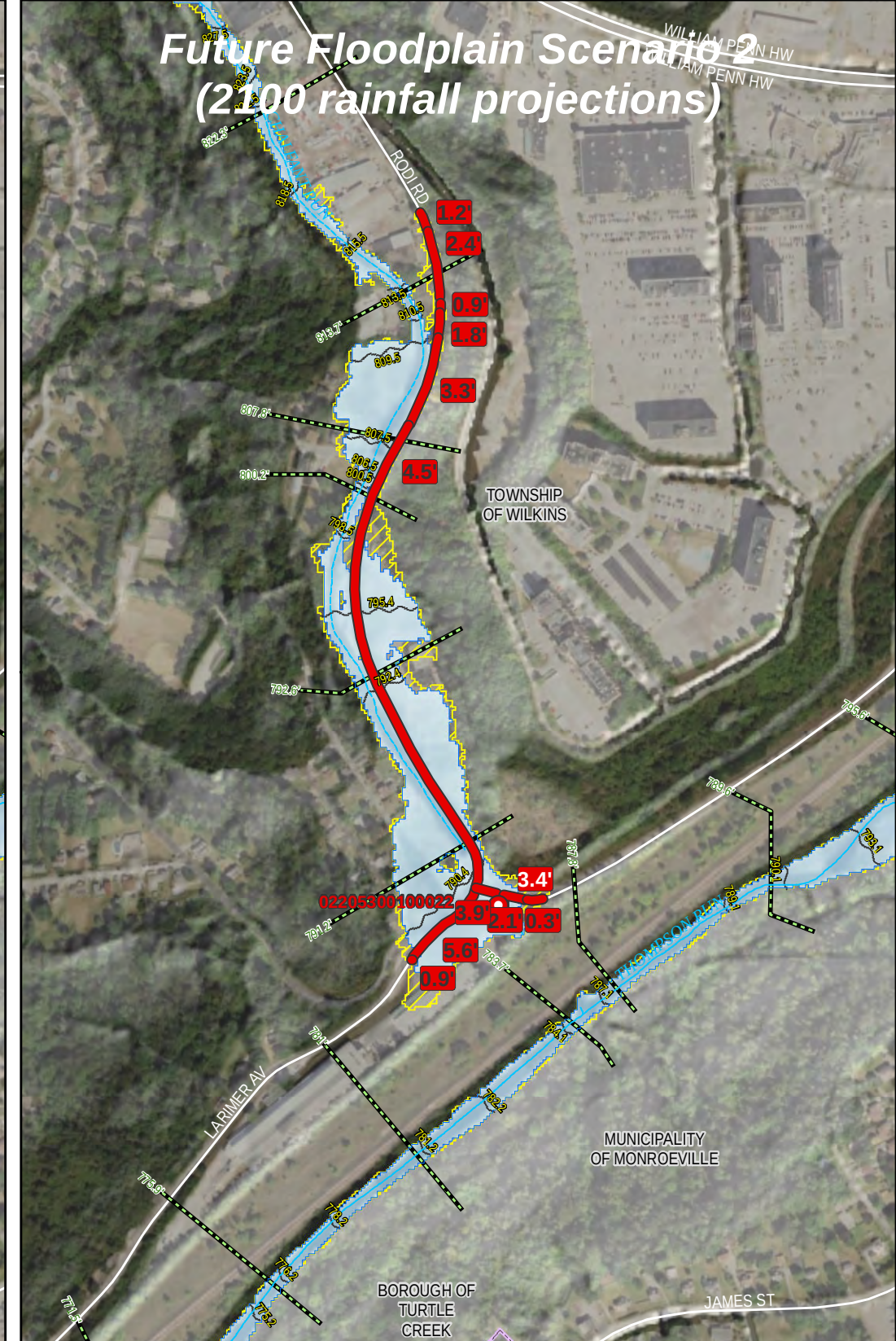
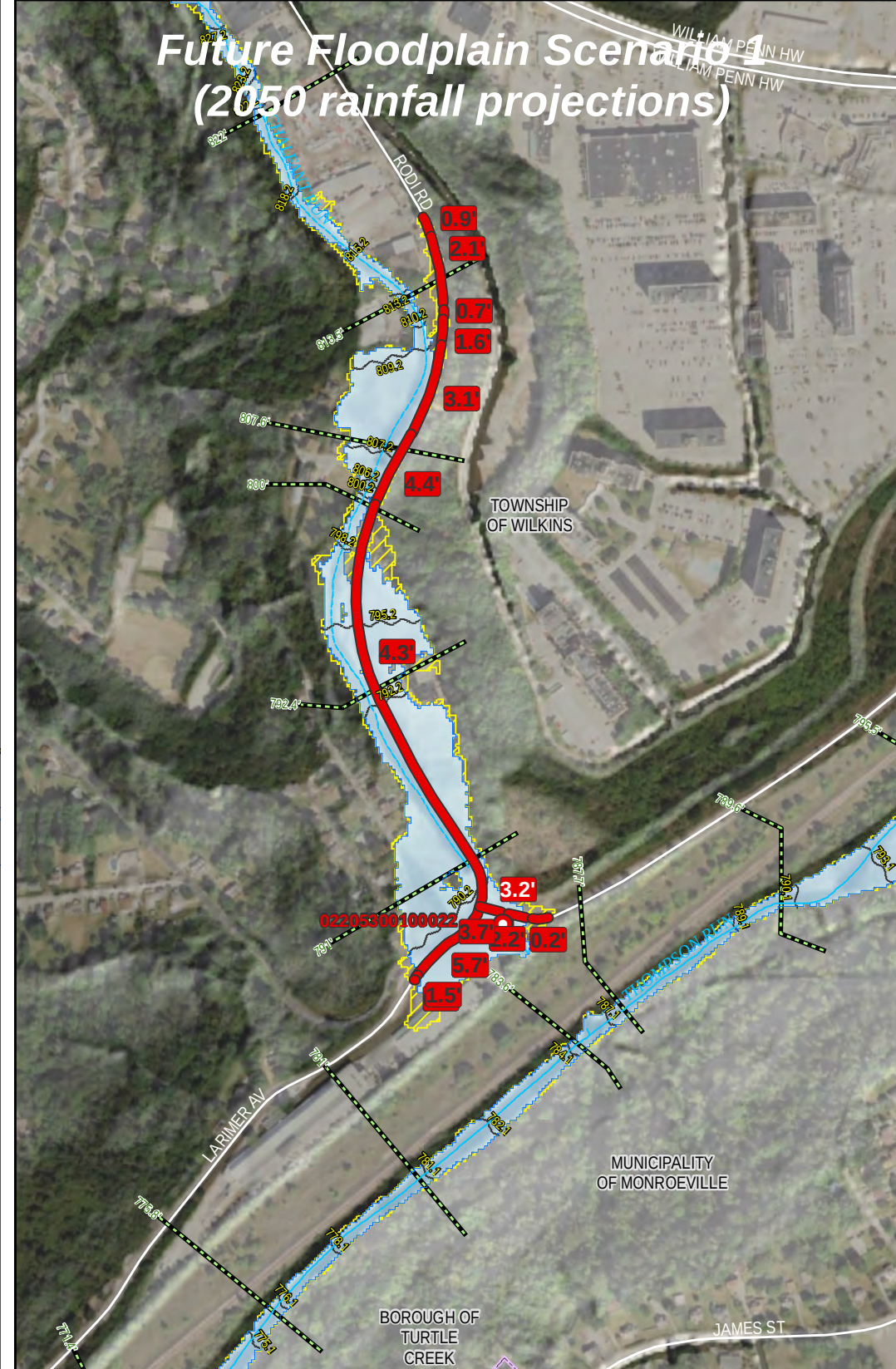
Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 151 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



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. CODY ST
	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

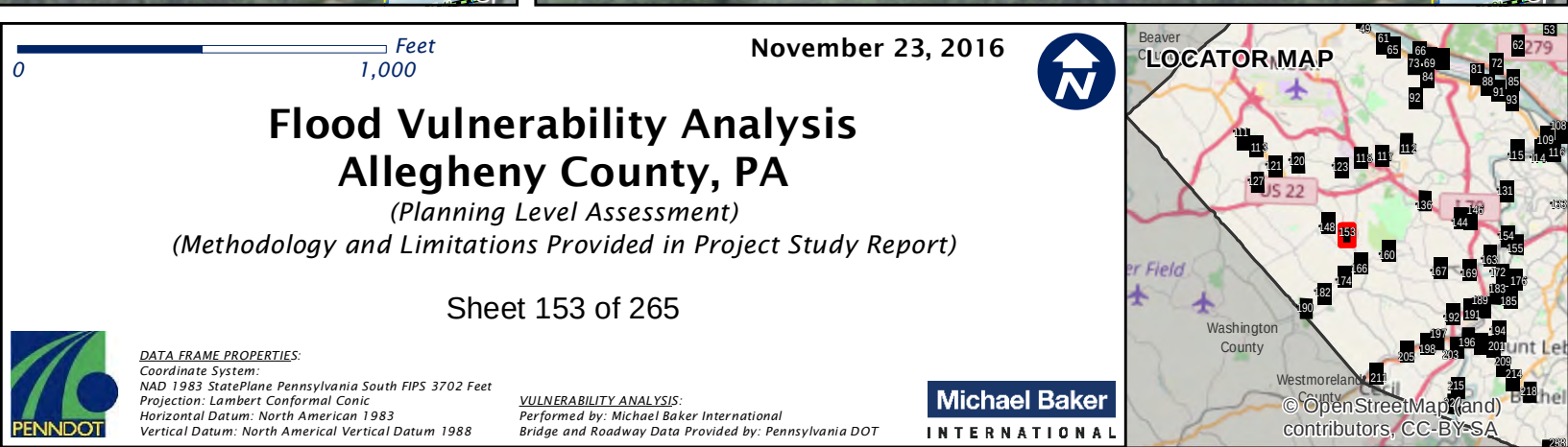
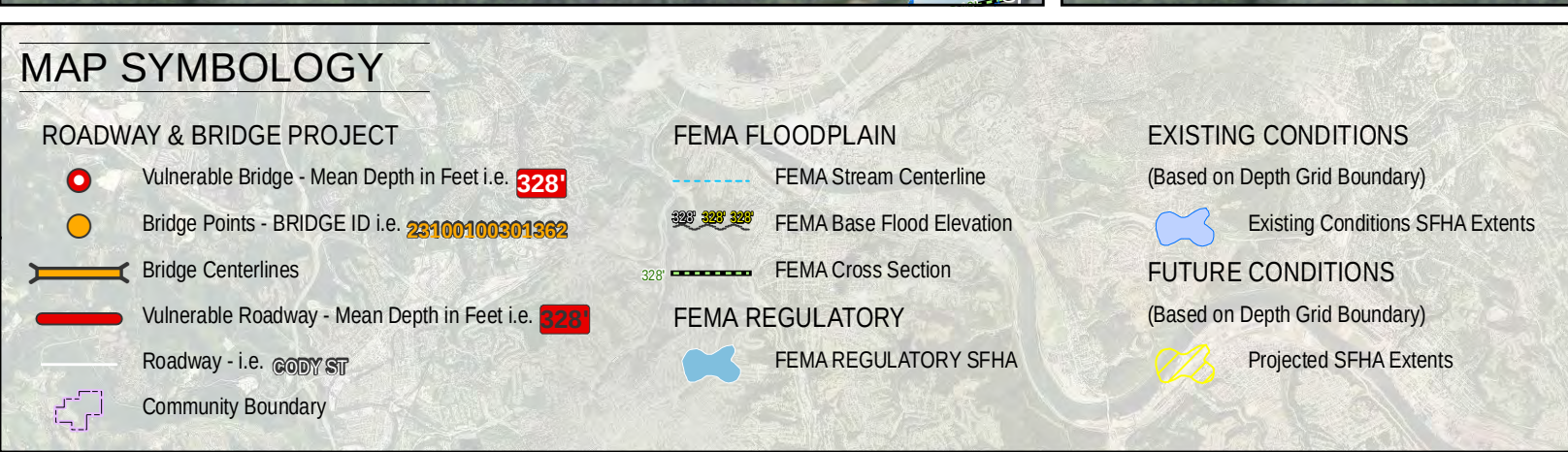
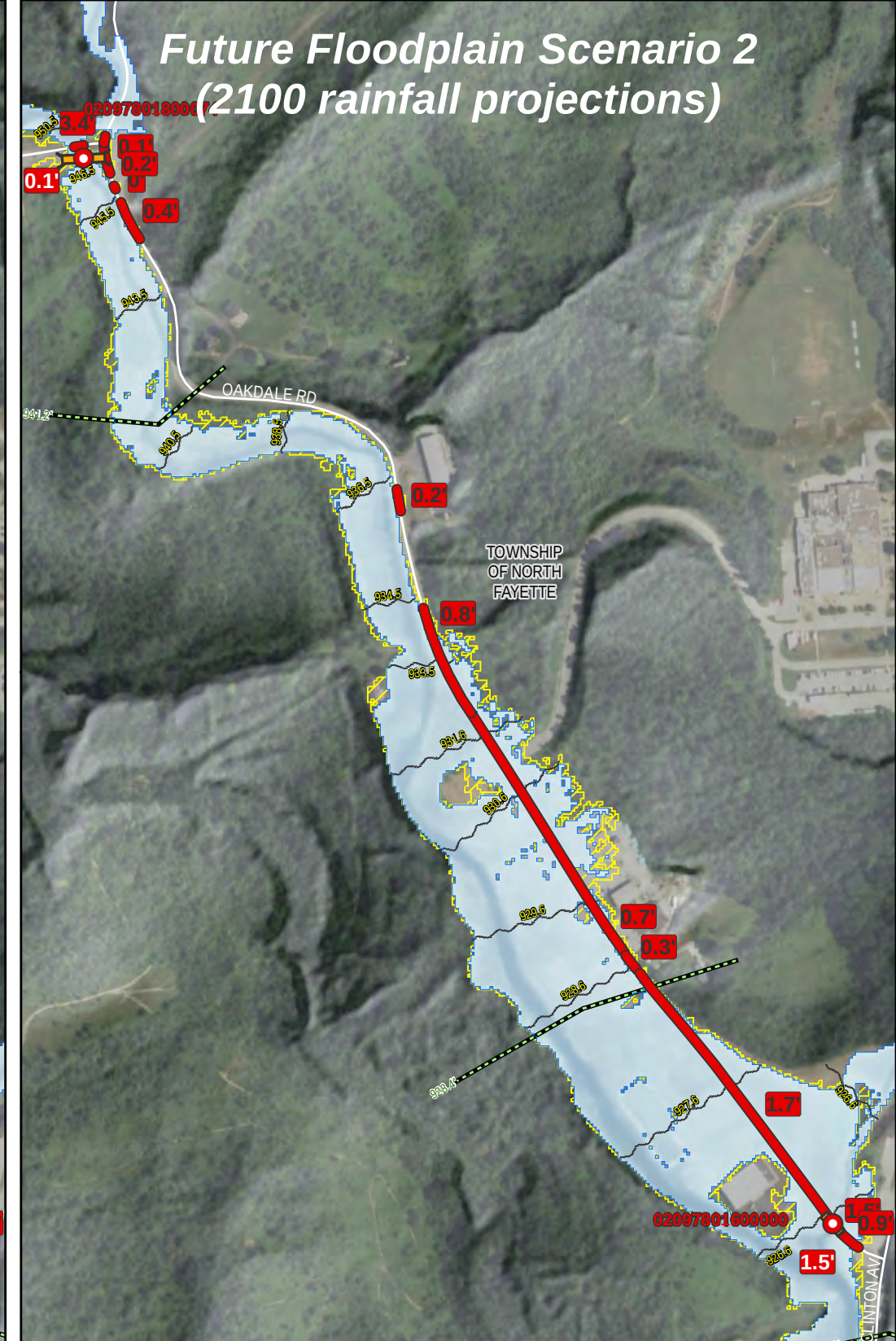
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

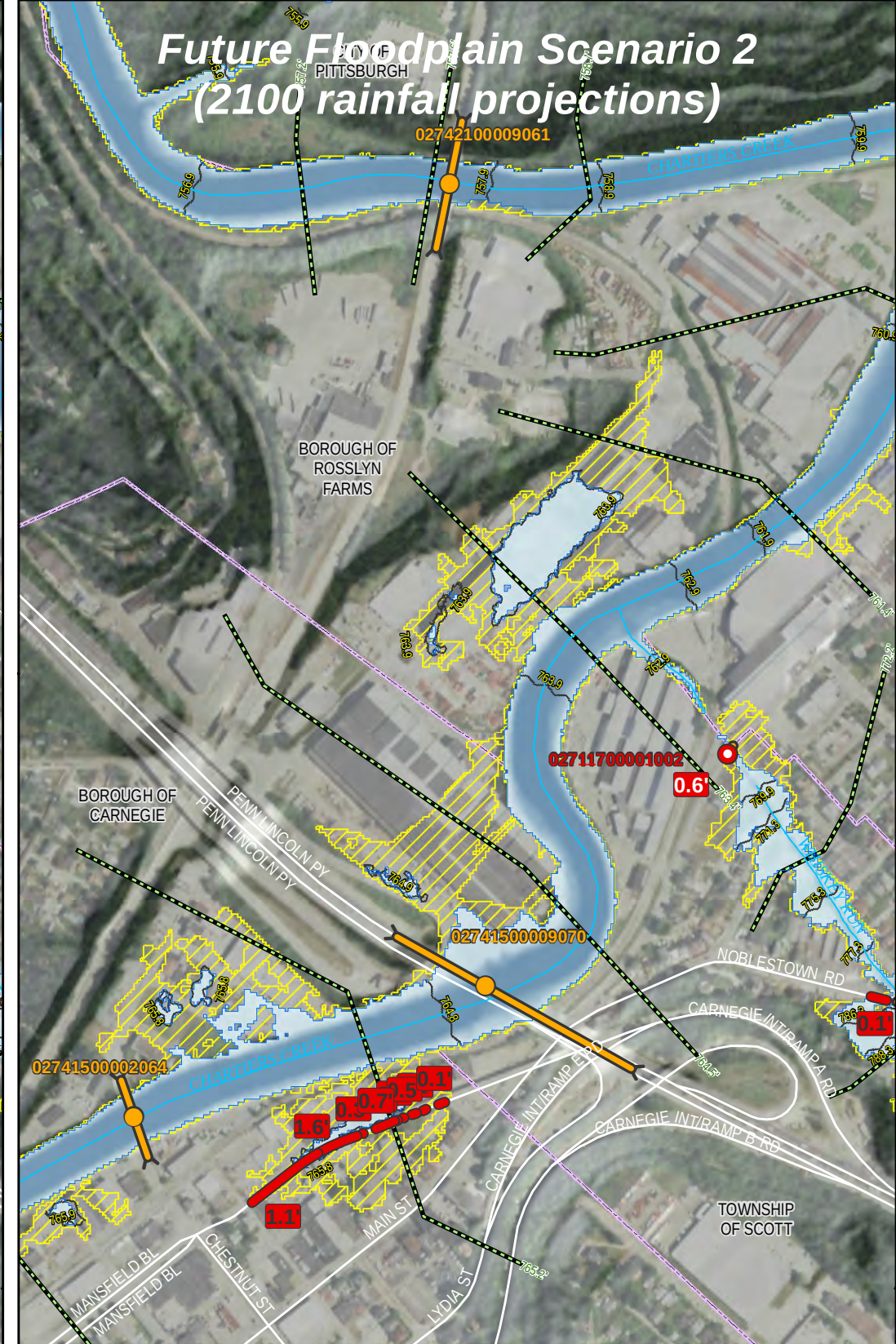
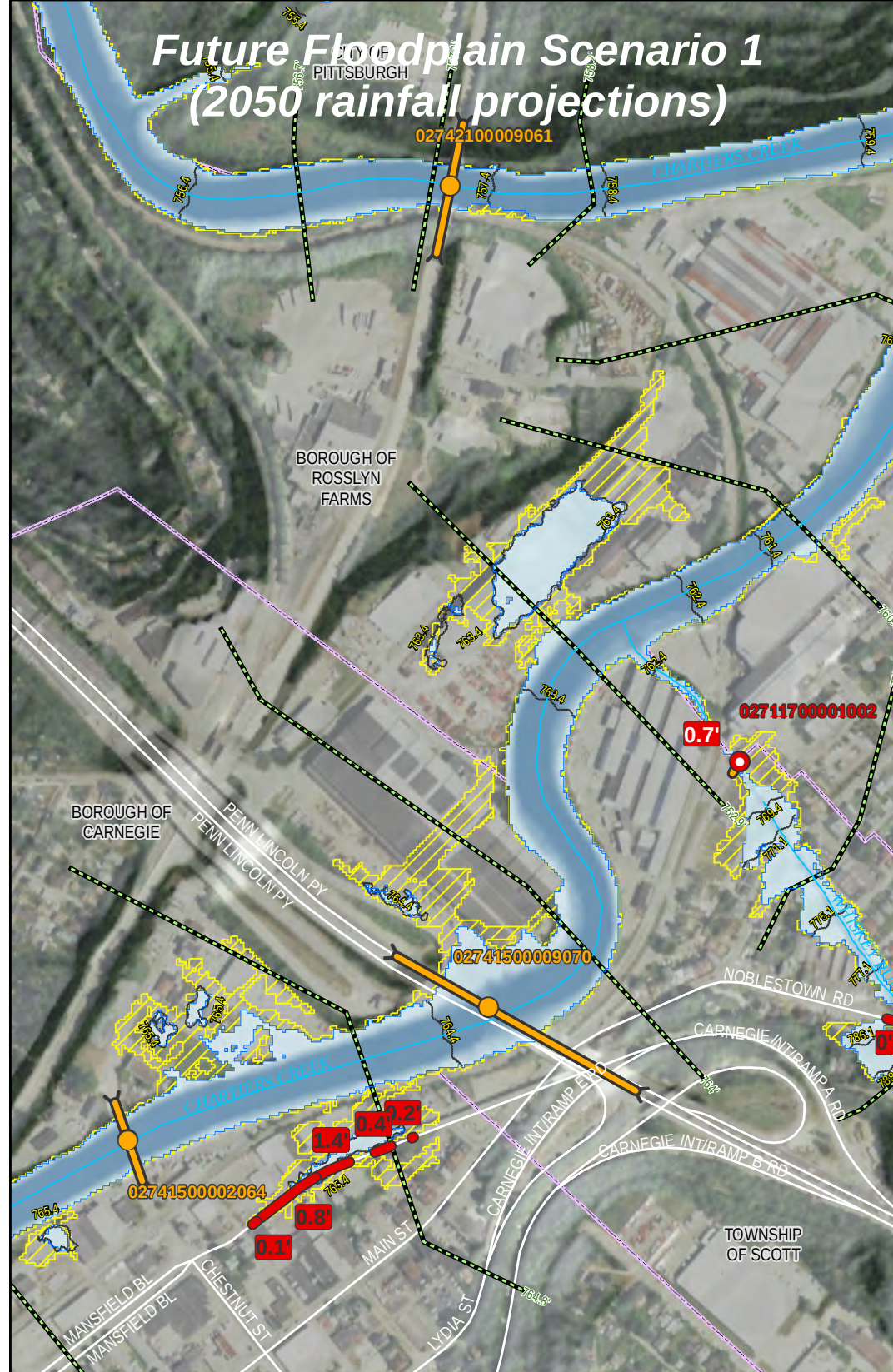
Sheet 152 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
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Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
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Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

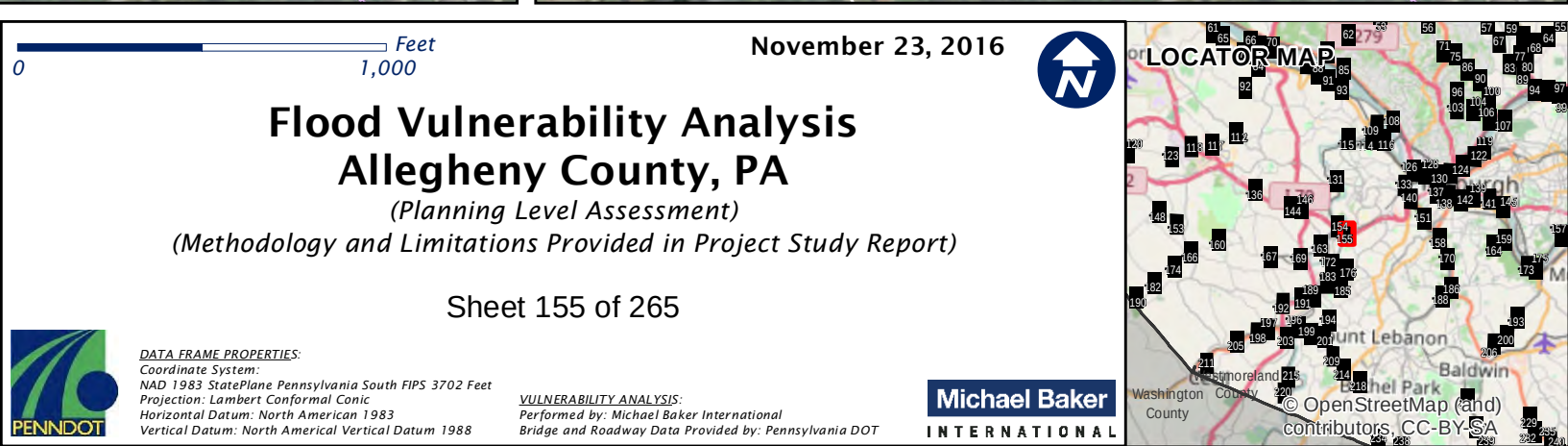
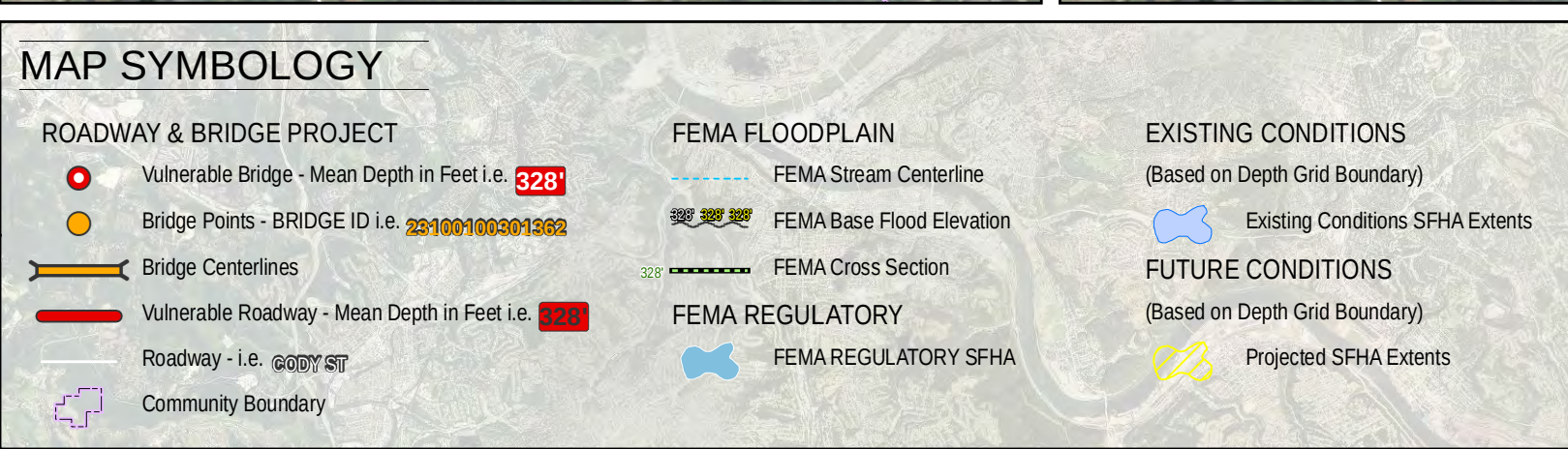
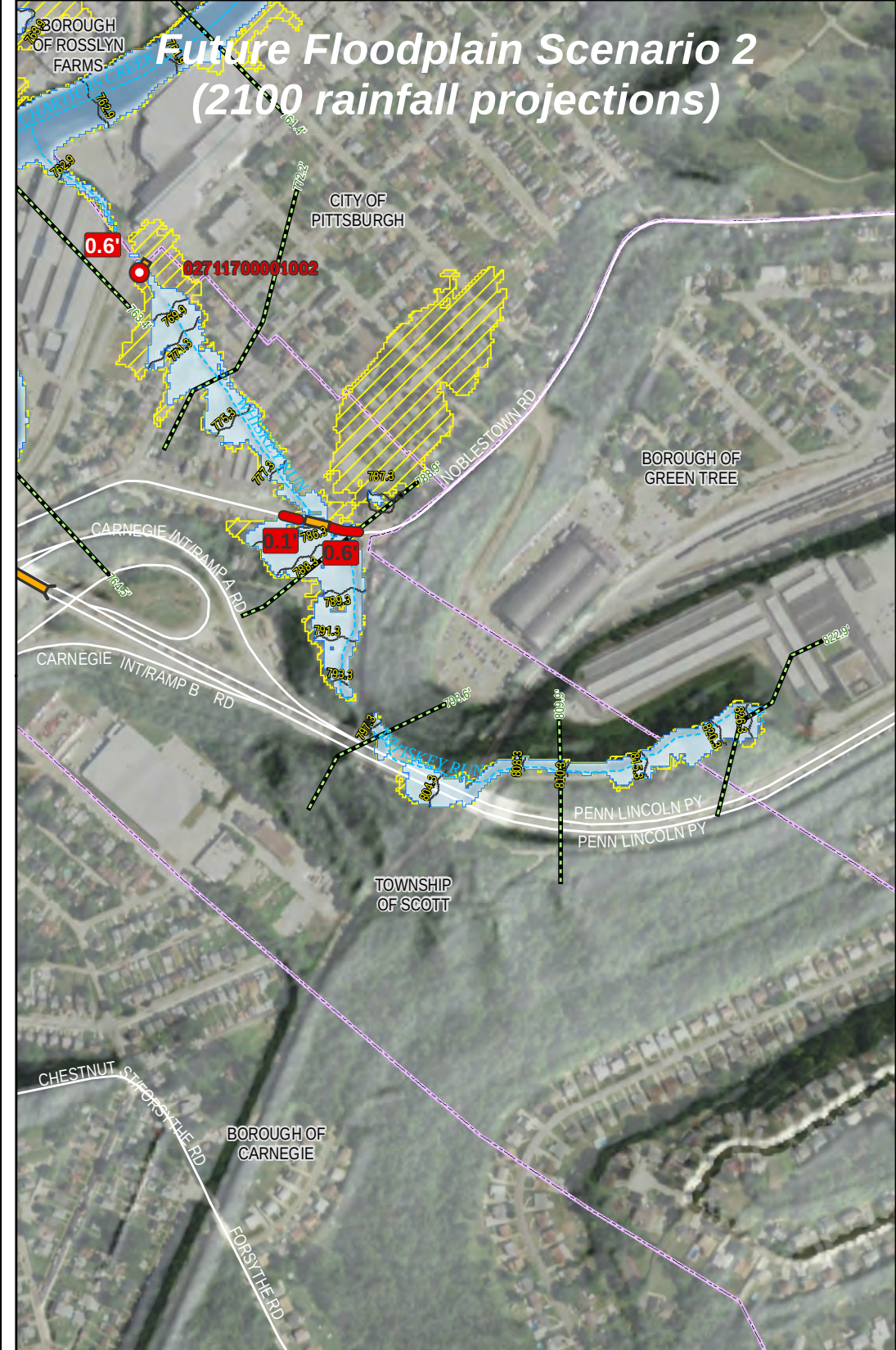
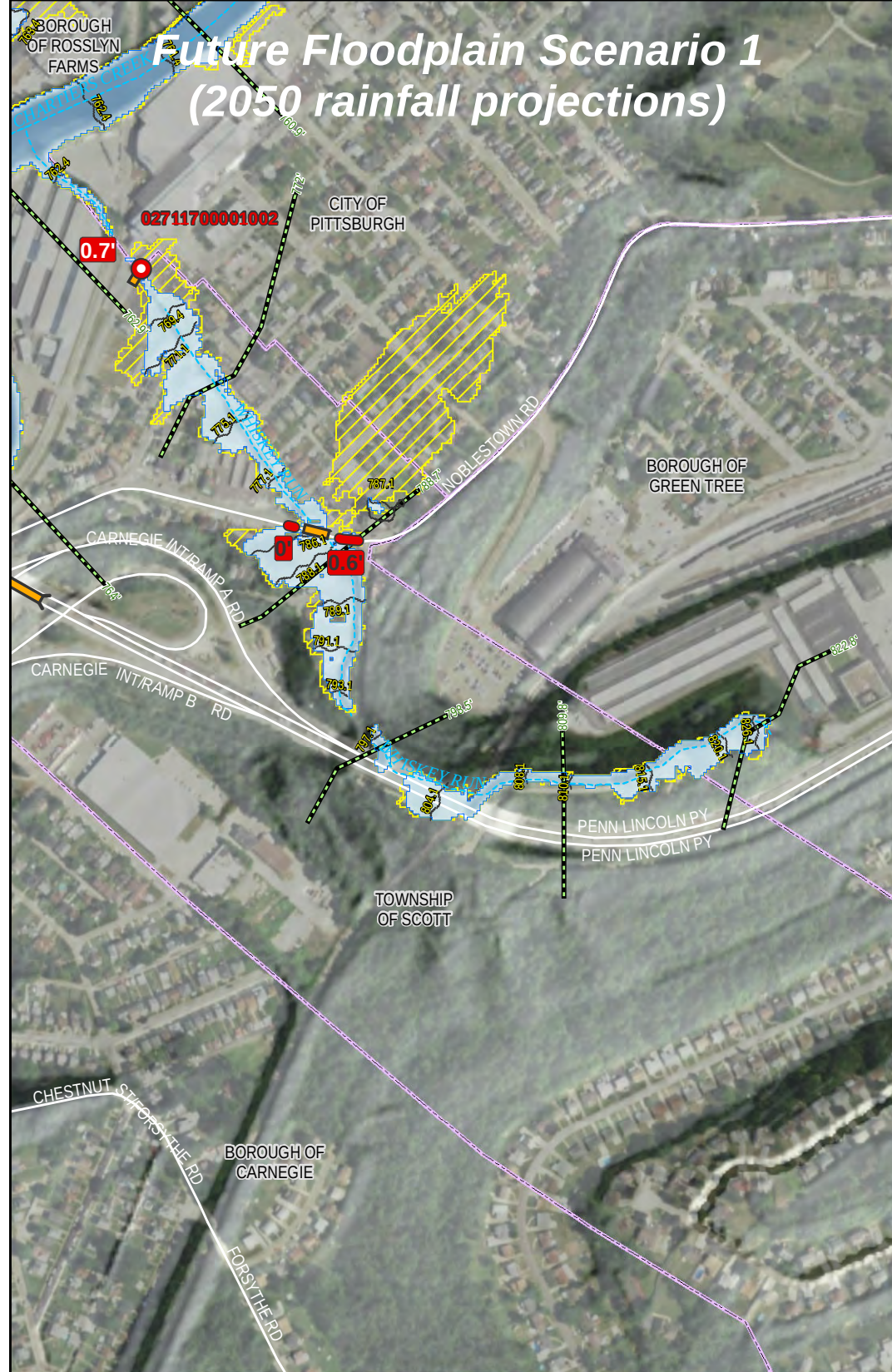
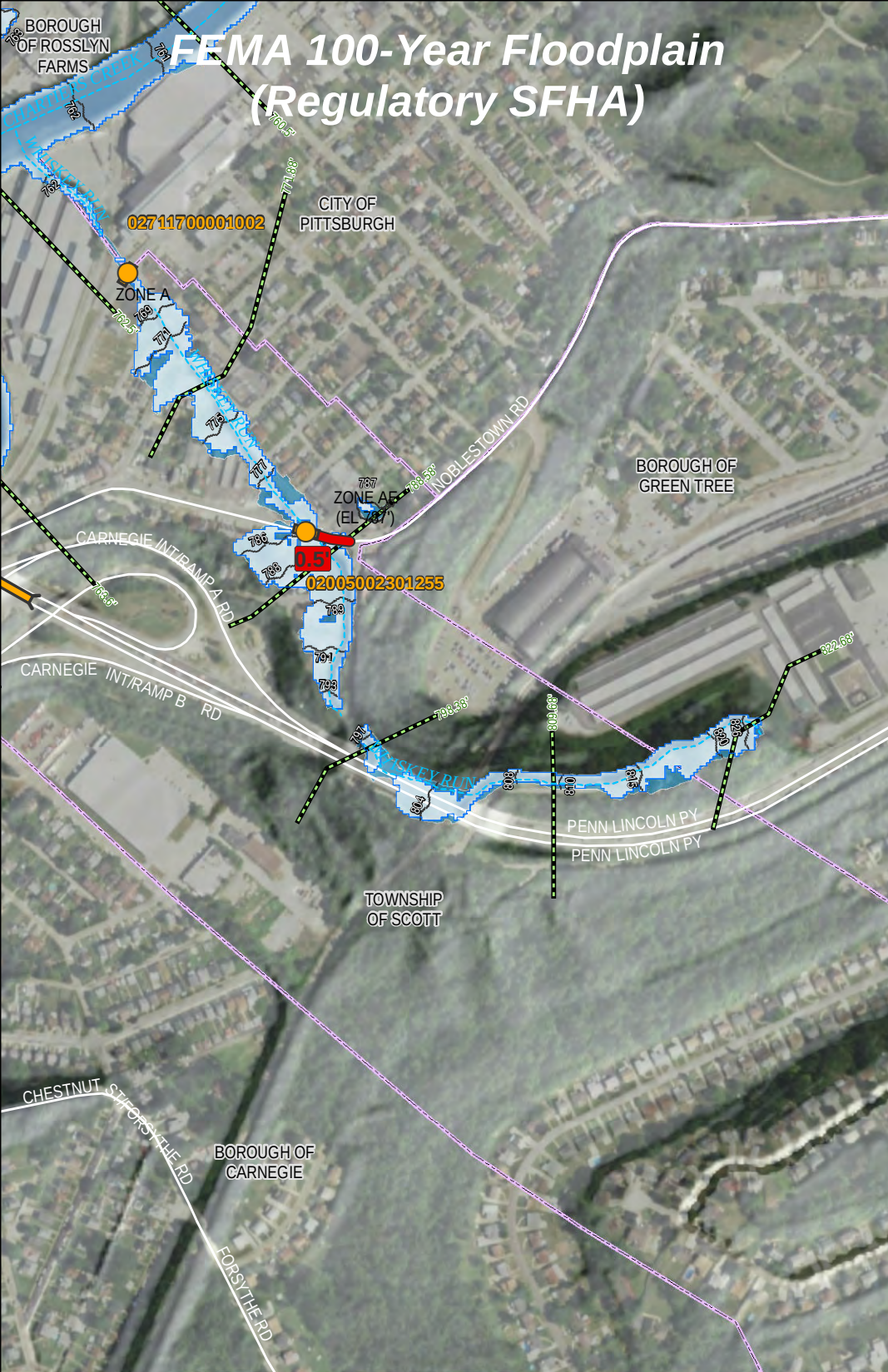
Flood Vulnerability Analysis Allegheny County, PA

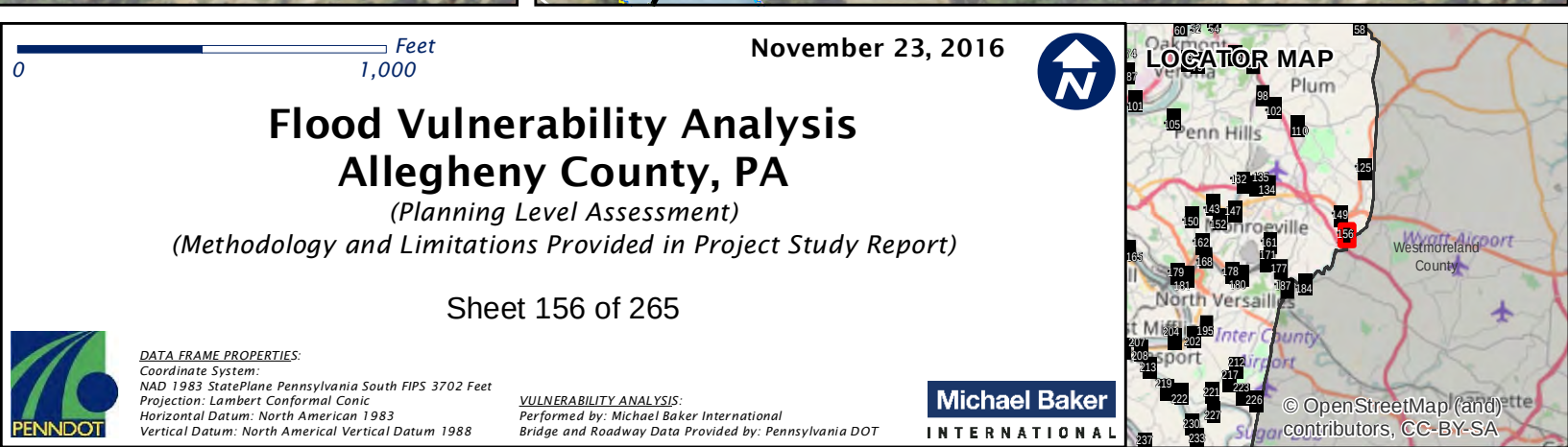
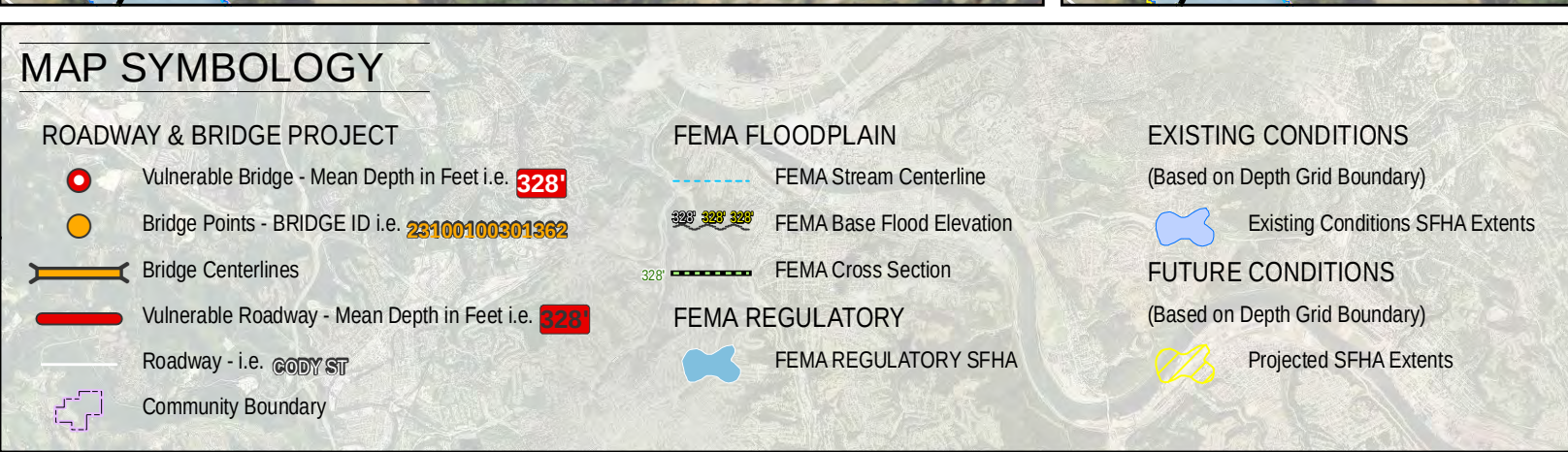
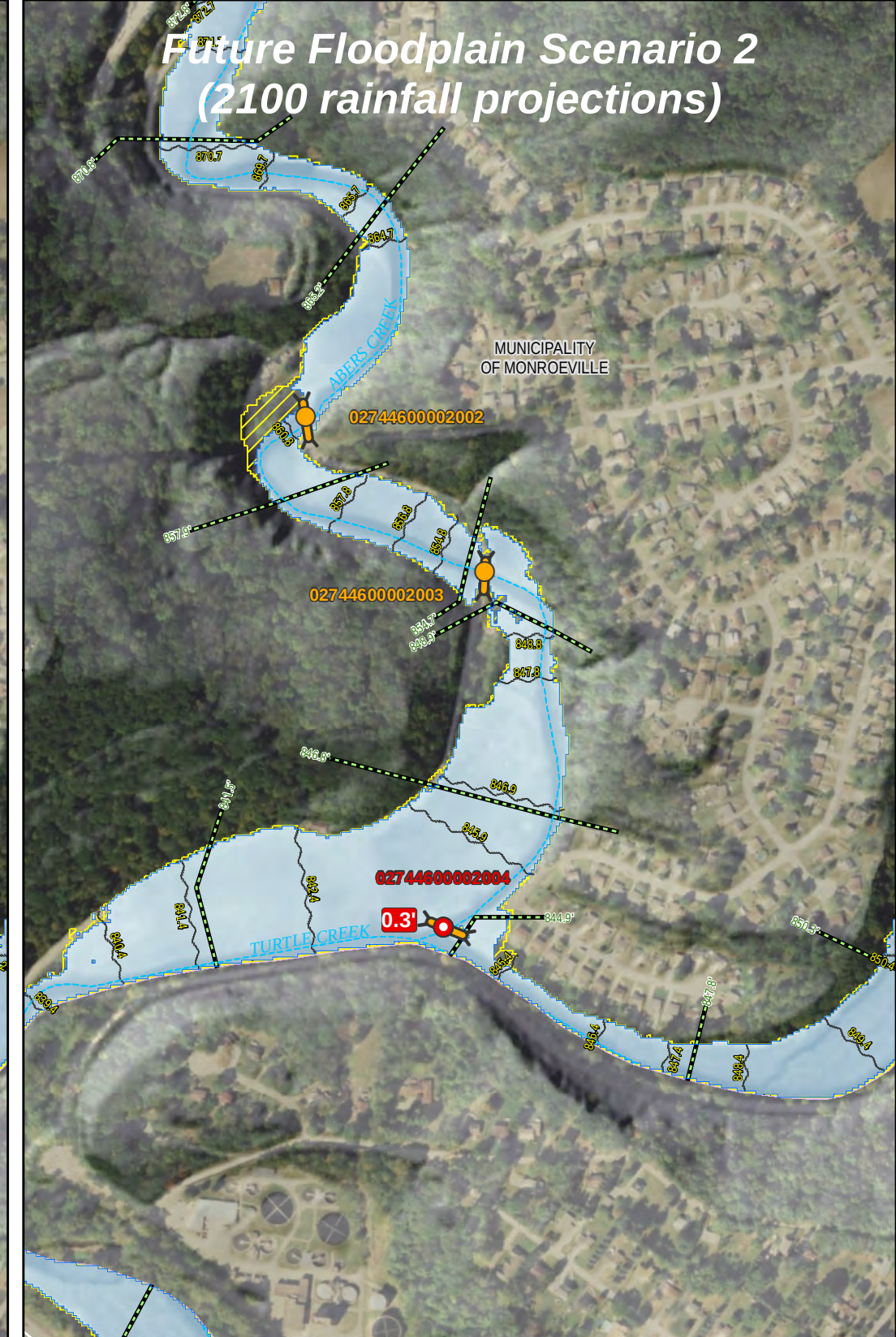
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 154 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT





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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

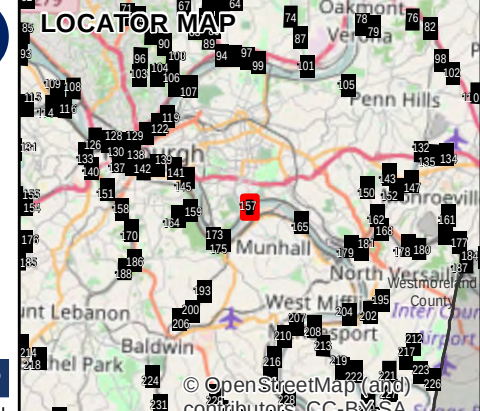
Sheet 157 of 265



DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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INTERNATIONAL**





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
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Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 159 of 265

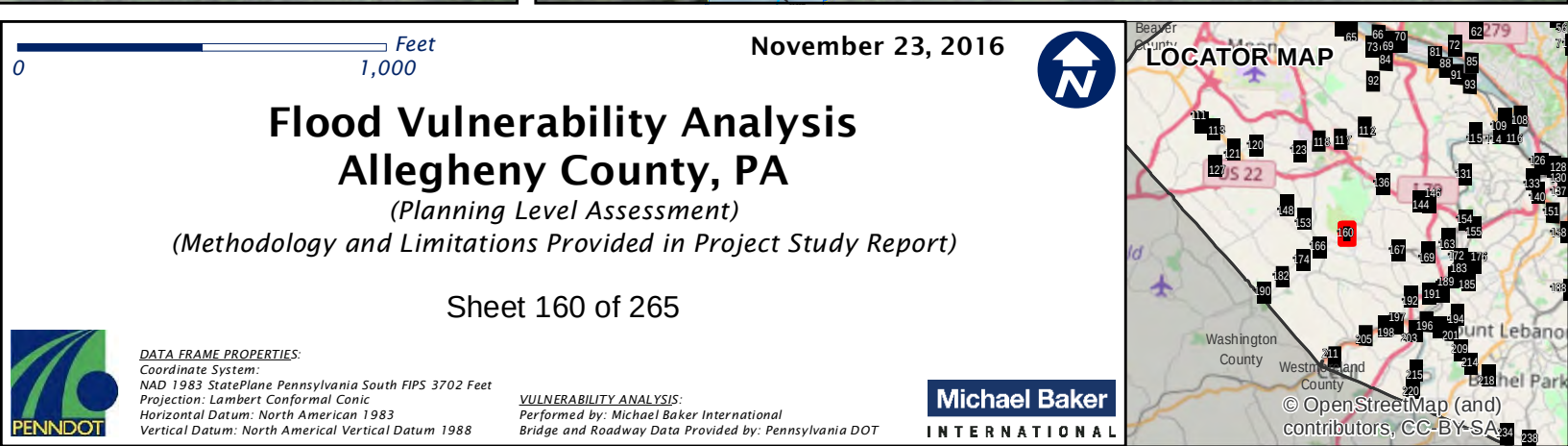
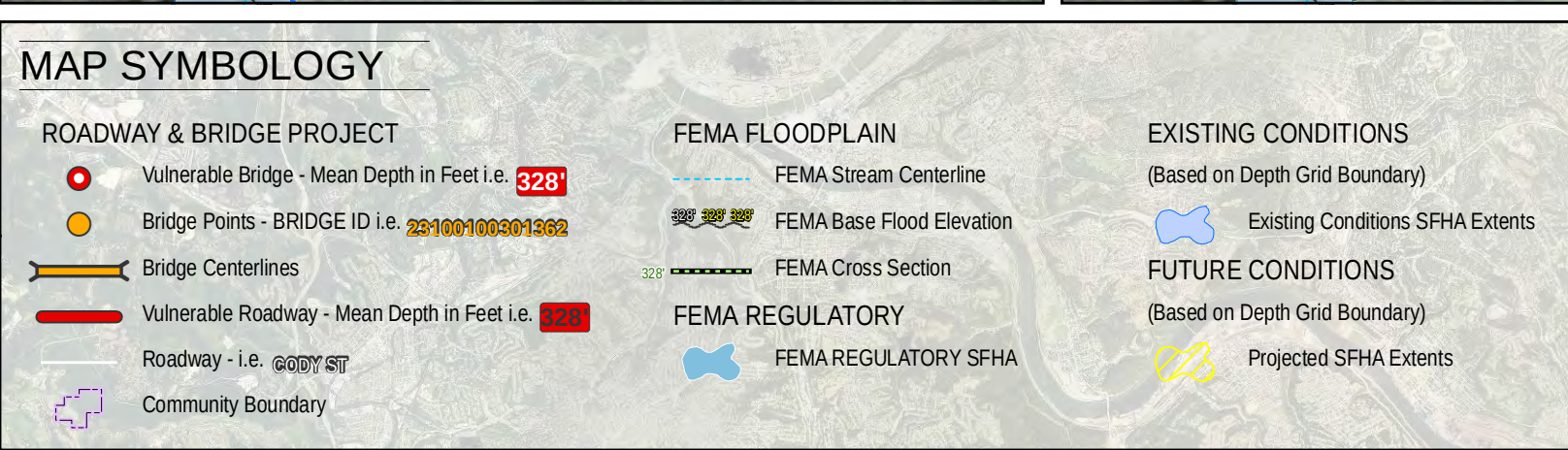
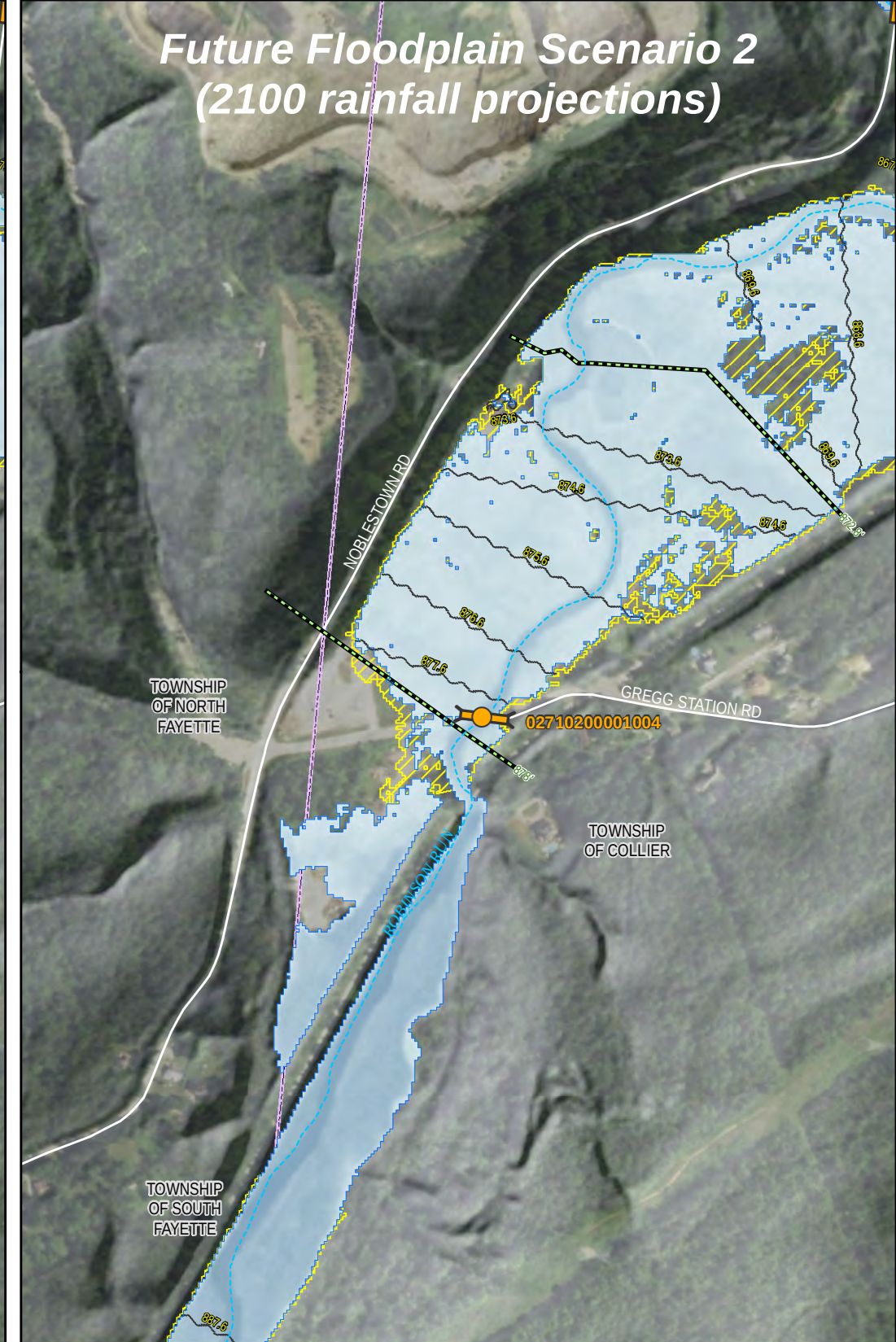
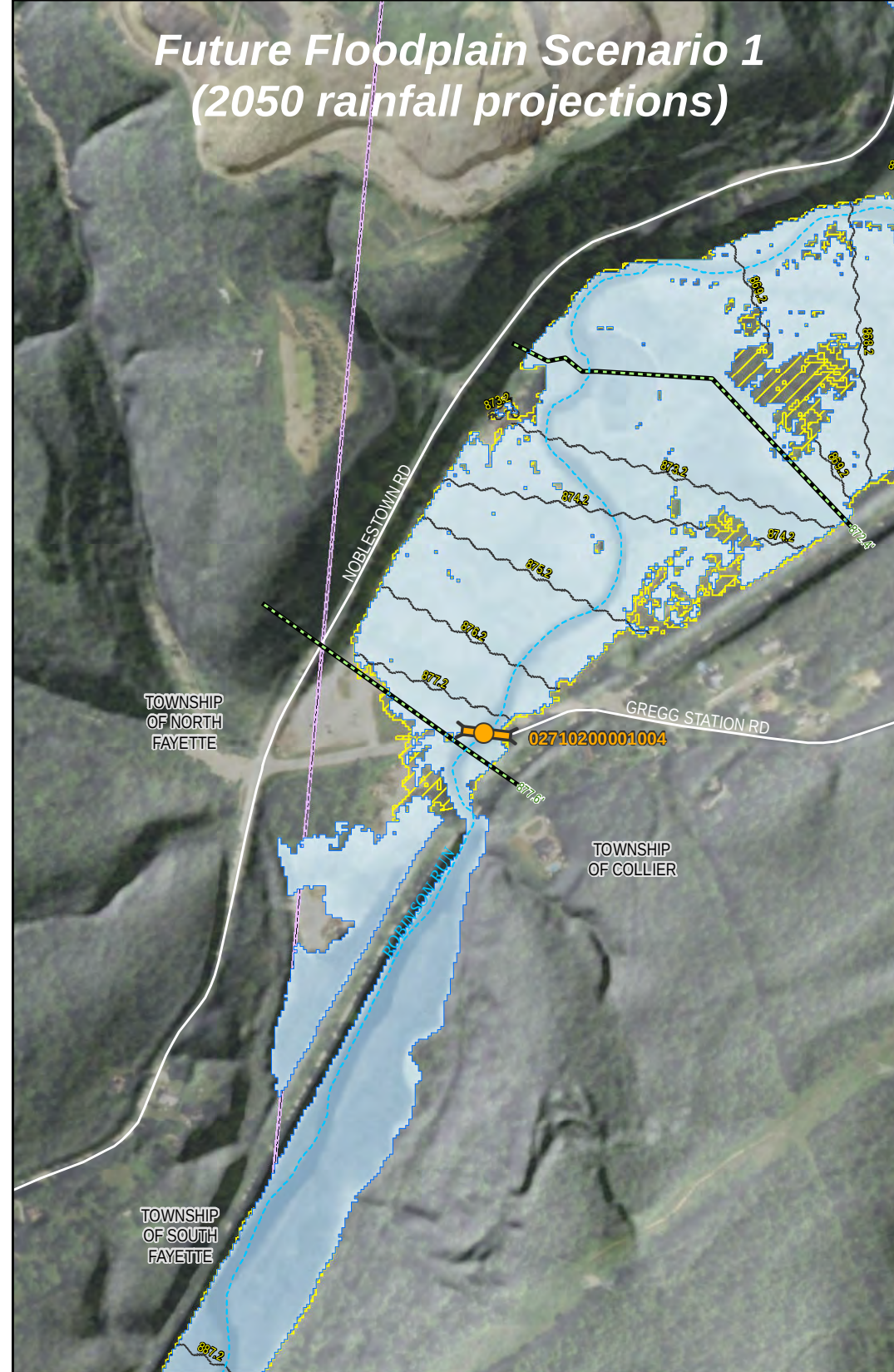
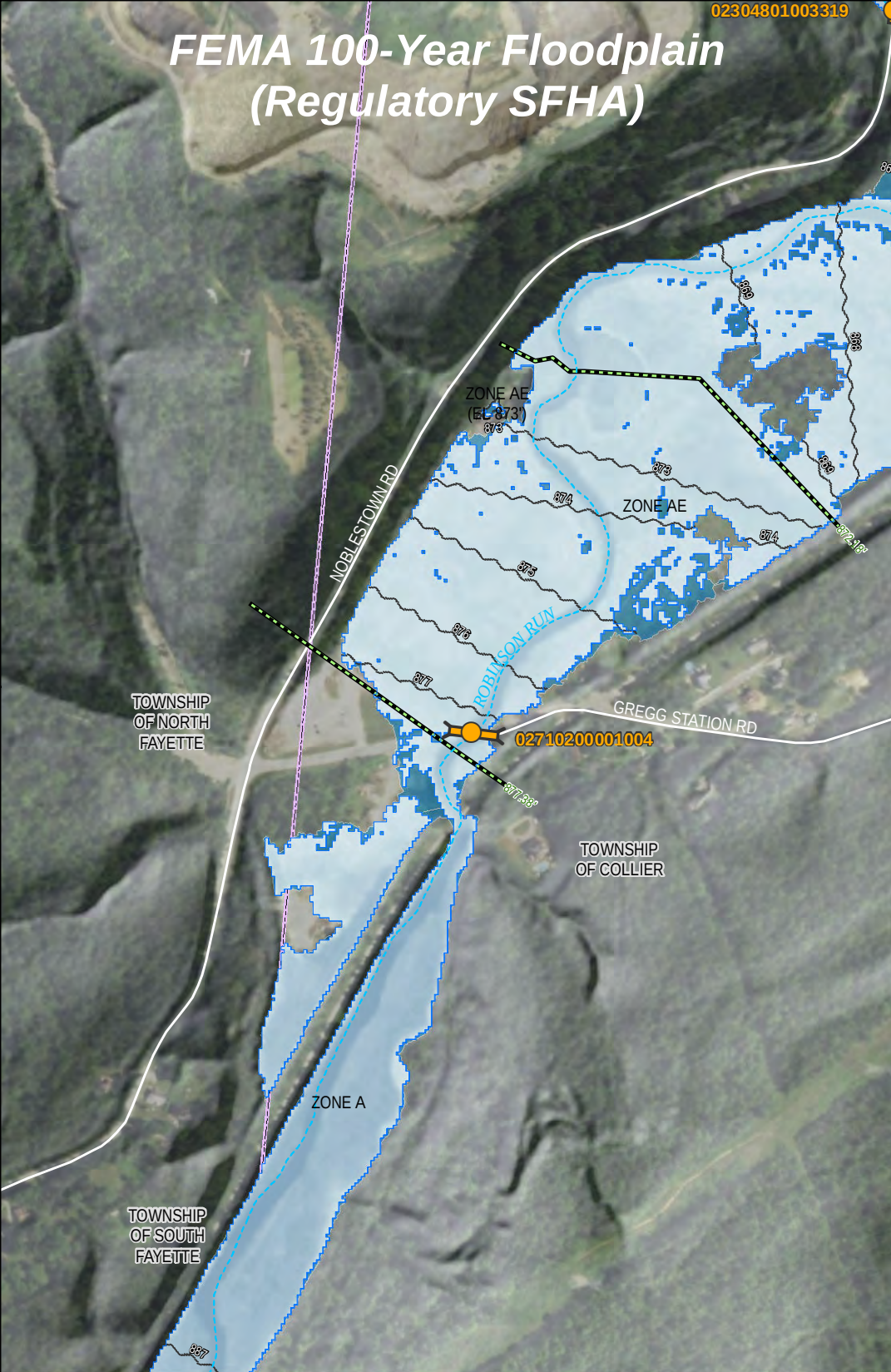
**Michael Baker
INTERNATIONAL**

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

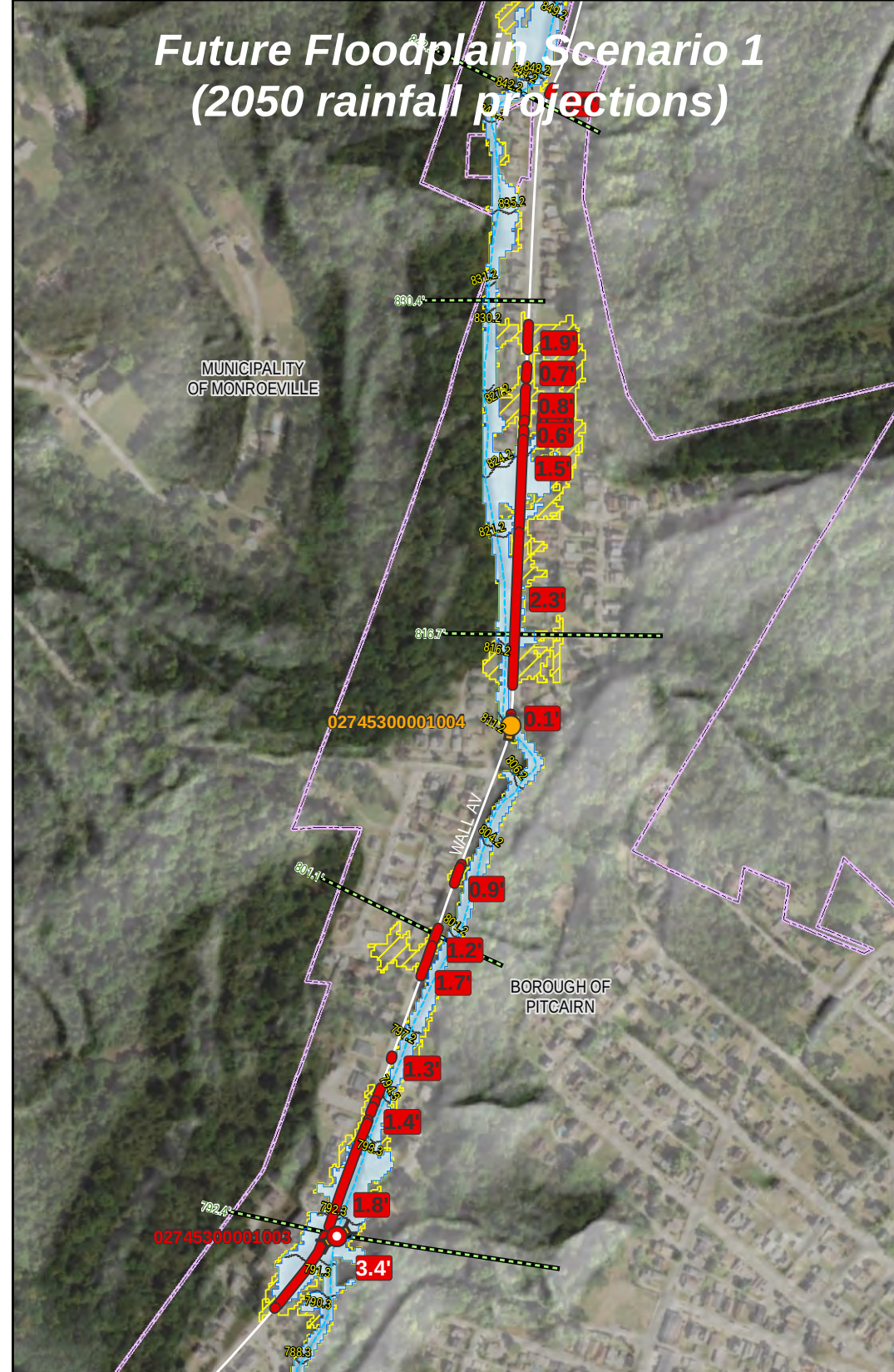
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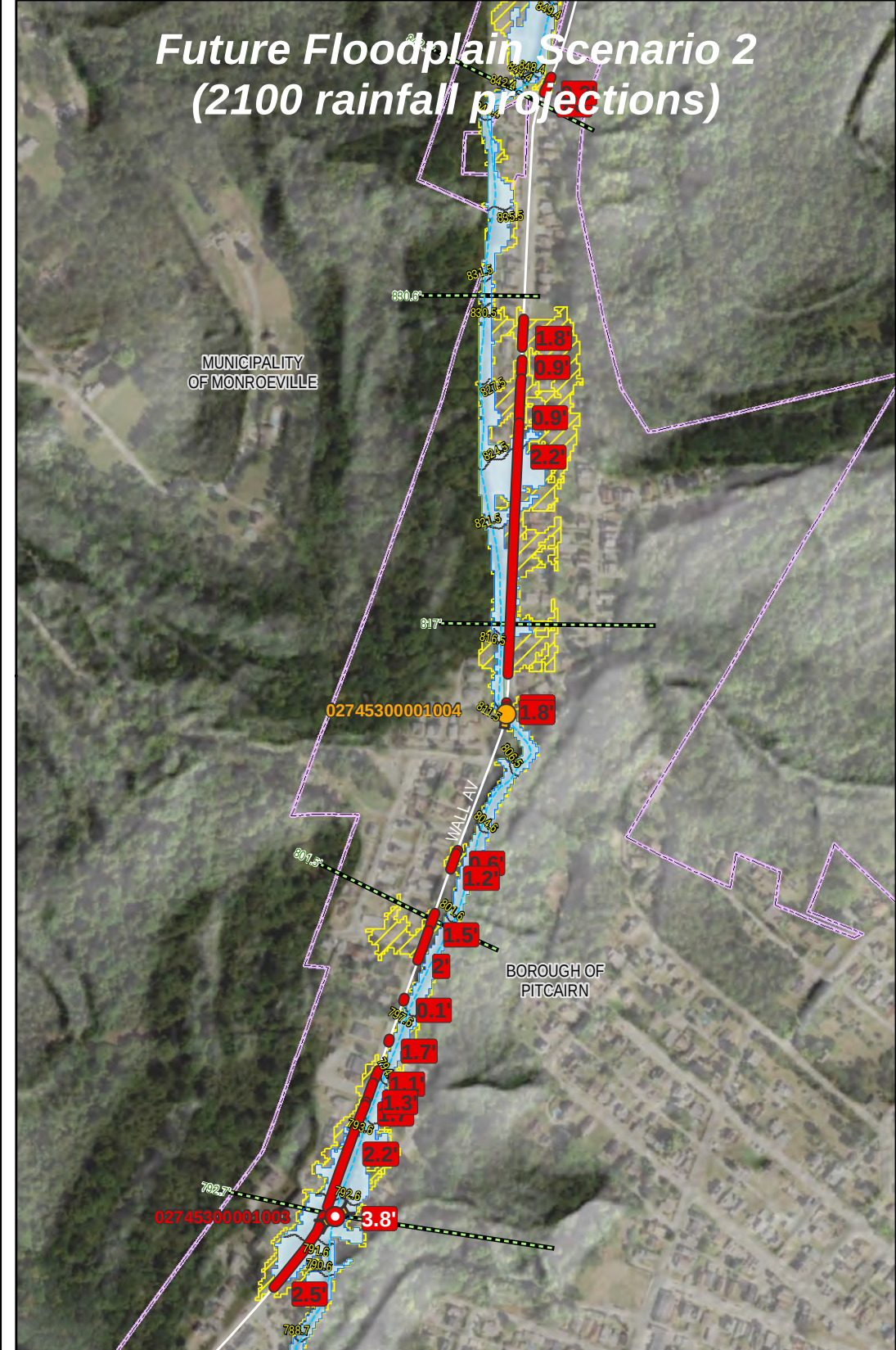
FEMA 100-Year Floodplain (Regulatory SFHA)



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
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- Roadway - i.e. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

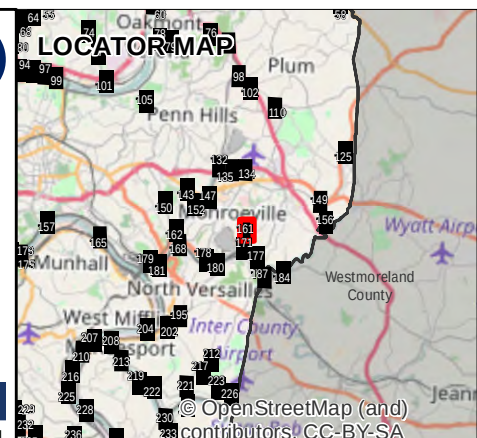
Sheet 161 of 265

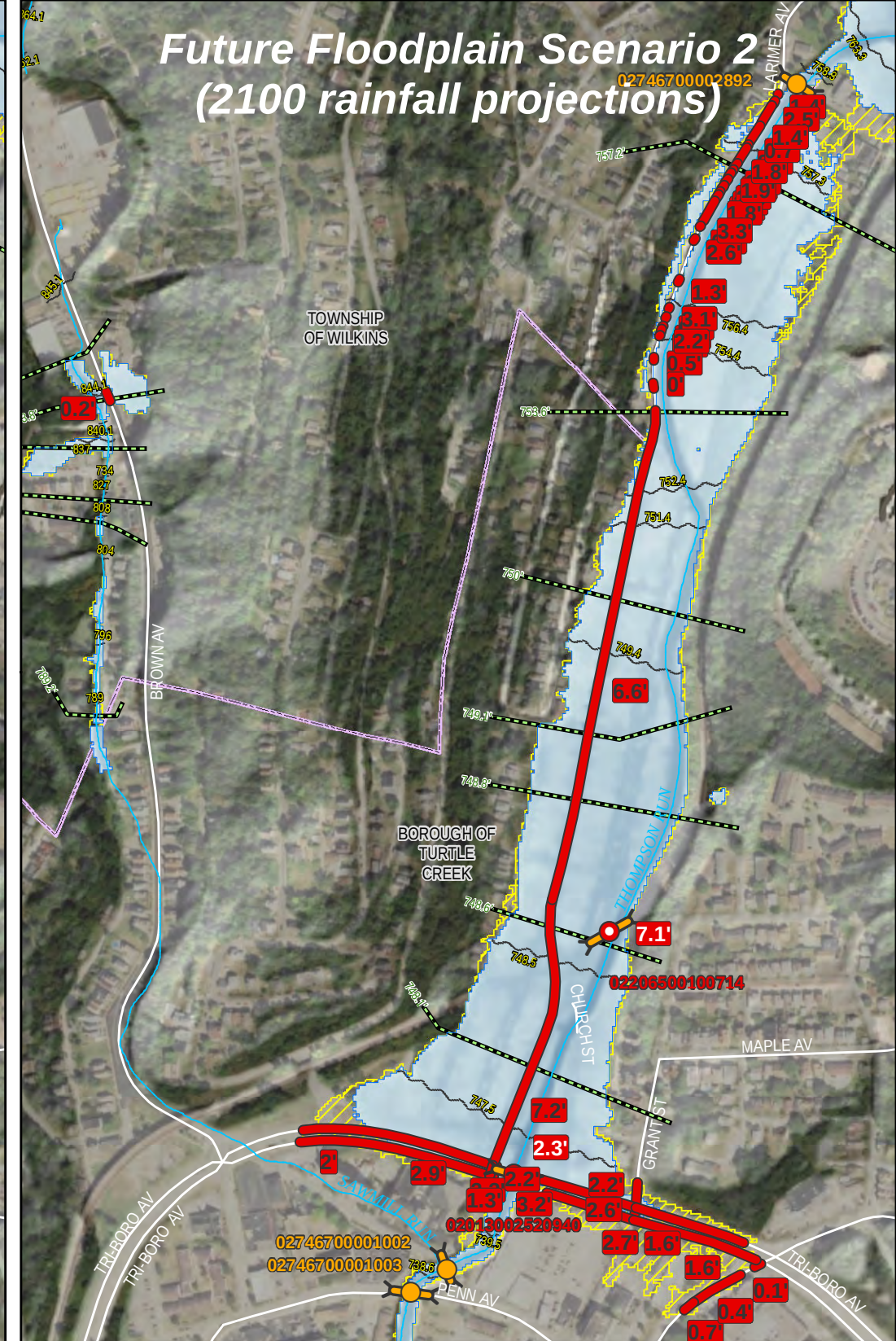
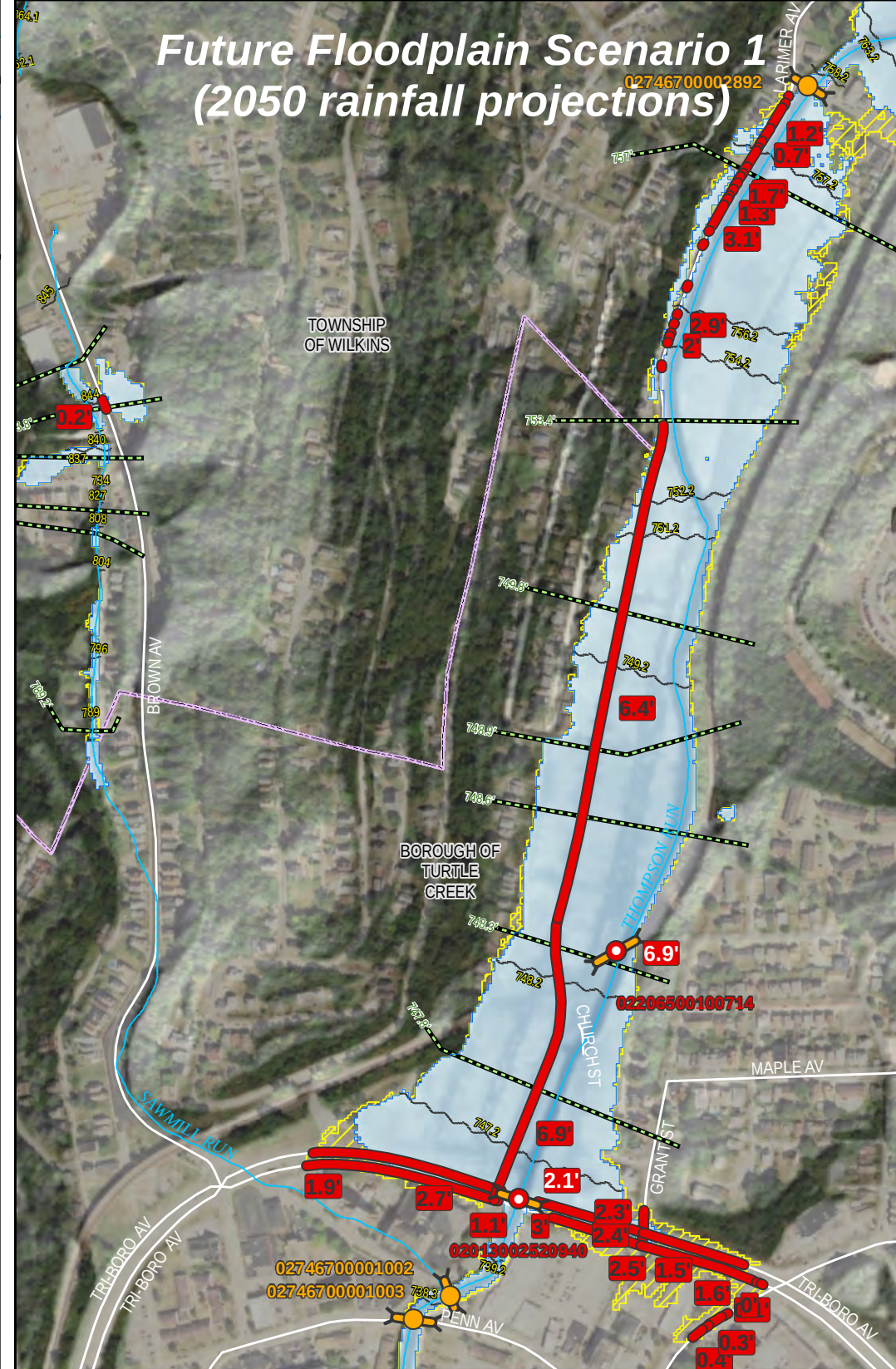
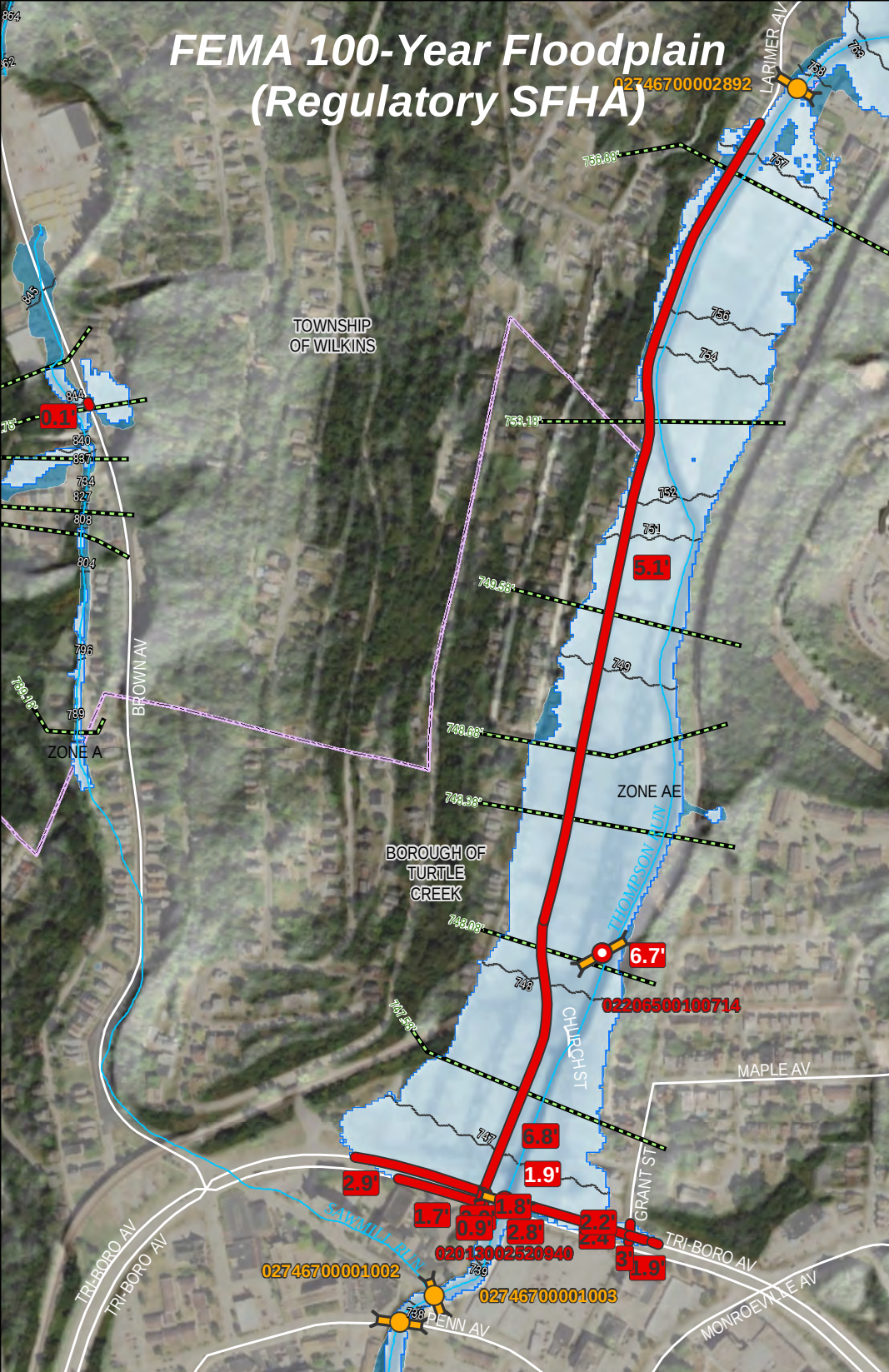


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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INTERNATIONAL





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
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Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. GODY ST	FEMA REGULATORY SFHA	
Community Boundary		

0 Feet
1,000

Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 162 of 265

November 23, 2016

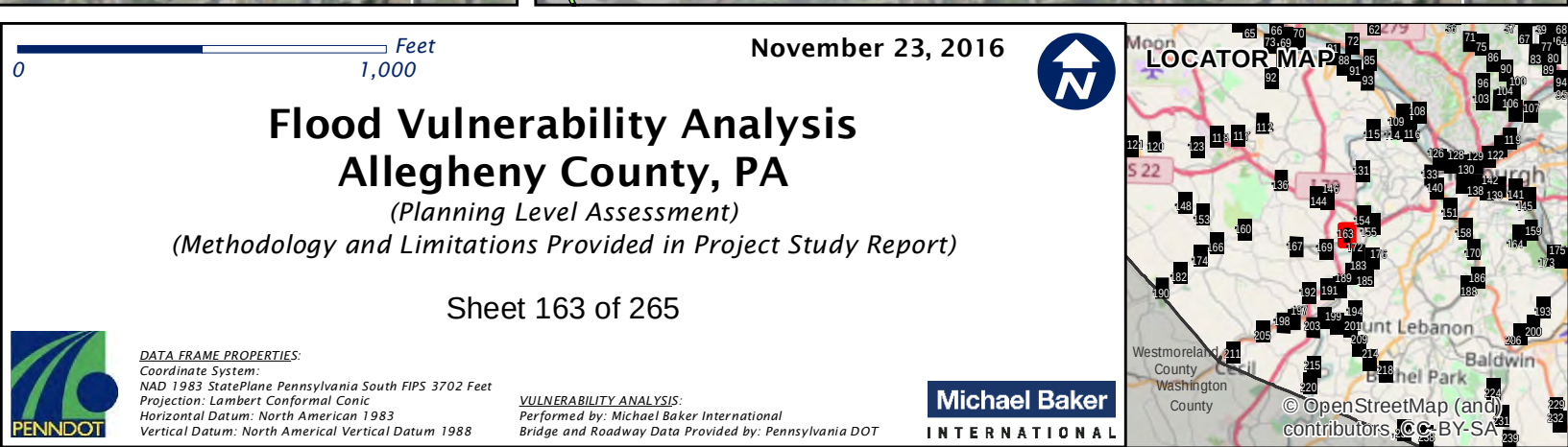
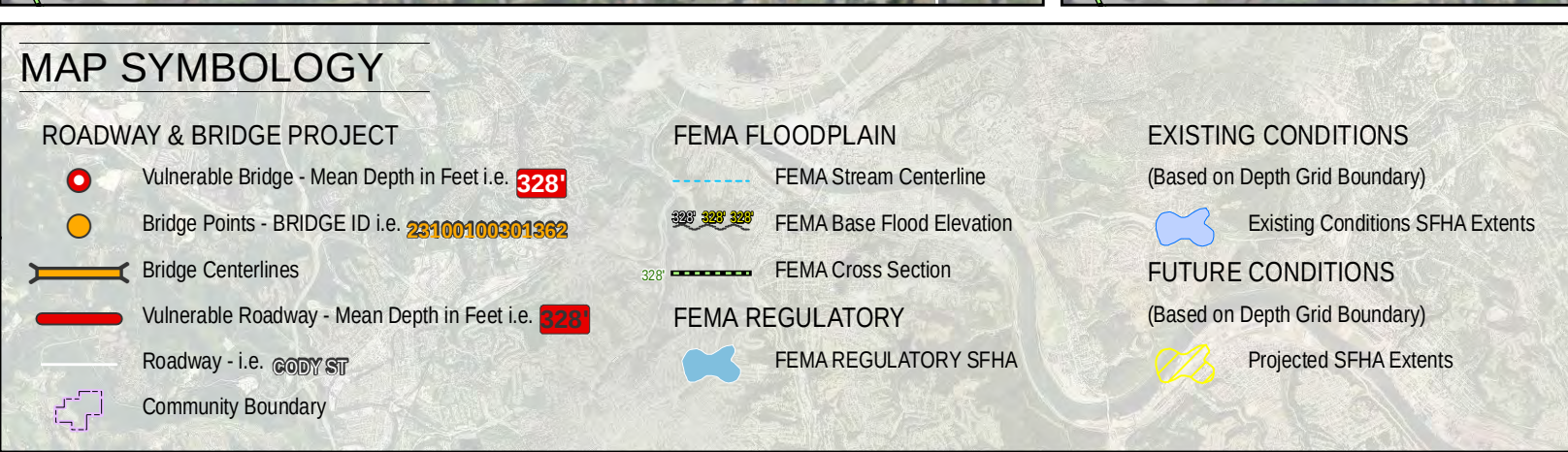
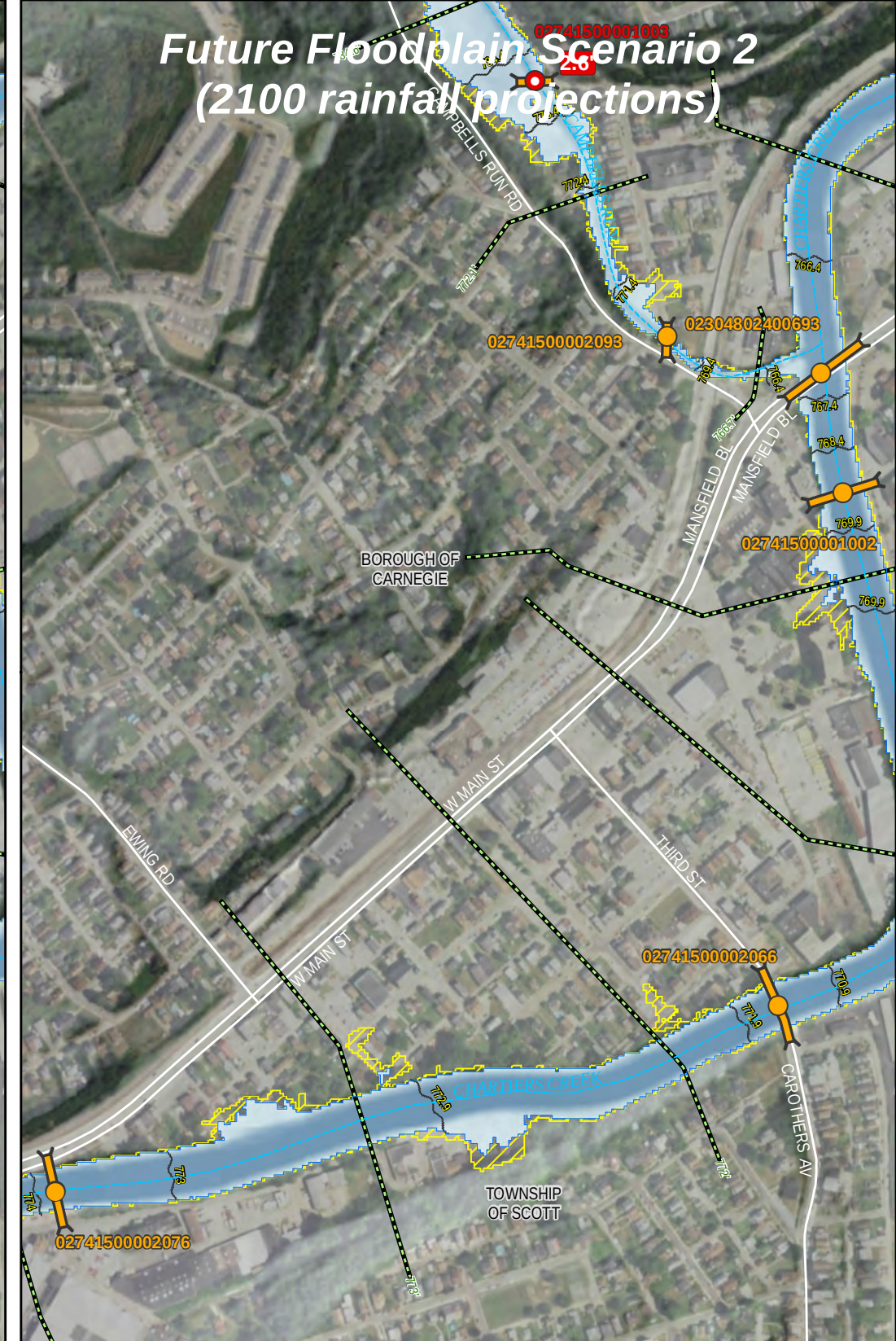
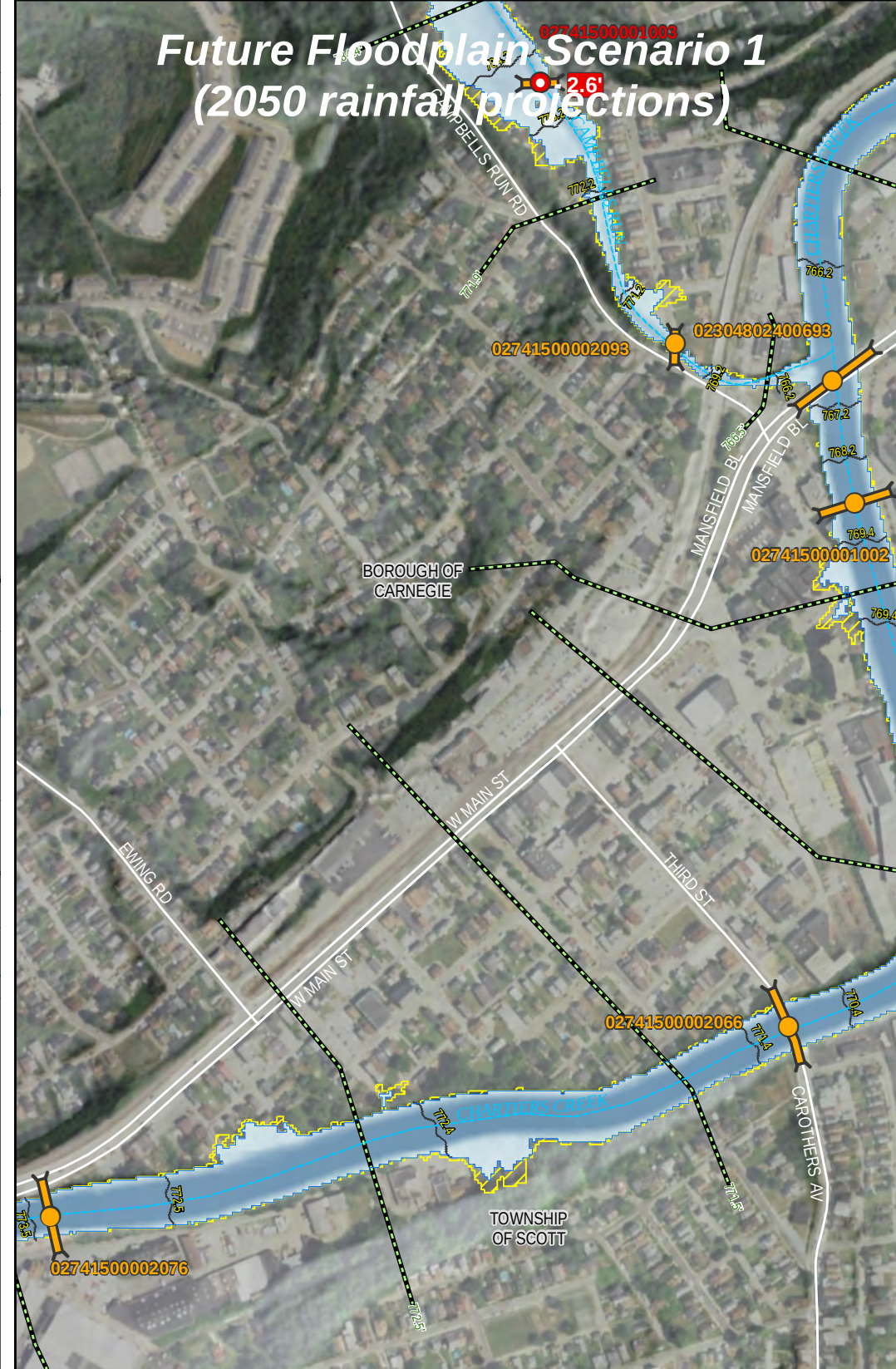
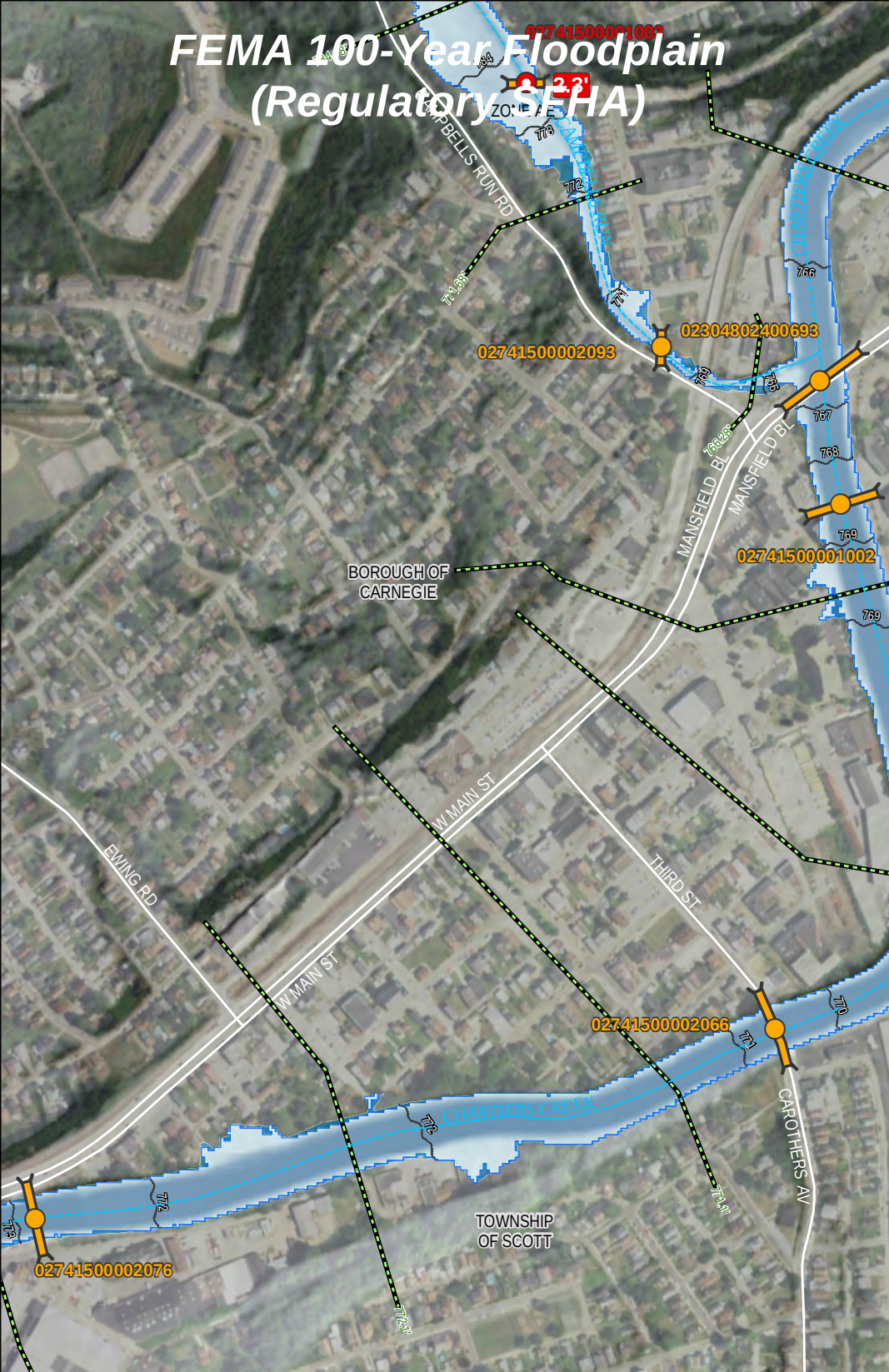
Michael Baker INTERNATIONAL

LOCATOR MAP

DATA FRAME PROPERTIES:
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NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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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'**
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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

0 Feet
1,000

November 23, 2016



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

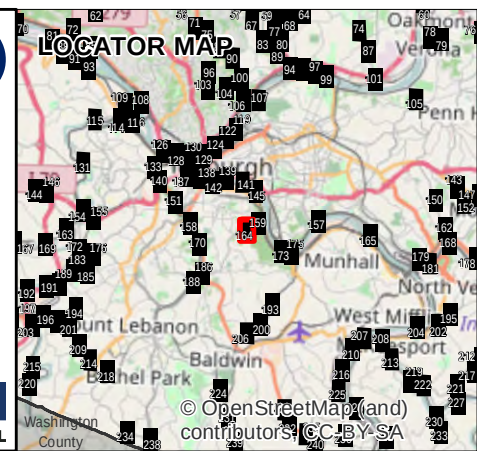
Sheet 164 of 265

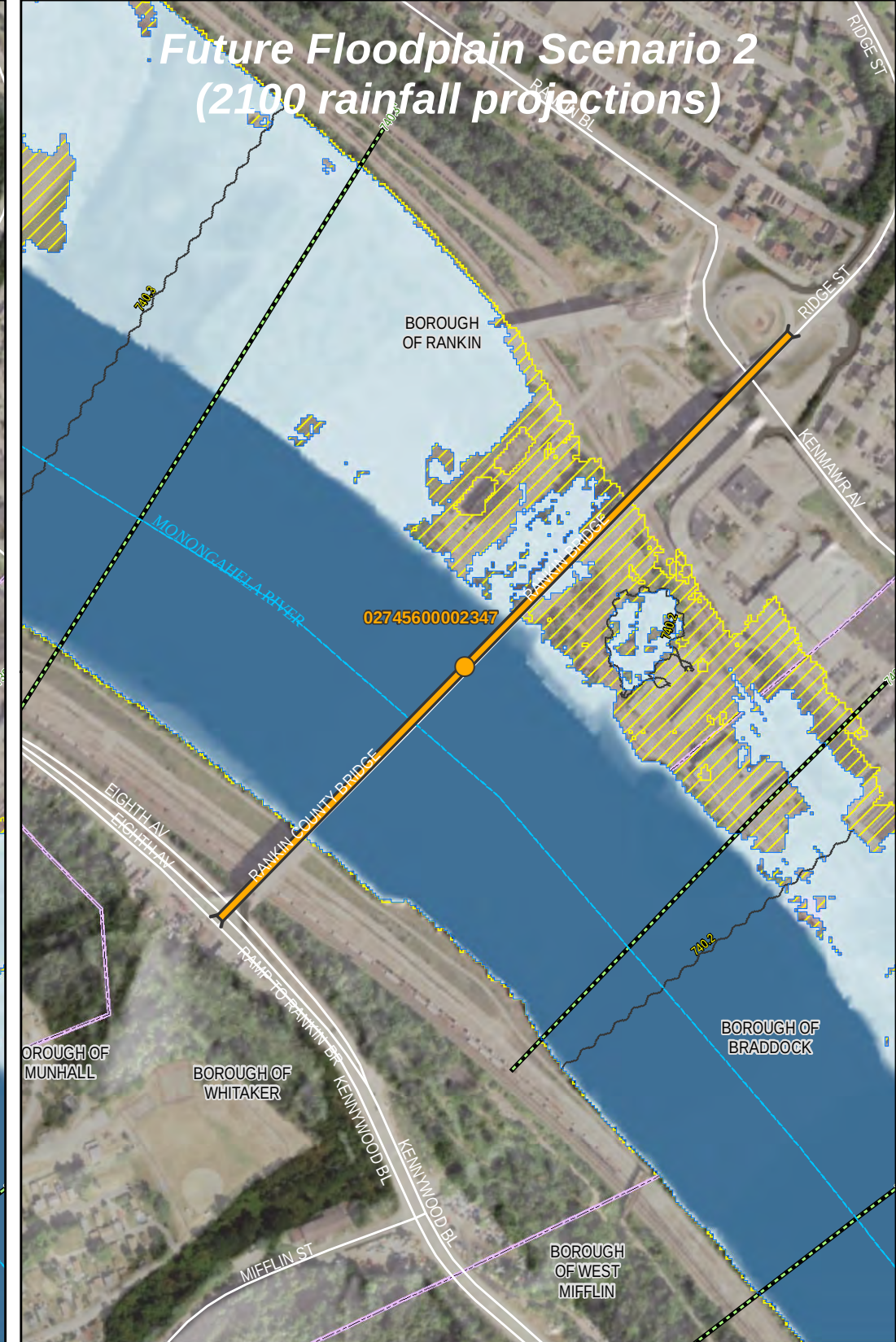
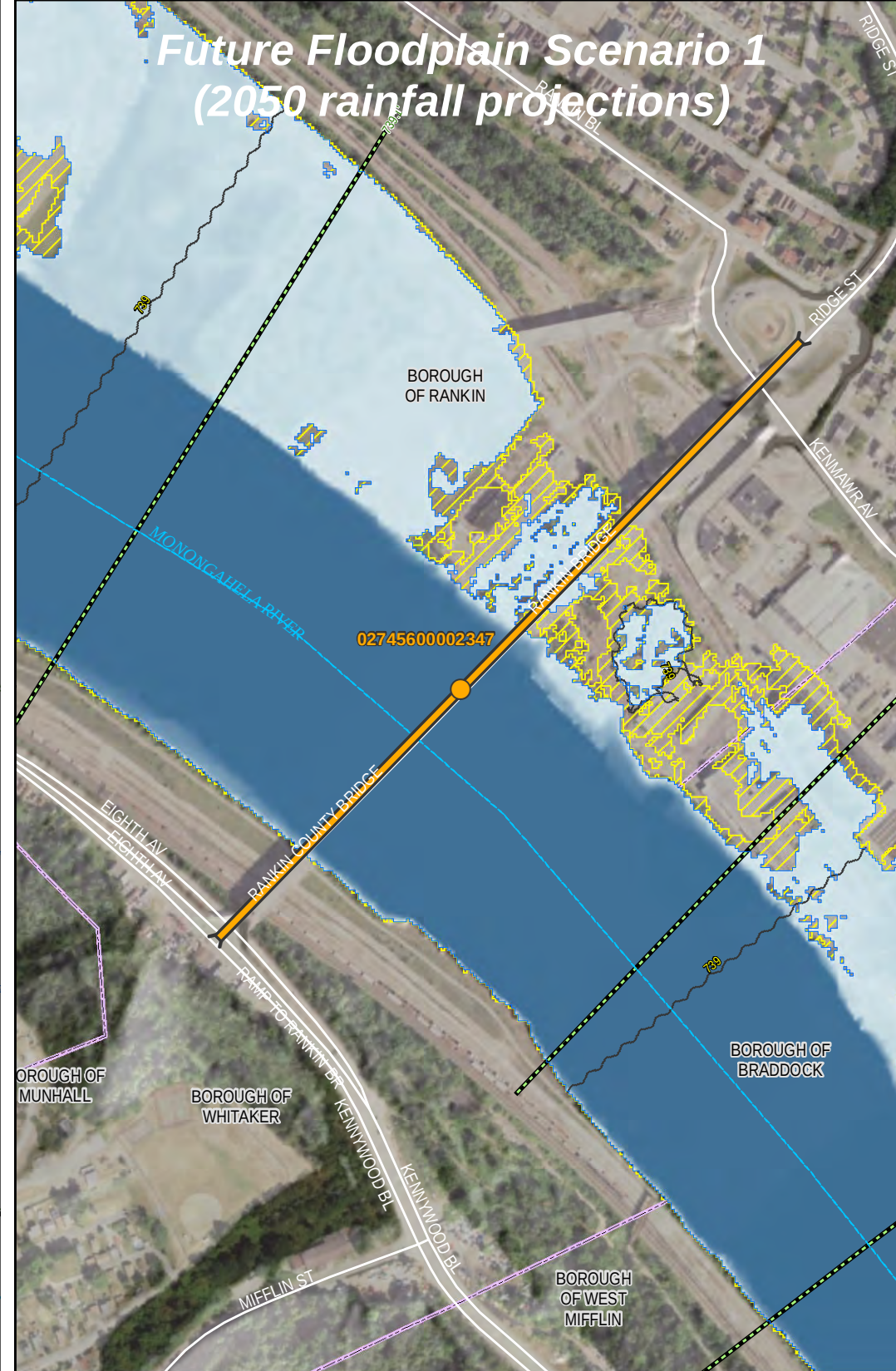
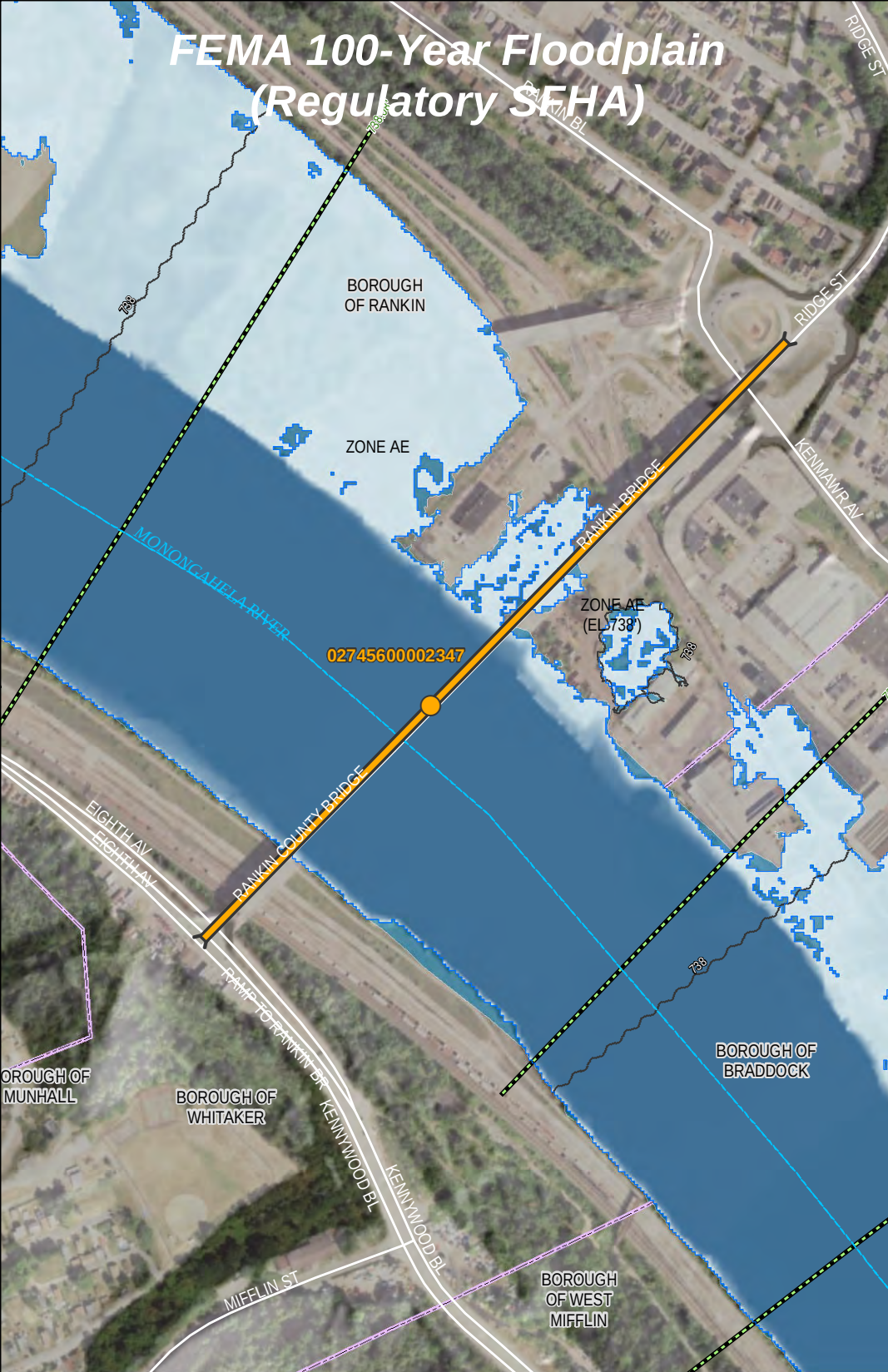


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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL





MAP SYMBOLOLOGY

ROADWAY & BRIDGE PROJECT	
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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

0 1,000 Feet

November 23, 2016

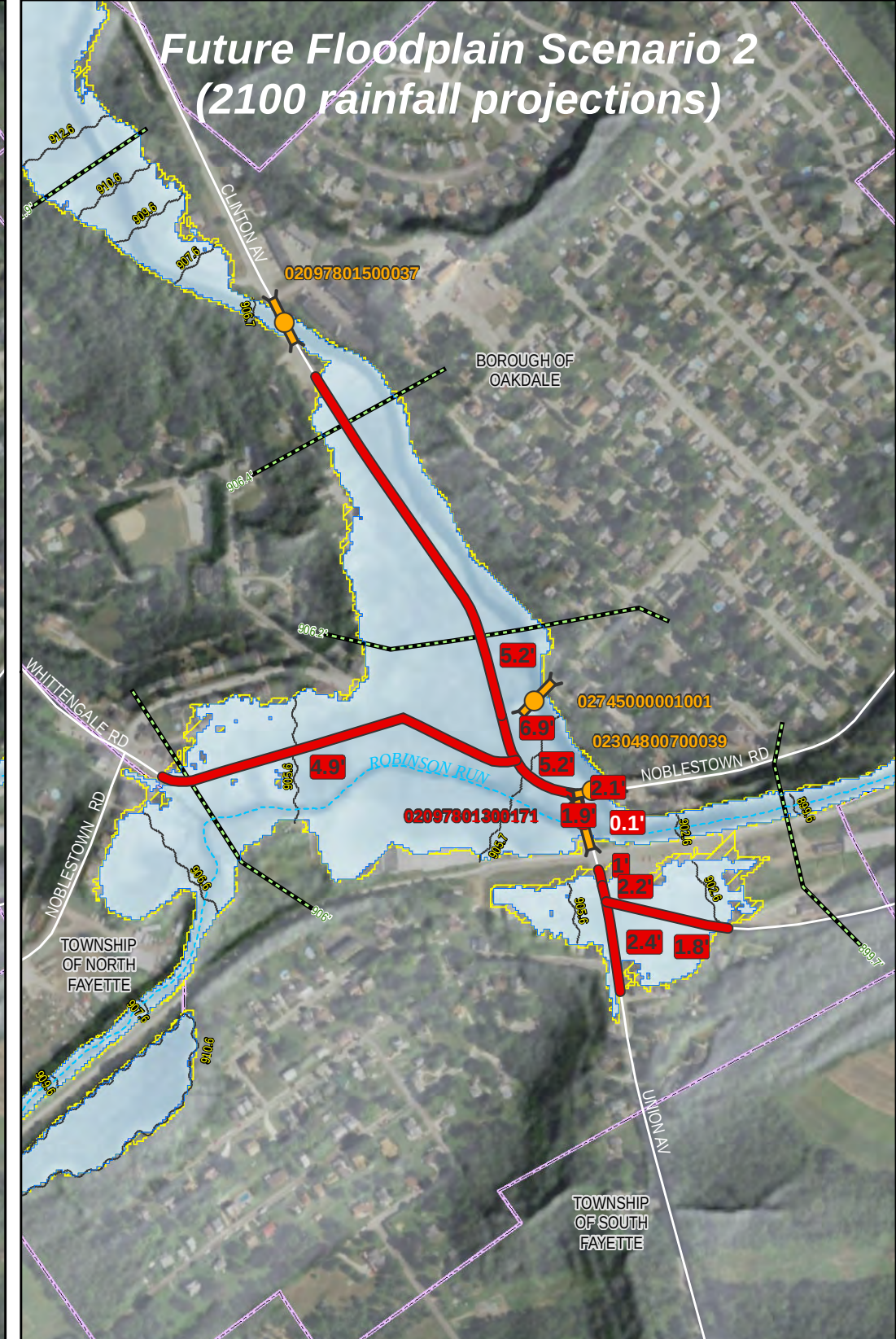
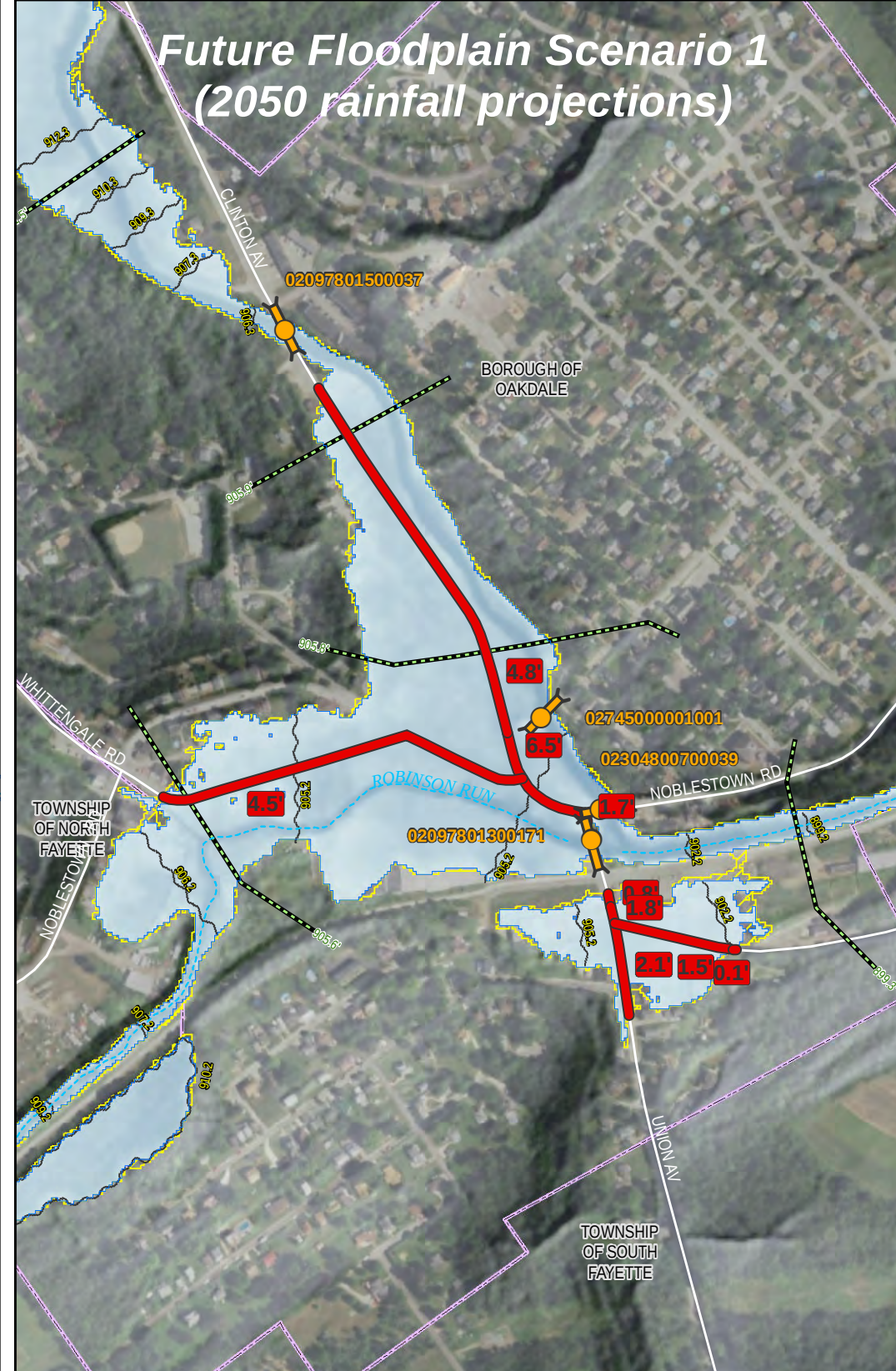
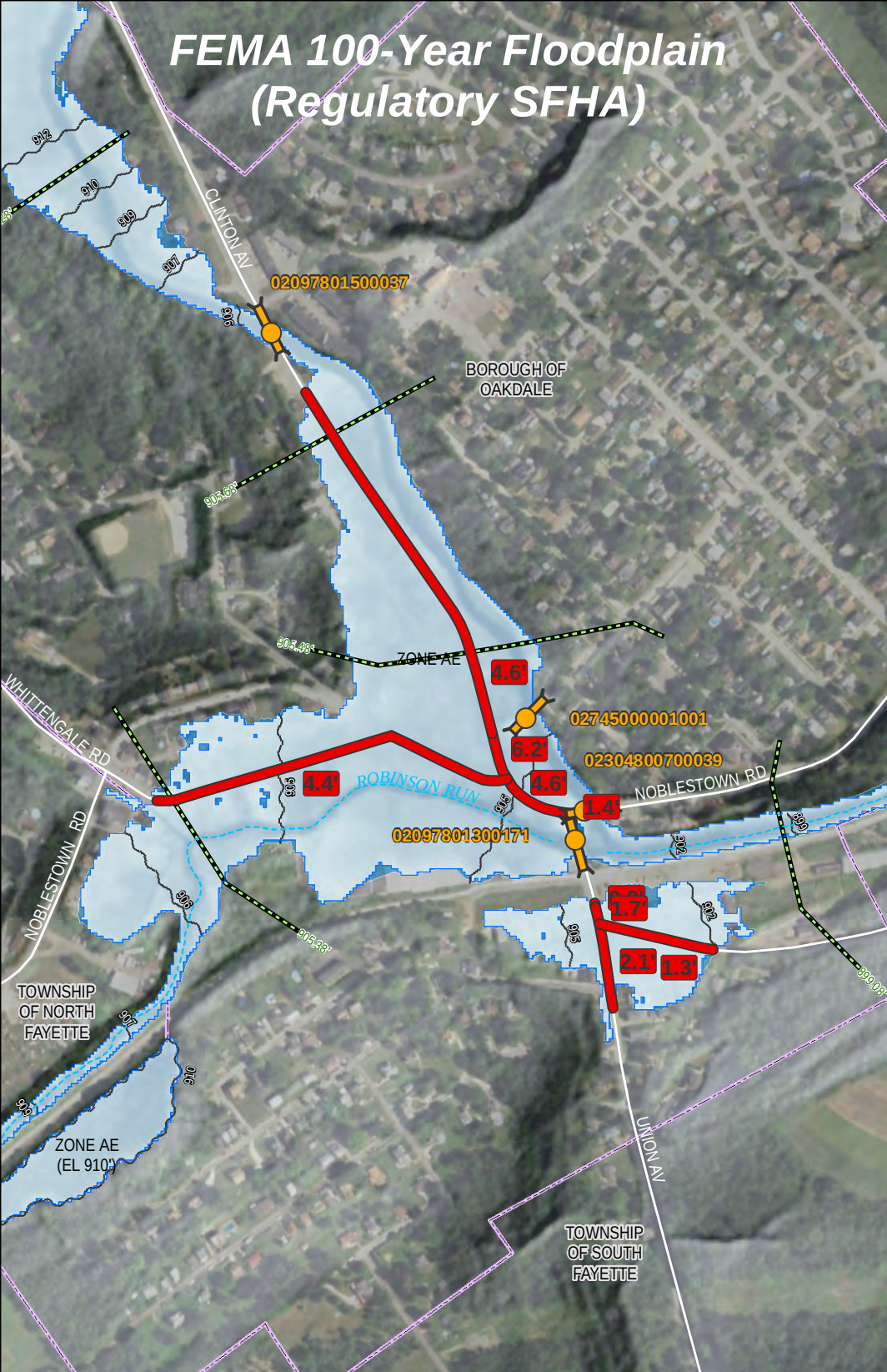
Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 165 of 265

DATA FRAME PROPERTIES:
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NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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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

0 1,000 Feet

November 23, 2016



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

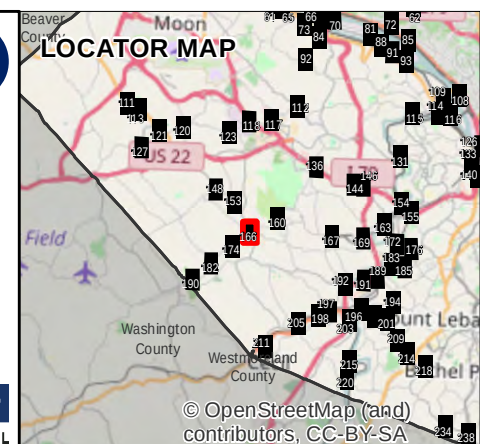
Sheet 166 of 265



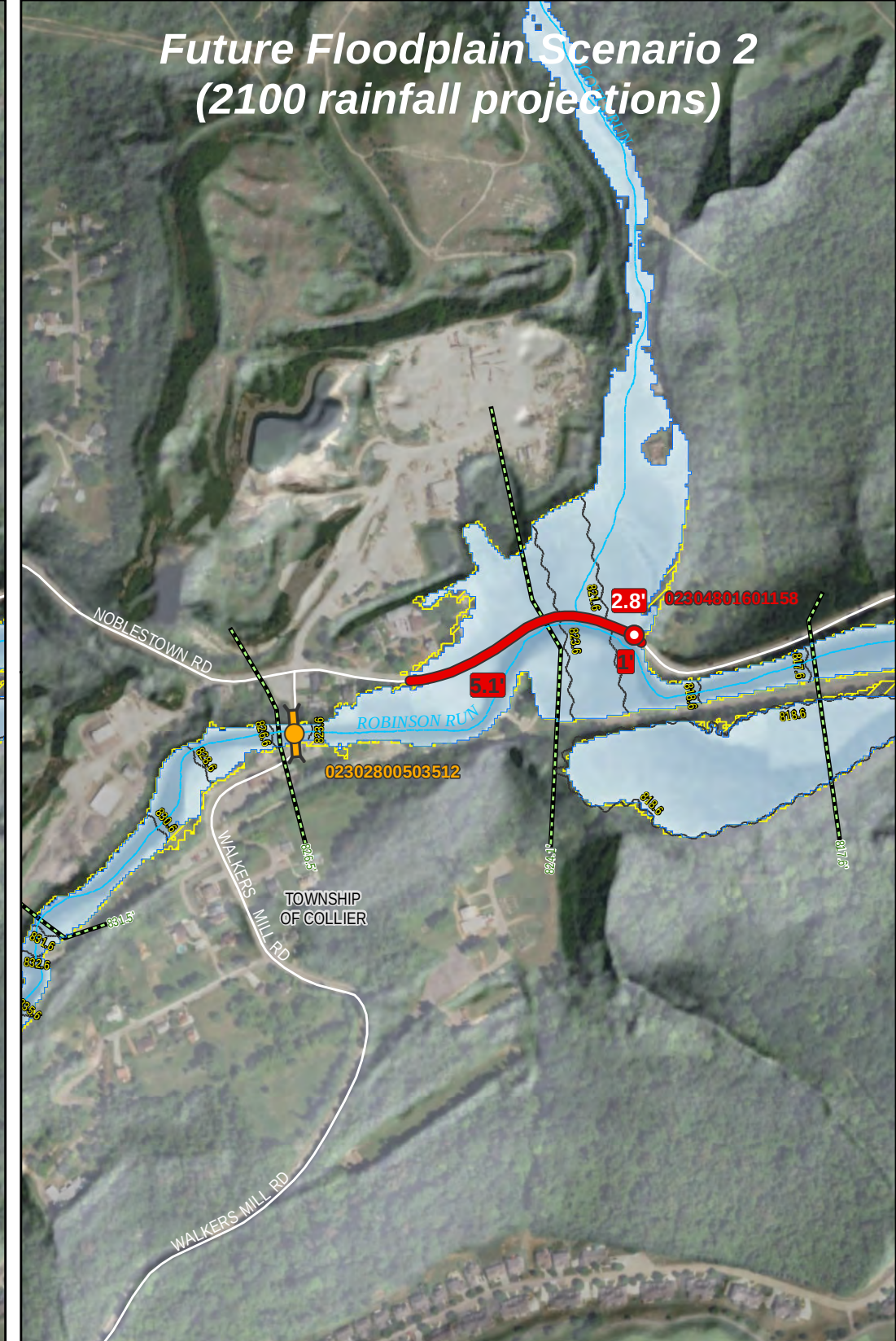
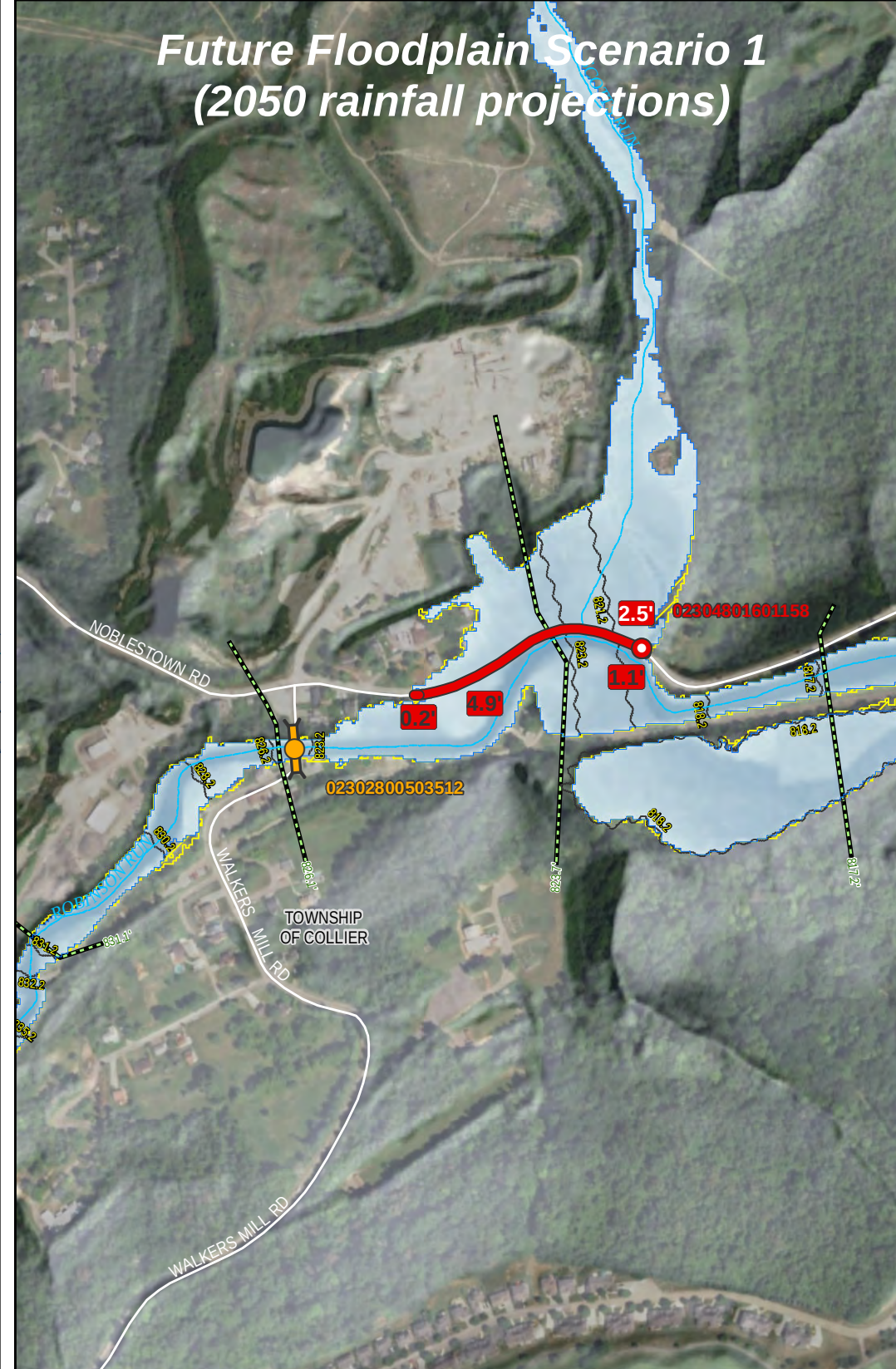
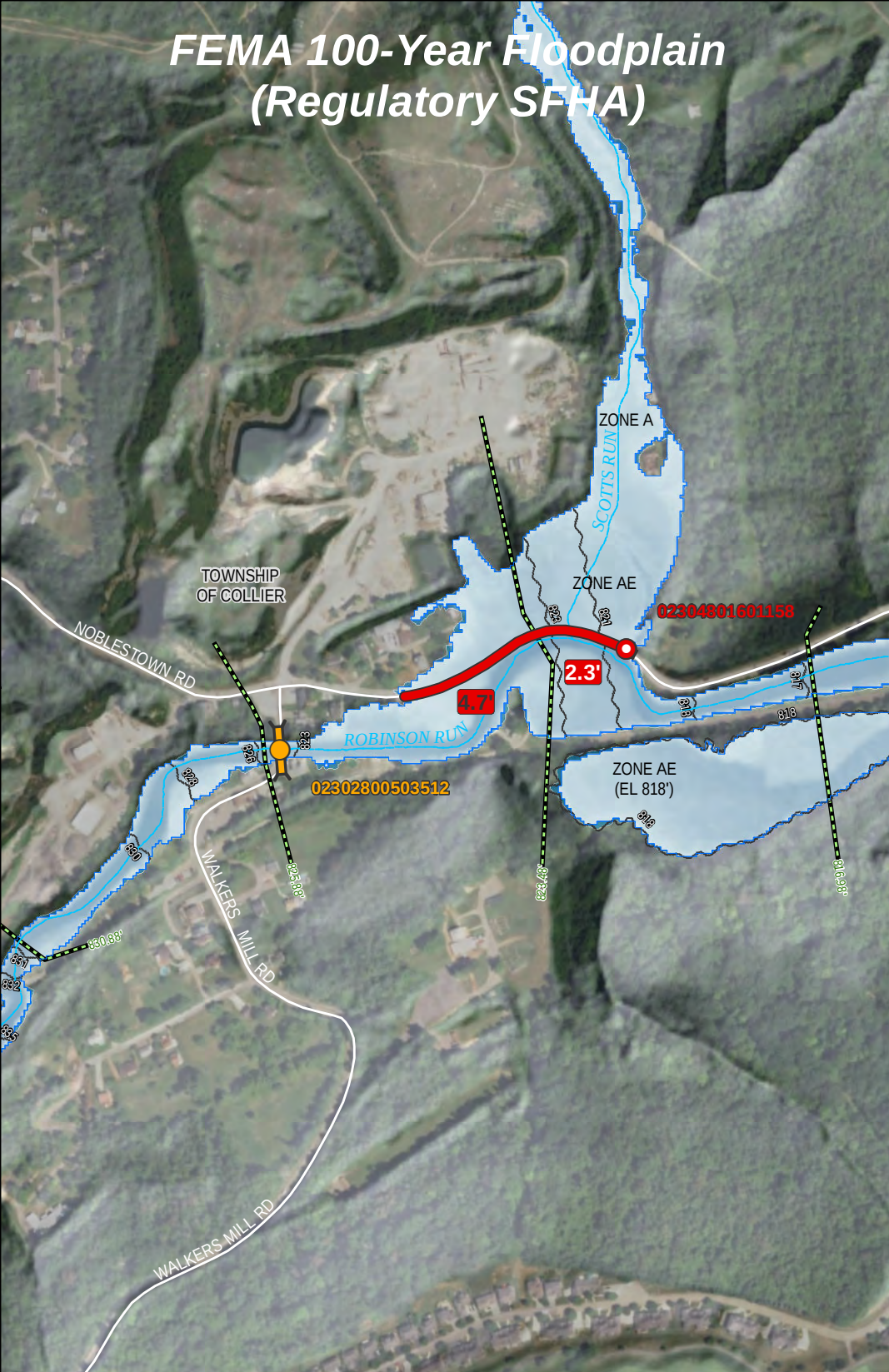
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**



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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

Feet
0 1,000

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

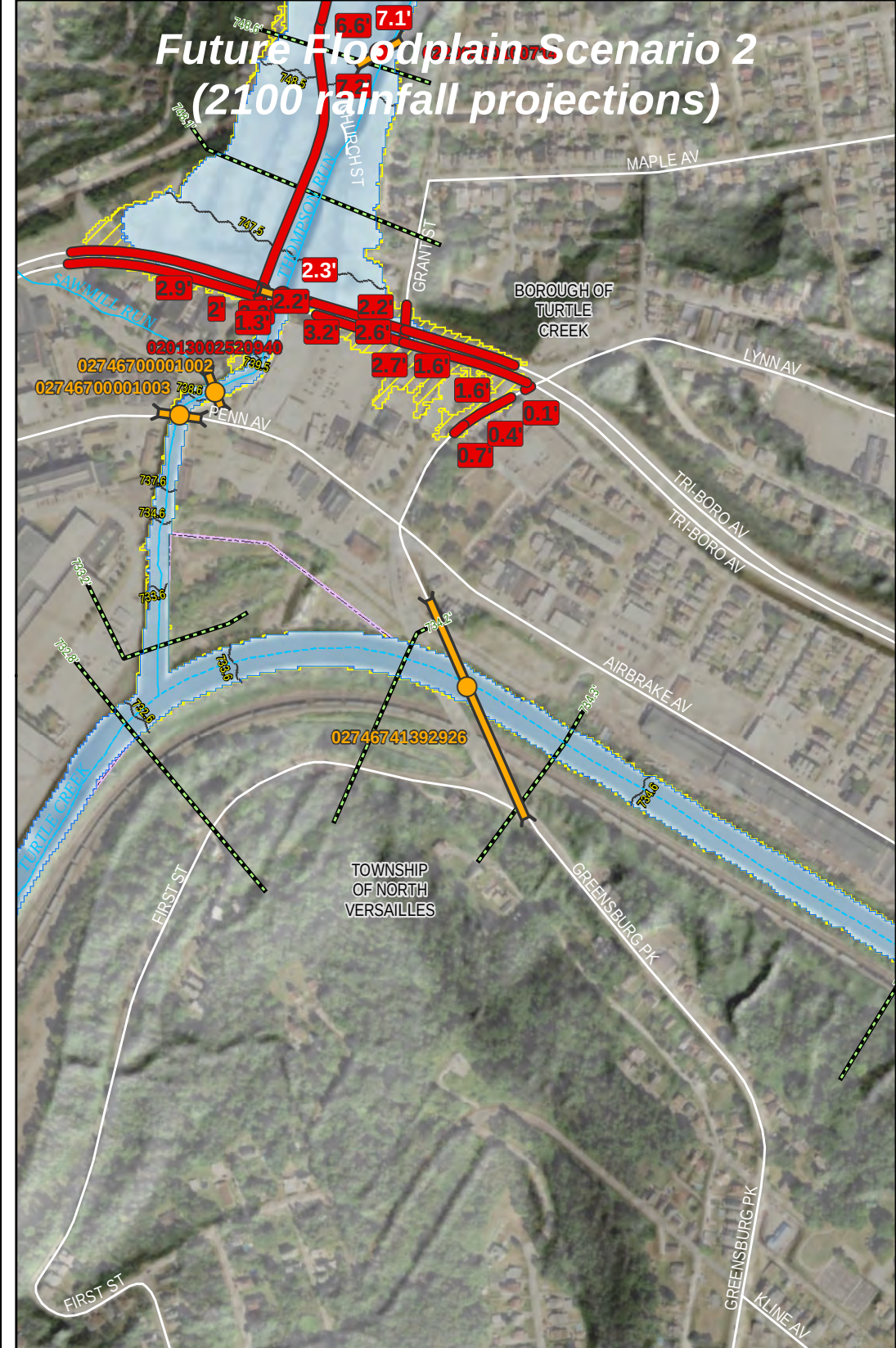
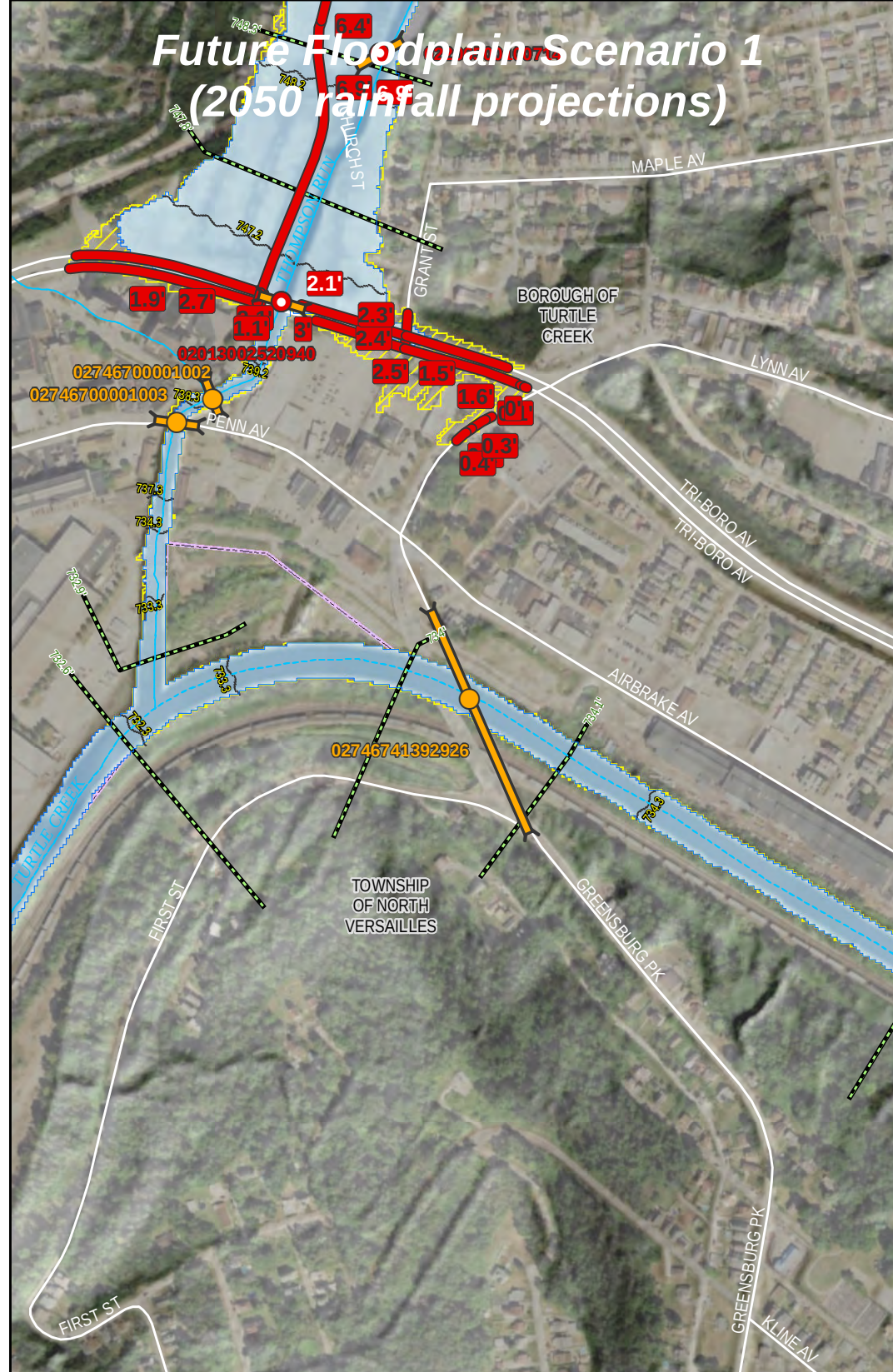
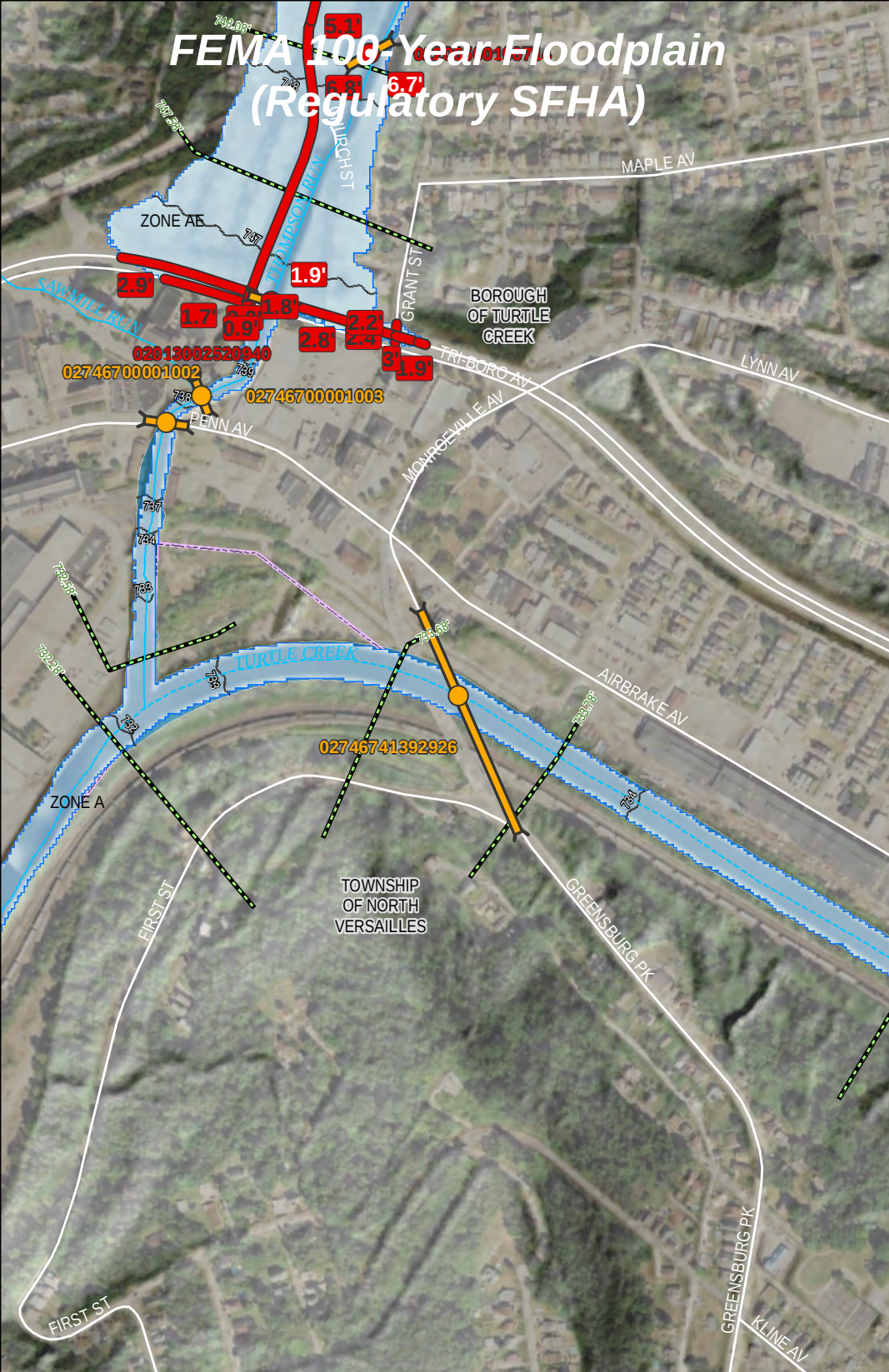
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



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. **CODY ST**
 - 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

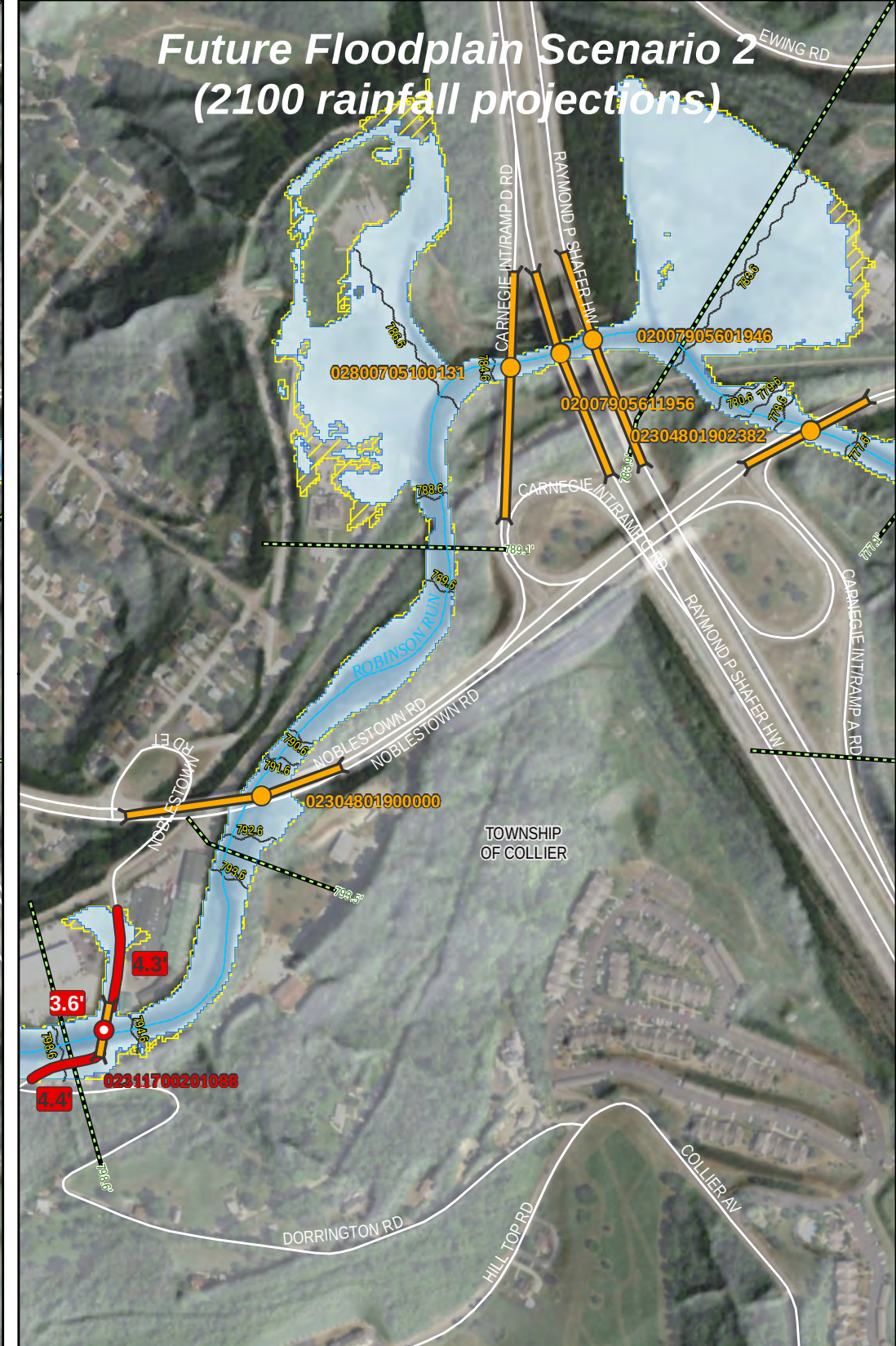
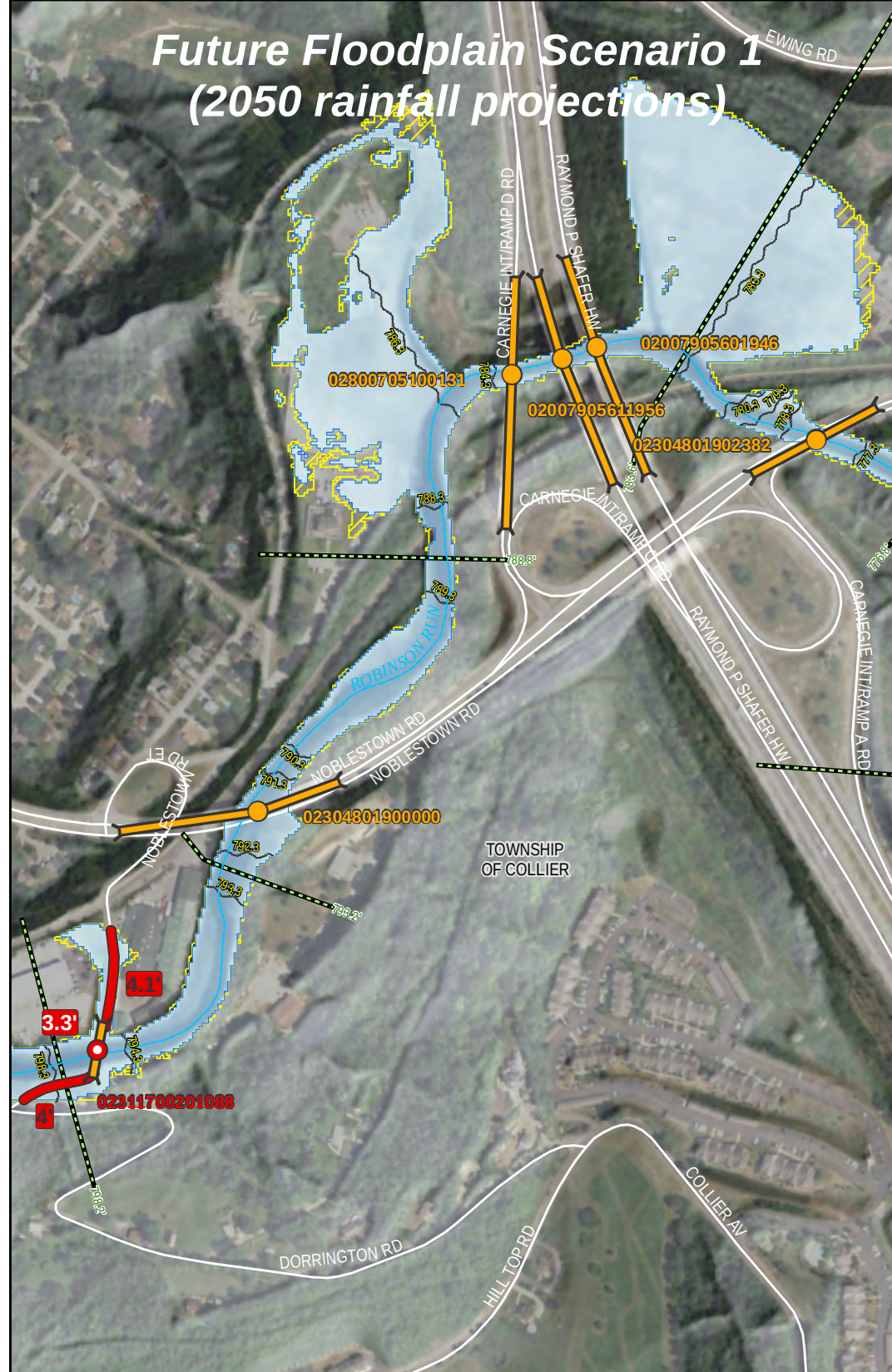
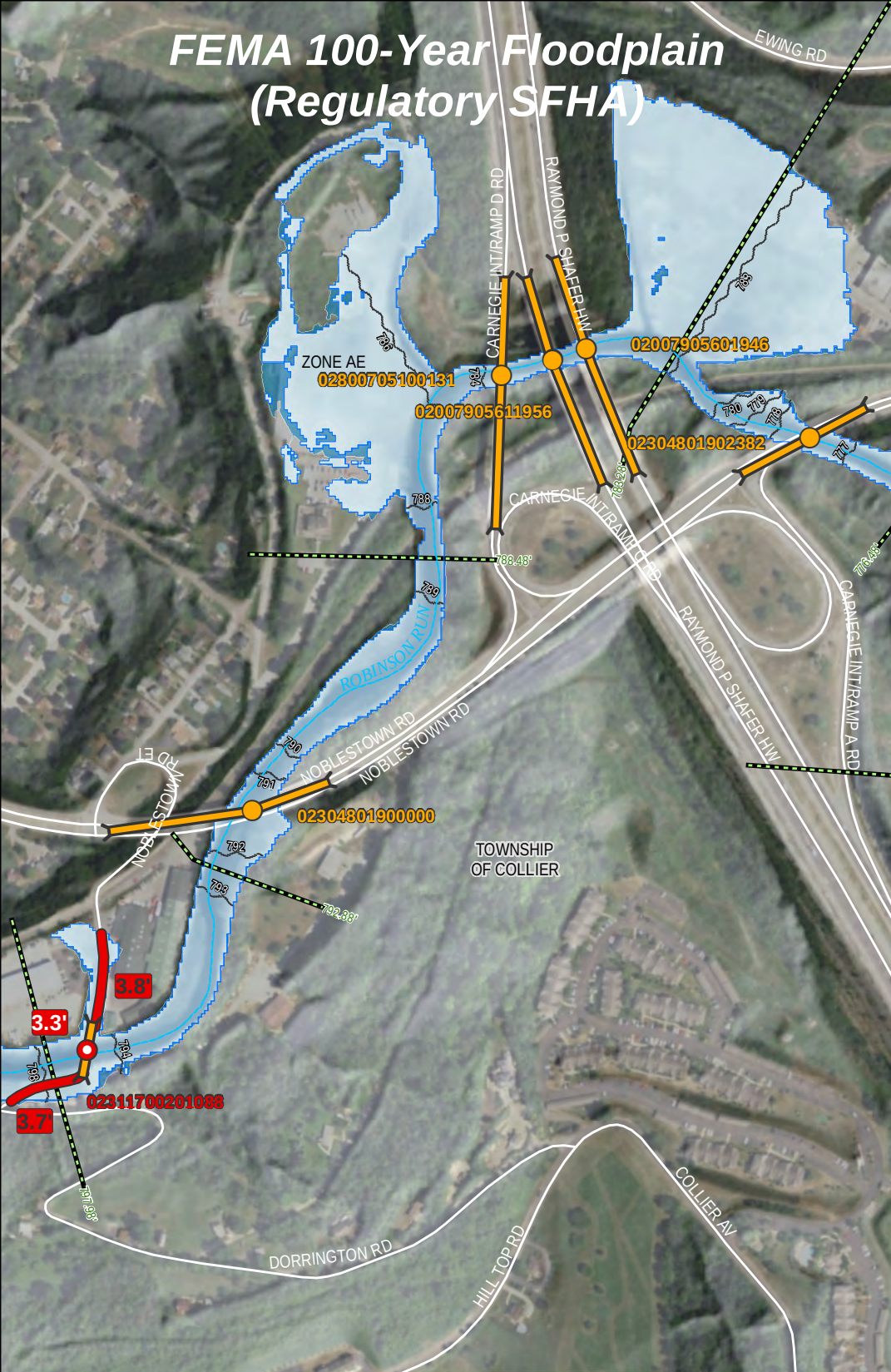
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 168 of 265

LOGATOR MAP

DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



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. CODY ST
	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

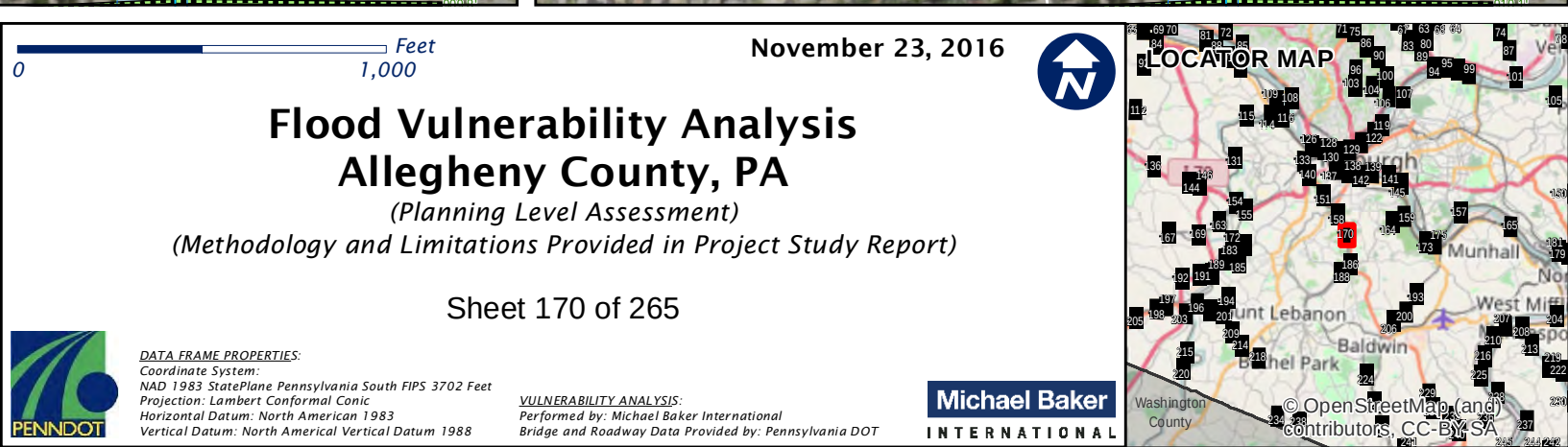
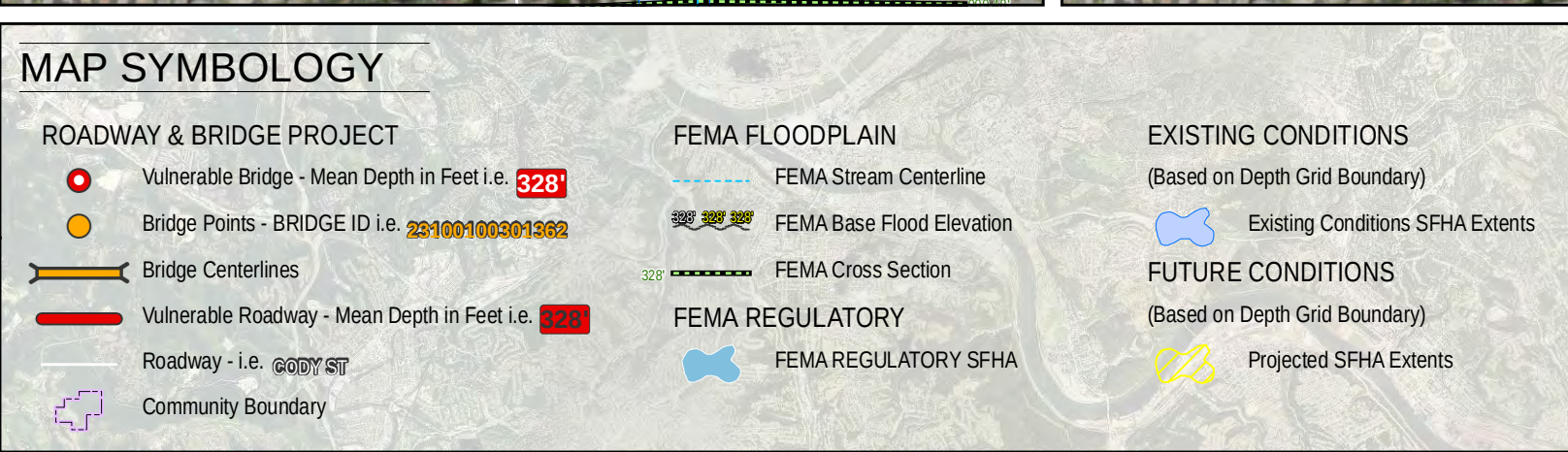
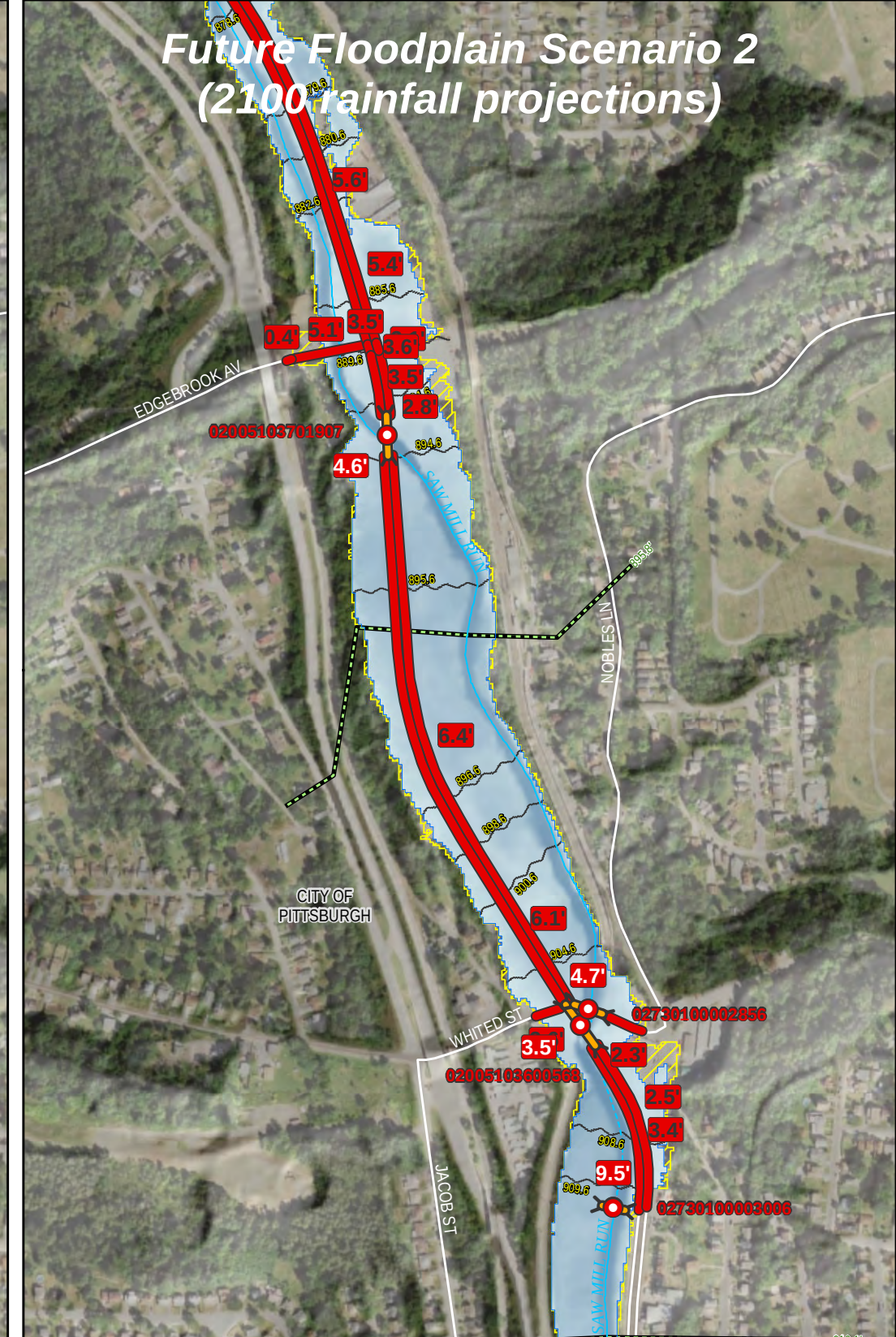
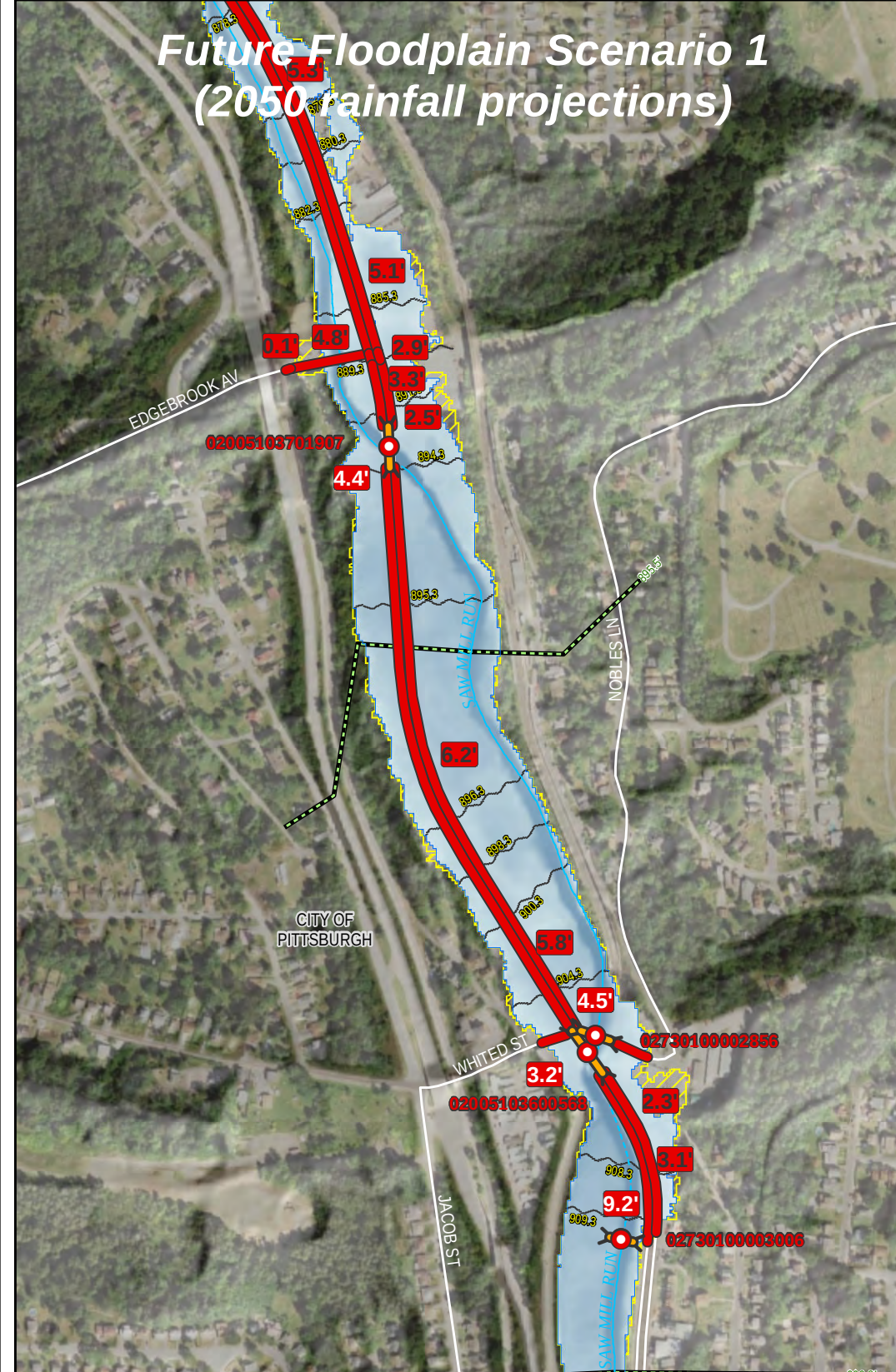
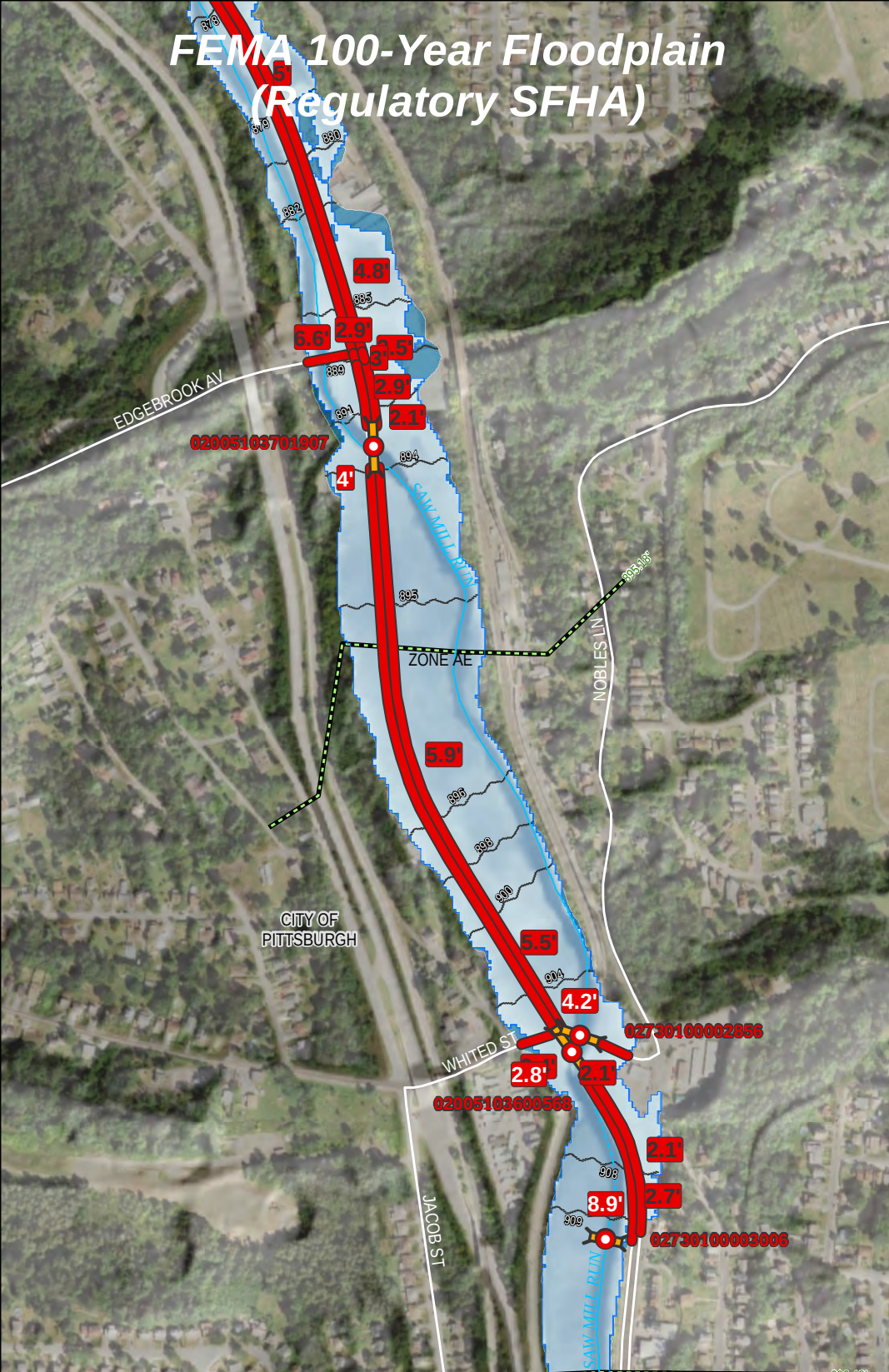
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(Methodology and Limitations Provided in Project Study Report)

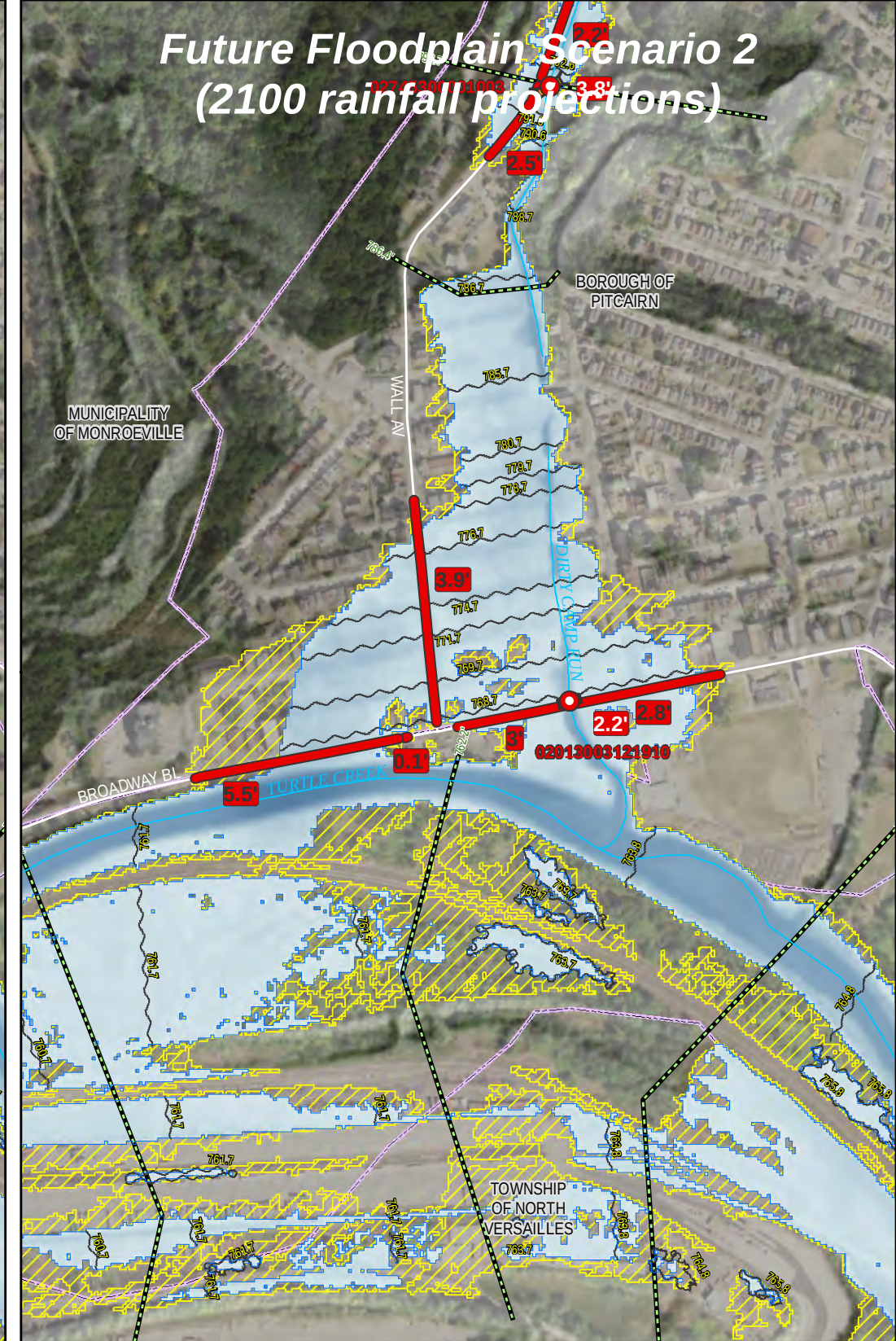
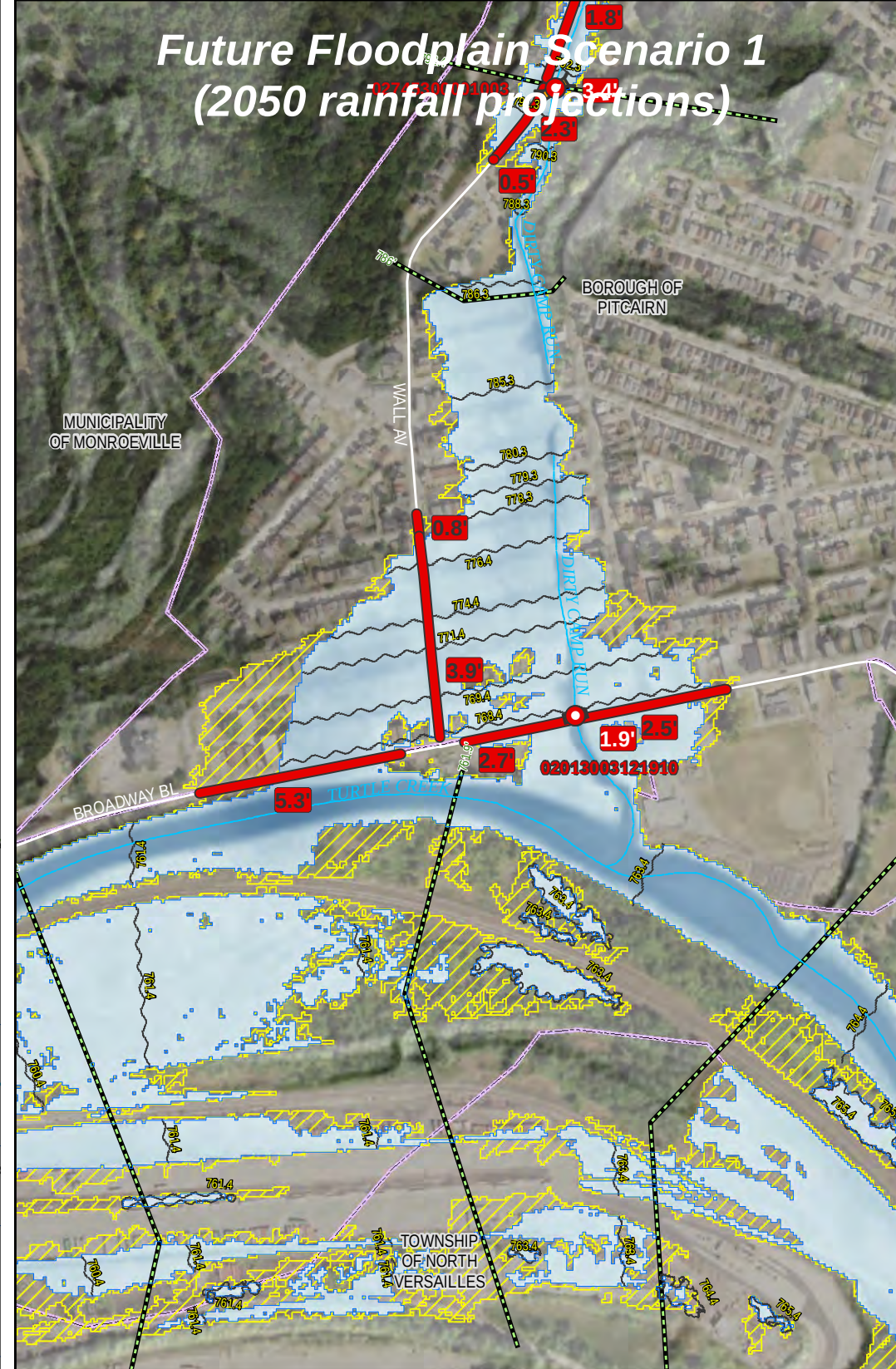
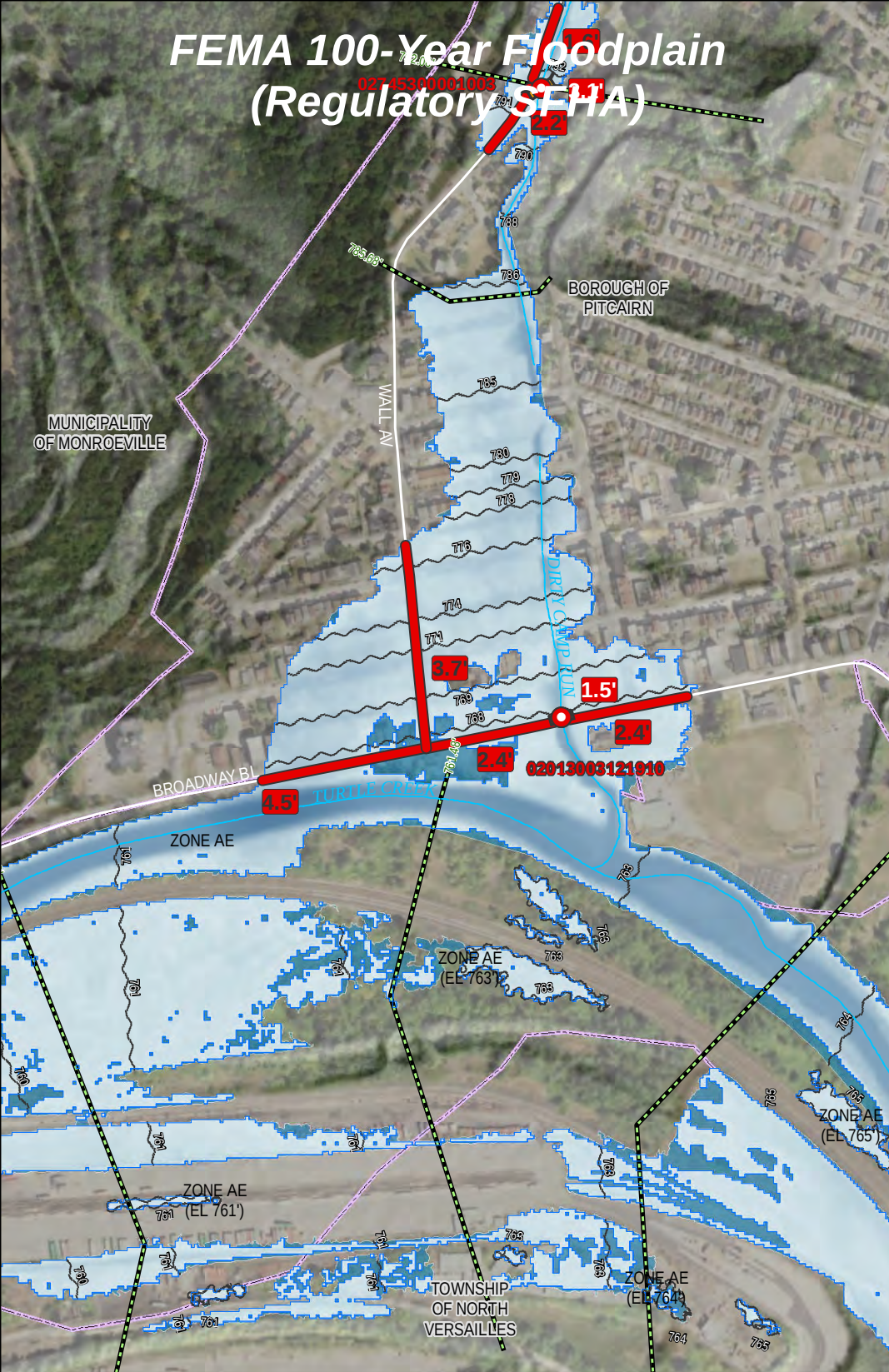
Sheet 169 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP





MAP SYMBOLOGY

Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation
Bridge Centerlines	FEMA Cross Section
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA
Community Boundary	

EXISTING CONDITIONS (Based on Depth Grid Boundary)

Existing Conditions SFHA Extents

FUTURE CONDITIONS (Based on Depth Grid Boundary)

Projected SFHA Extents

0 1,000 Feet

Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 171 of 265

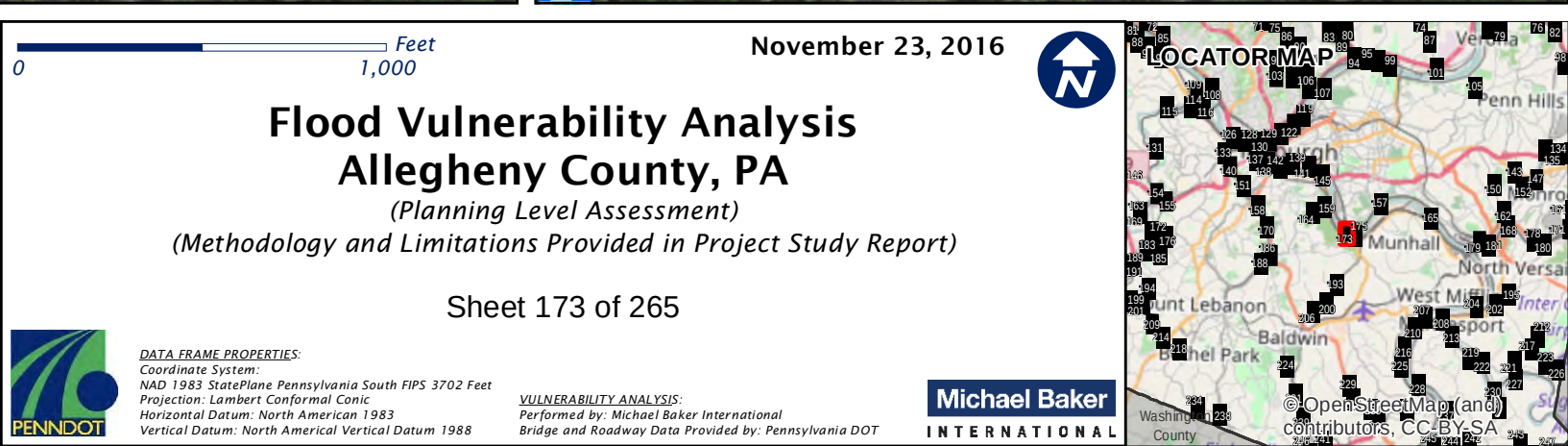
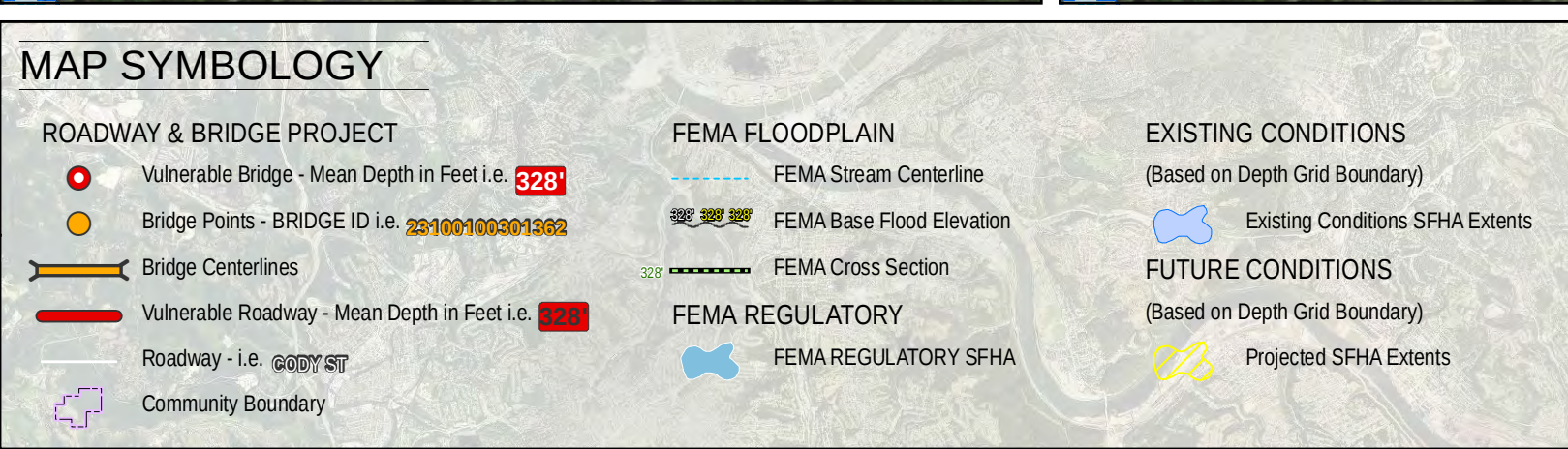
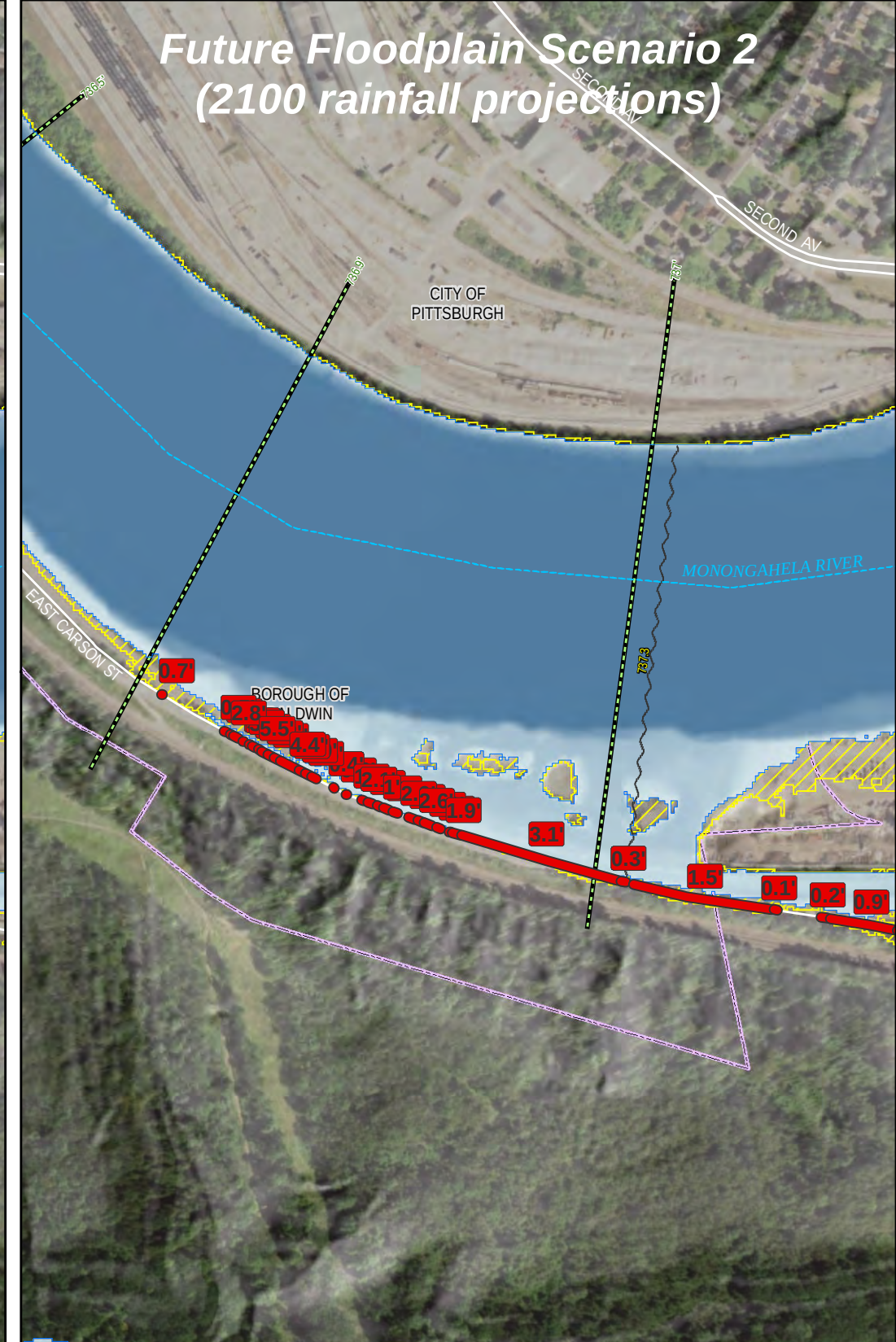
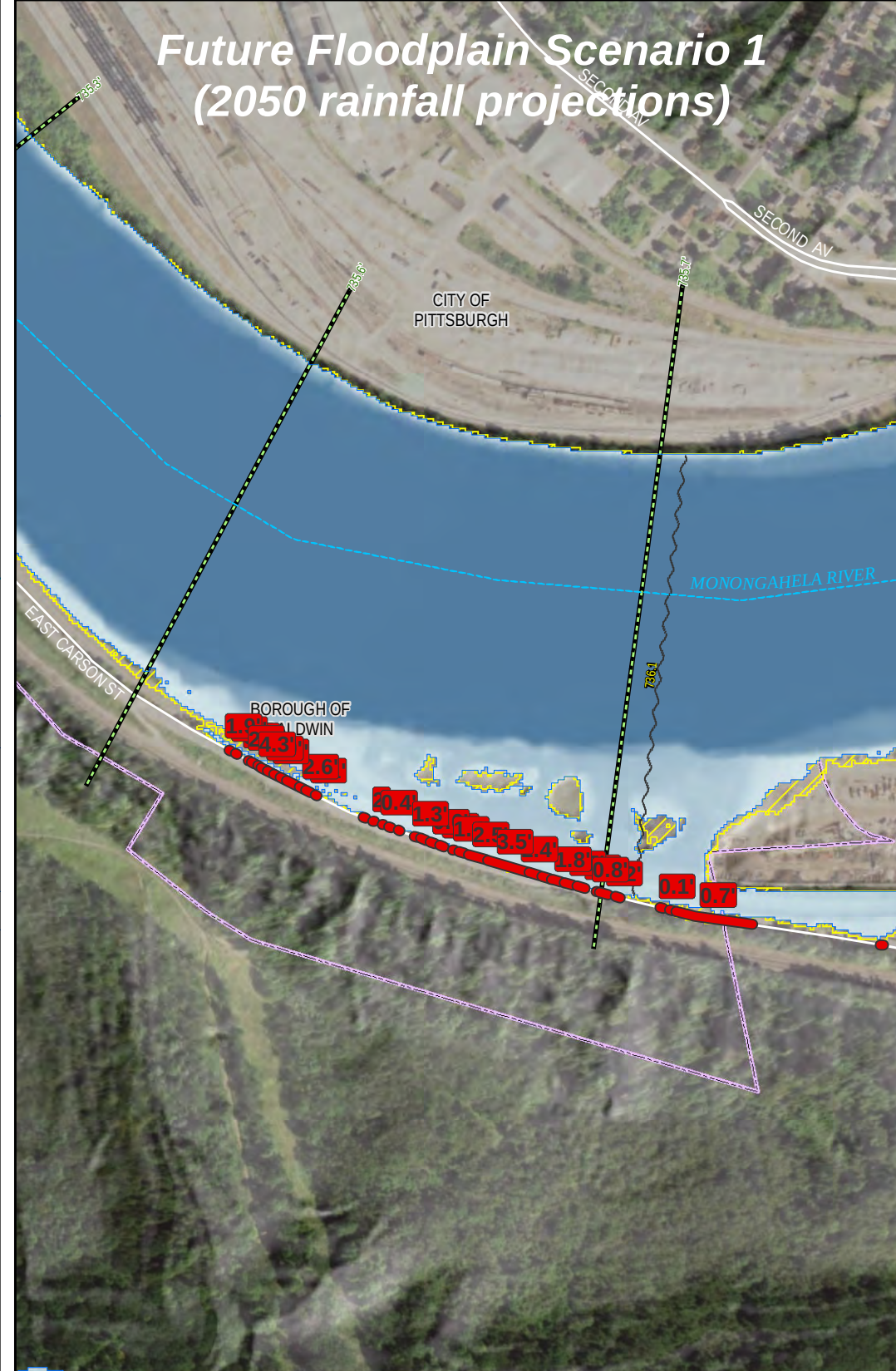
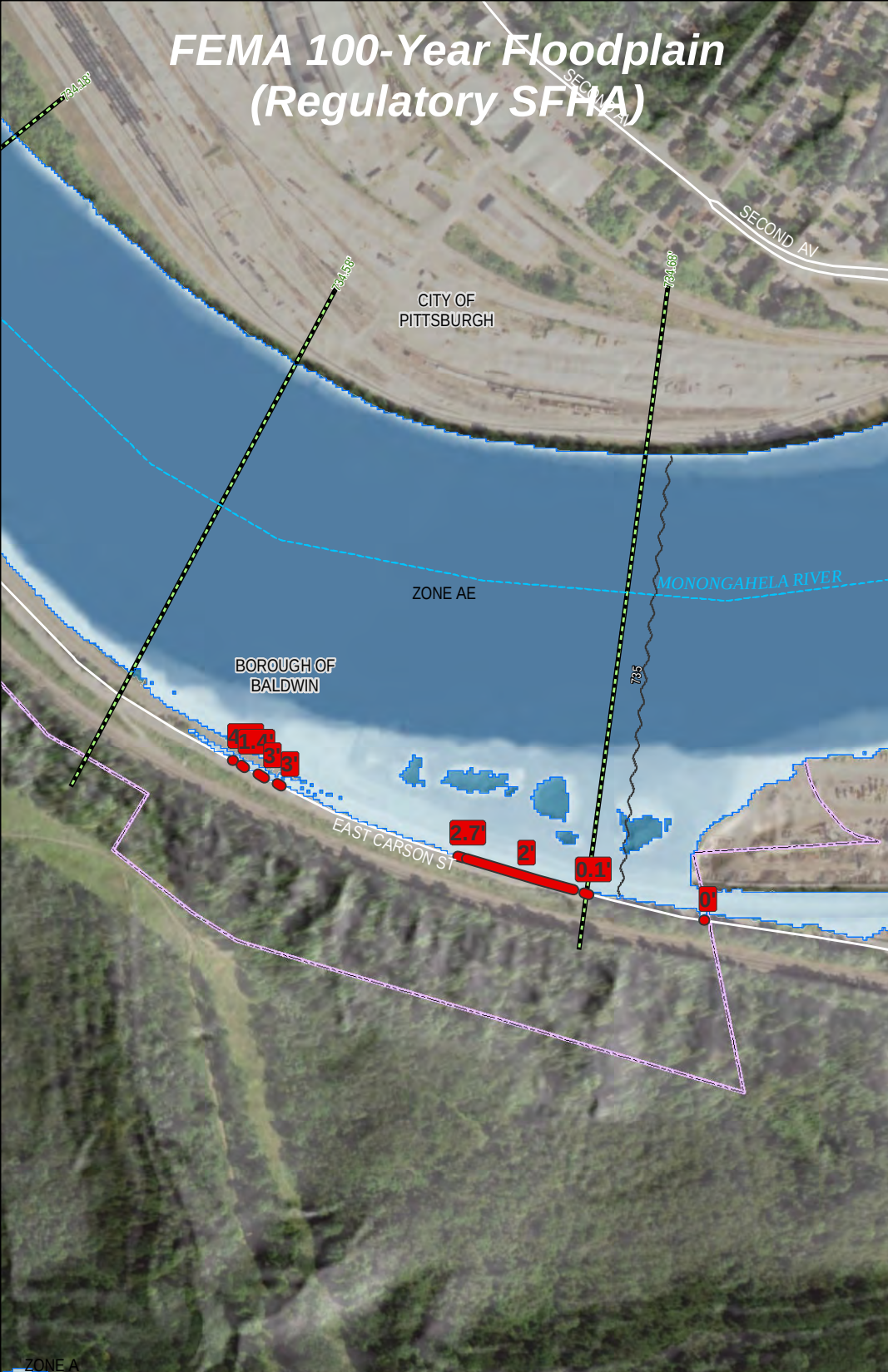
Michael Baker INTERNATIONAL

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
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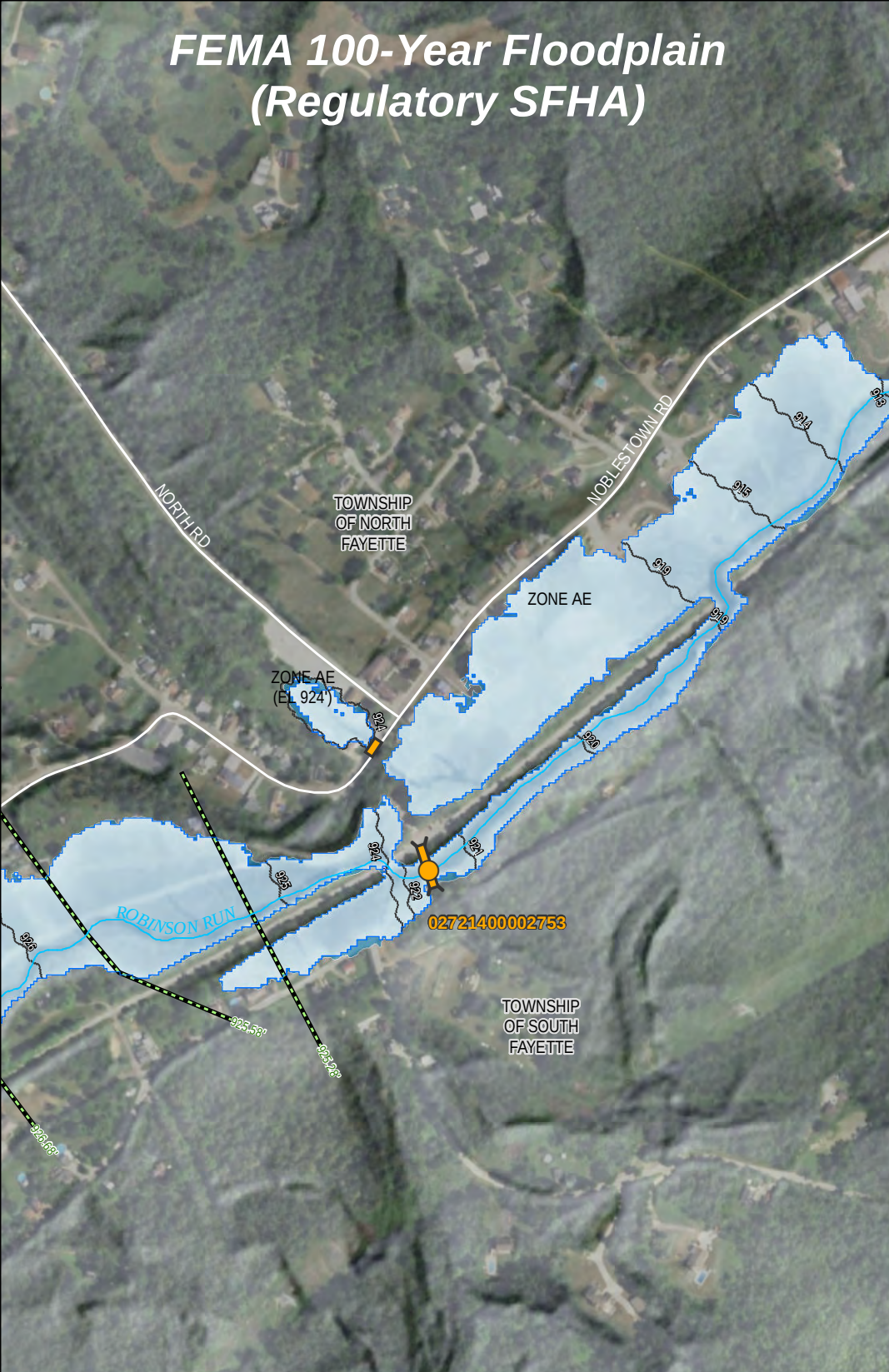
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

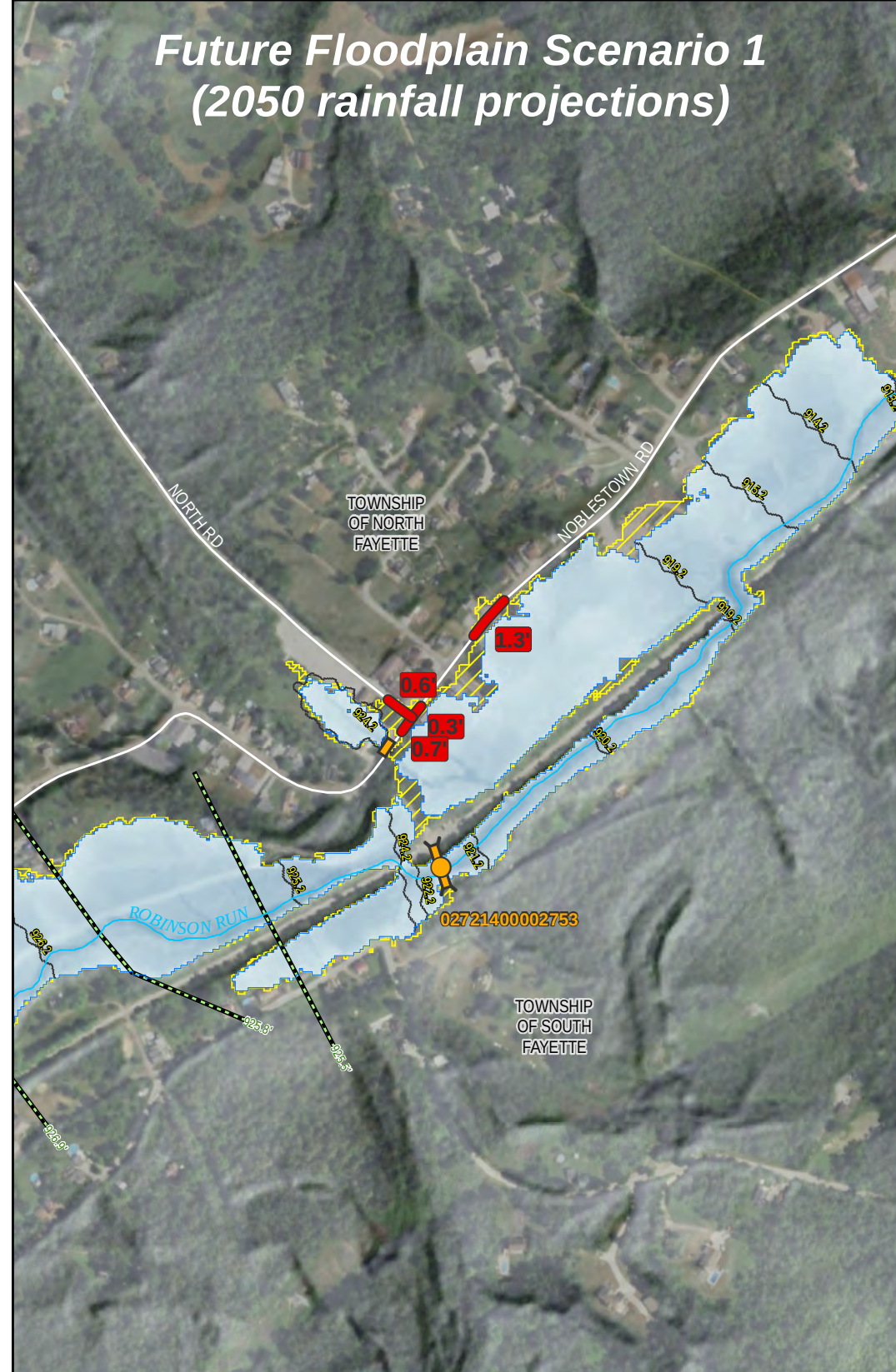
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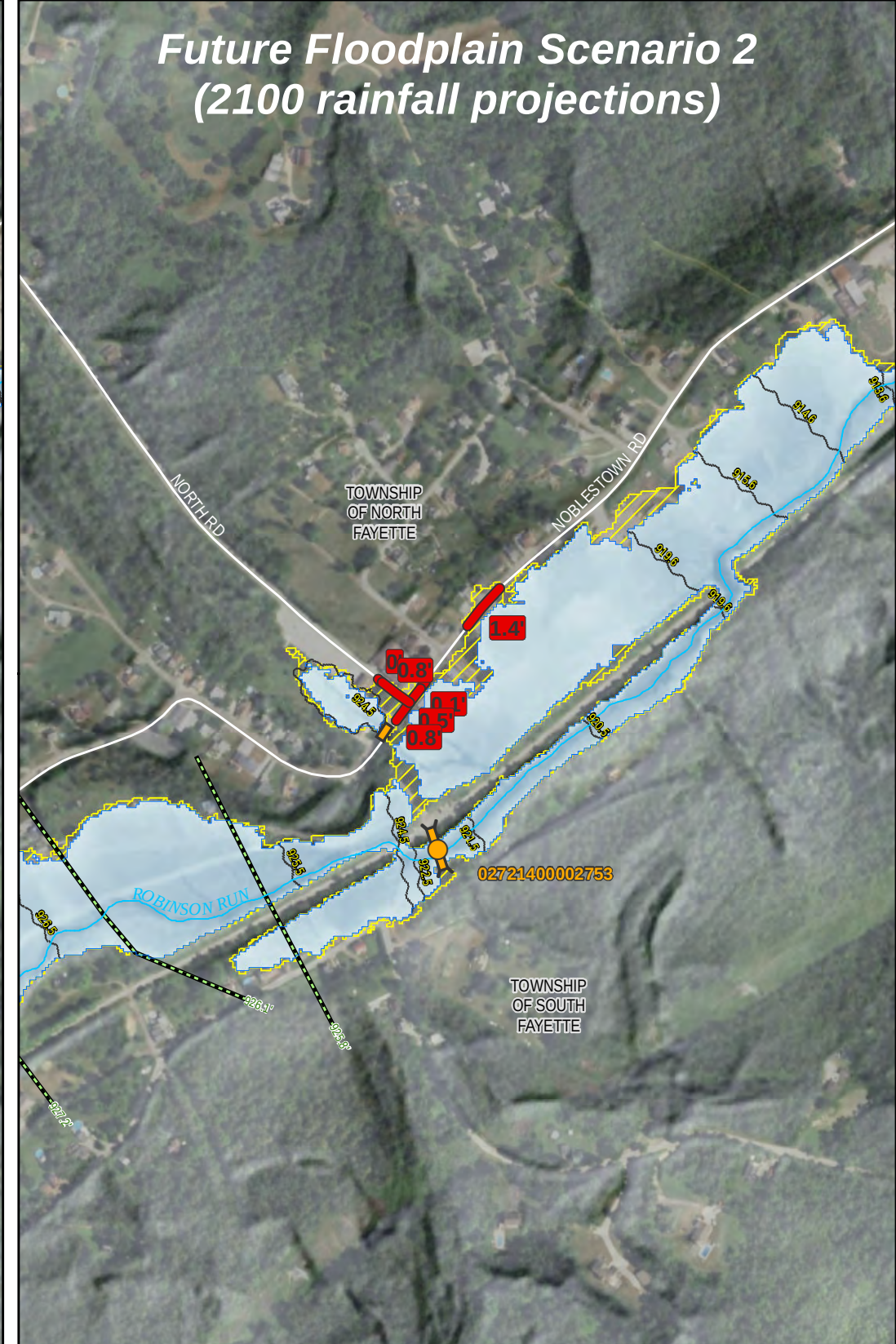
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **CODY ST**
-  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

0 Feet
1,000

November 23, 2016



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

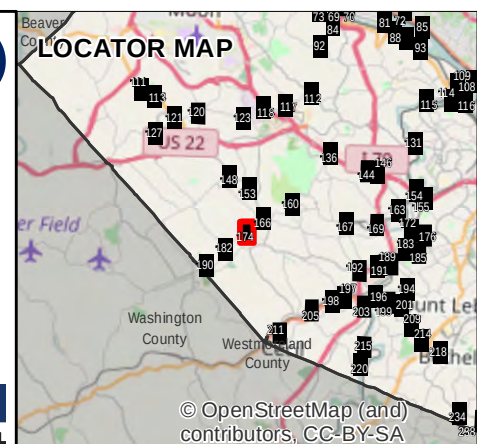
Sheet 174 of 265



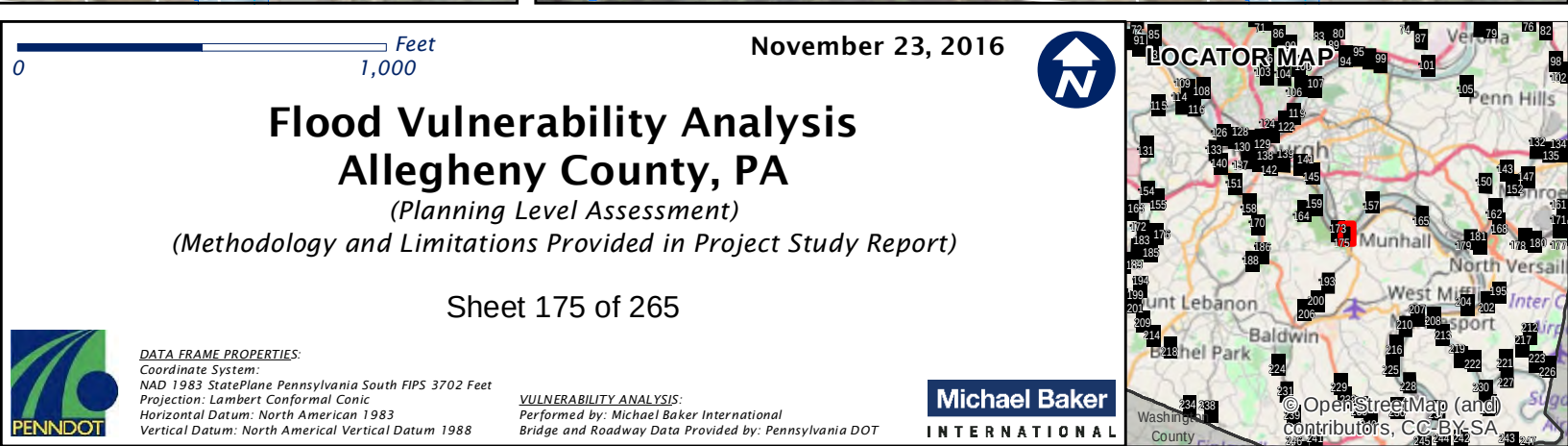
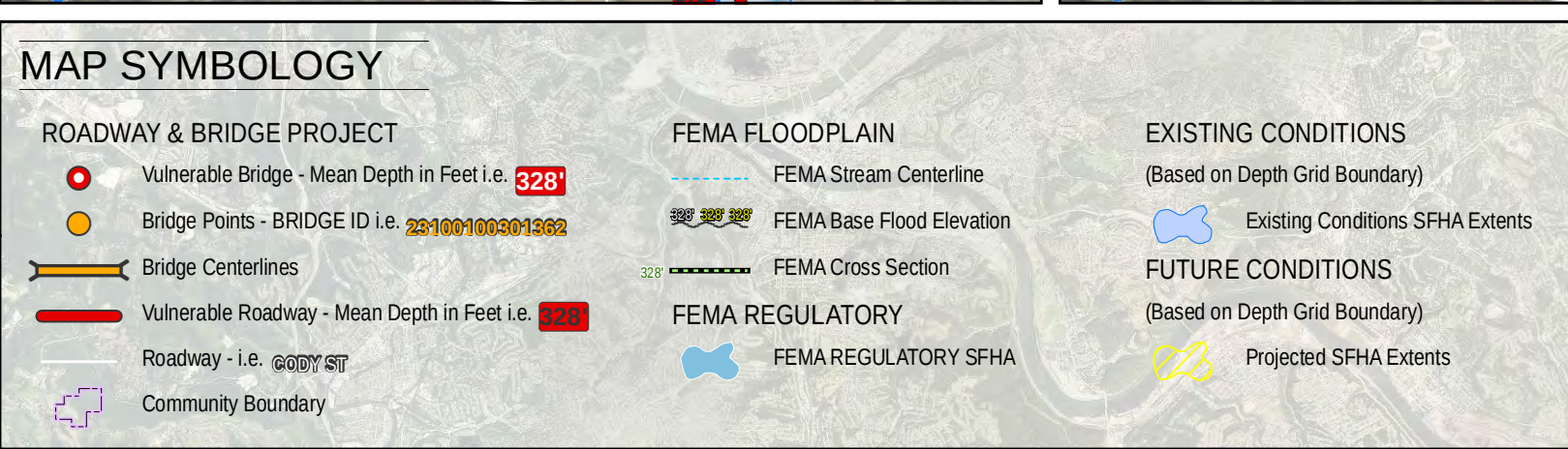
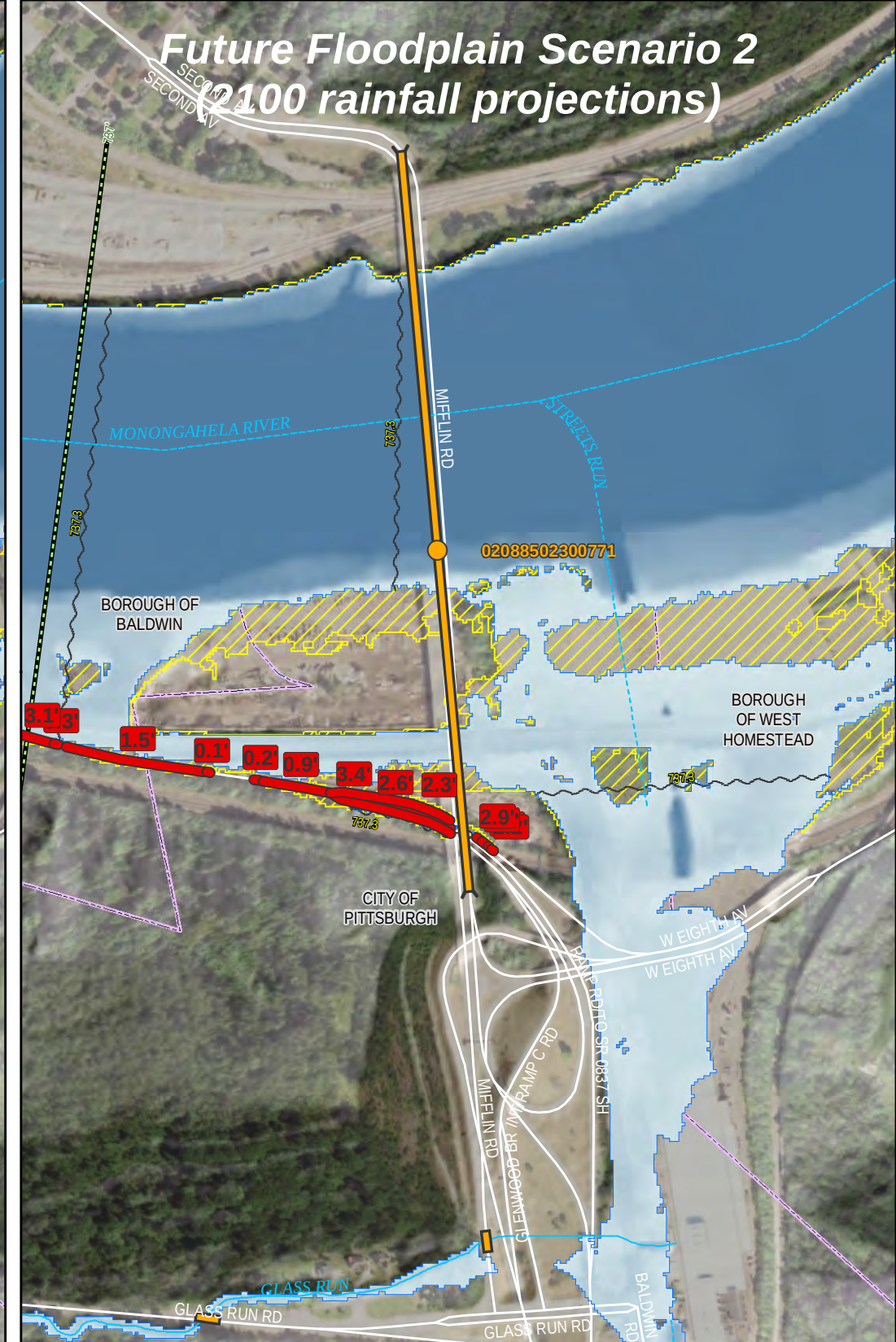
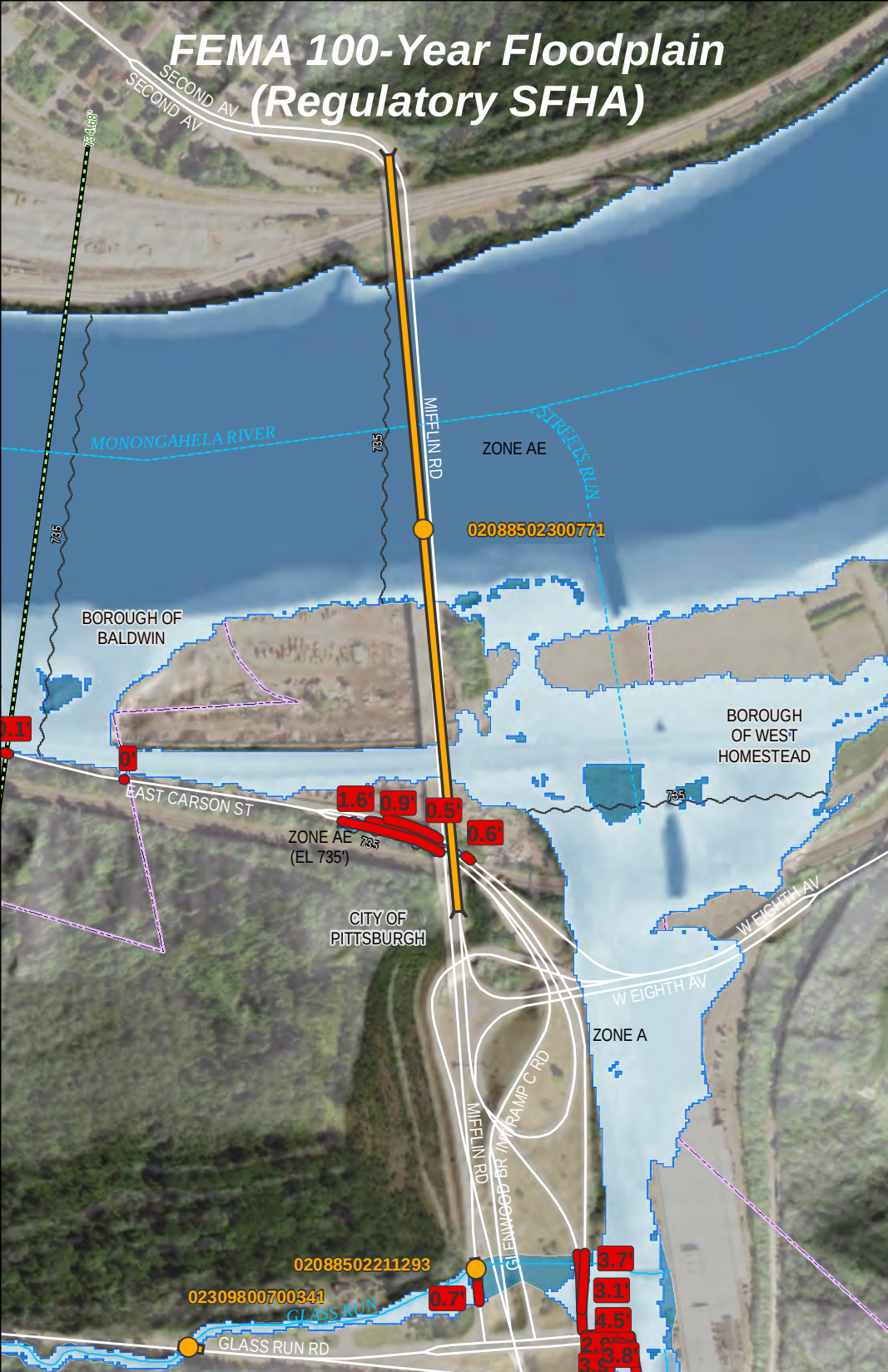
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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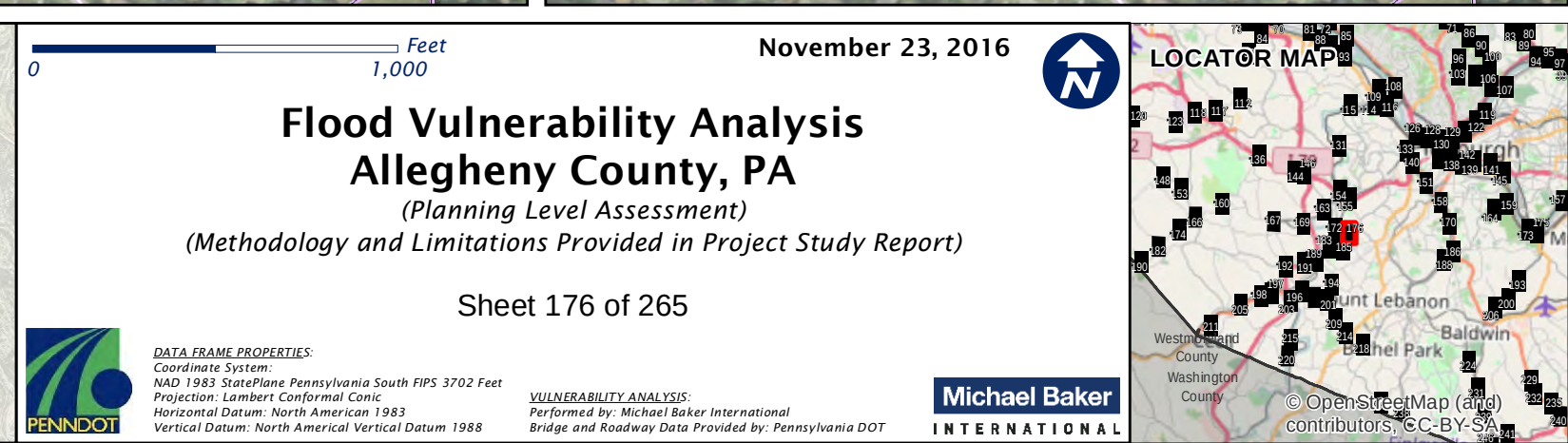
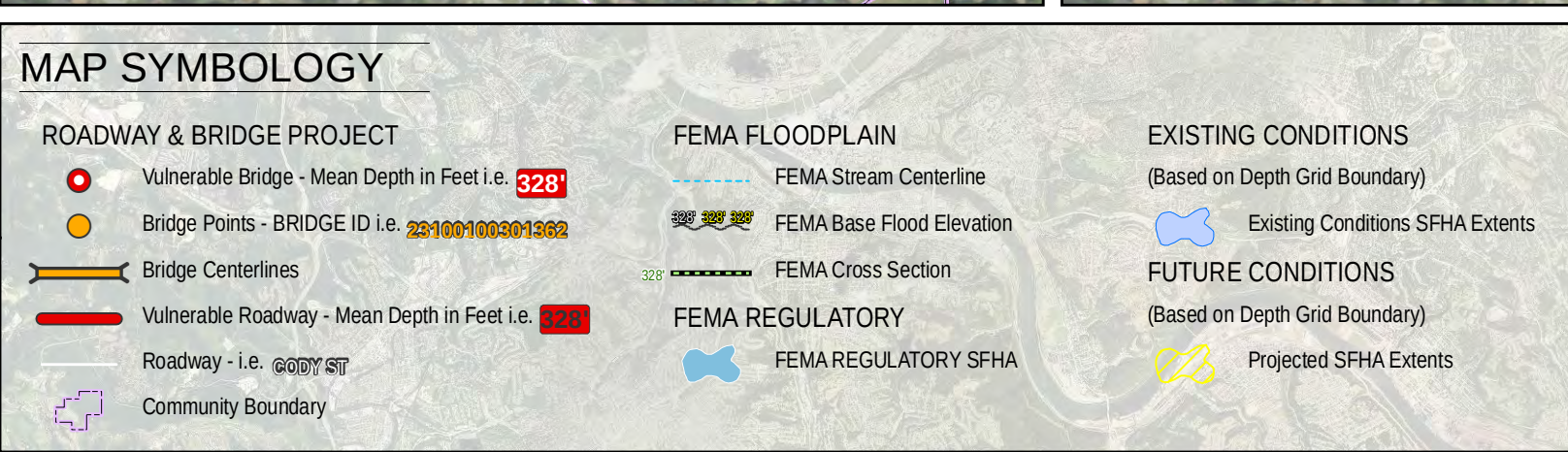
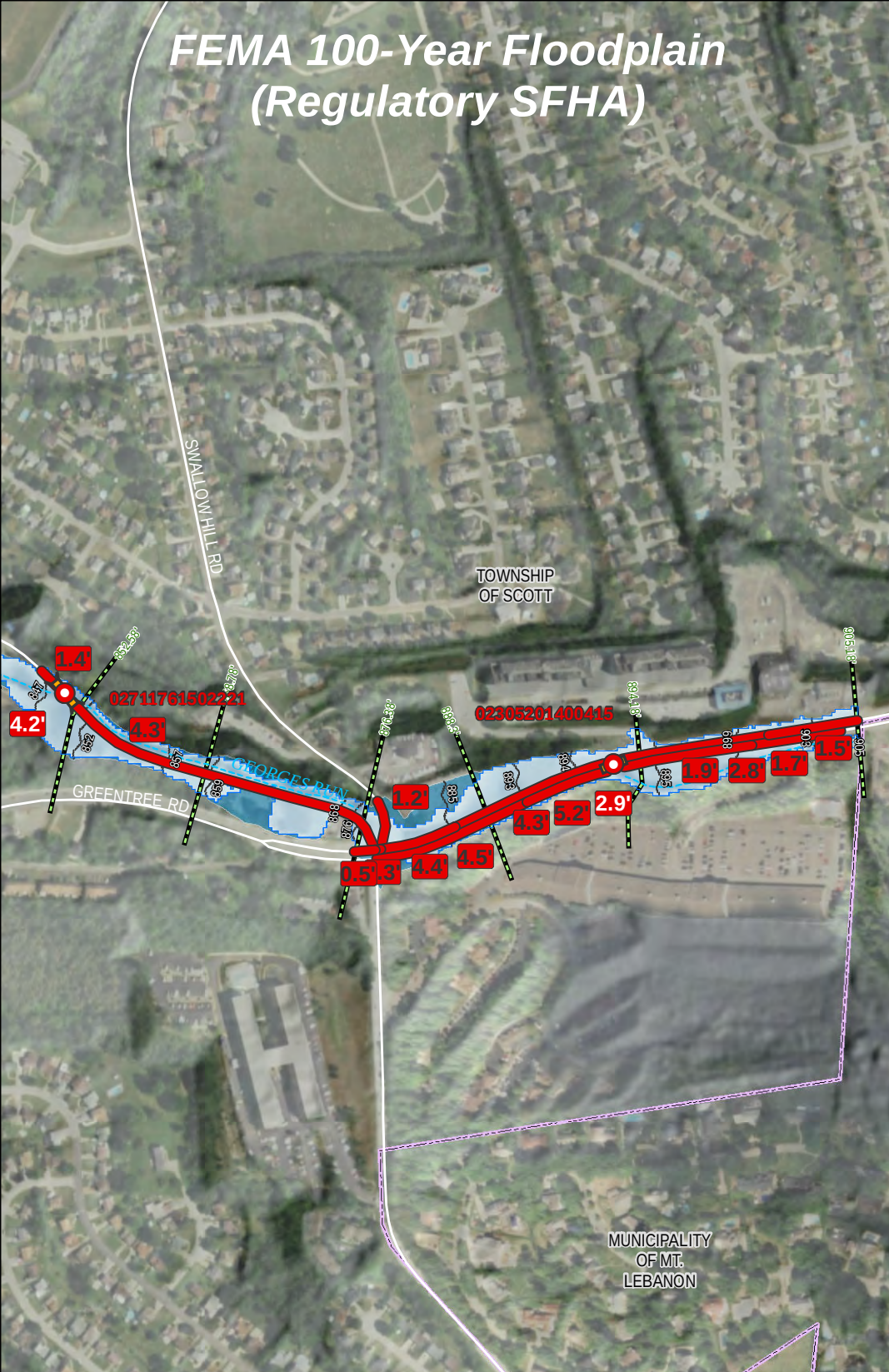
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

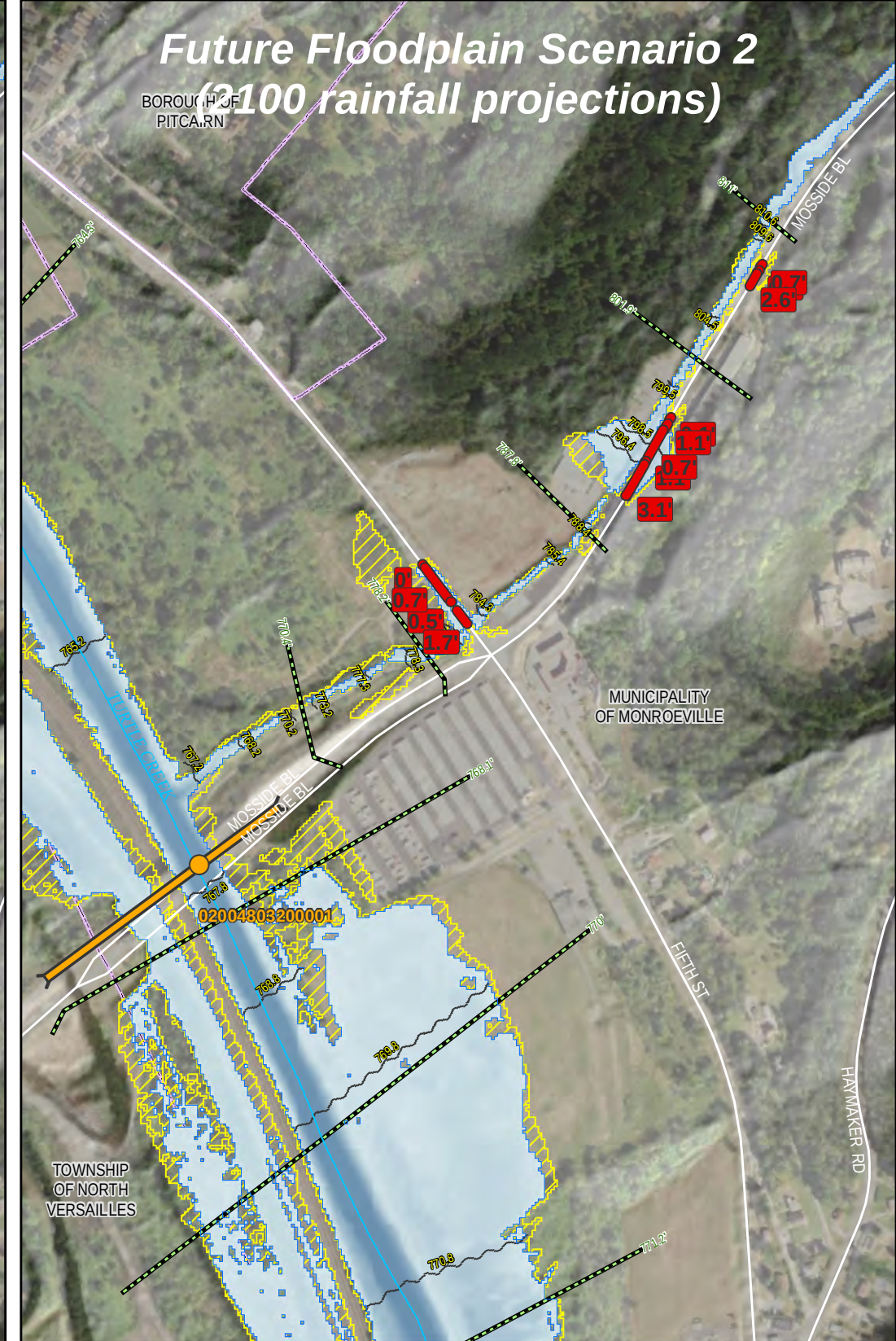
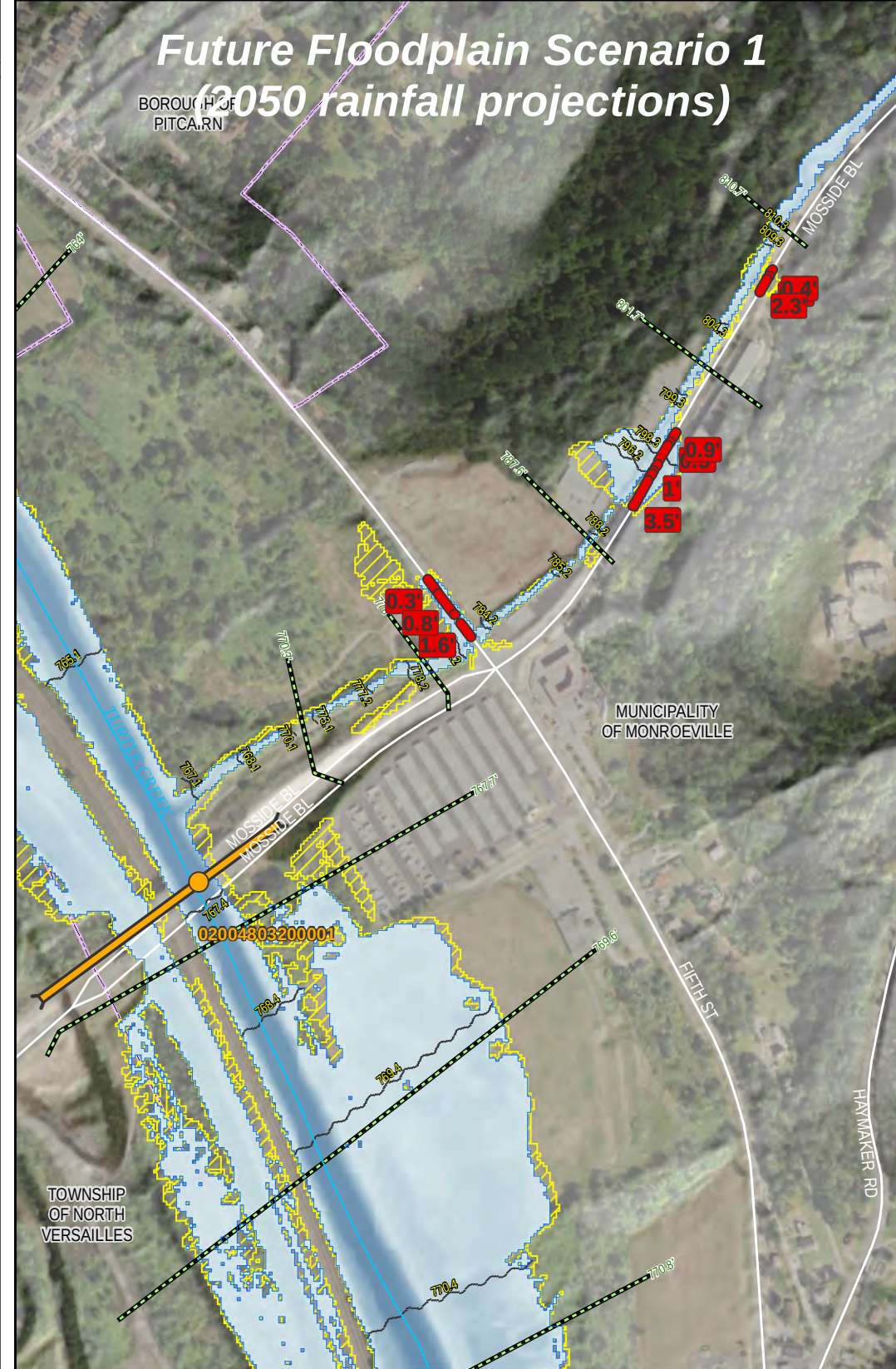
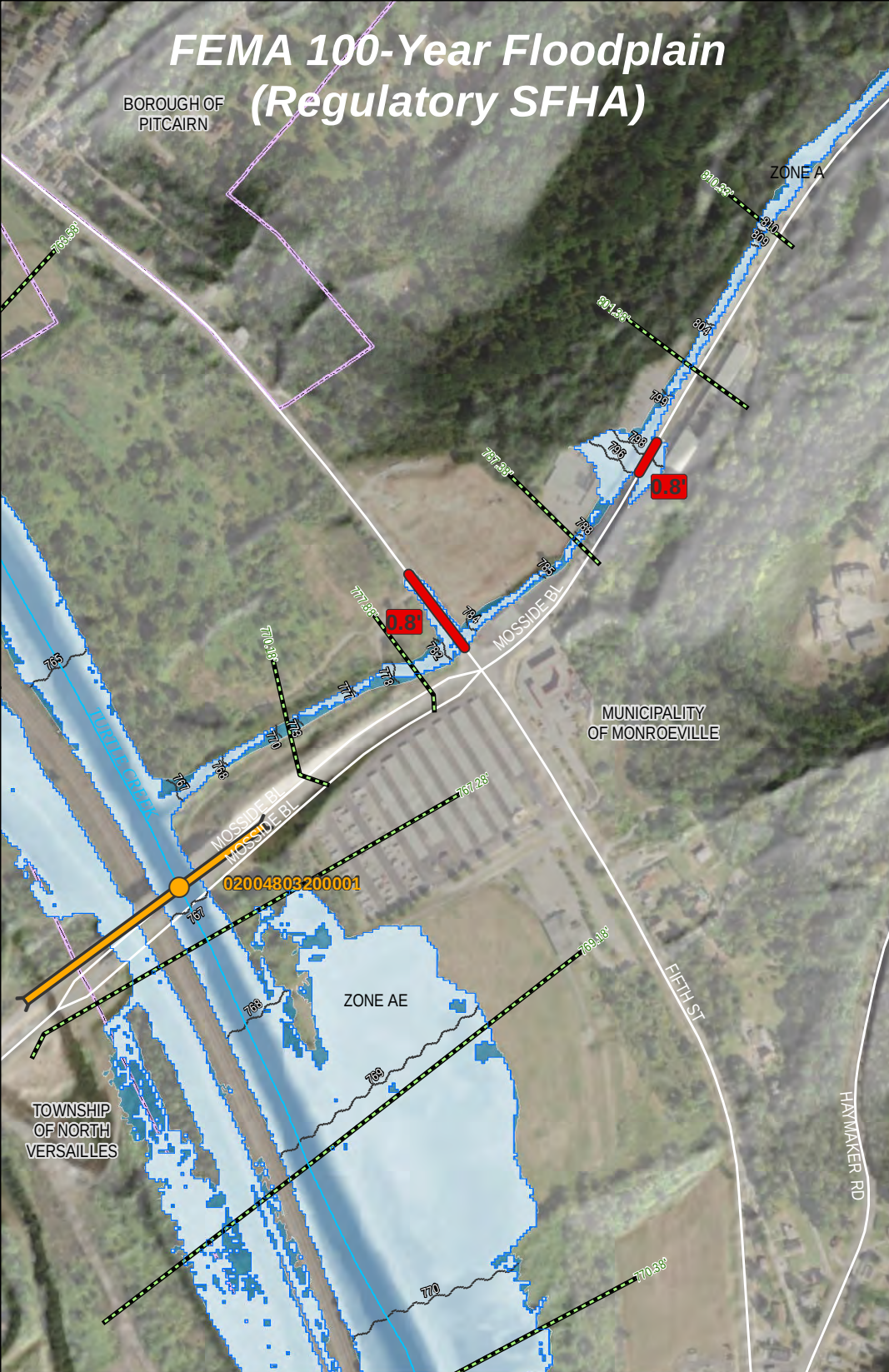
**Michael Baker
INTERNATIONAL**



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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. CODY ST
	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

0 1,000 Feet

Flood Vulnerability Analysis Allegheny County, PA

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

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November 23, 2016

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

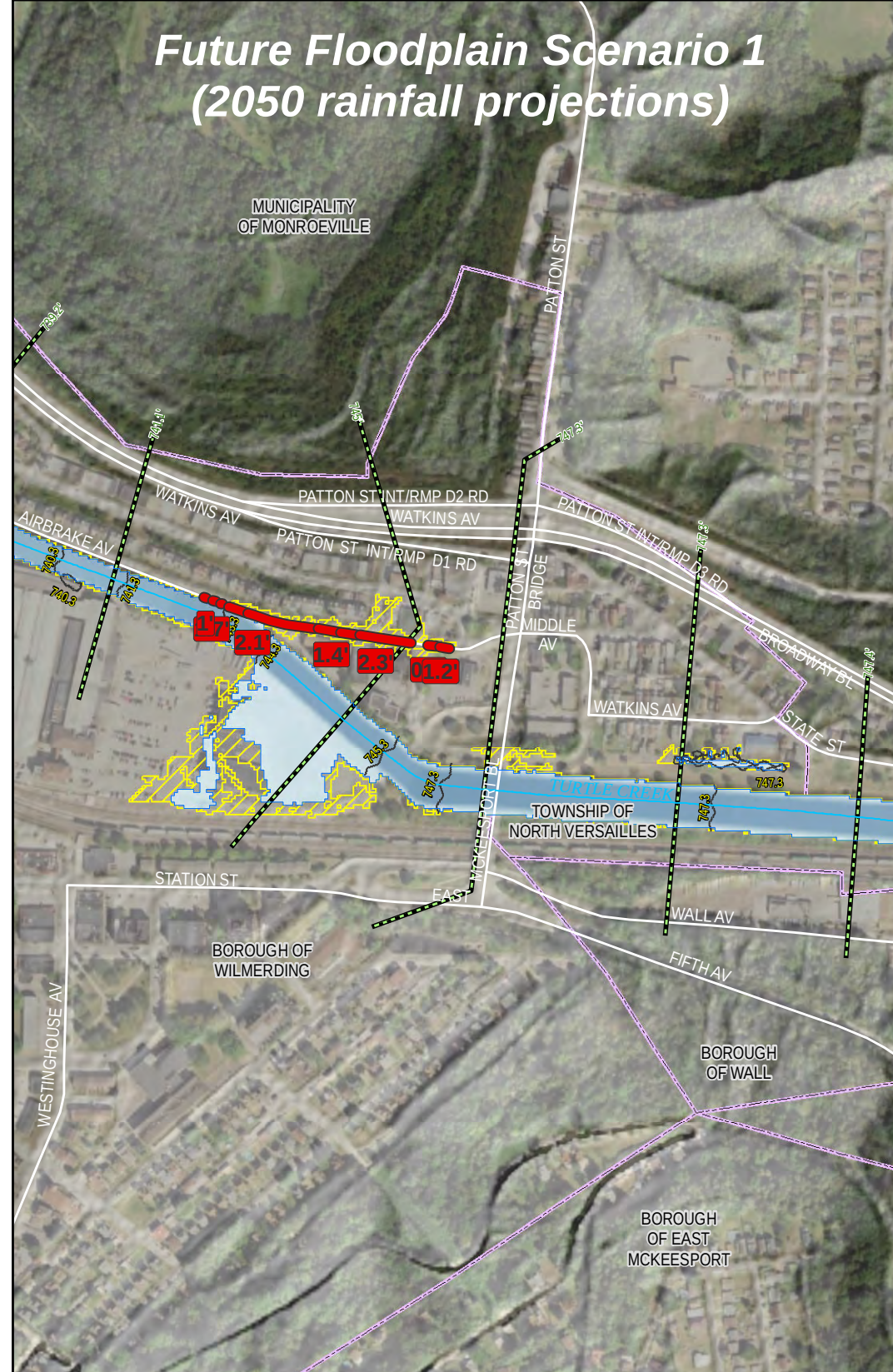
LOCATOR MAP:
Penn Hills
Monroeville
North Versailles
West Mifflin
Westmoreland County
Wyatt Airport
Jeannette

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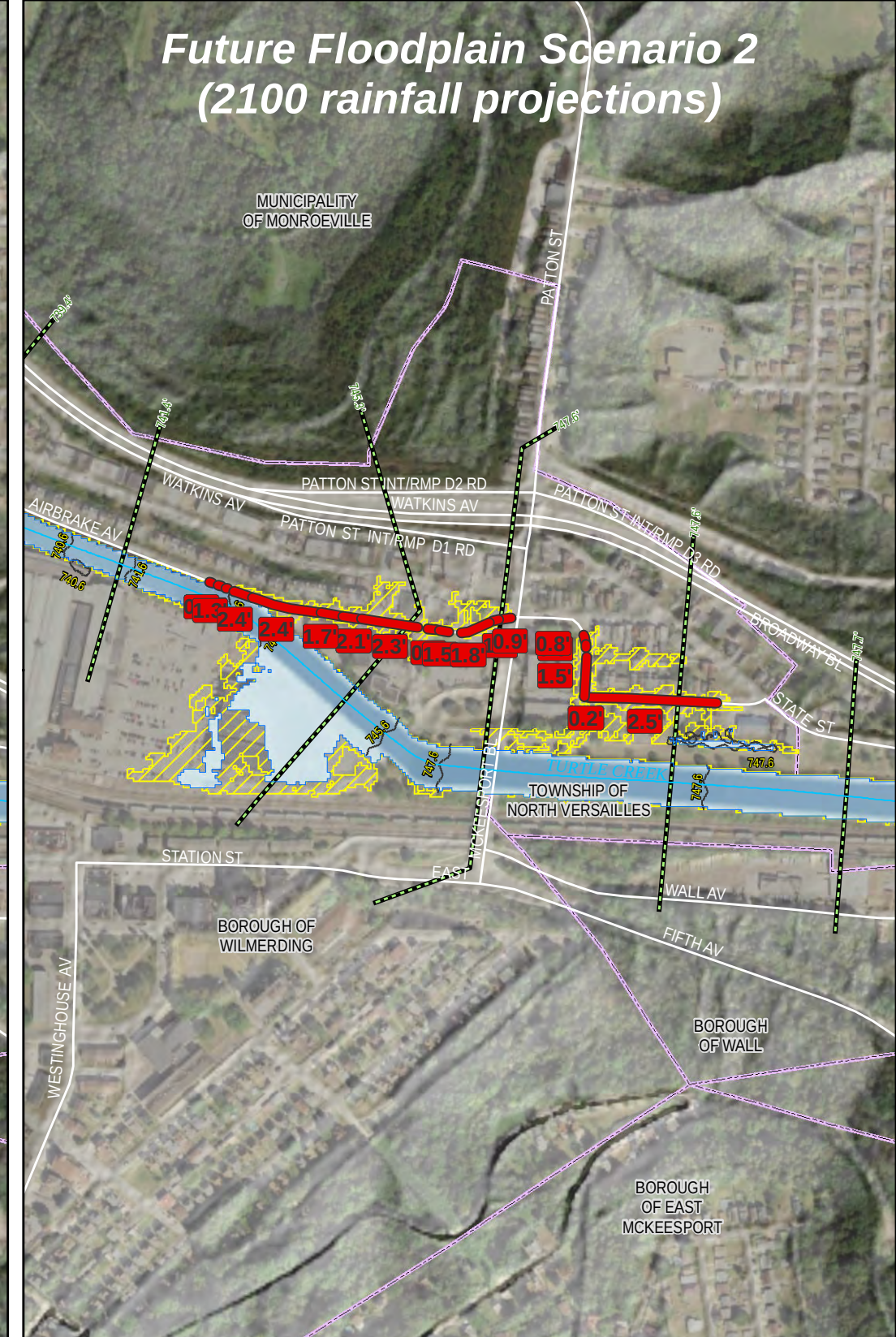
FEMA 100-Year Floodplain (Regulatory SFHA)



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'**
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FUTURE CONDITIONS

(Based on Depth Grid Boundary)

- Projected SFHA Extents

0 Feet
1,000

November 23, 2016



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

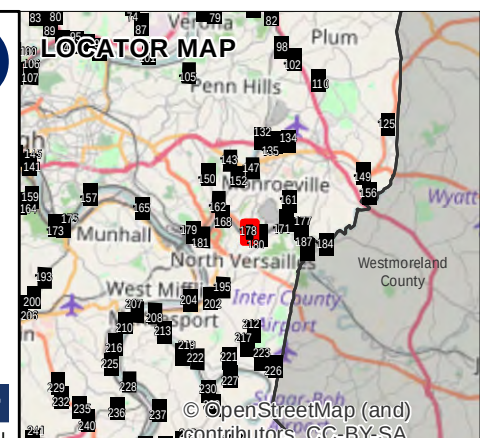
Sheet 178 of 265



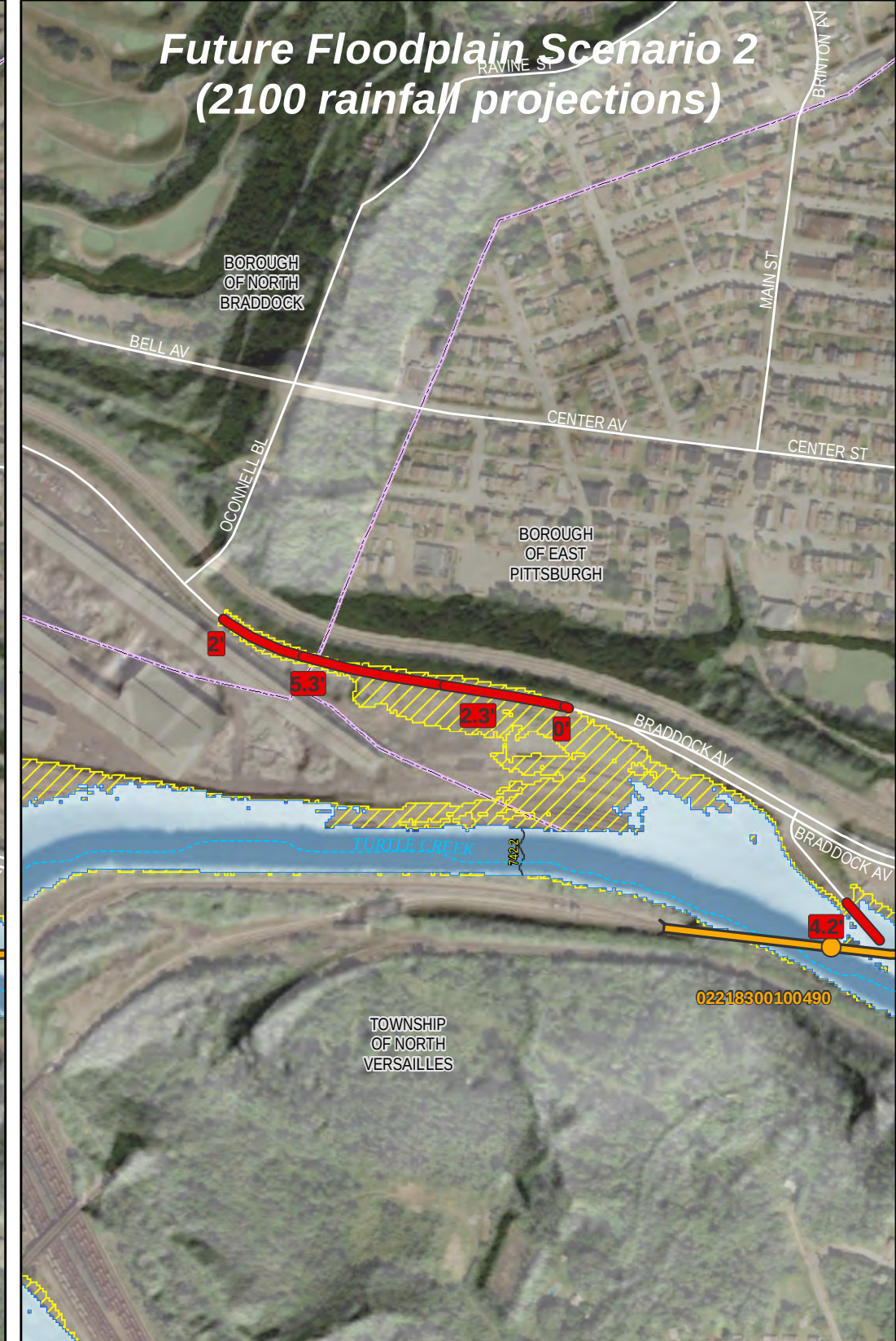
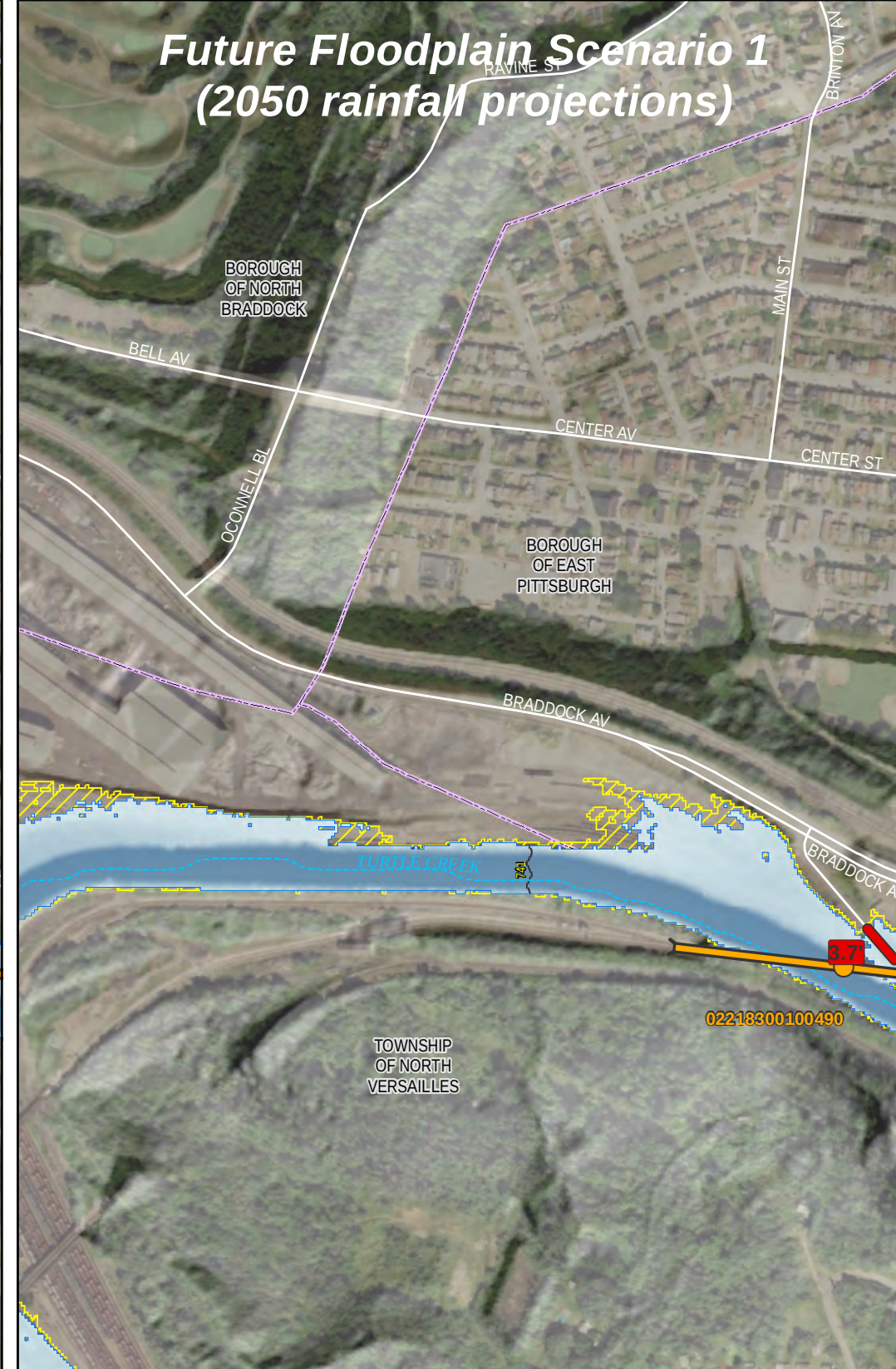
DATA FRAME PROPERTIES:
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**



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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
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Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

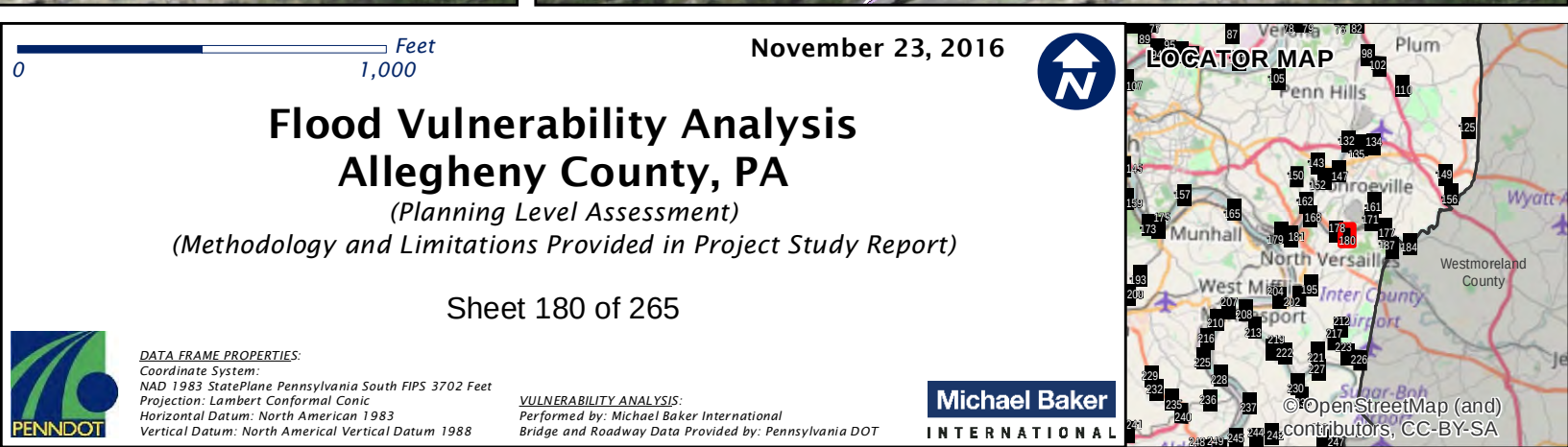
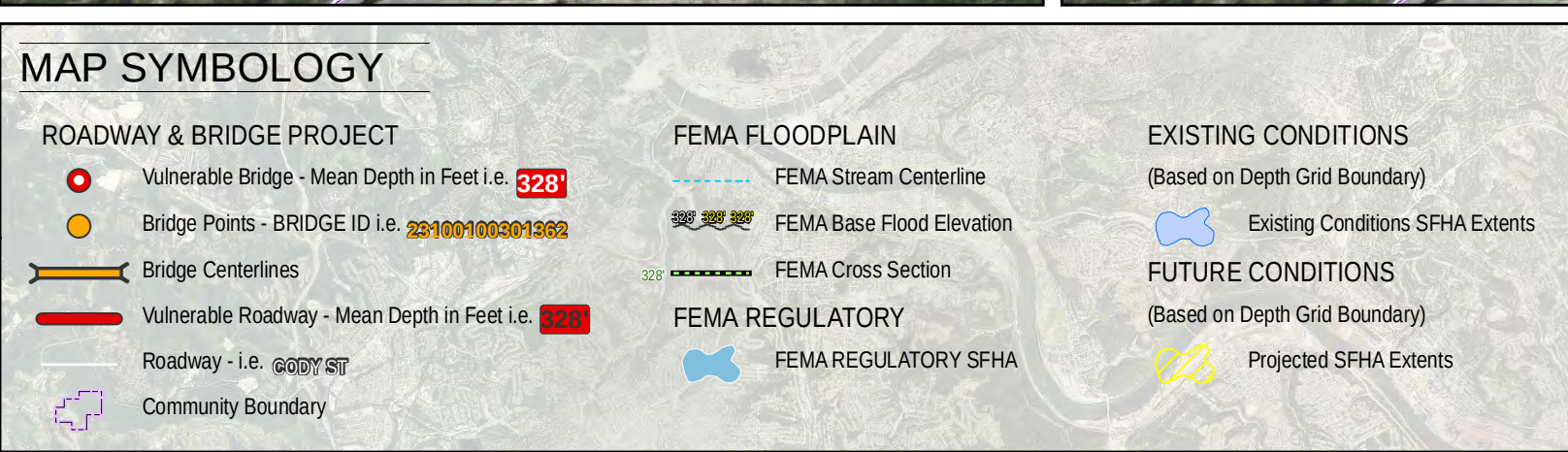
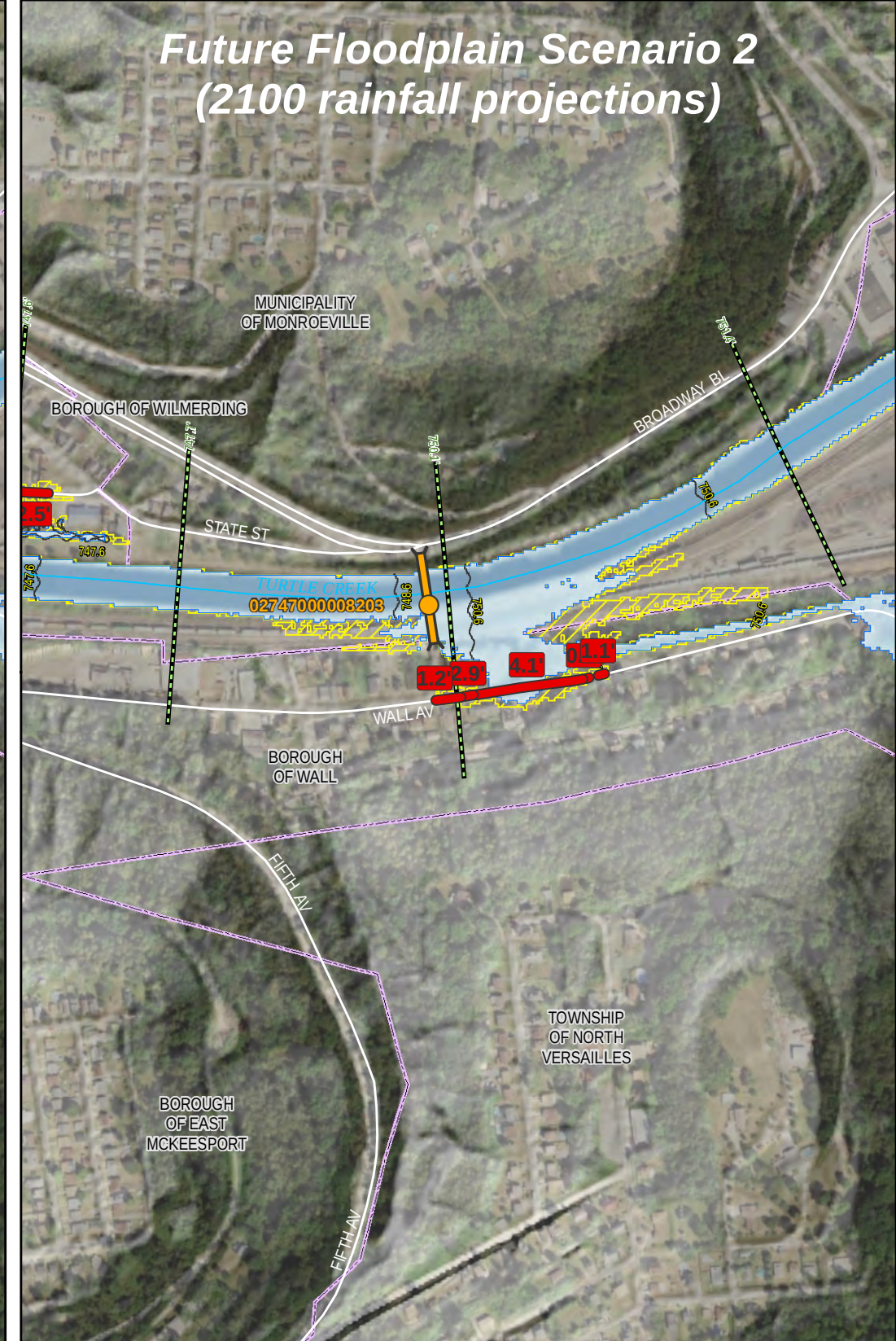
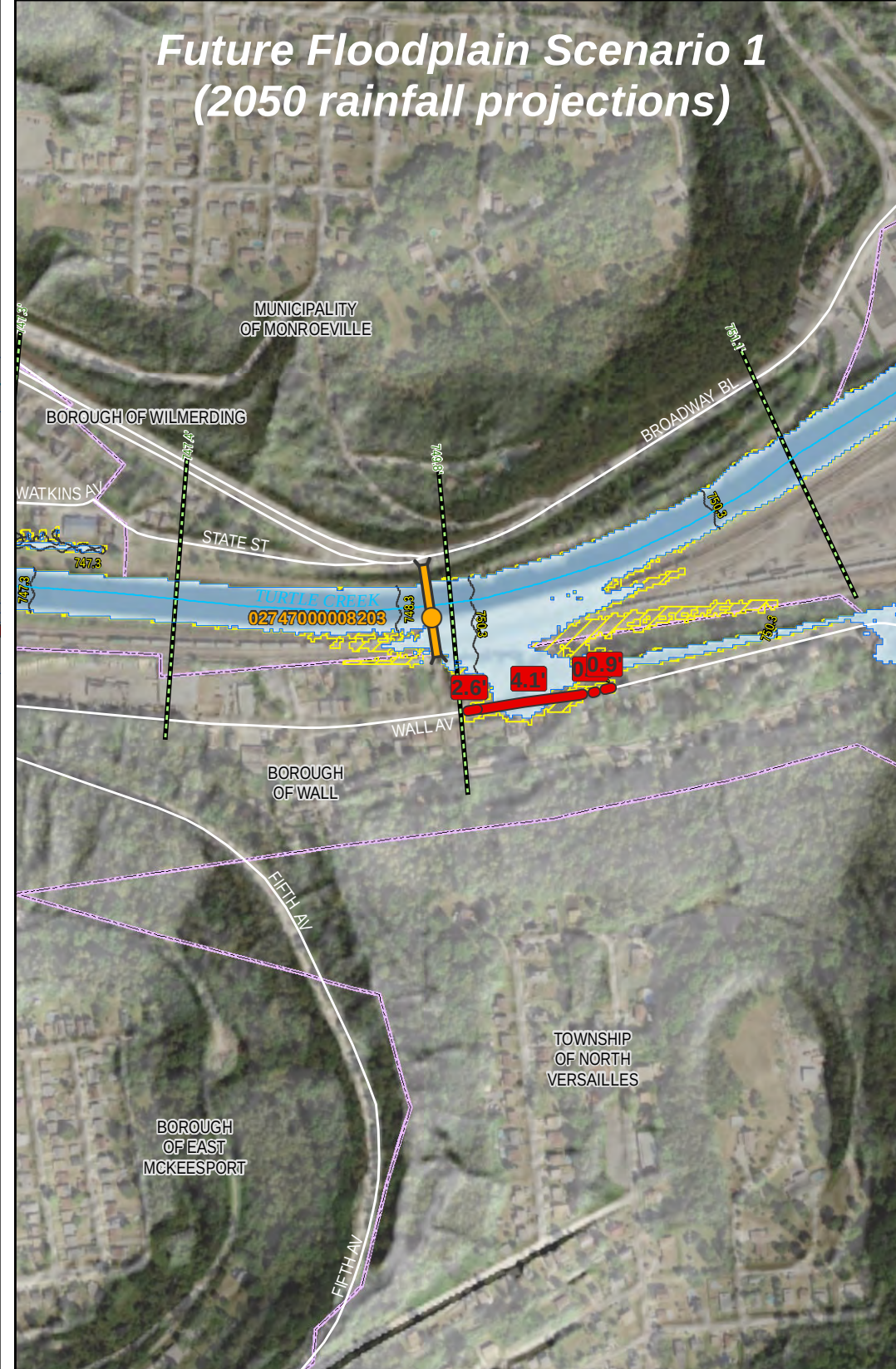
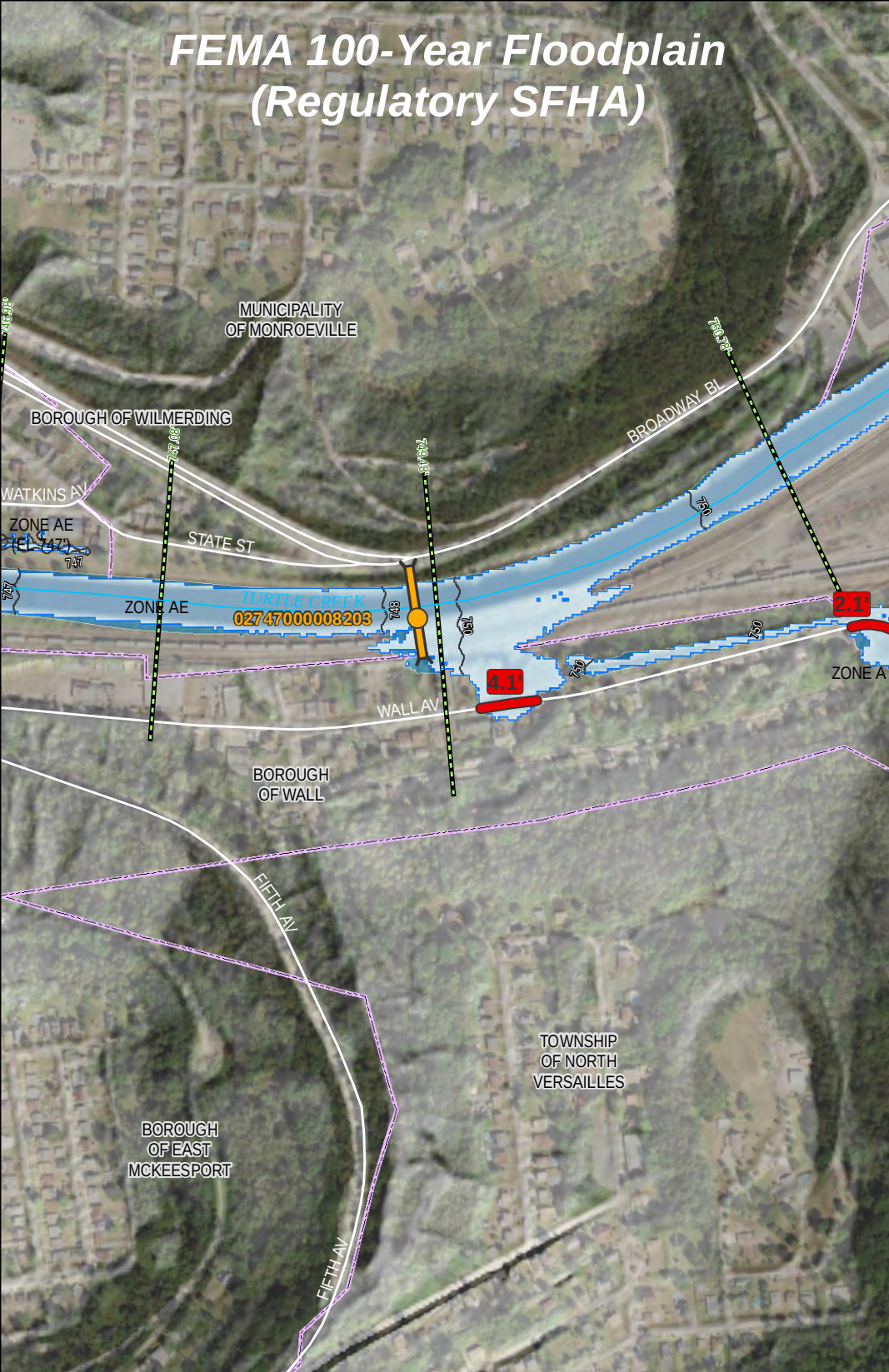
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

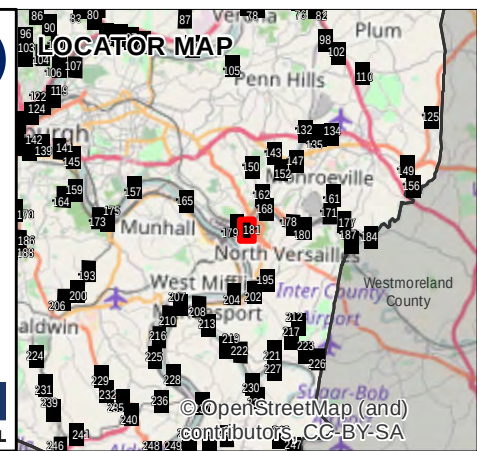


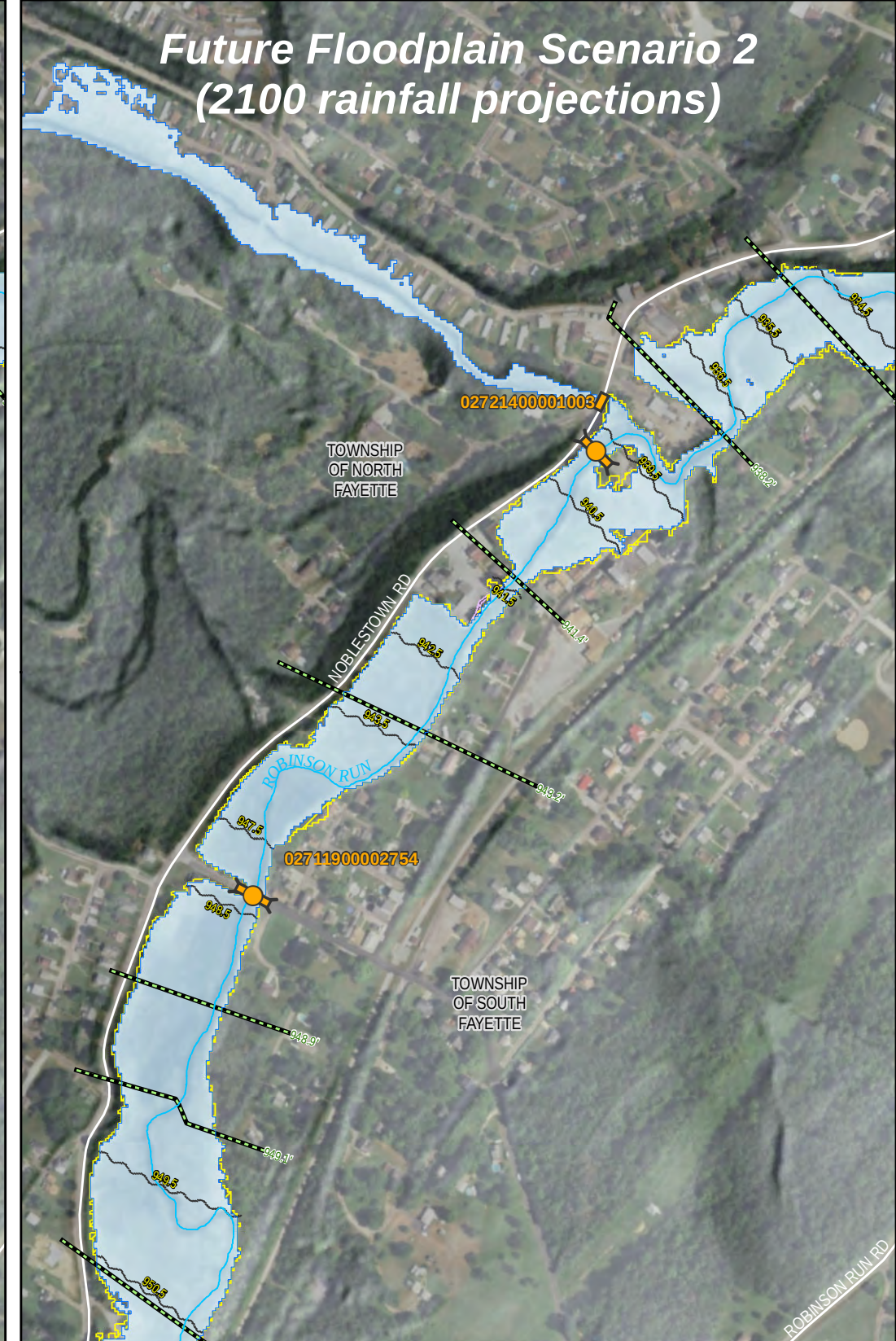
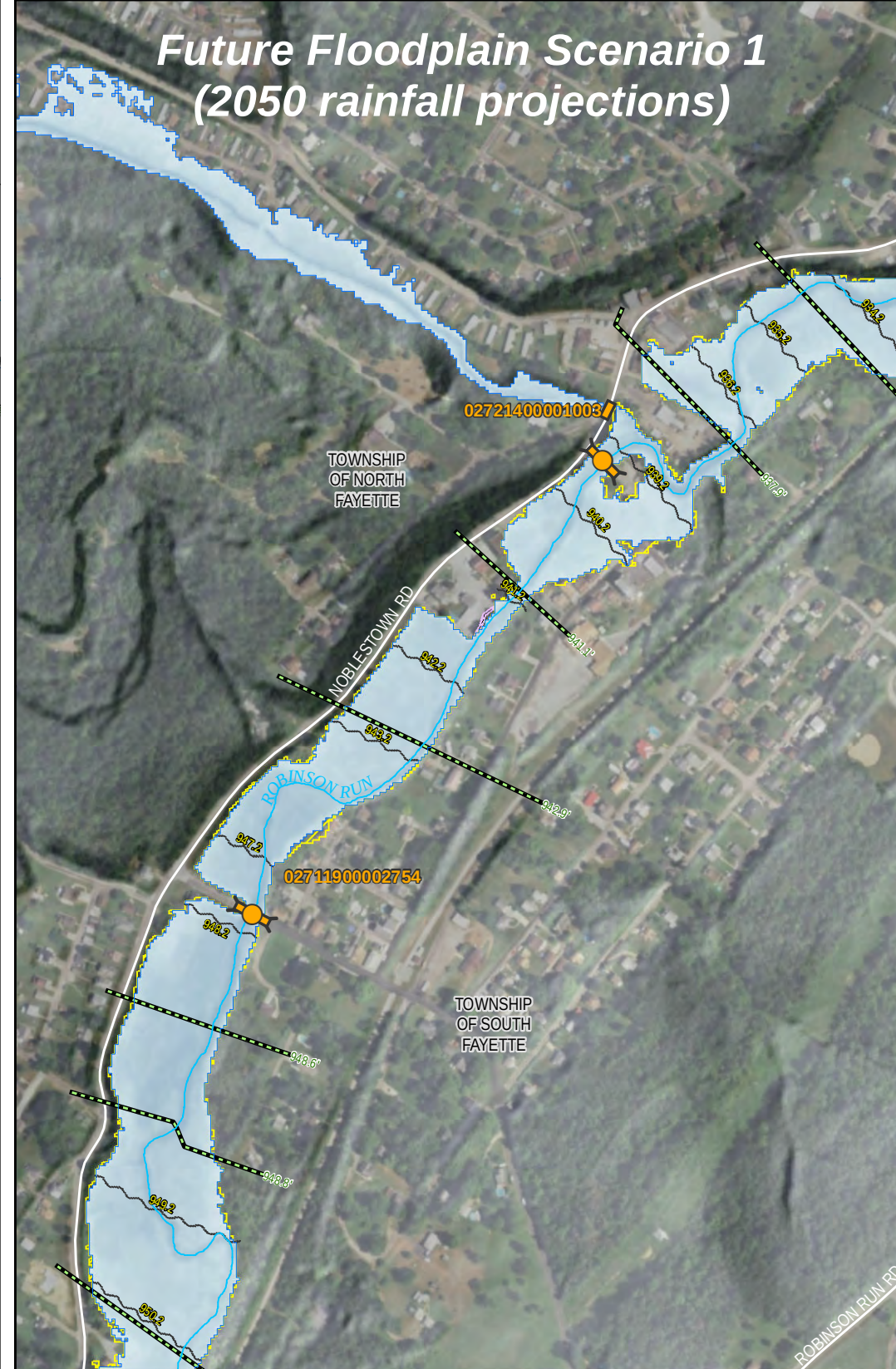
**FEMA 100-Year Floodplain
(Regulatory SFHA)**

MAIN ST
CENTER AV
CENTER ST
BOROUGH OF EAST PITTSBURGH
LINCOLN HWY
LINDEN AV
TRI-BORO AV
TRI-BORO AV
BRADDOCK AV
TRI-BORO AV
LINCOLN HWY
LINCOLN HWY
TOWNSHIP OF NORTH VERSAILLES
ALLEGHENY RIVER
ZONE AE
ZONE A
02218300100490
02203700910878

Future Floodplain Scenario 1
(2050 rainfall projections)

MAIN ST
CENTER AV
CENTER ST
BOROUGH OF EAST PITTSBURGH
LINCOLN HWY
LINDEN AV
TRI-BORO AV
TRI-BORO
BRADDOCK AV
TURTLE CREEK
02218300100490
3.7
TOWNSHIP OF NORTH VERSAILLES
LINCOLN HWY





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	
	Vulnerable Bridge - Mean Depth in Feet i.e. 328'
	Bridge Points - BRIDGE ID i.e. 23100100301362
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FEMA FLOODPLAIN	
	FEMA Stream Centerline
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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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

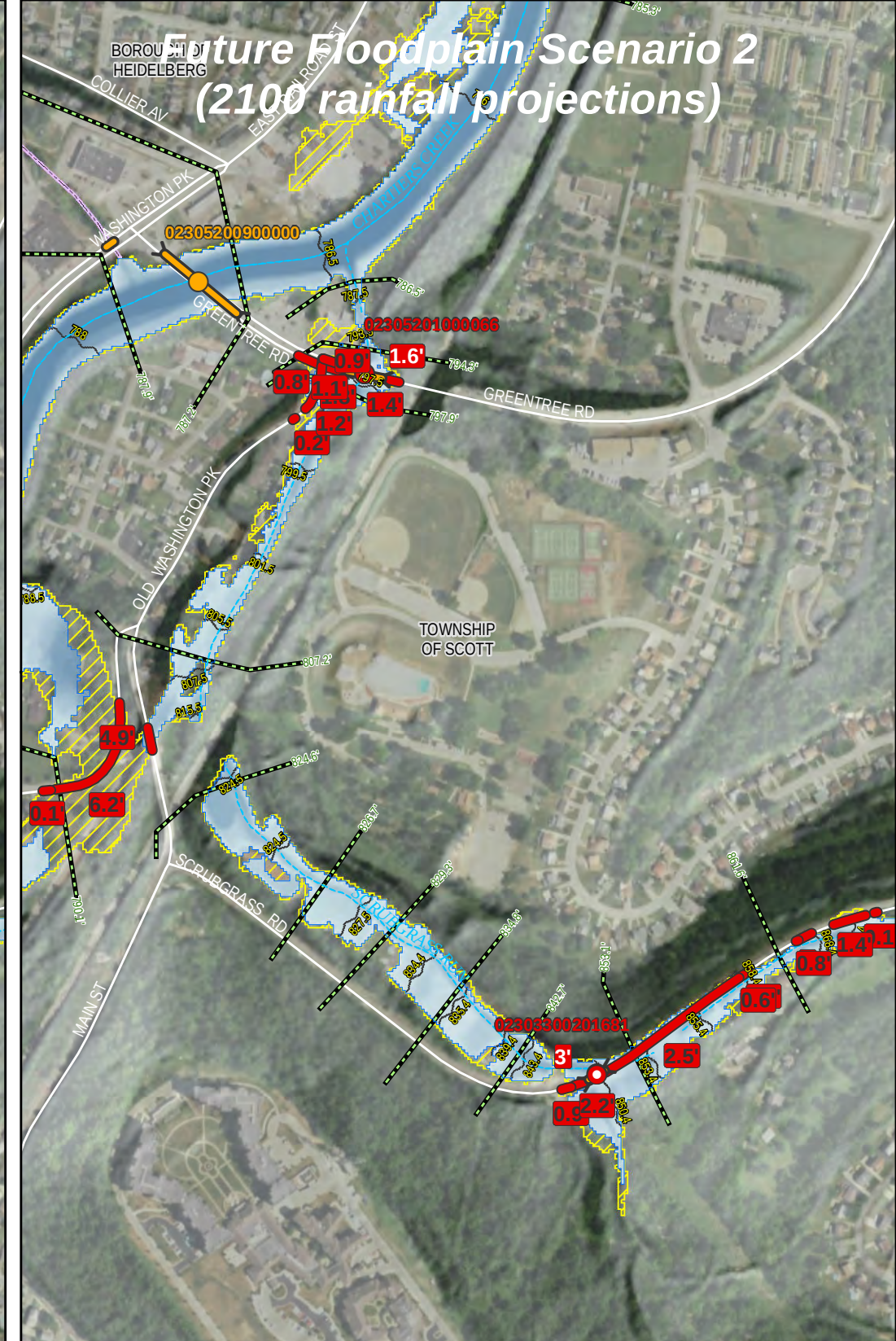
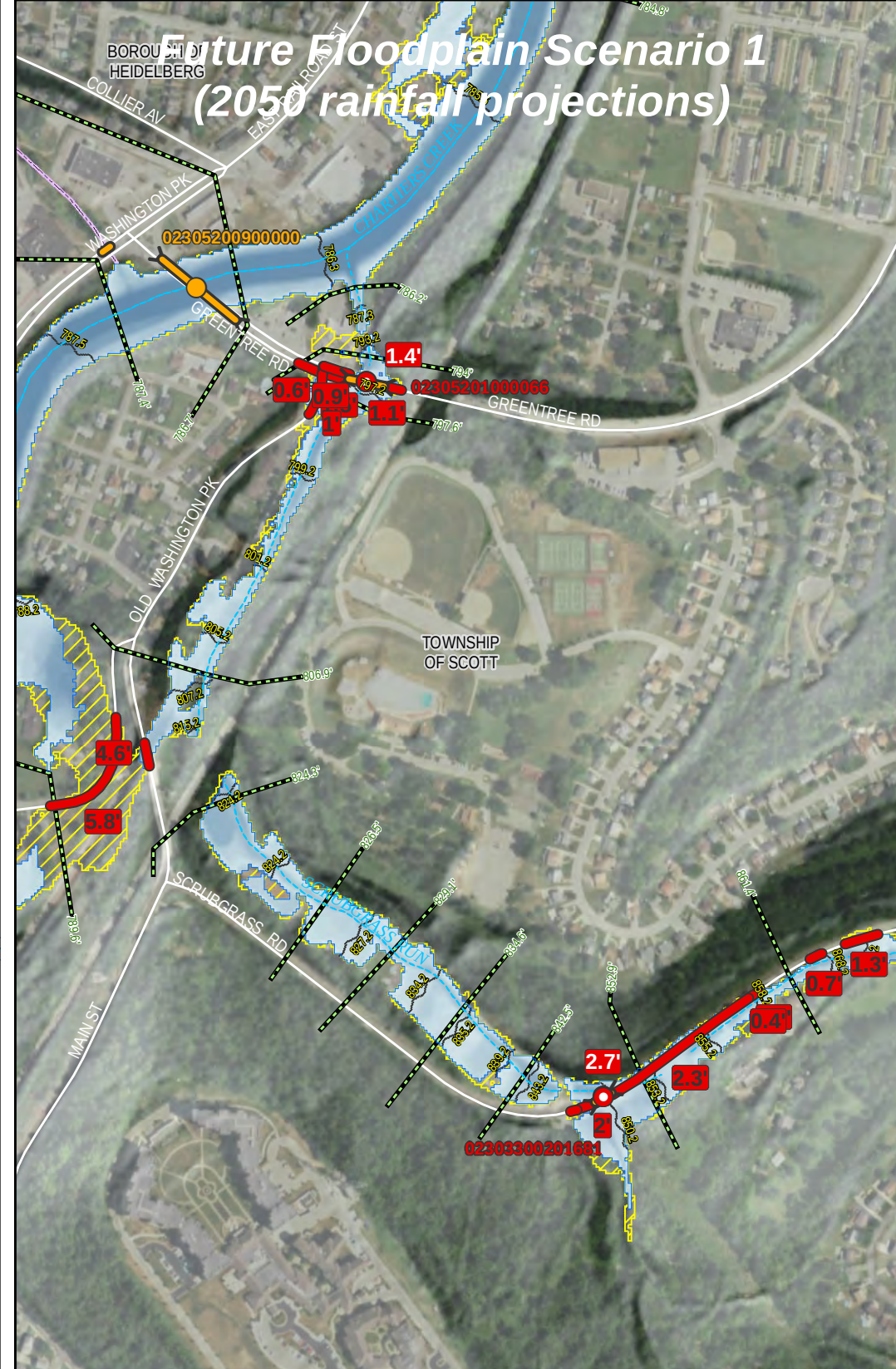
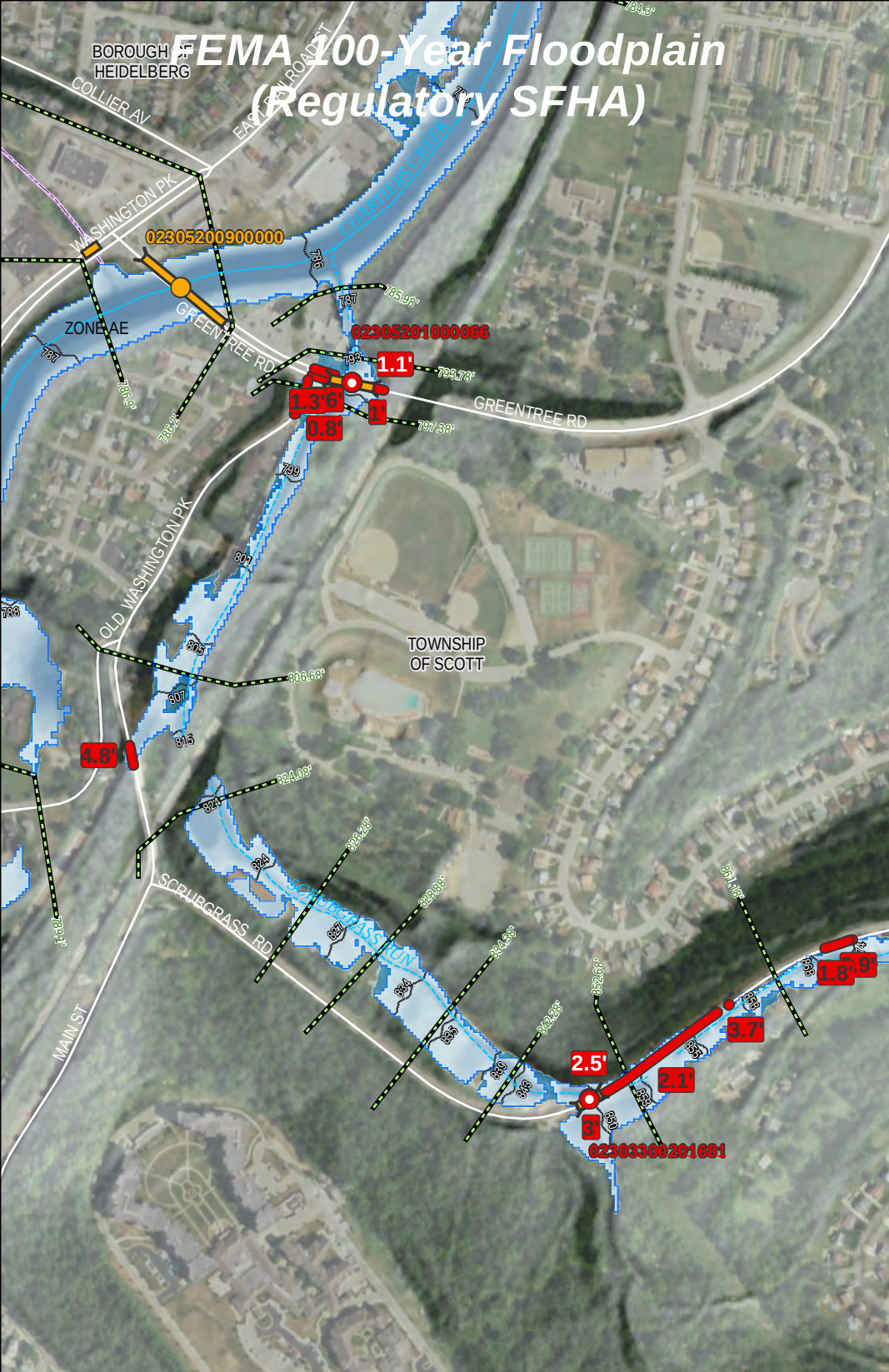
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 182 of 265

DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

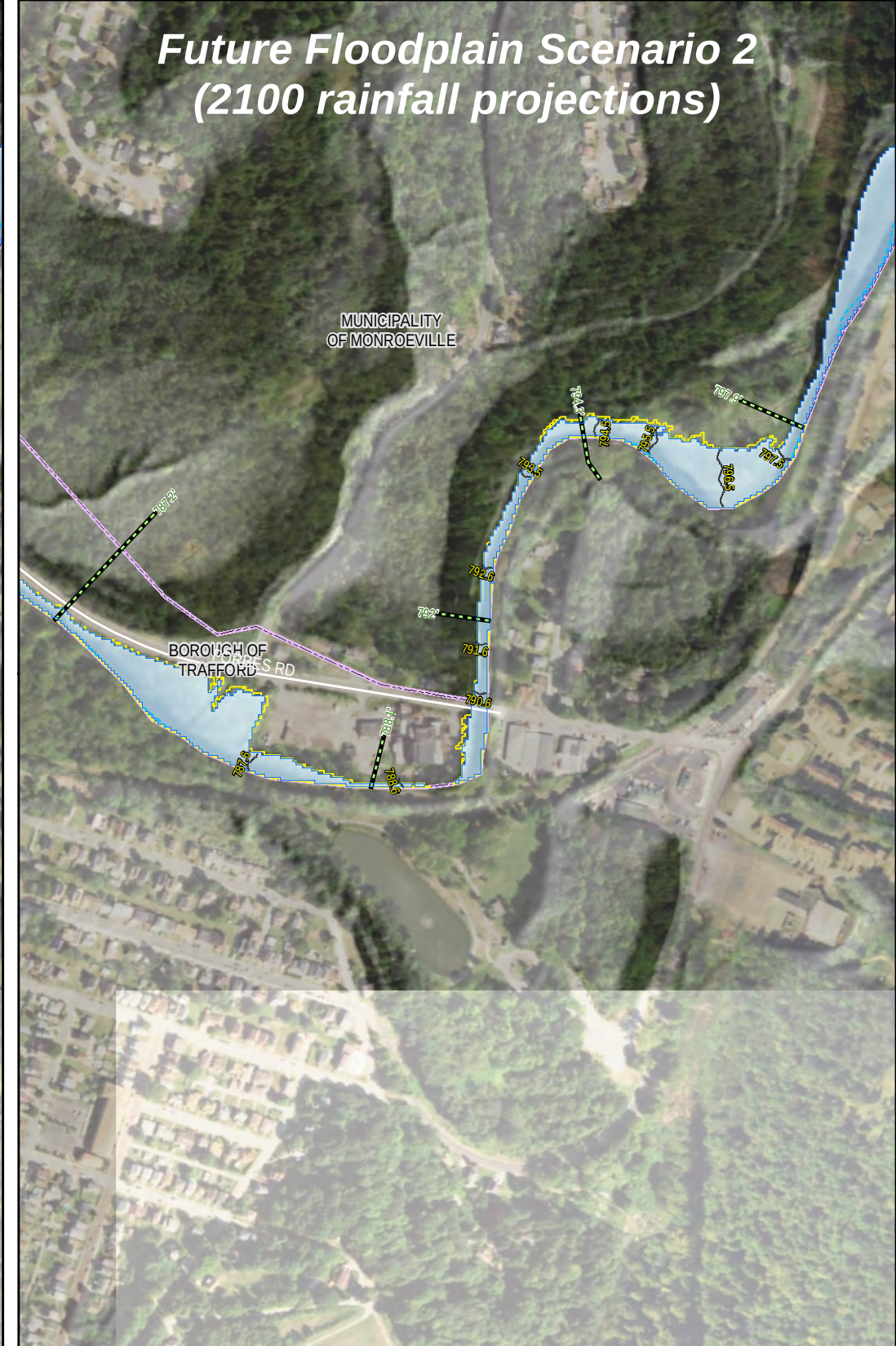
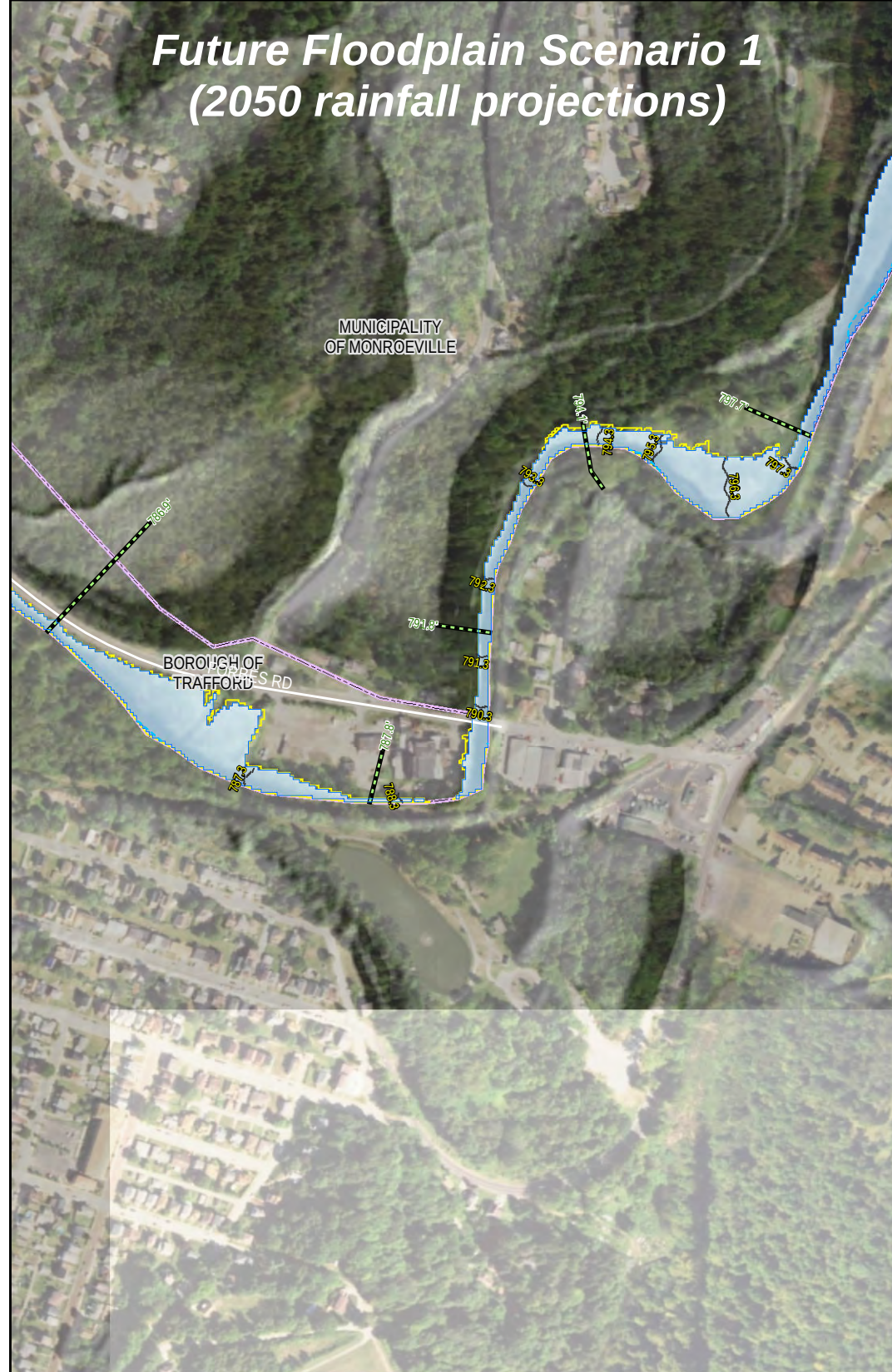
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



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. CODY ST
	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

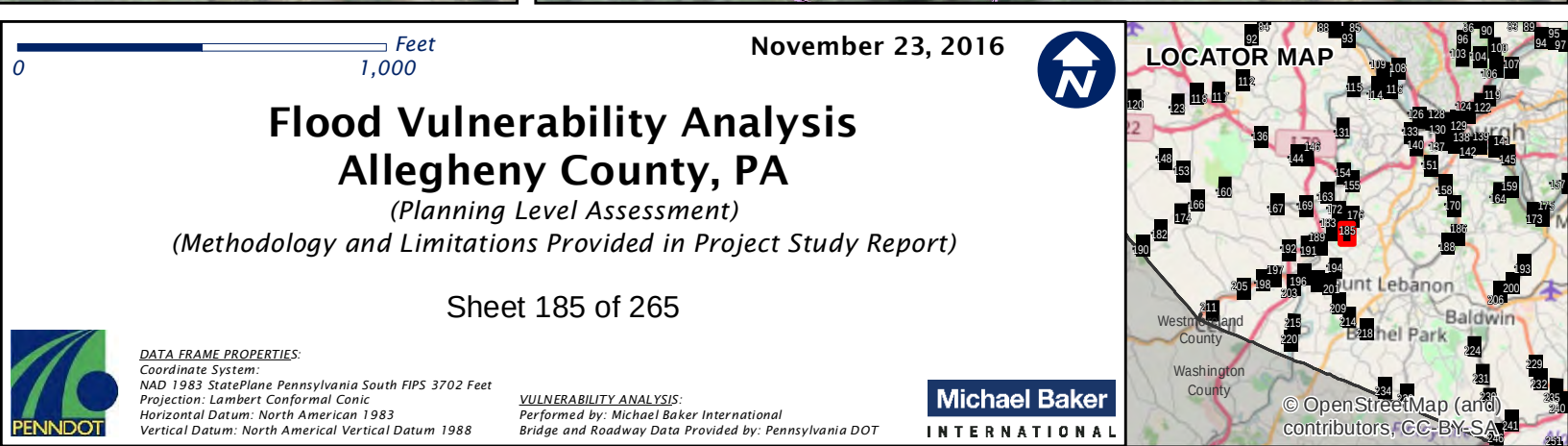
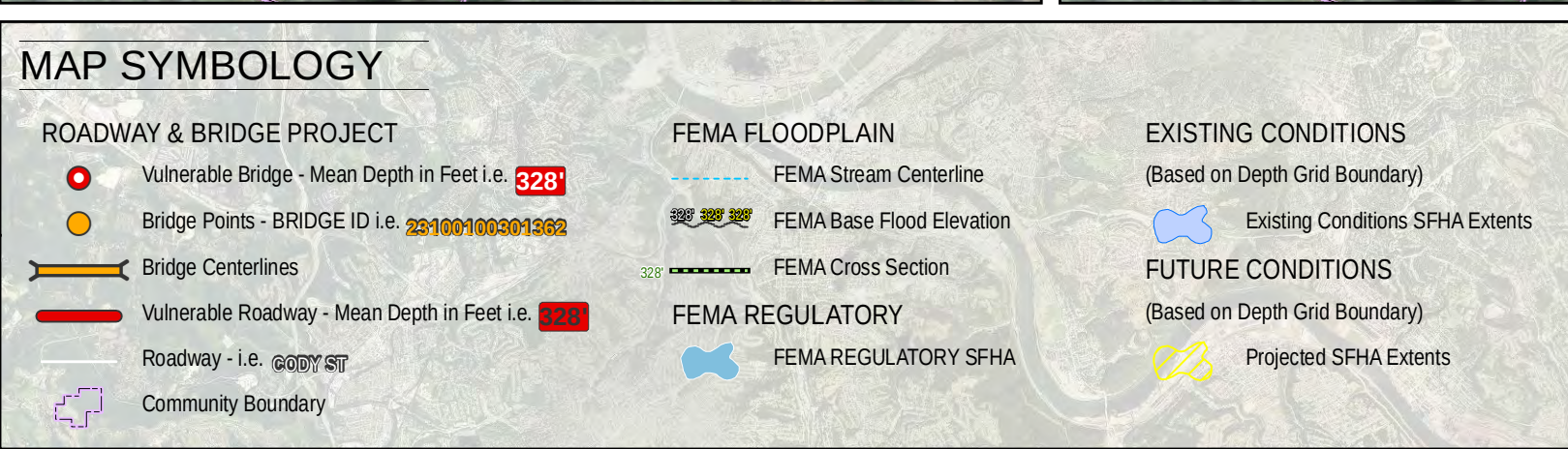
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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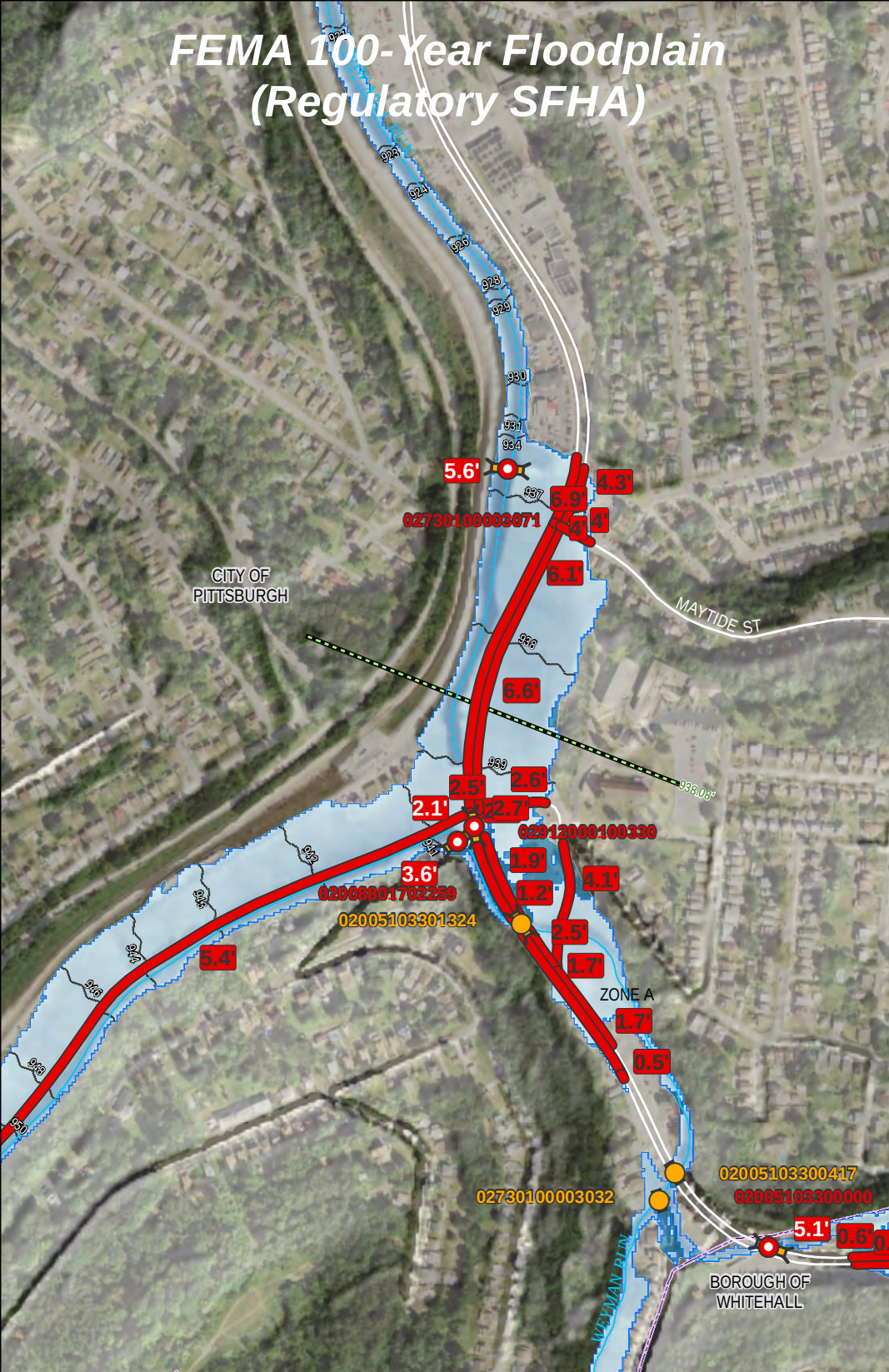
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Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

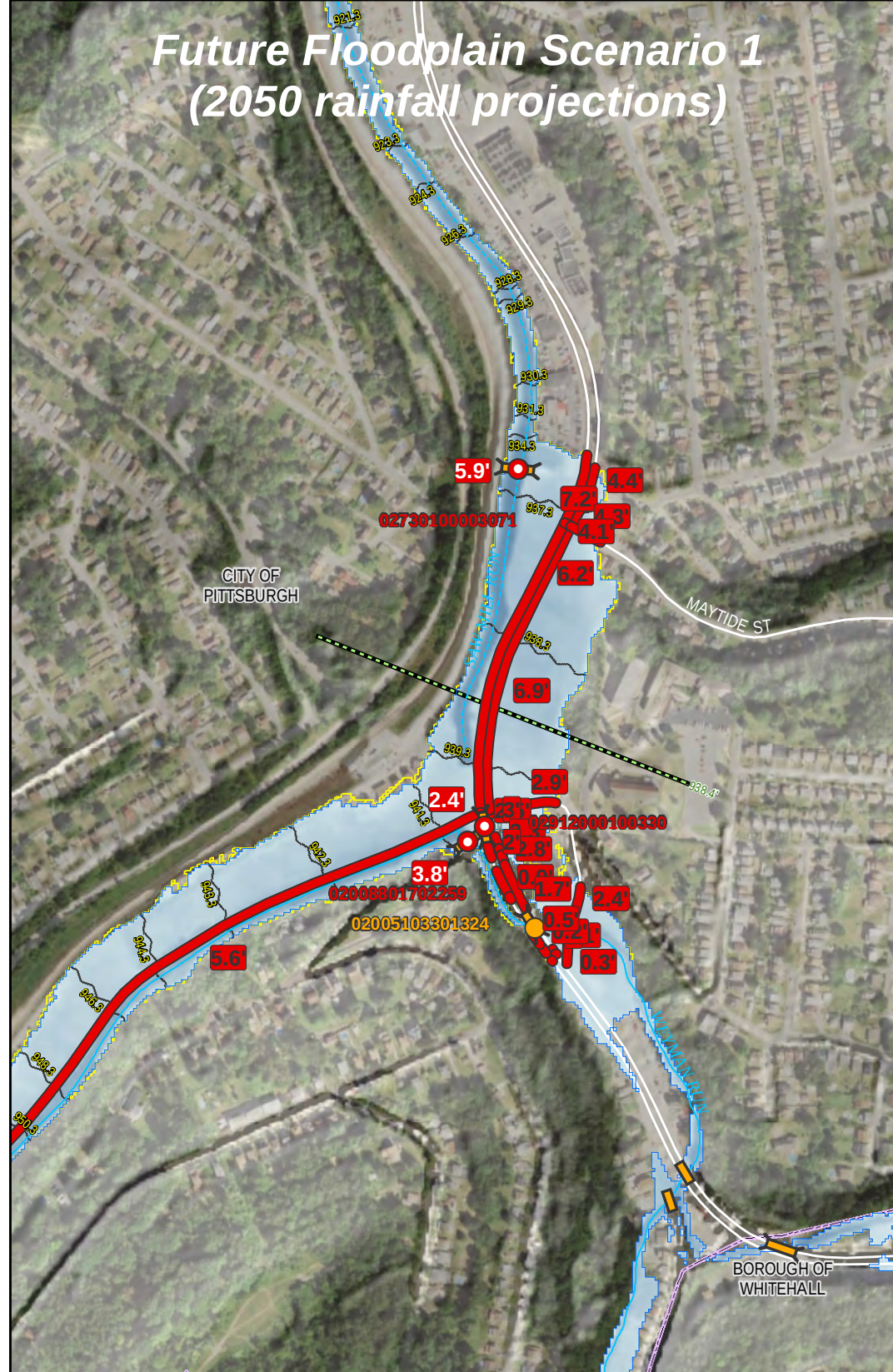
LOCATOR MAP



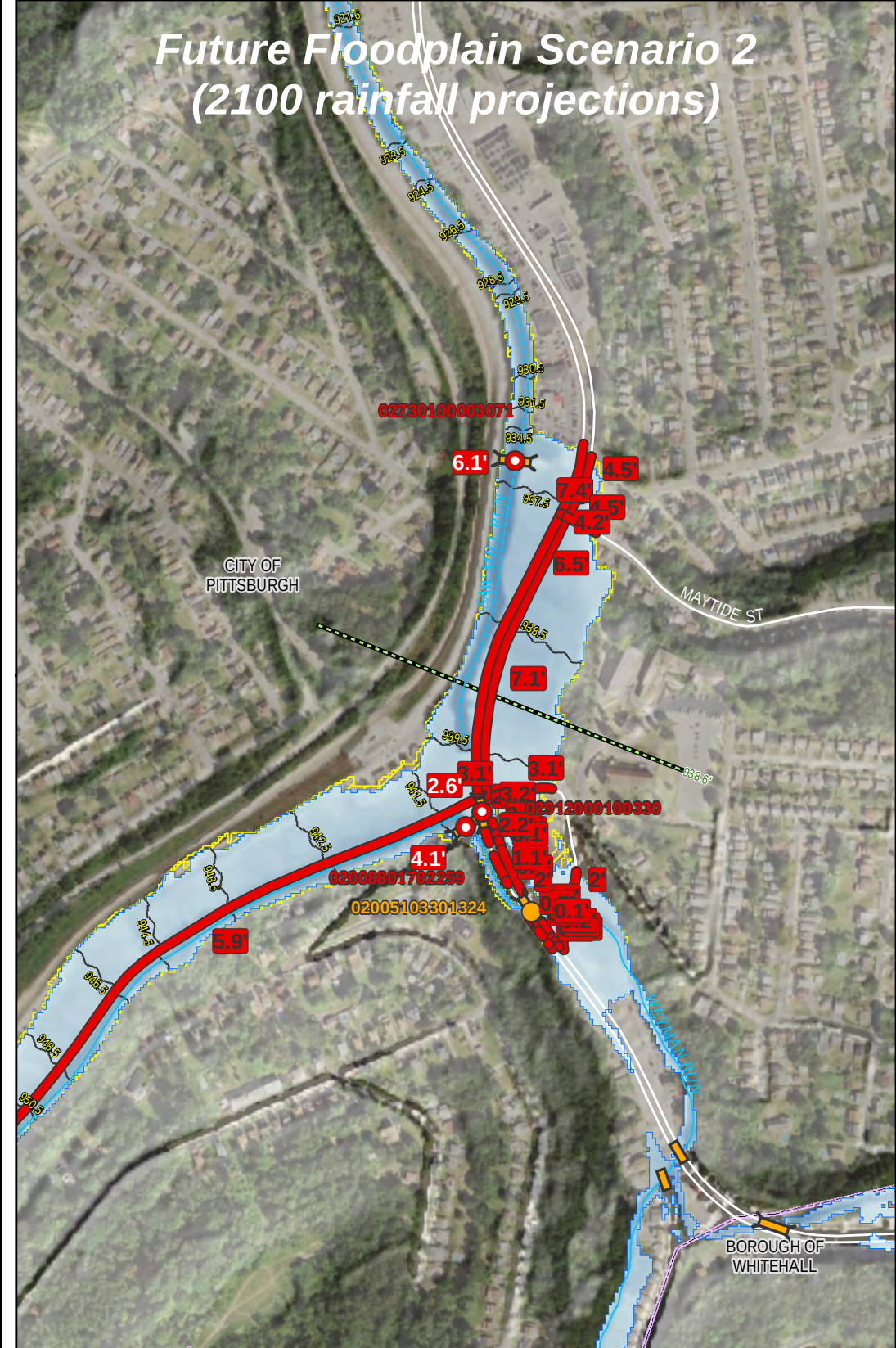
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

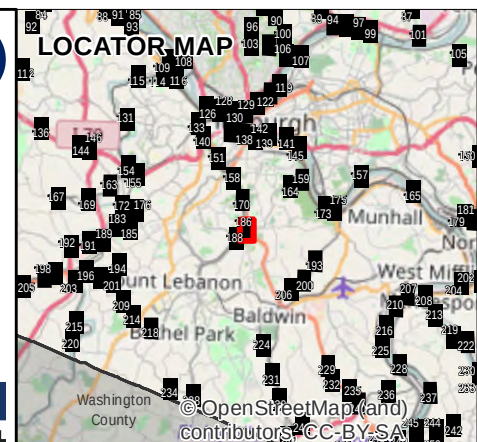
Sheet 186 of 265



DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

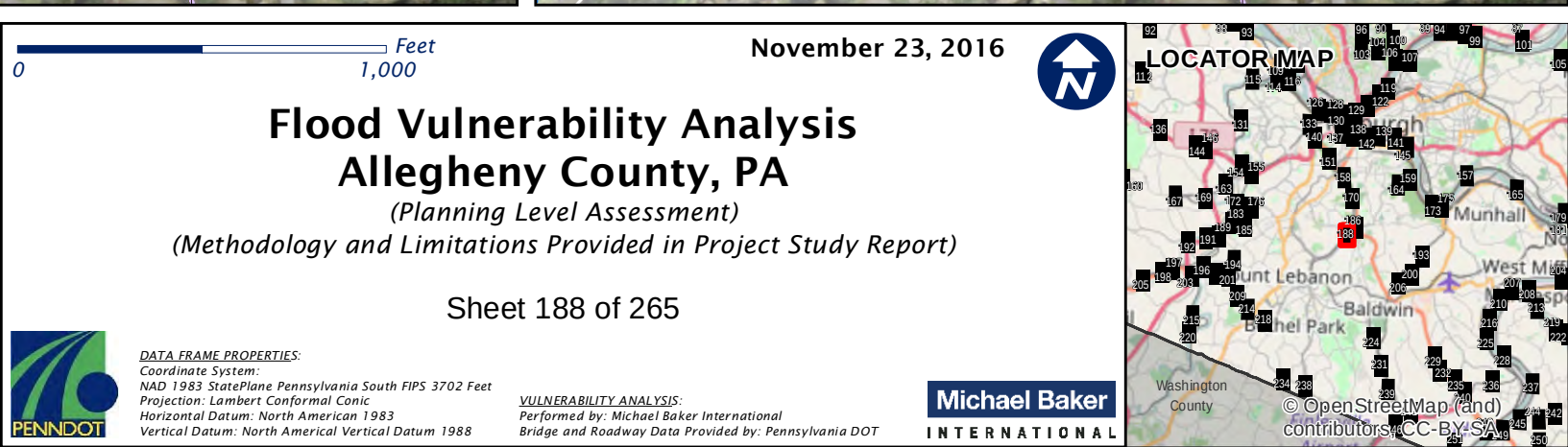
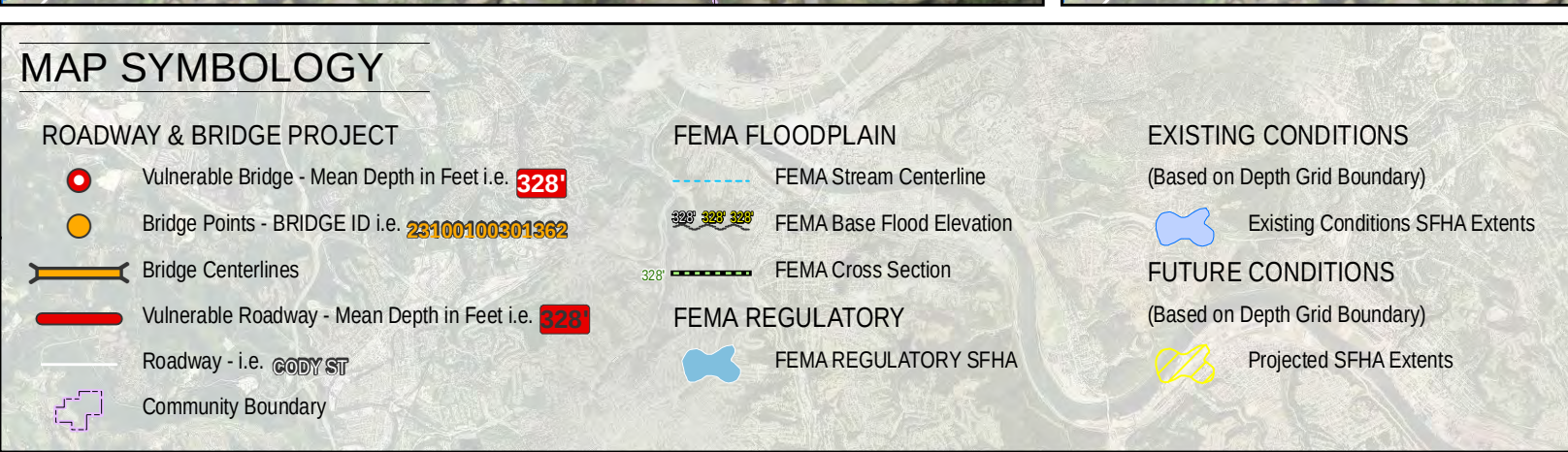
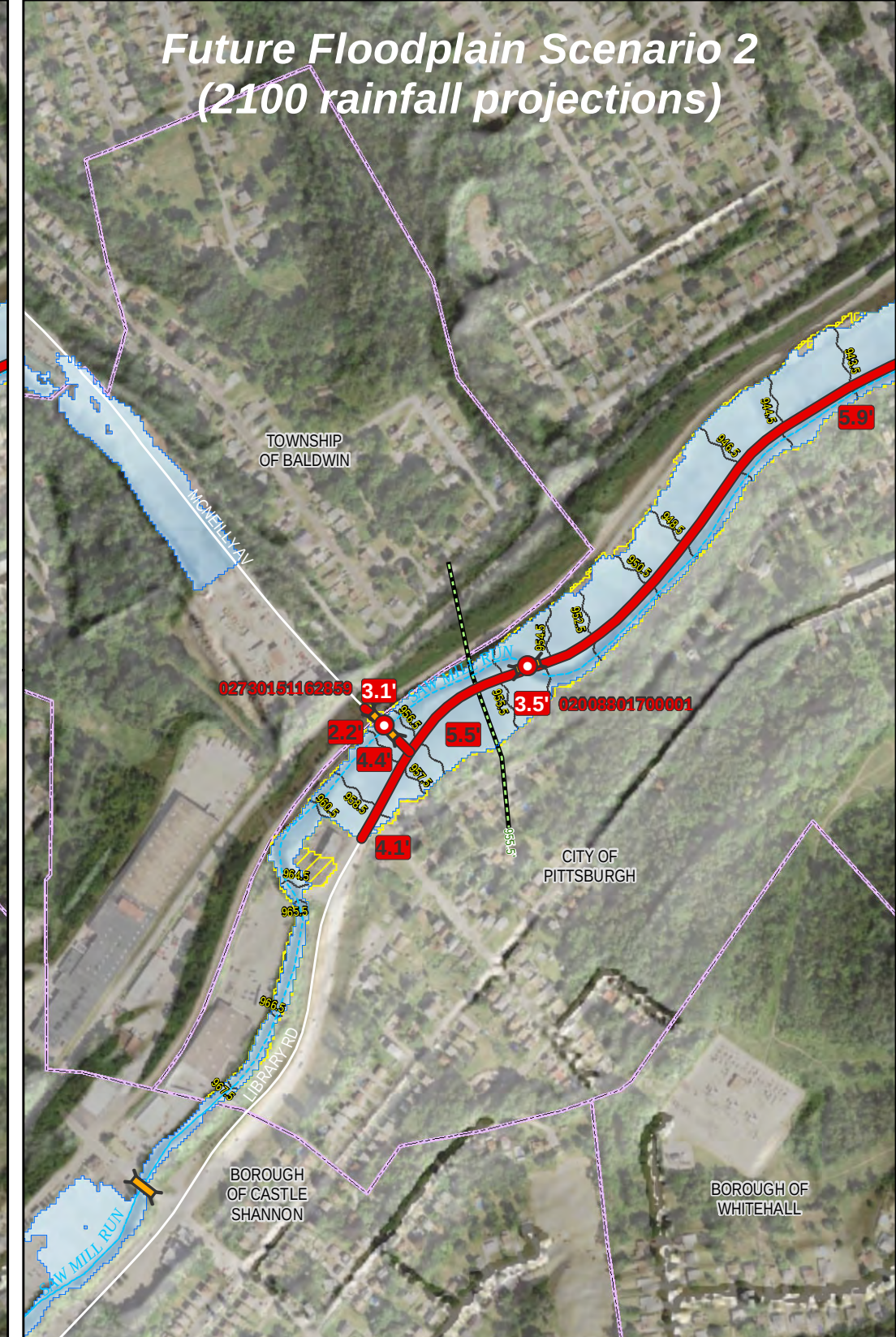
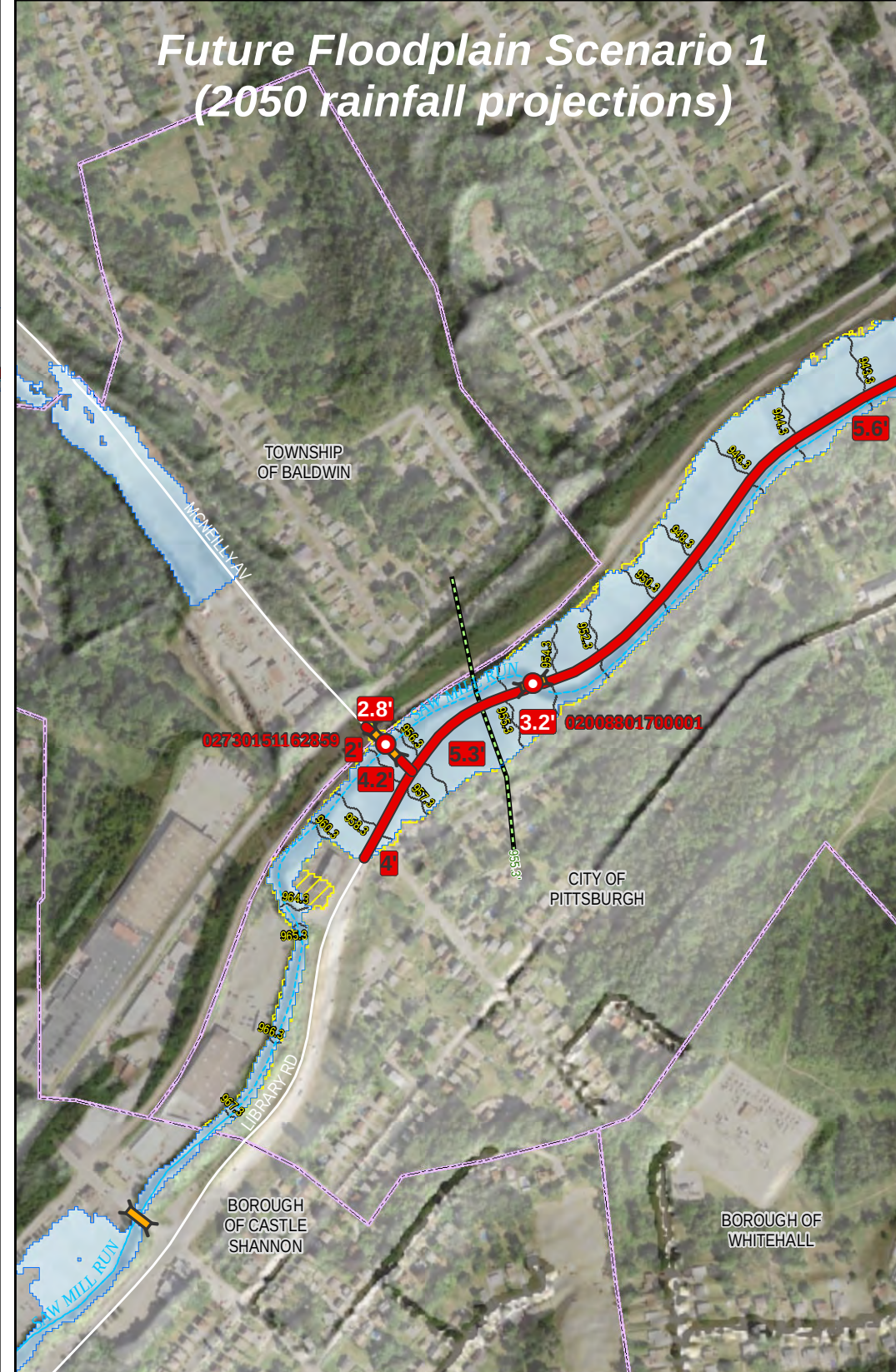
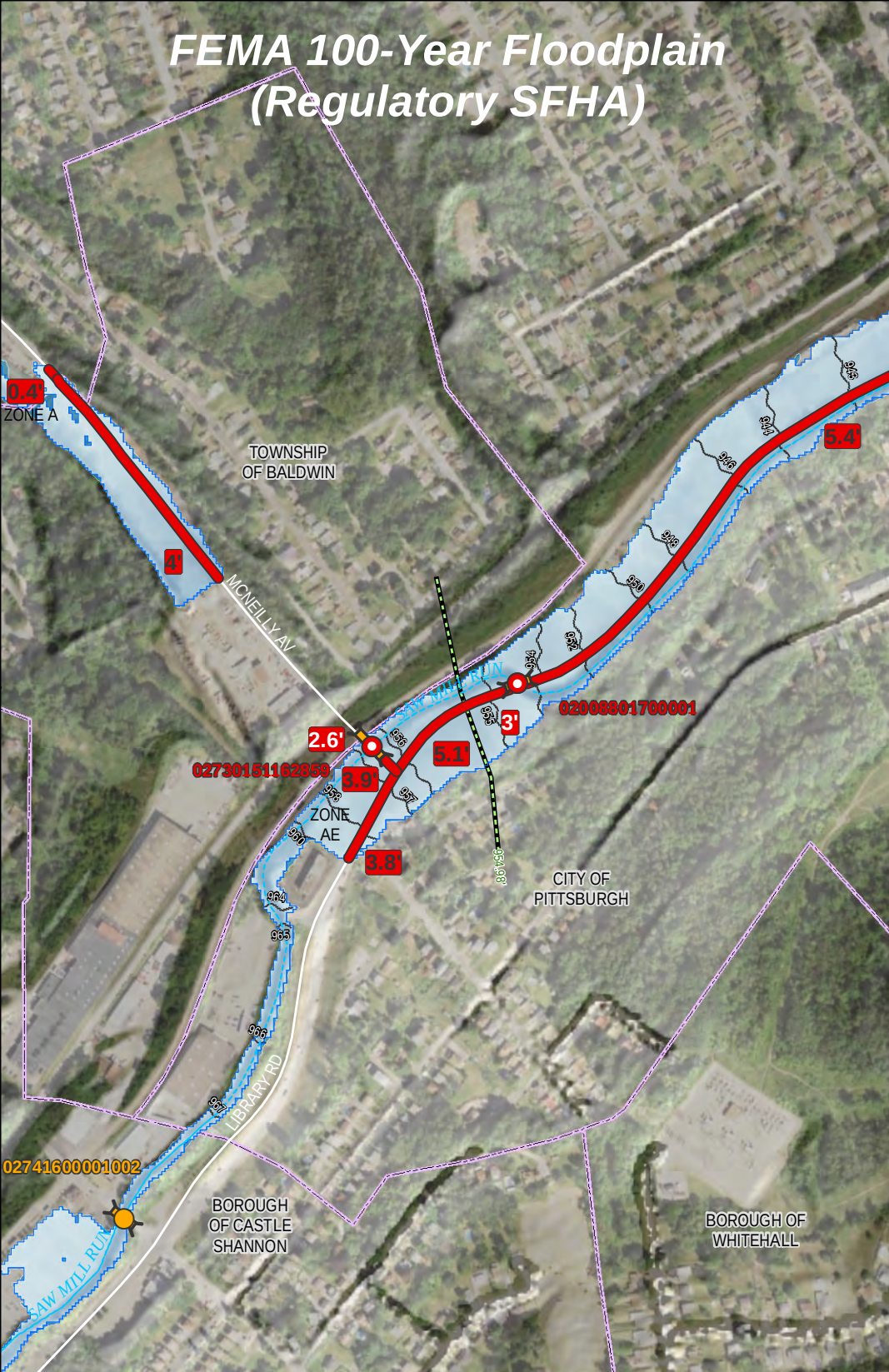
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(Methodology and Limitations Provided in Project Study Report)

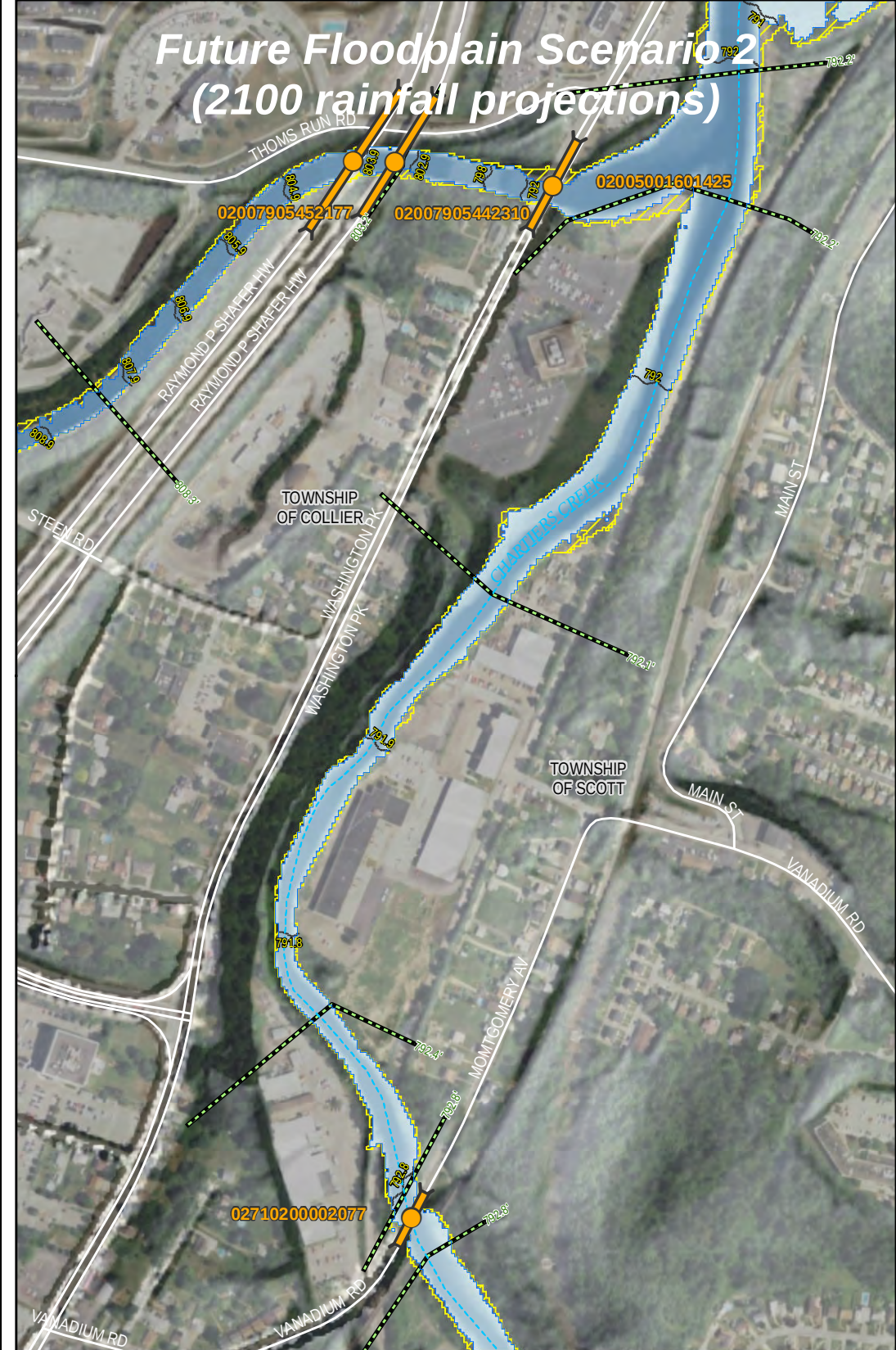
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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP





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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

Sheet 189 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

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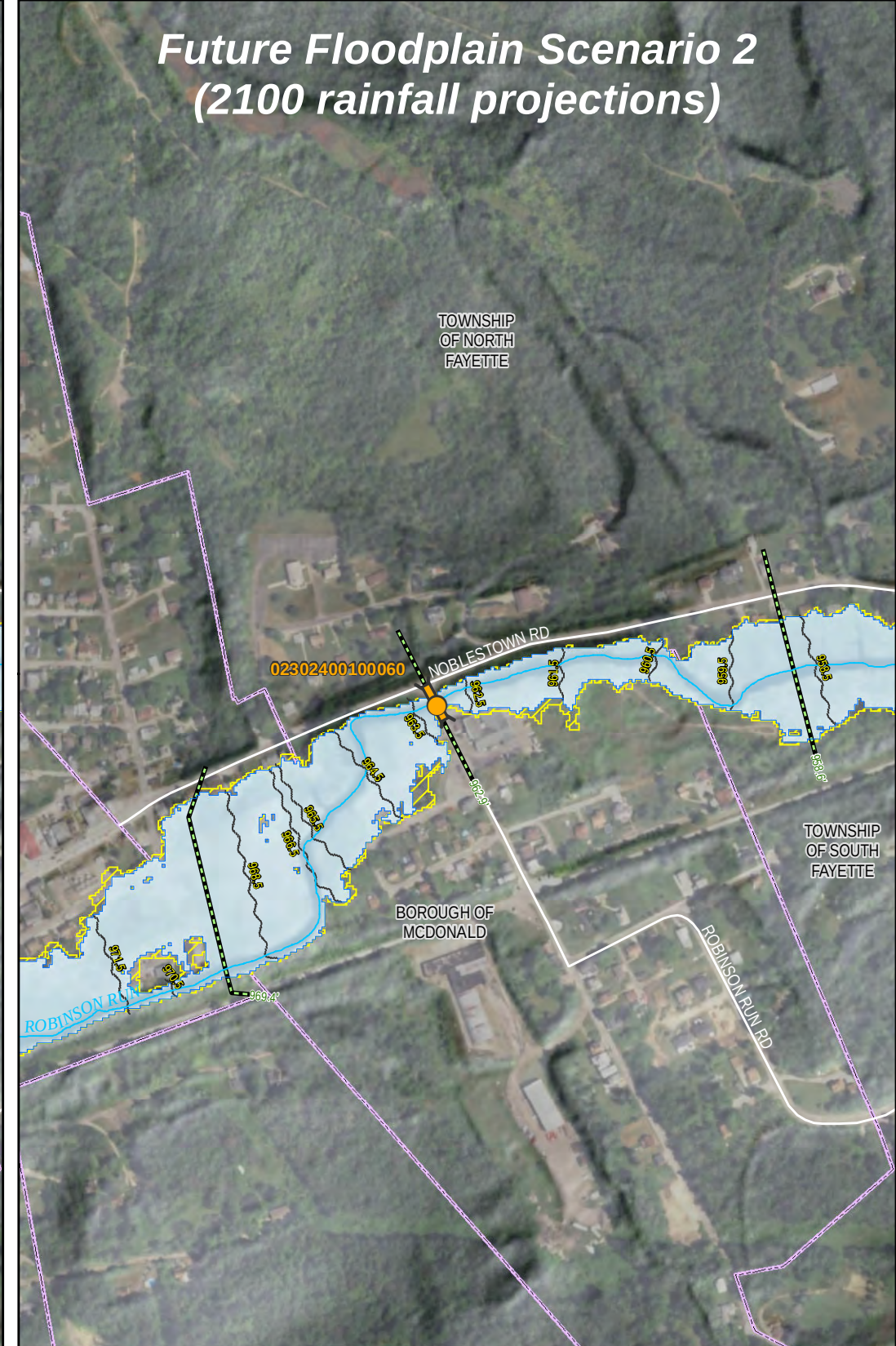
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **60DY ST**
-  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

0 1,000 Feet

November 23, 2016



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

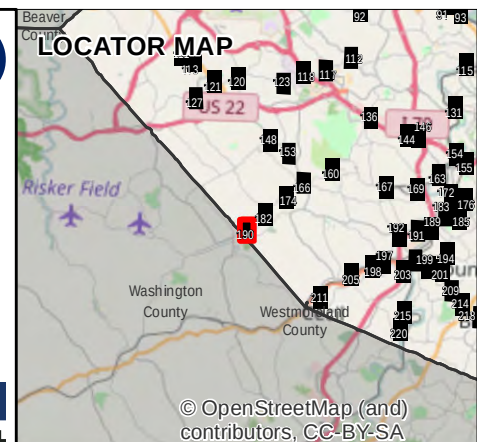
Sheet 190 of 265



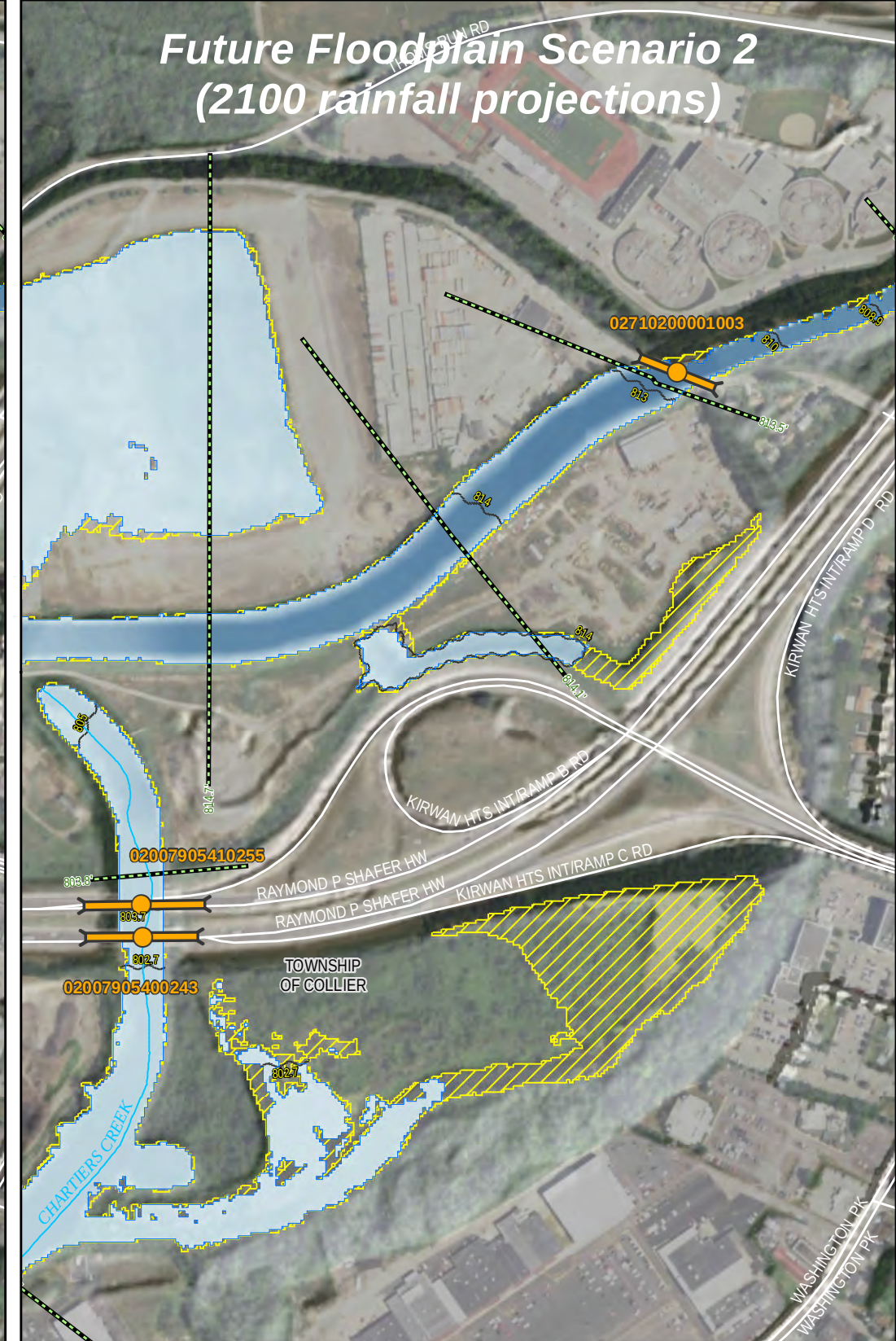
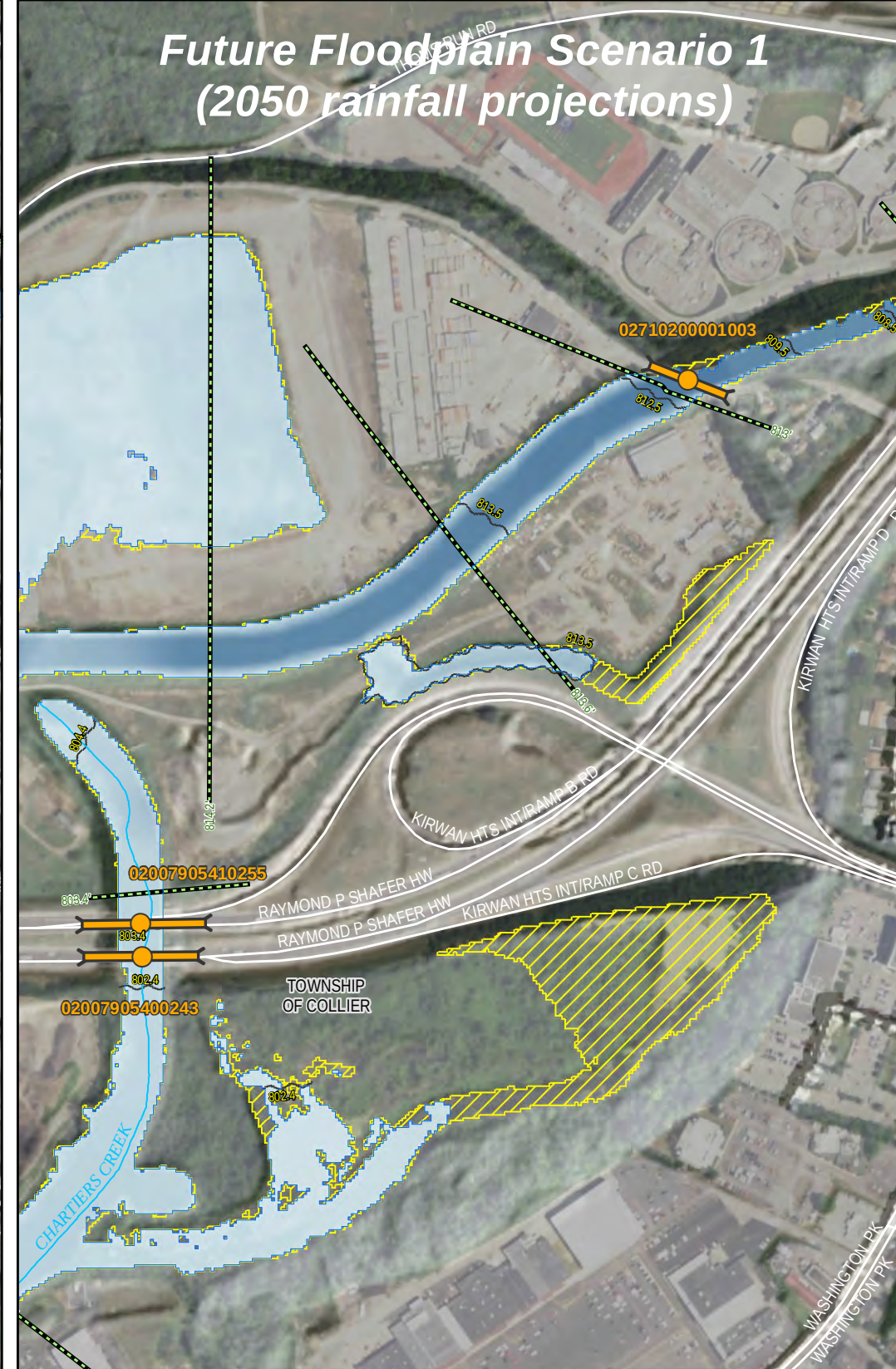
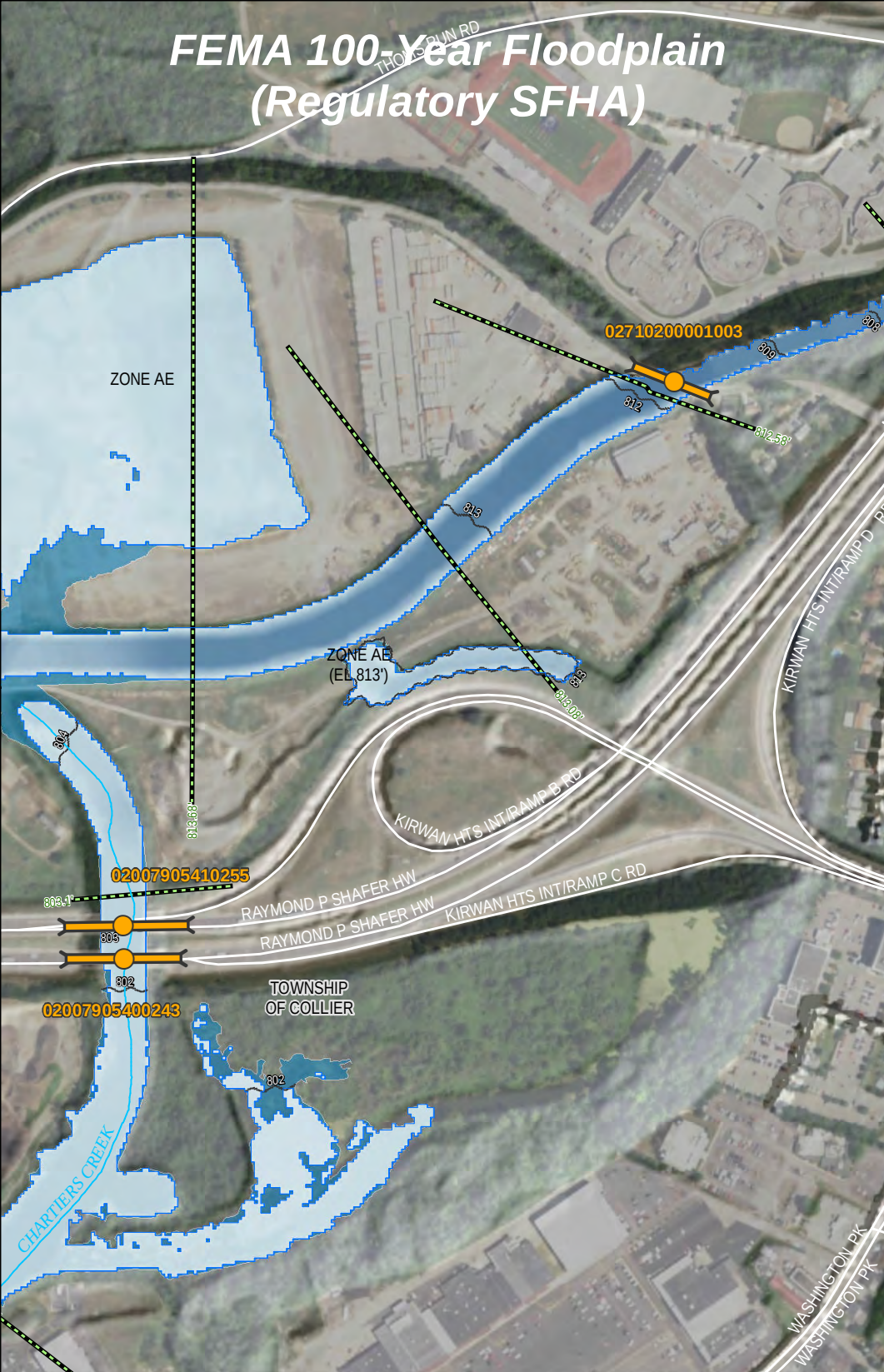
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

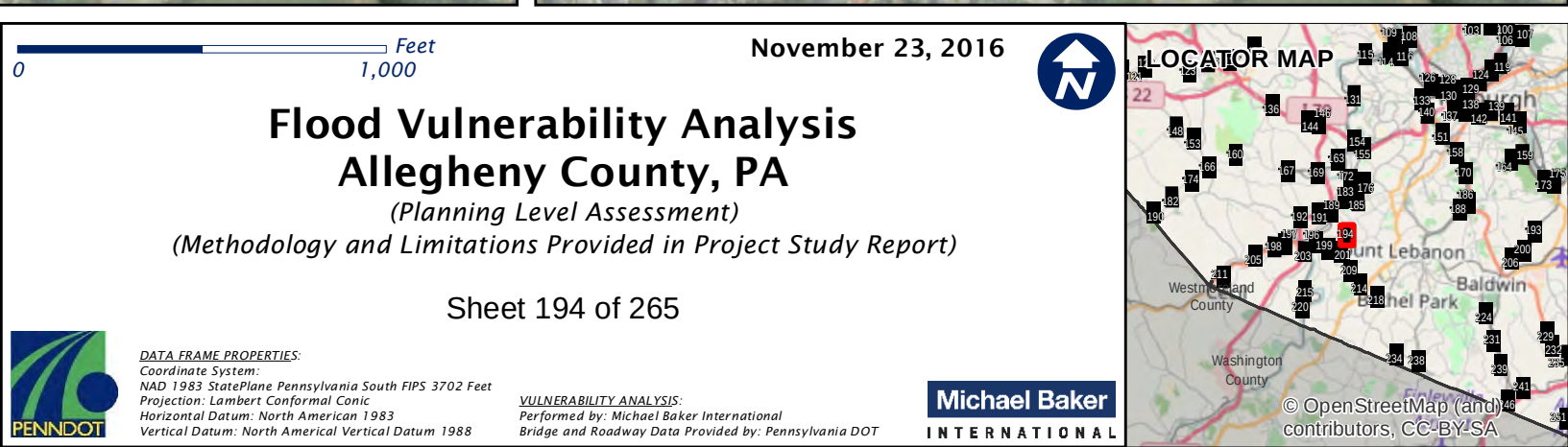
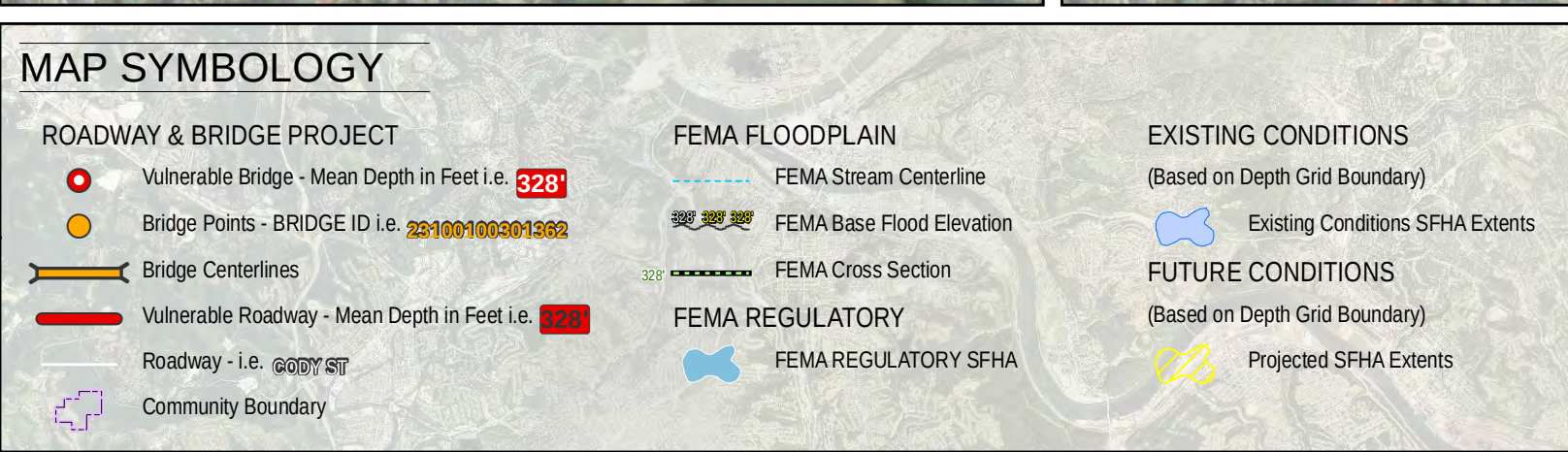
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(Methodology and Limitations Provided in Project Study Report)

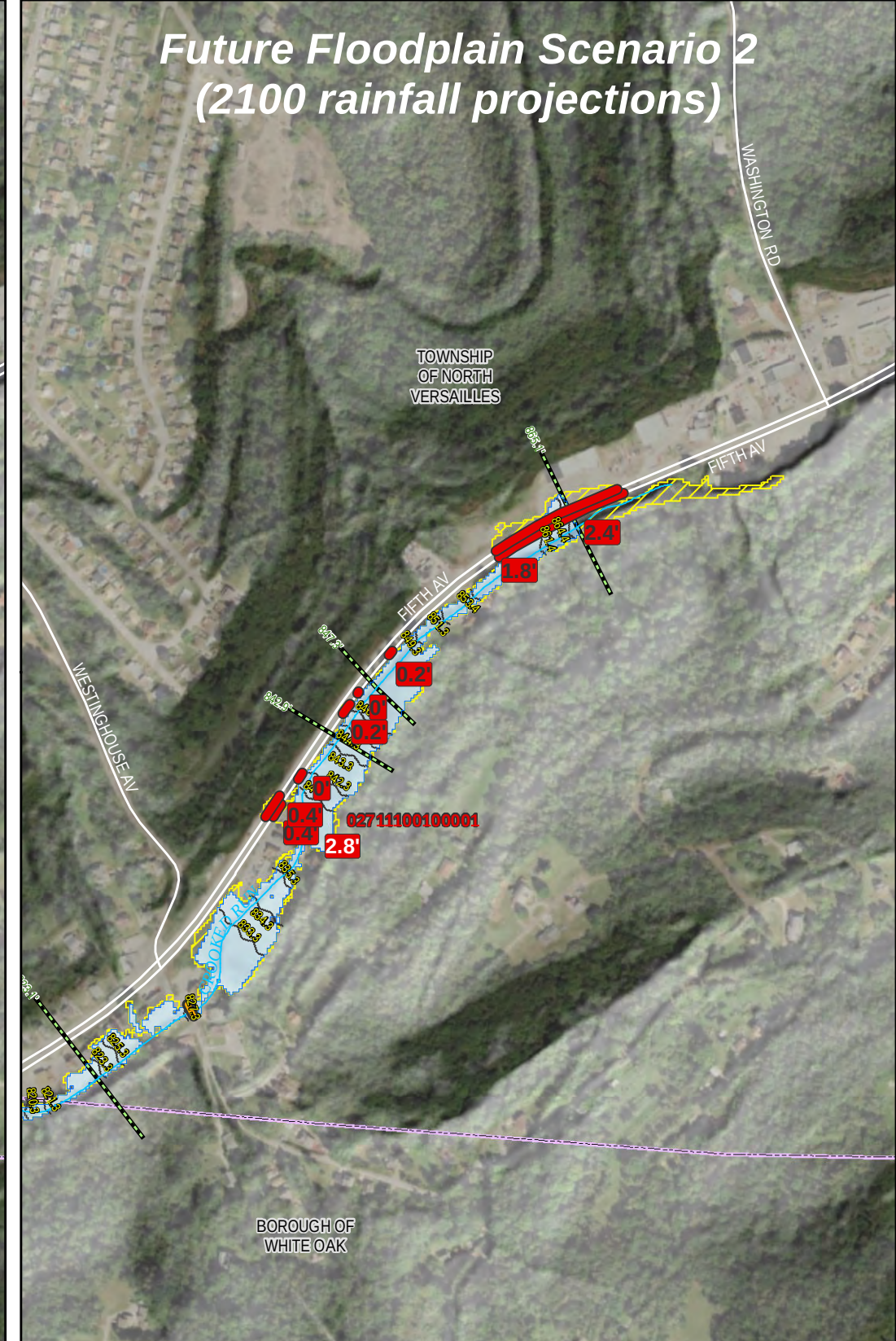
Sheet 191 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP





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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

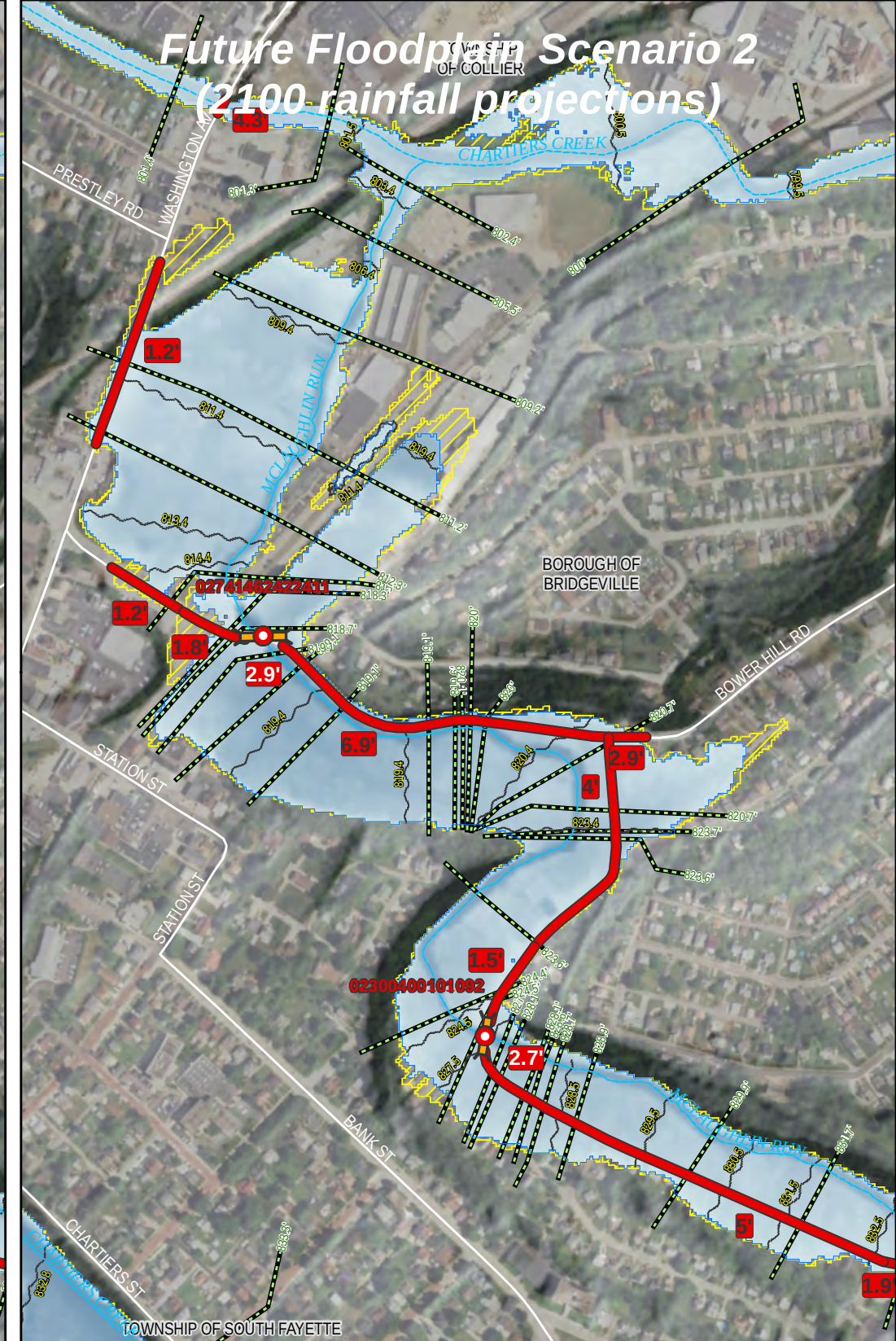
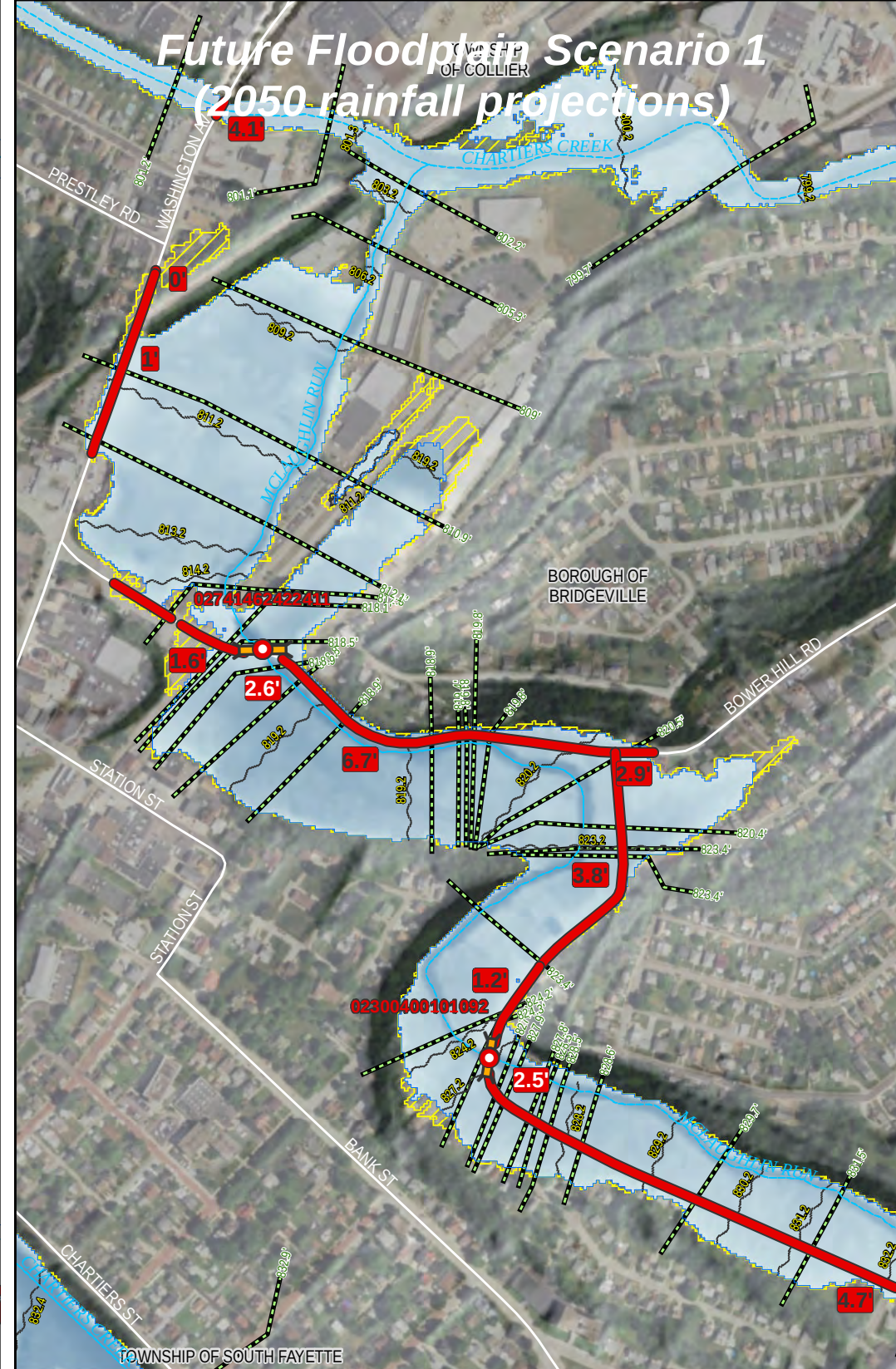
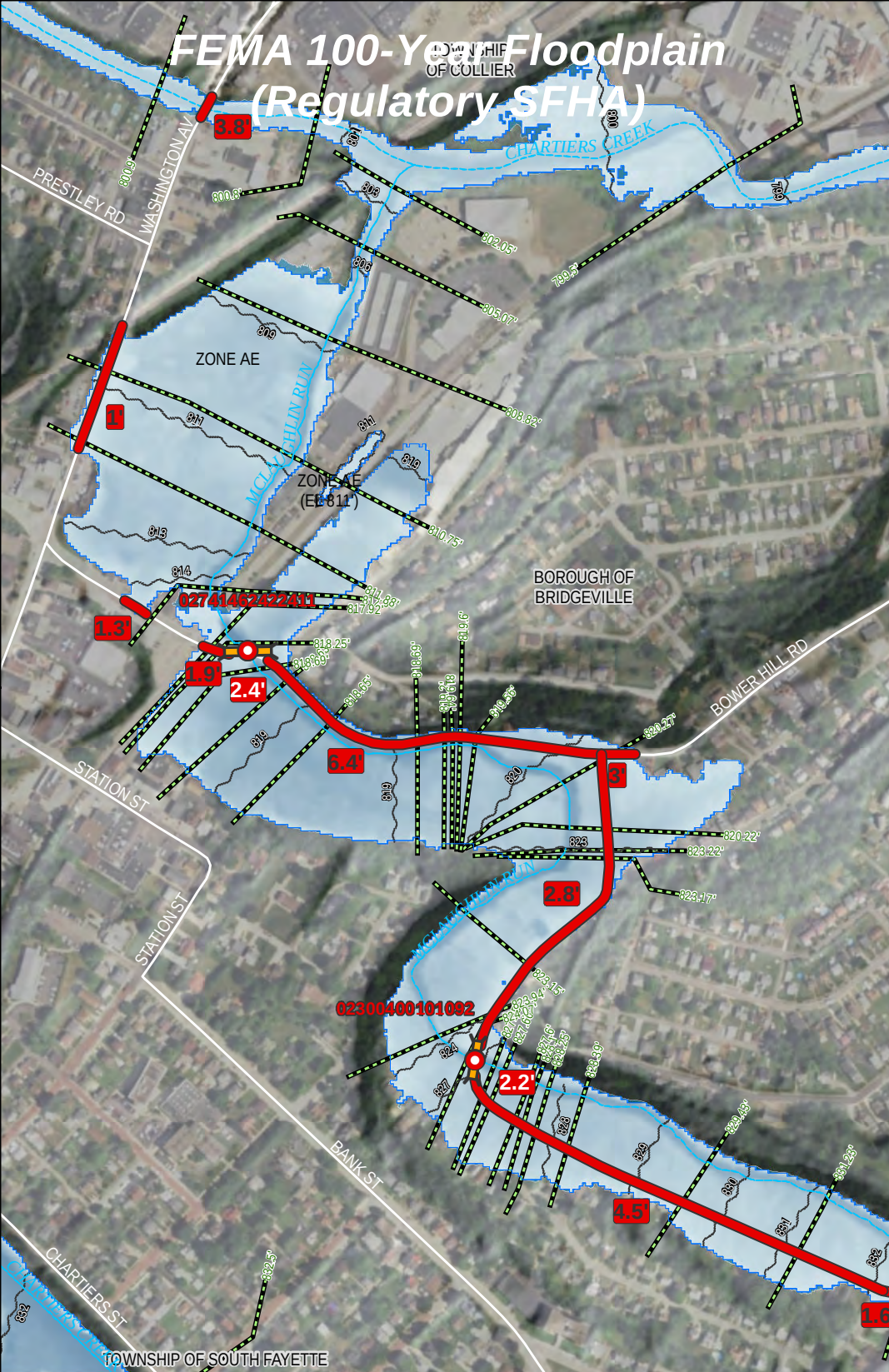
Sheet 195 of 265

Michael Baker
INTERNATIONAL

LOCATOR MAP

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



MAP SYMBOLOGY

Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	Projected SFHA Extents
Bridge Centerlines	FEMA Cross Section	
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

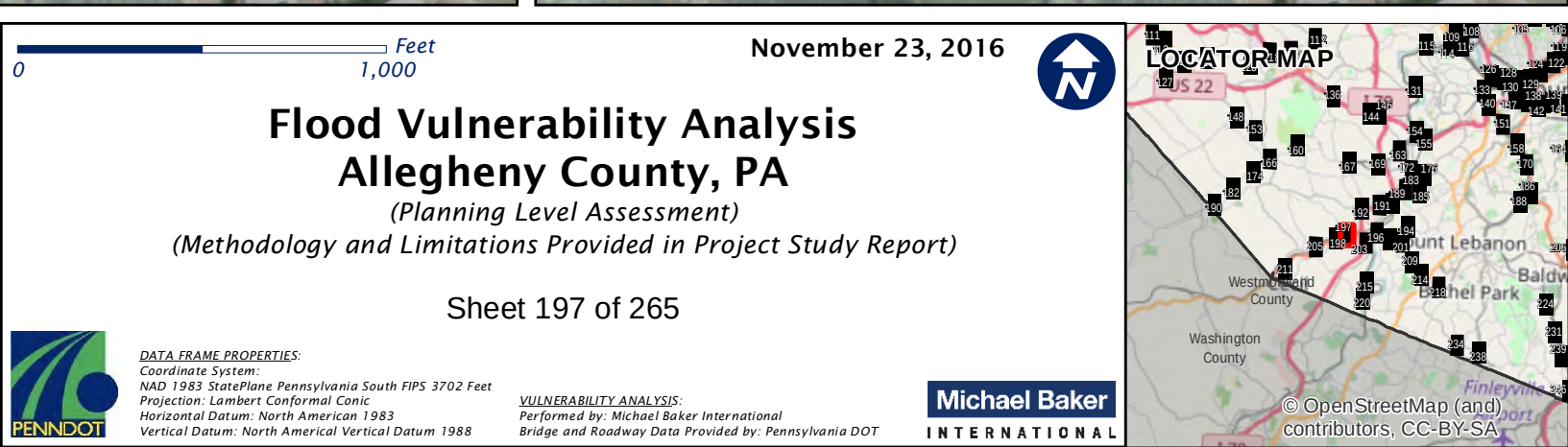
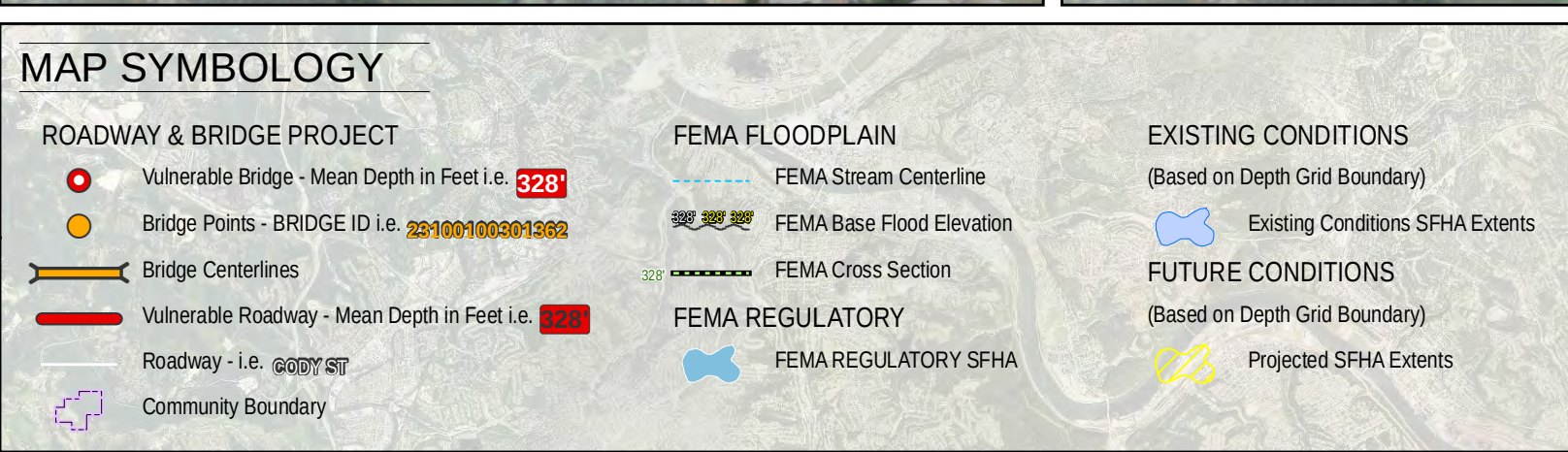
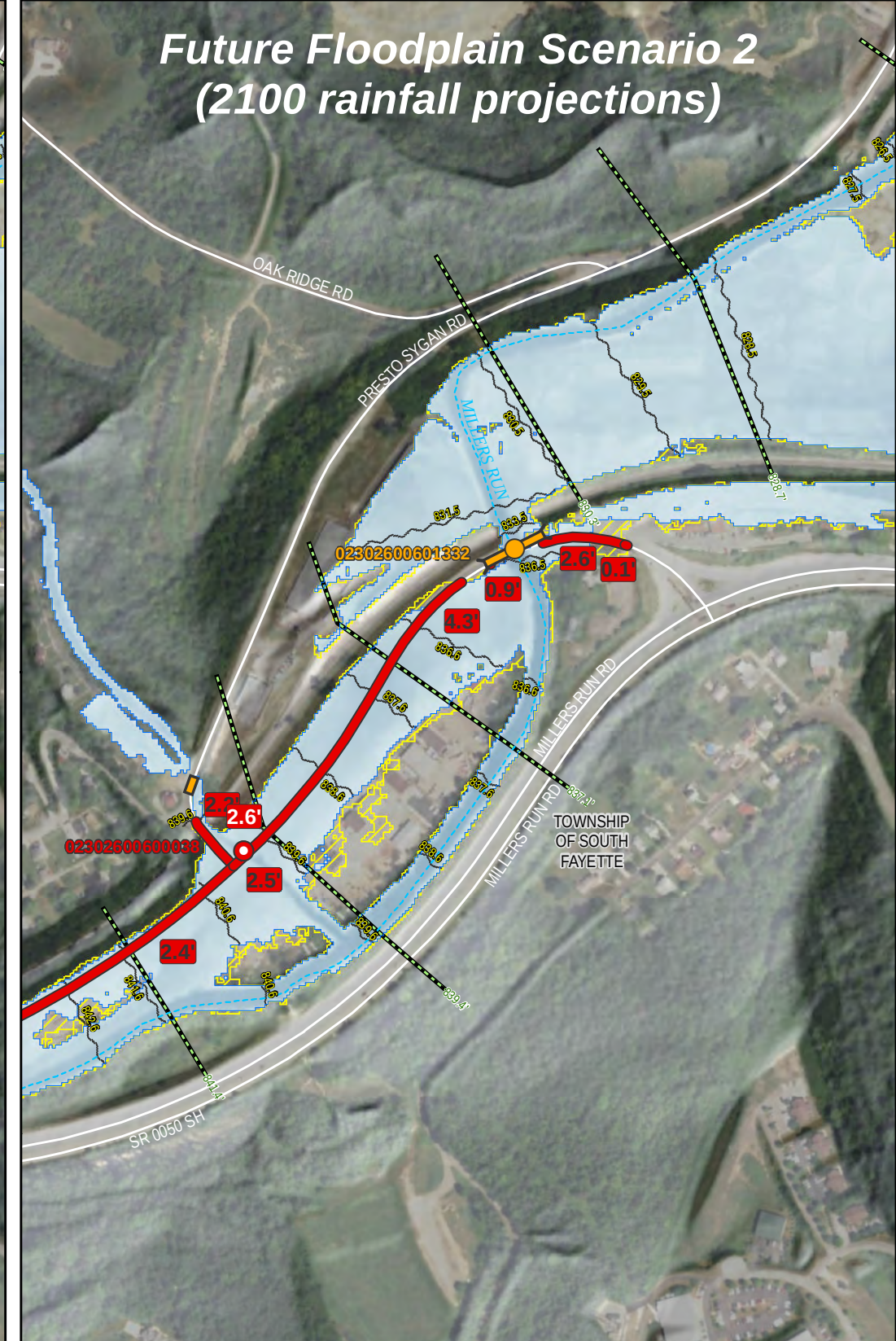
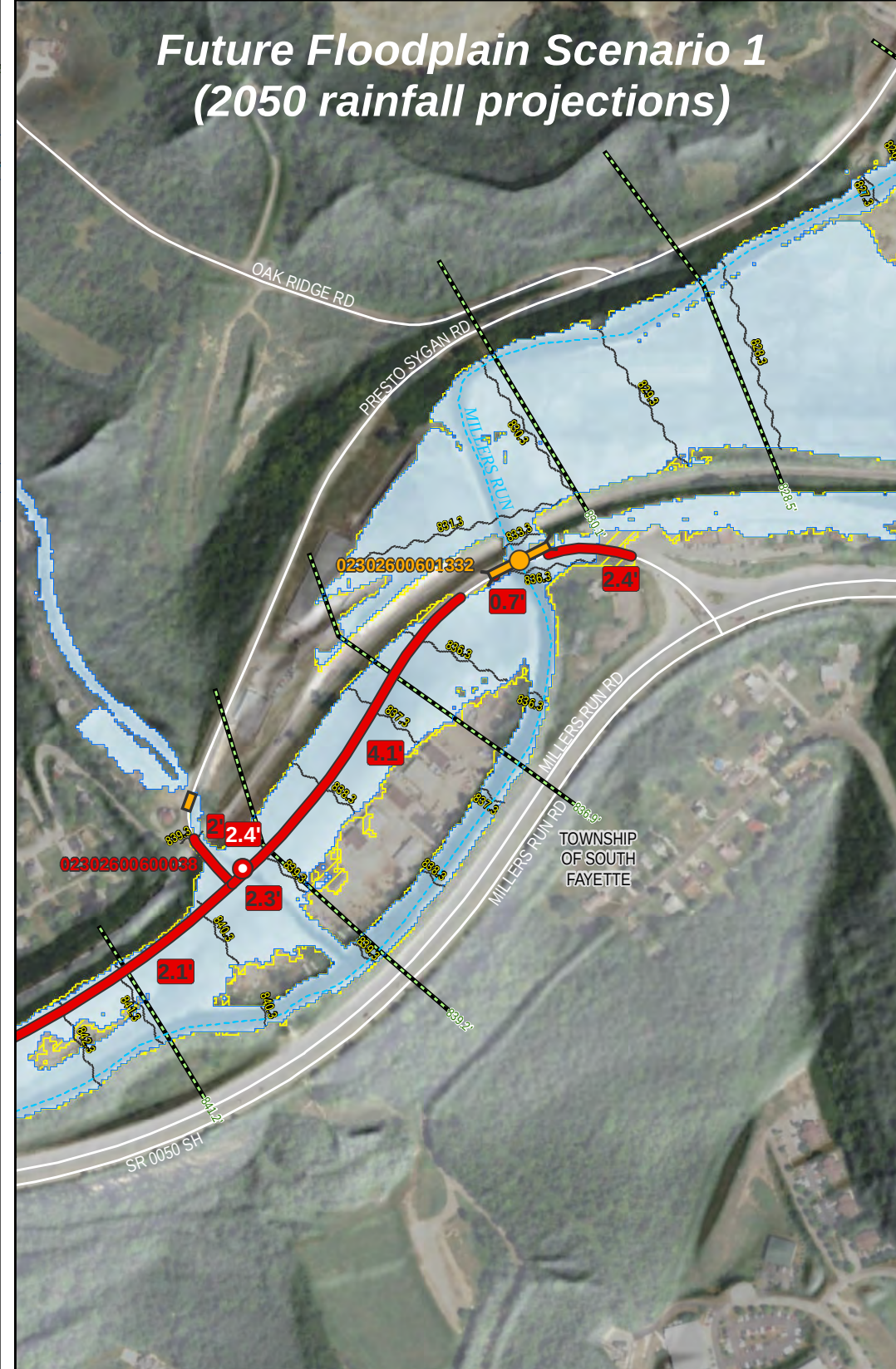
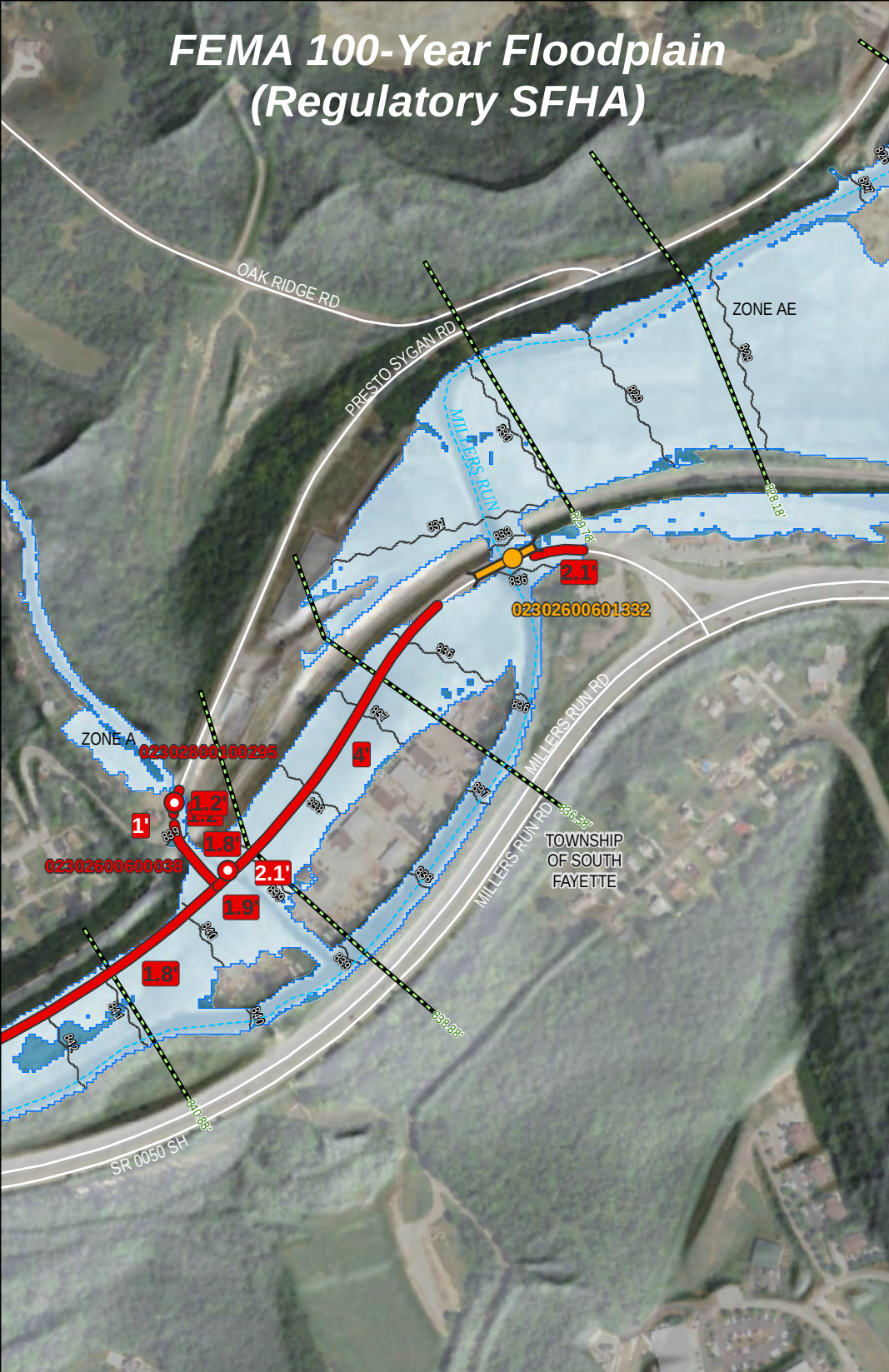
Allegheny County, PA

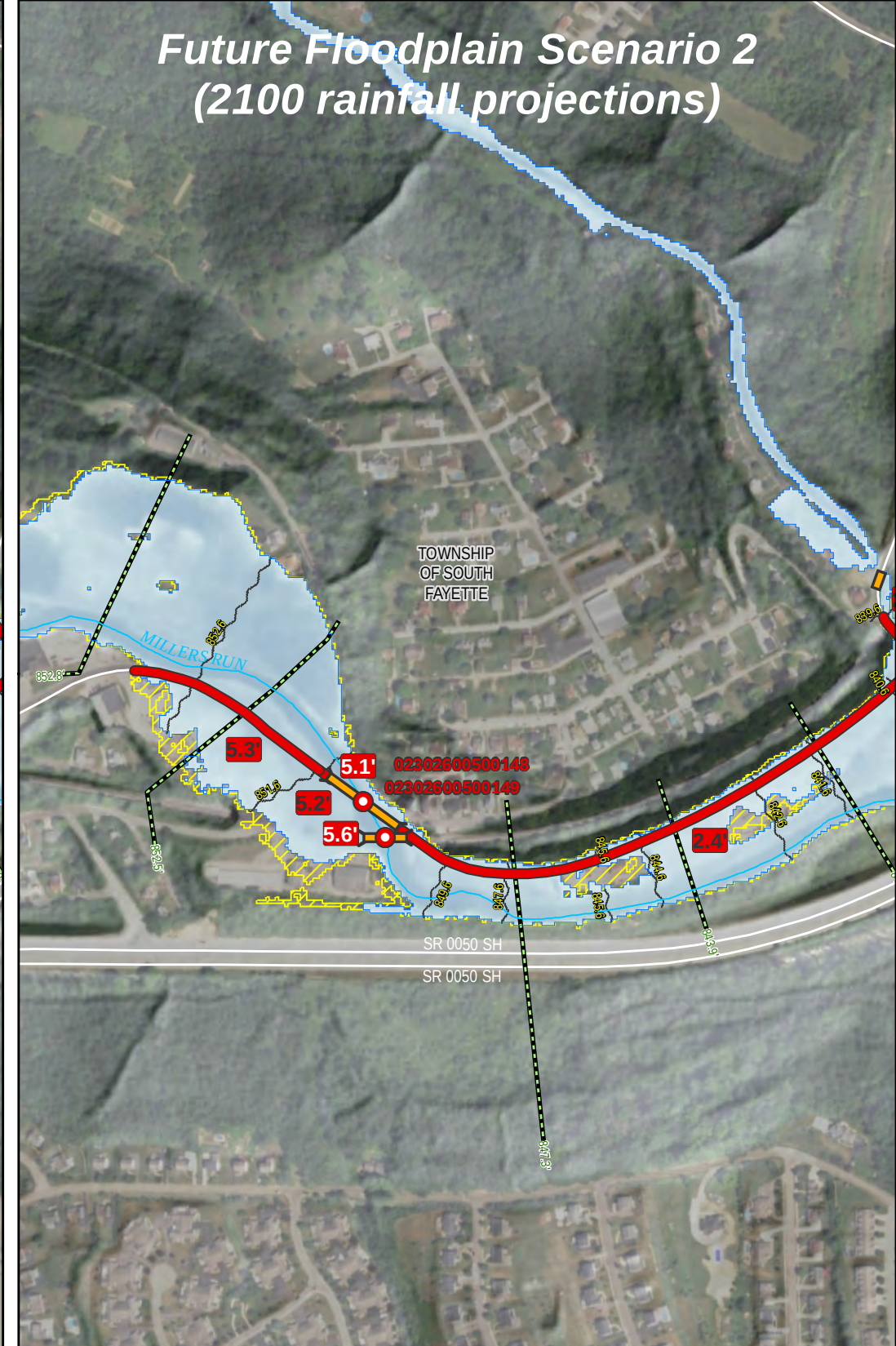
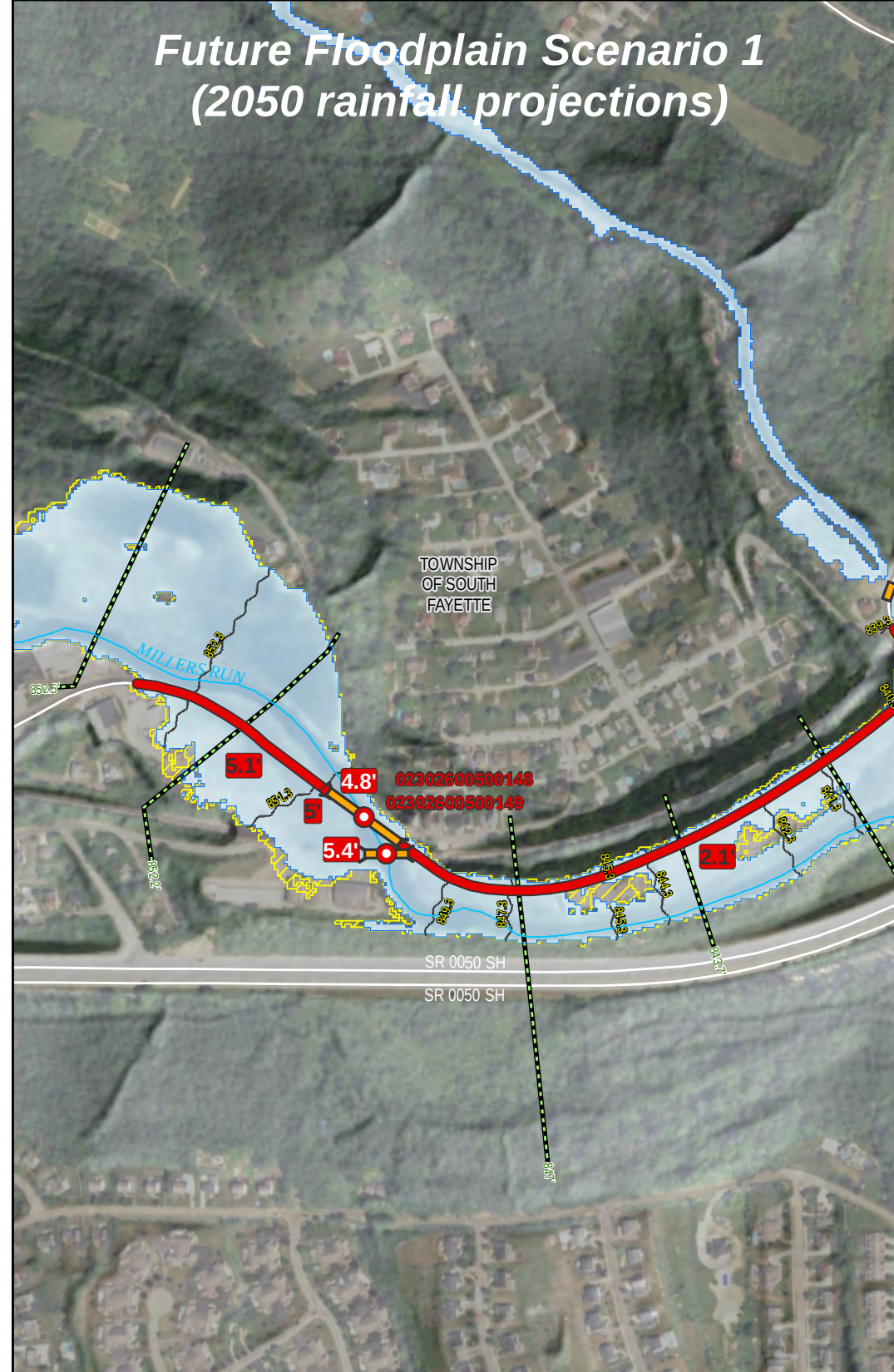
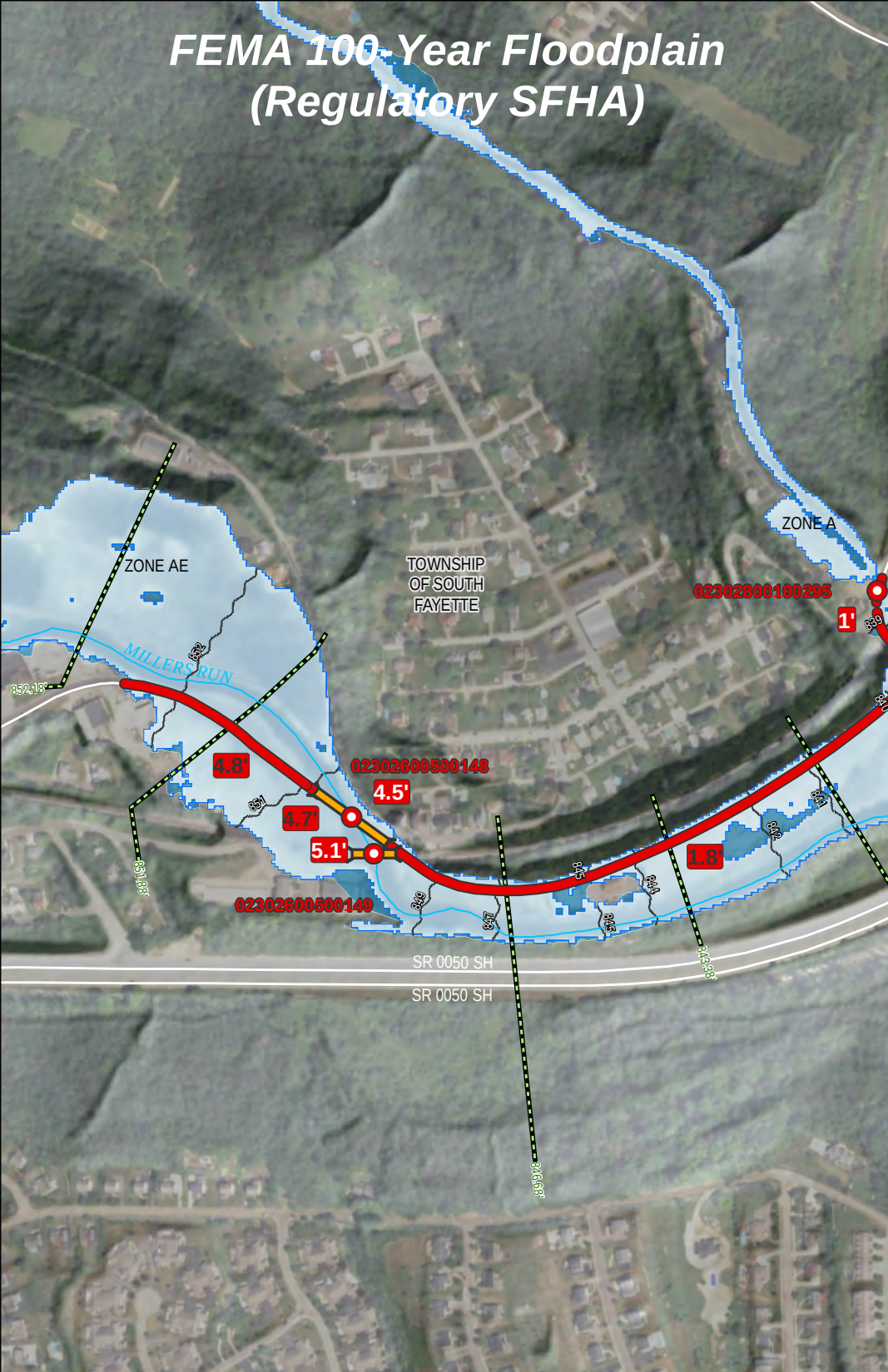
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT





MAP SYMBOLOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

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PENNDOT

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LOCATOR MAP

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**FEMA 100-Year Floodplain
(Regulatory SFHA)**

ZONE A

BOWER HILL RD

TOWNSHIP OF UPPER ST. CLAIR

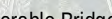
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BOROUGH OF BRIDGEVILLE

LESNETT RD

[illegible][illegible]

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. GODY ST  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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Feet

01,000

November 23, 2016



Flood Vulnerability Analysis

Allegheny County, PA

(Planning Level Assessment)

(Methodology and Limitations Provided in Project Study Report)

Sheet 199 of 265



DATA FRAME PROPERTIES:
 Coordinate System:
 NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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 Performed by: Michael Baker International
 Bridge and Roadway Data Provided by: Pennsylvania DOT

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Feet

01,000

November 23, 2016



Flood Vulnerability Analysis

Allegheny County, PA

(Planning Level Assessment)

(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
 Coordinate System:
 NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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INTERNATIONAL

Feet

01,000

November 23, 2016



Flood Vulnerability Analysis

Allegheny County, PA

(Planning Level Assessment)

(Methodology and Limitations Provided in Project Study Report)

Sheet 199 of 265



DATA FRAME PROPERTIES:
 Coordinate System:
 NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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Feet

01,000

November 23, 2016



Flood Vulnerability Analysis

Allegheny County, PA

(Planning Level Assessment)

(Methodology and Limitations Provided in Project Study Report)

Sheet 199 of 265



DATA FRAME PROPERTIES:
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 NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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Michael Baker

INTERNATIONAL

Feet

01,000

November 23, 2016



Flood Vulnerability Analysis

Allegheny County, PA

(Planning Level Assessment)

(Methodology and Limitations Provided in Project Study Report)

Sheet 199 of 265



DATA FRAME PROPERTIES:

Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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Bridge and Roadway Data Provided by: Pennsylvania DOT

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Feet

01,000

November 23, 2016



Flood Vulnerability Analysis

Allegheny County, PA

(Planning Level Assessment)

(Methodology and Limitations Provided in Project Study Report)

Sheet 199 of 265



DATA FRAME PROPERTIES:

Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
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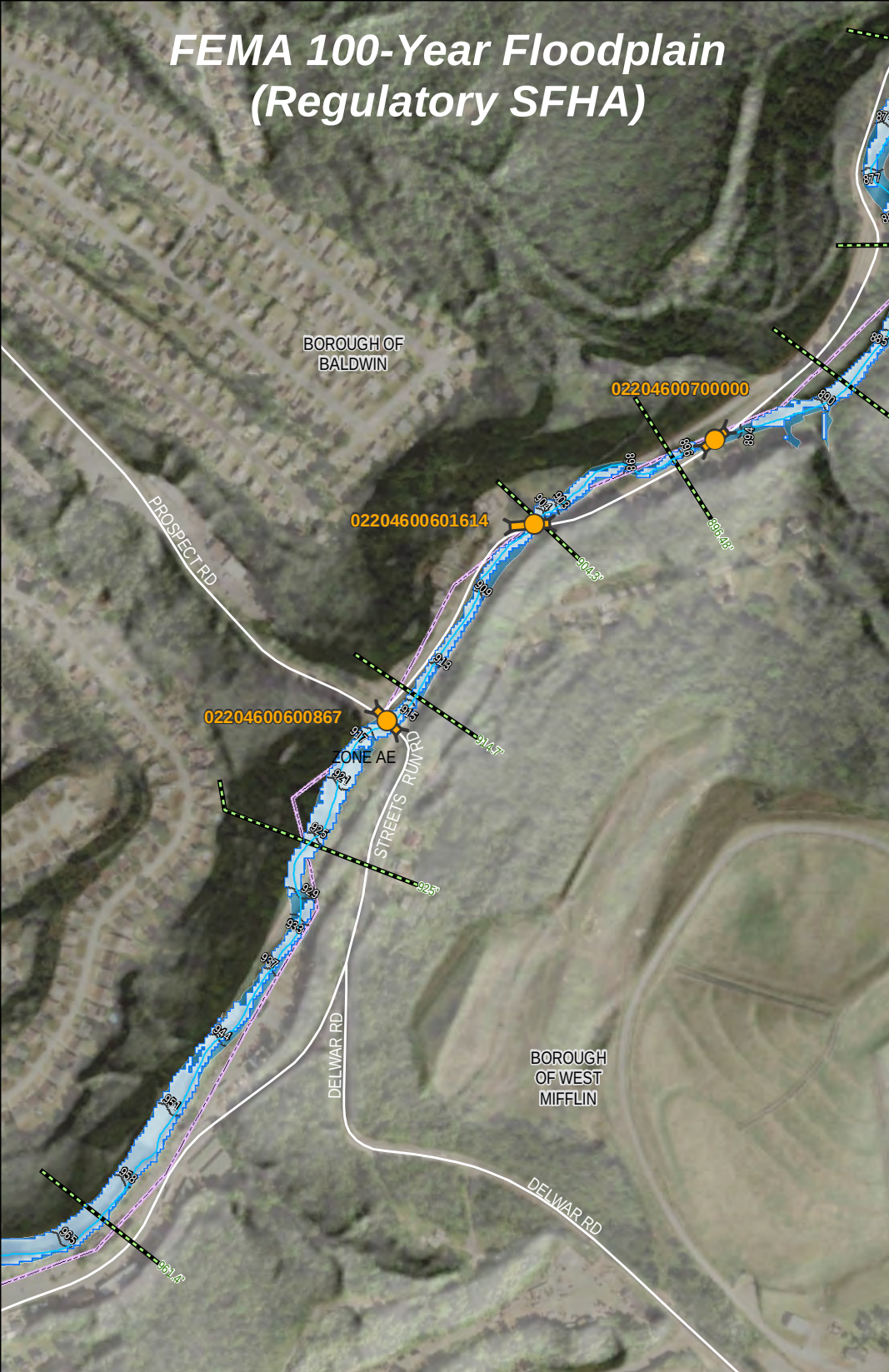
VULNERABILITY ANALYSIS:

Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

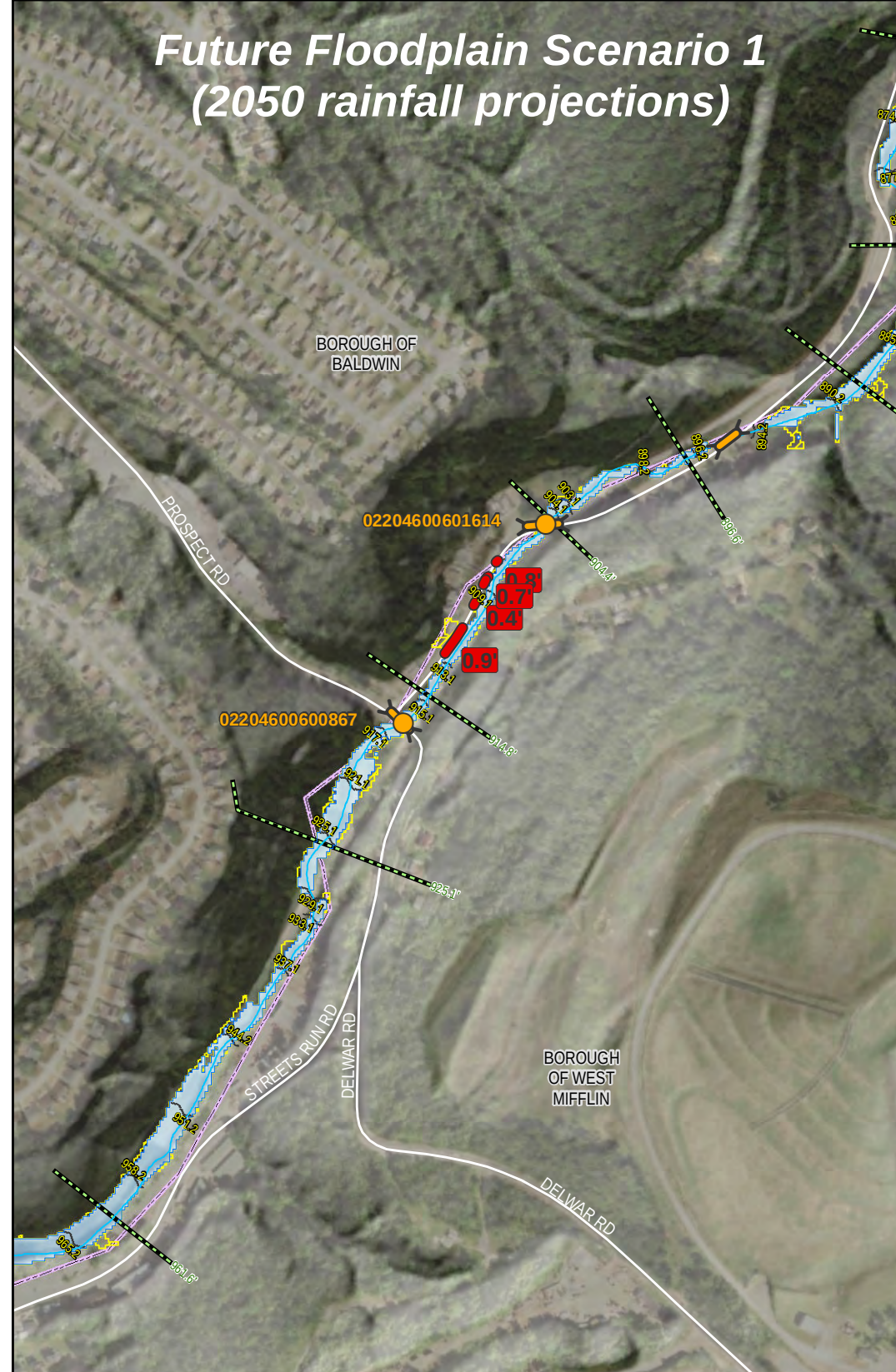
Michael Baker

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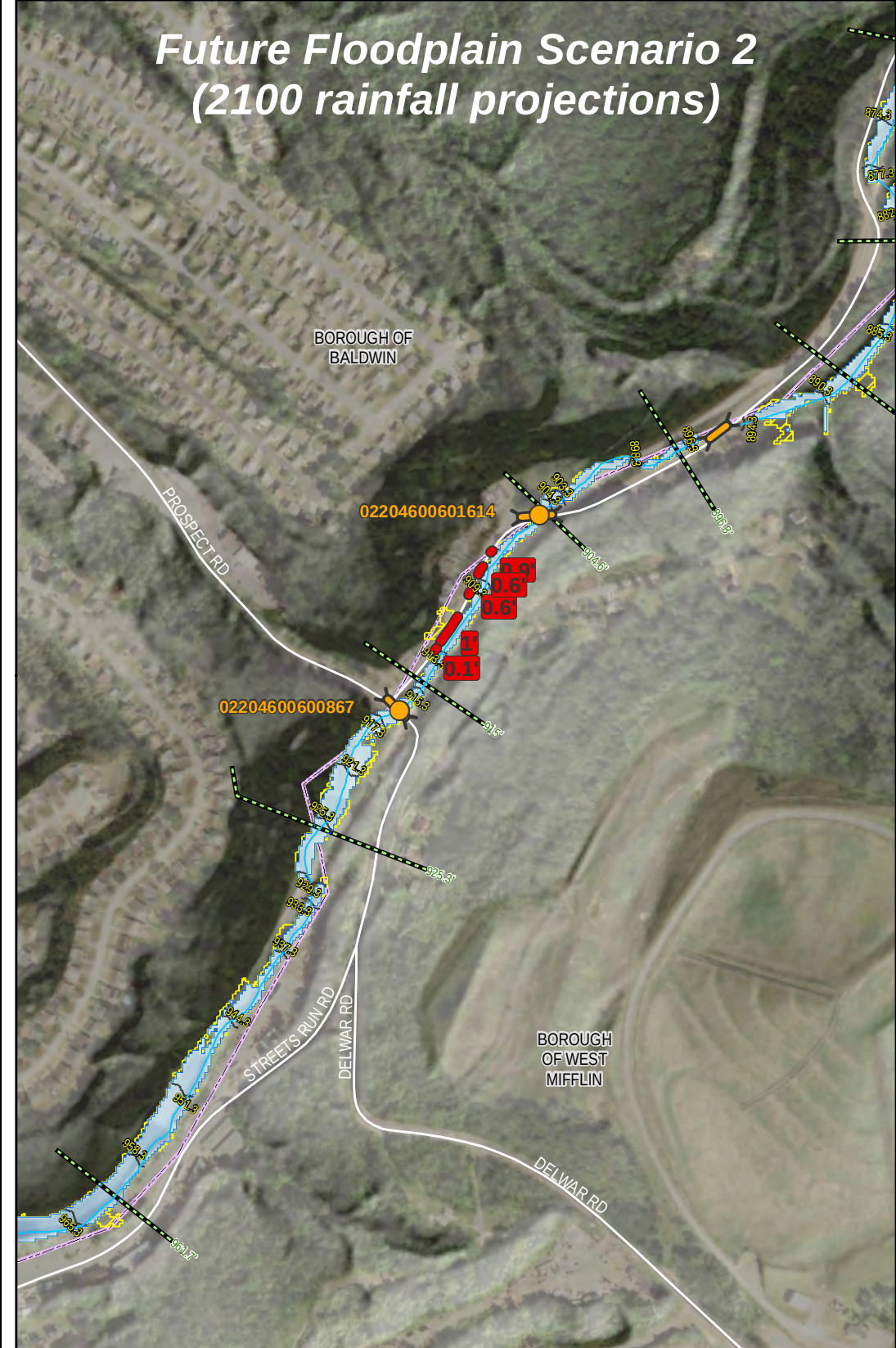
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

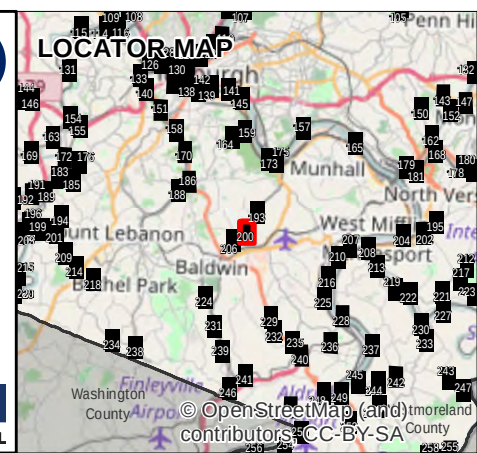
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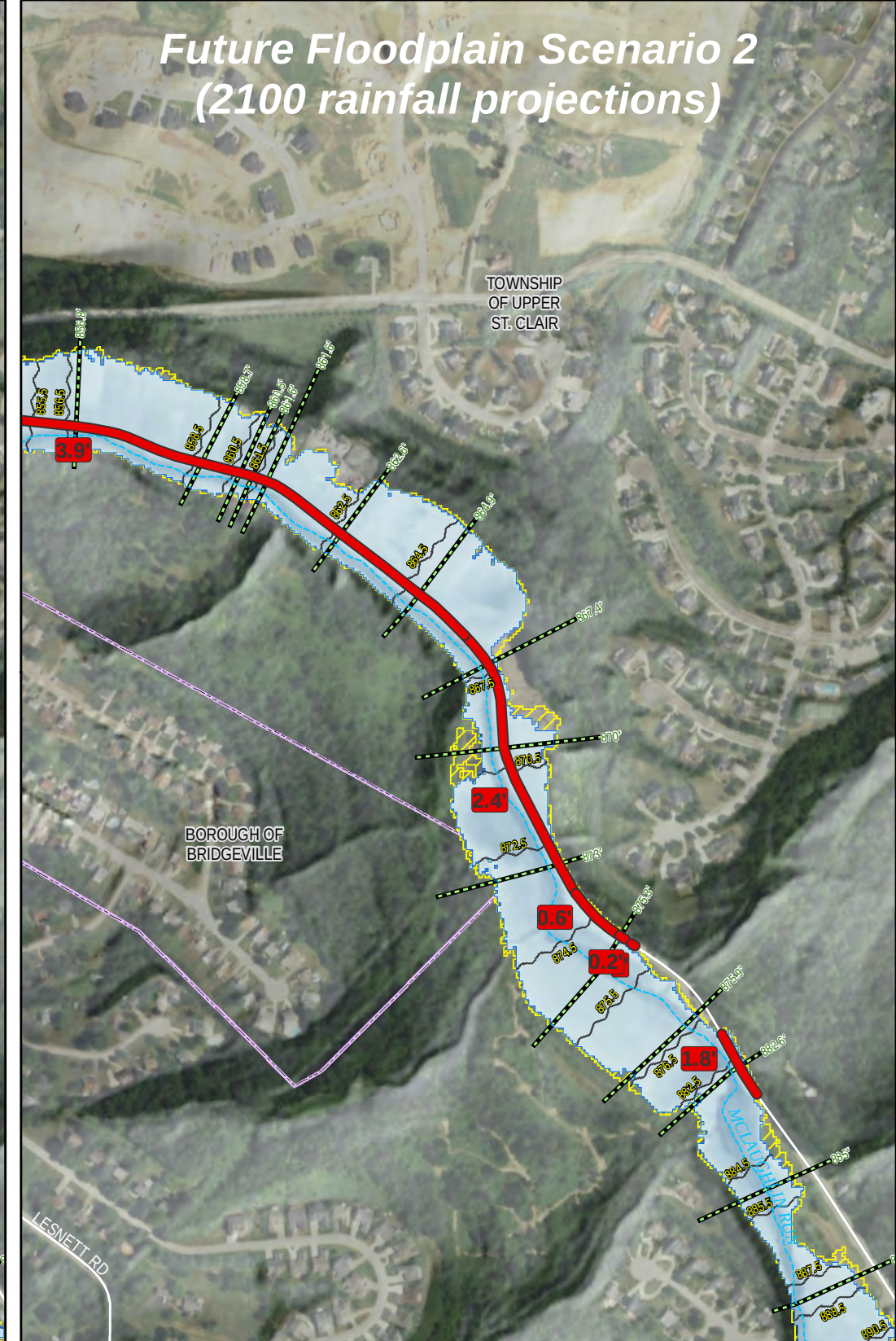
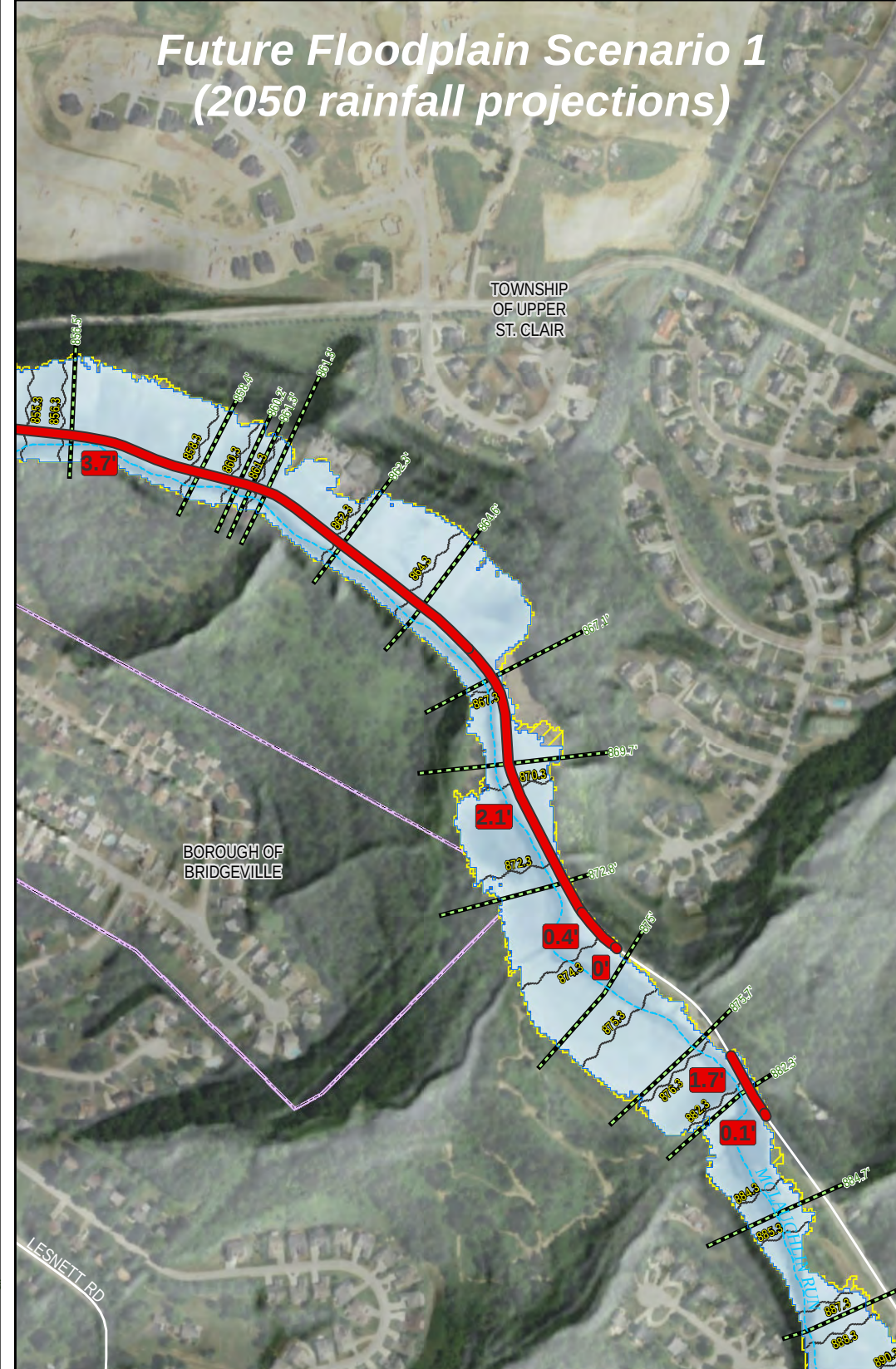


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

0 Feet 1,000

November 23, 2016

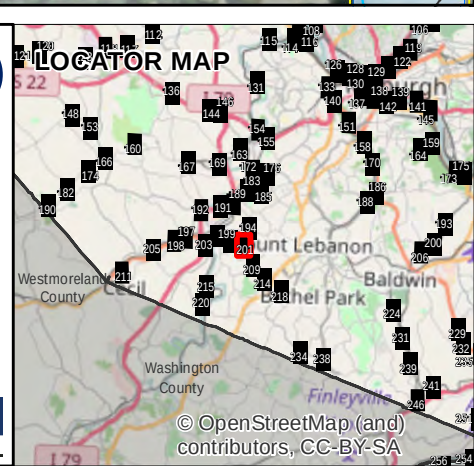
Flood Vulnerability Analysis Allegheny County, PA

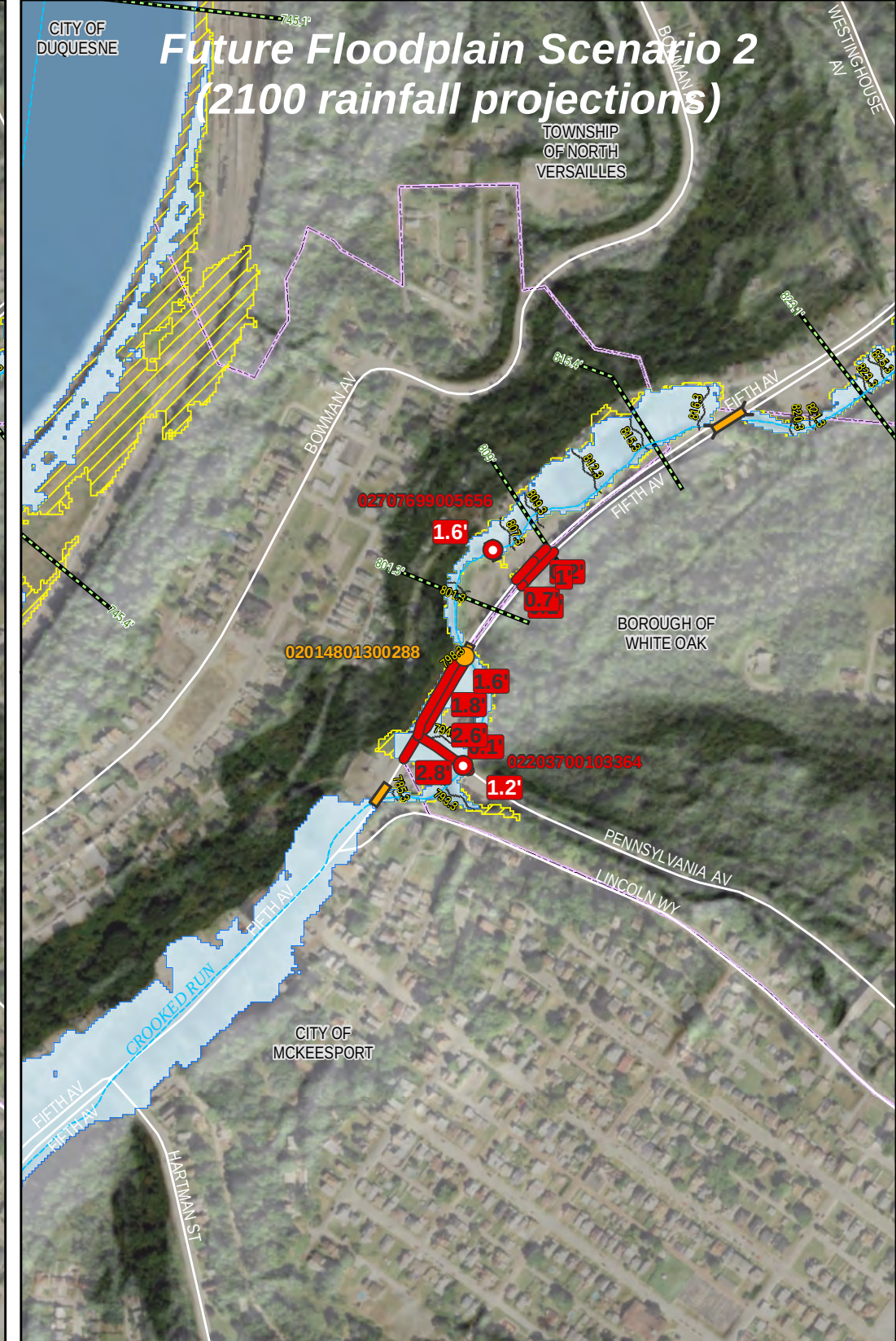
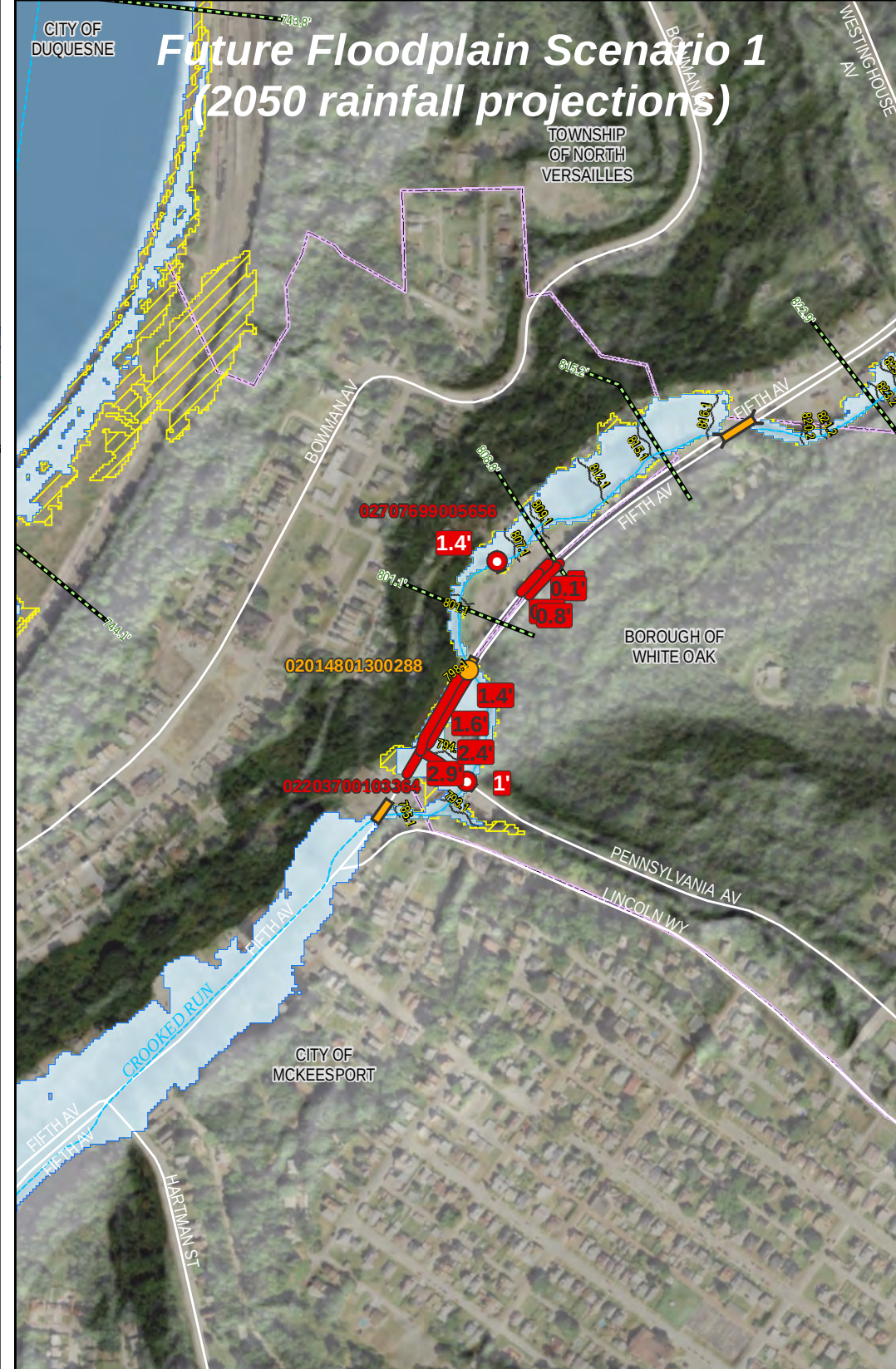
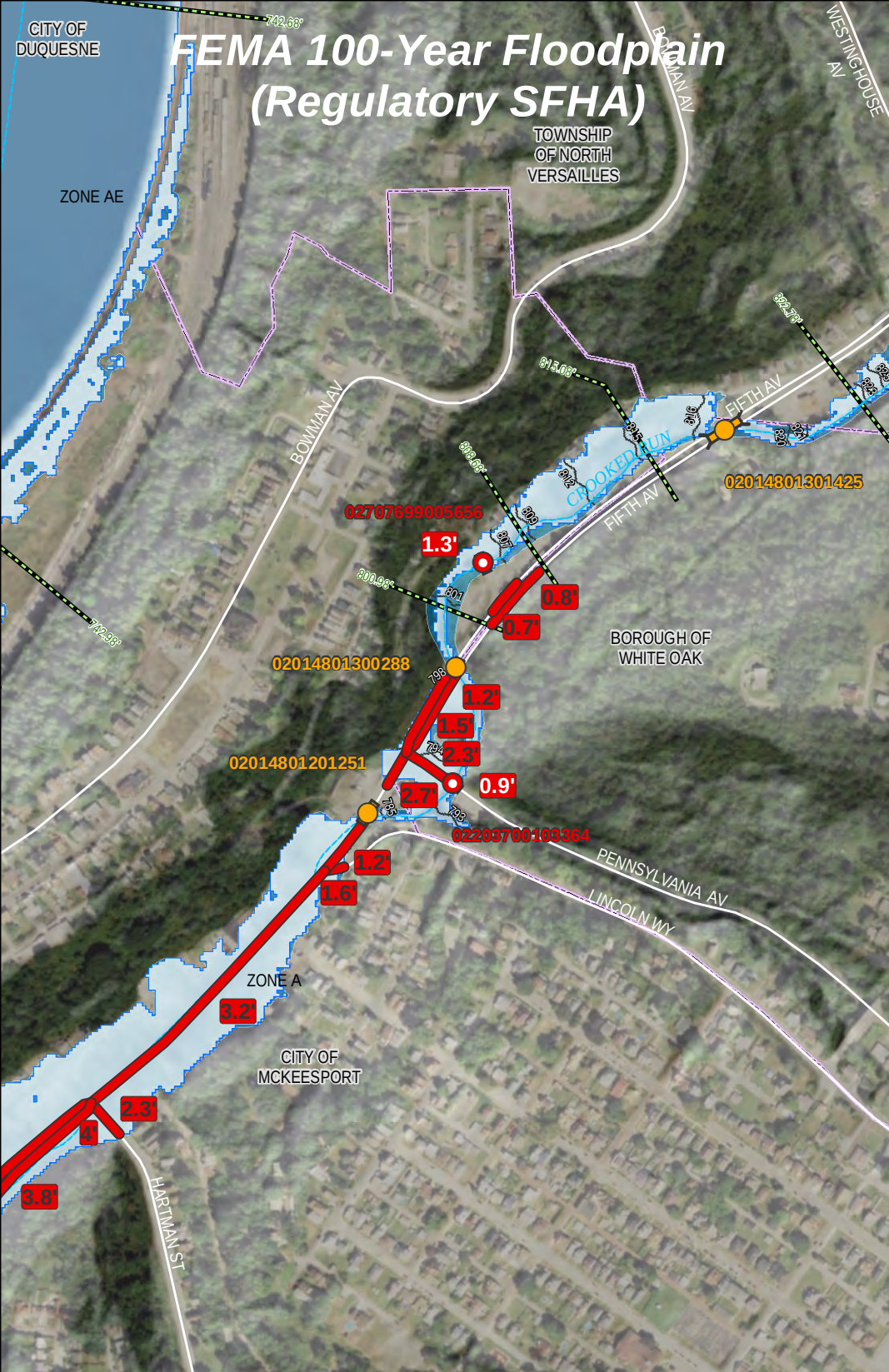
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT





MAP SYMBOLOLOGY

- ROADWAY & BRIDGE PROJECT**
- Vulnerable Bridge - Mean Depth in Feet i.e. **328'**
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 - Bridge Centerlines
 - Vulnerable Roadway - Mean Depth in Feet i.e. **328'**
 - Roadway - i.e. **CODY ST**
 - 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

0 1,000 Feet

November 23, 2016

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

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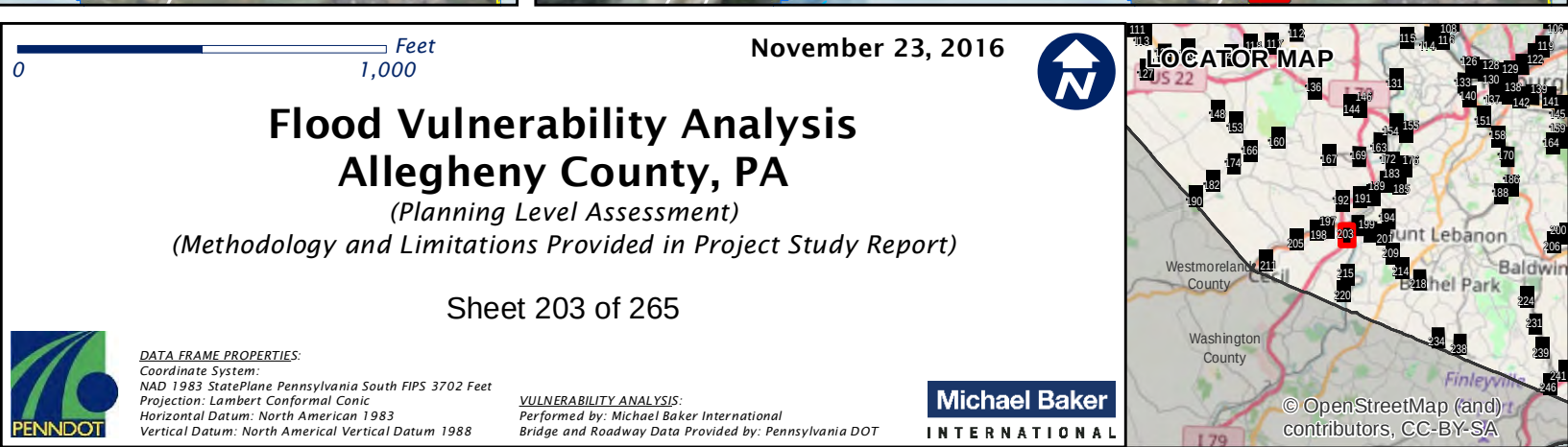
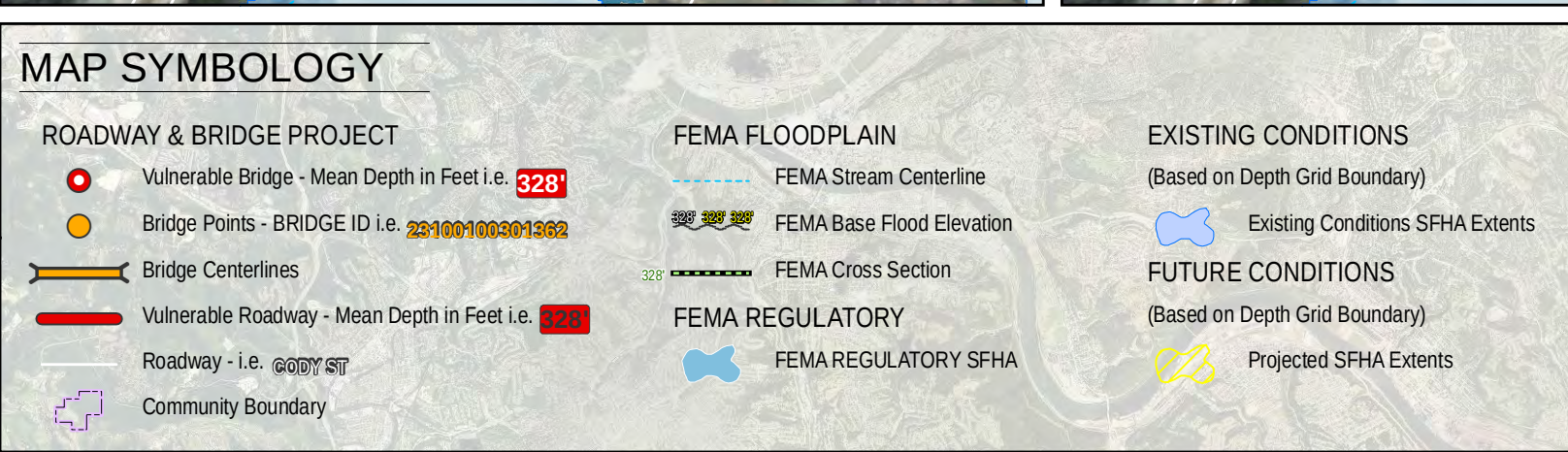
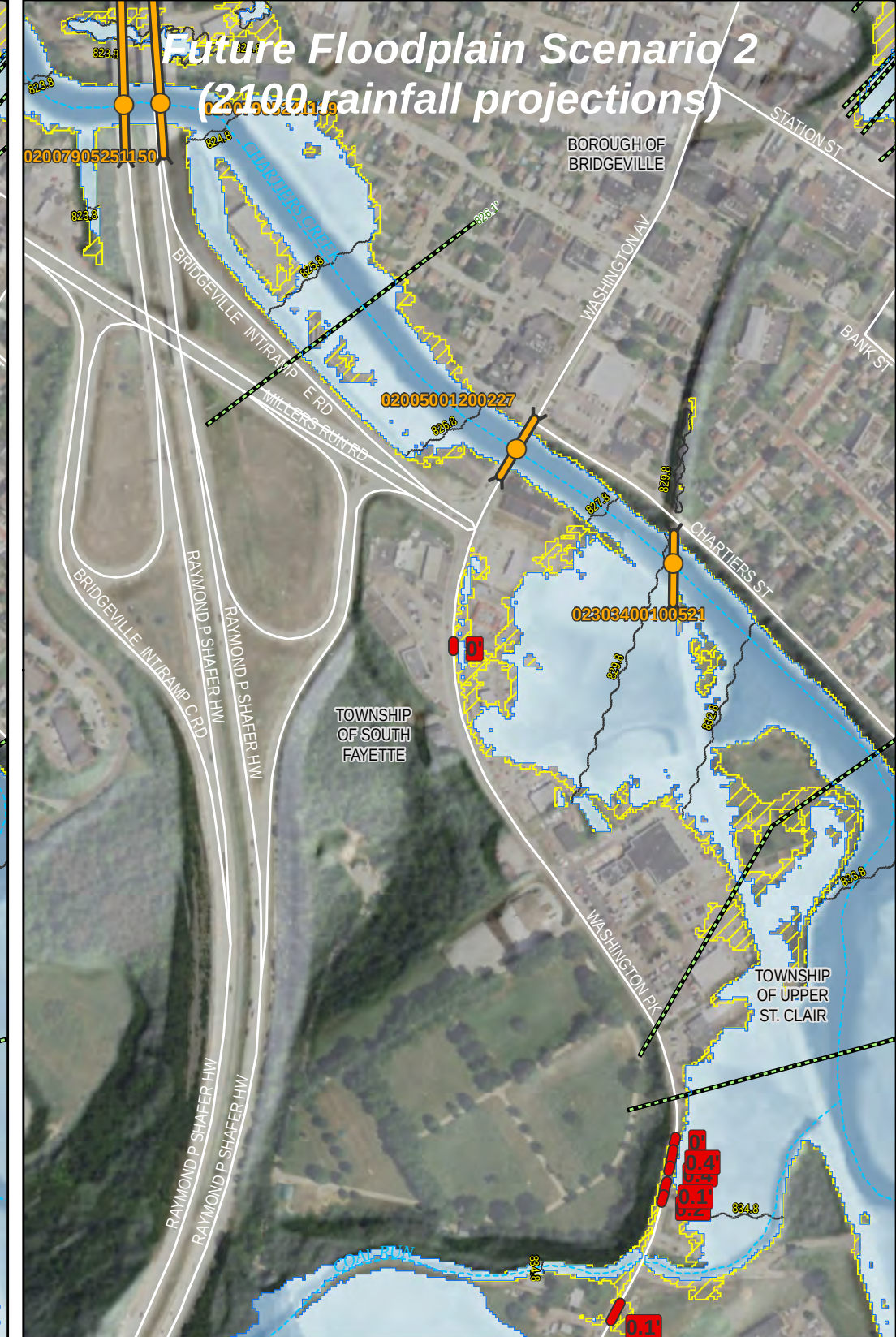
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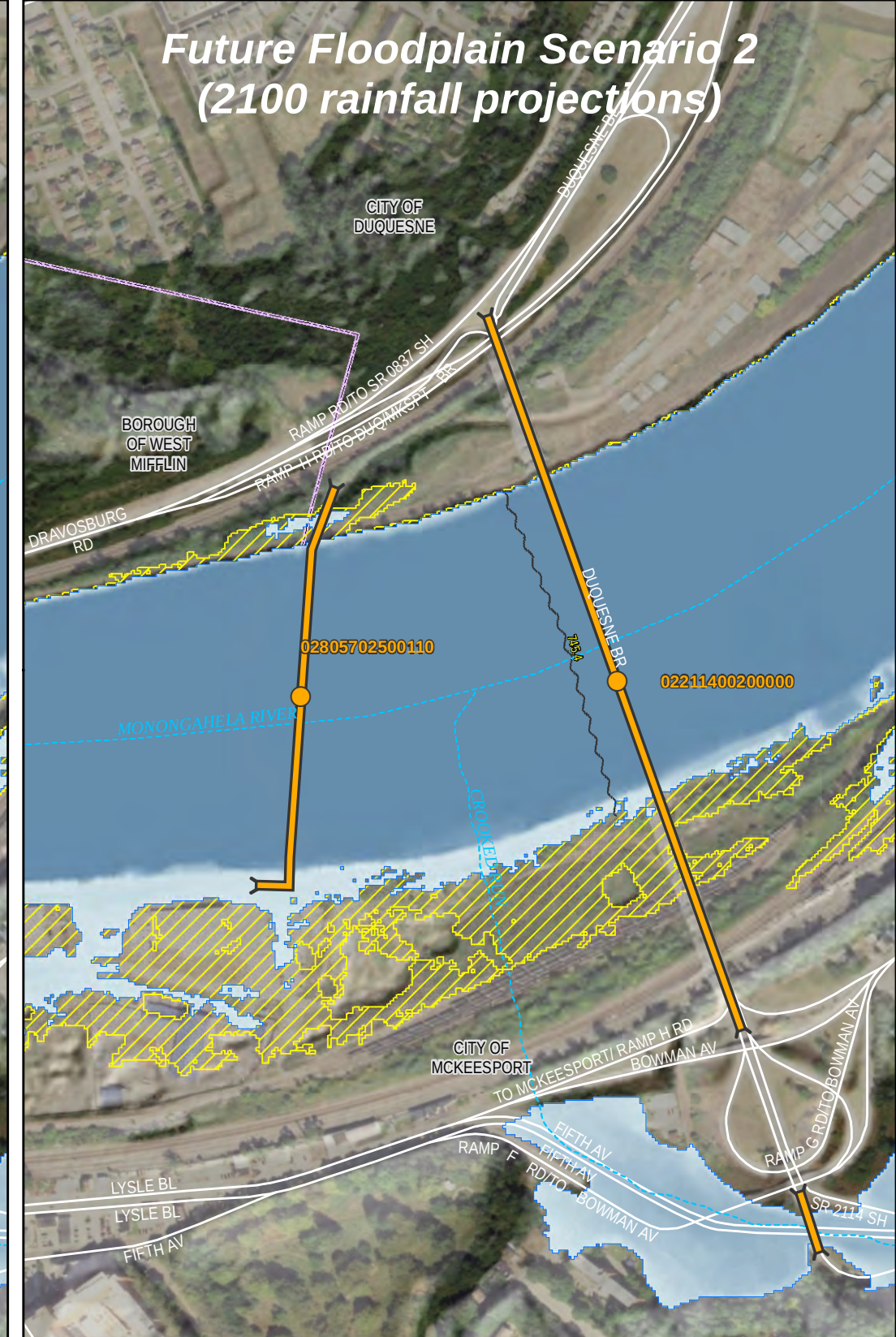
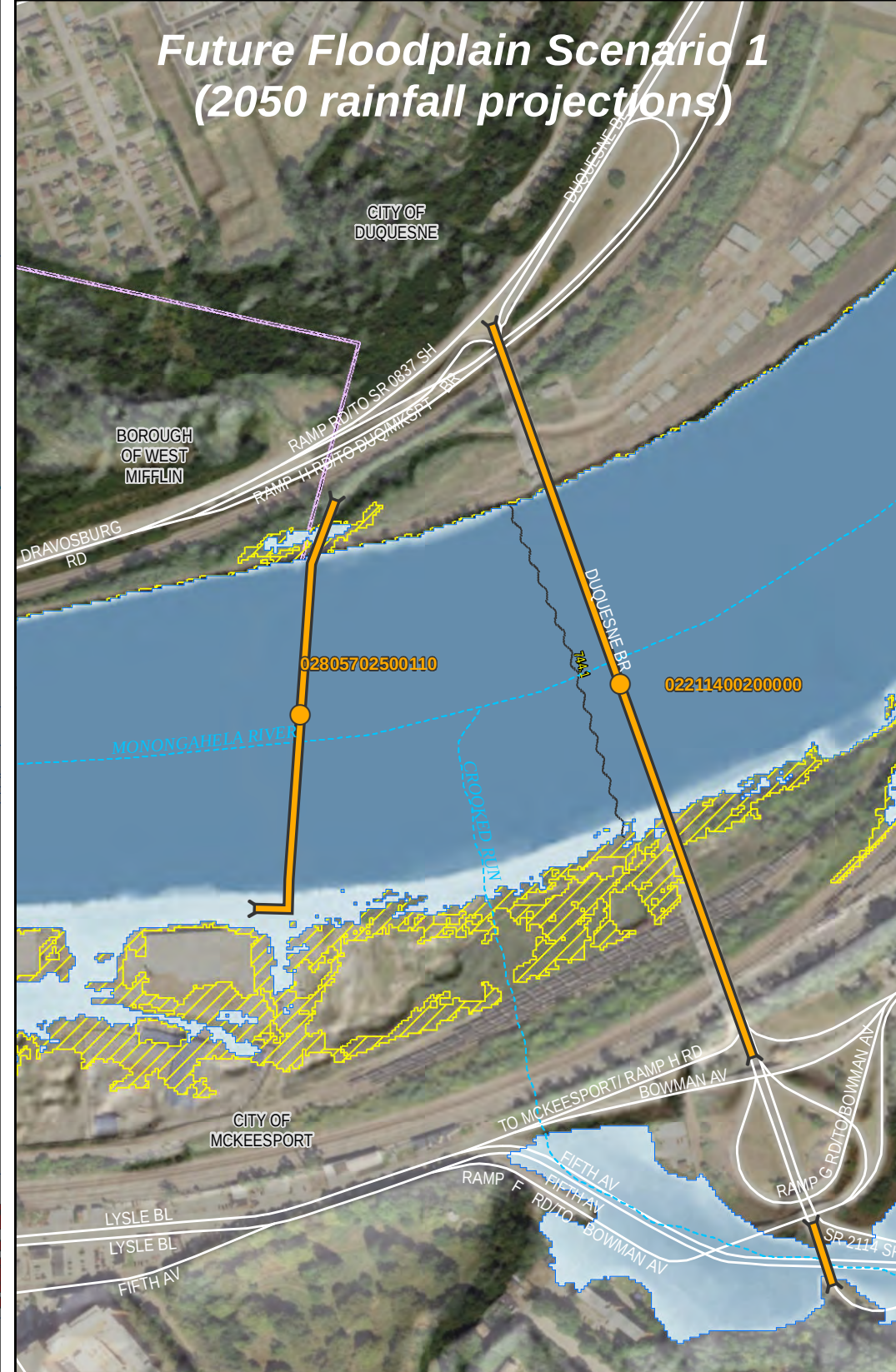
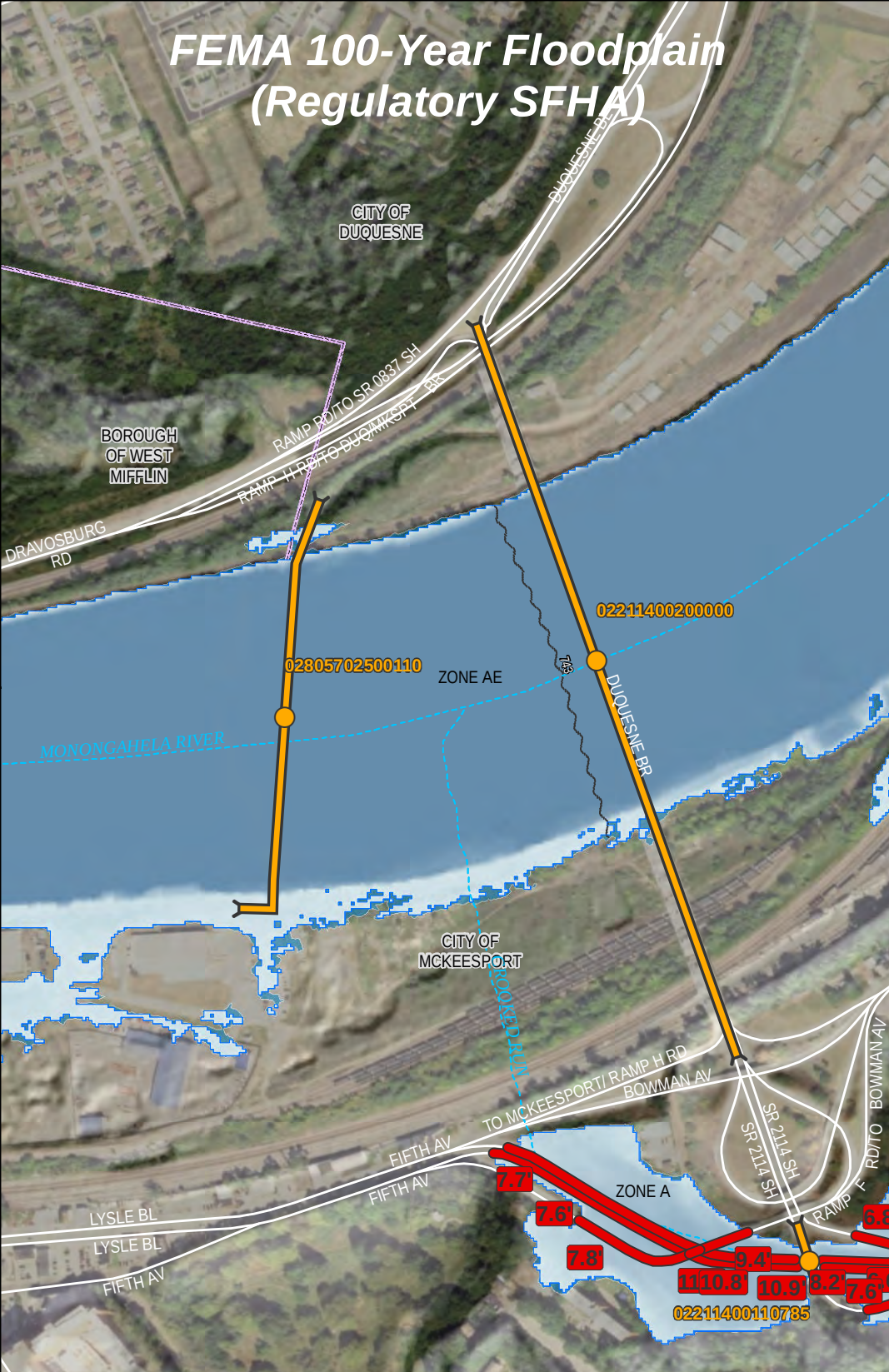
LOCATOR MAP

Michael Baker INTERNATIONAL

DATA FRAME PROPERTIES:
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NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT





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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

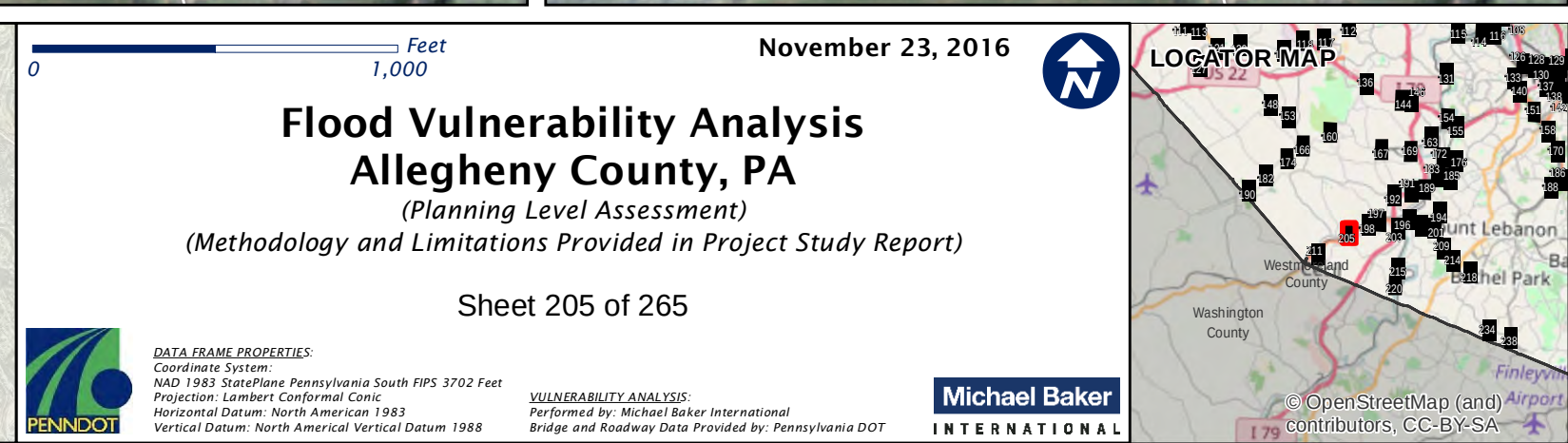
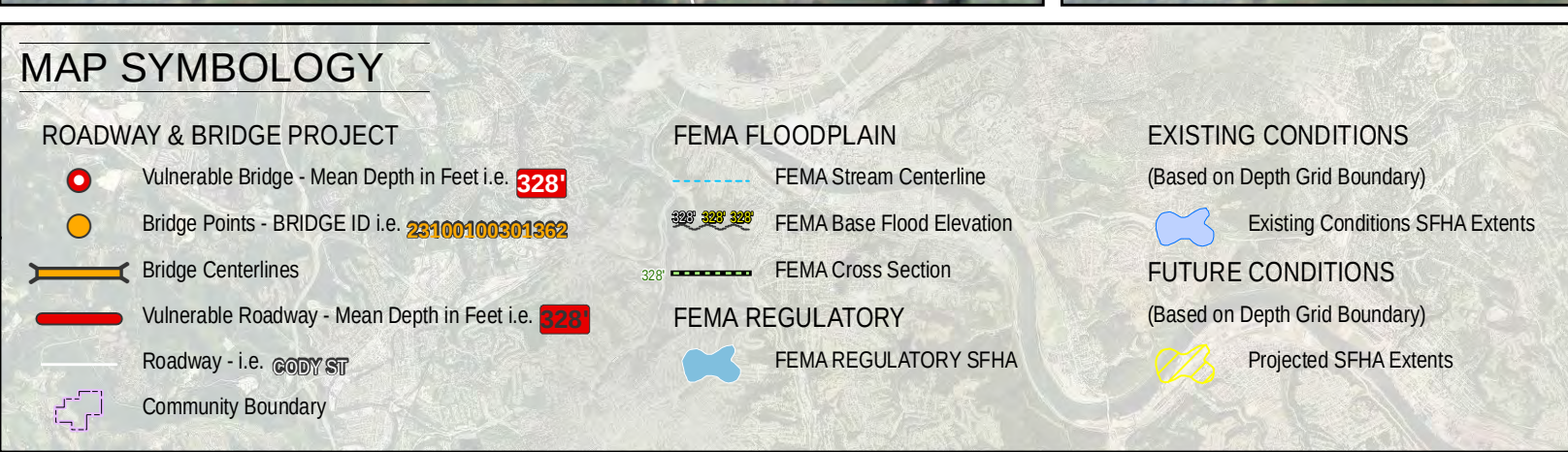
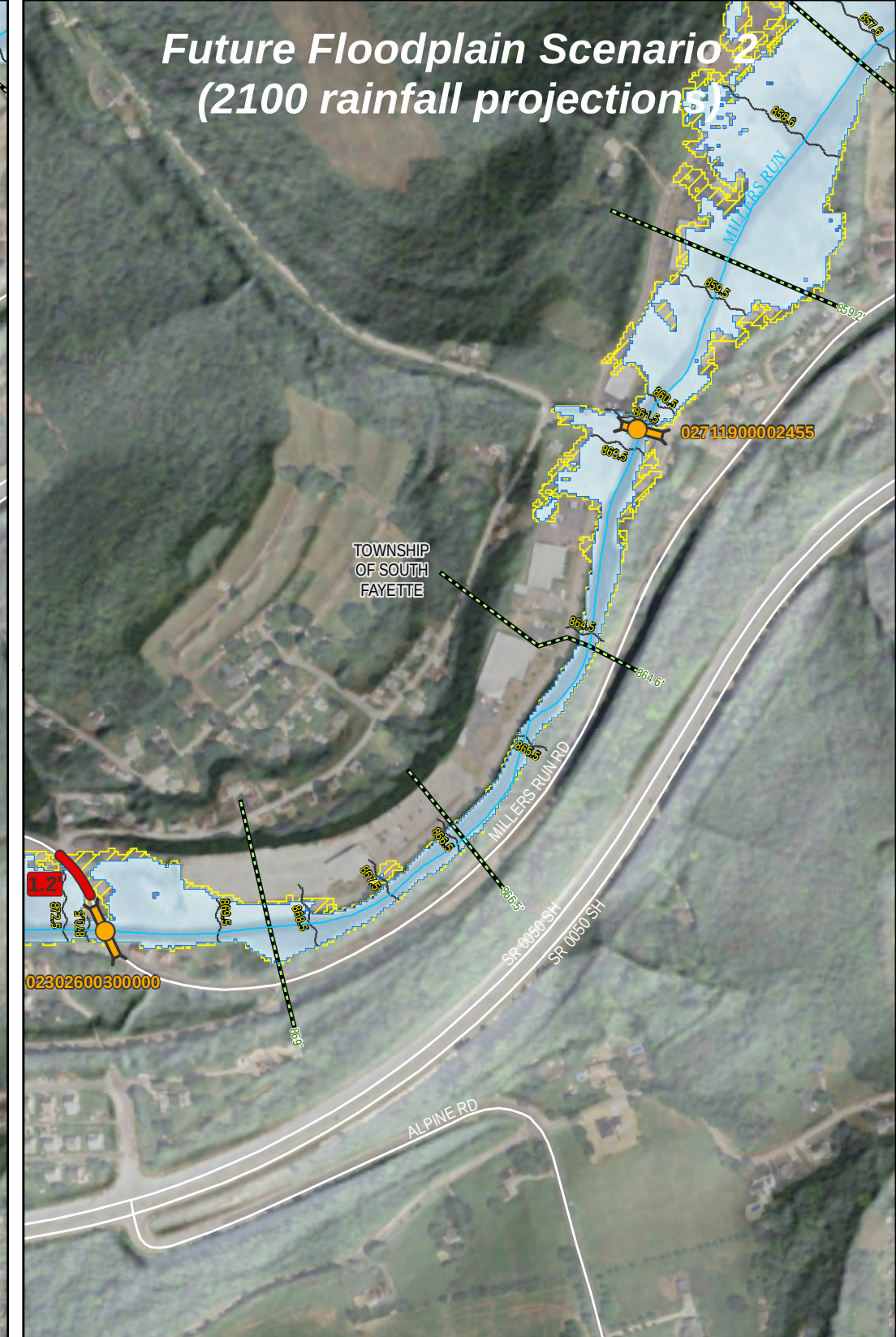
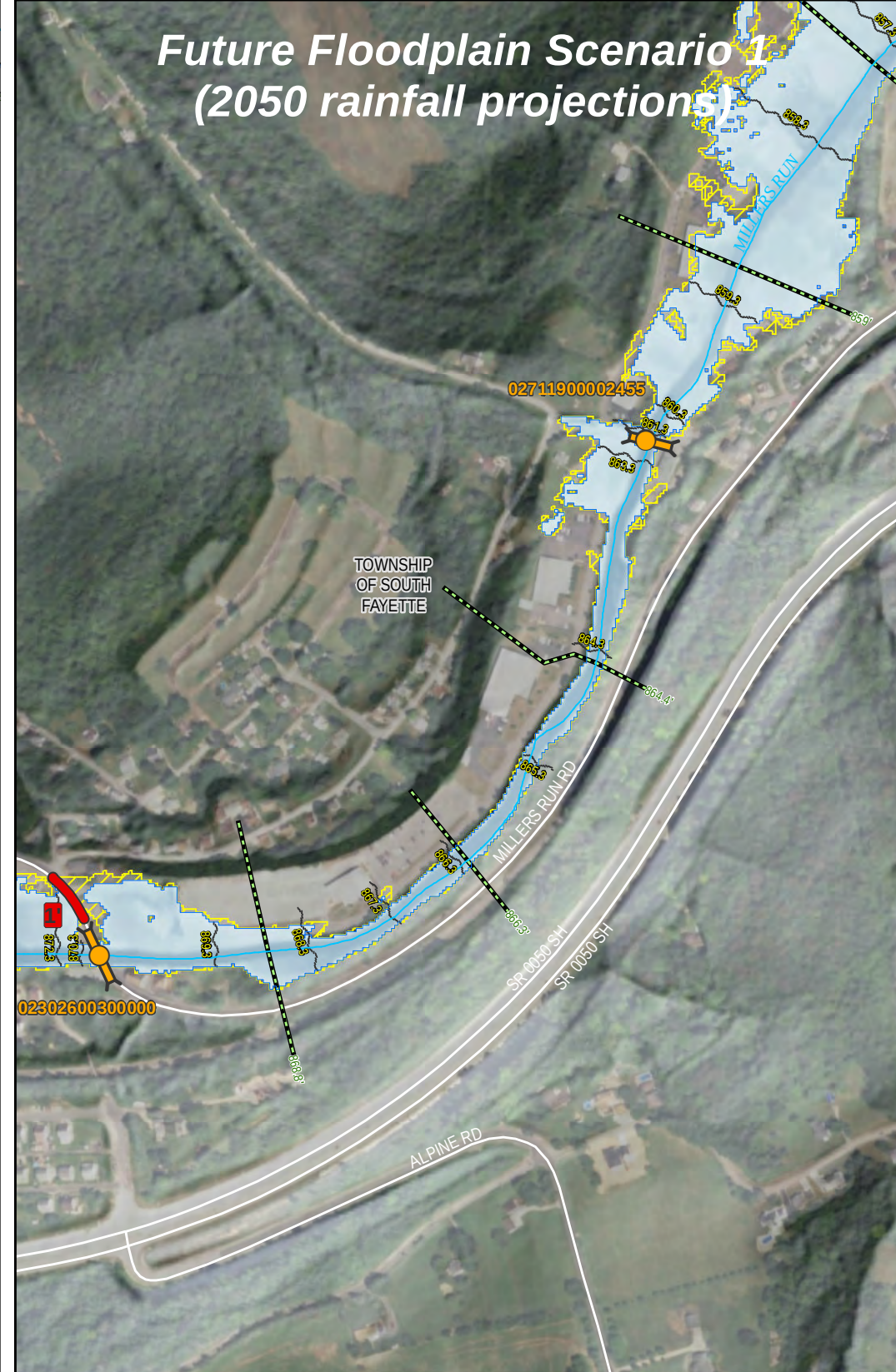
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(Methodology and Limitations Provided in Project Study Report)

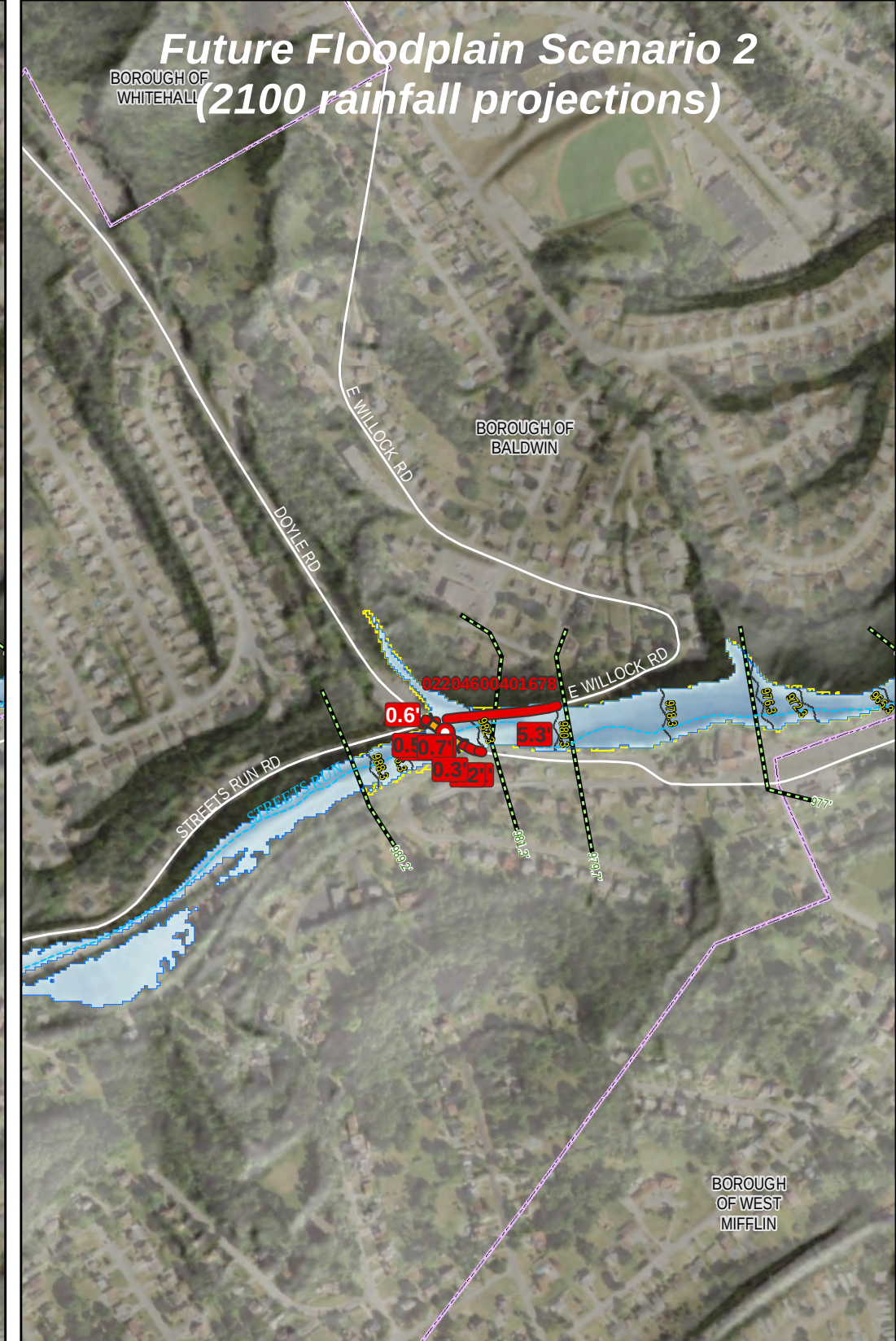
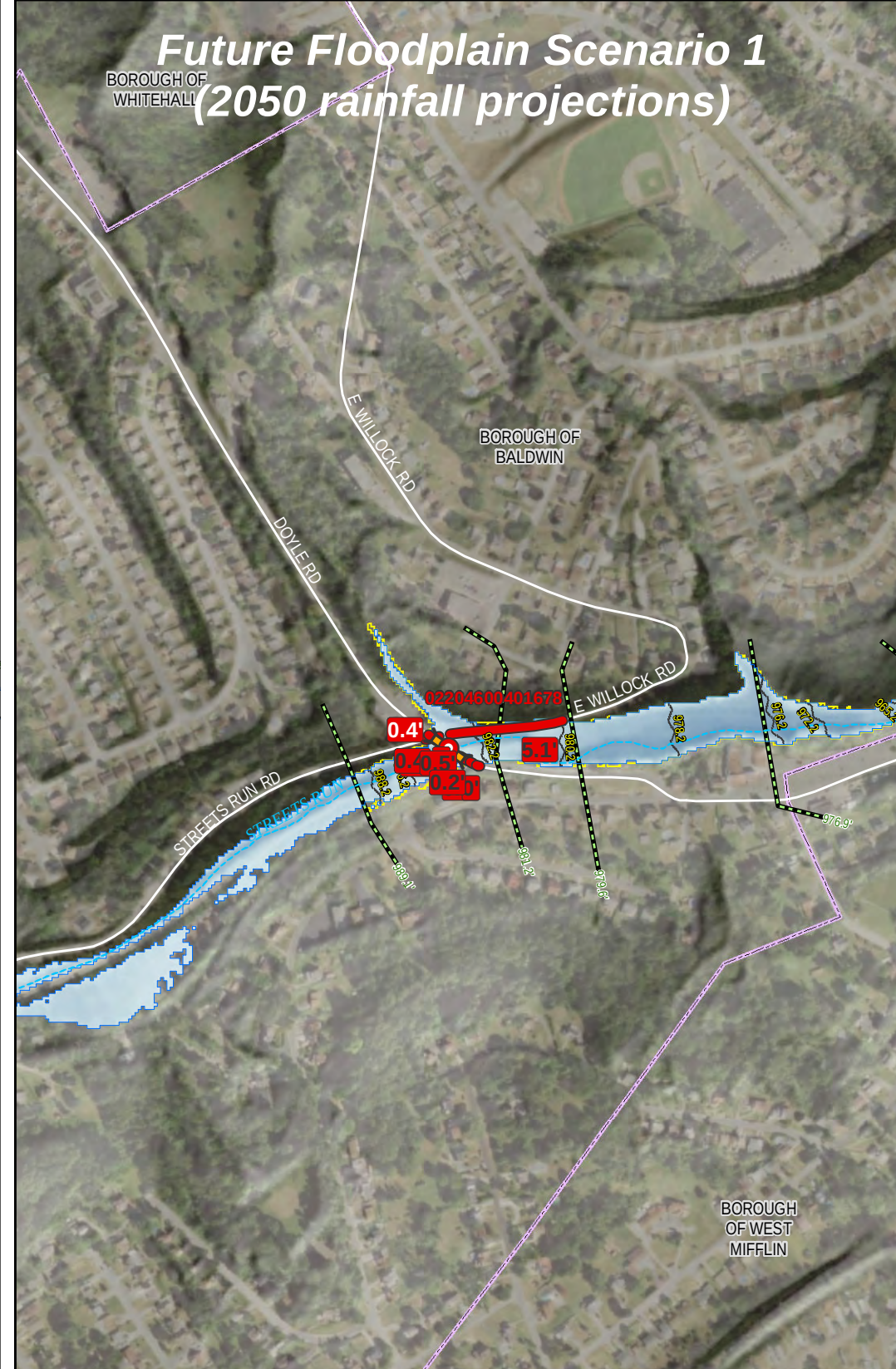
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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP





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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016

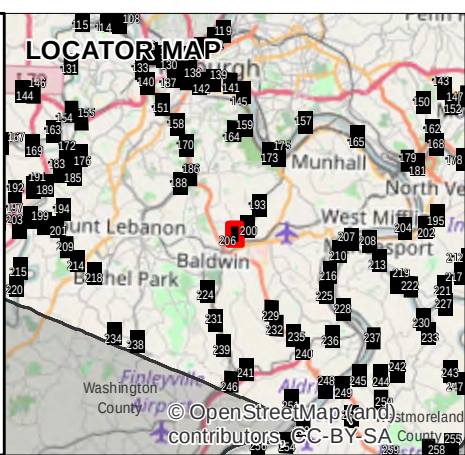
Flood Vulnerability Analysis
Allegheny County, PA
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

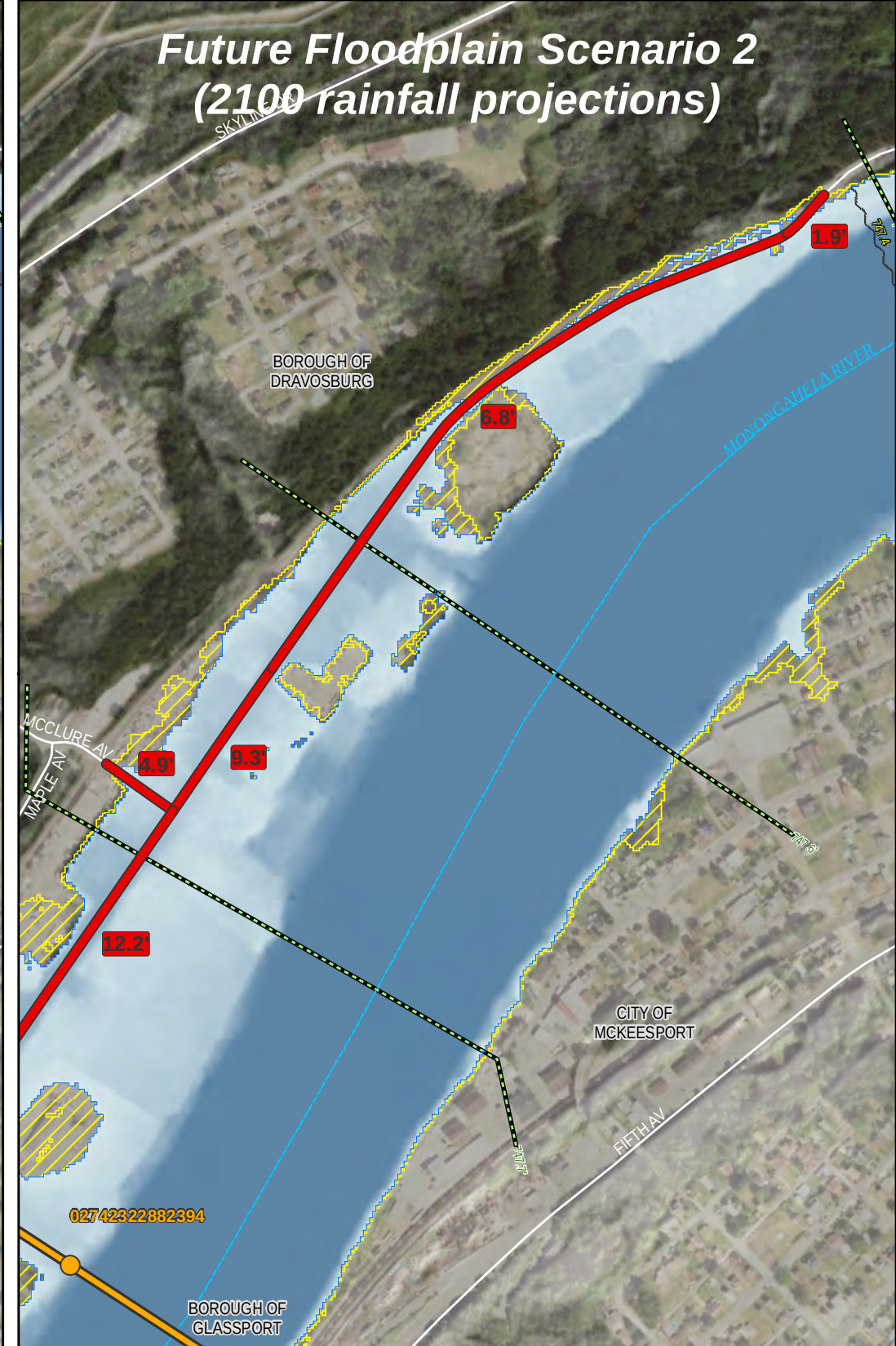
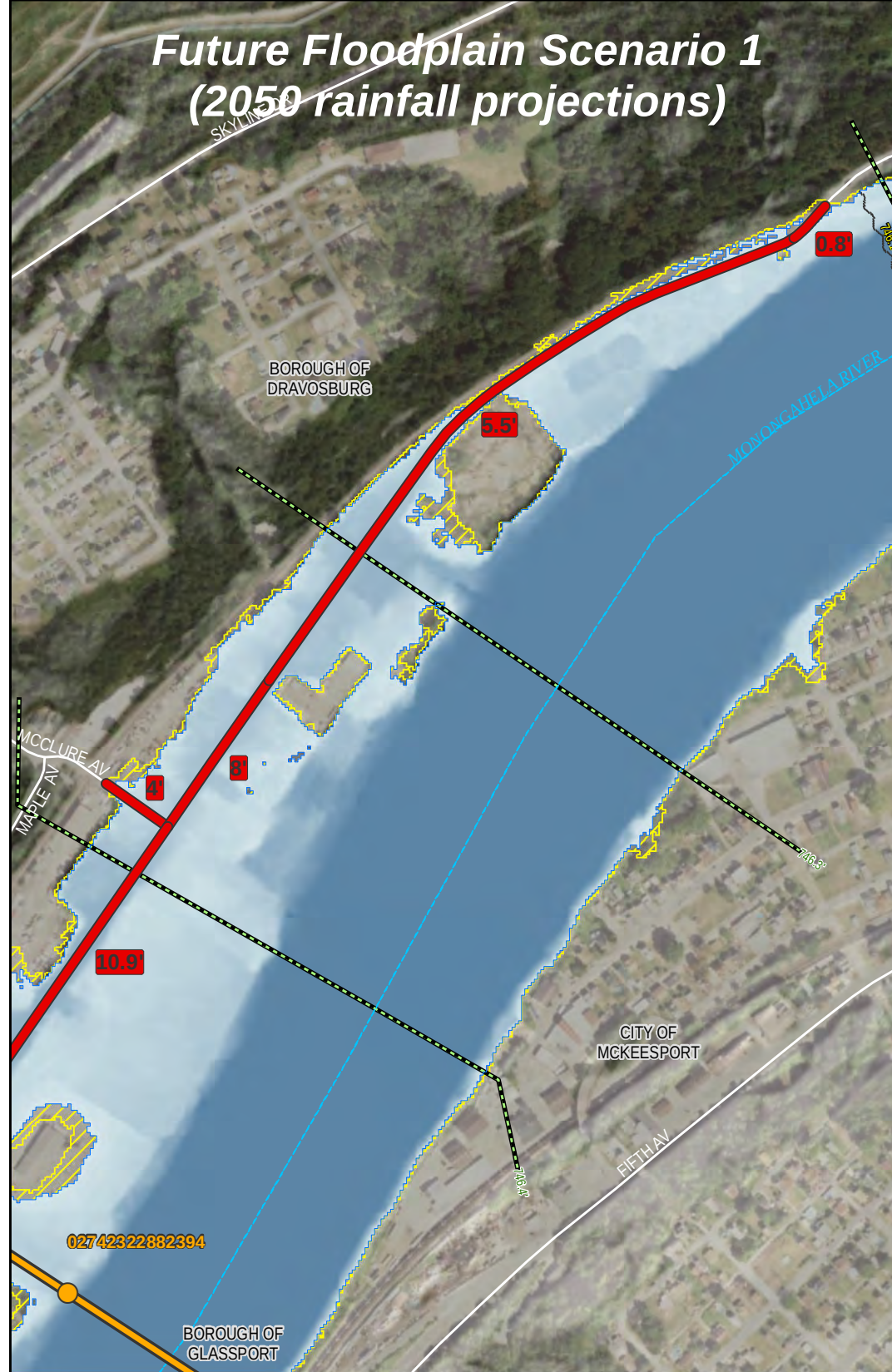
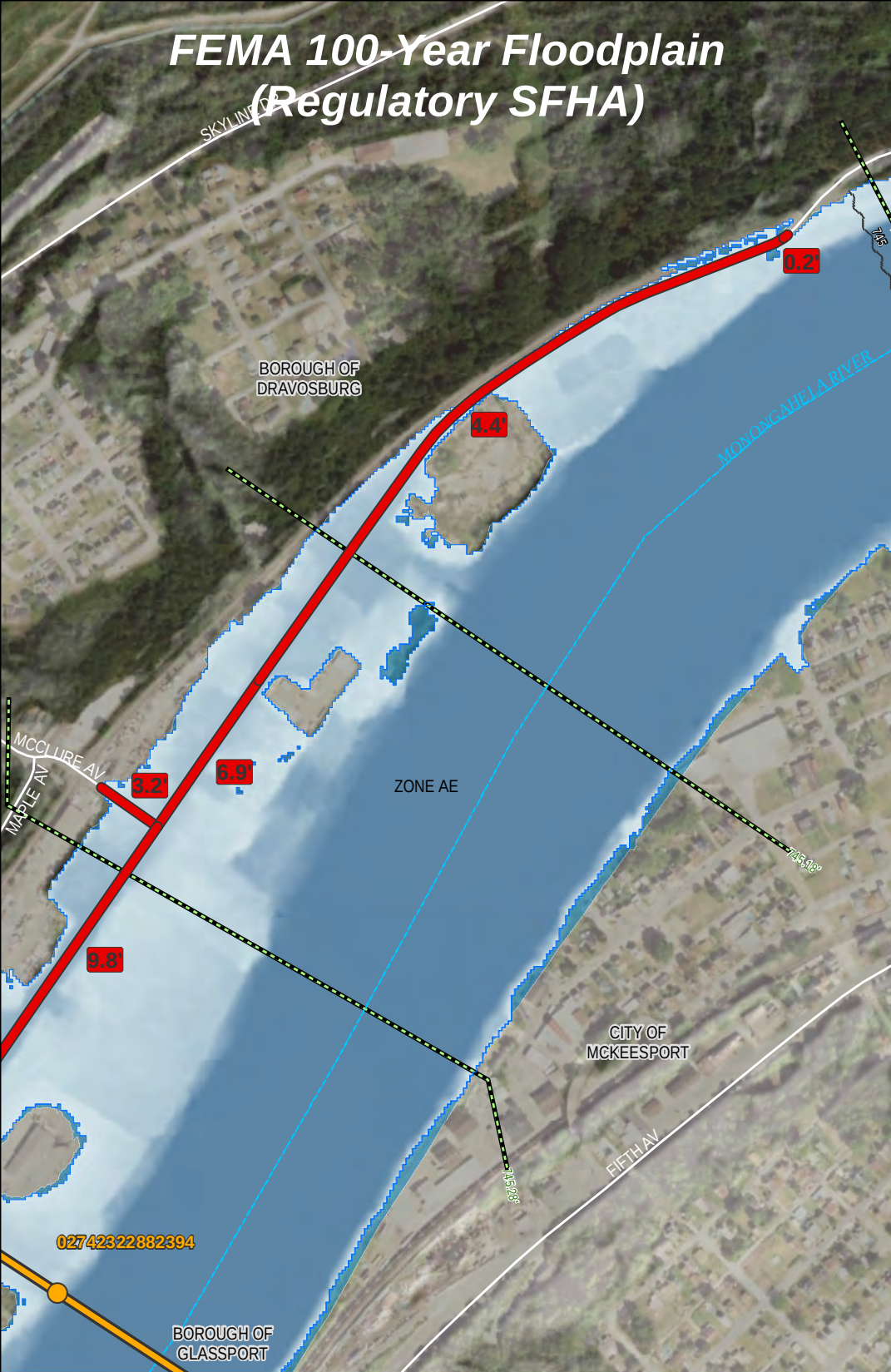
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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. **328'**
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- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. **328'**
- Roadway - i.e. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

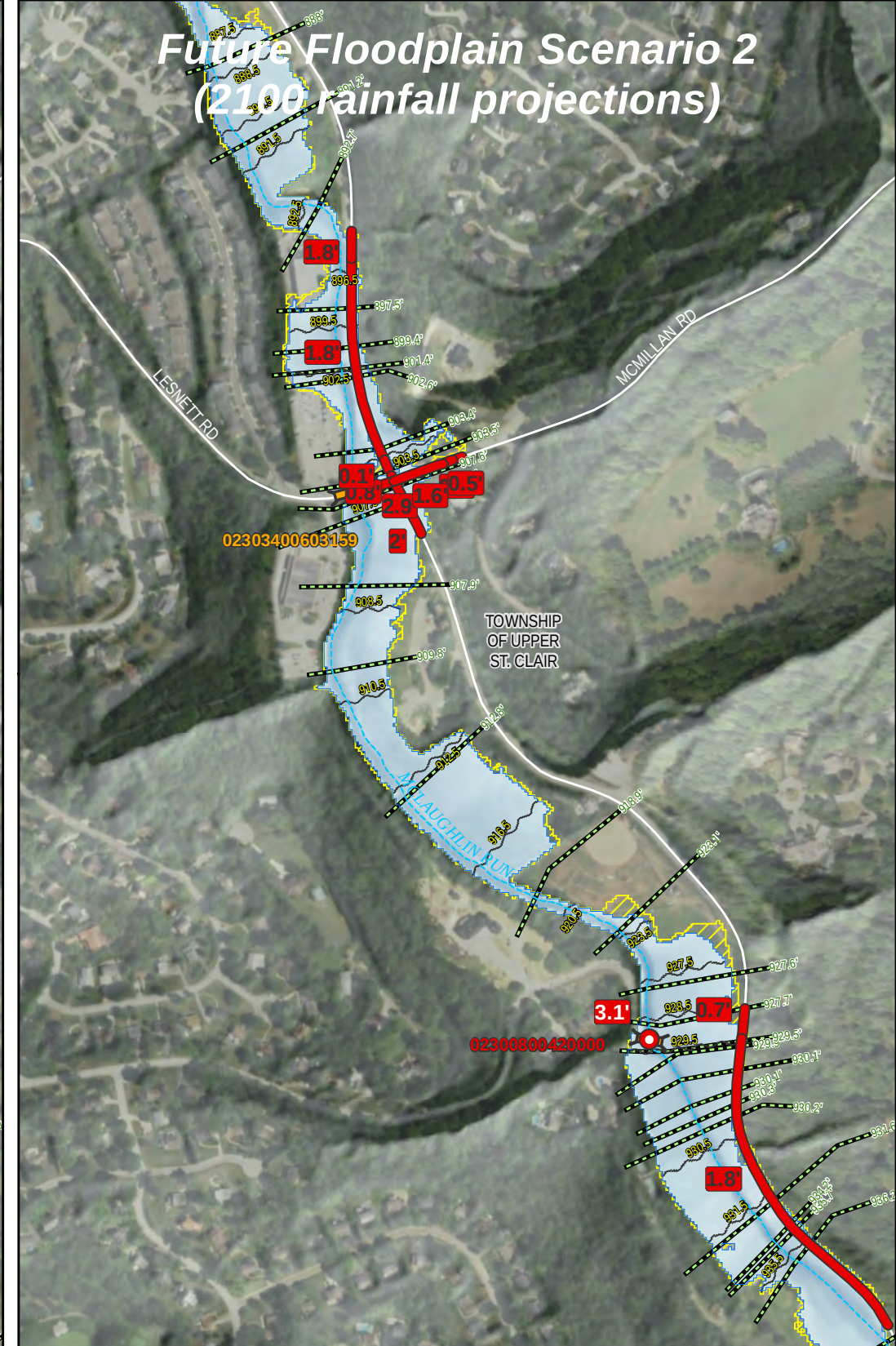
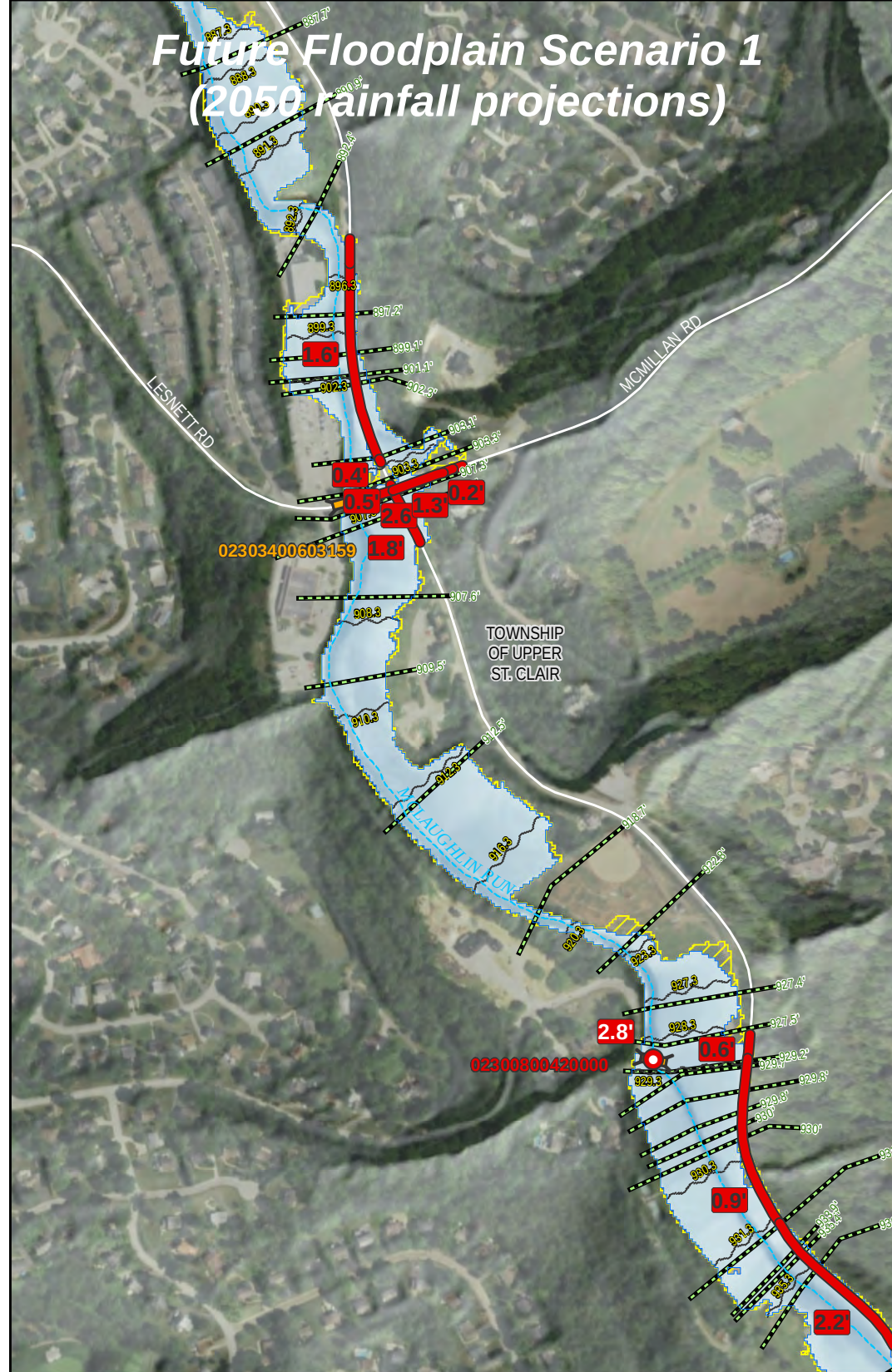
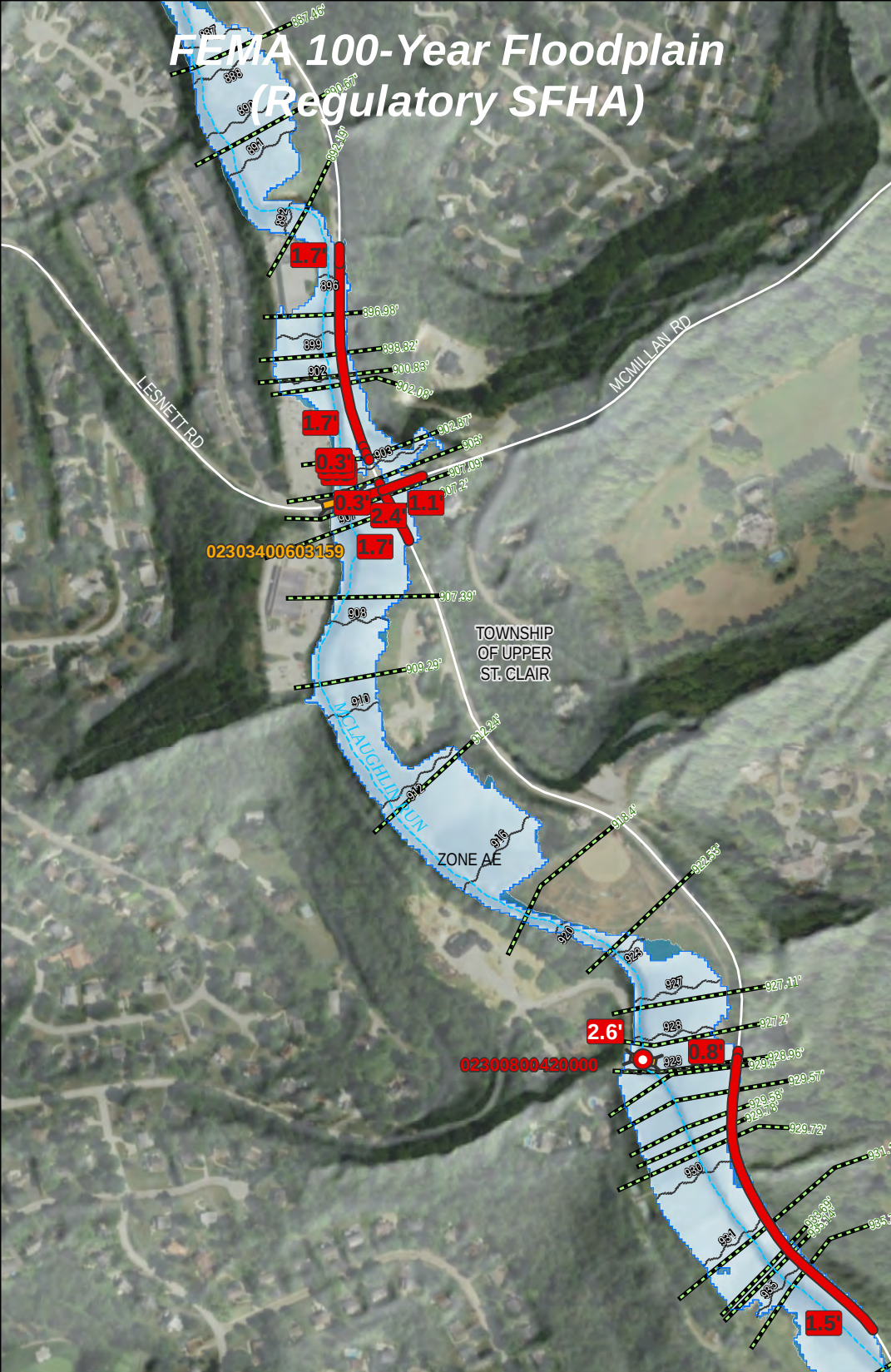
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(Methodology and Limitations Provided in Project Study Report)

Sheet 207 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. **328'**
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FEMA FLOODPLAIN

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- 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

Feet
0 1,000

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

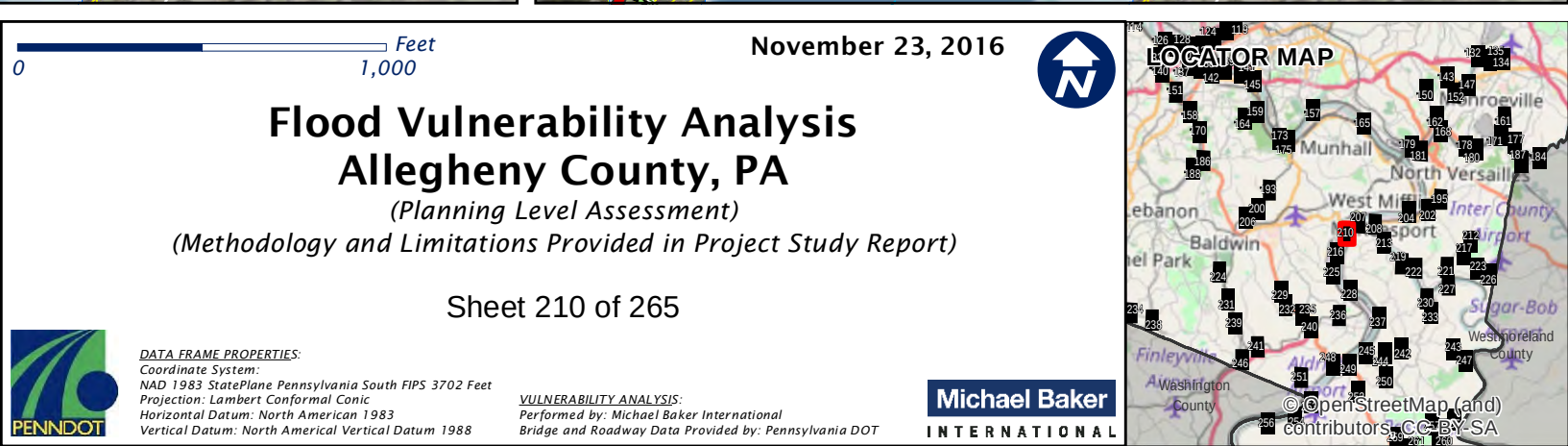
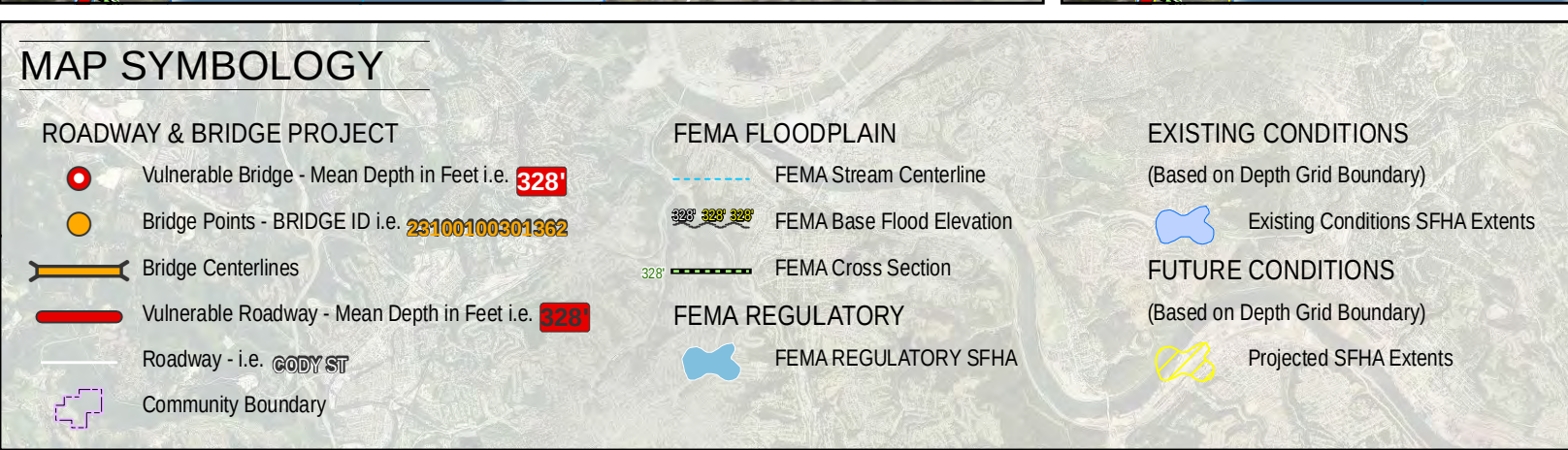
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(Methodology and Limitations Provided in Project Study Report)

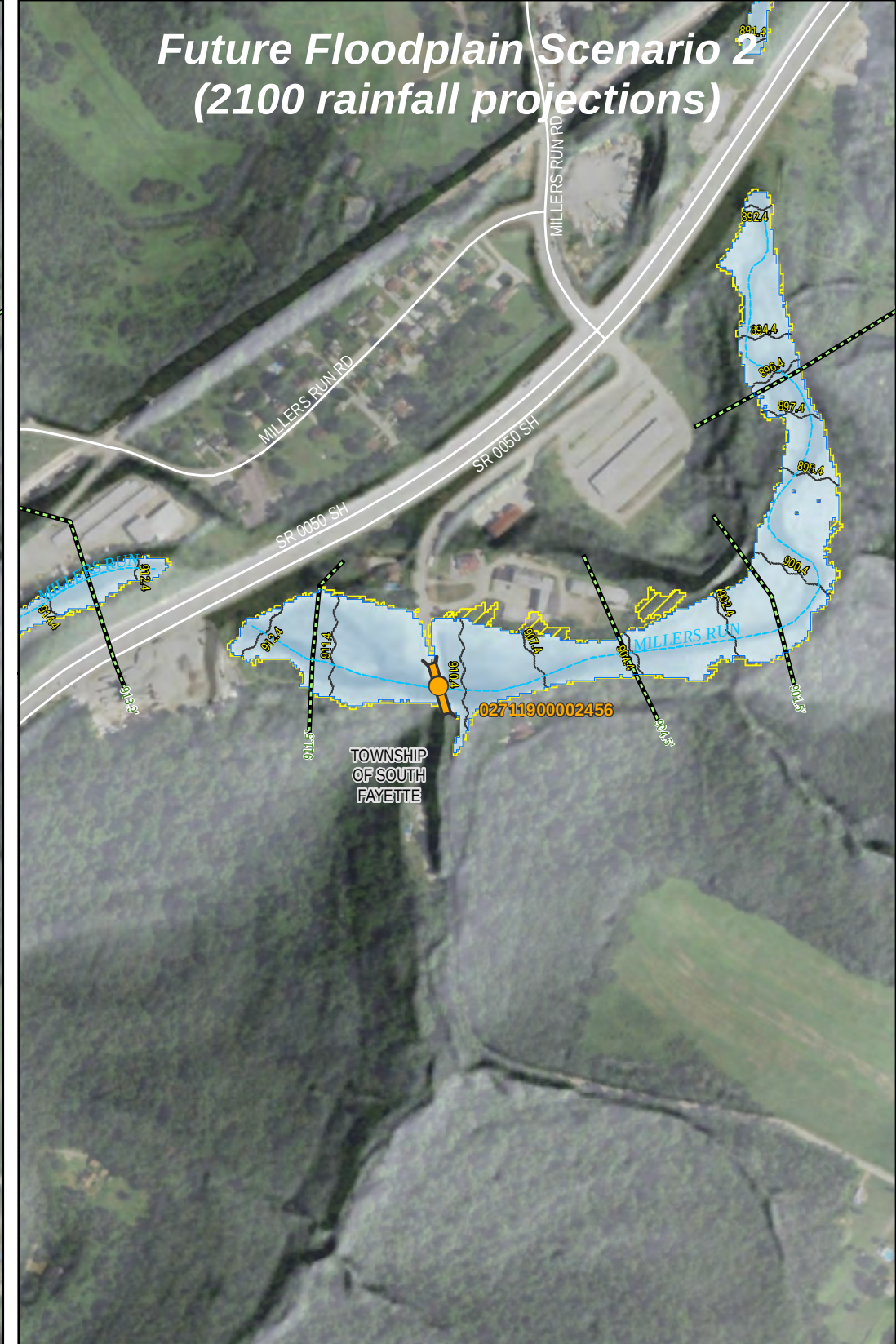
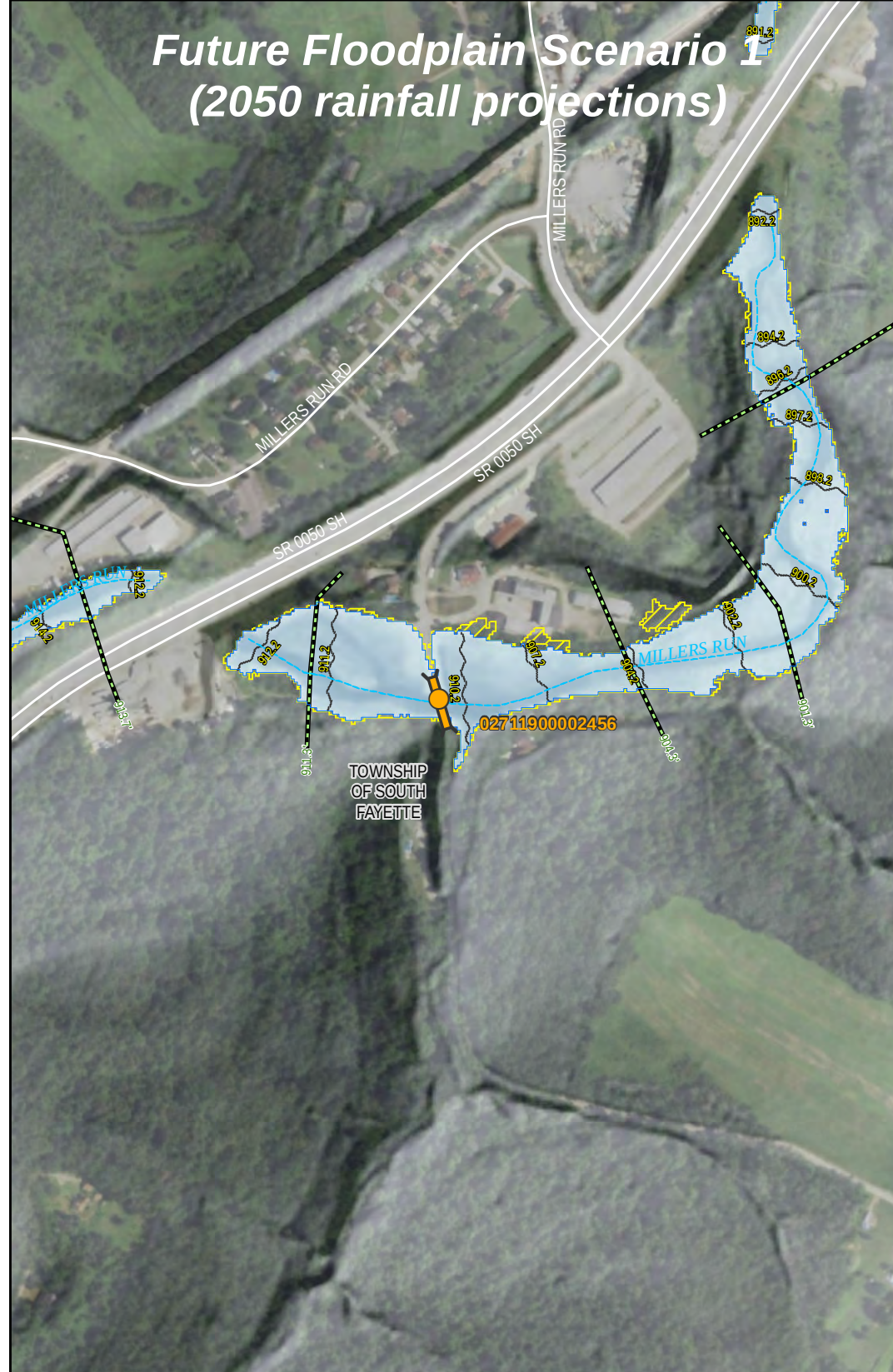
Sheet 209 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
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Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

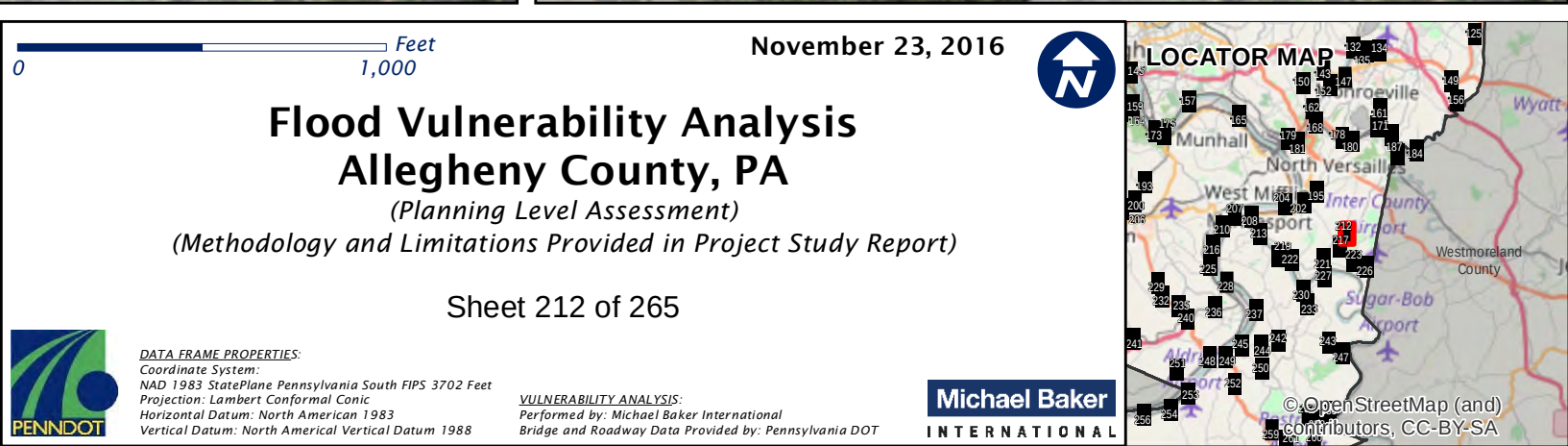
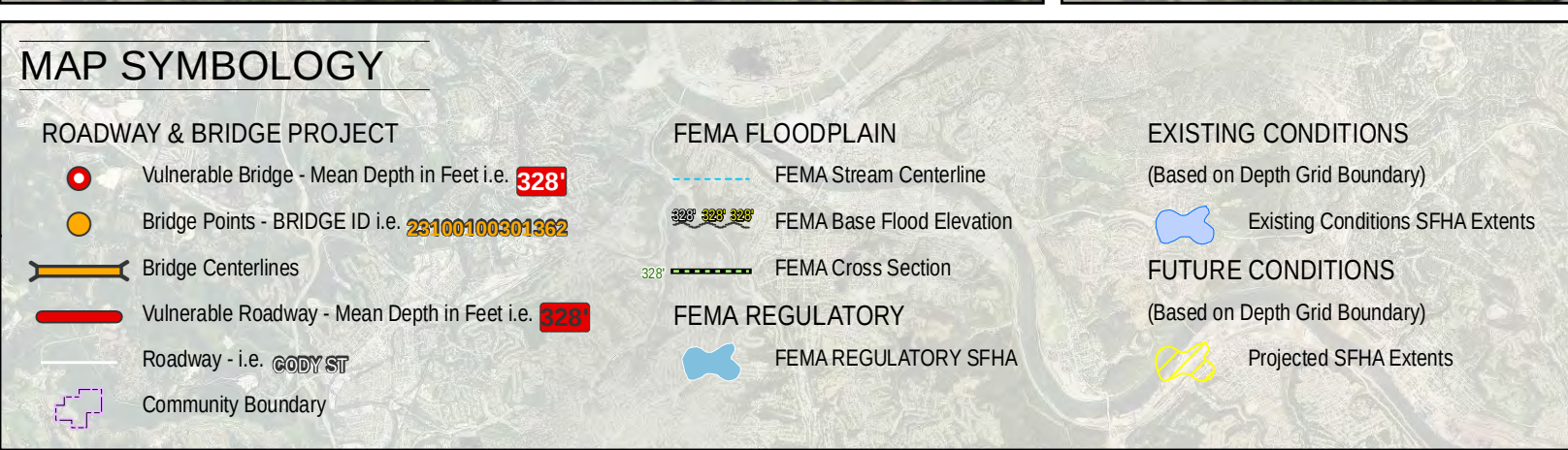
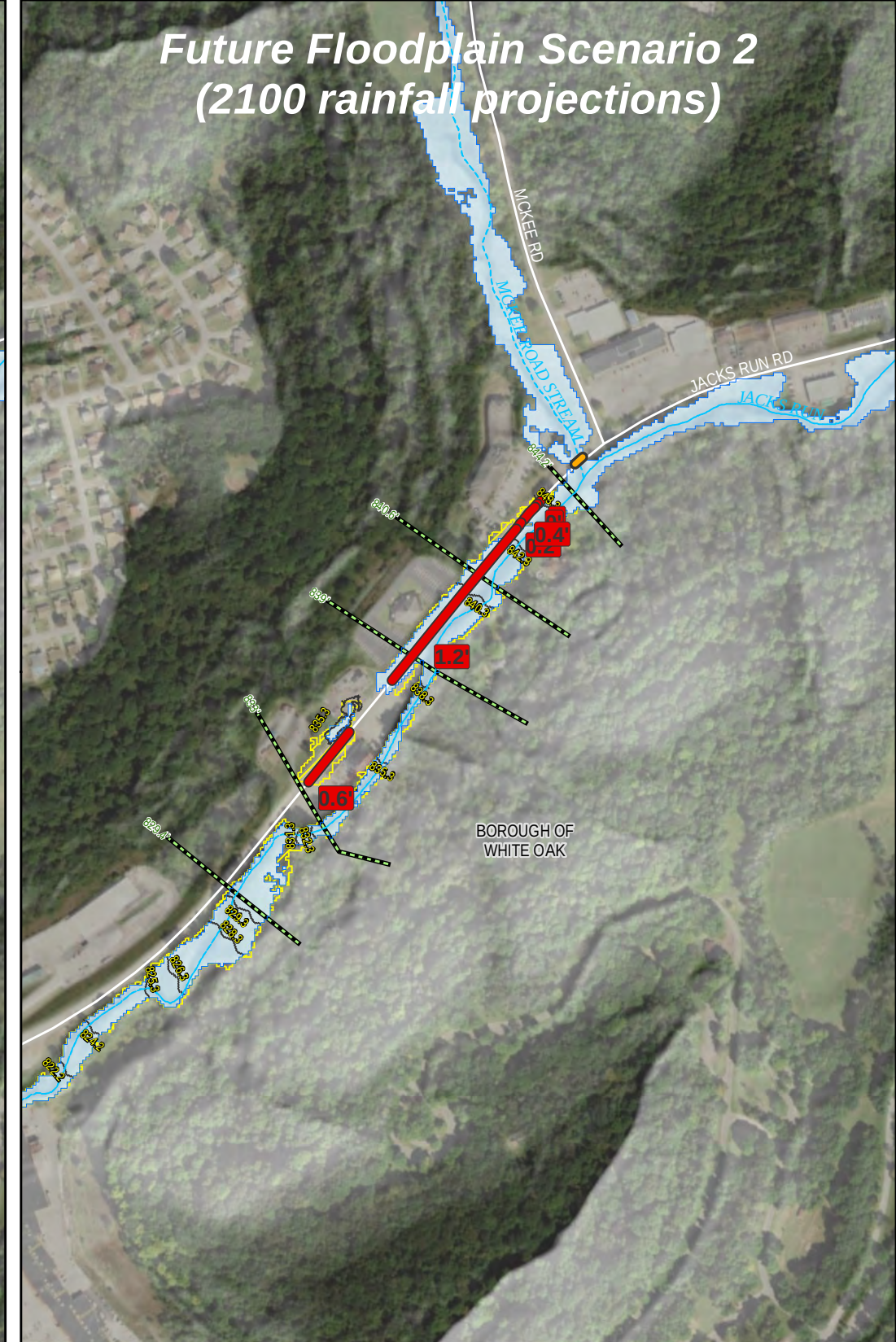
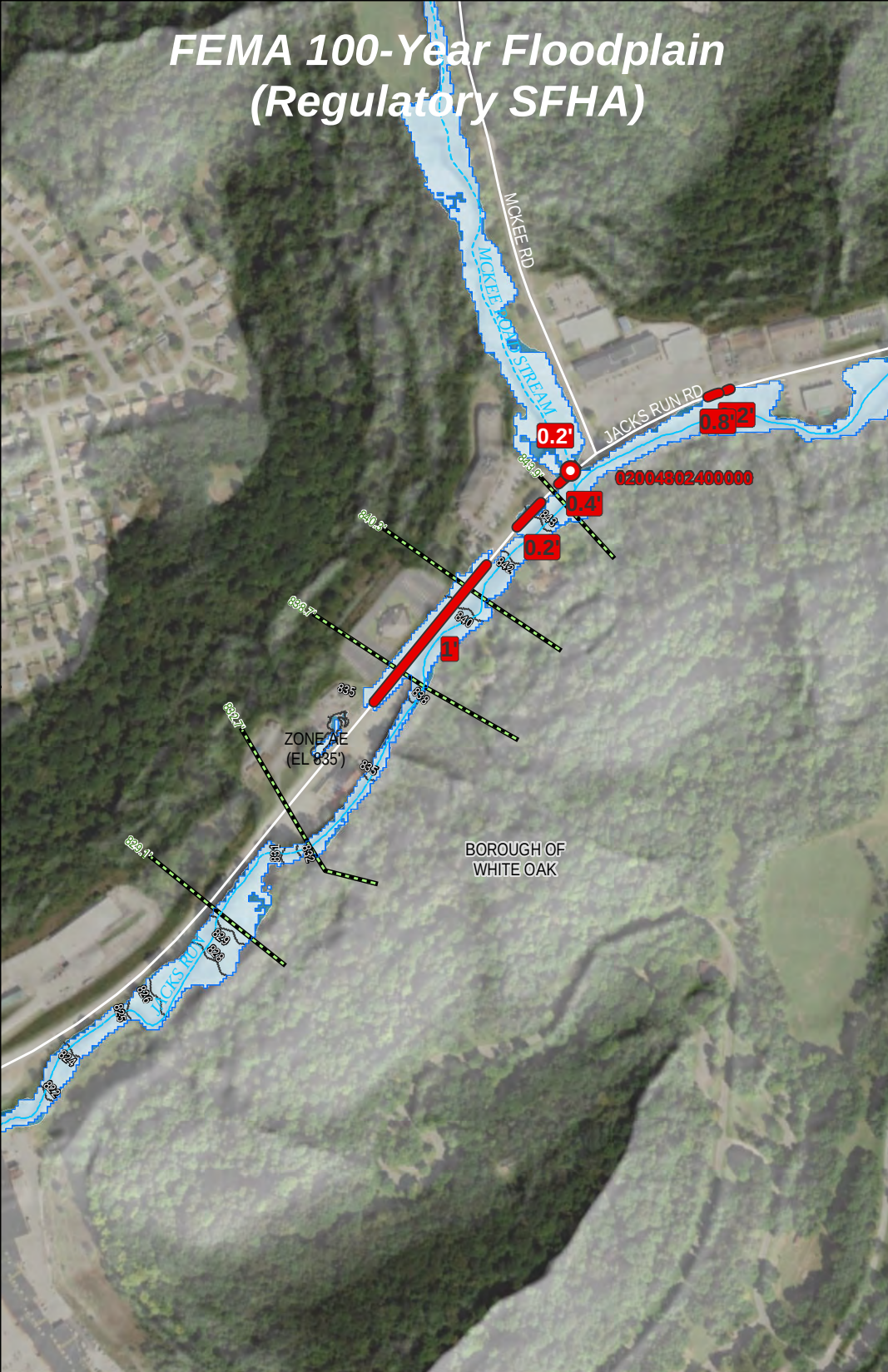
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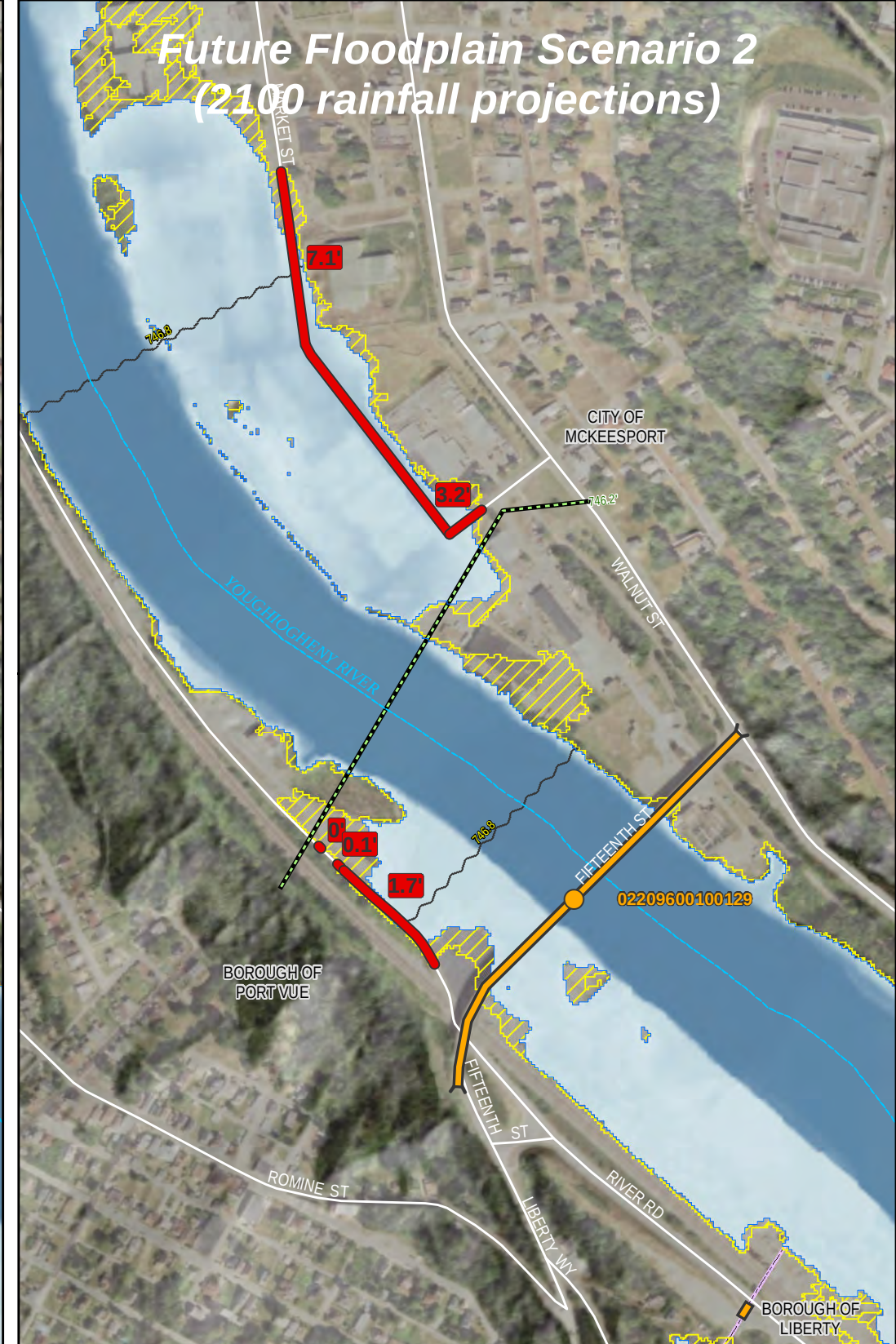
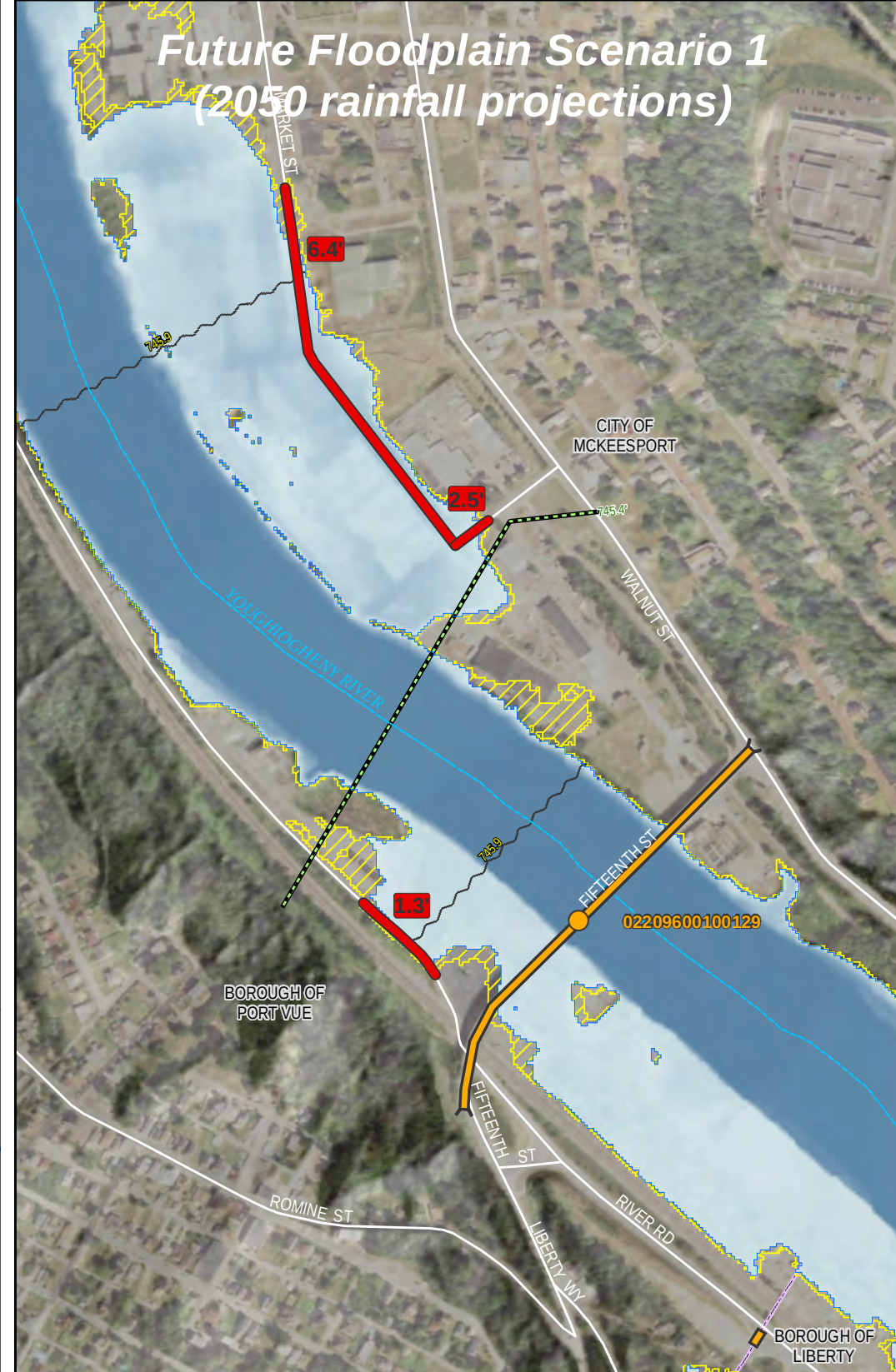
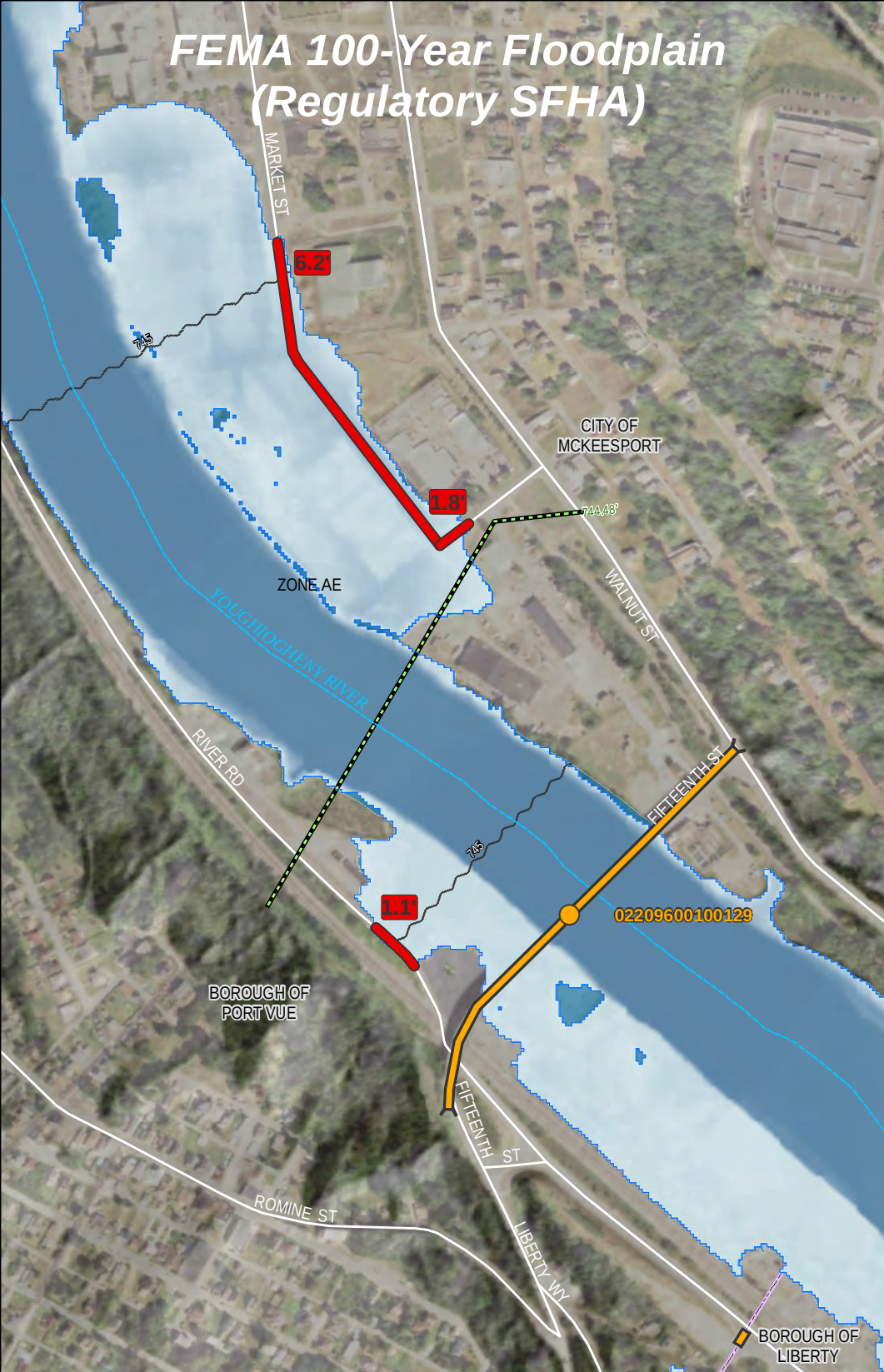
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LOCATOR MAP

DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
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Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

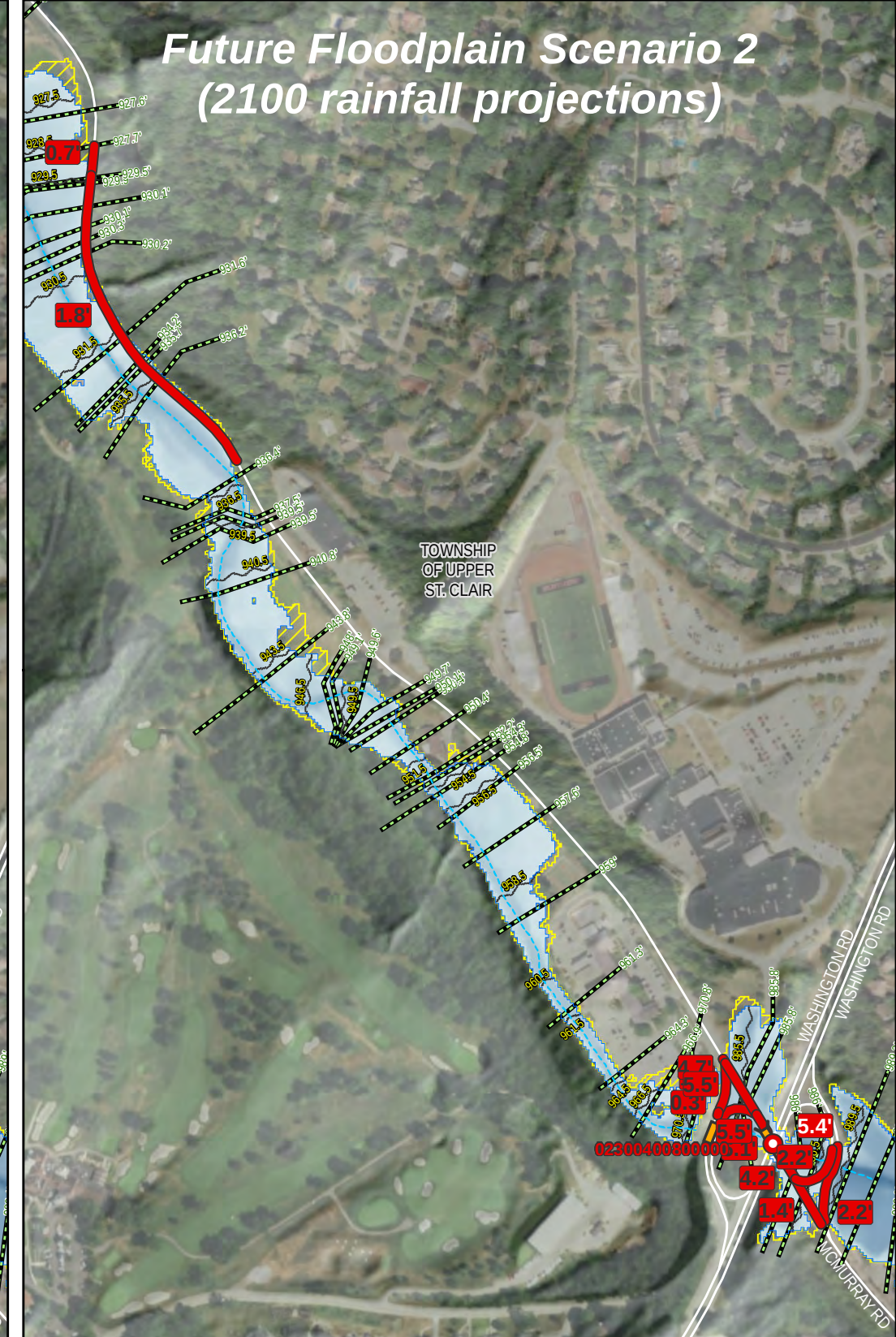
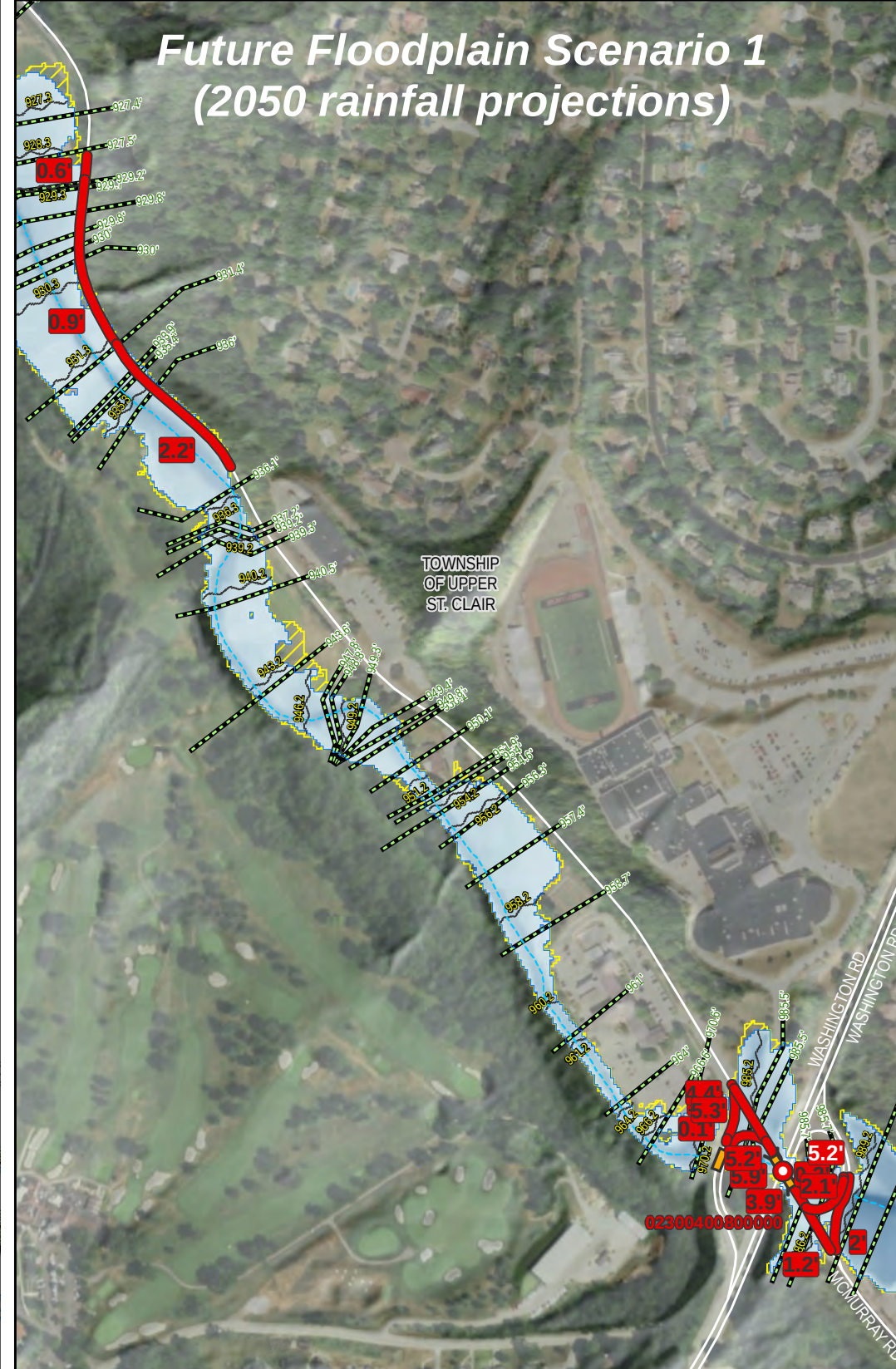
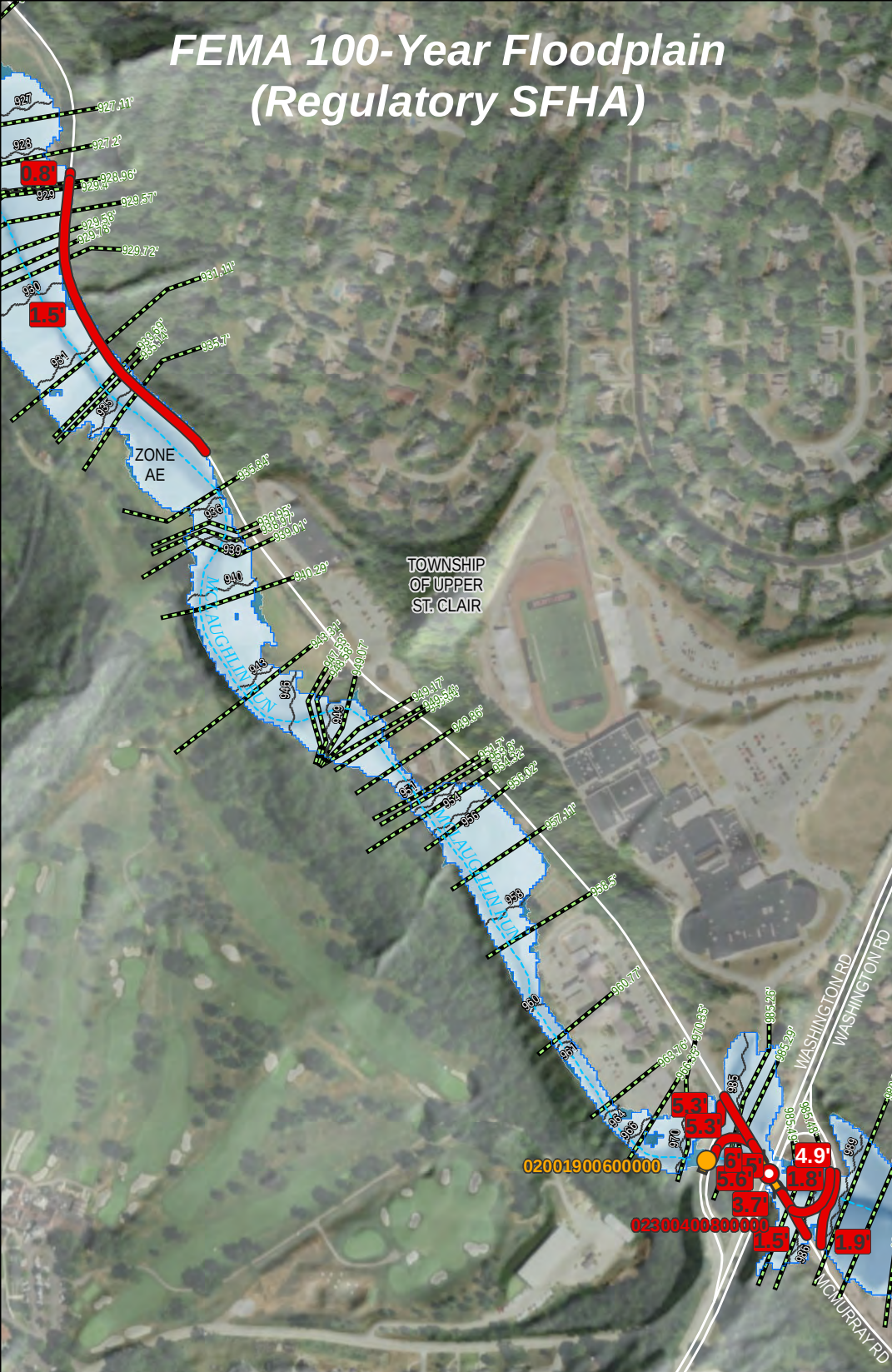
Sheet 213 of 265

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LOCATOR MAP

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
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Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 214 of 265

DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
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Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
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Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
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Community Boundary		

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

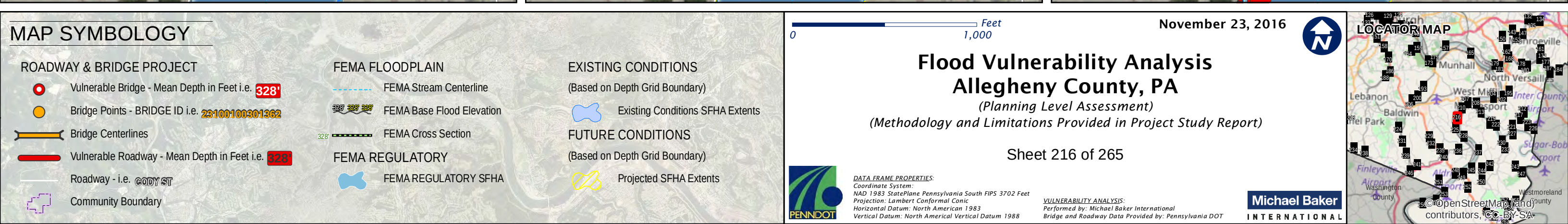
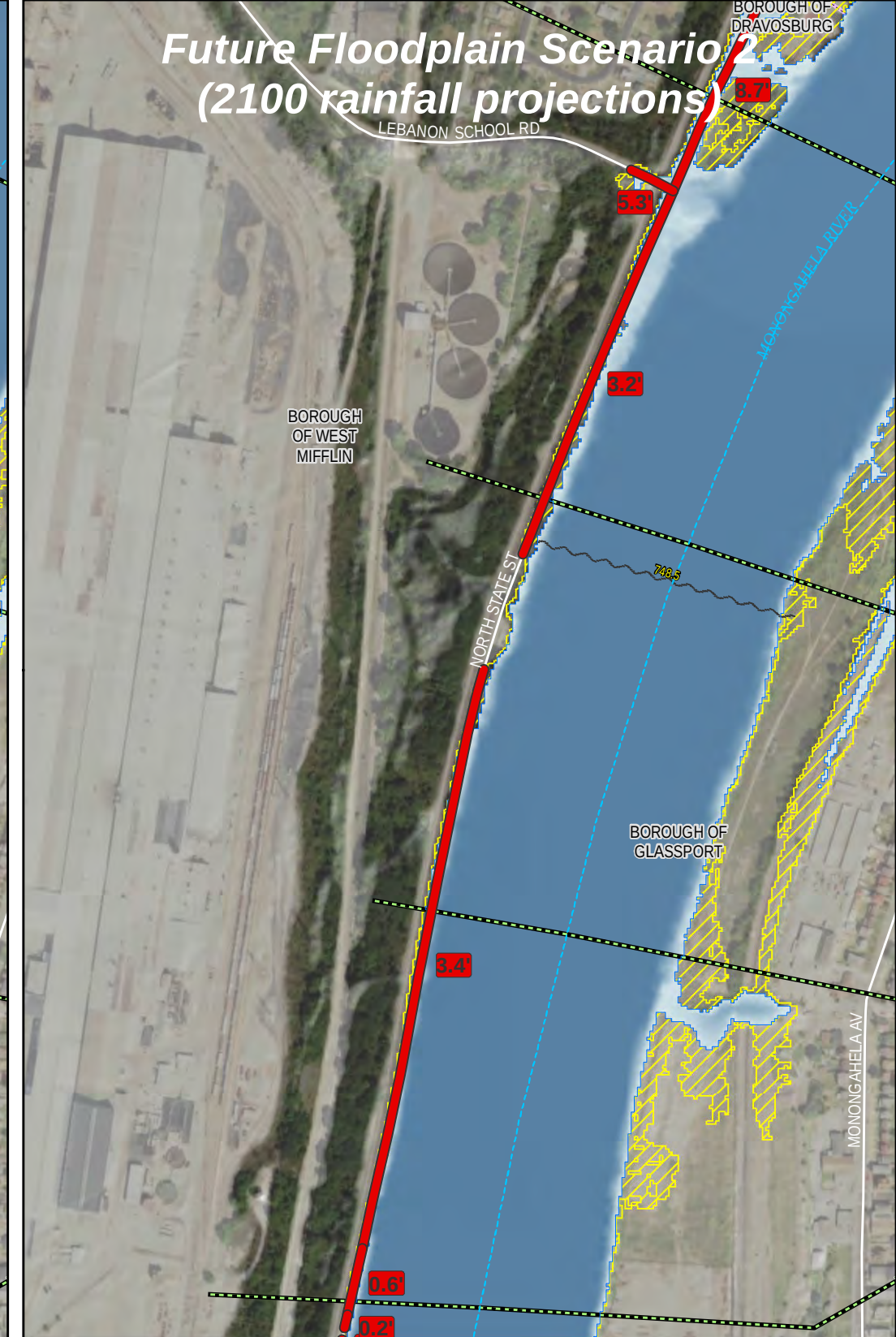
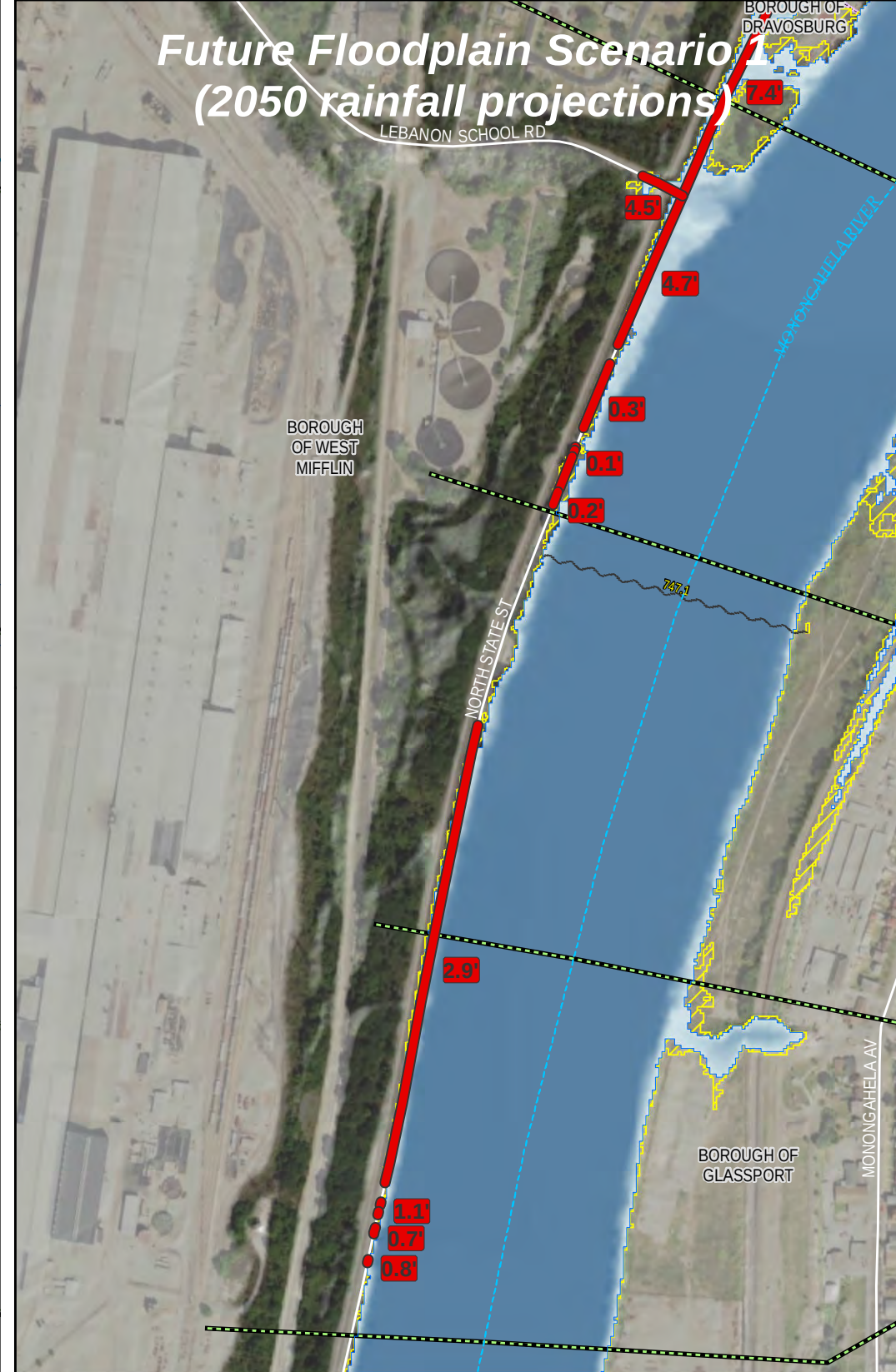
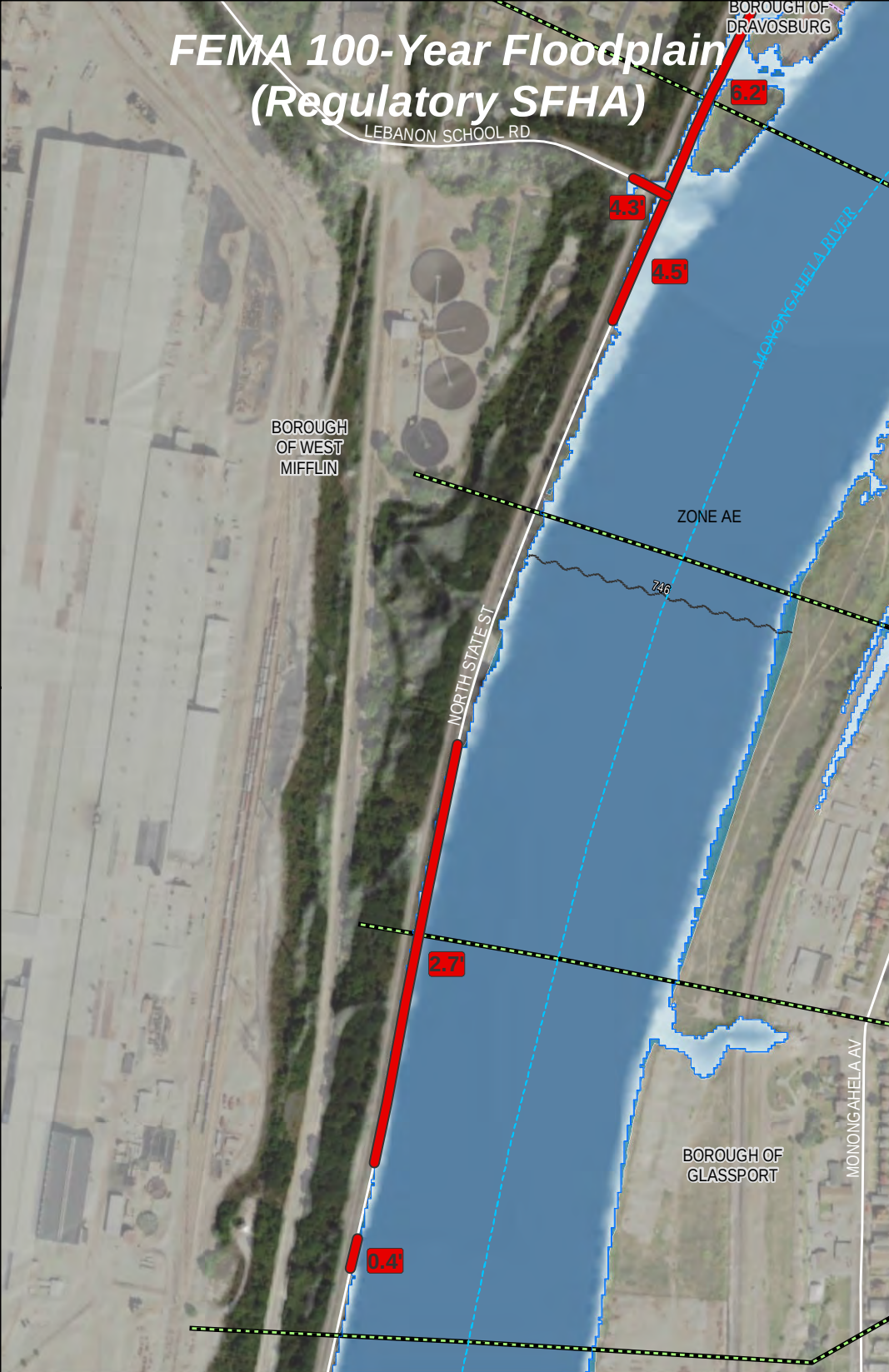
Sheet 215 of 265

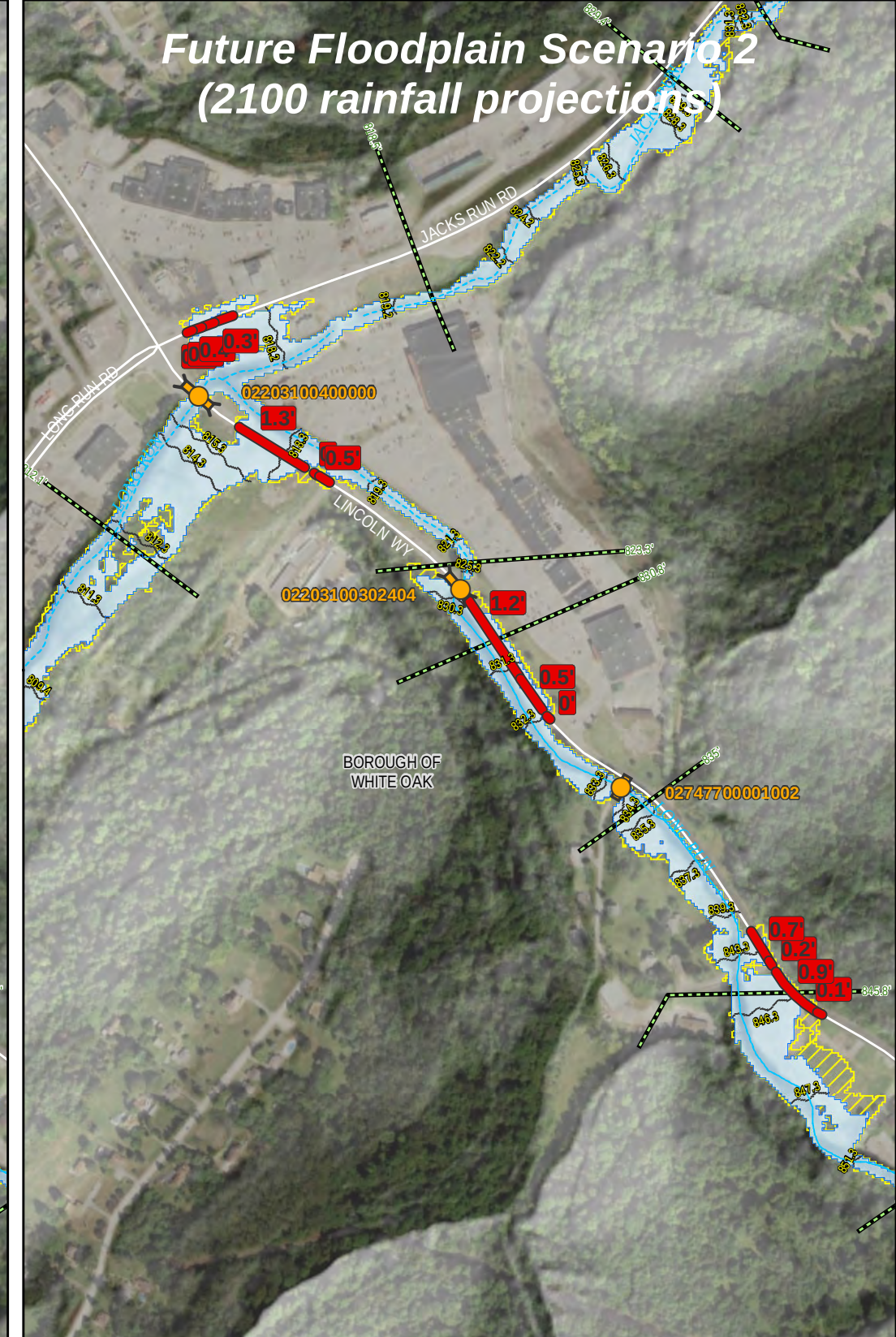
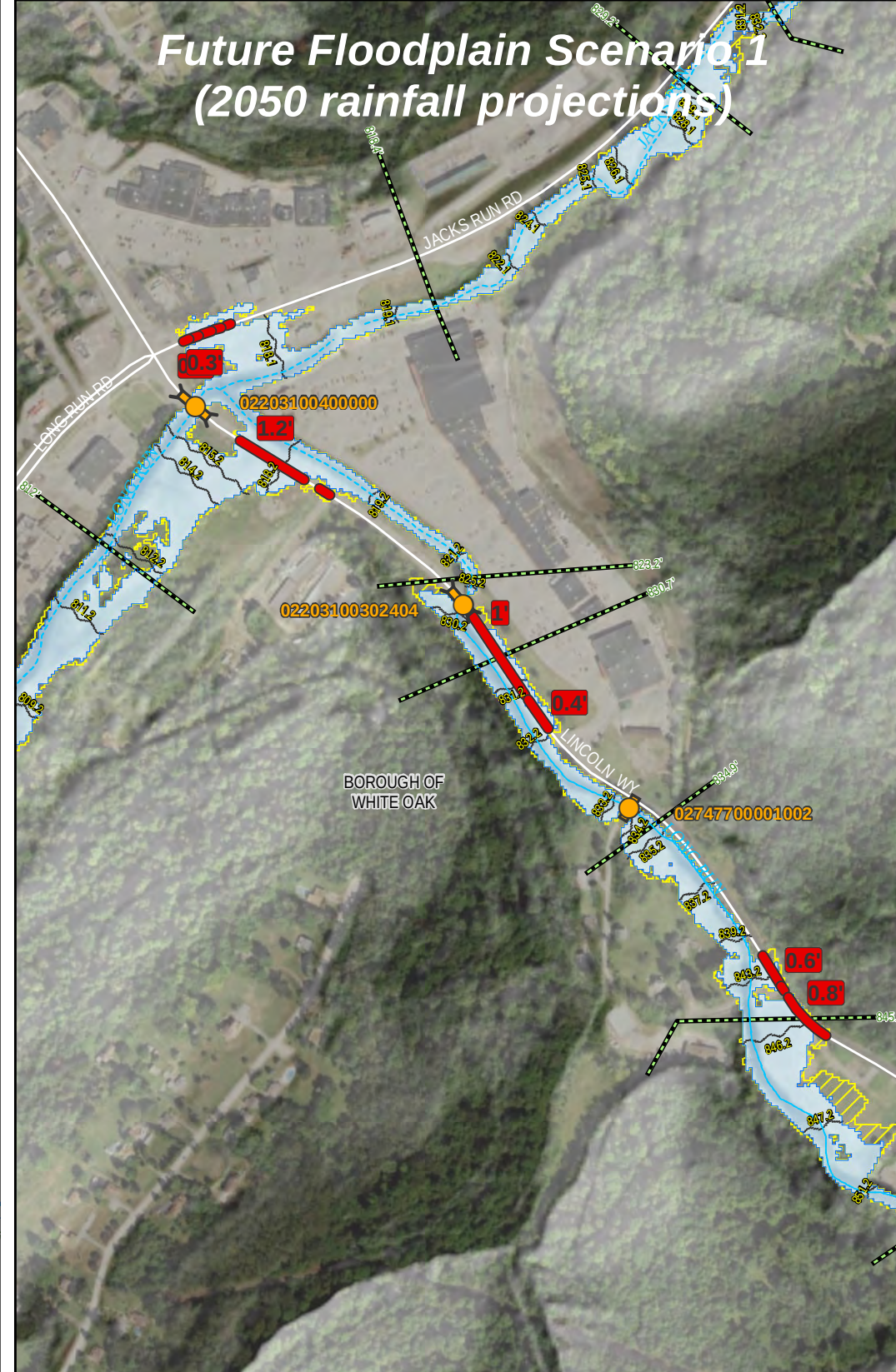
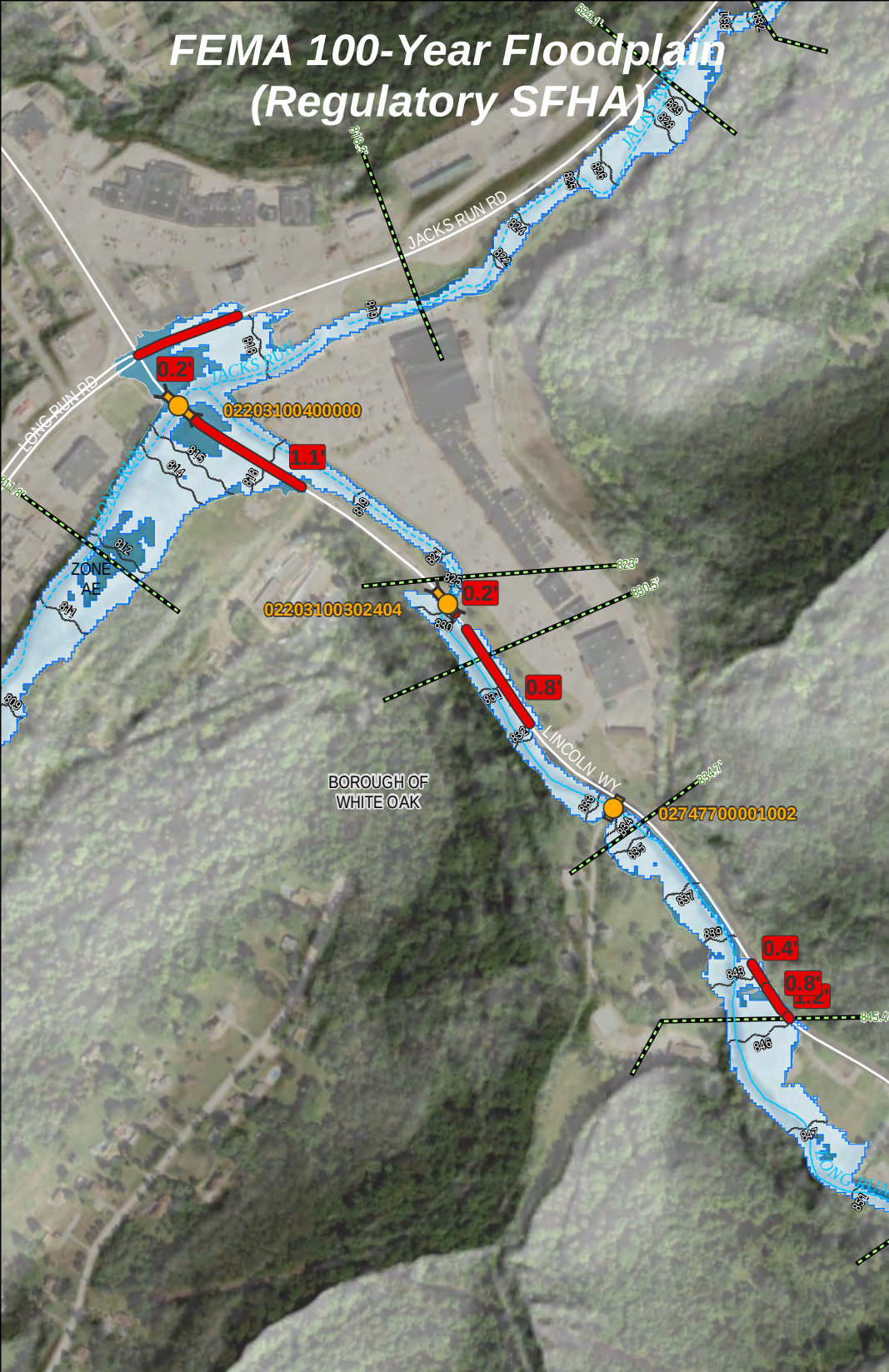
DATA FRAME PROPERTIES:
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NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

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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. CODY ST
	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)

Sheet 217 of 265

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INTERNATIONAL

LOCATOR MAP

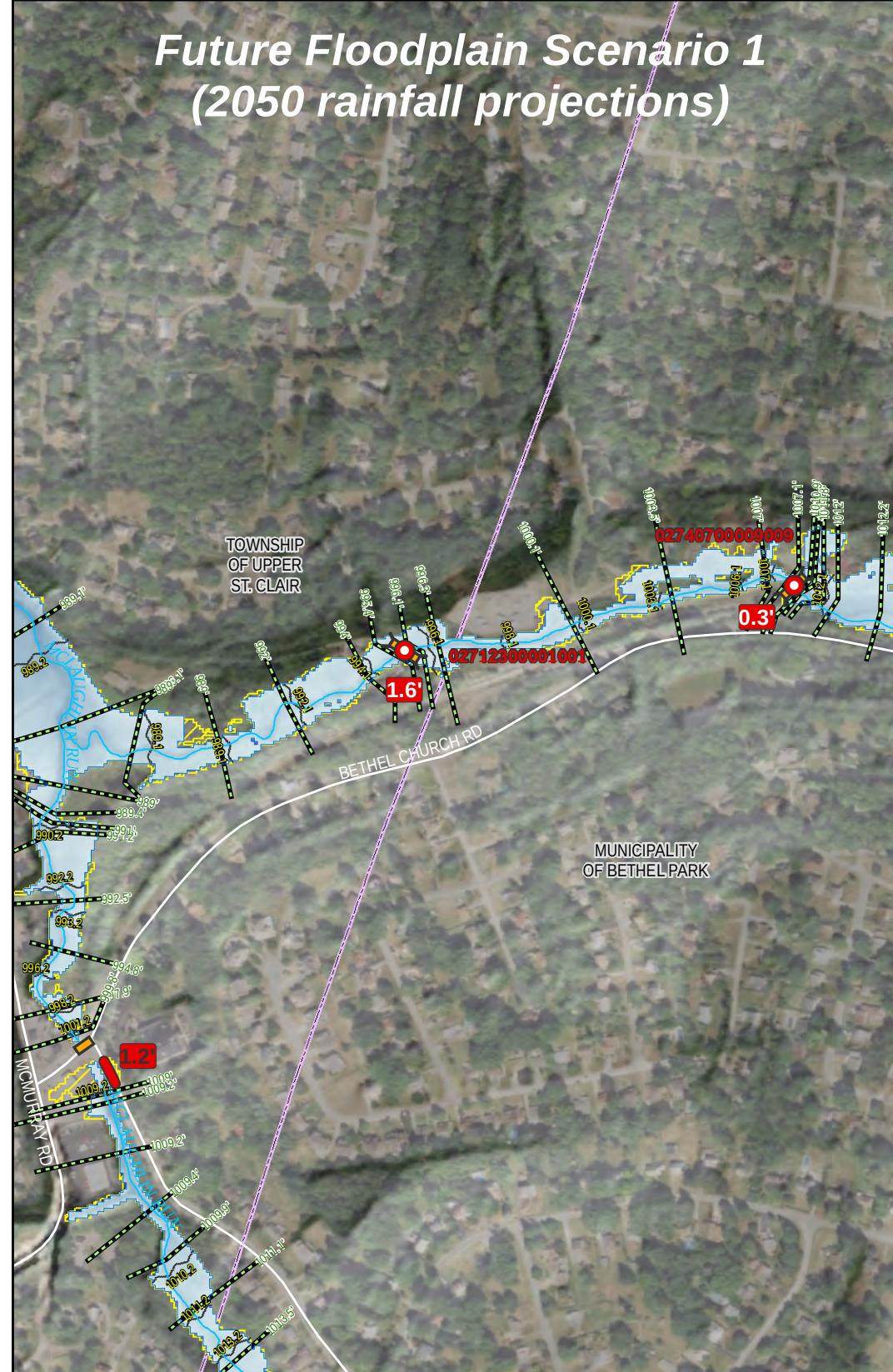
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Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

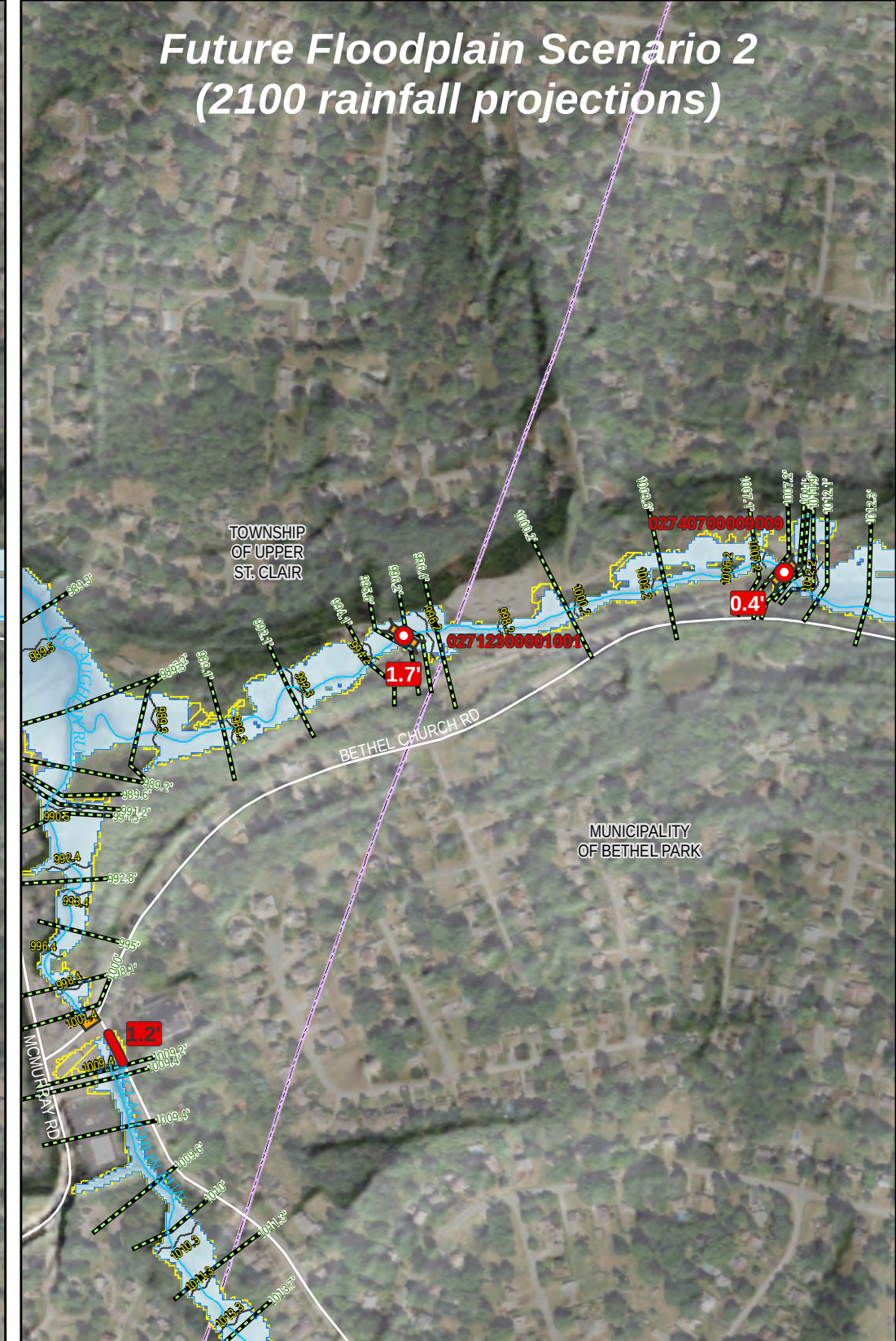
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **CODY ST**
- 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)

0 Feet
1,000

November 23, 2016



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

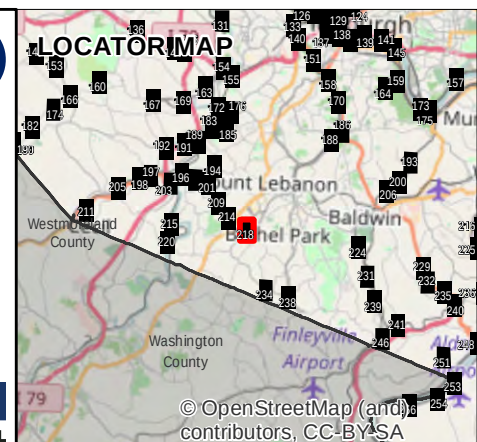
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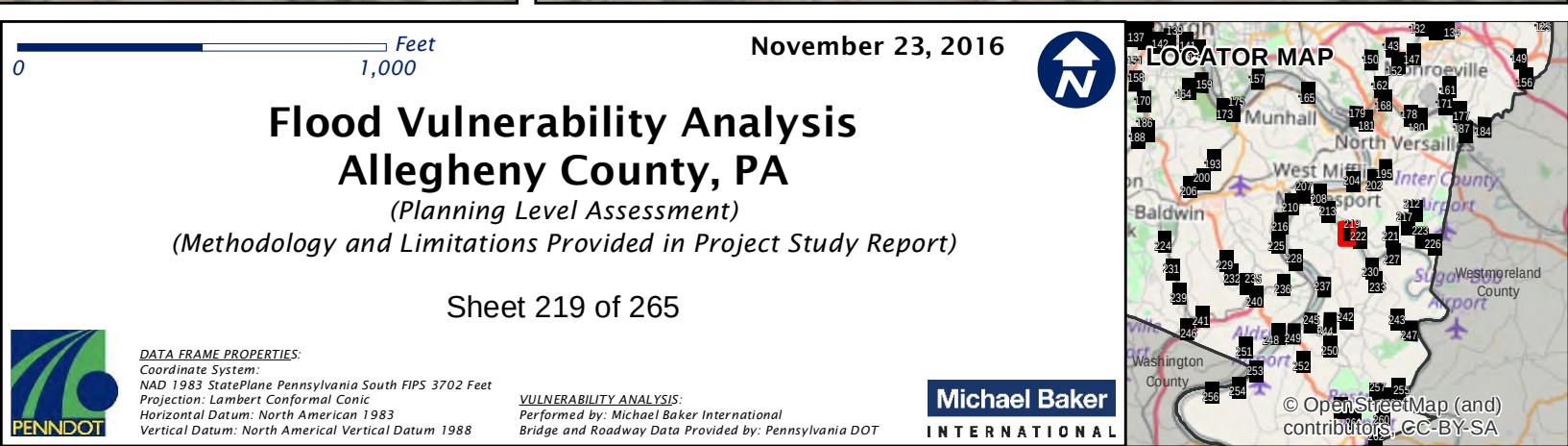
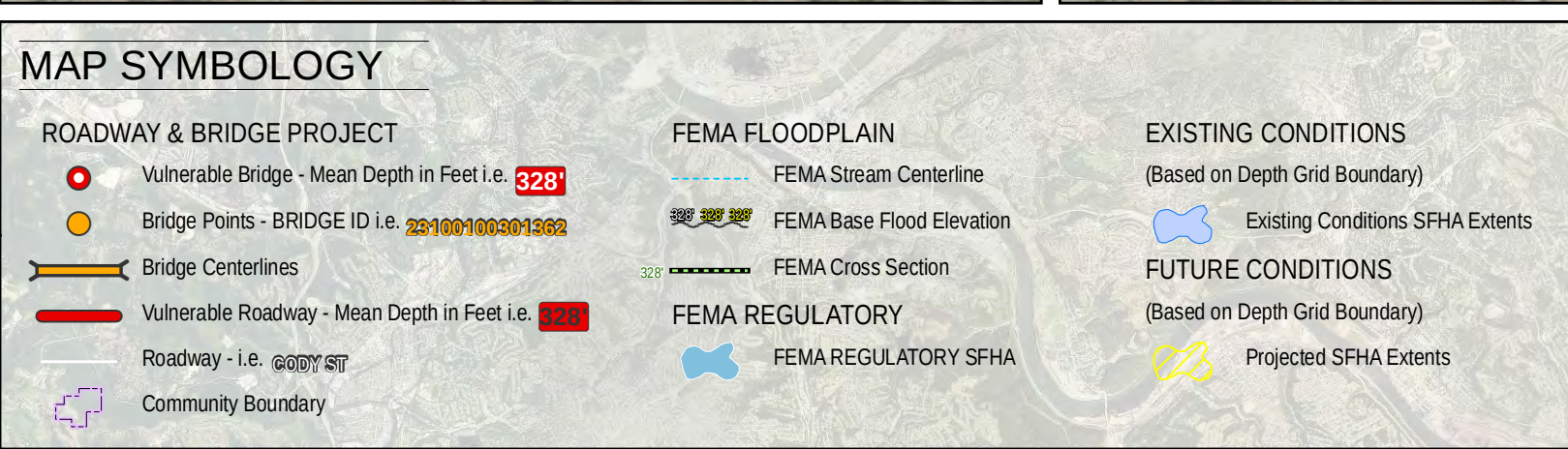
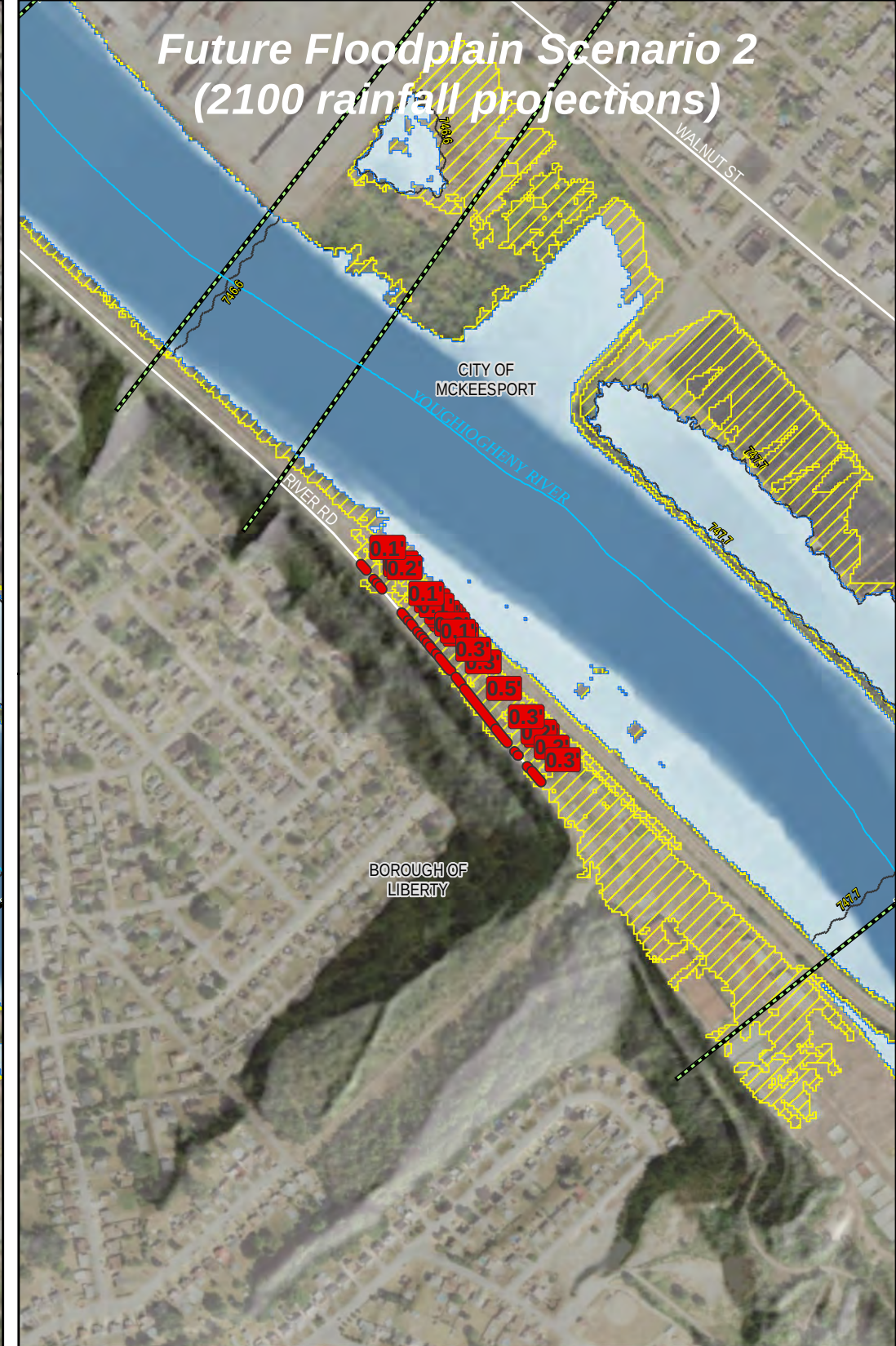
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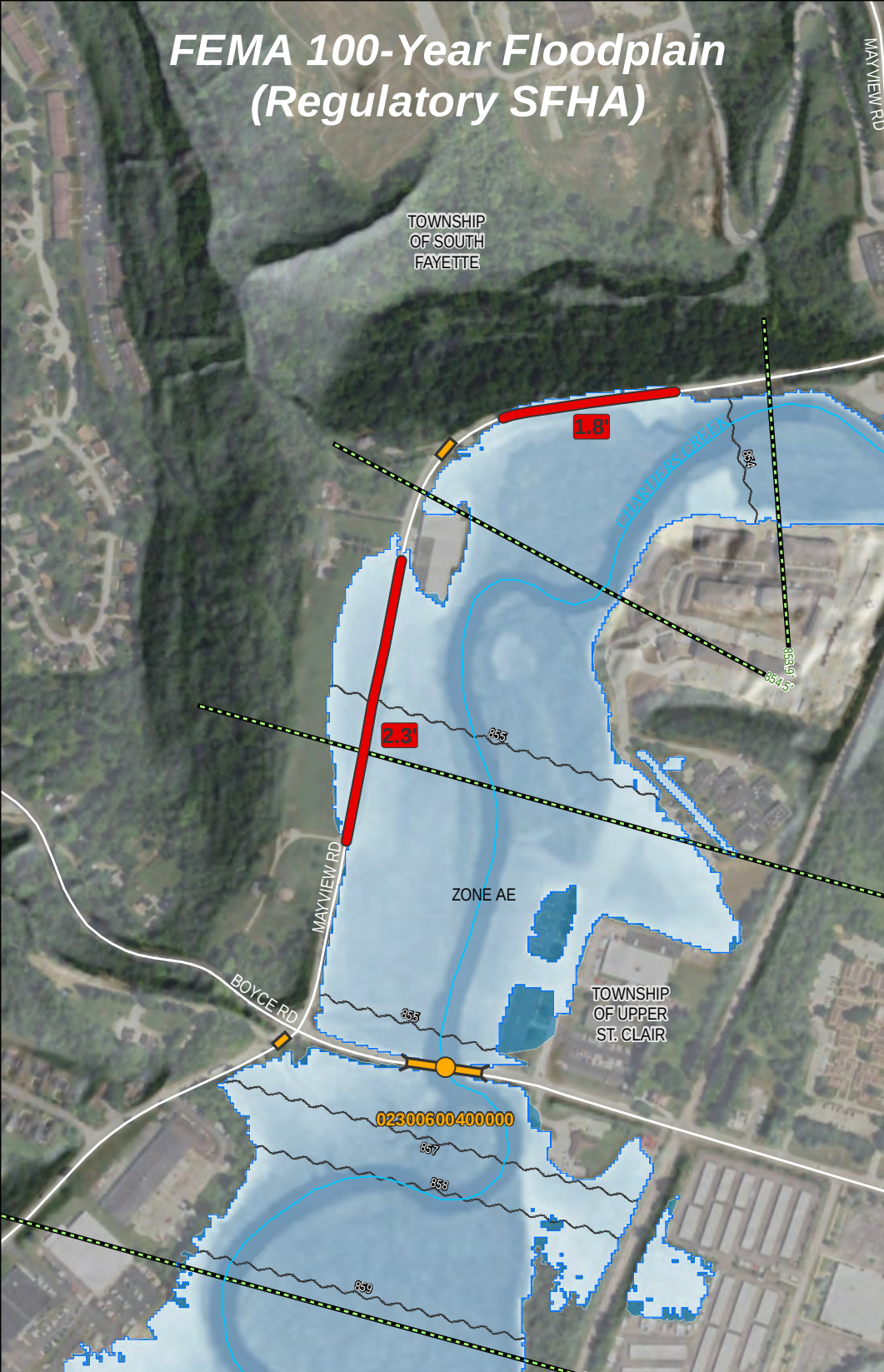
**Michael Baker
INTERNATIONAL**



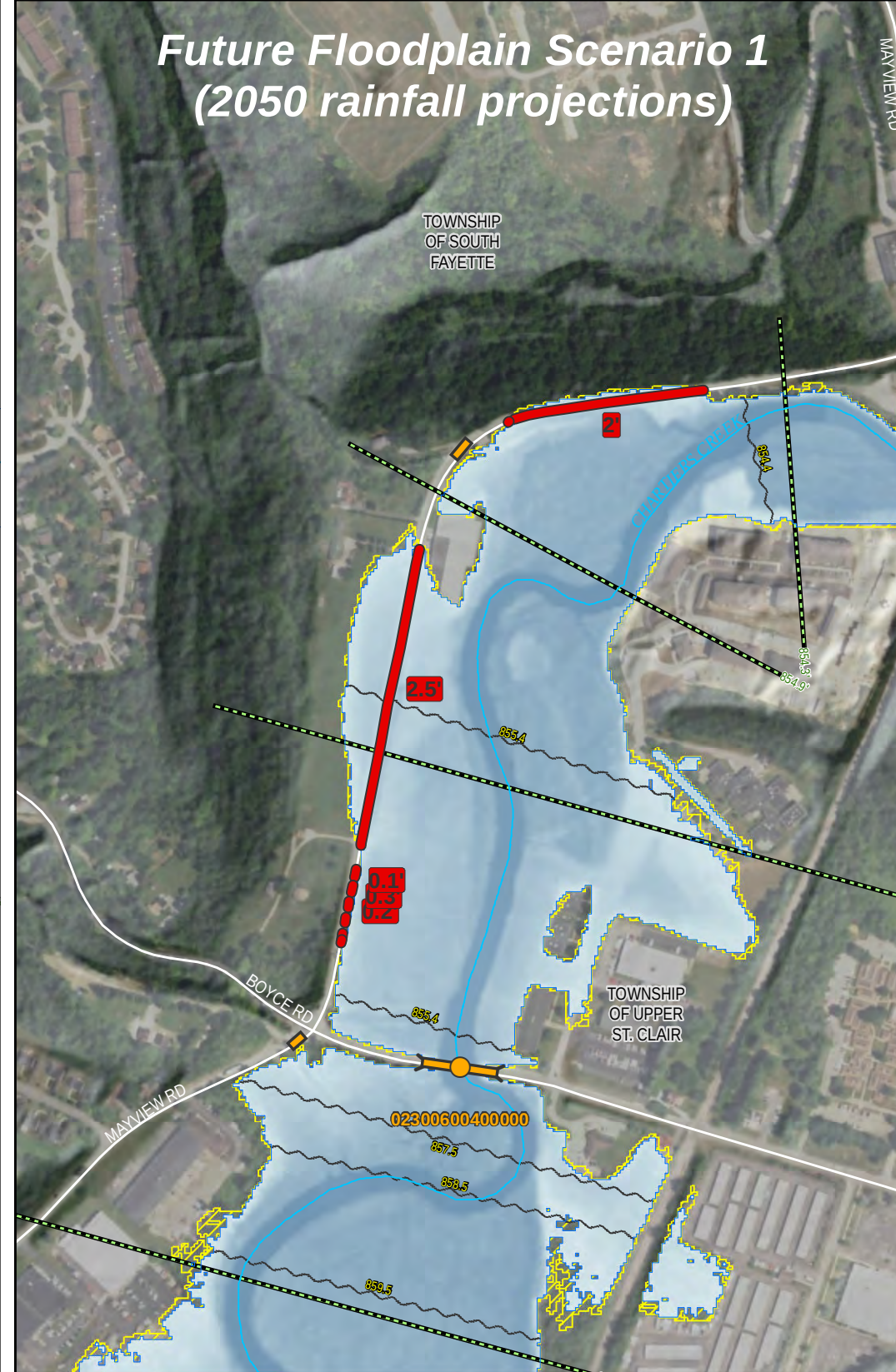
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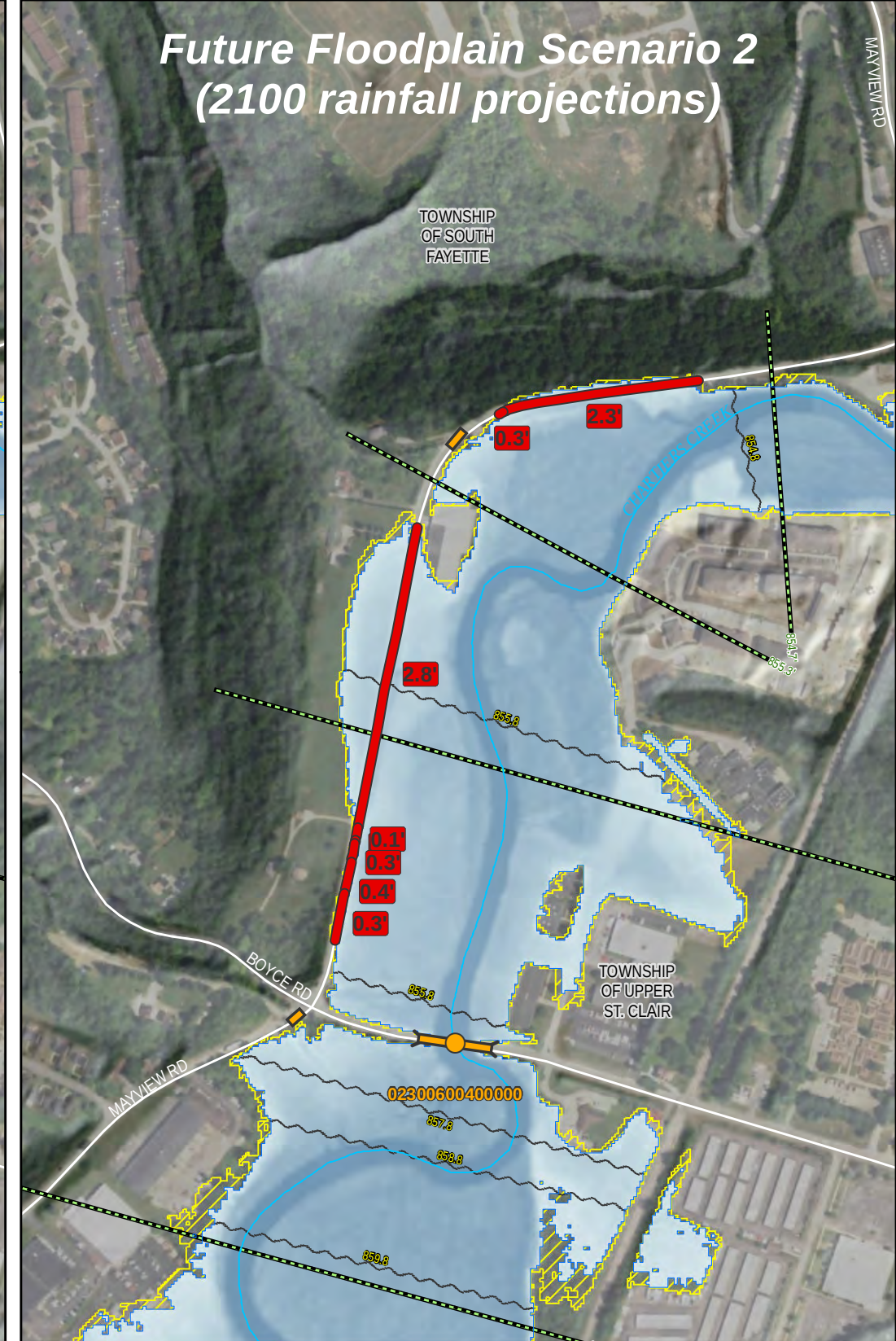
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOLOGY

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- 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

0 Feet
1,000

November 23, 2016



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

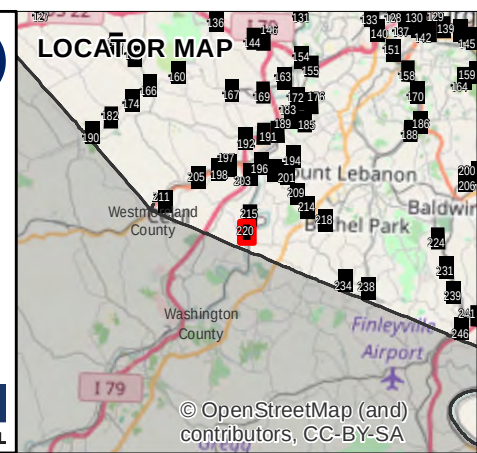
Sheet 220 of 265



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

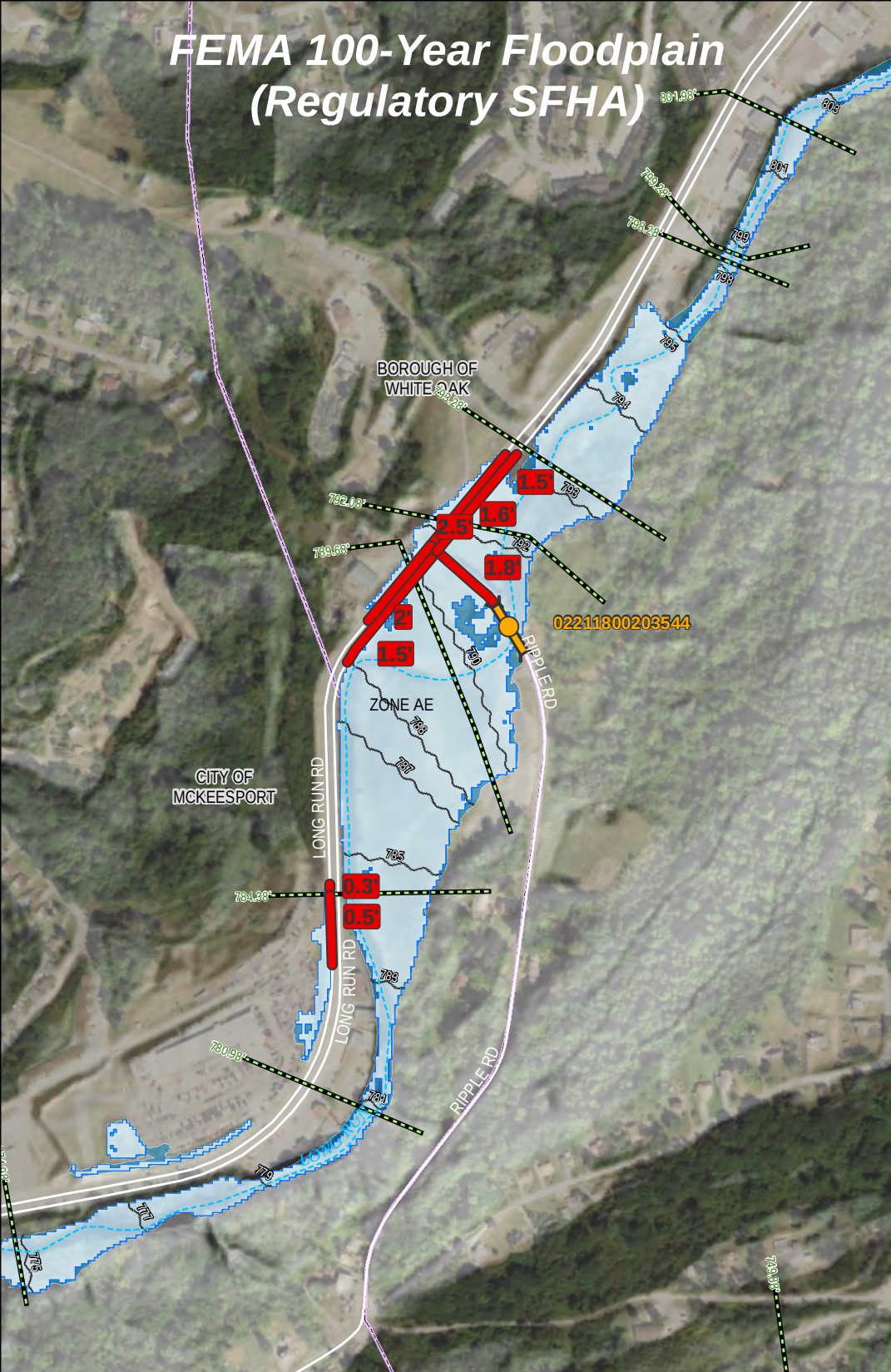
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL

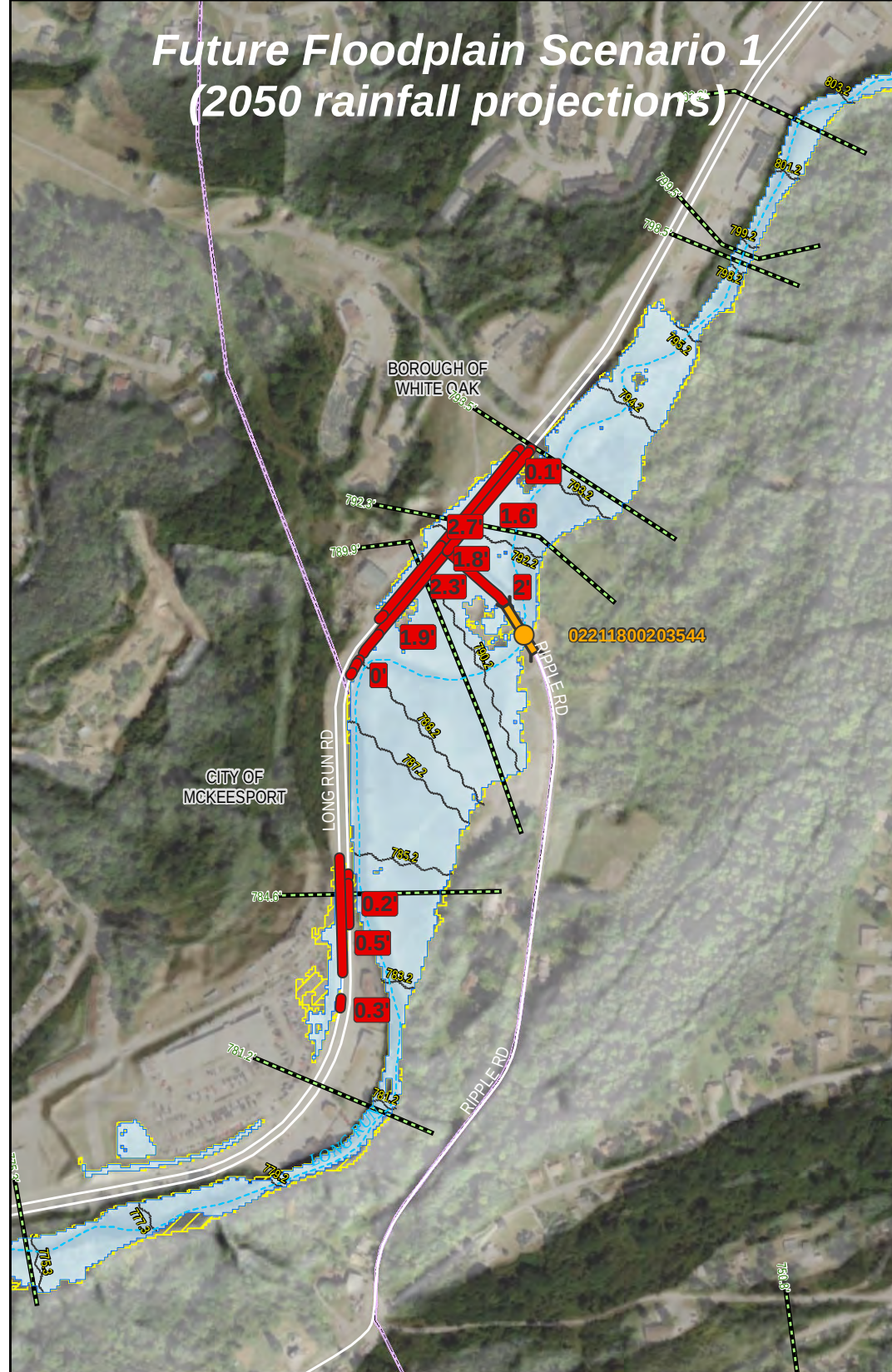


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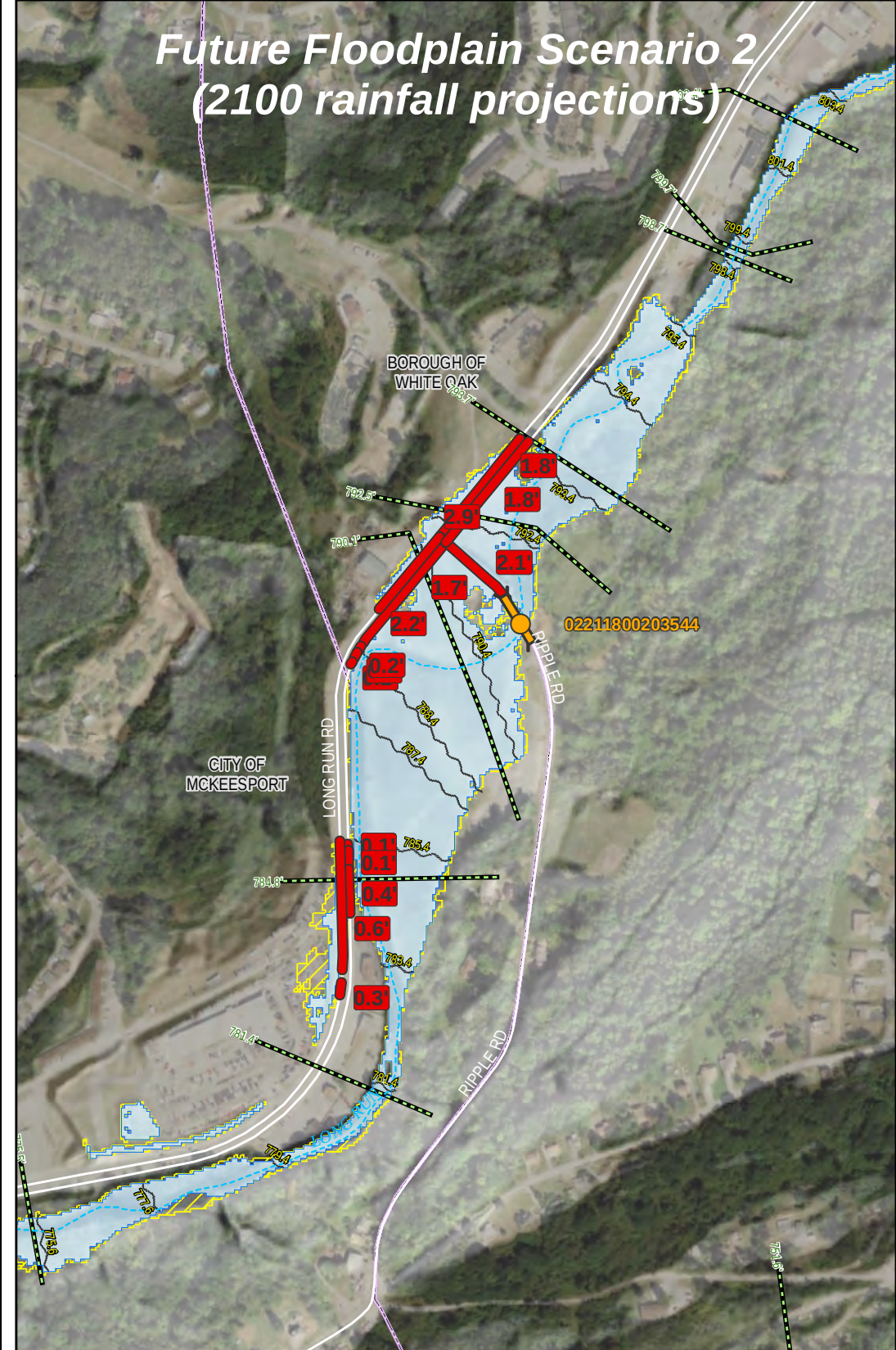
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Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOGY

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- 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

0 1,000 Feet

November 23, 2016



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

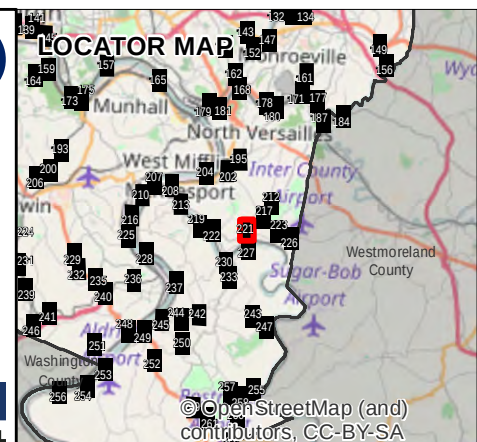
Sheet 221 of 265



DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL



**FEMA 100-Year Floodplain
(Regulatory SFHA)**

THIRTIETH ST

WALNUT ST

CITY OF MCKEESPORT

EDEN PARK BL

LONG RUN

ALLEGHENY RIVER

LONG RUN RD

BOROUGH OF LIBERTY

BOROUGH OF VERSAILLES

ZONE AE (EL 746')

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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. GODY ST  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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0 Feet
1,000

November 23, 2016



Flood Vulnerability Analysis

Allegheny County, PA

(Planning Level Assessment)

(Methodology and Limitations Provided in Project Study Report)

Sheet 222 of 265



DATA FRAME PROPERTIES:
 Coordinate System:
 NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
 Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983
 Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
 Performed by: Michael Baker International
 Bridge and Roadway Data Provided by: Pennsylvania DOT



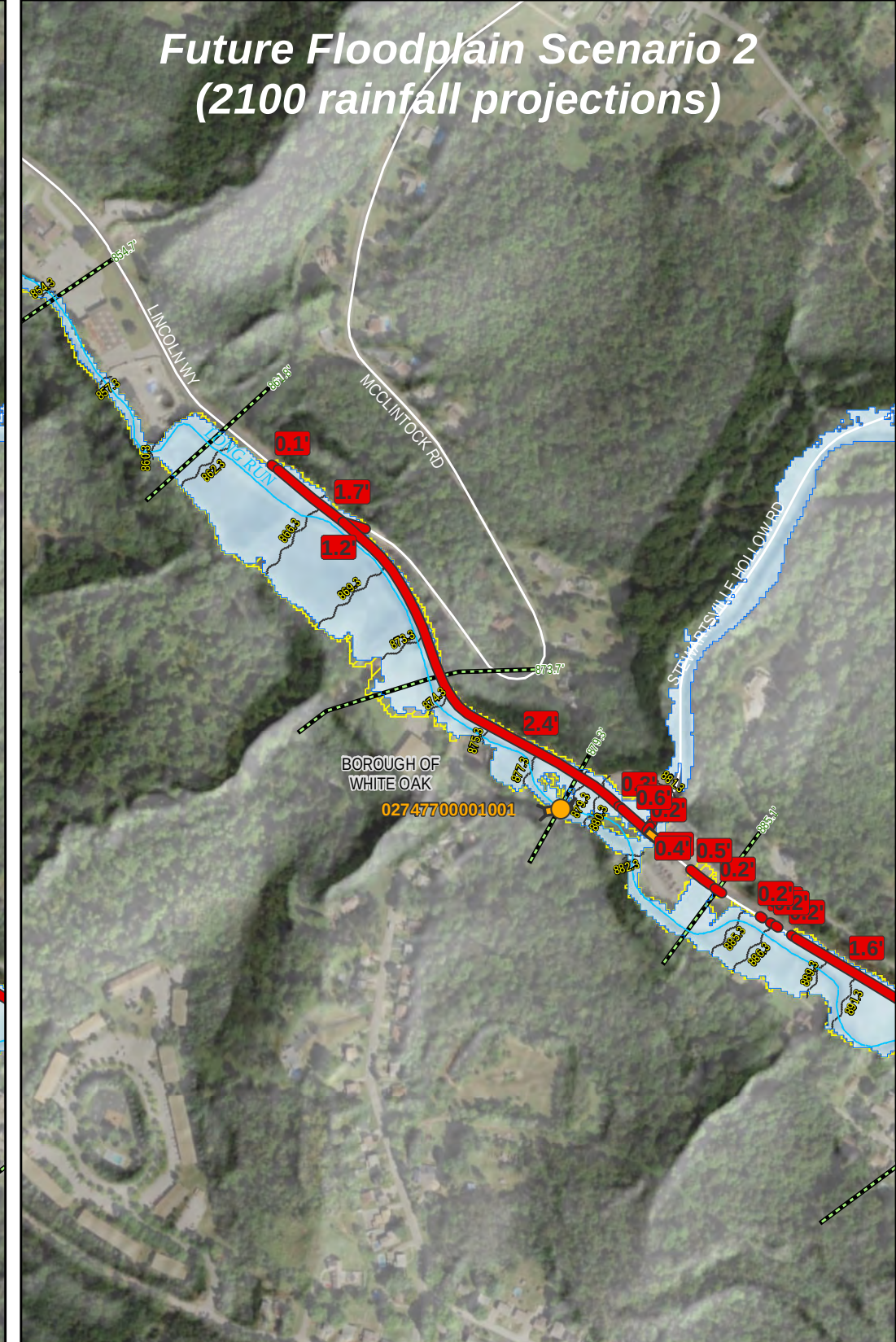
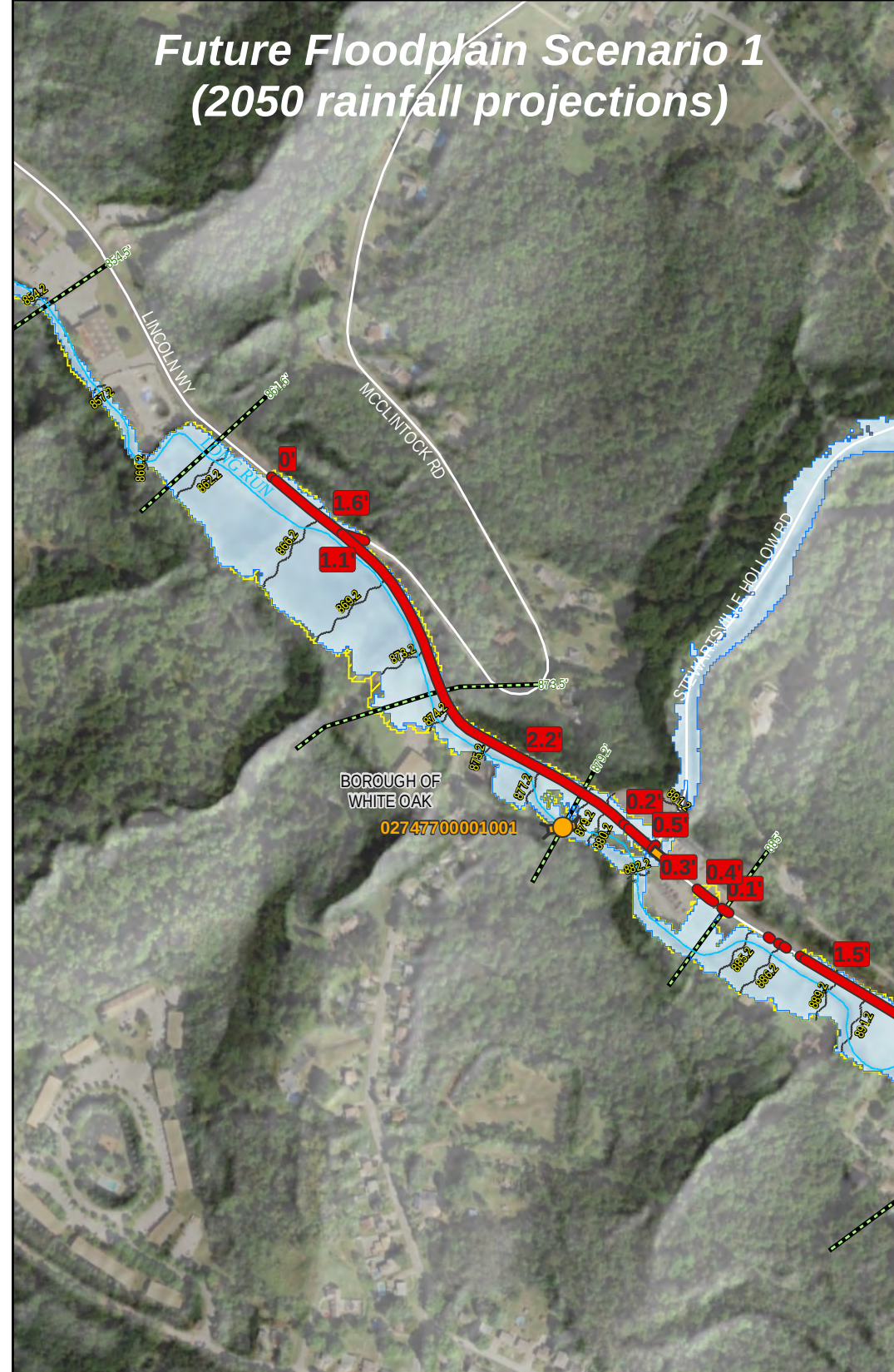
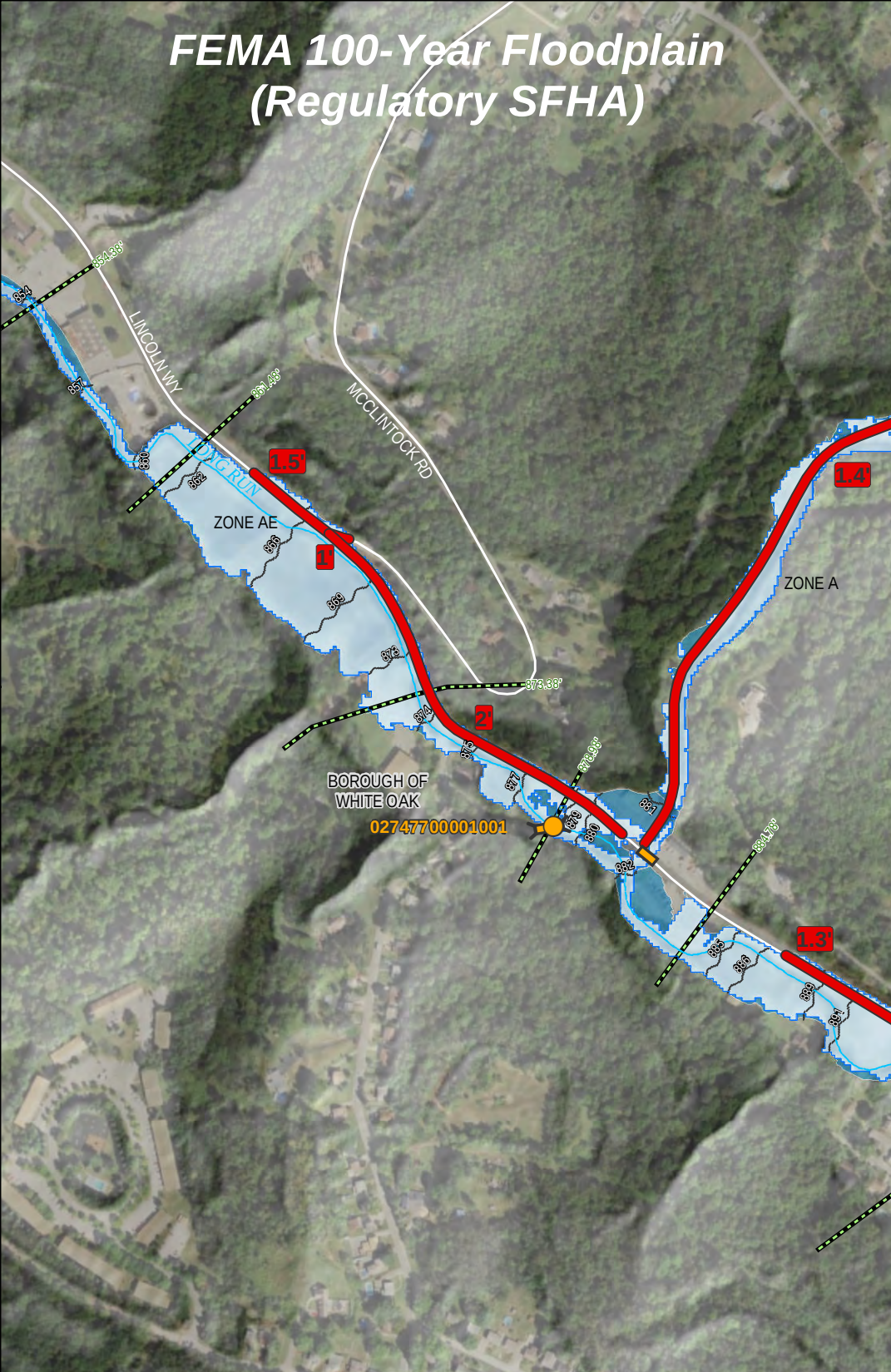


DATA FRAME PROPERTIES:
Coordinate System:
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Michael Baker
INTERNATIONAL

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MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

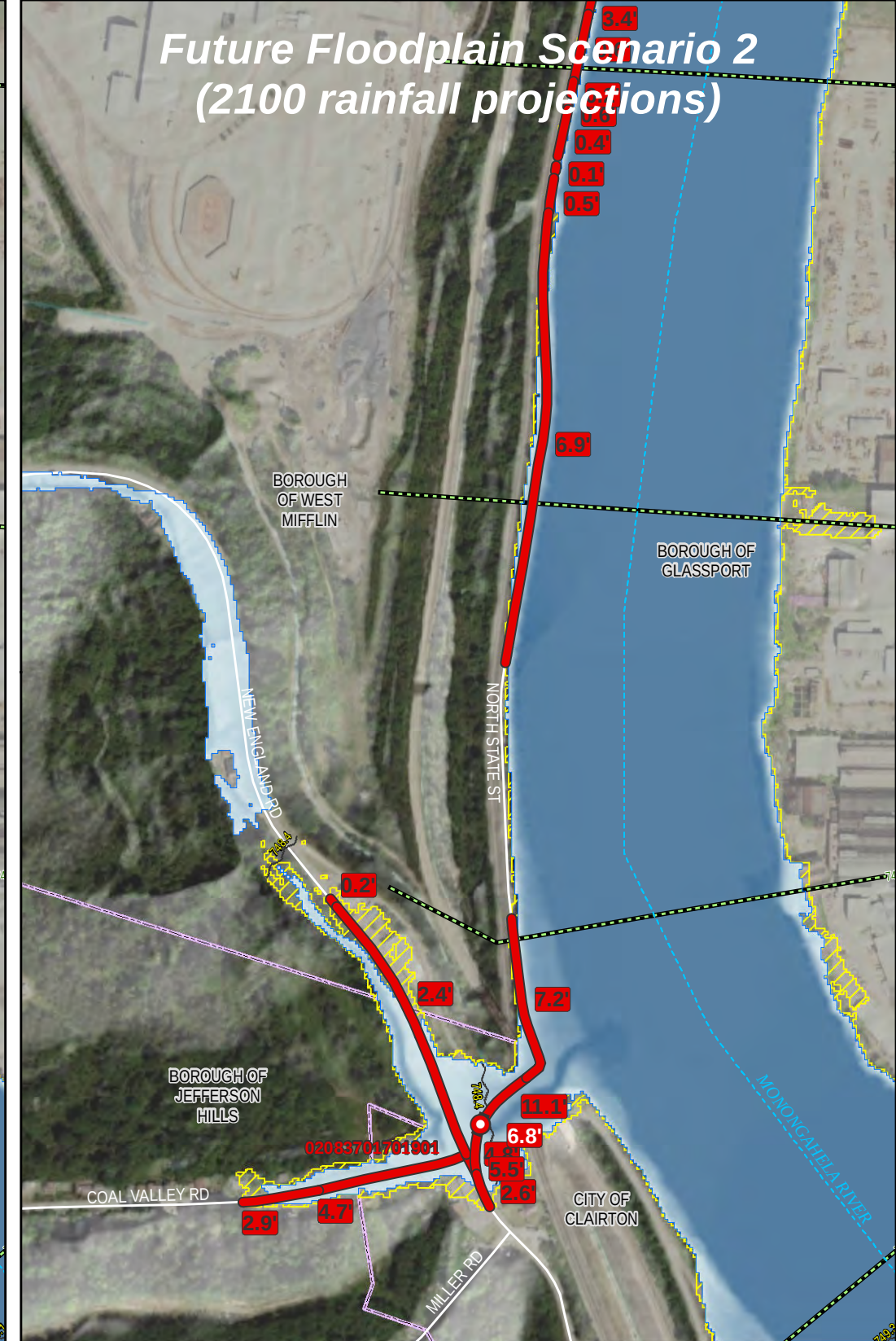
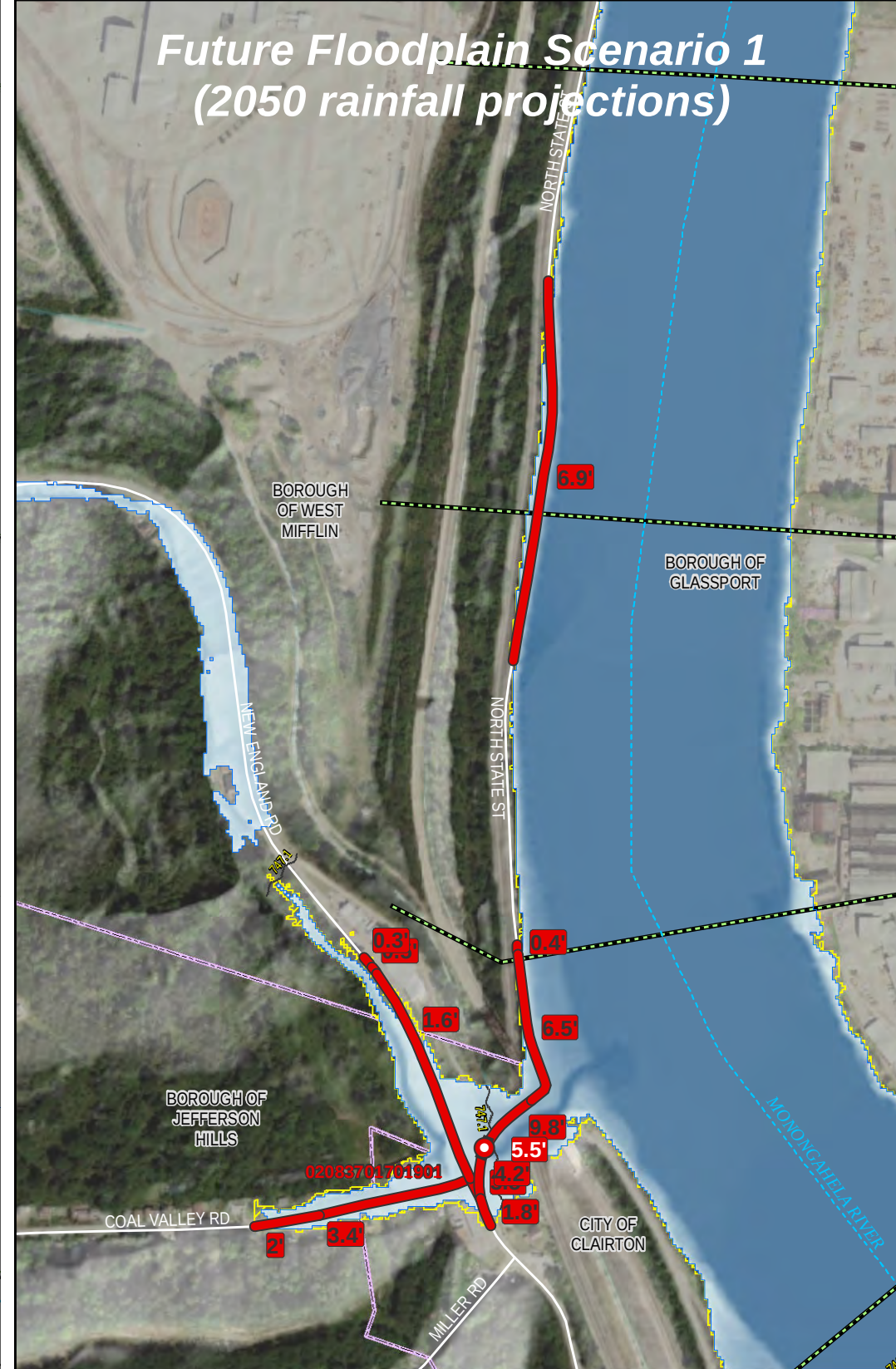
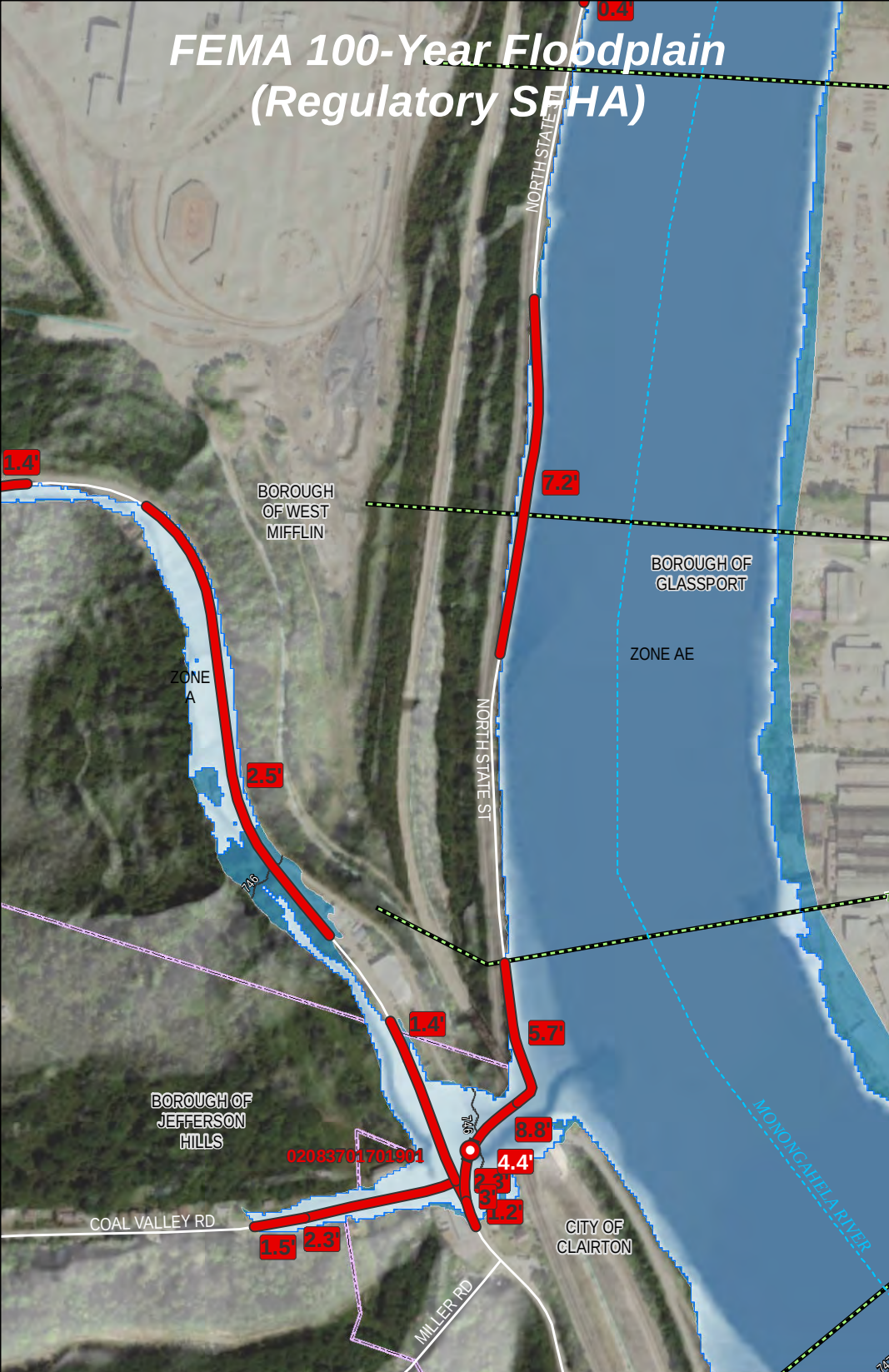
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 223 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOLOGY

Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	Existing Conditions SFHA Extents
Bridge Centerlines	FEMA Cross Section	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	Projected SFHA Extents
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

0 1,000 Feet

Flood Vulnerability Analysis Allegheny County, PA

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

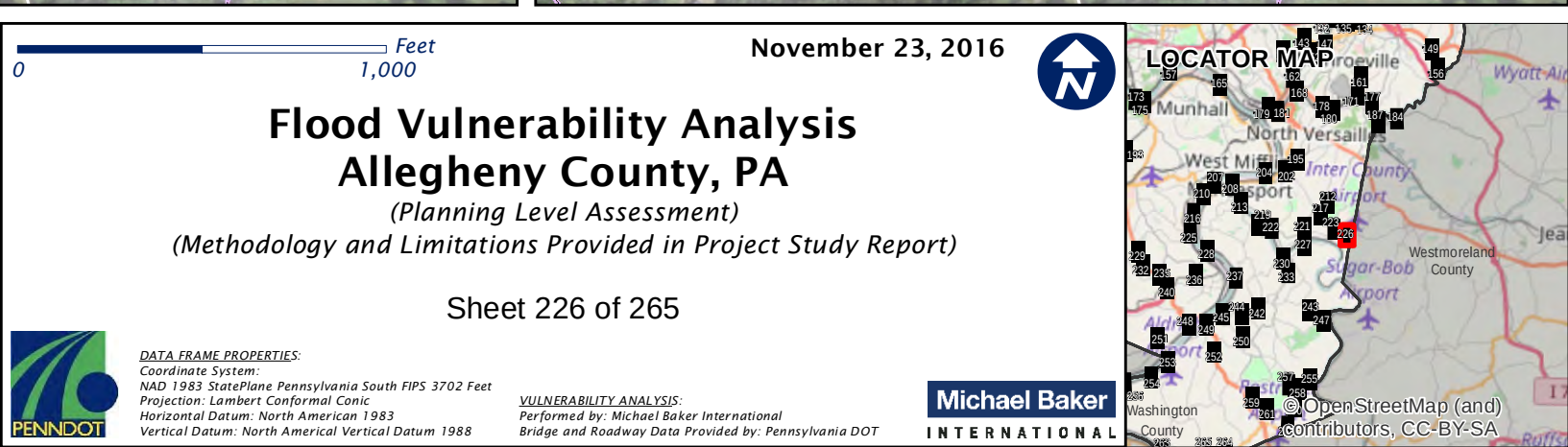
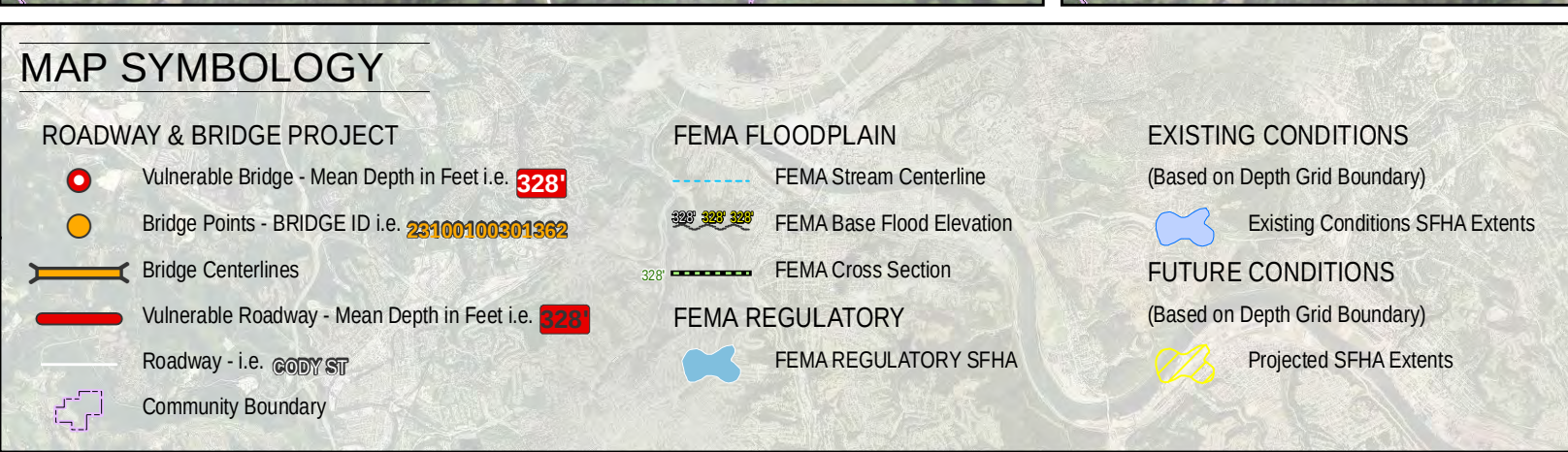
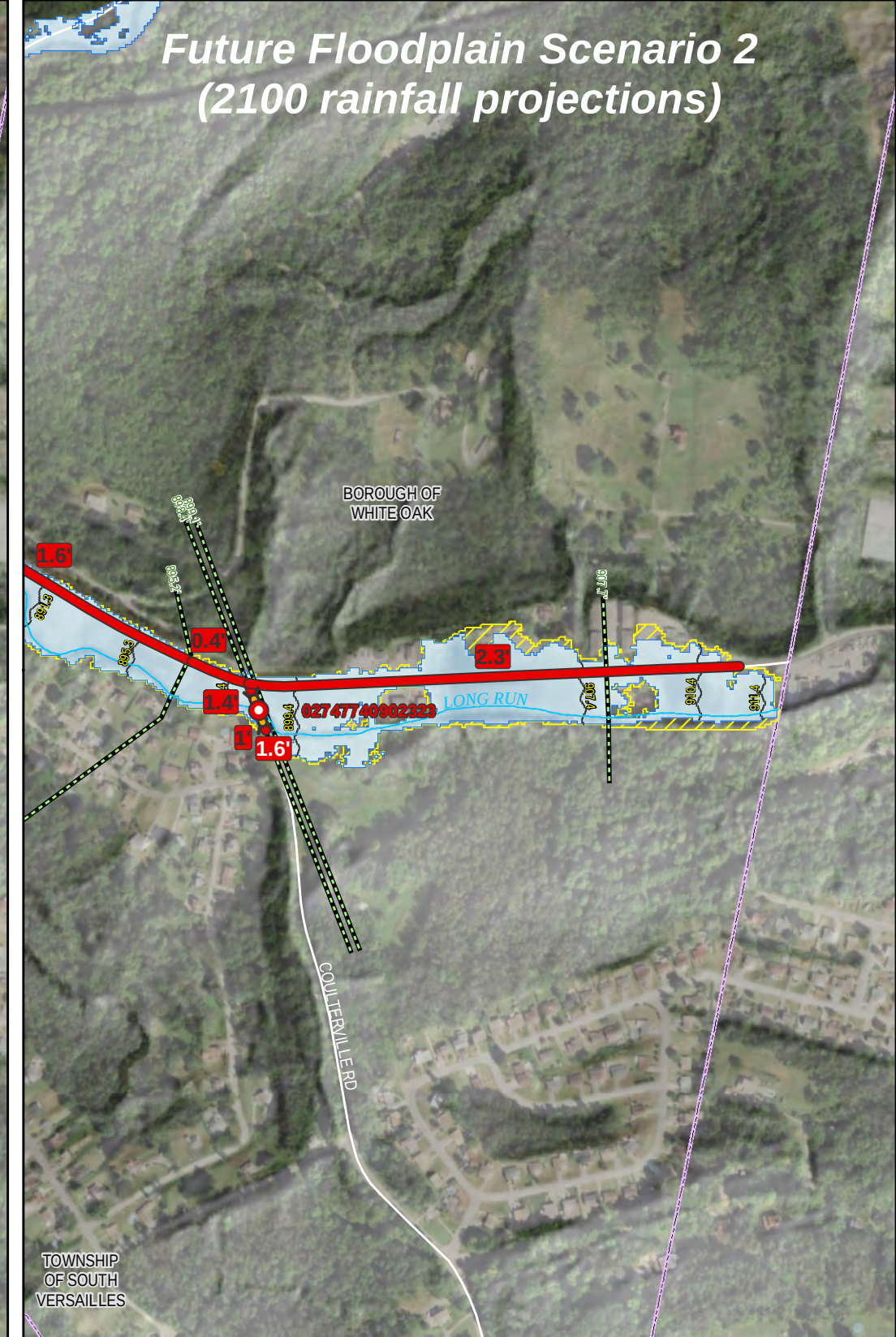
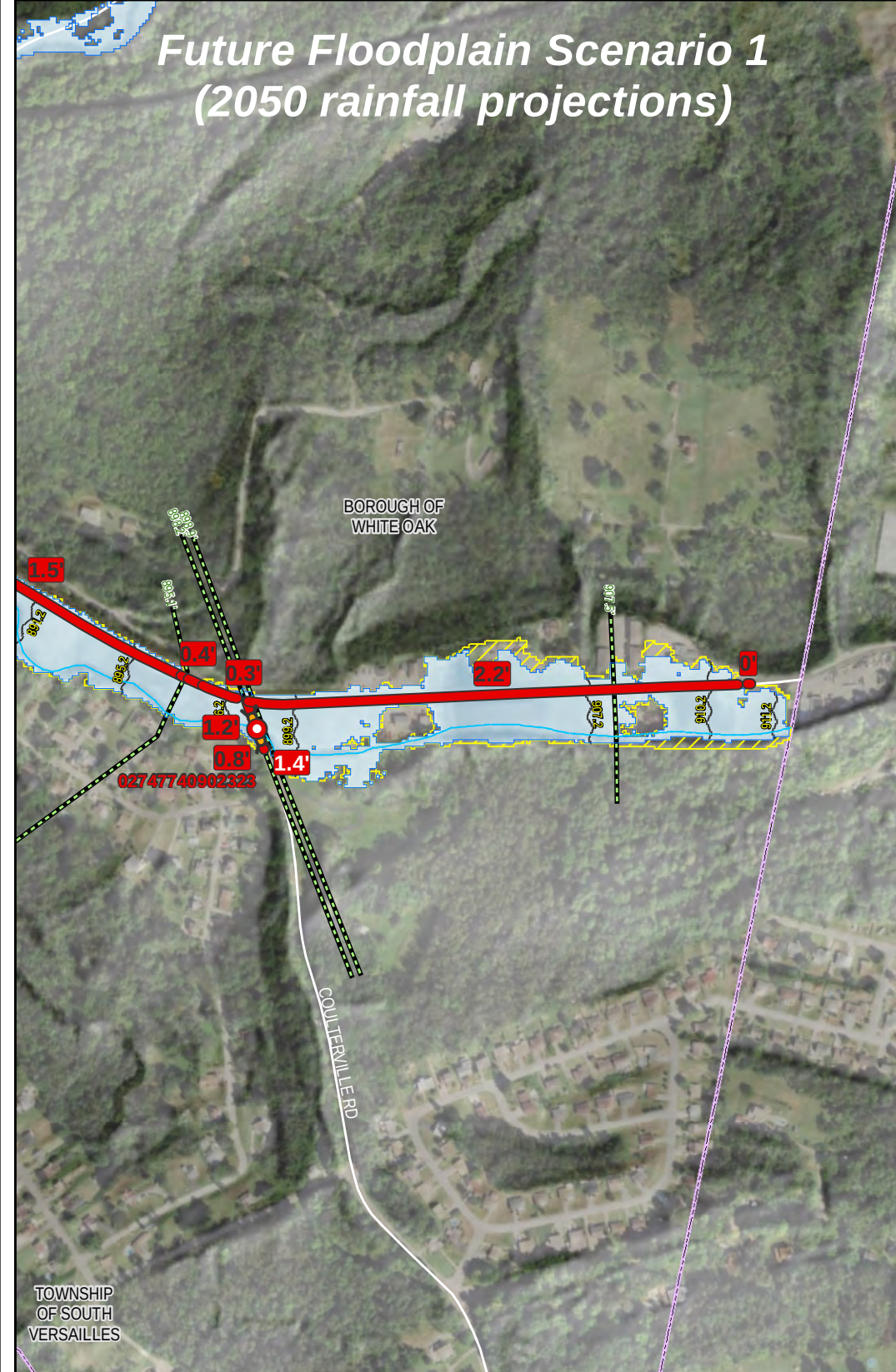
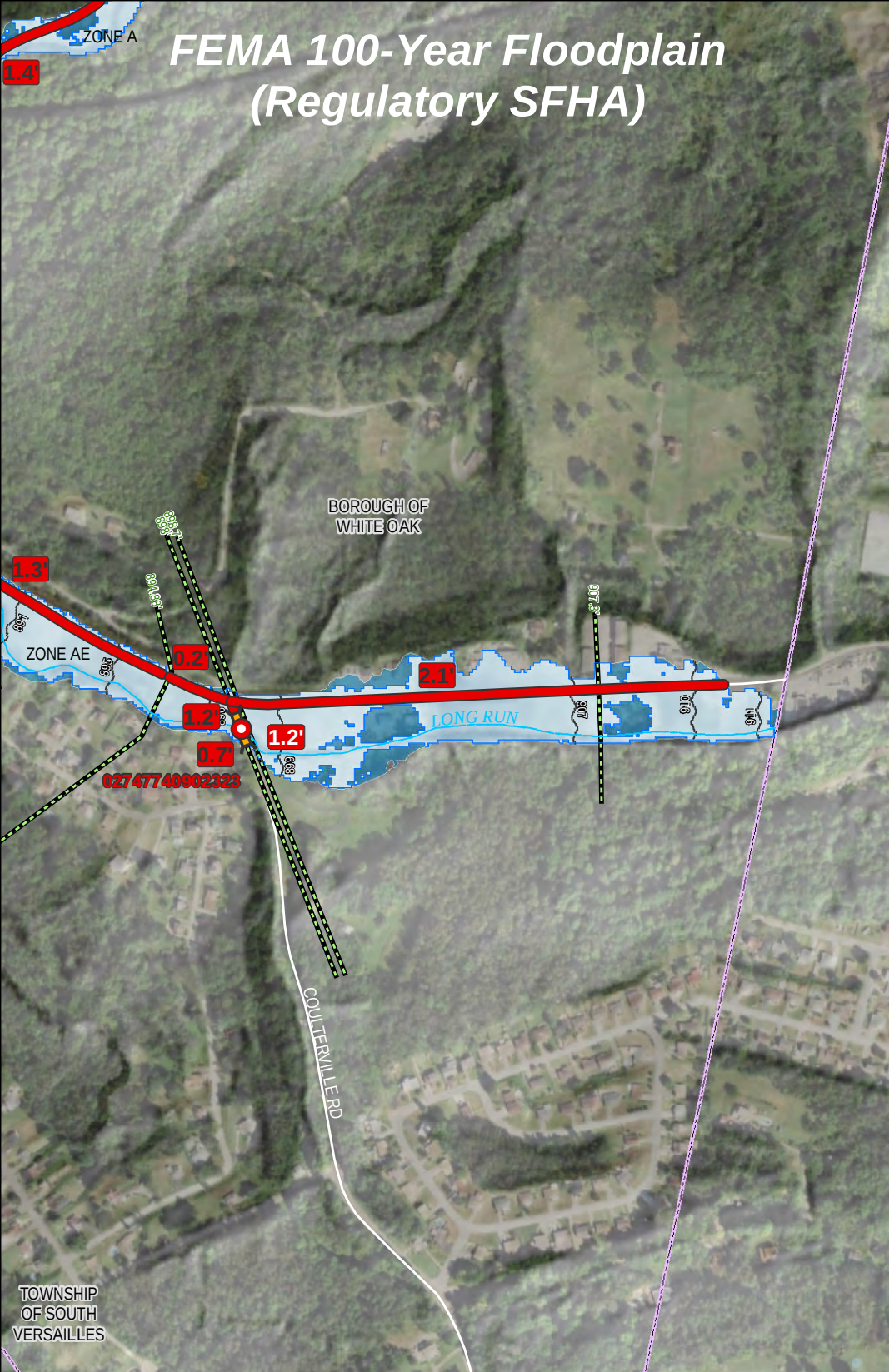
Sheet 225 of 265

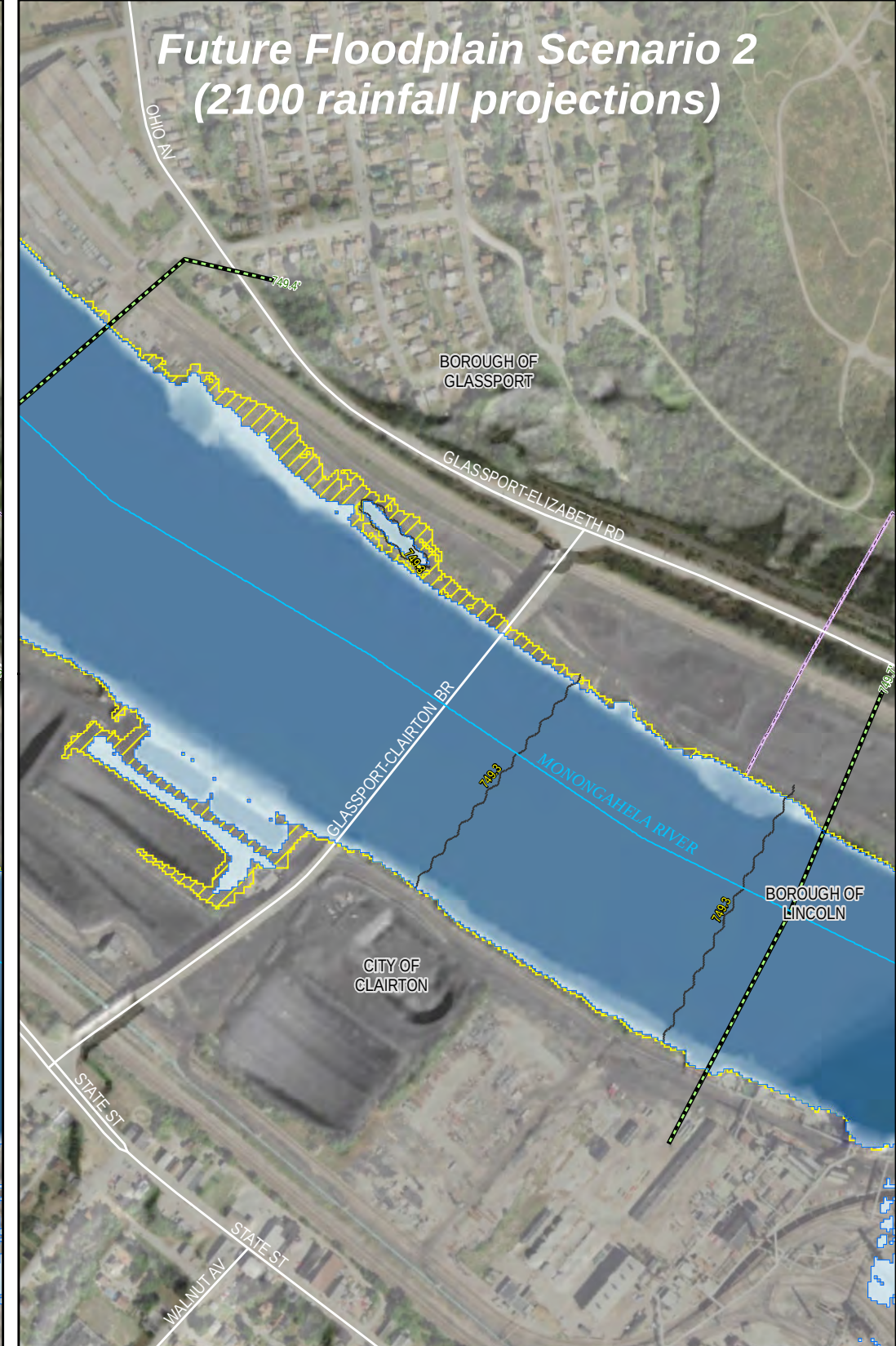
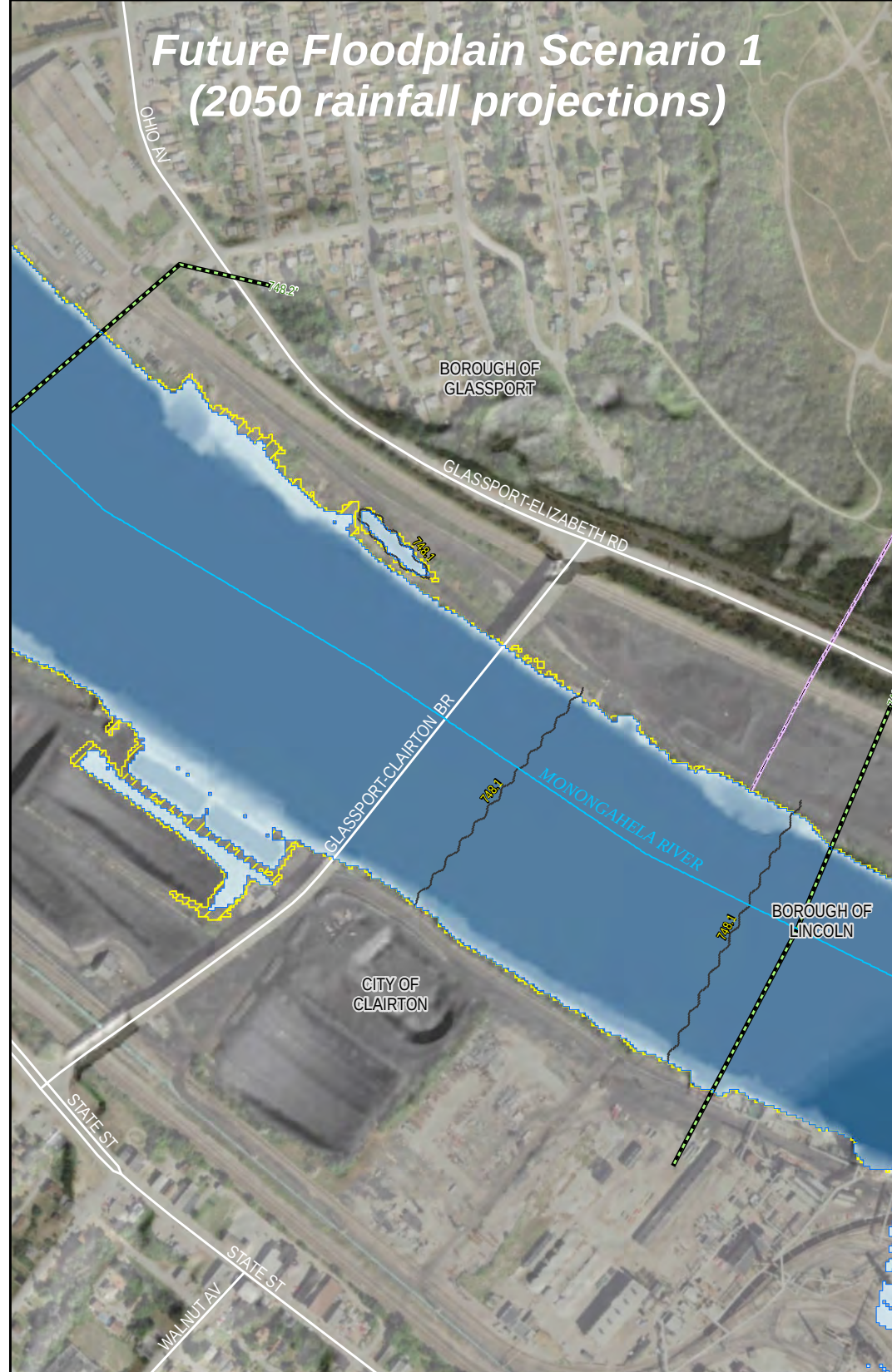
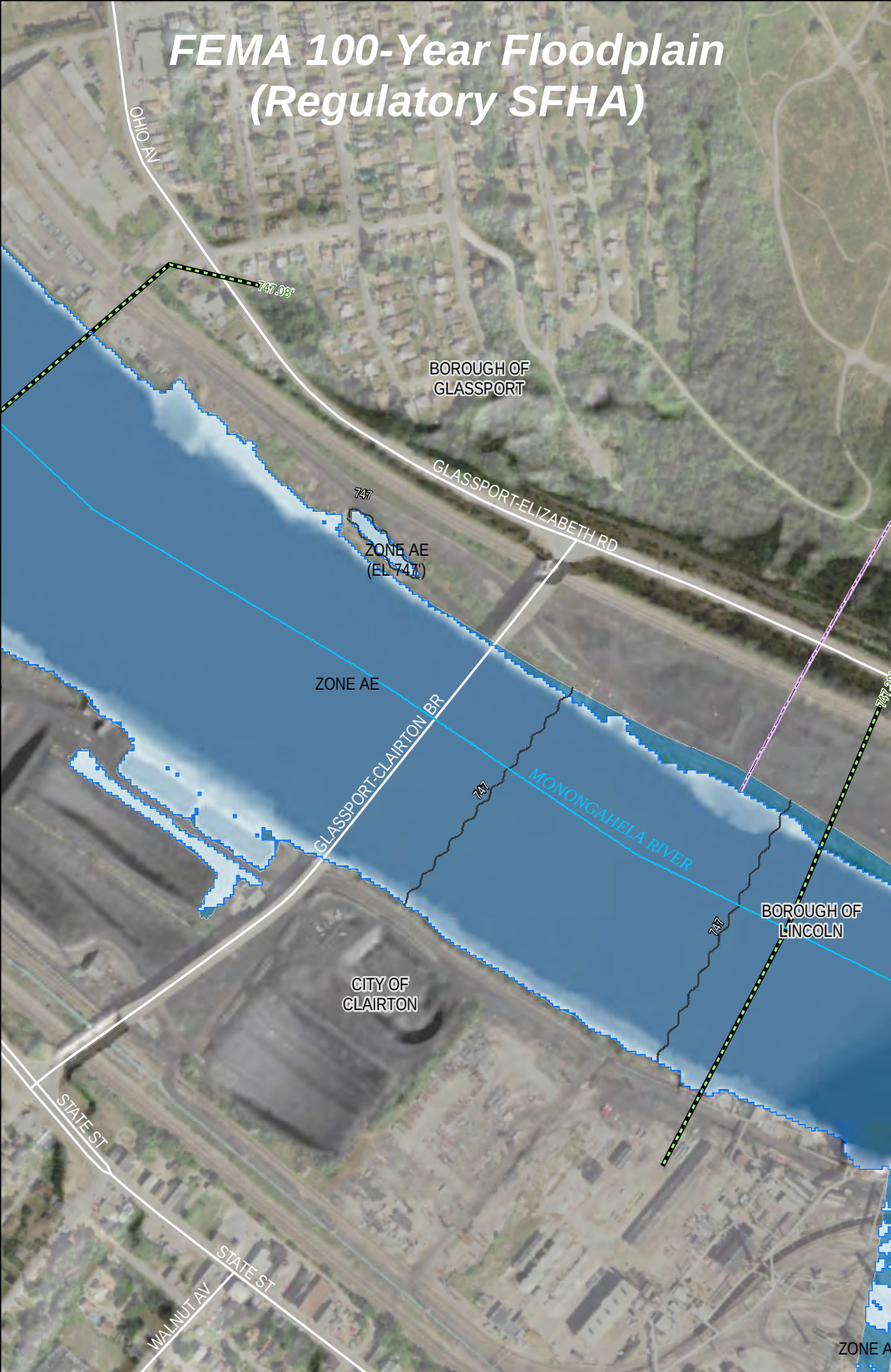
November 23, 2016

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

- Vulnerable Bridge - Mean Depth in Feet i.e. **328'**
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- Bridge Centerlines
- Vulnerable Roadway - Mean Depth in Feet i.e. **328'**
- Roadway - i.e. **GOODY ST**
- 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

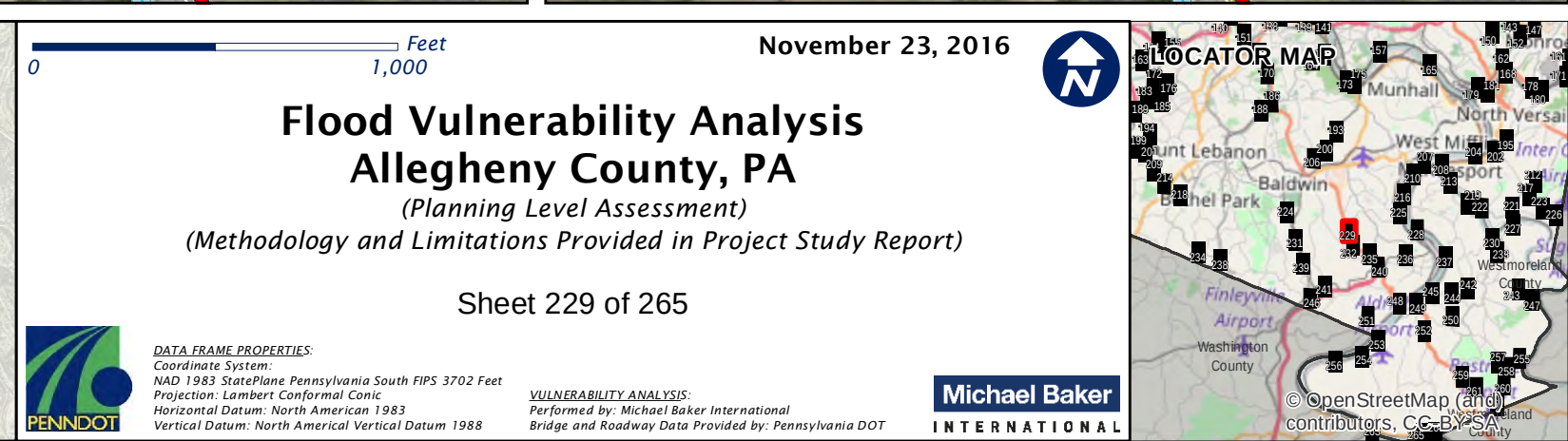
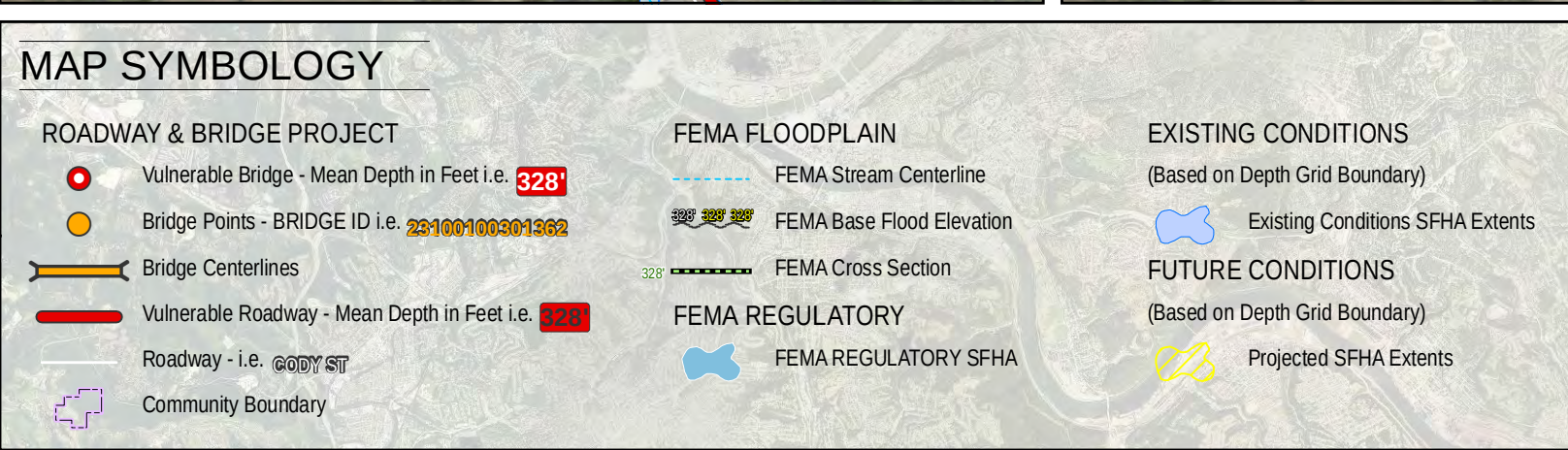
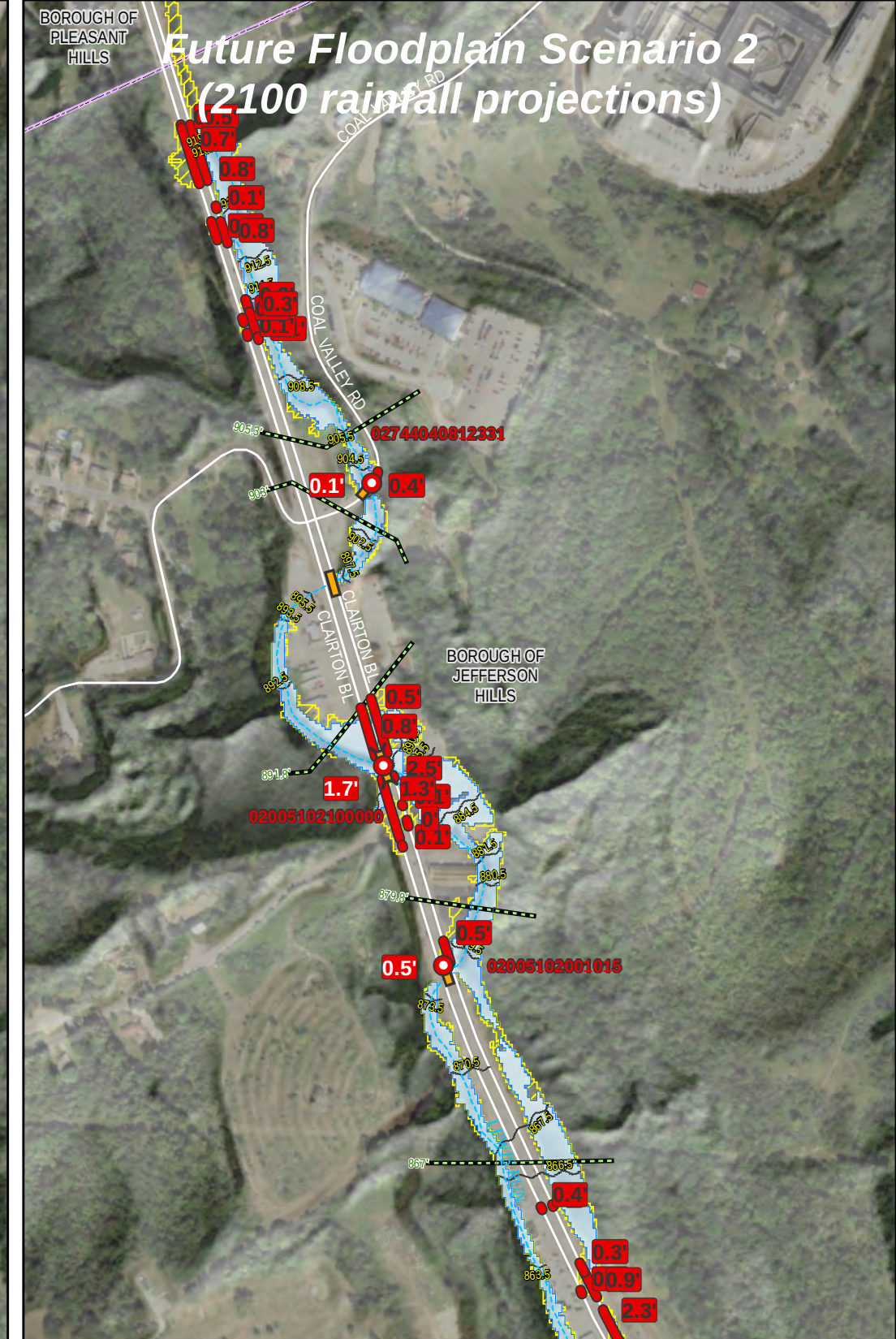
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

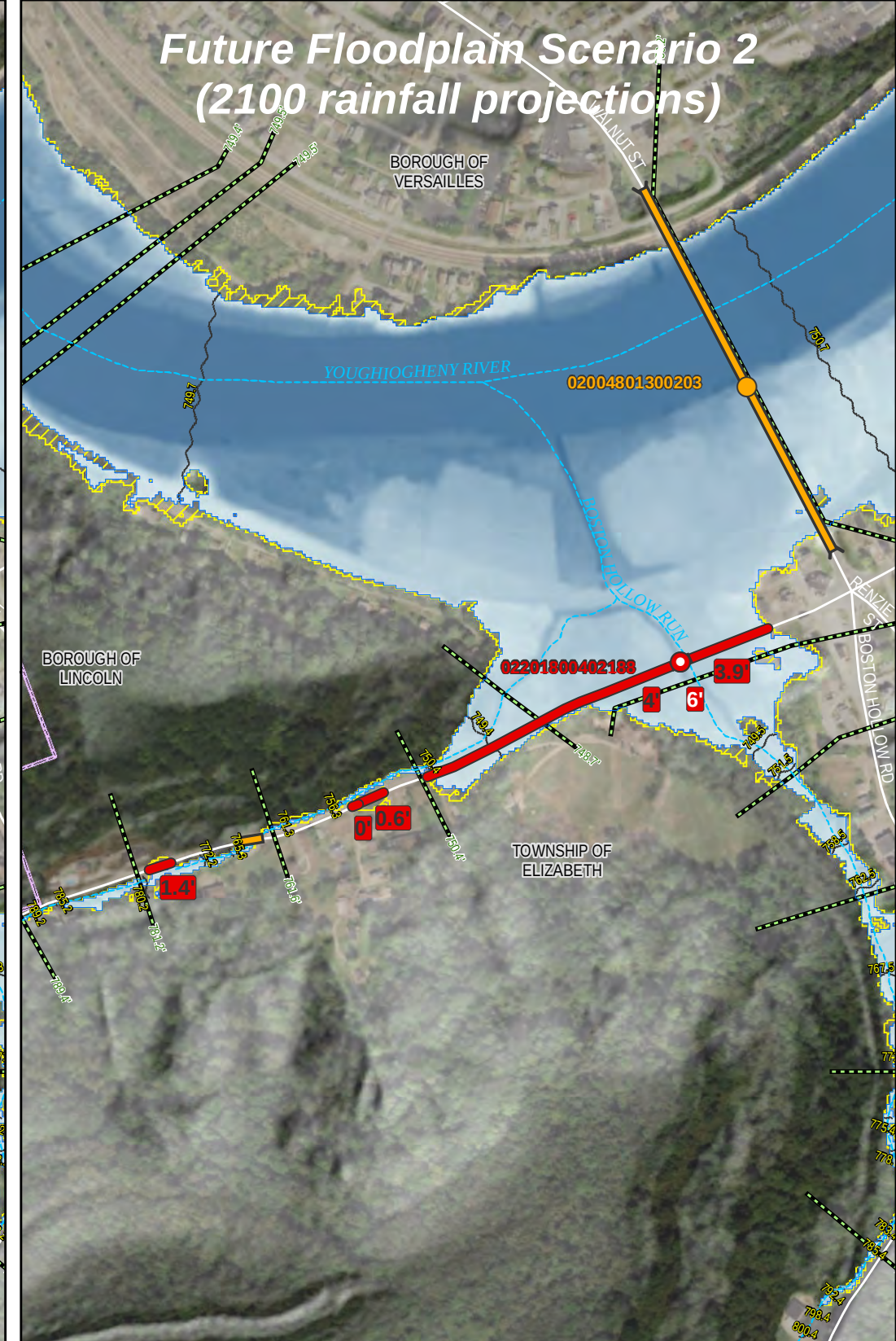
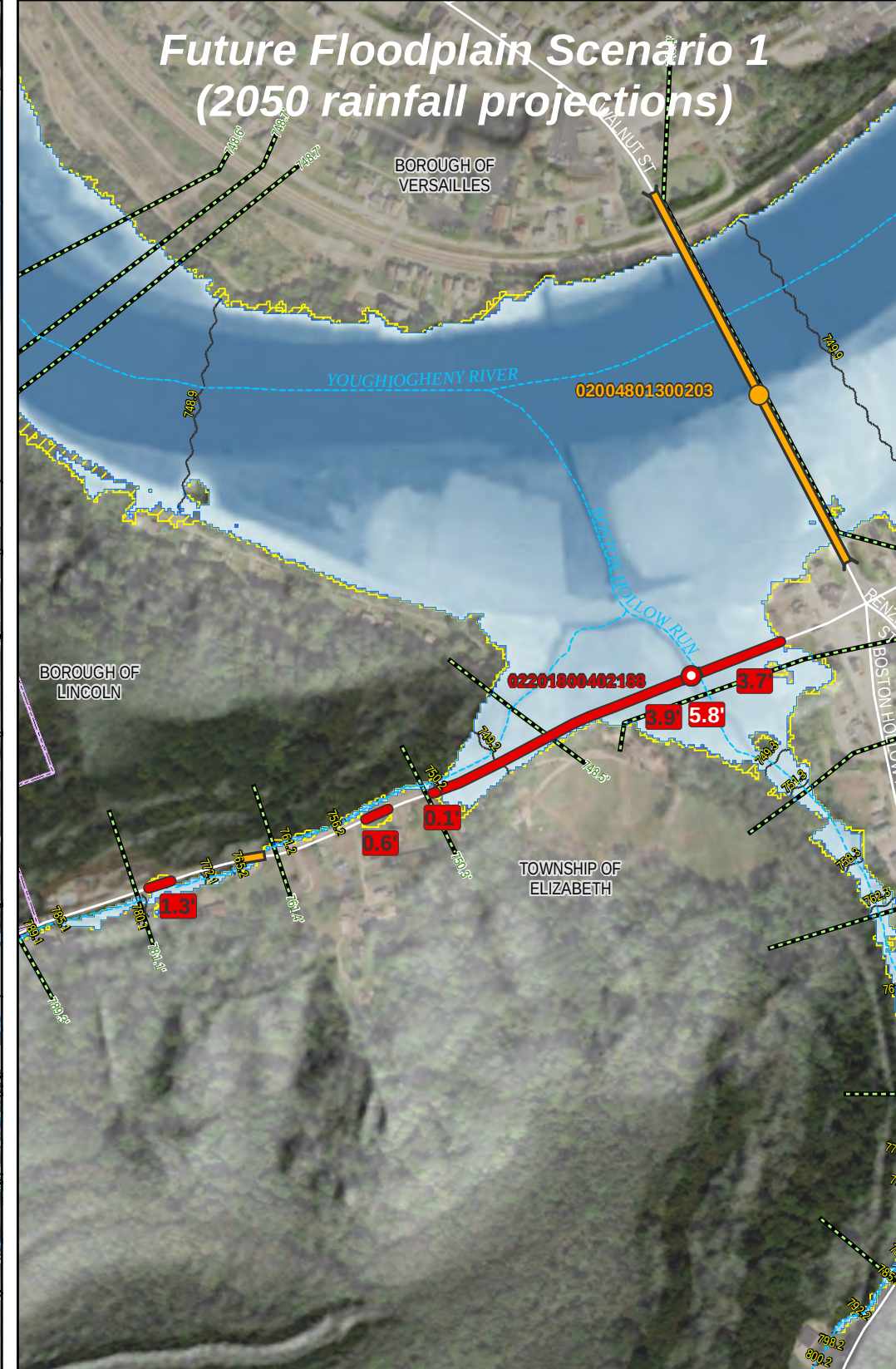
Sheet 228 of 265

DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
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Vertical Datum: North American Vertical Datum 1988

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Performed by: Michael Baker International
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LOCATOR MAP





MAP SYMBOLOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 230 of 265

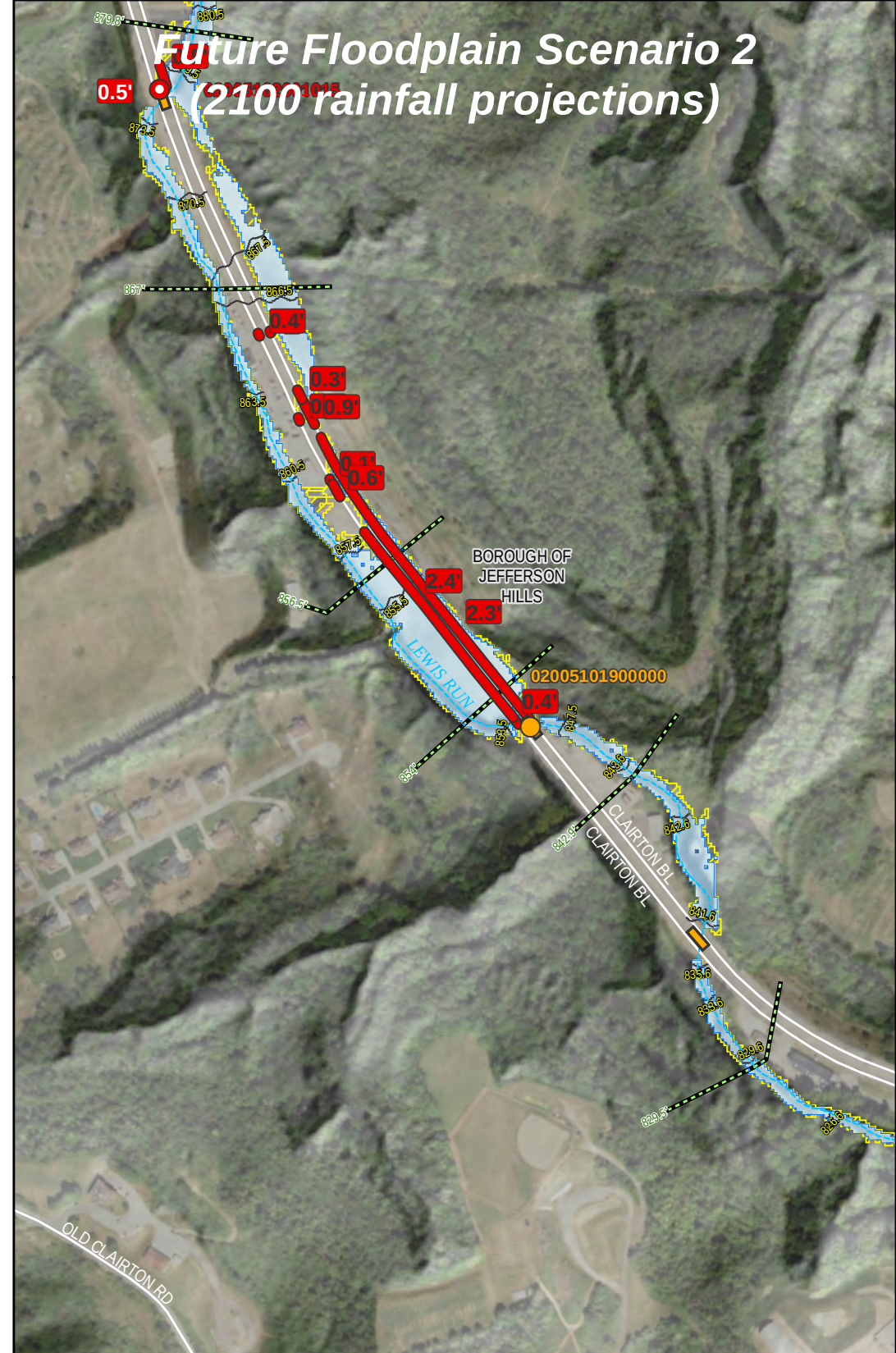
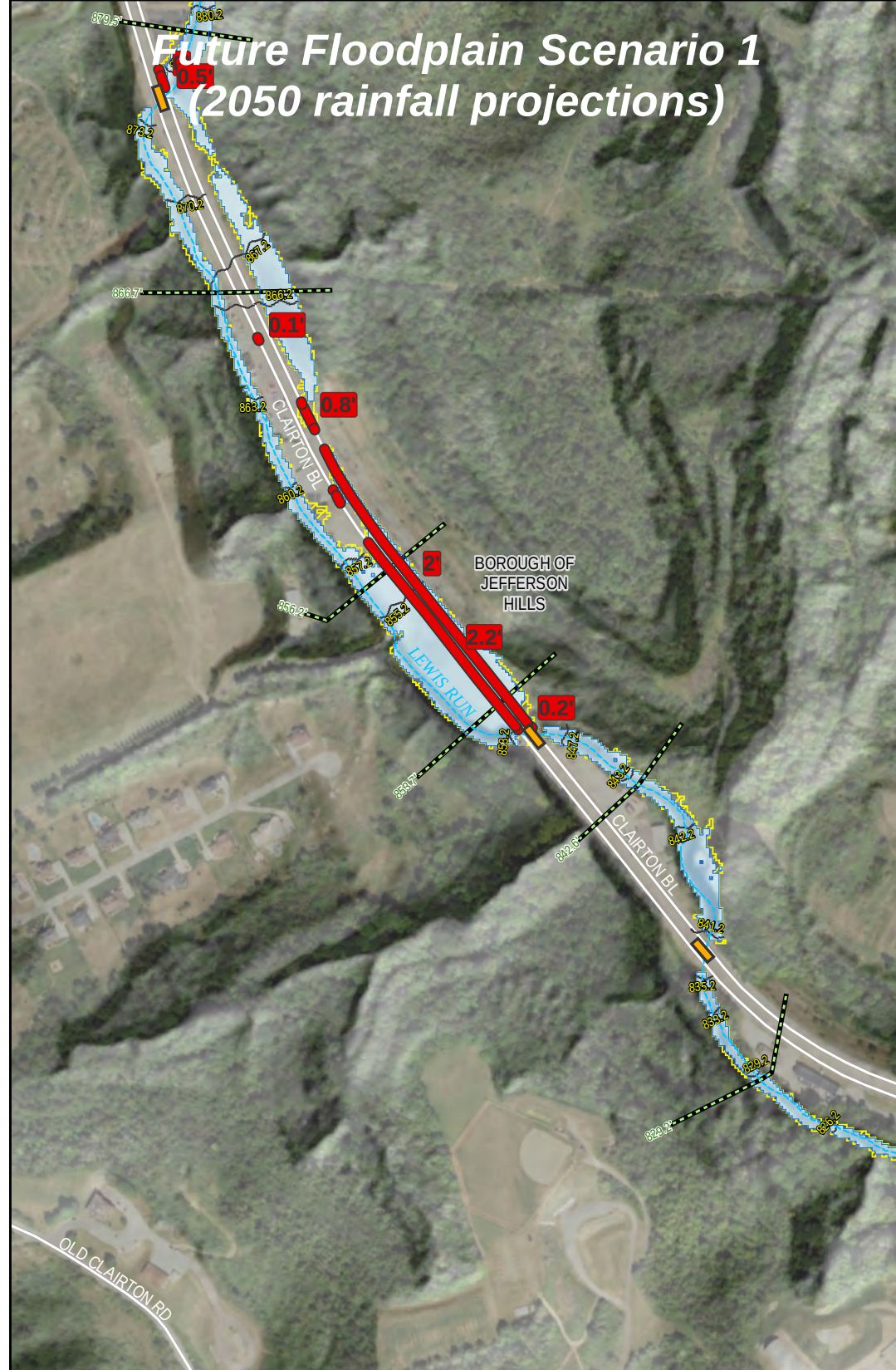
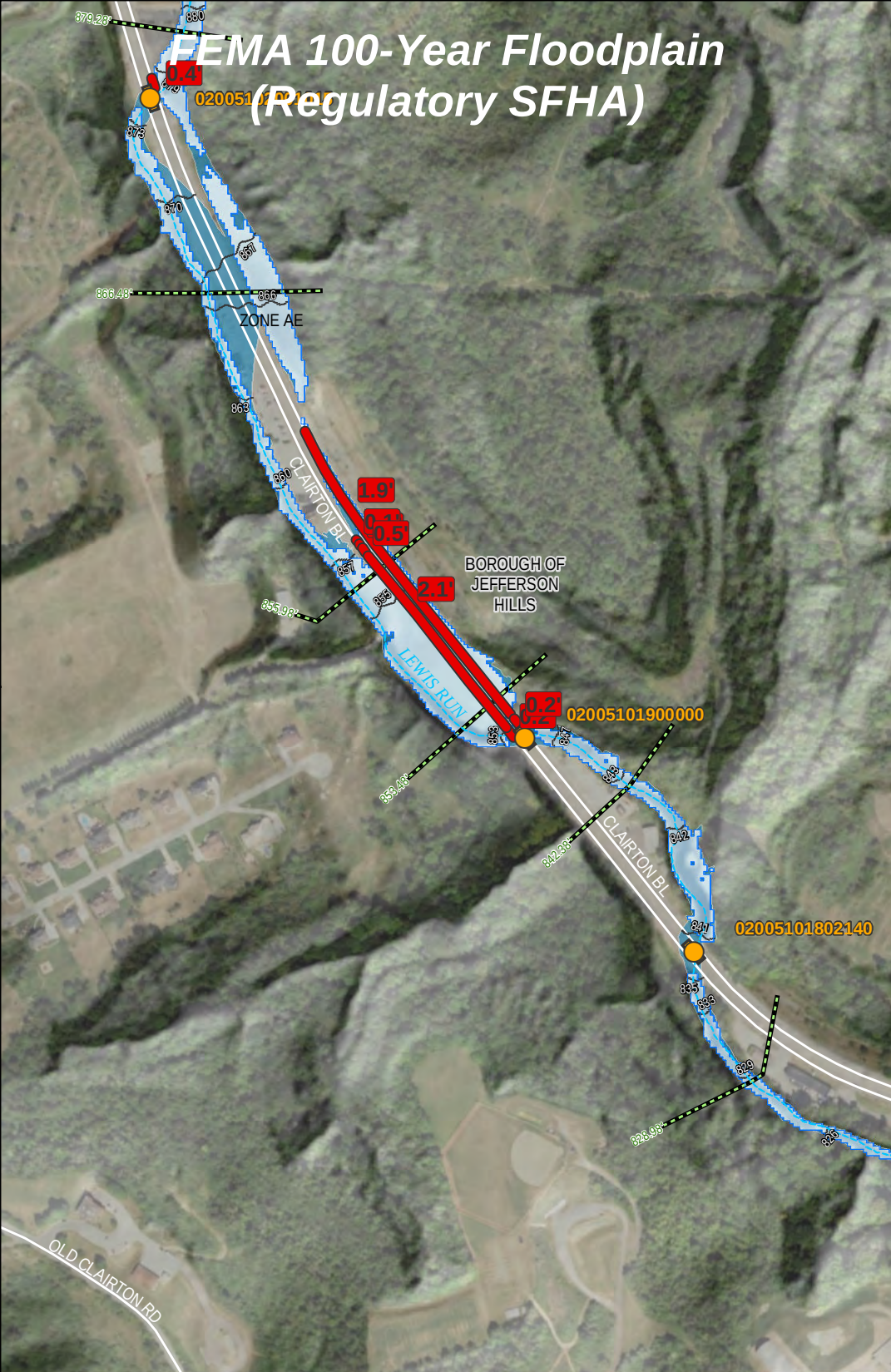
PENNDOT

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**

LOCATOR MAP



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

Sheet 232 of 265

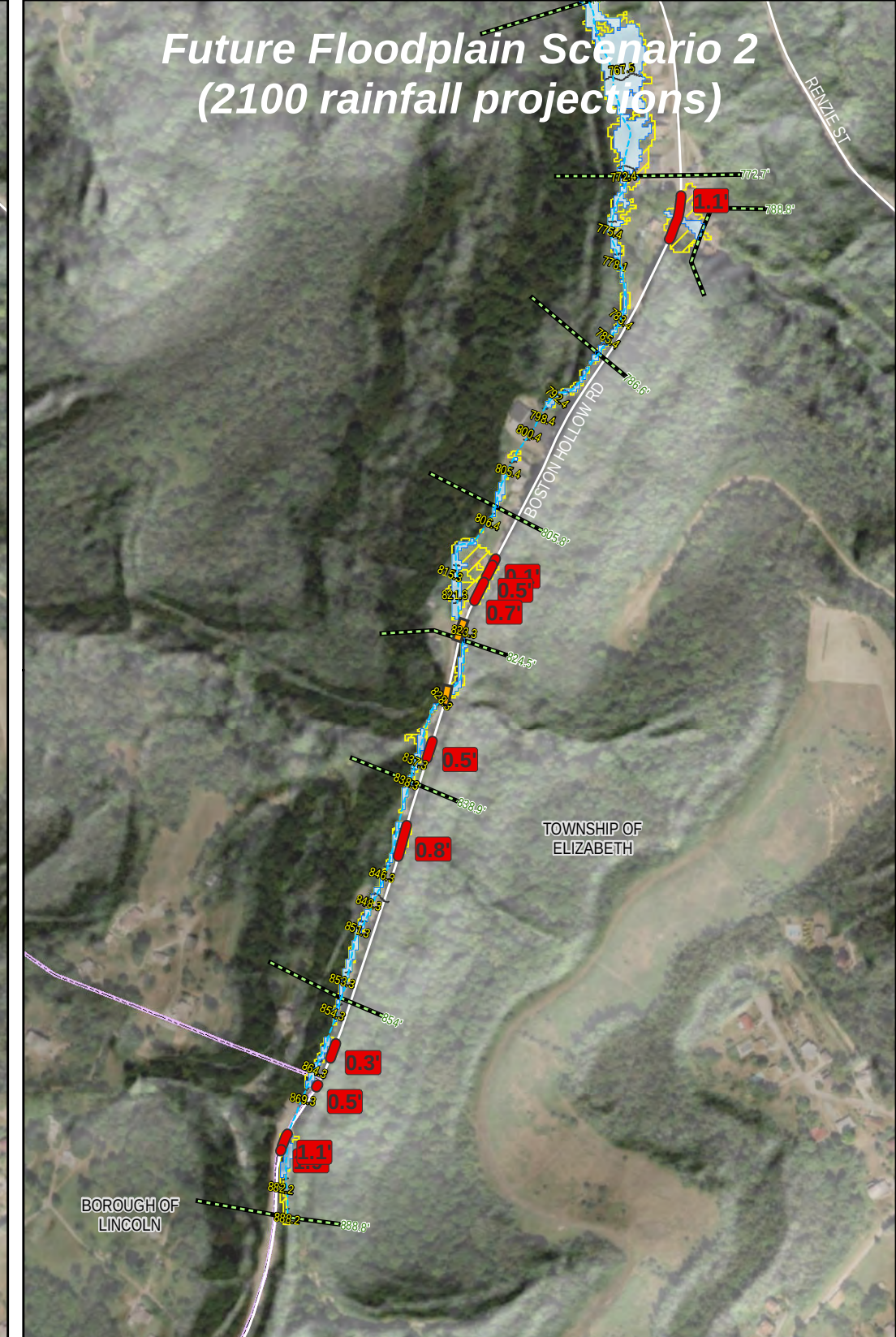
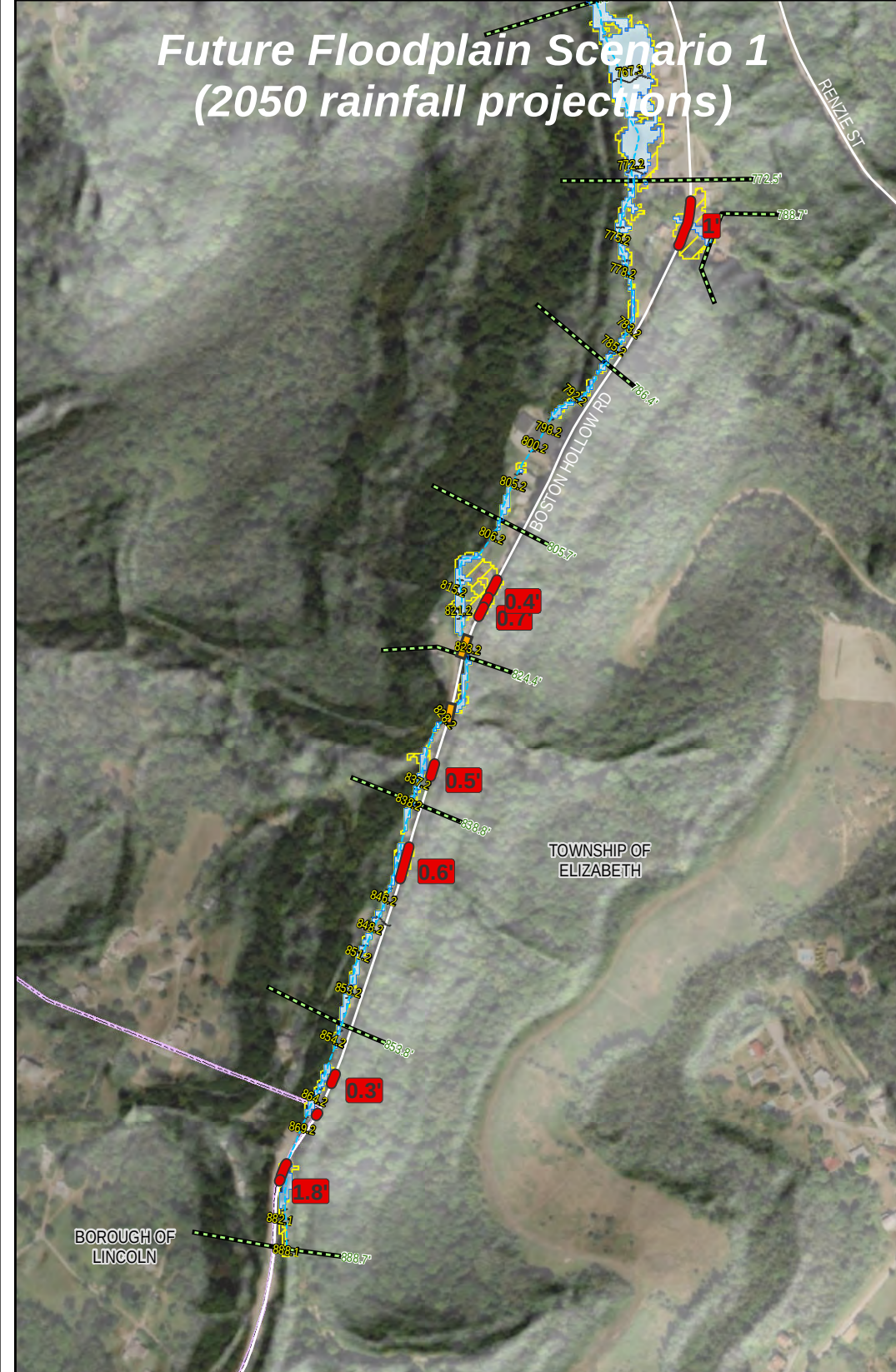
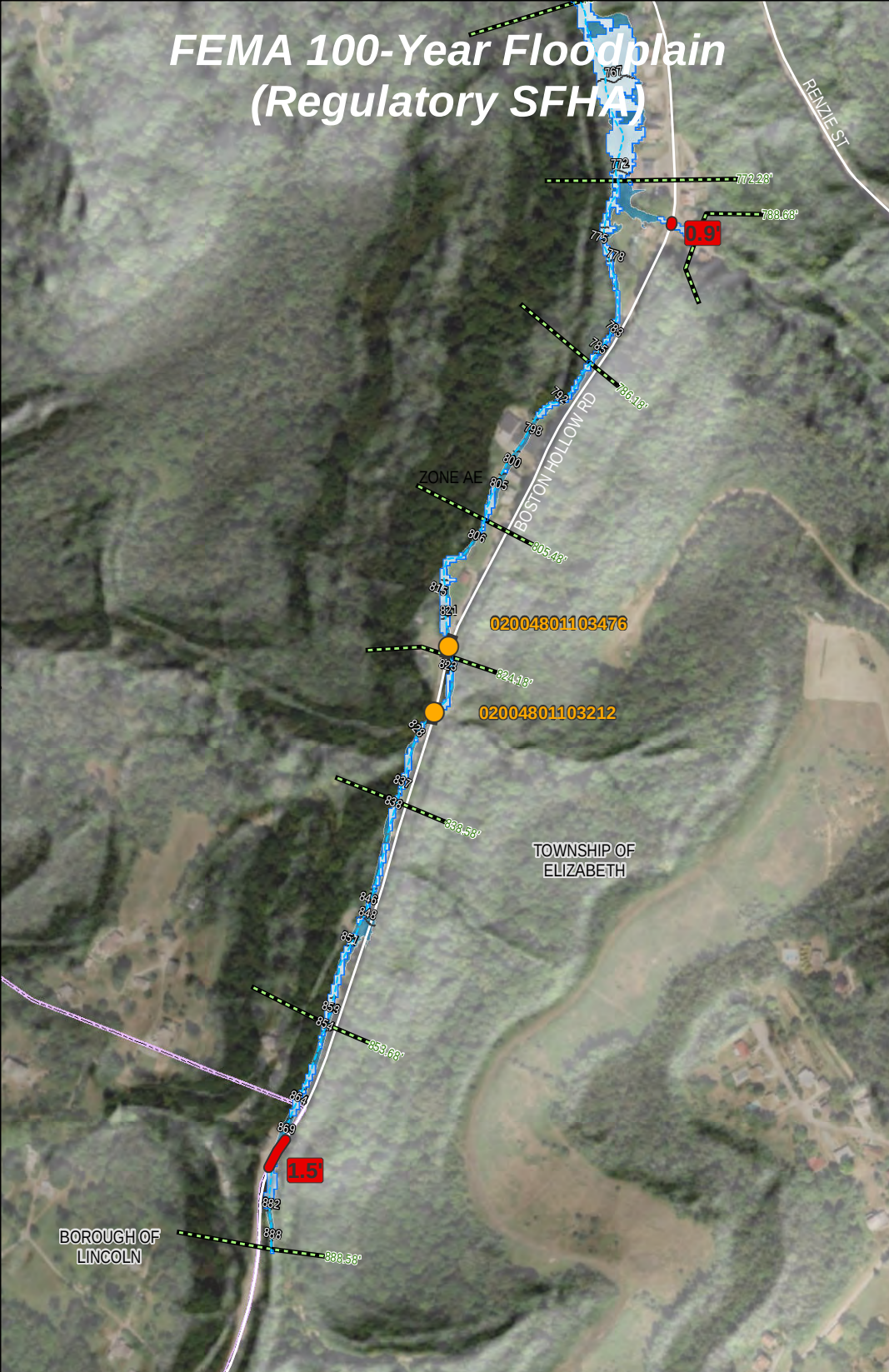
DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker INTERNATIONAL

LOCATOR MAP

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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. CODY ST
	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

0 1,000 Feet

November 23, 2016

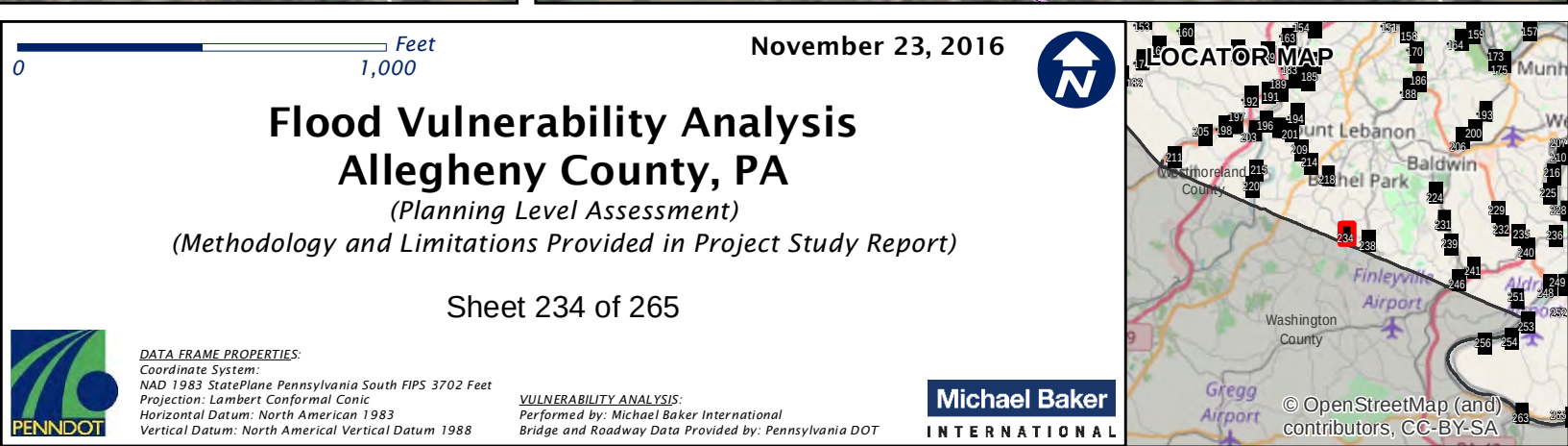
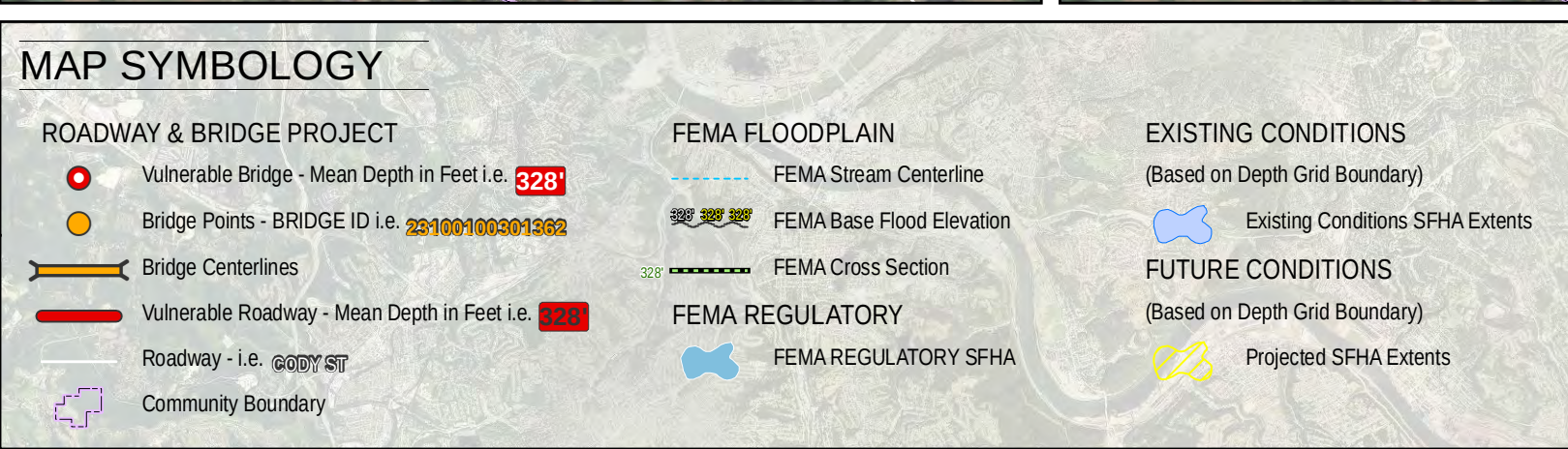
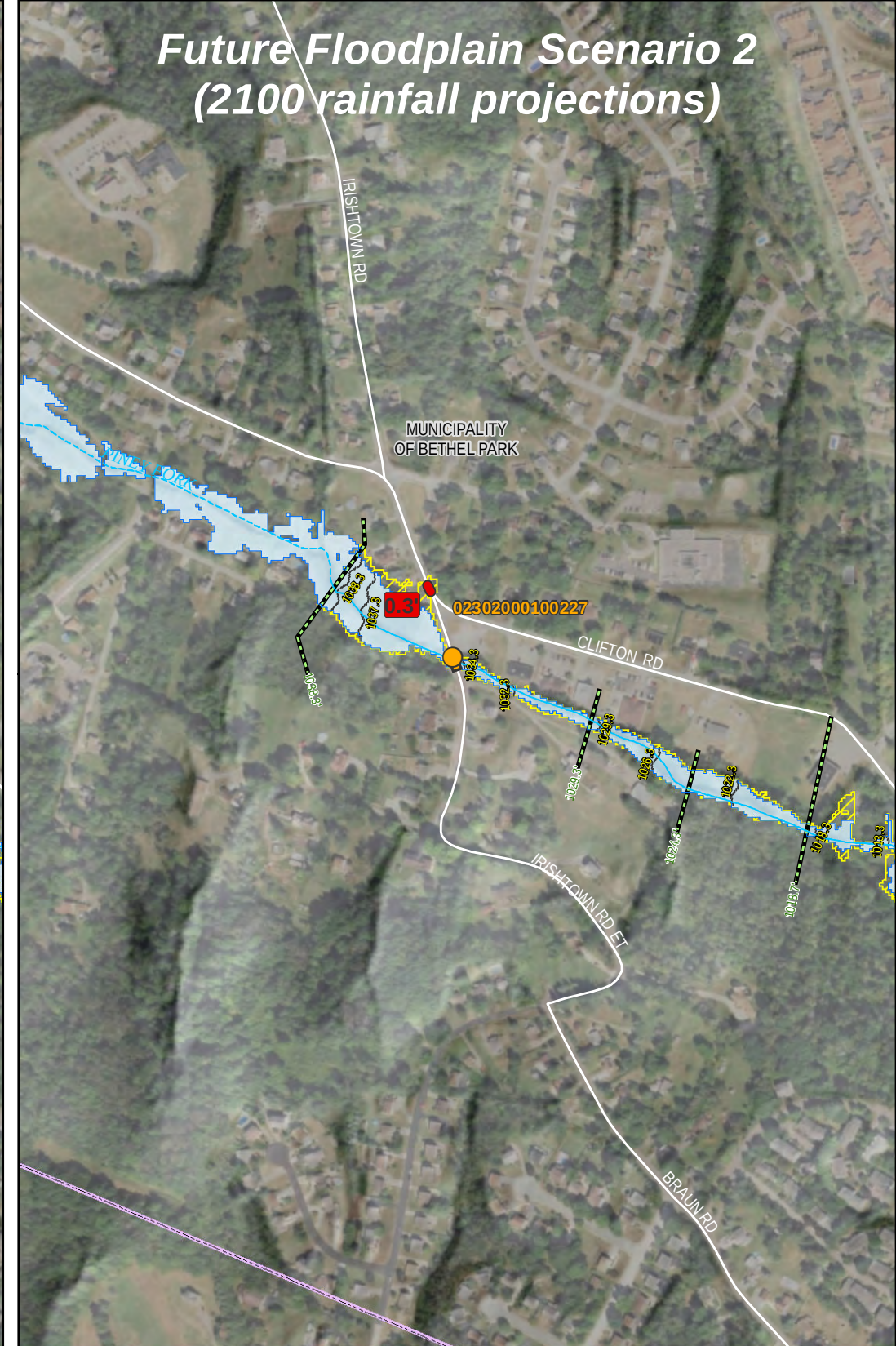
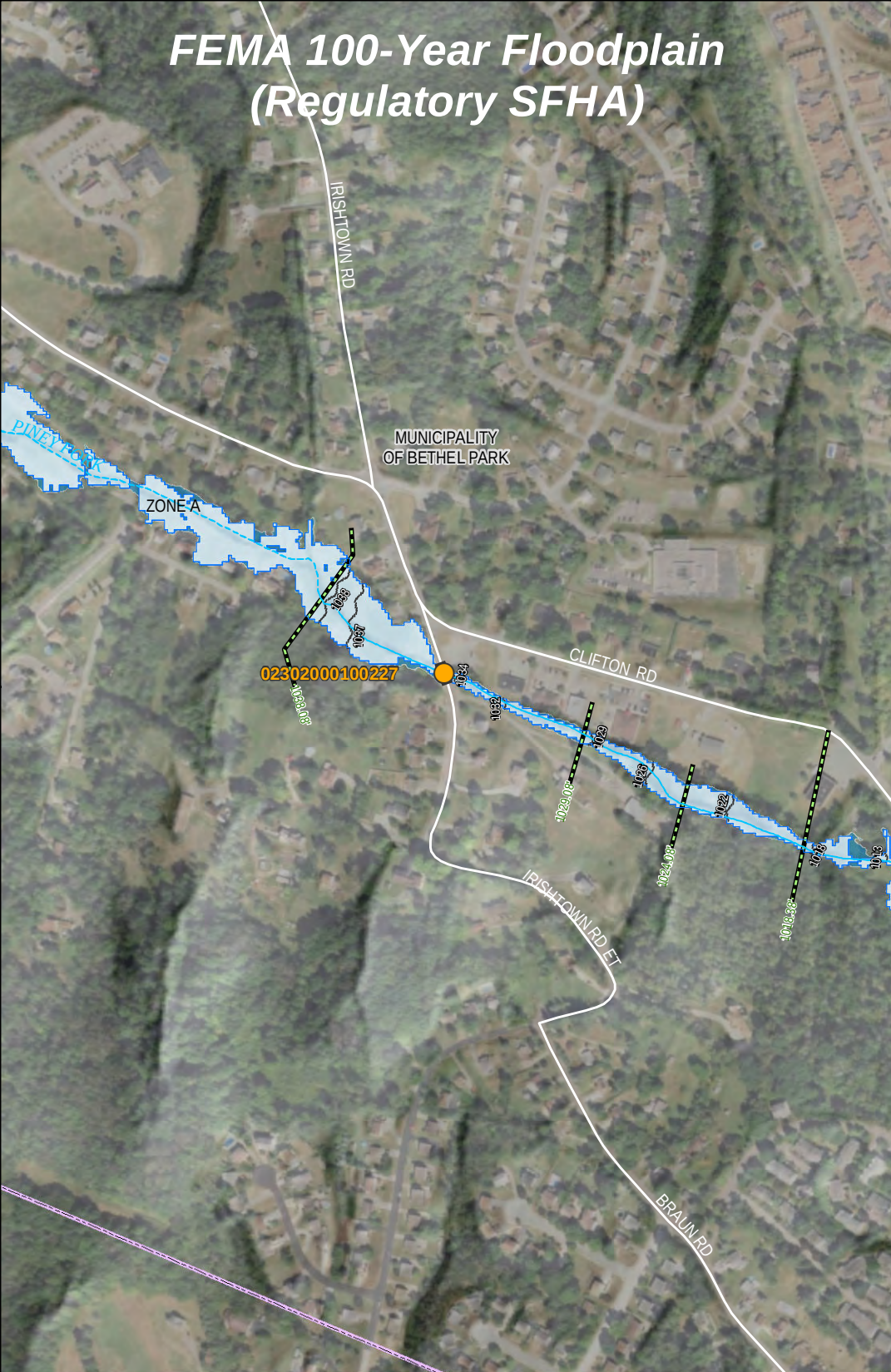
Flood Vulnerability Analysis Allegheny County, PA

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

Sheet 233 of 265

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

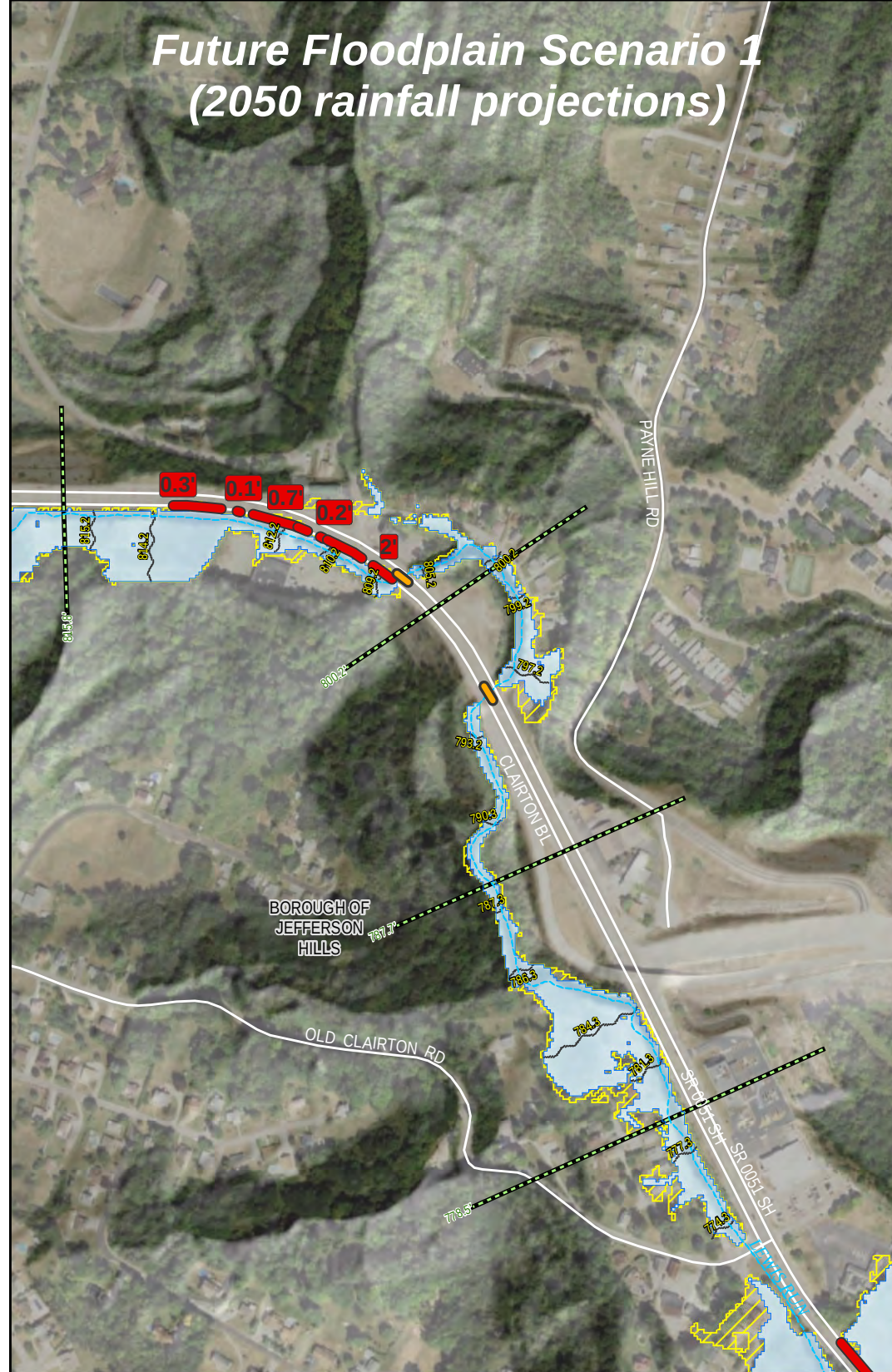
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



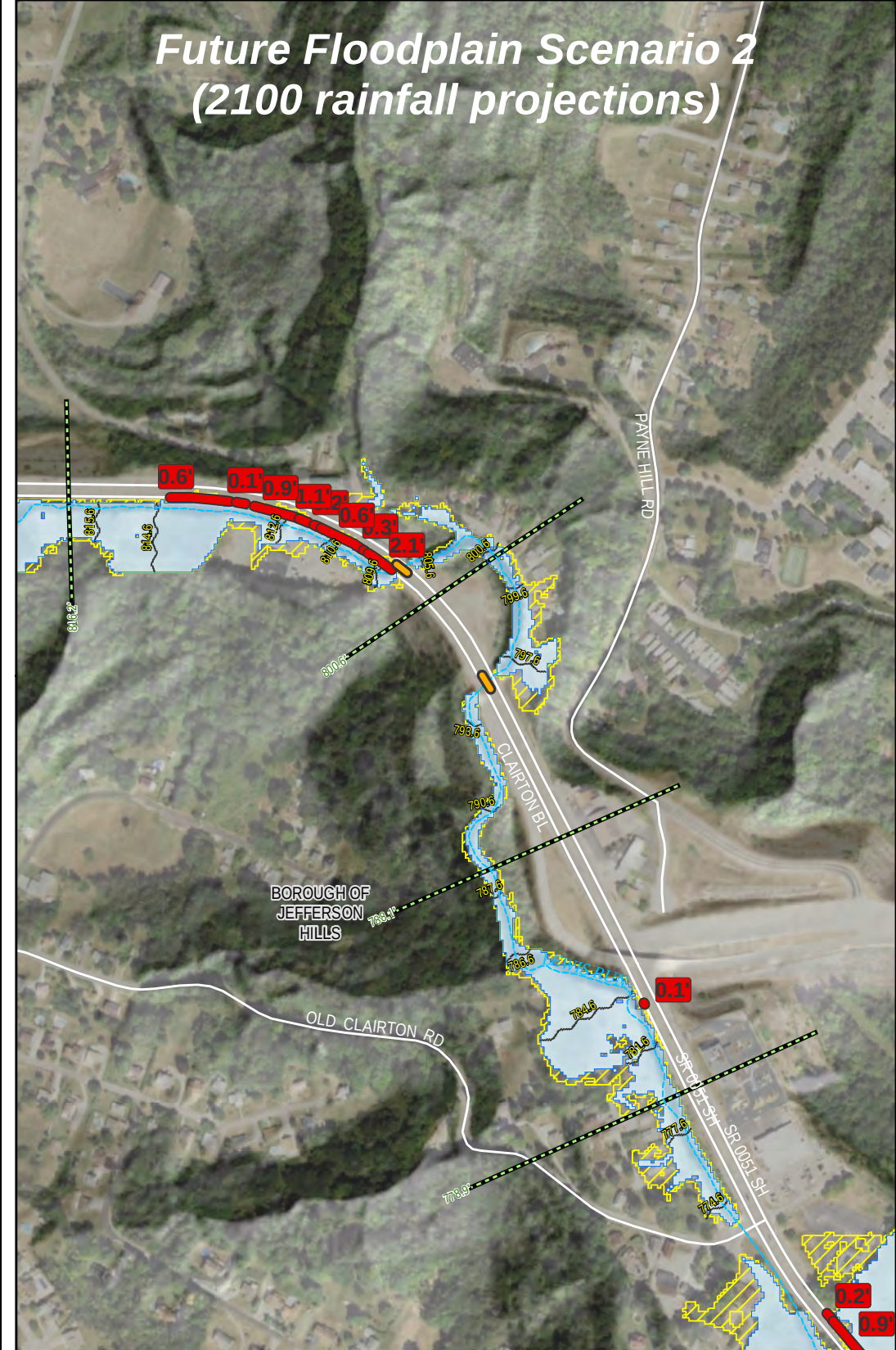
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016



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

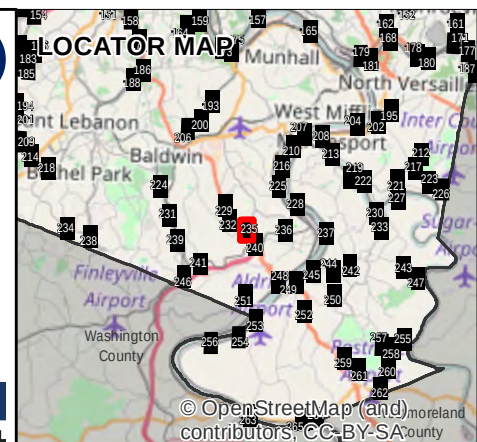
Sheet 235 of 265



DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**





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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

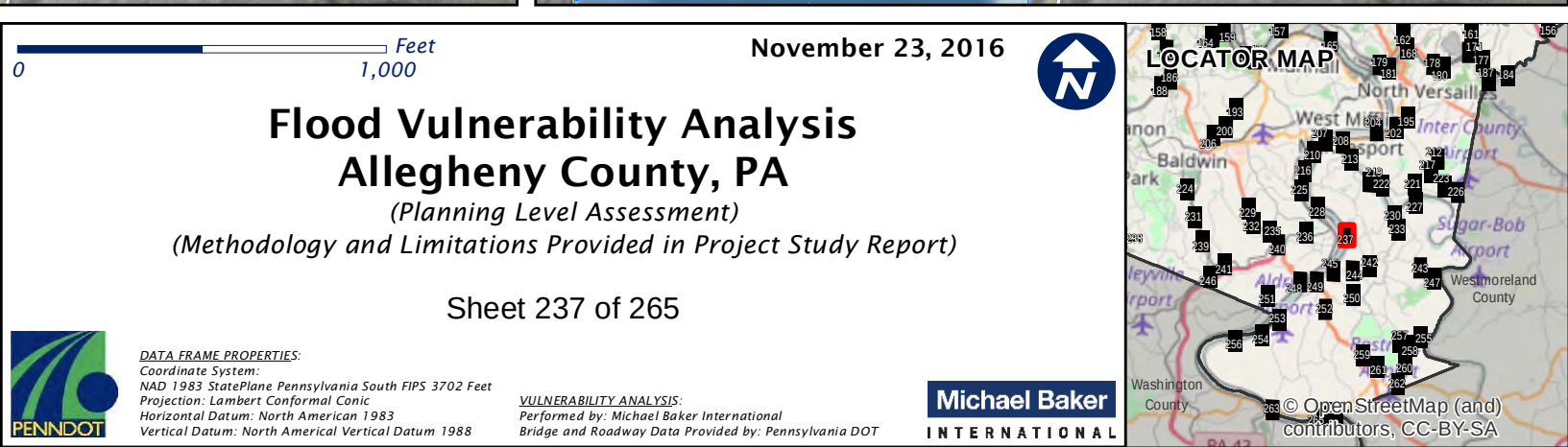
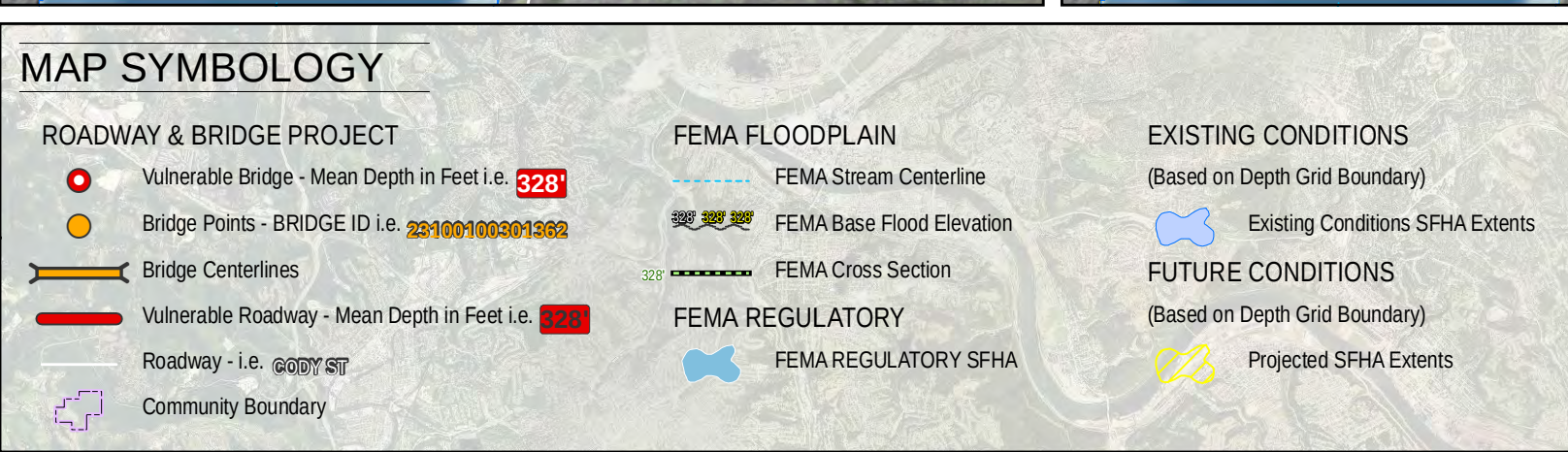
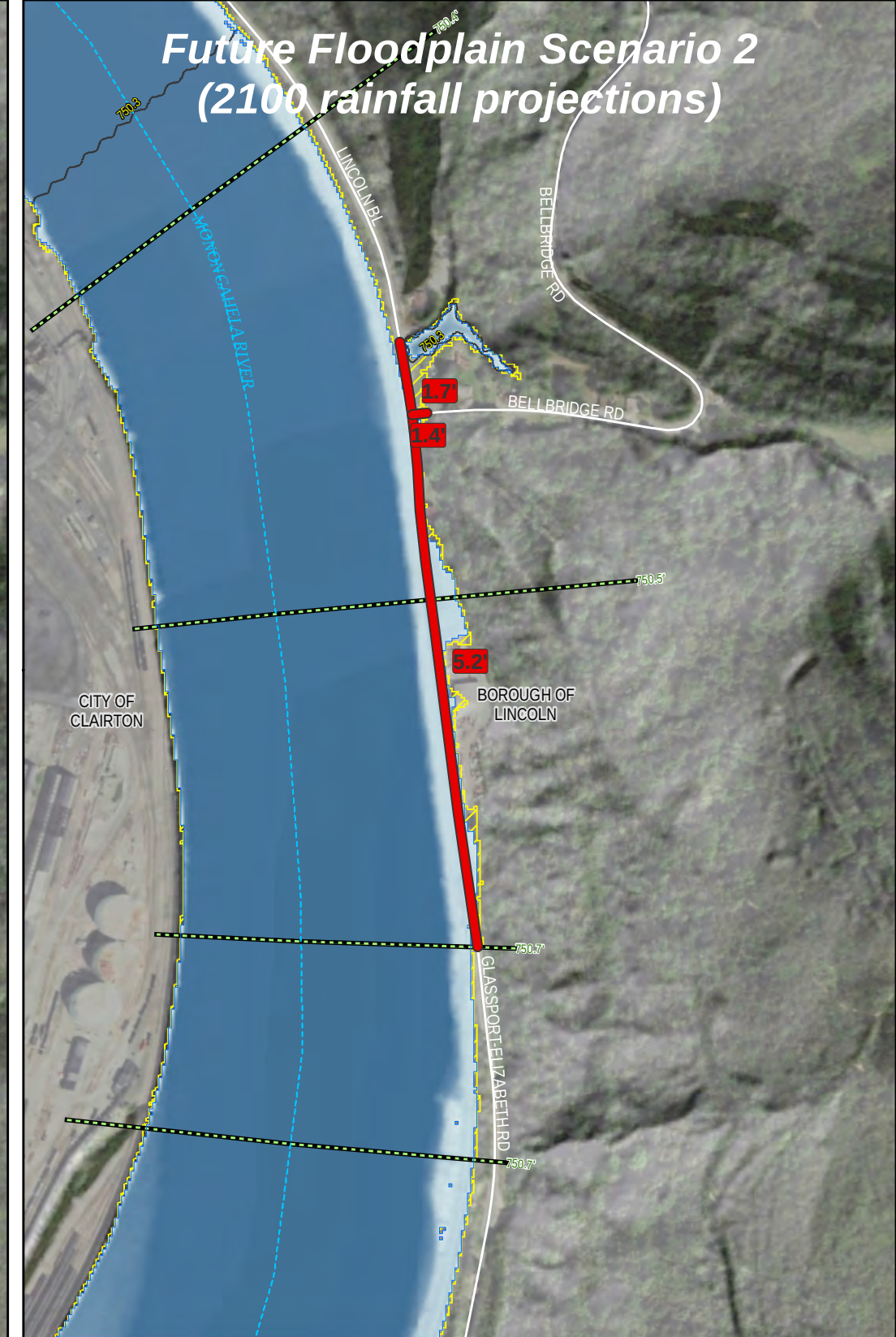
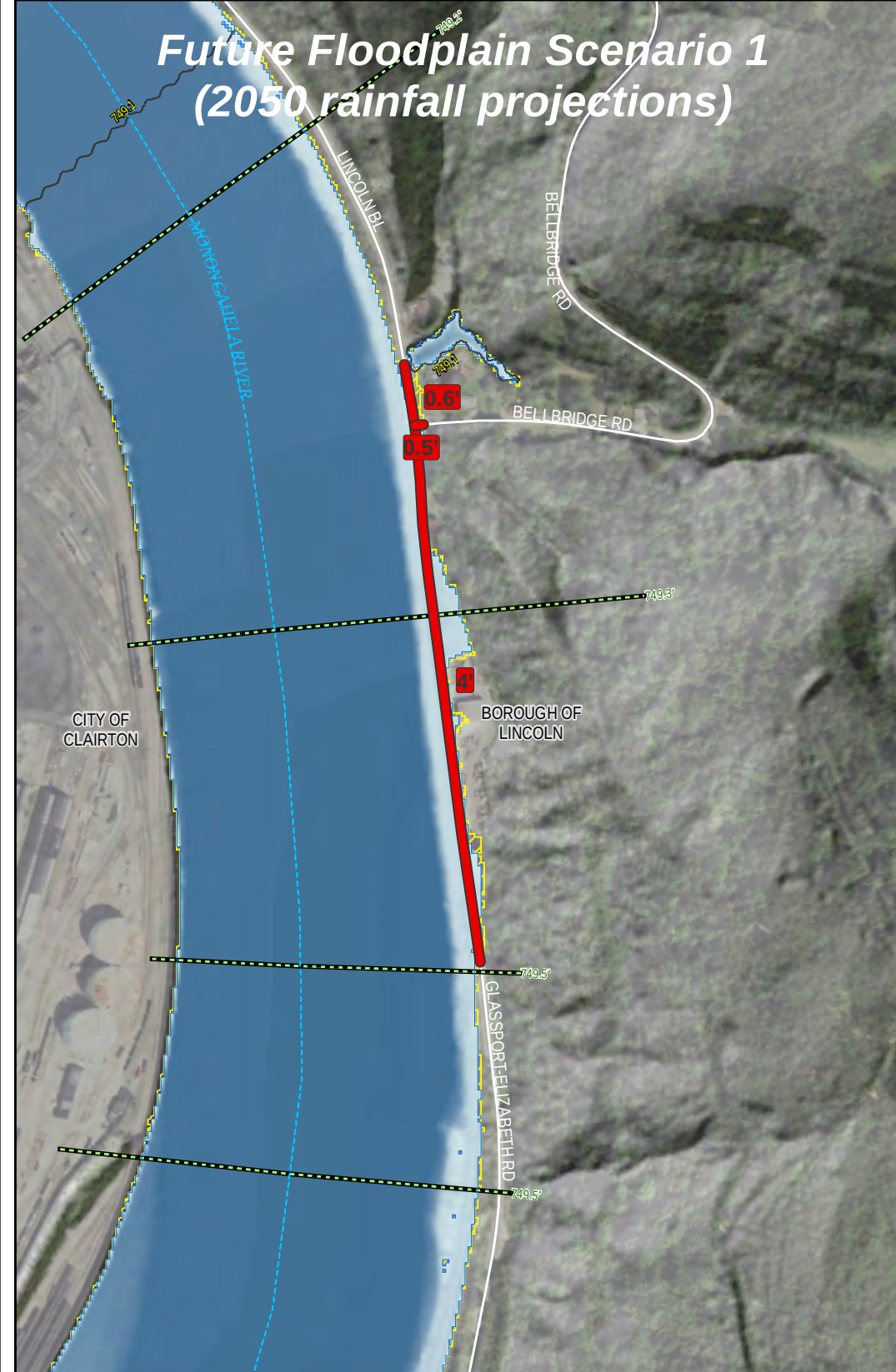
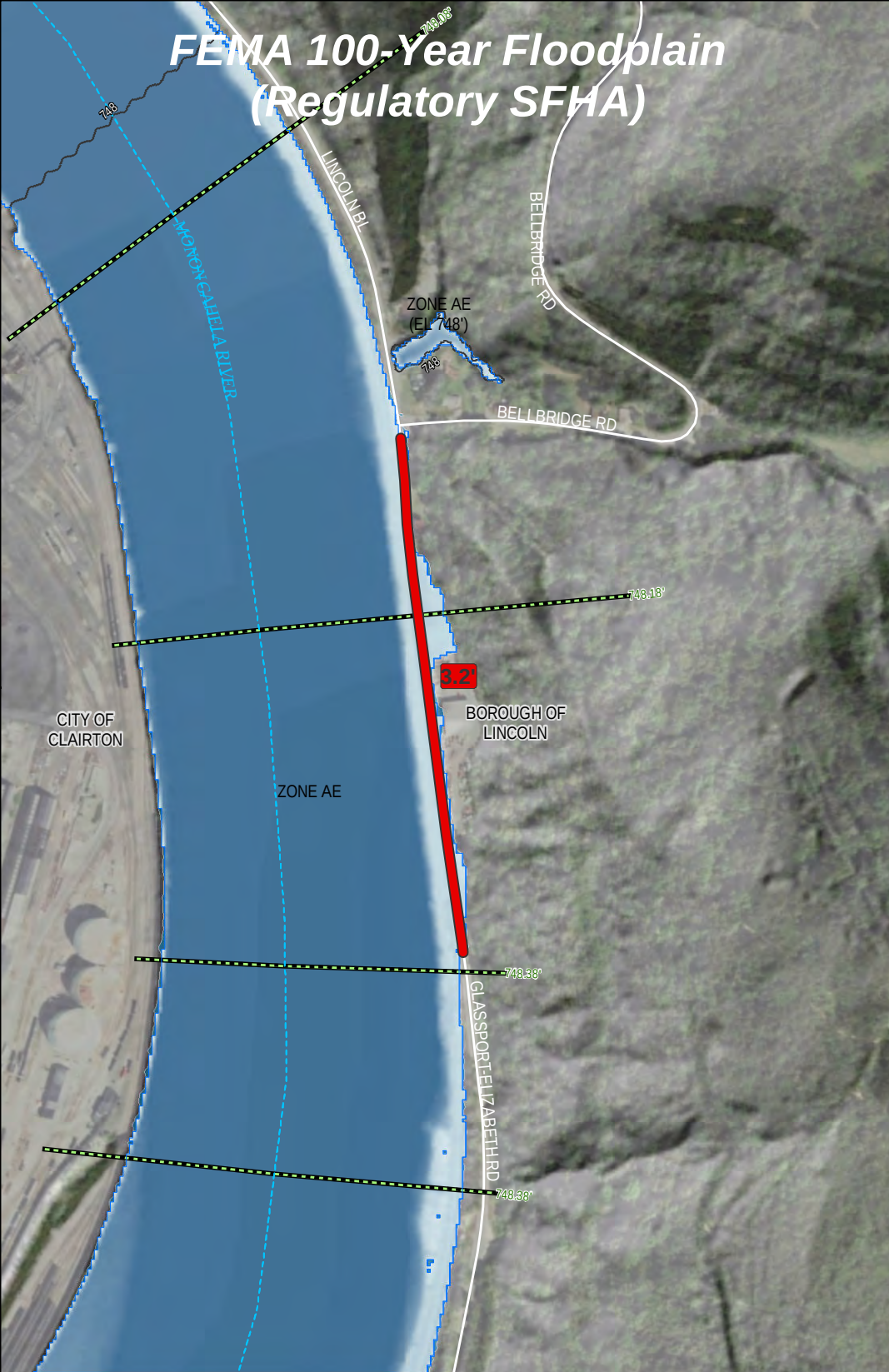
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

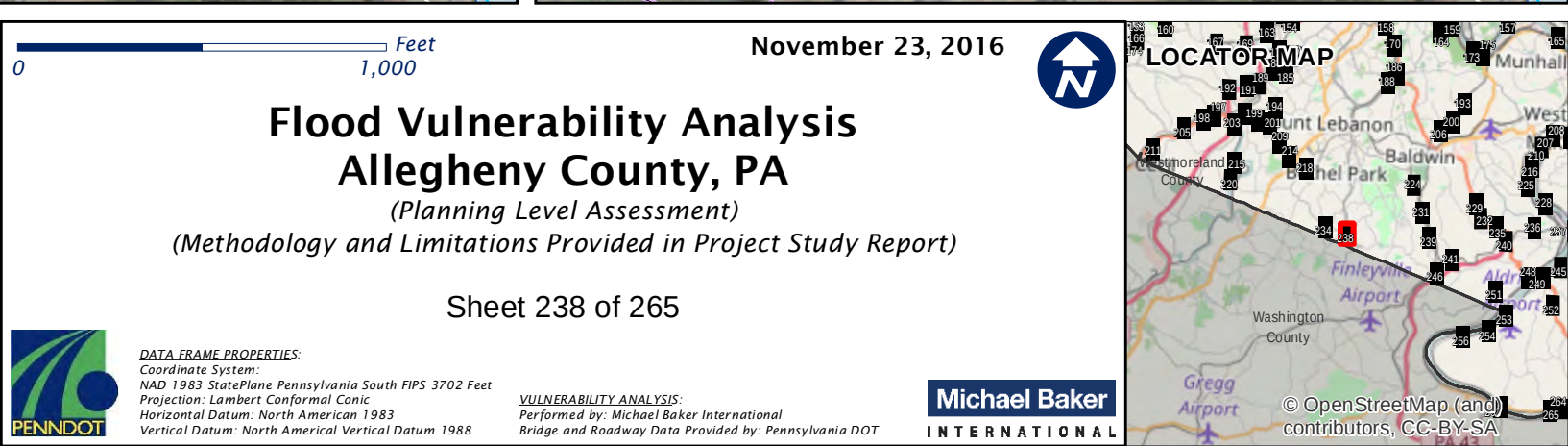
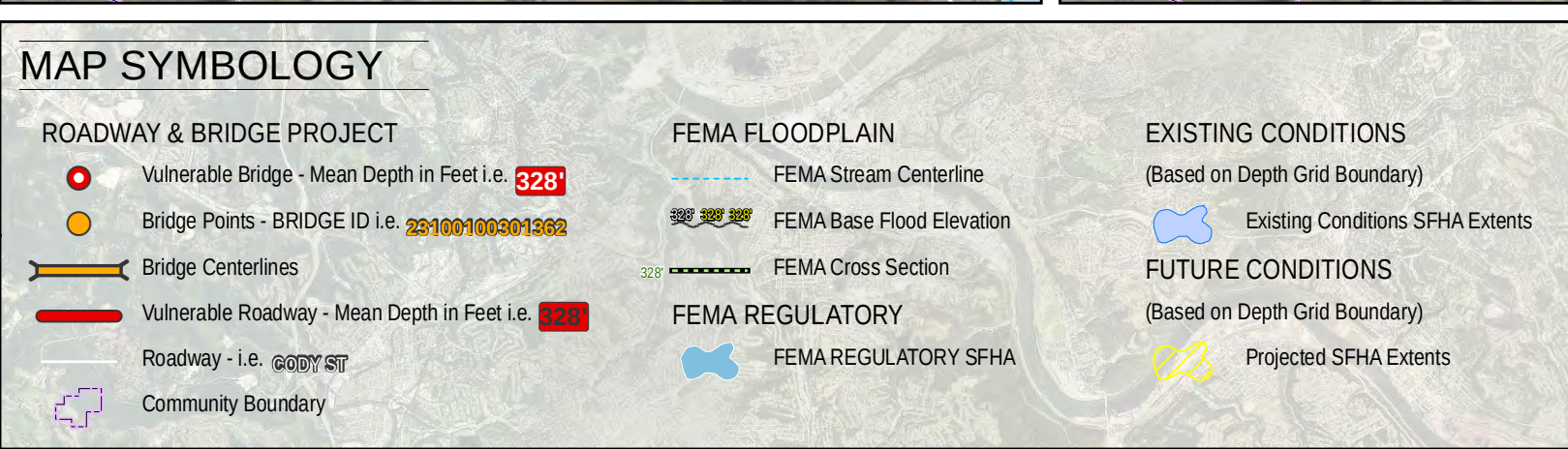
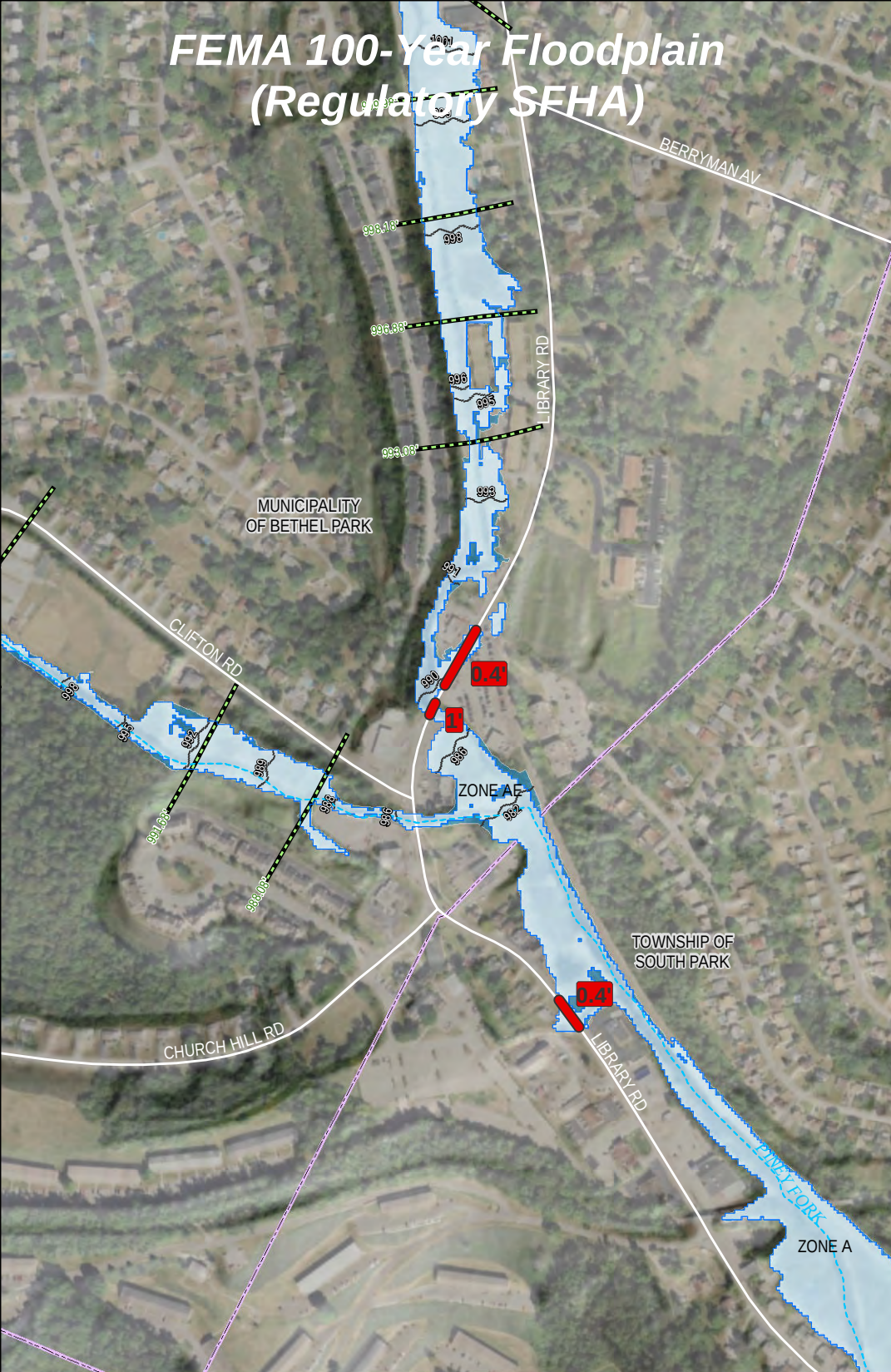
Sheet 236 of 265

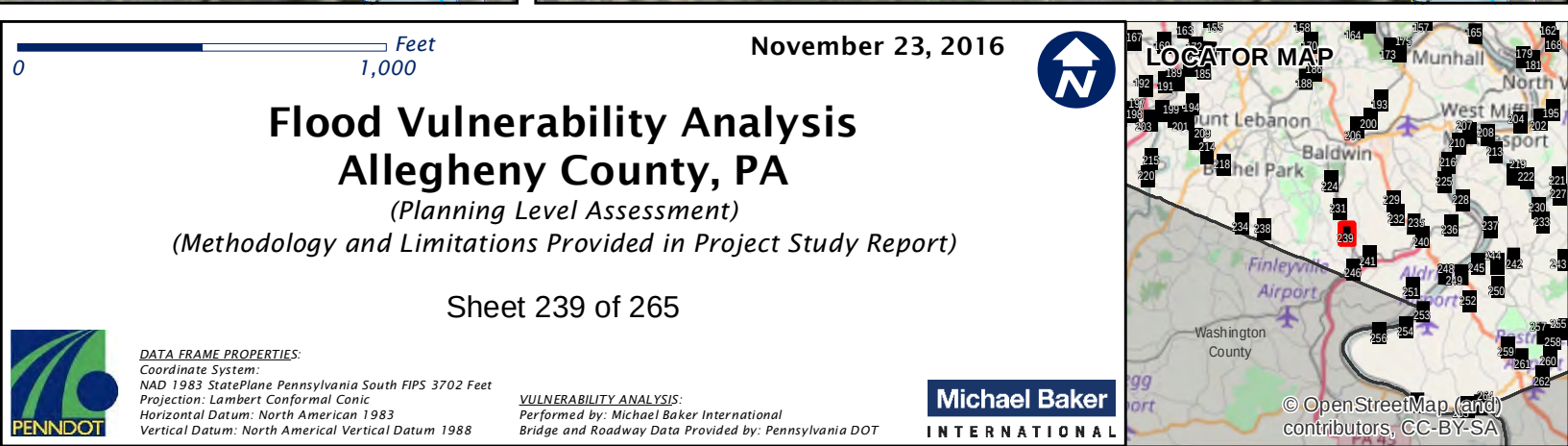
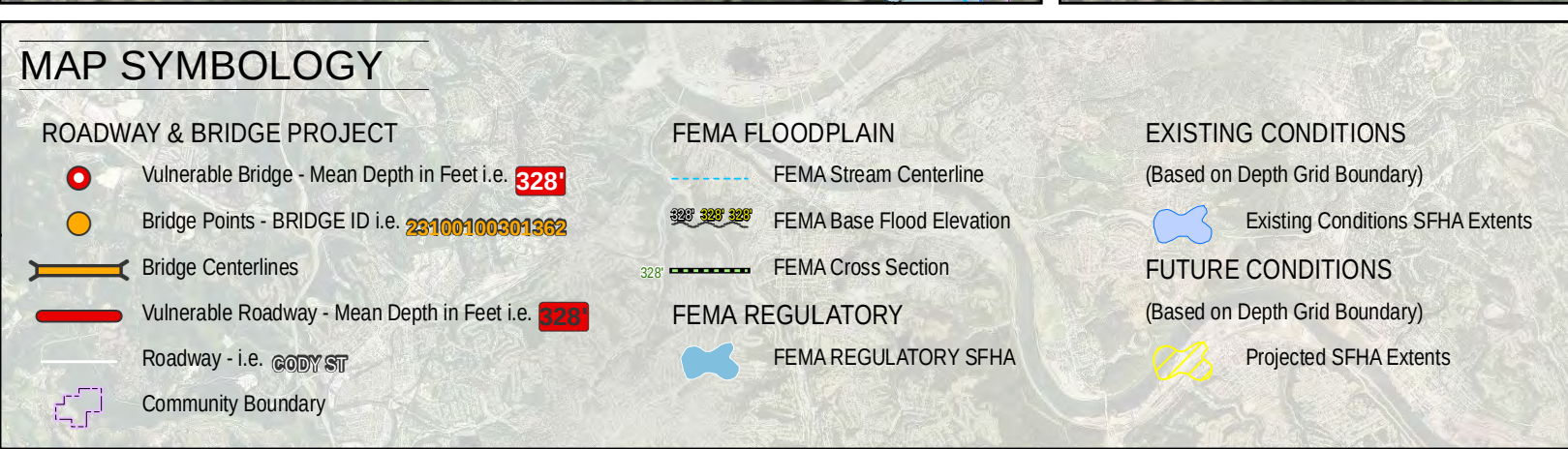
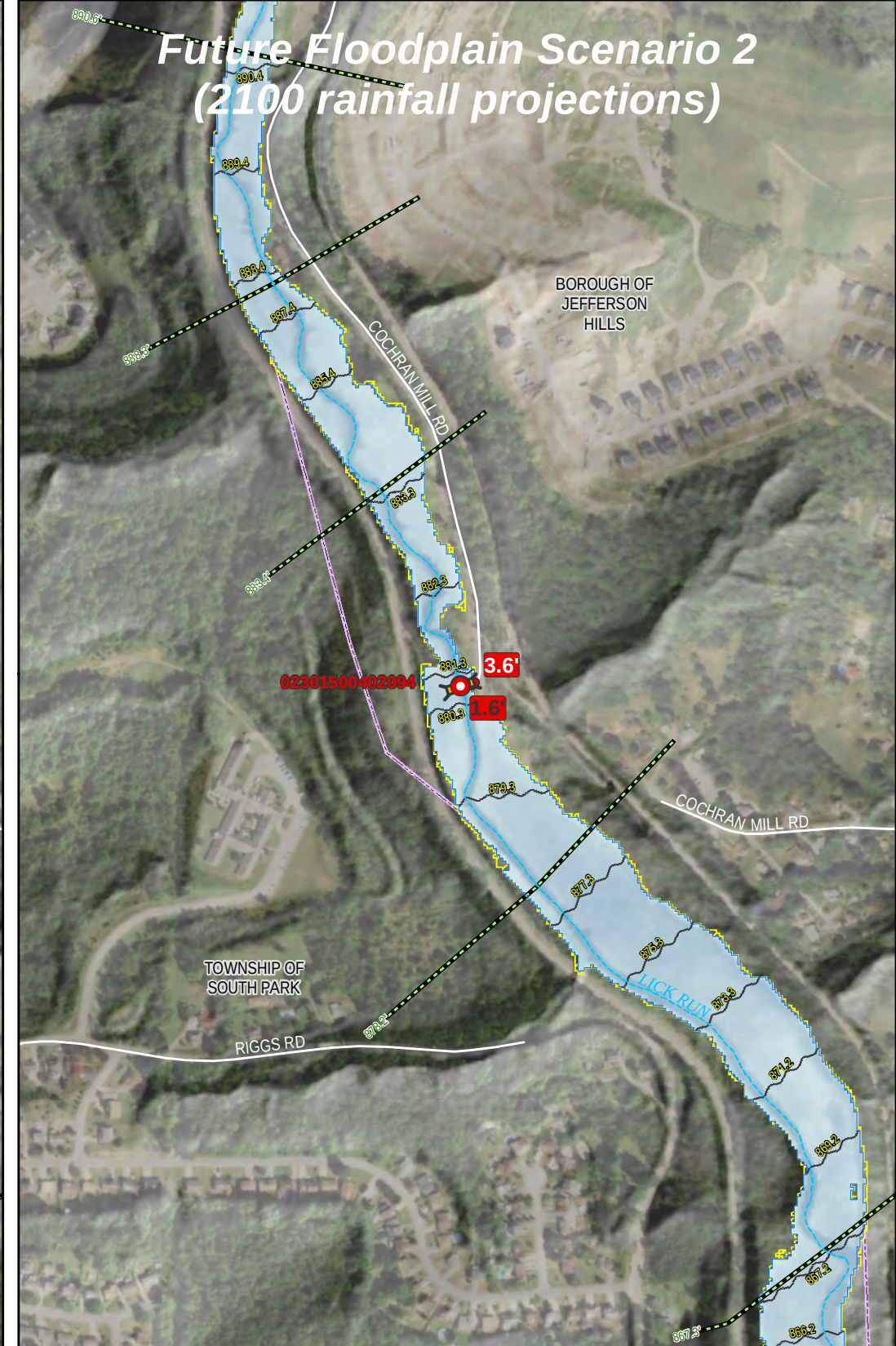
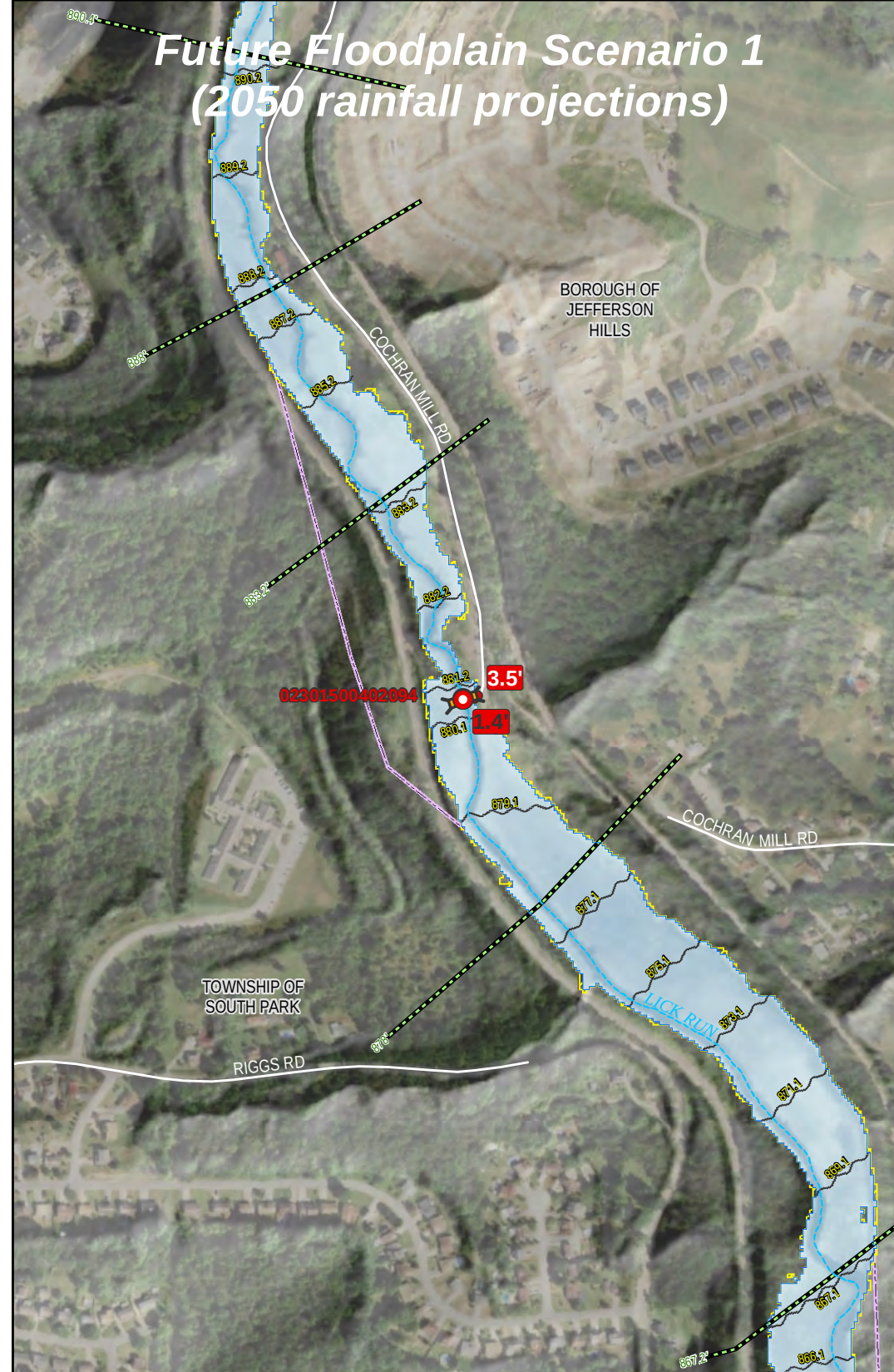
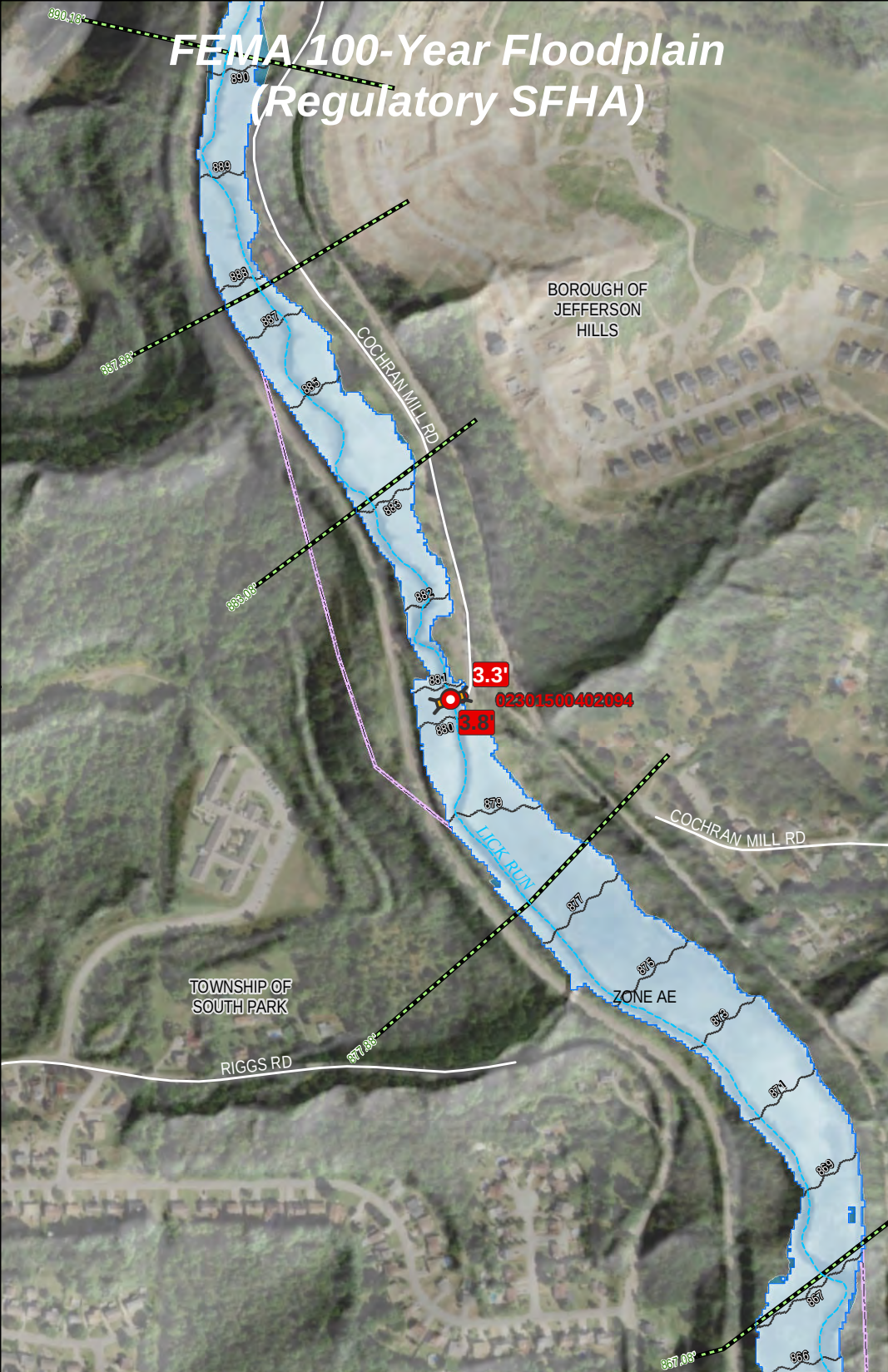
DATA FRAME PROPERTIES:
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NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

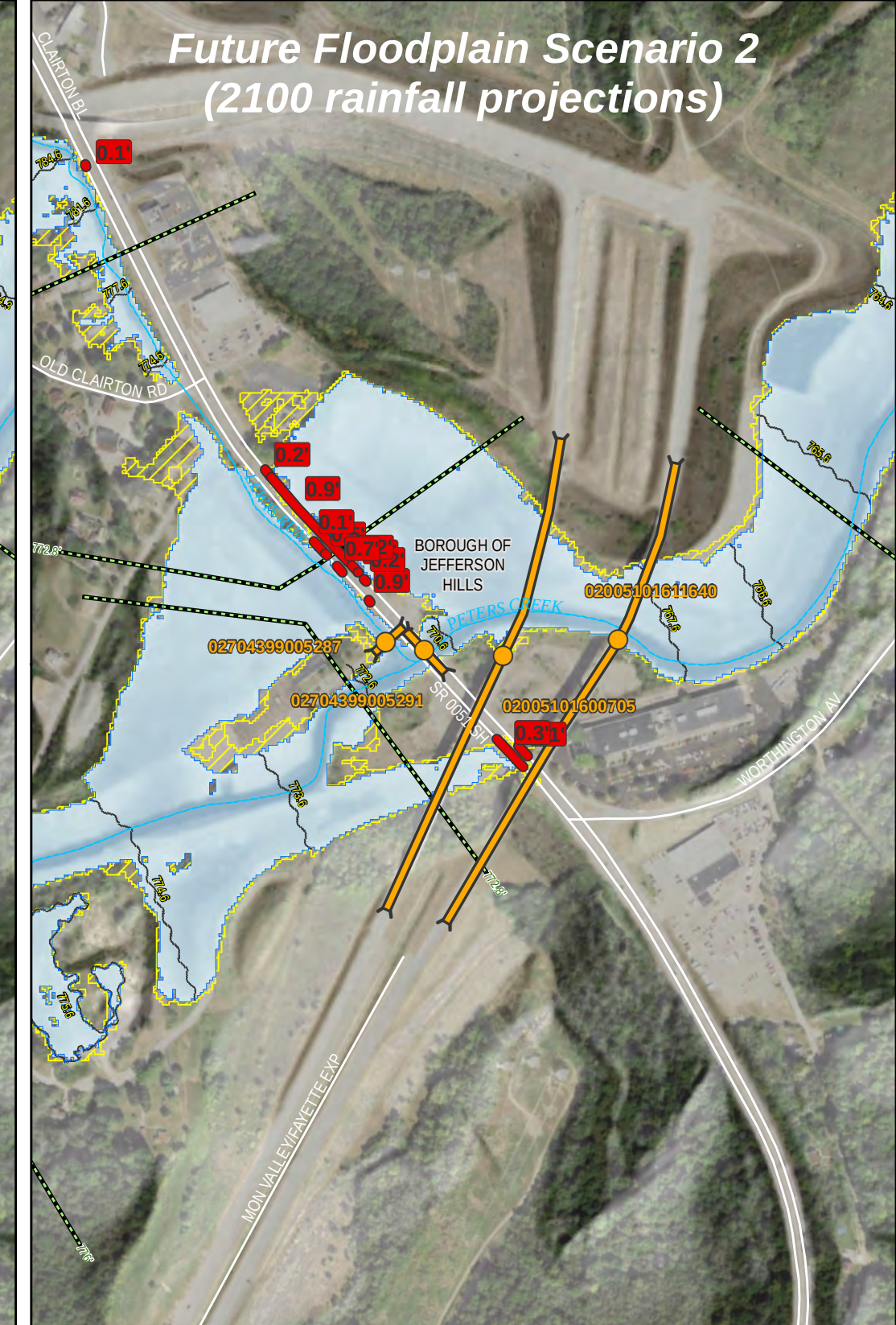
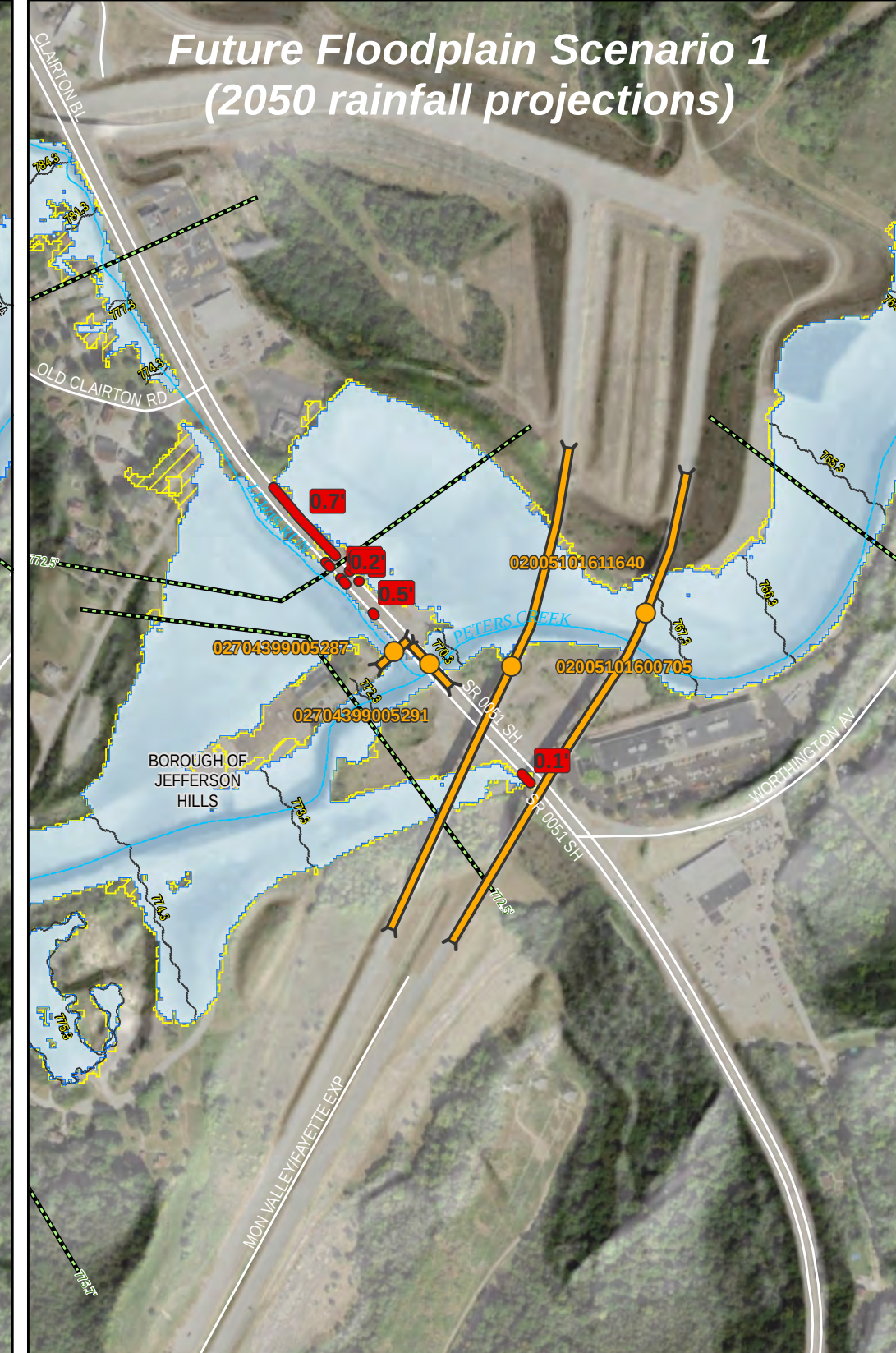
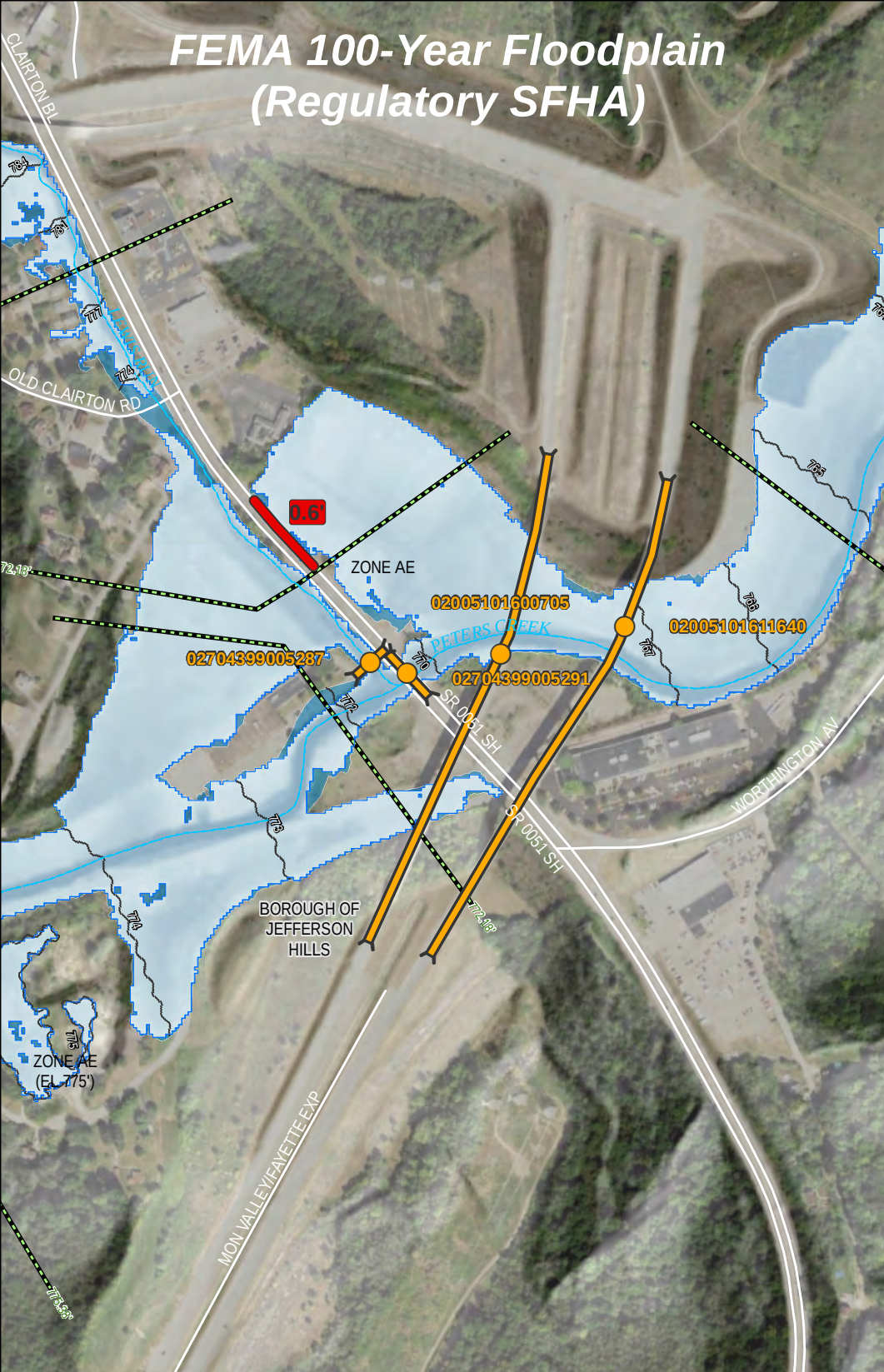
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP









MAP SYMBOLOGY

Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	Projected SFHA Extents
Bridge Centerlines	FEMA Cross Section	
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY SFHA	
Roadway - i.e. CODY ST		
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

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LOCATOR MAP

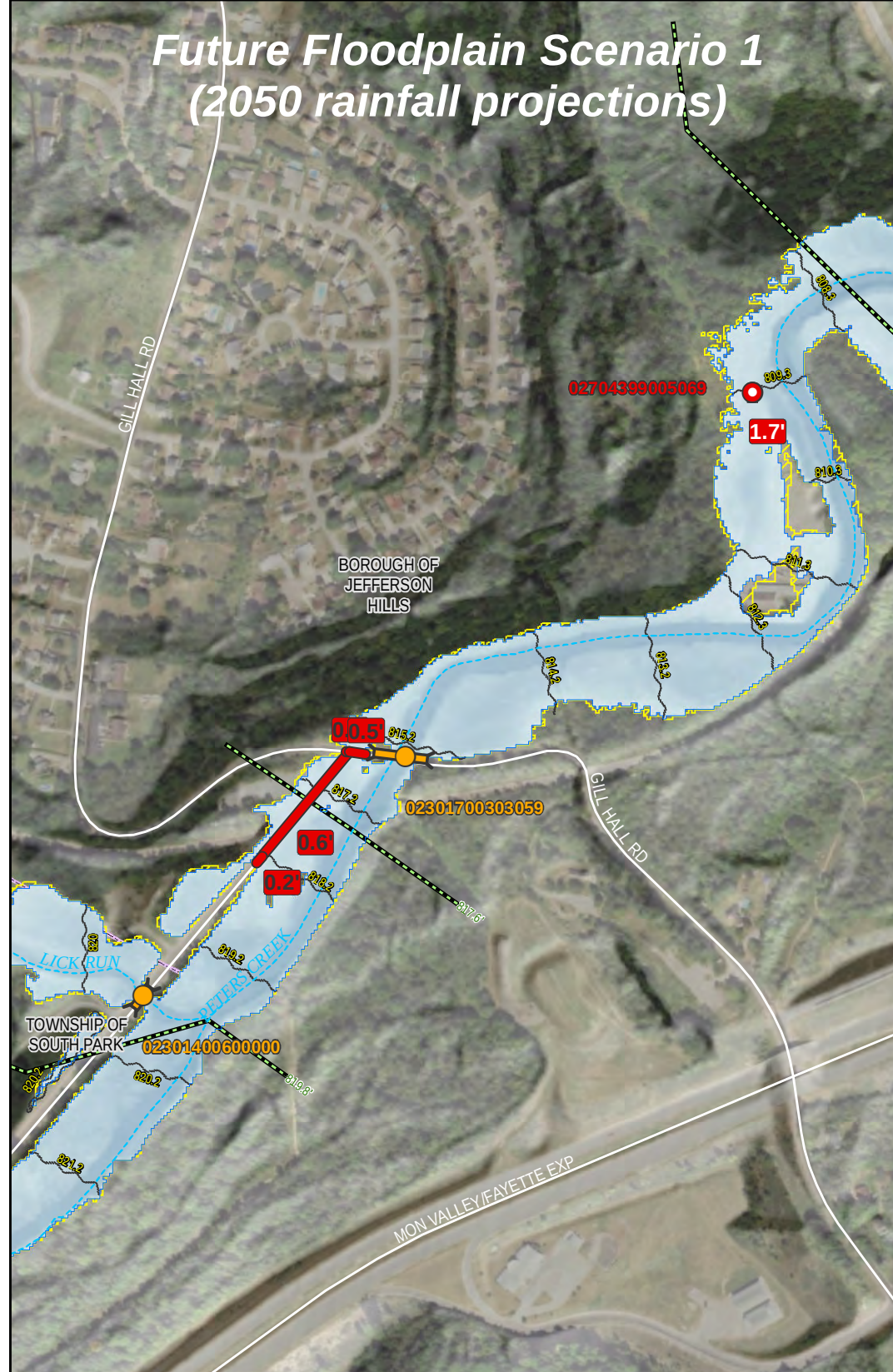
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

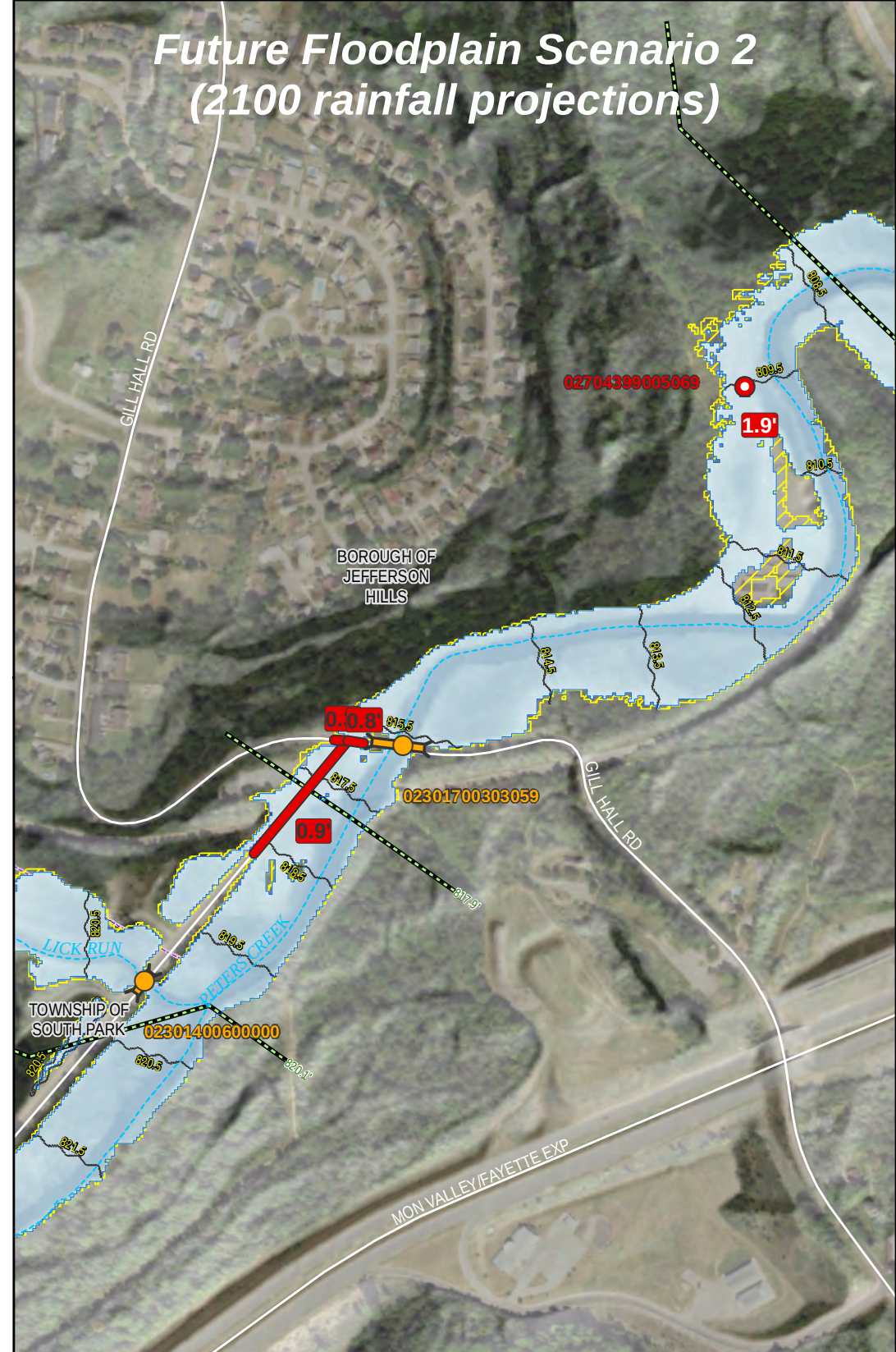
FEMA 100-Year Floodplain (Regulatory SFHA)



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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

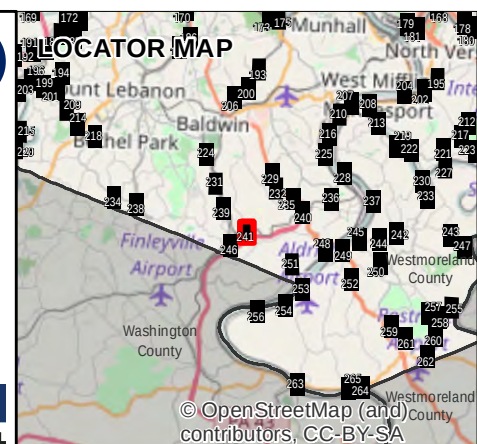
Sheet 241 of 265

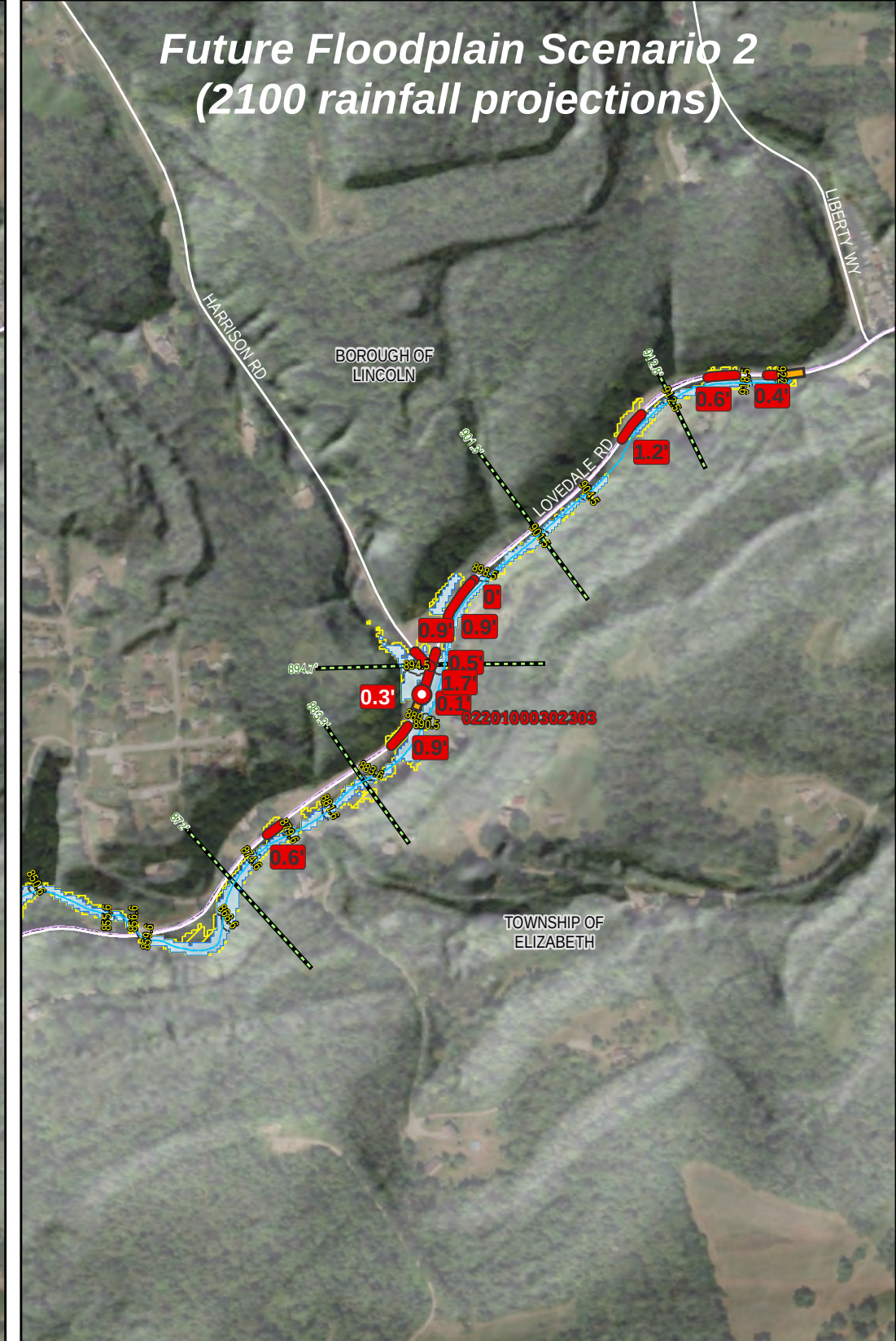
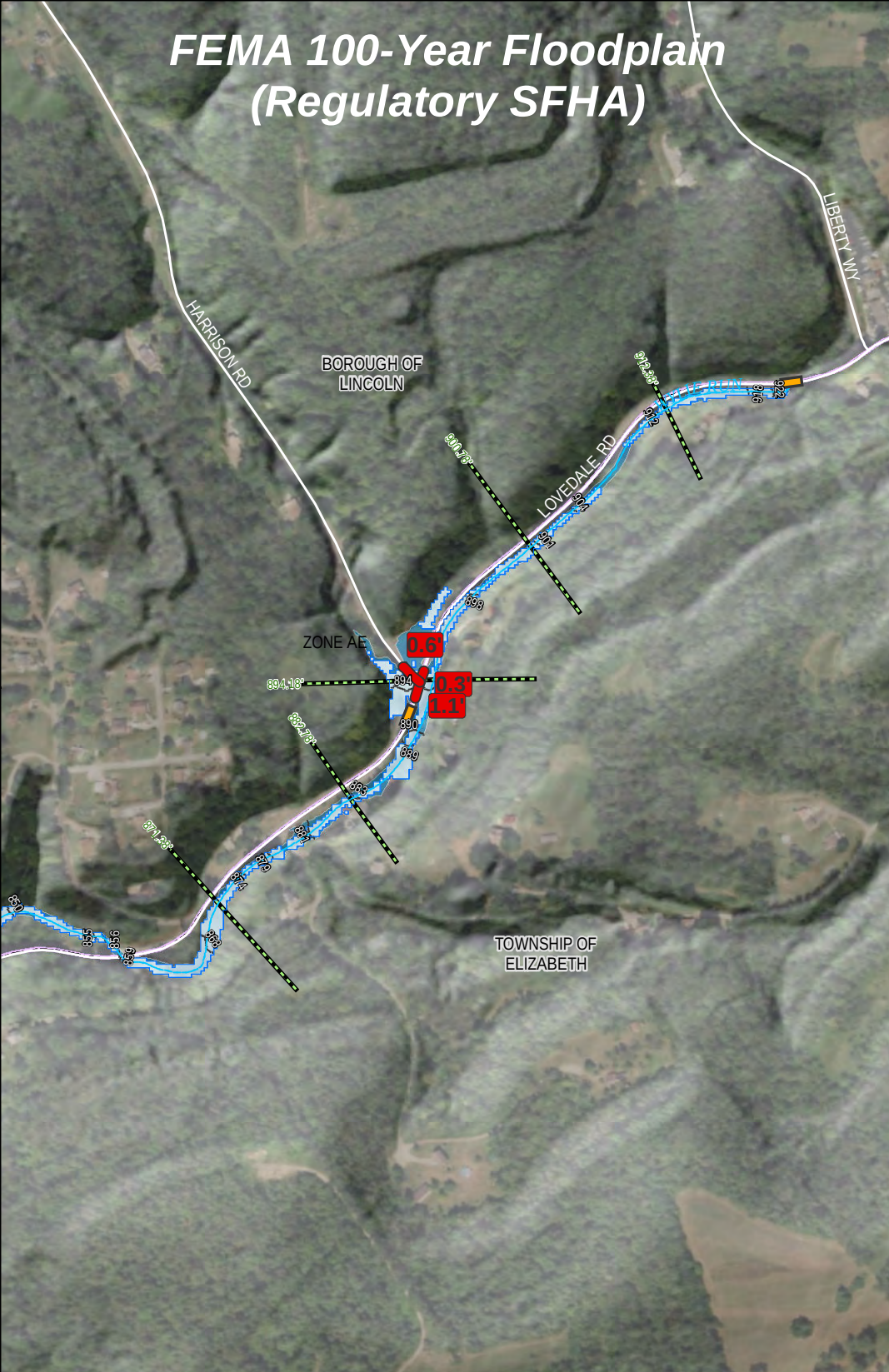


DATA FRAME PROPERTIES:
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NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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INTERNATIONAL





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

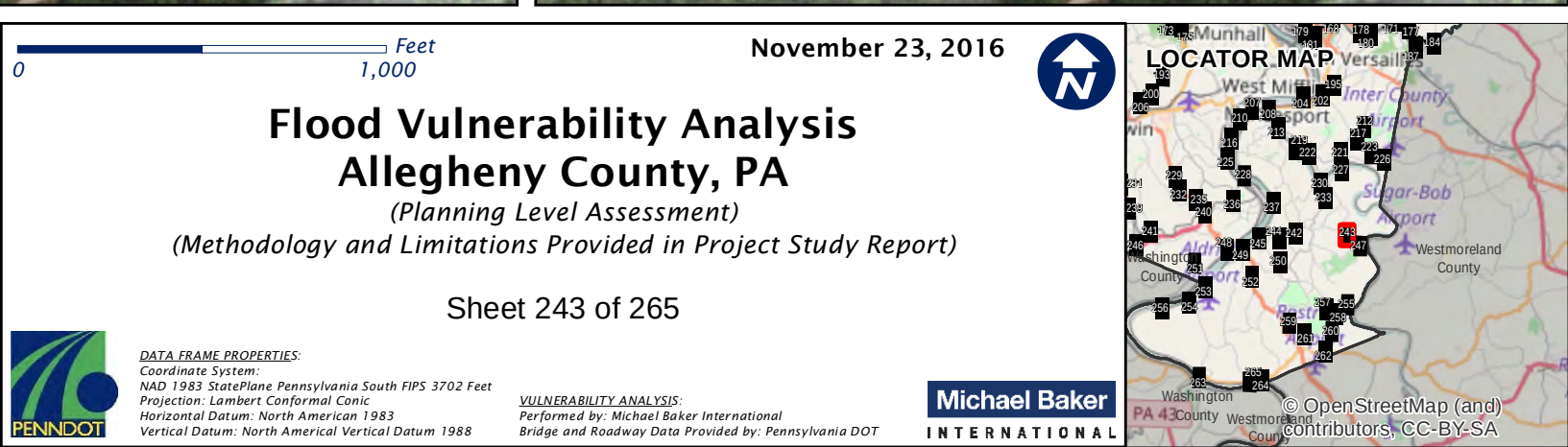
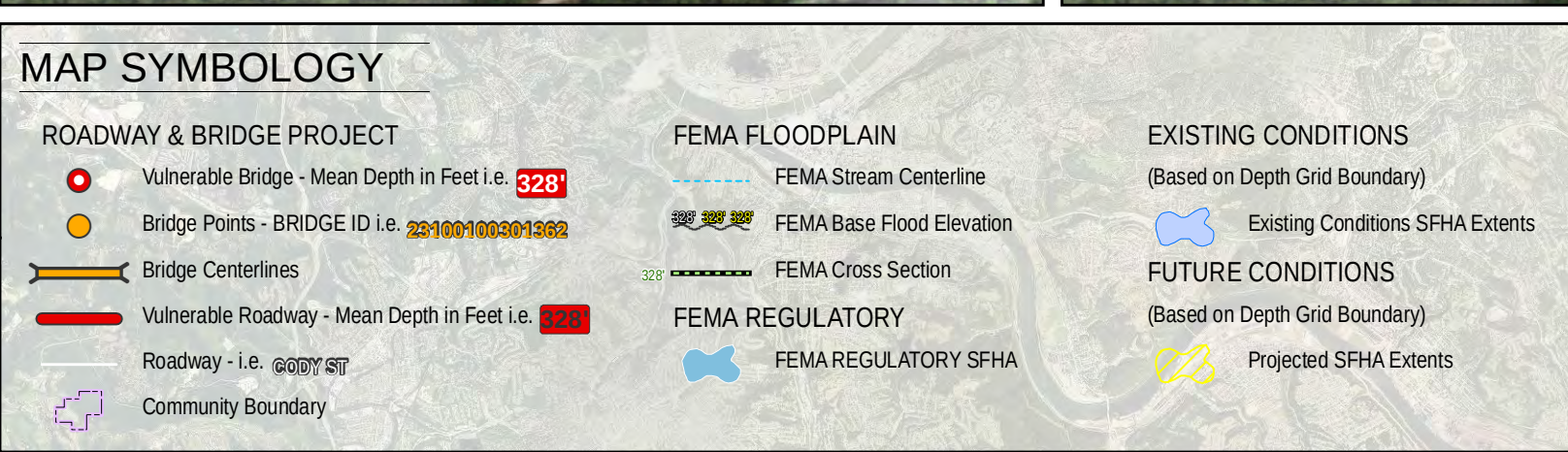
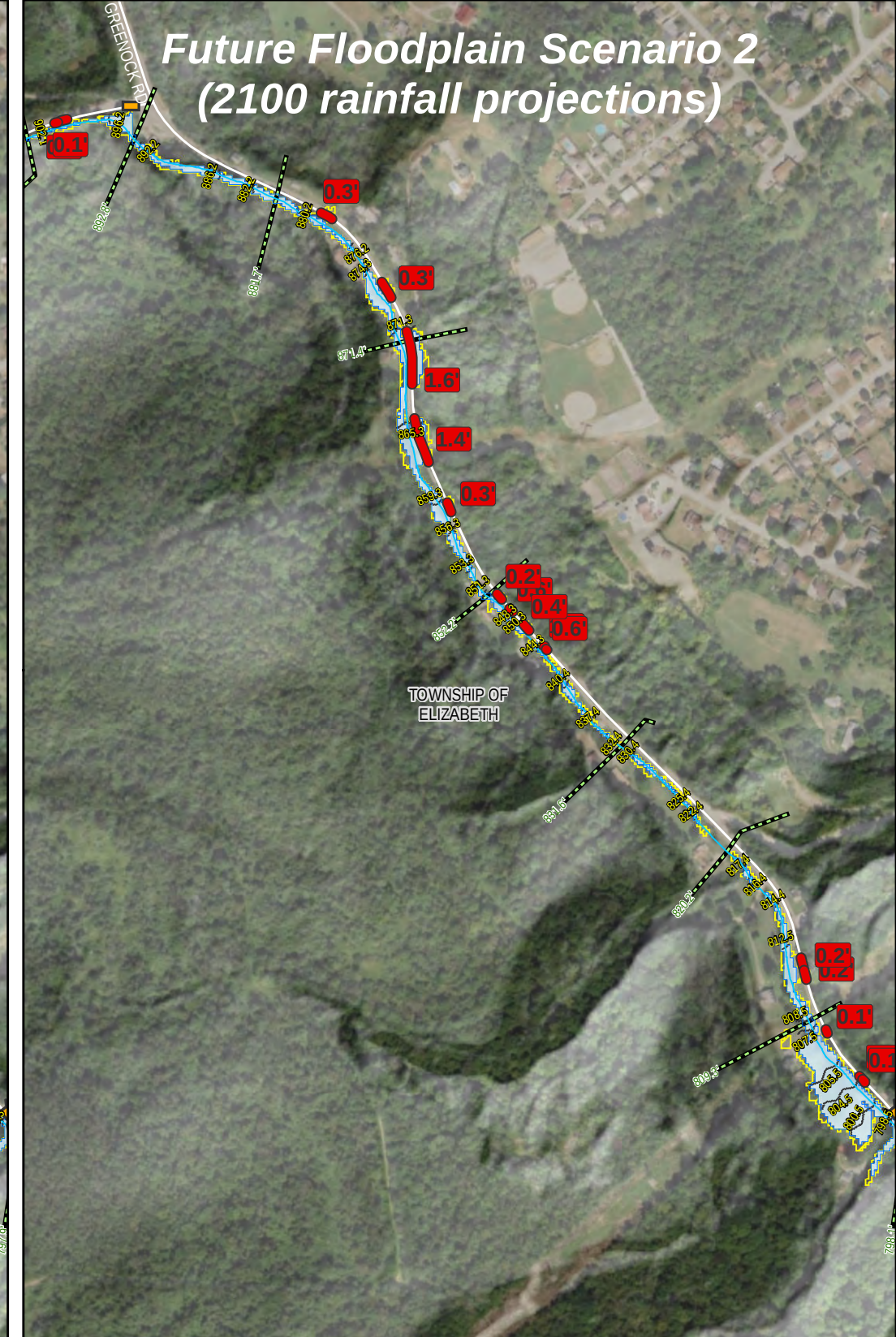
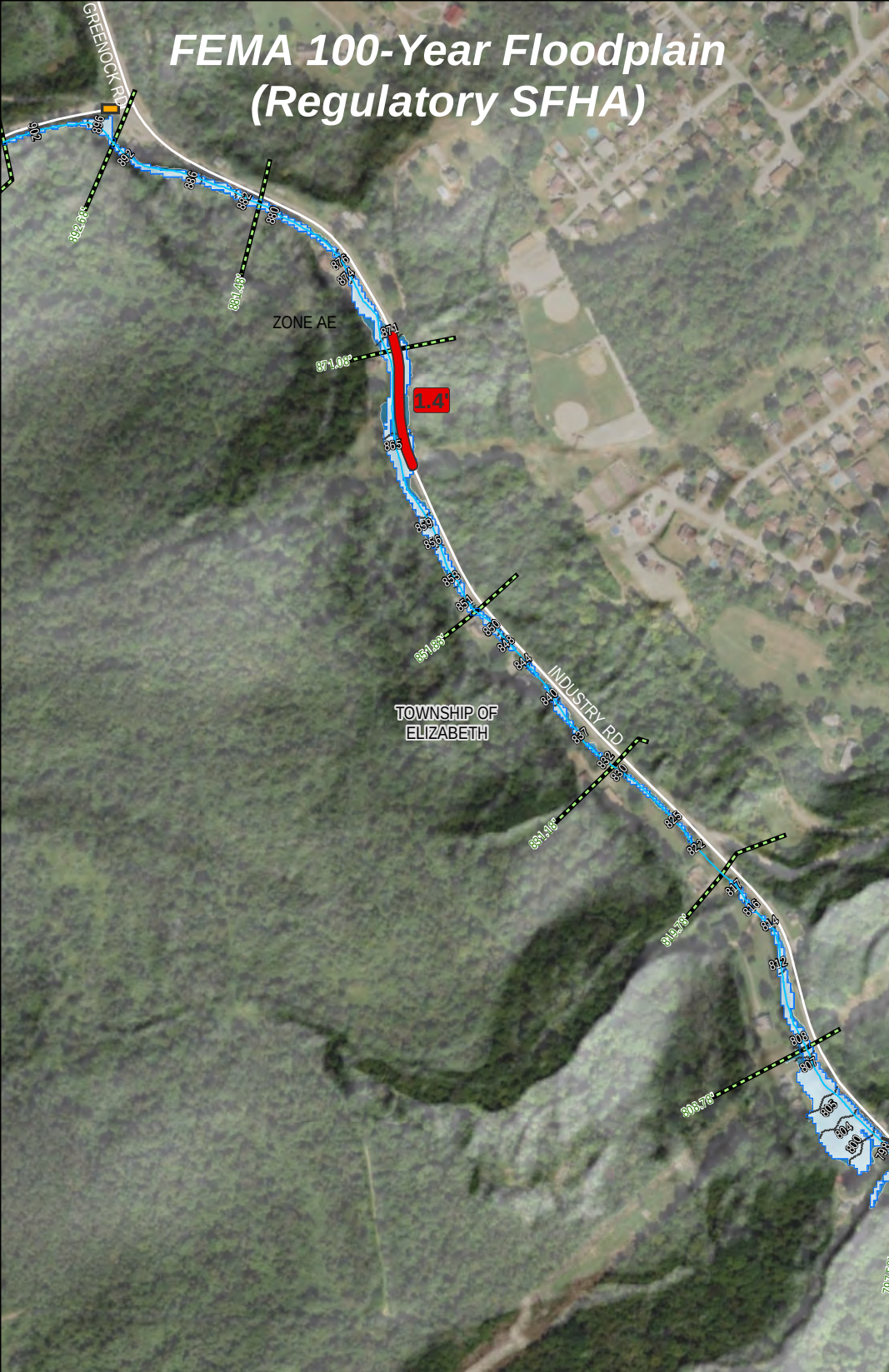
Allegheny County, PA

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

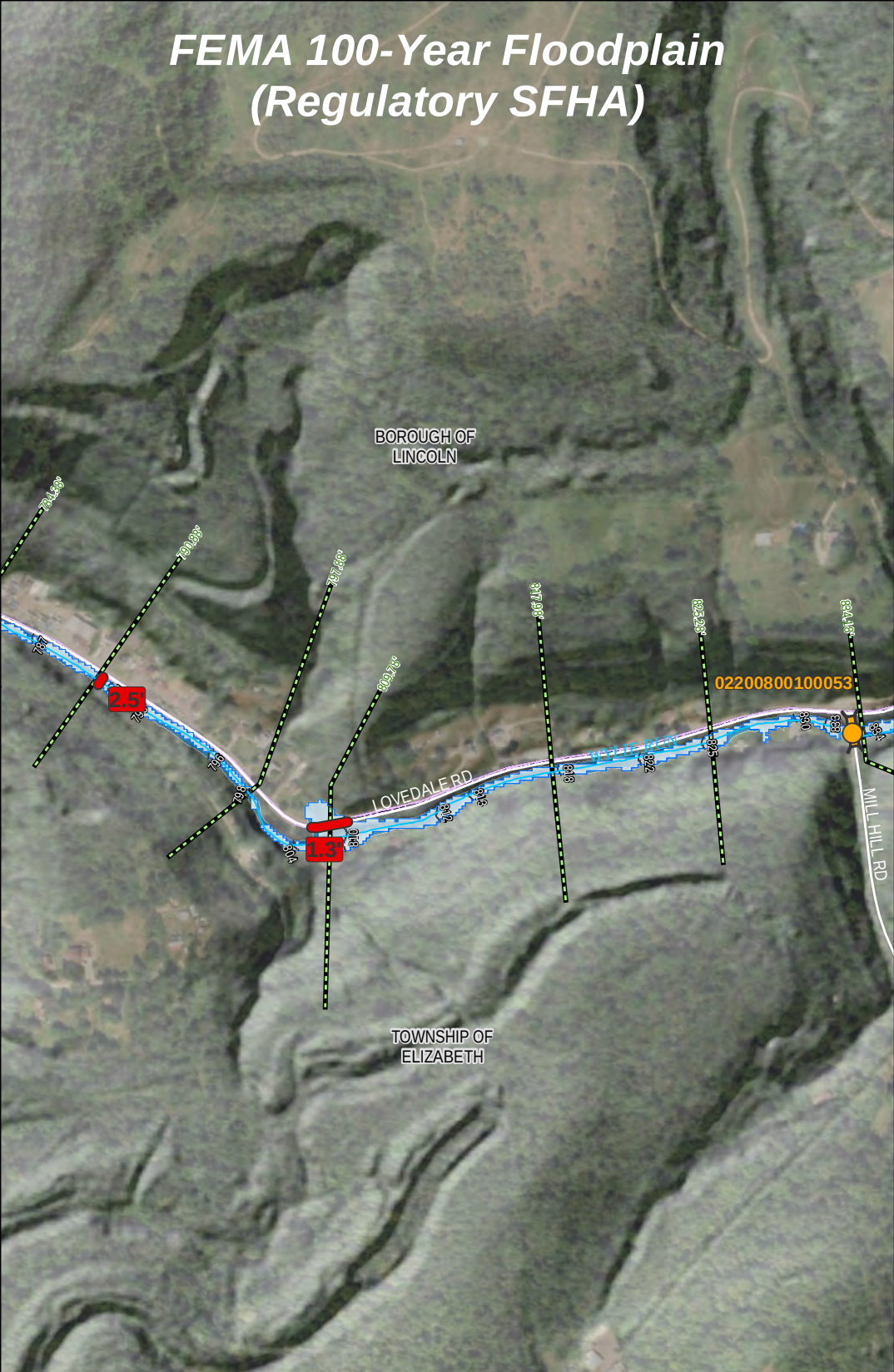
Sheet 242 of 265

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

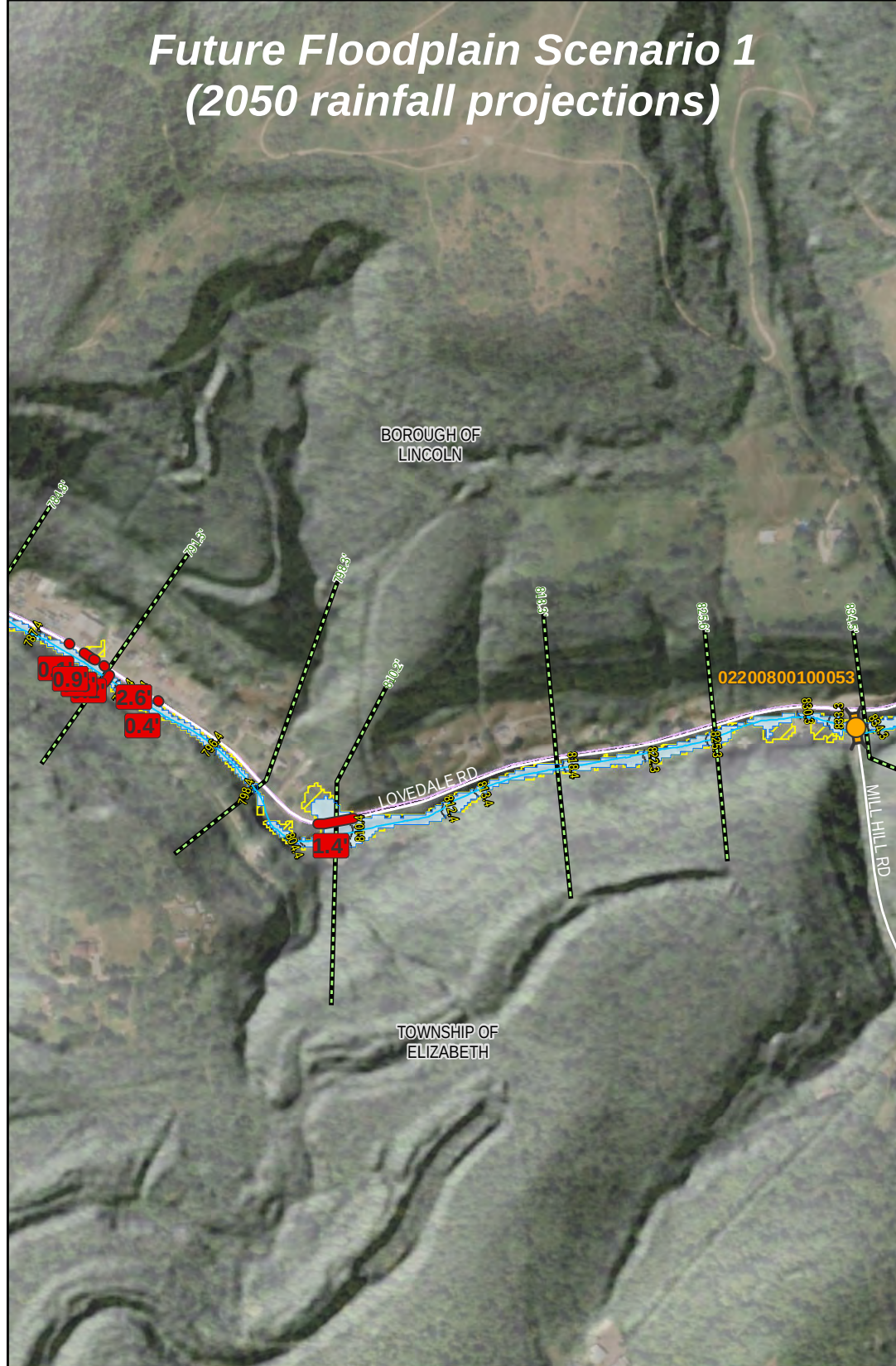
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



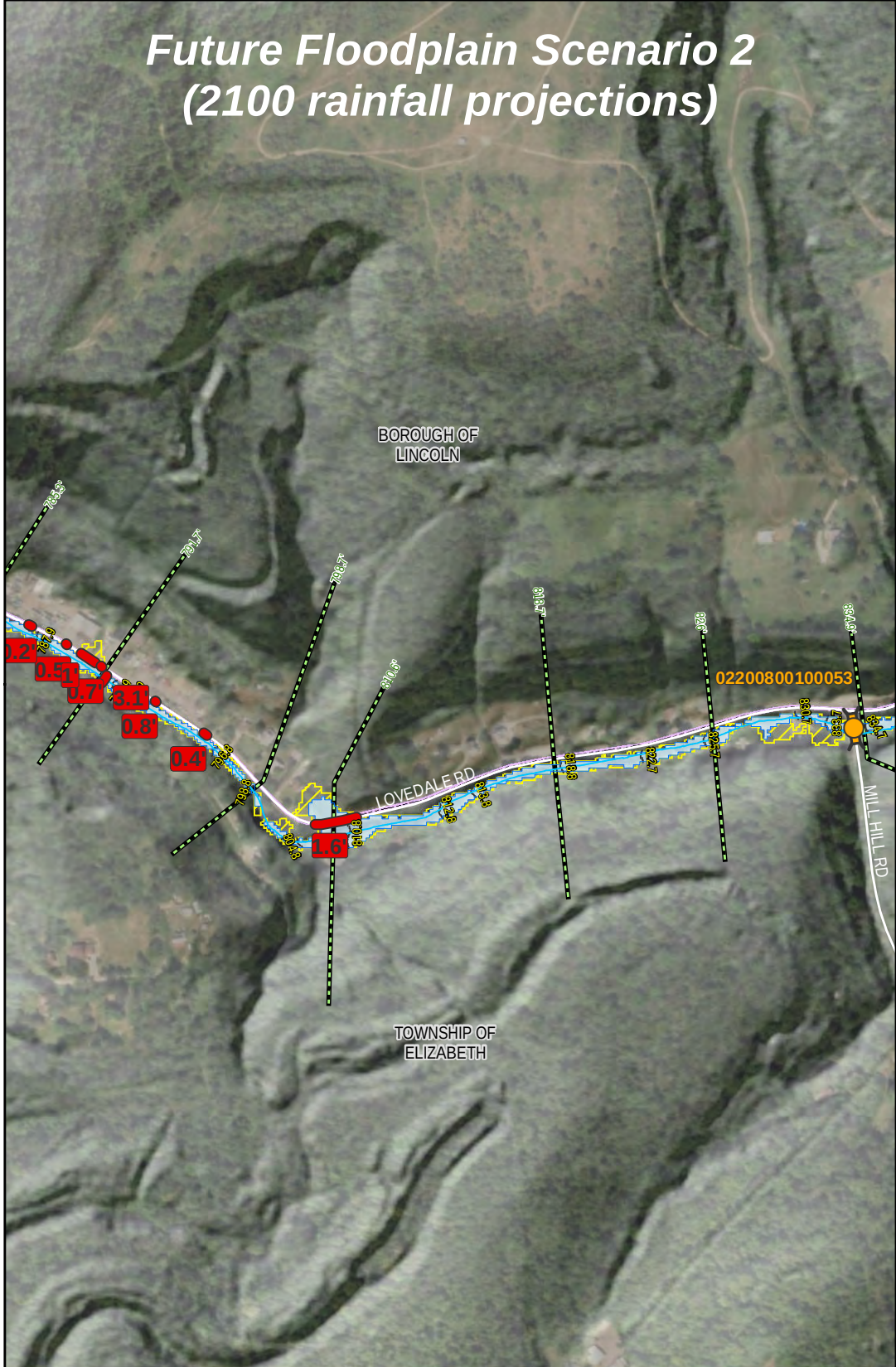
FEMA 100-Year Floodplain
(Regulatory SFHA)



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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016



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

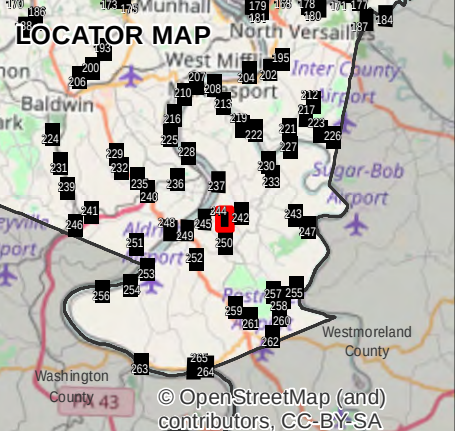
Sheet 244 of 265

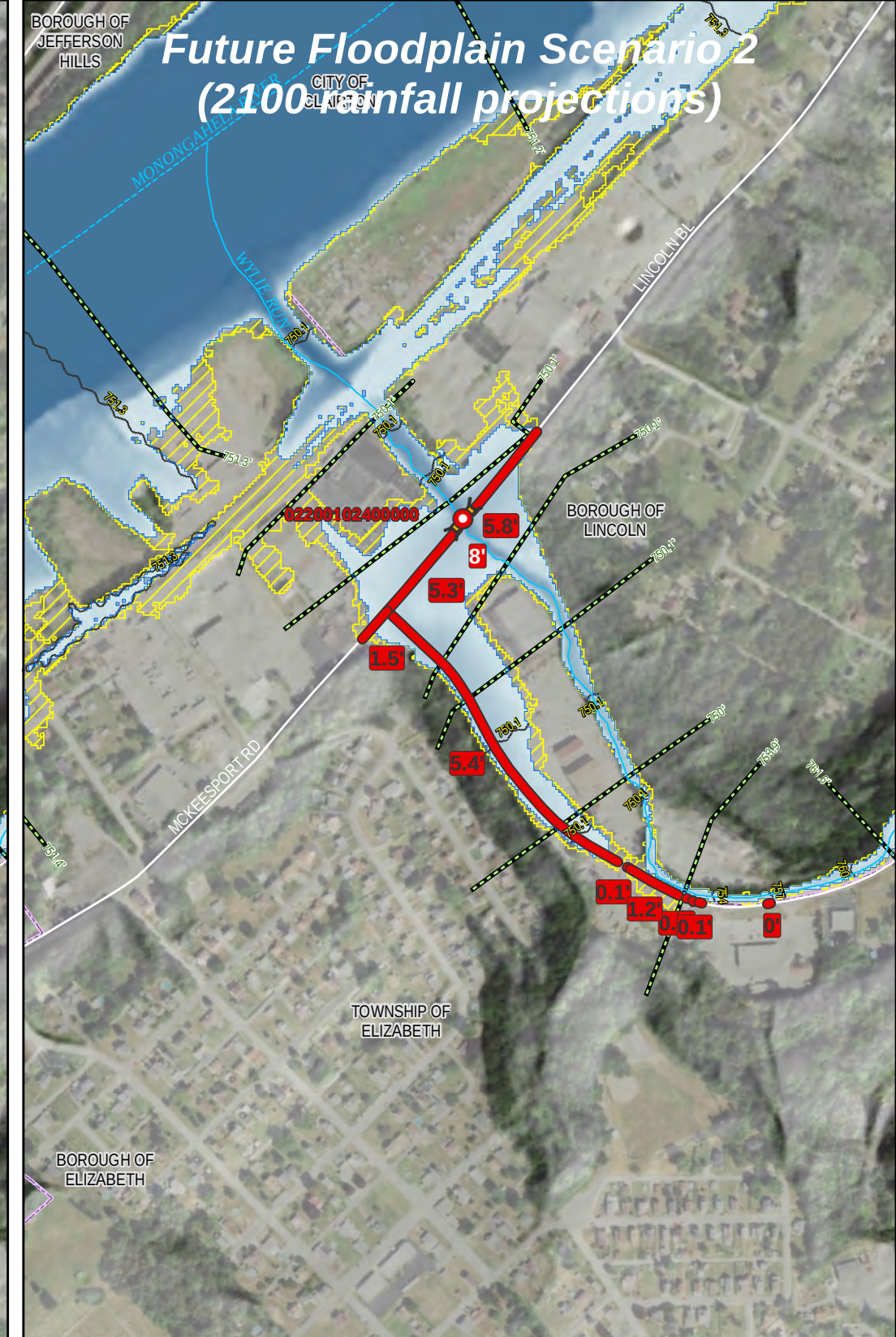
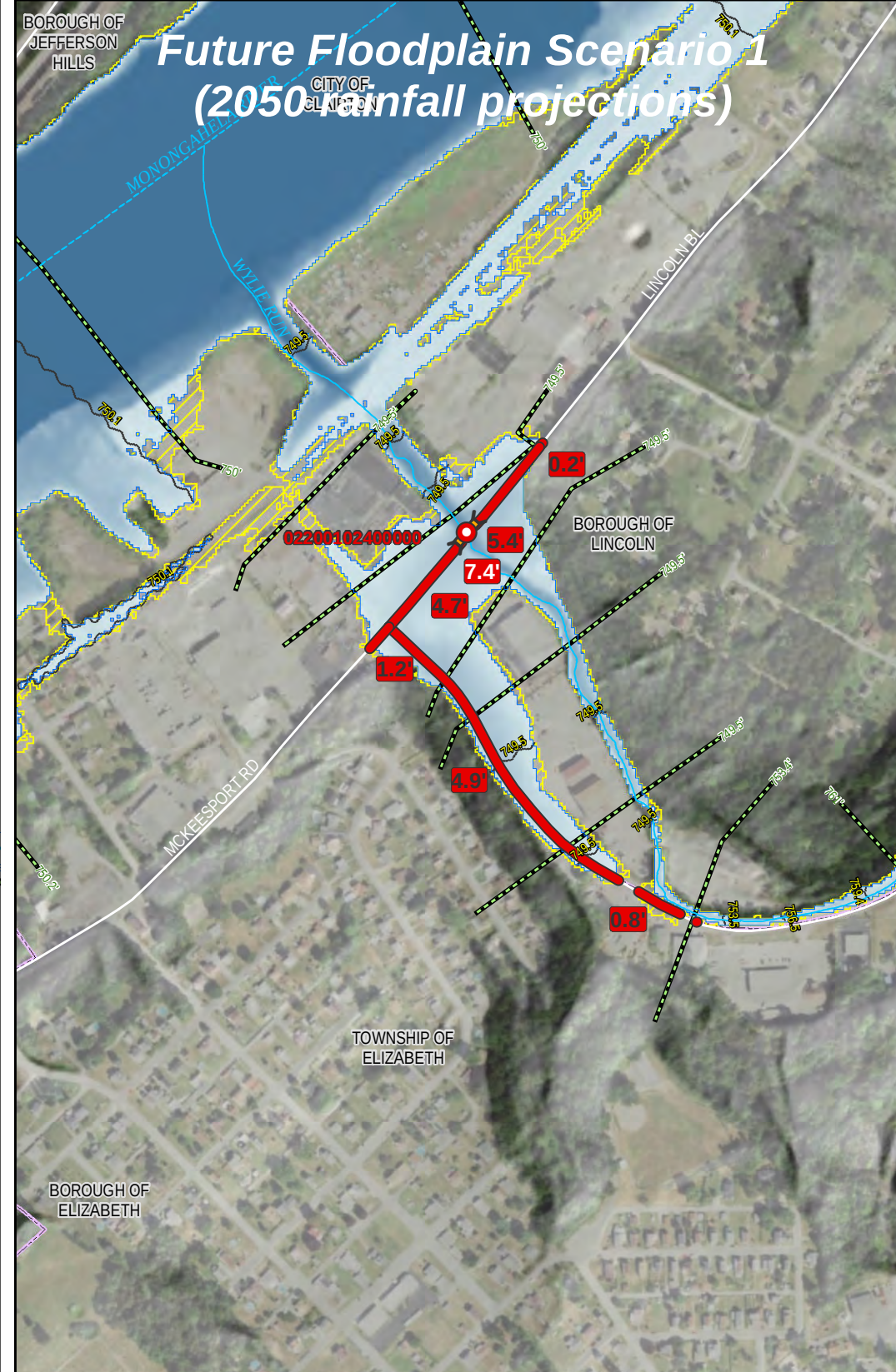
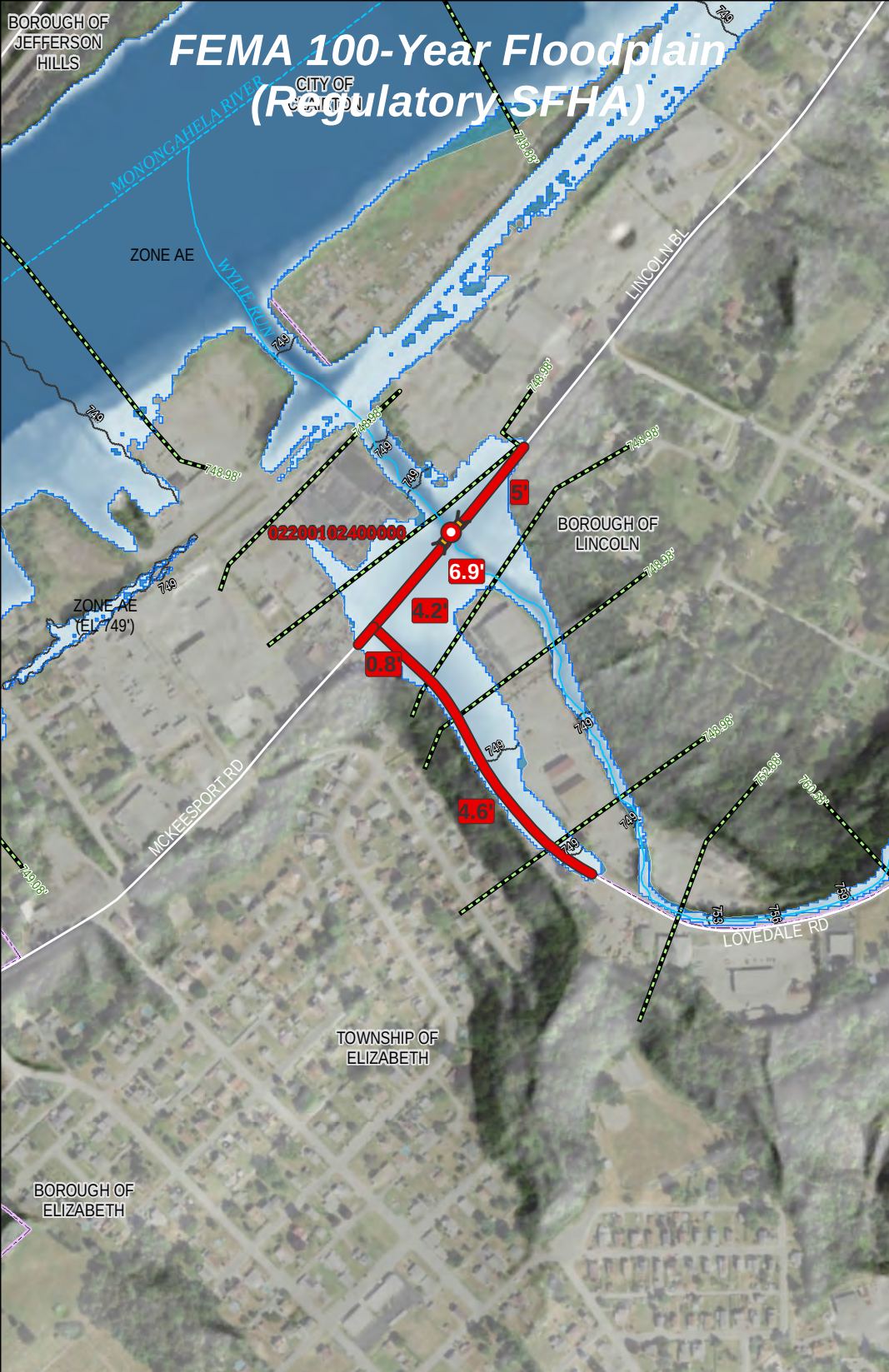


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
INTERNATIONAL





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. CODY ST
	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

0 1,000 Feet

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

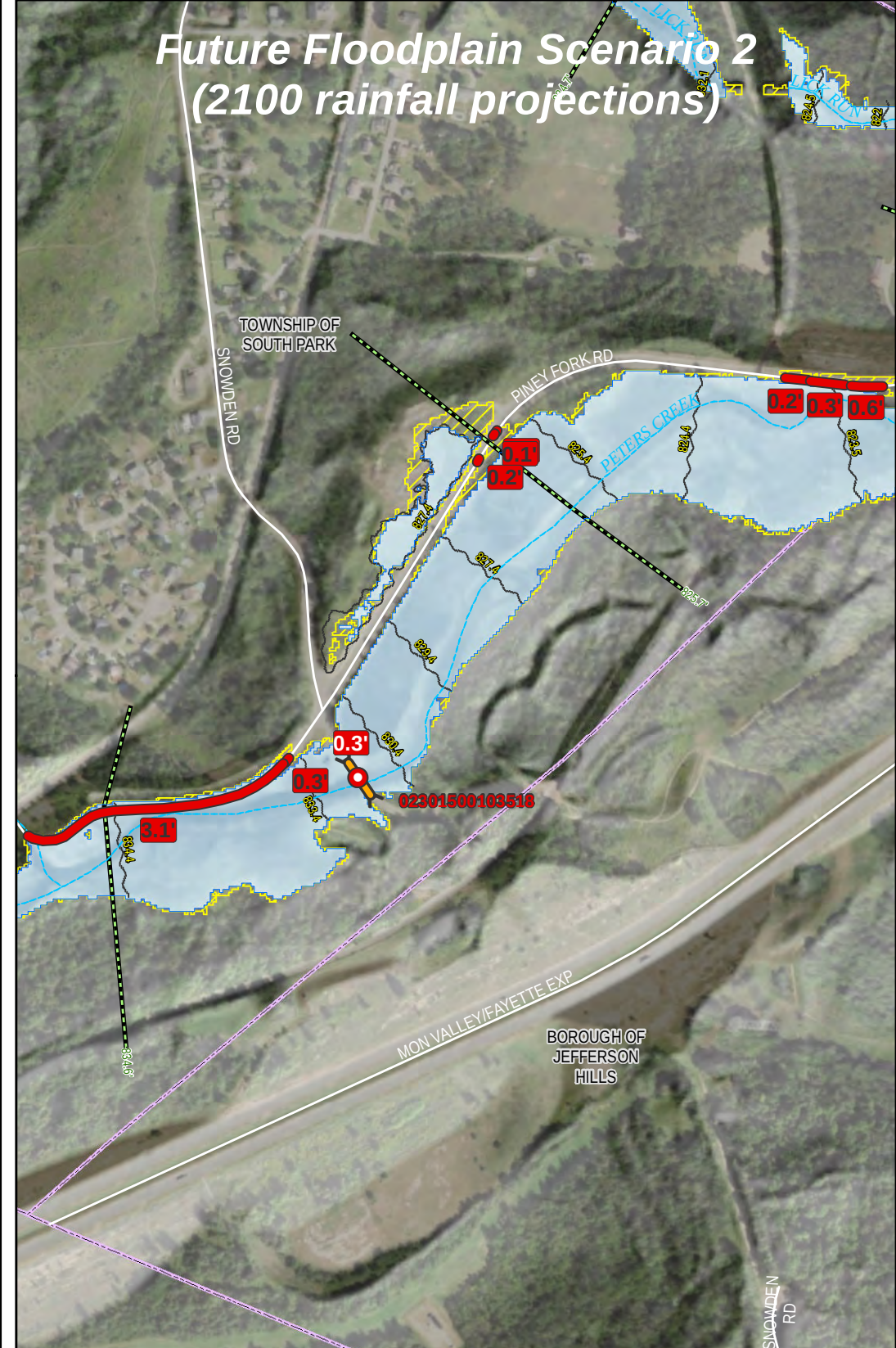
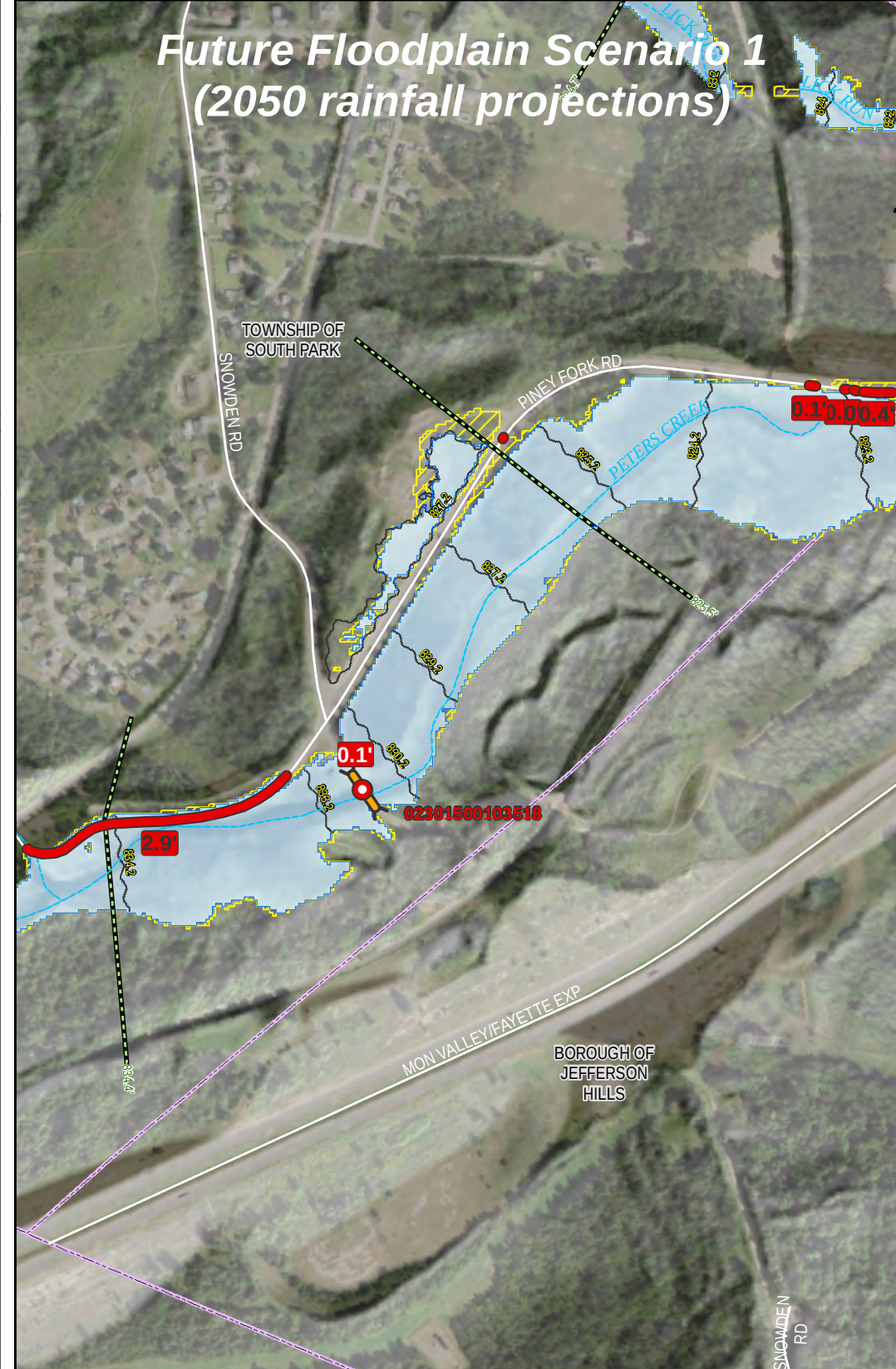
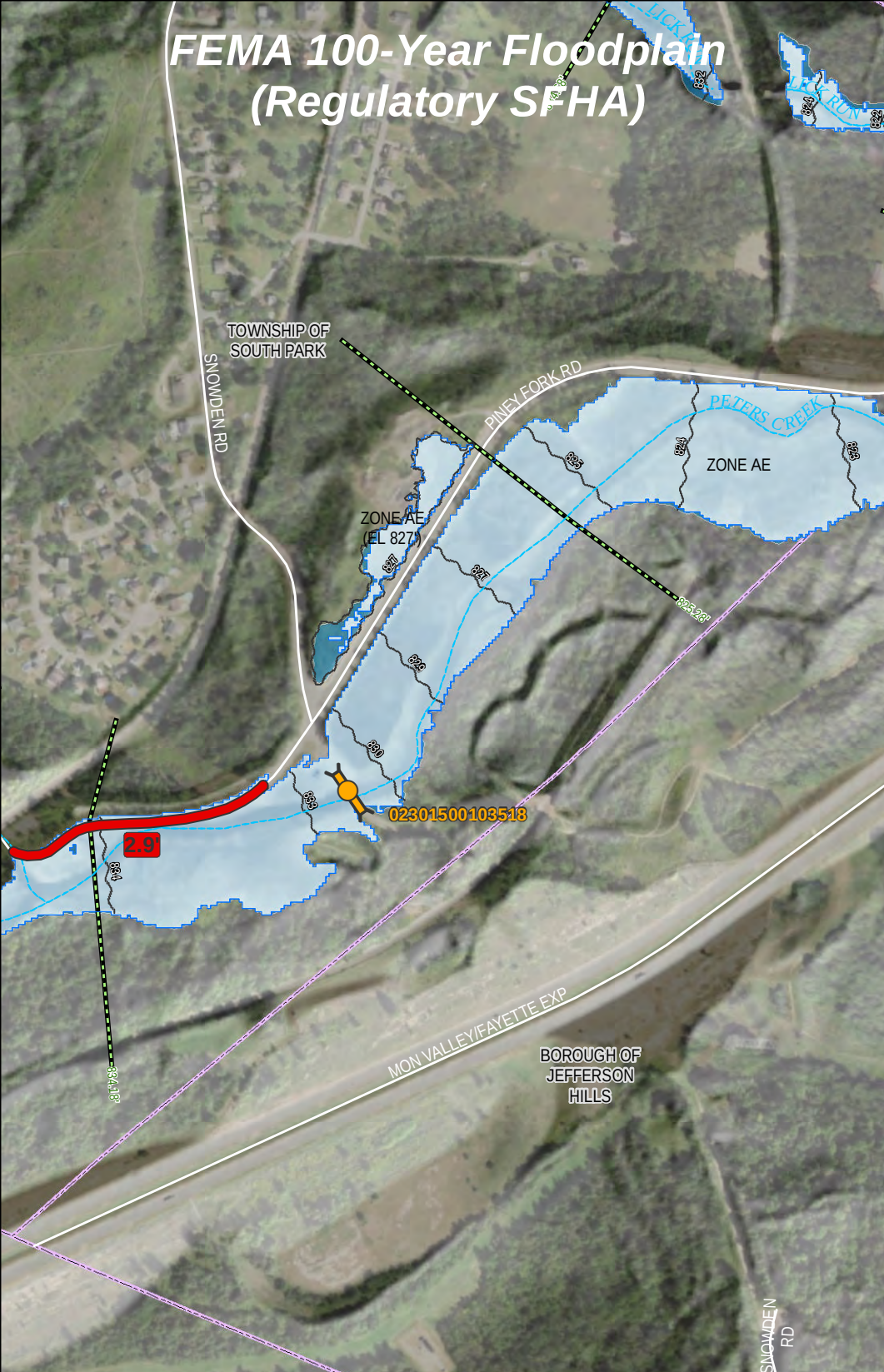
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
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Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

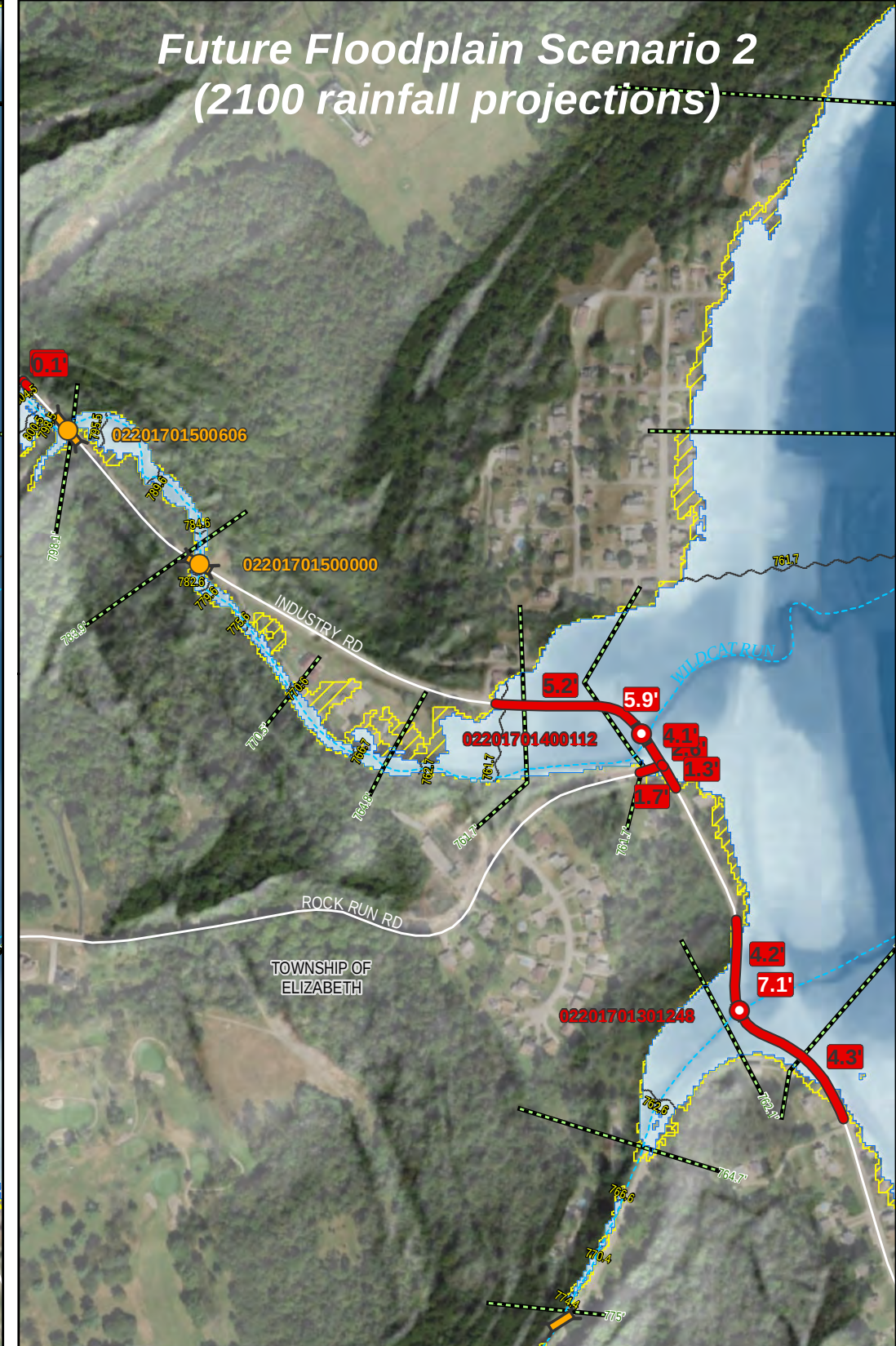
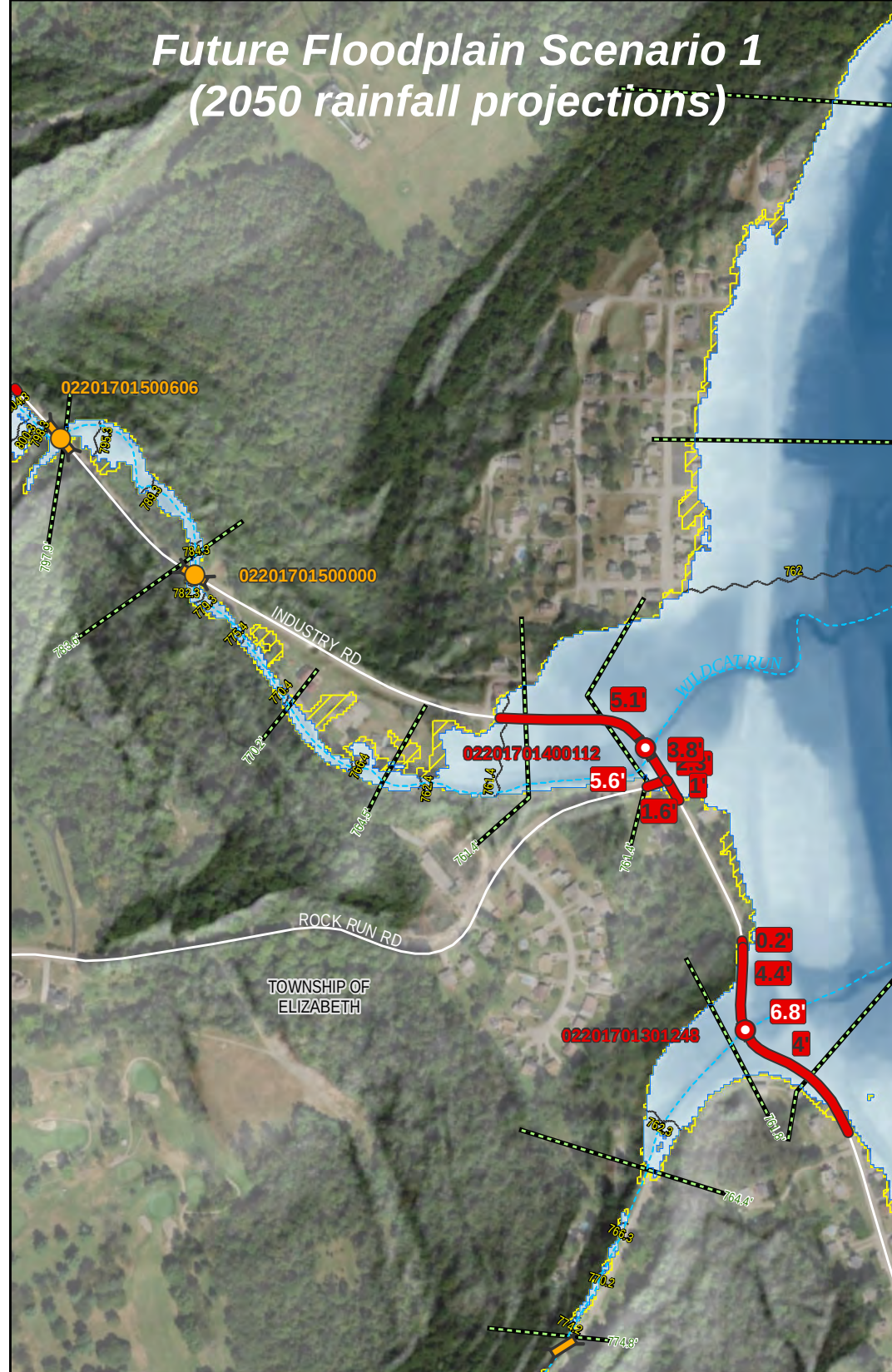
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

Sheet 246 of 265

DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

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Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

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Michael Baker INTERNATIONAL

LOCATOR MAP

DATA FRAME PROPERTIES:
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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. **CODY ST**
- 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

0 Feet
1,000

November 23, 2016



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

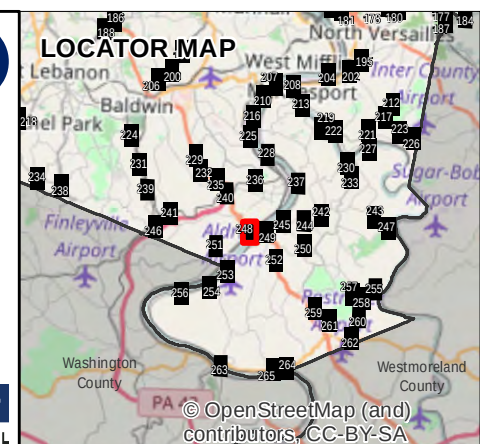
Sheet 248 of 265

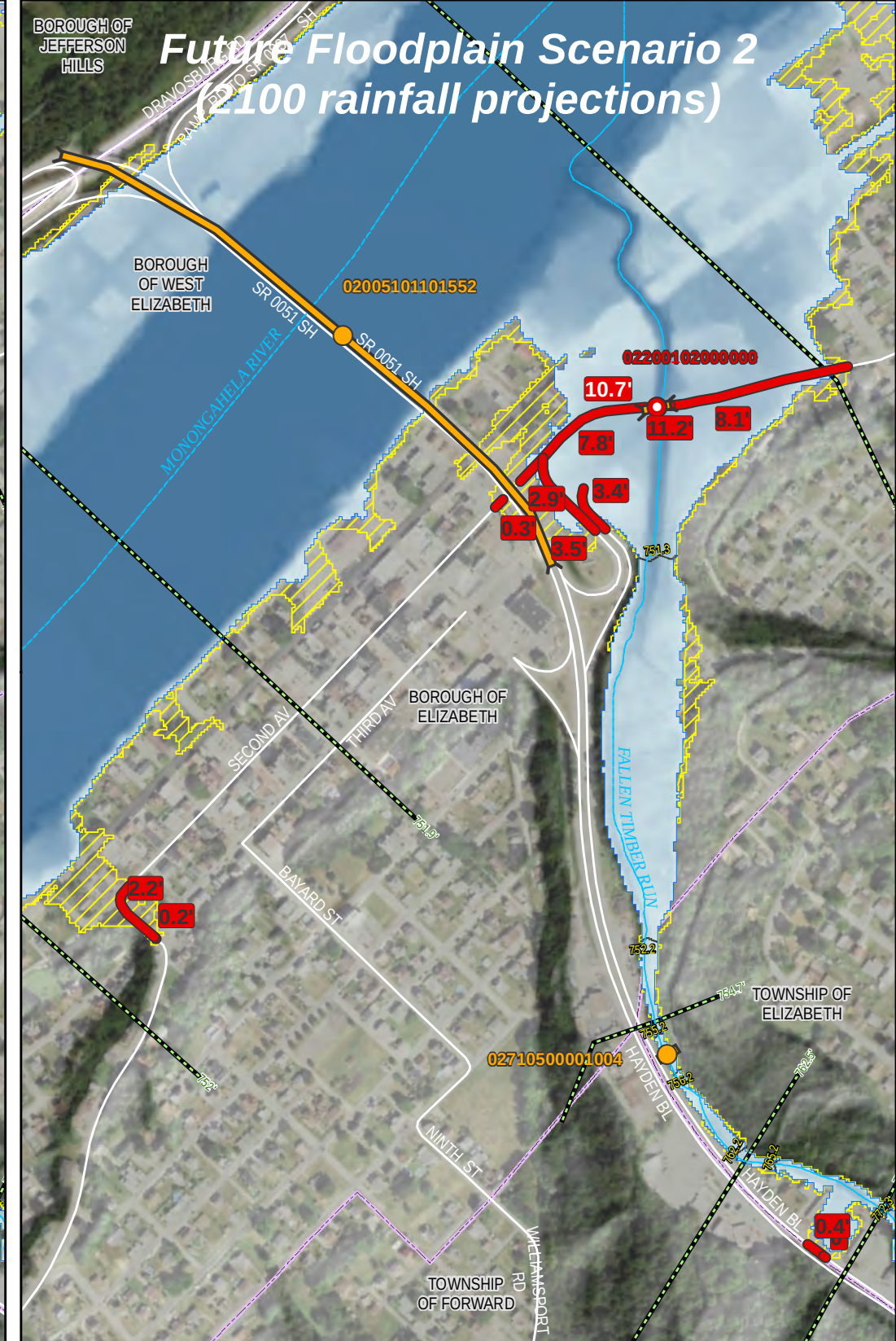
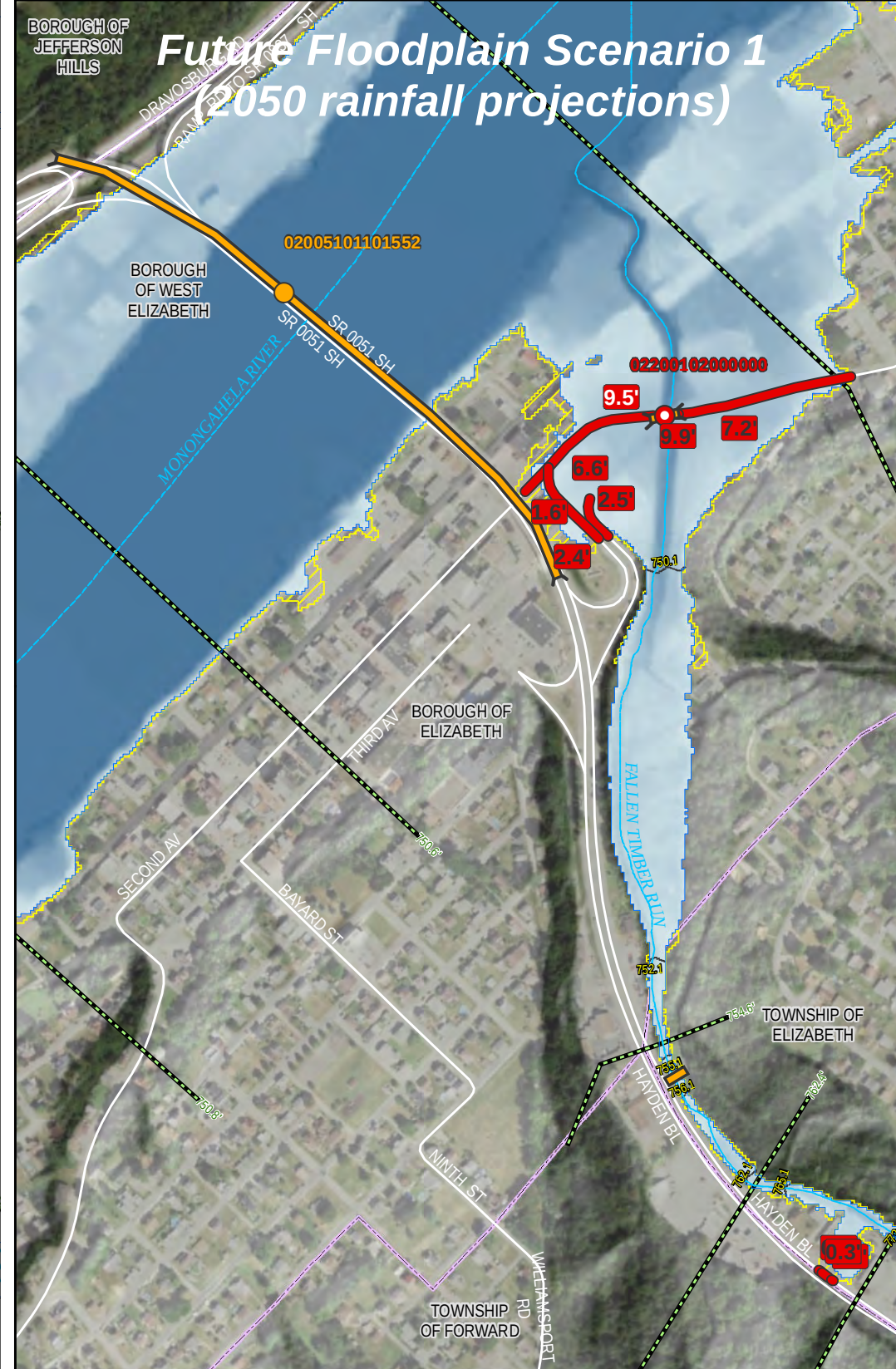
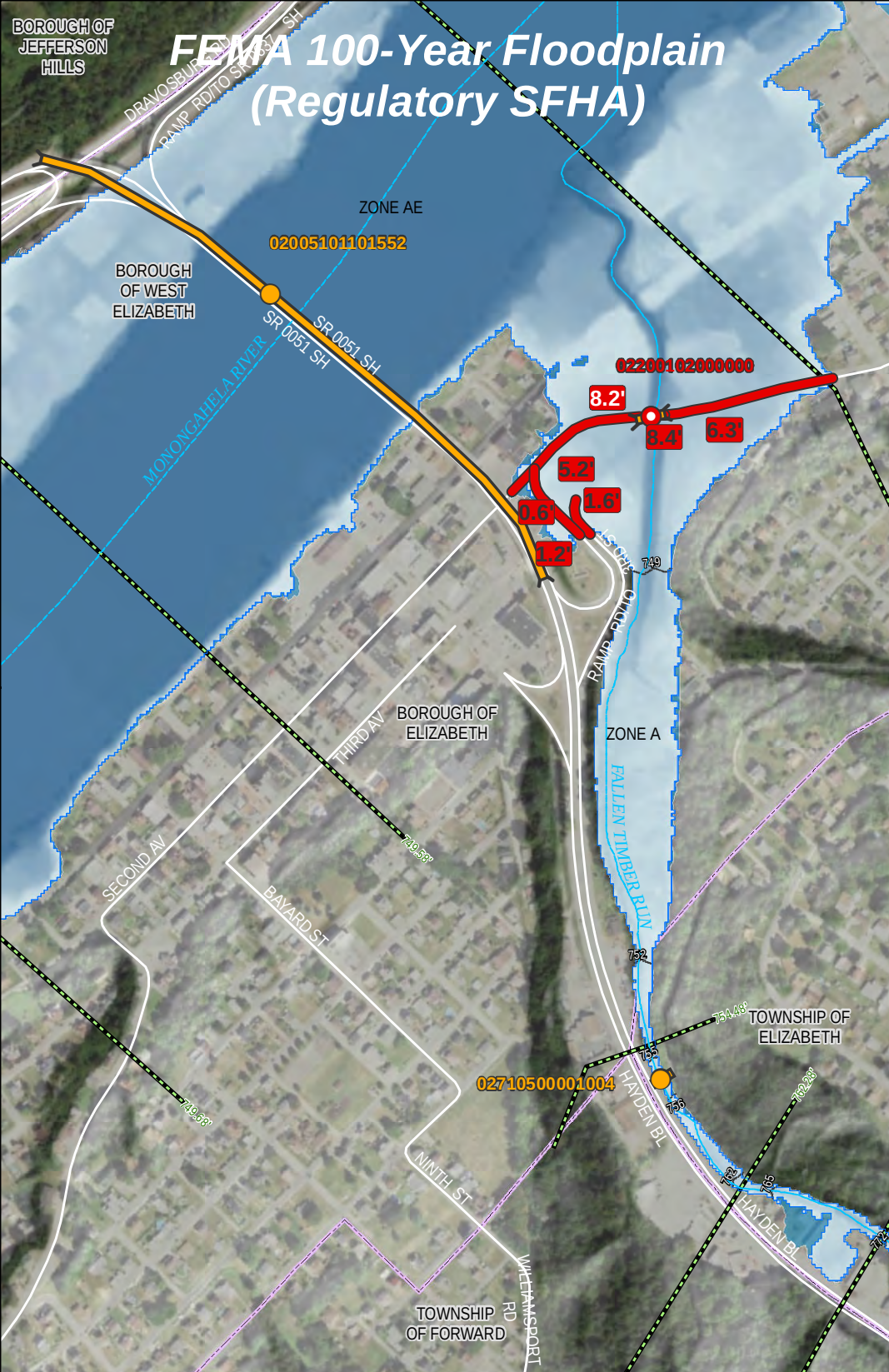


DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**





MAP SYMBOLOGY

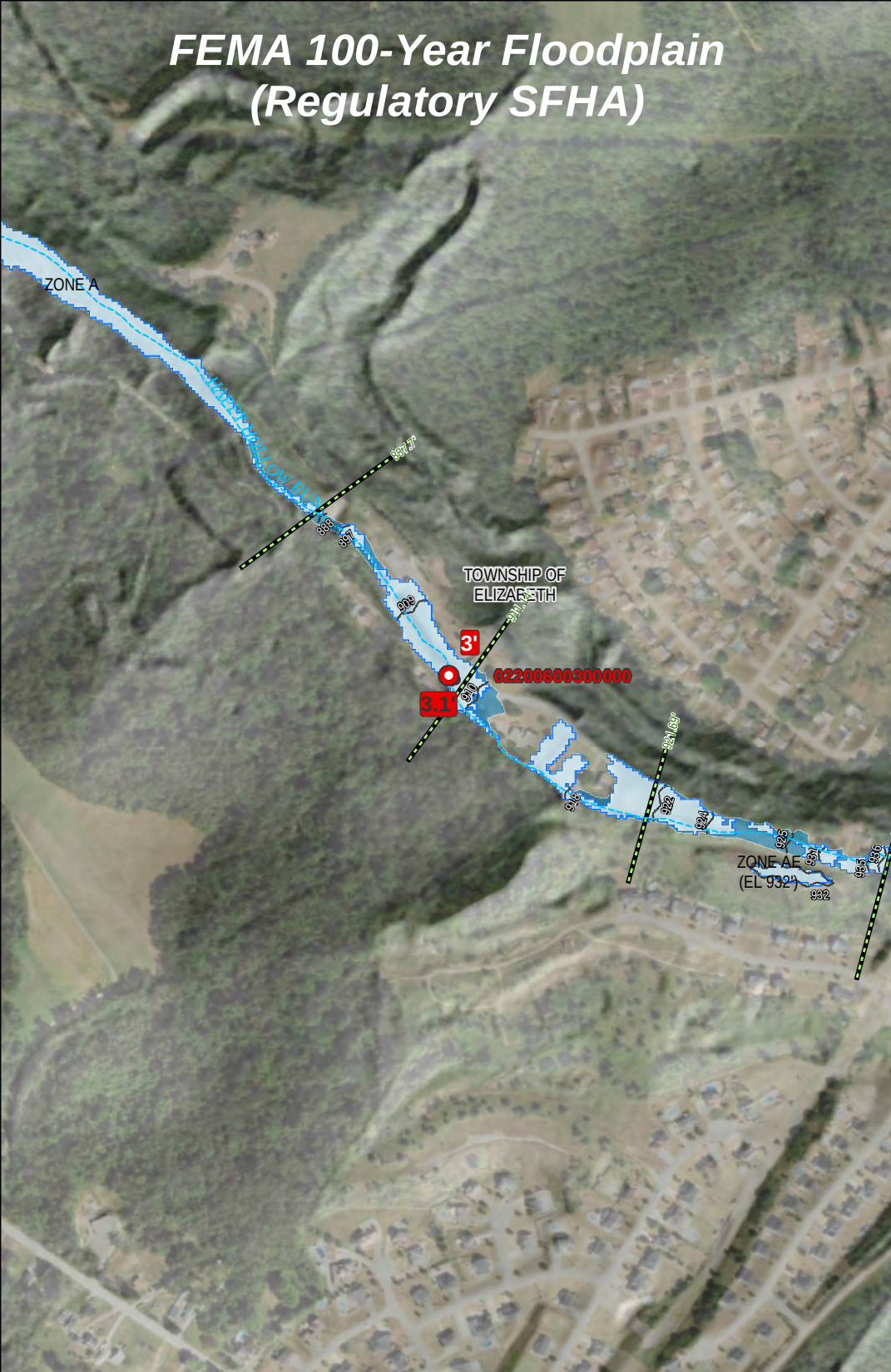
ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

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. **328'**
- Bridge Points - BRIDGE ID i.e. **23100100301362**
- Bridge Centerlines
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- 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

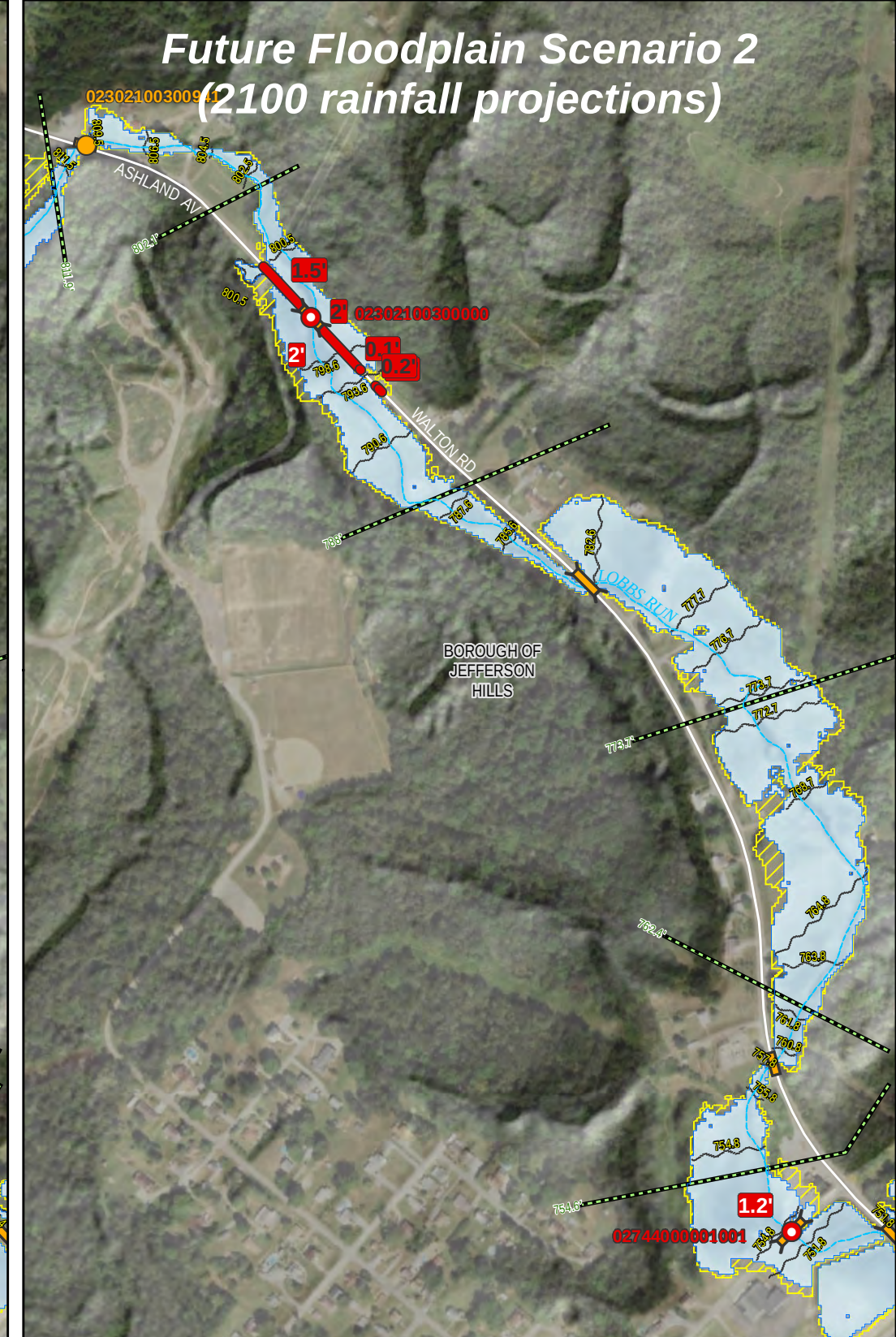
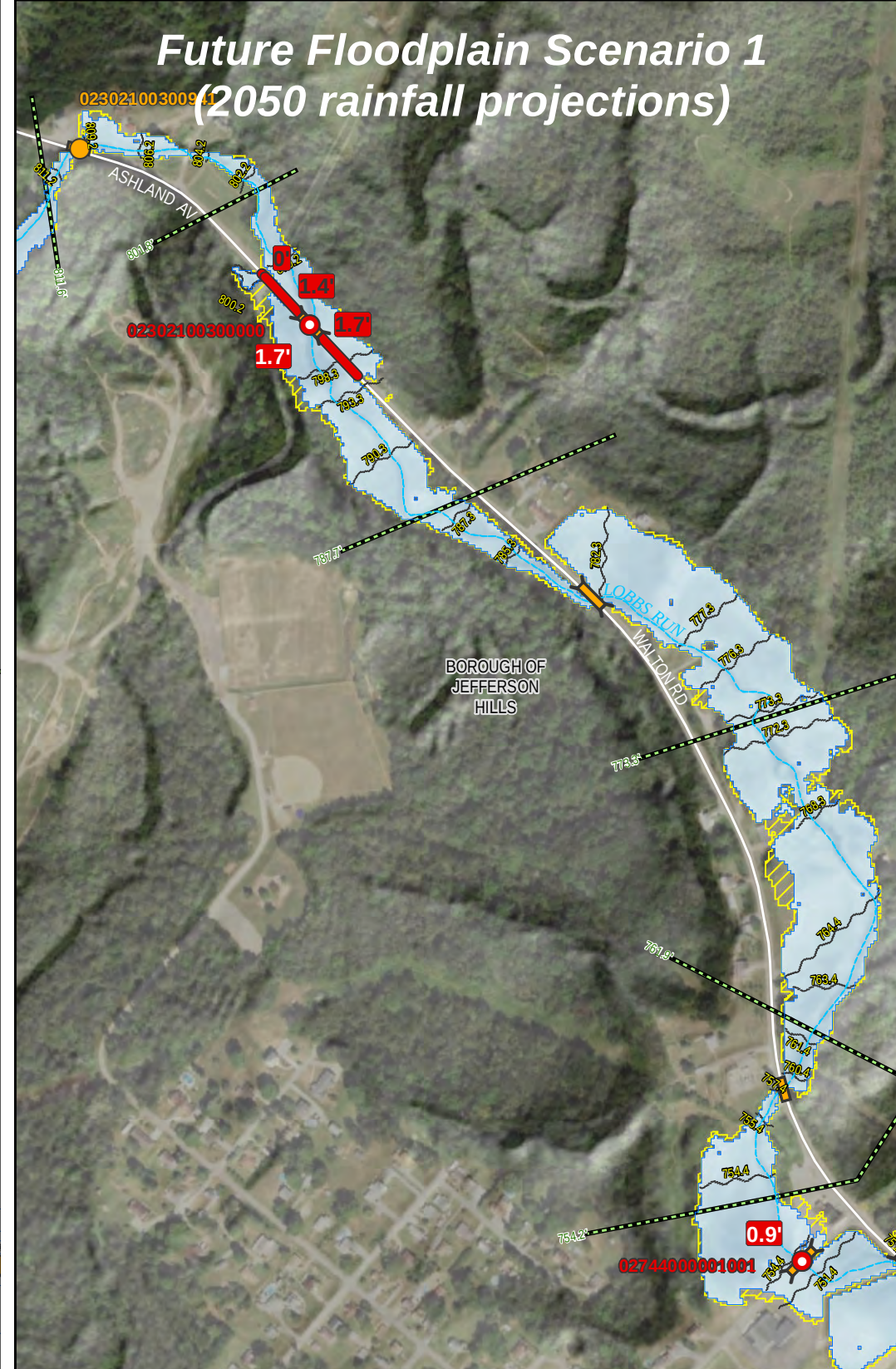
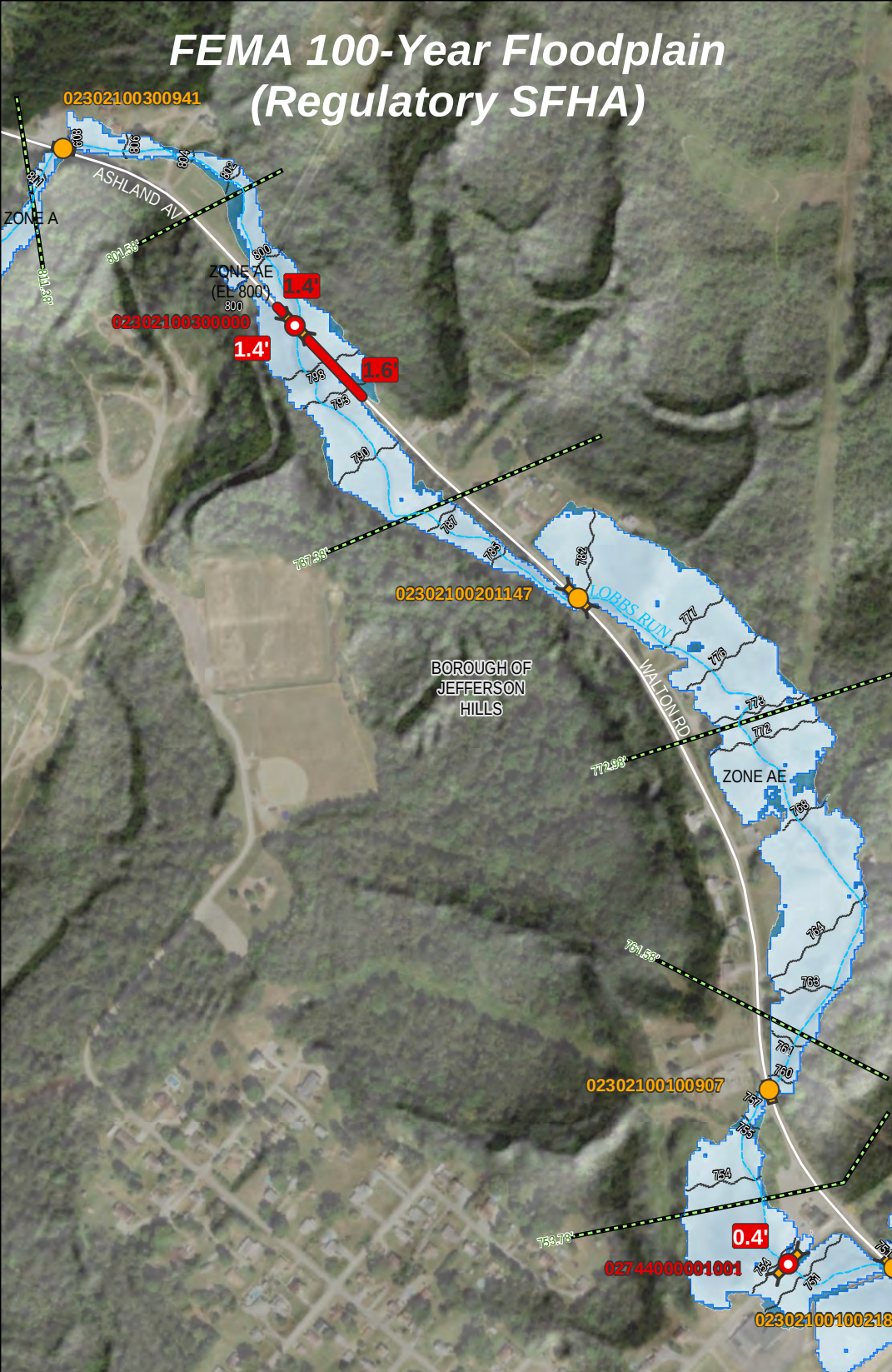
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP



MAP SYMBOLOGY

Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	Projected SFHA Extents
Bridge Centerlines	FEMA Cross Section	
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY SFHA	
Roadway - i.e. CODY ST		
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

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

Sheet 251 of 265

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

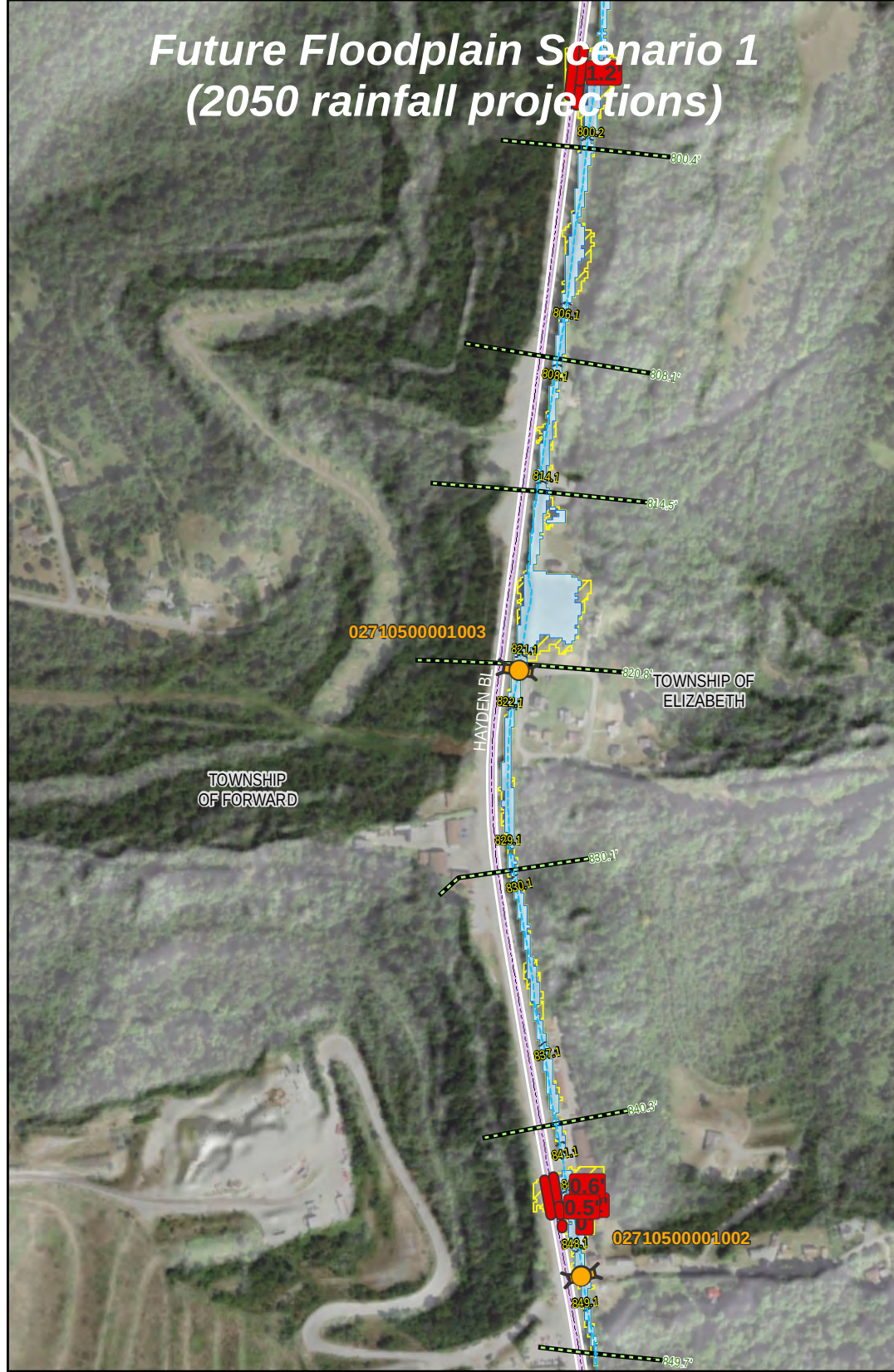
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

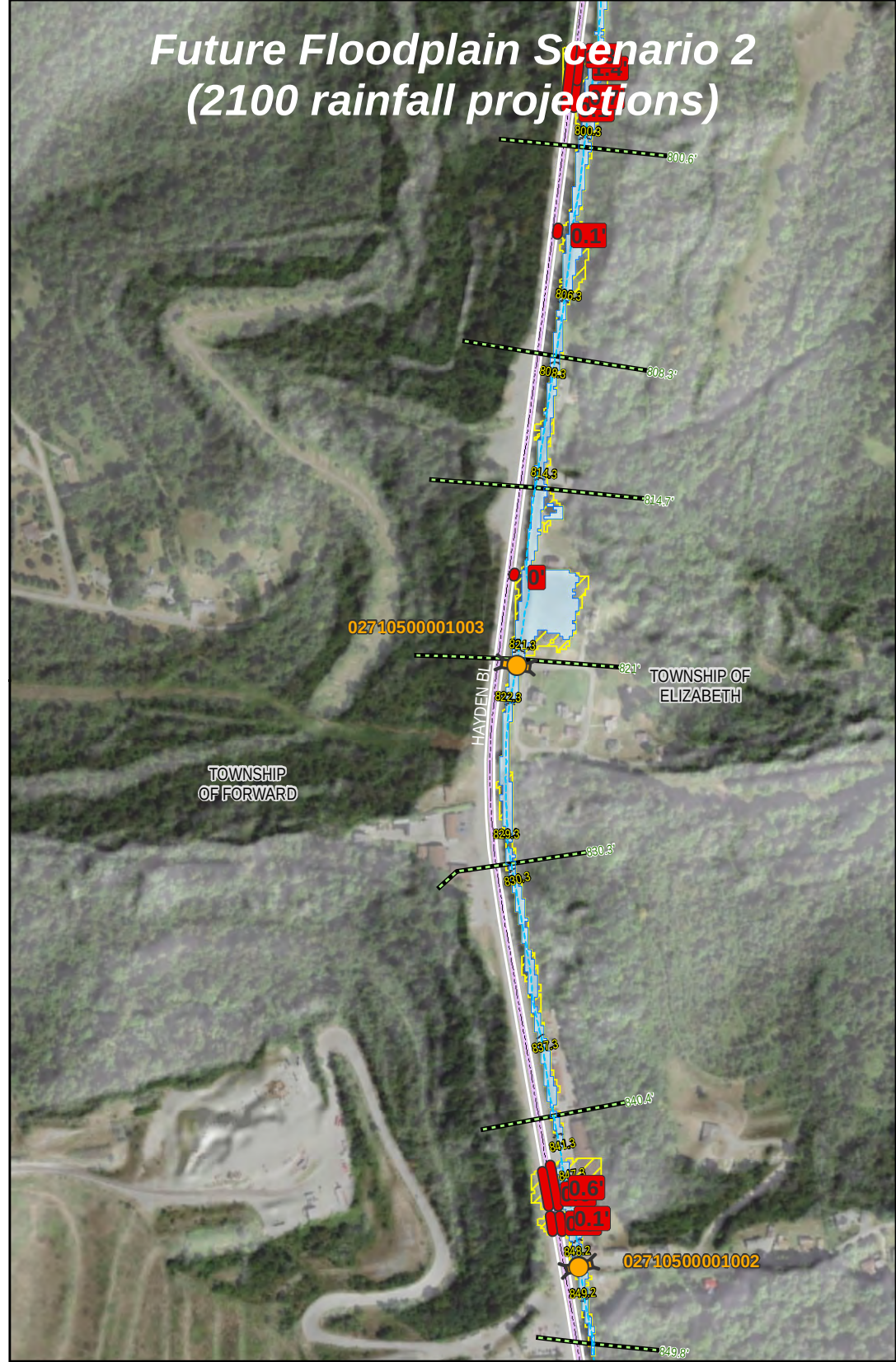
FEMA 100-Year Floodplain
(Regulatory SFHA)



Future Floodplain Scenario 1
(2050 rainfall projections)



Future Floodplain Scenario 2
(2100 rainfall projections)



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

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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

0 1,000 Feet

November 23, 2016



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

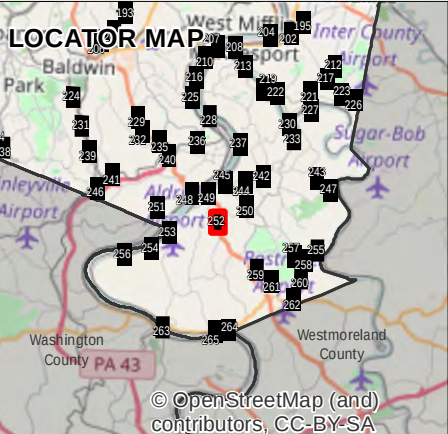
Sheet 252 of 265



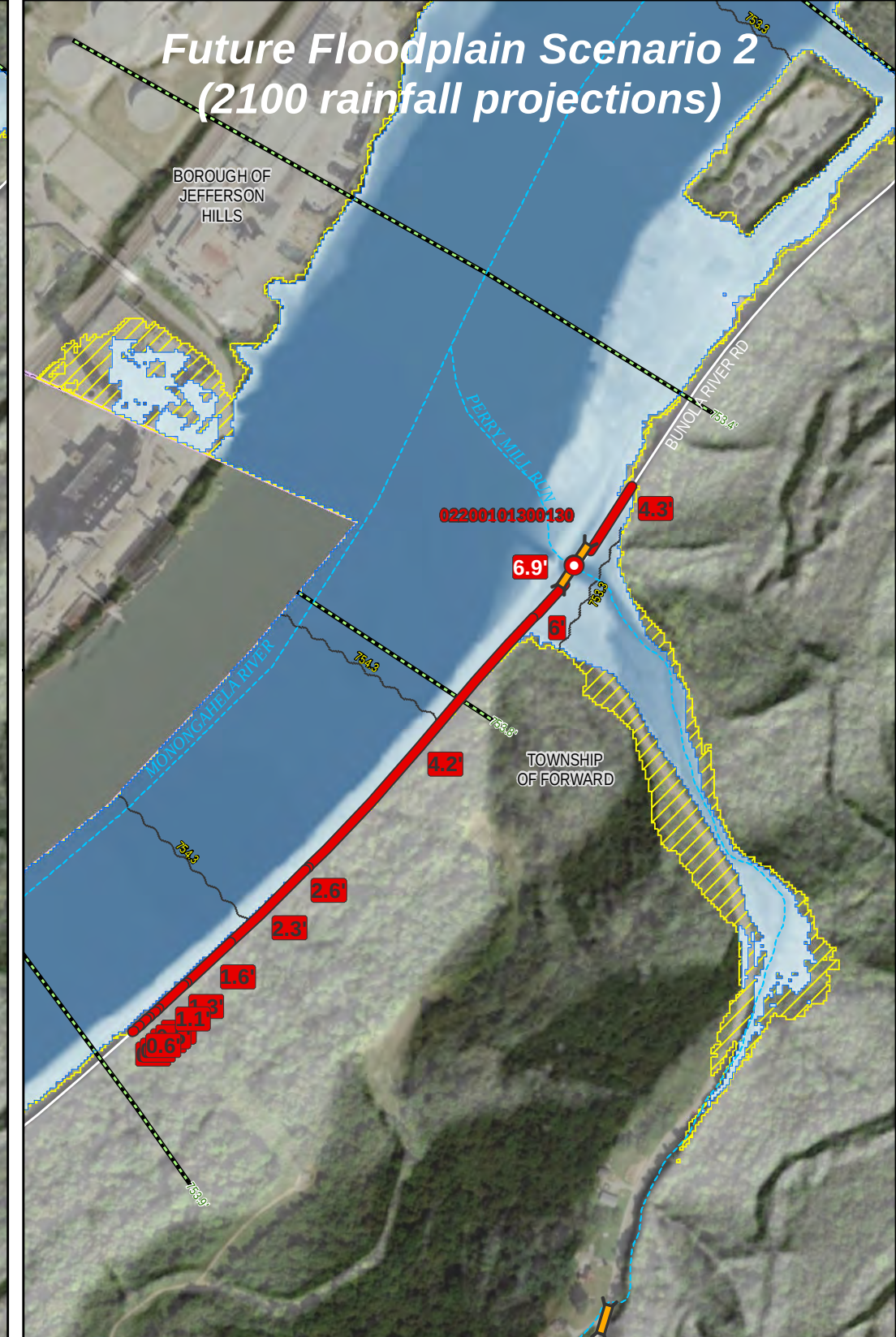
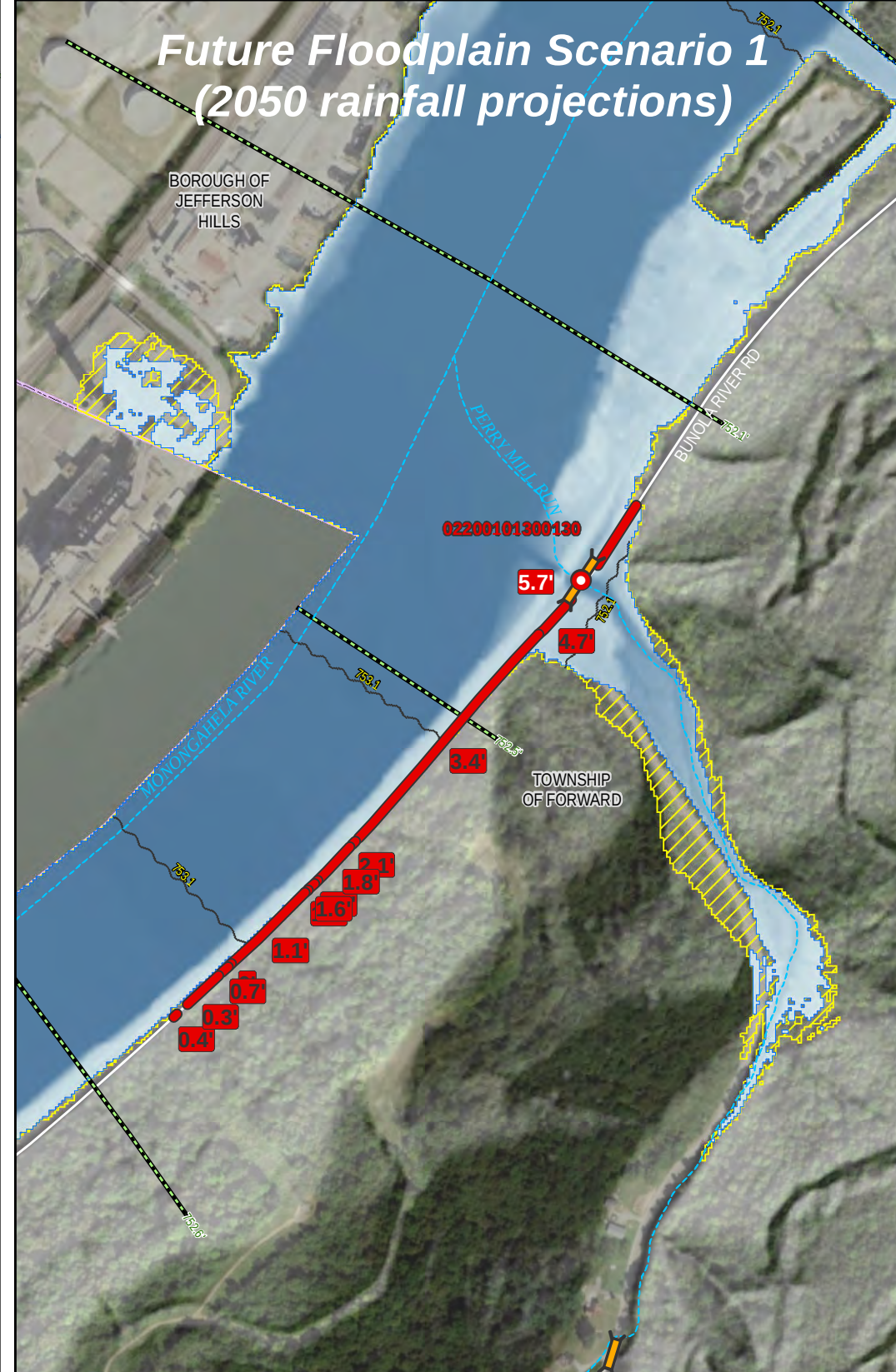
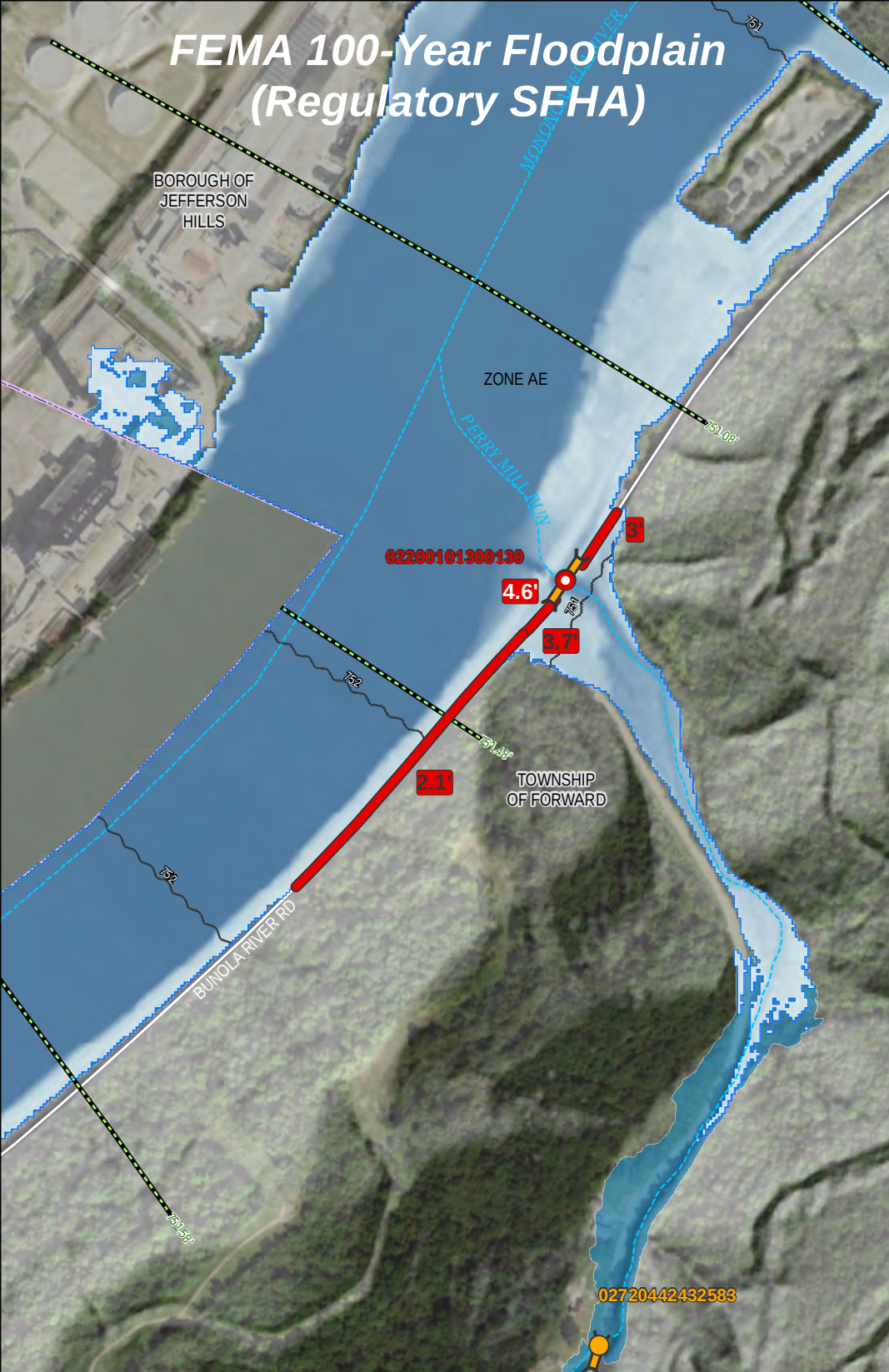
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

Michael Baker
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MAP SYMBOLOGY

Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	Projected SFHA Extents
Bridge Centerlines	FEMA Cross Section	
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY SFHA	
Roadway - i.e. CODY ST		
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

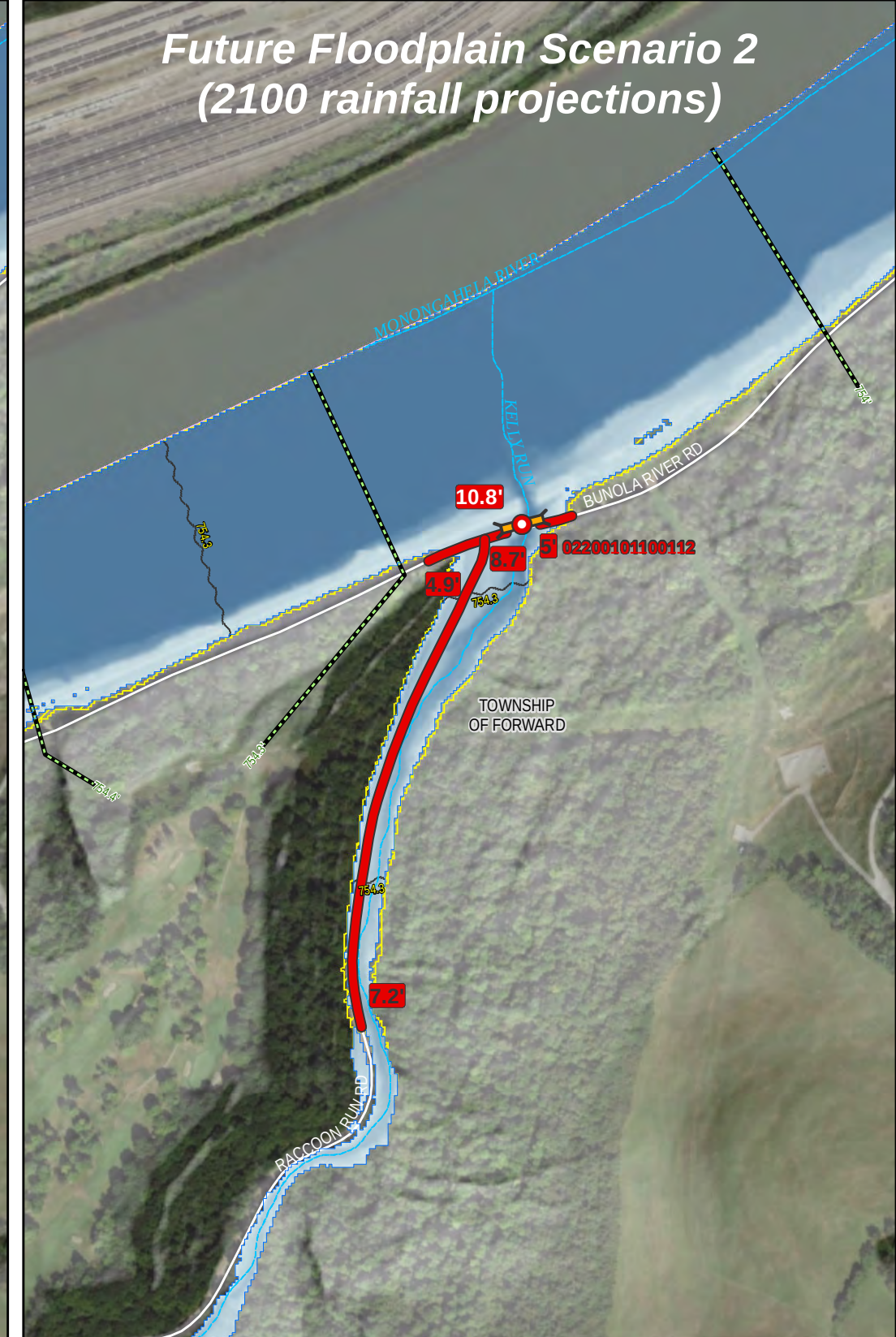
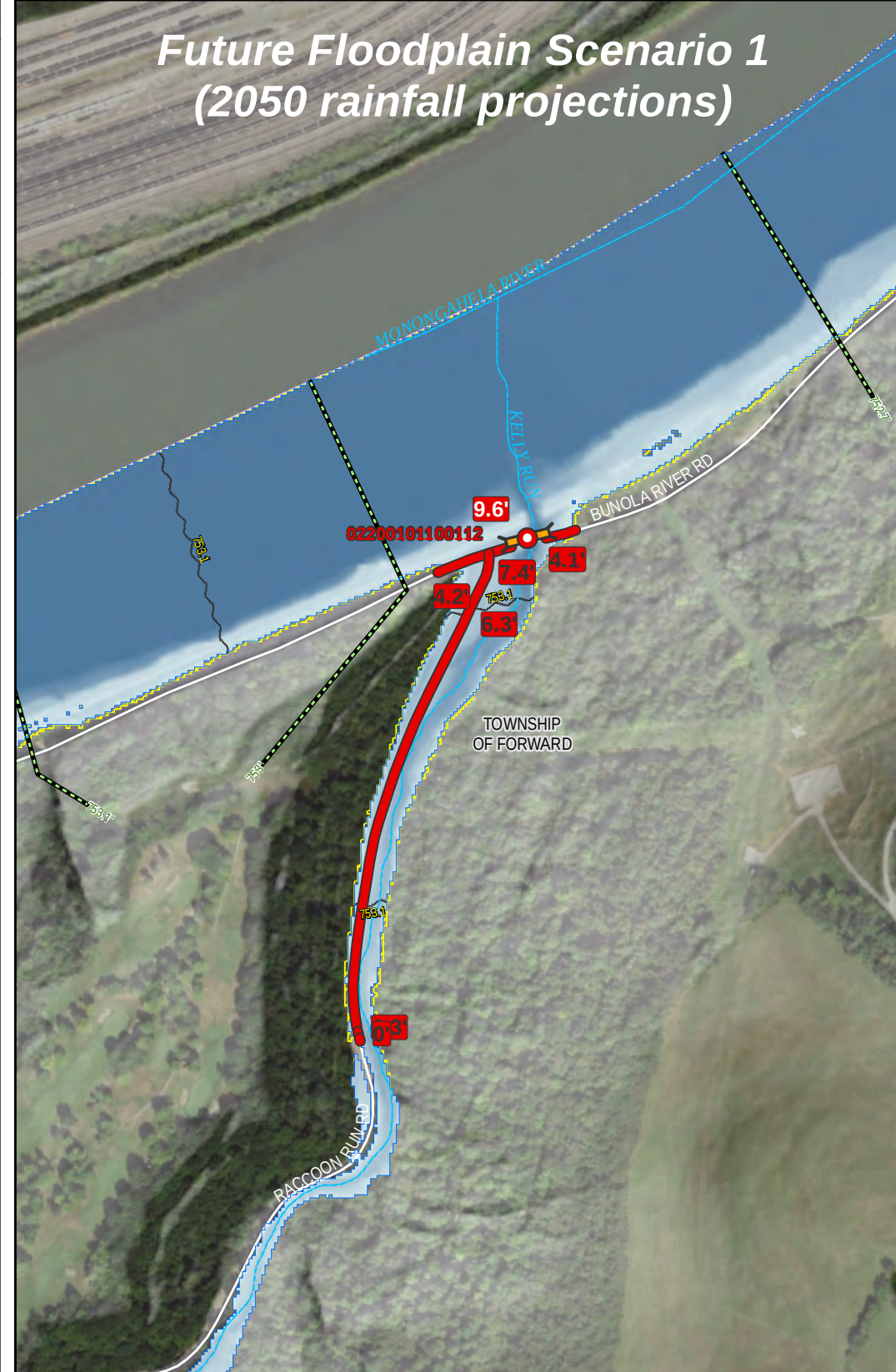
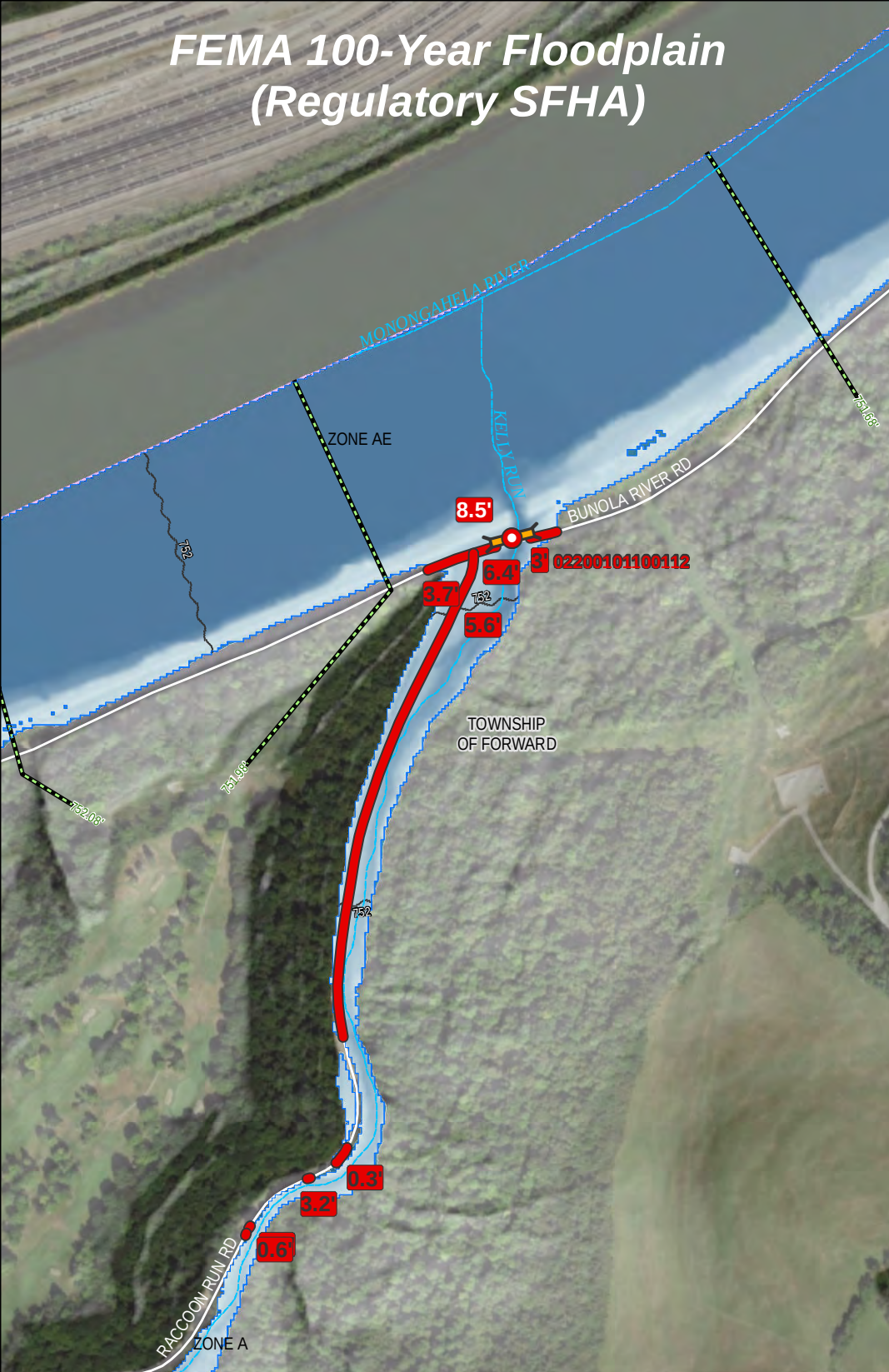
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LOCATOR MAP

DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



MAP SYMBOLOGY

Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation	Existing Conditions SFHA Extents
Bridge Centerlines	FEMA Cross Section	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	Projected SFHA Extents
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis Allegheny County, PA

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

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DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

LOCATOR MAP

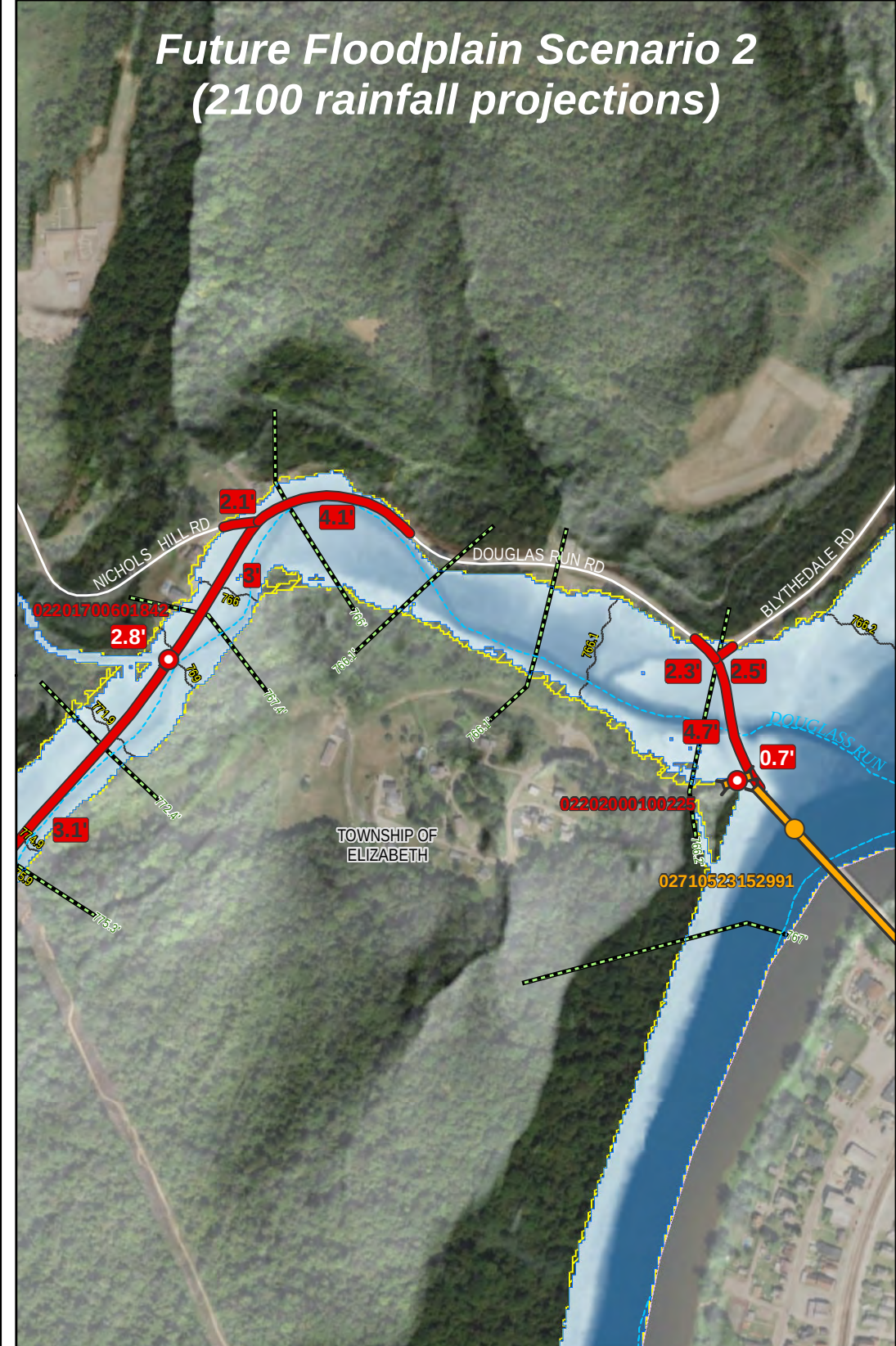
FEMA 100-Year Floodplain (Regulatory SFHA)



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**
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 - Vulnerable Roadway - Mean Depth in Feet i.e. **328'**
 - Roadway - i.e. **CODY ST**
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- 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

0 Feet 1,000

November 23, 2016



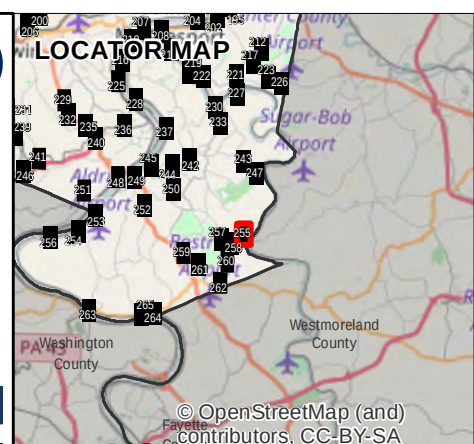
Flood Vulnerability Analysis Allegheny County, PA (Planning Level Assessment) (Methodology and Limitations Provided in Project Study Report)

Sheet 255 of 265

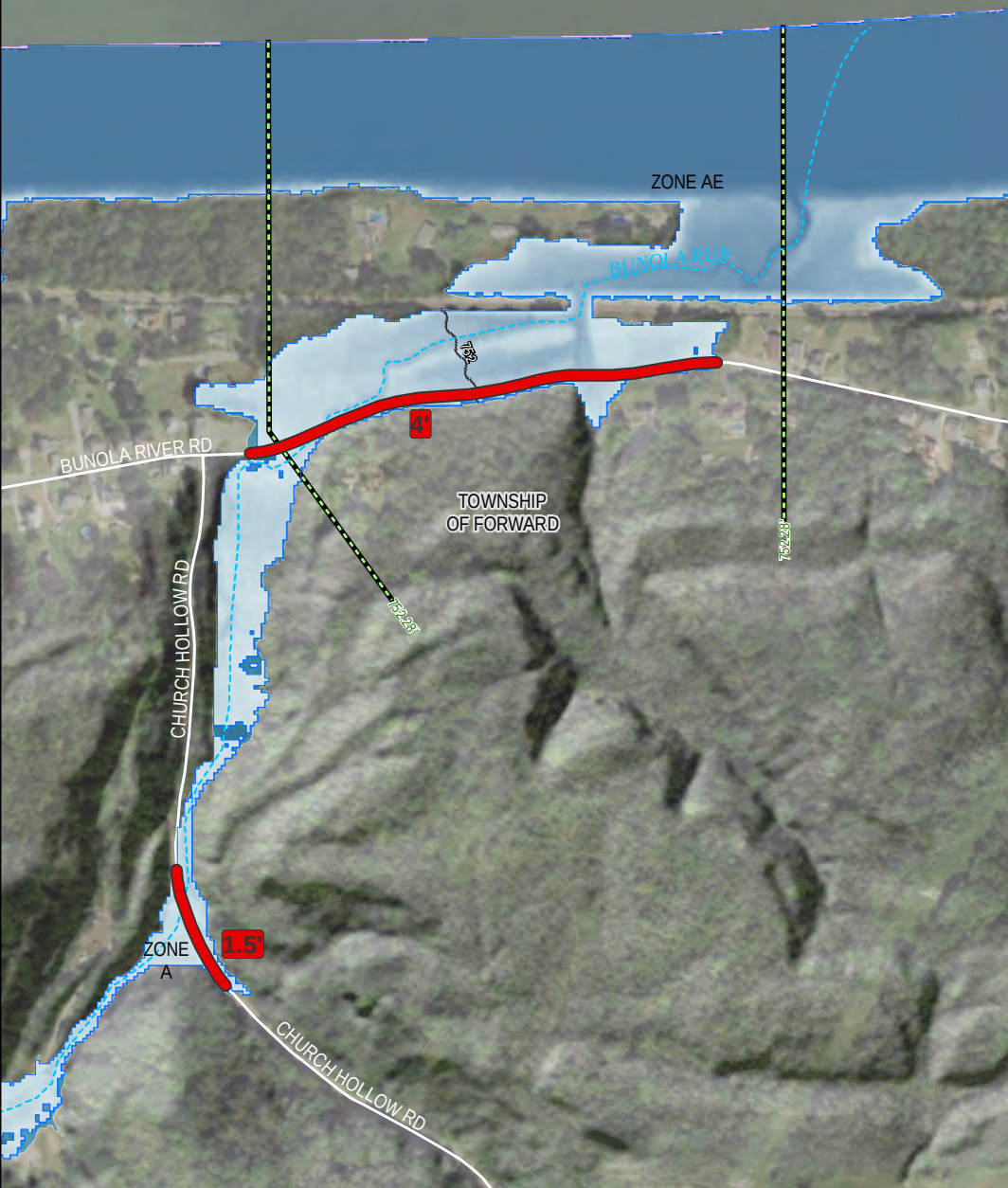


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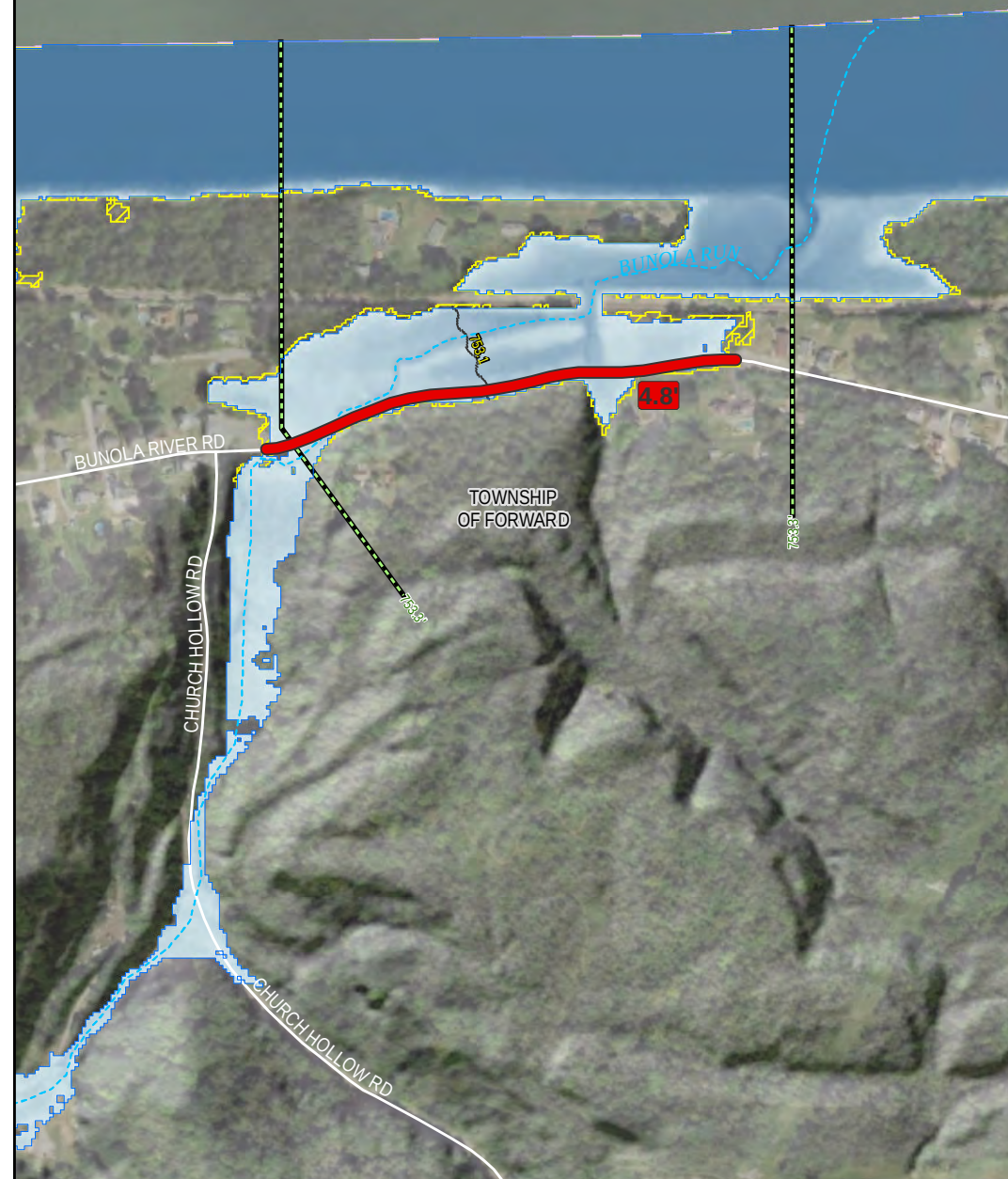
VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT



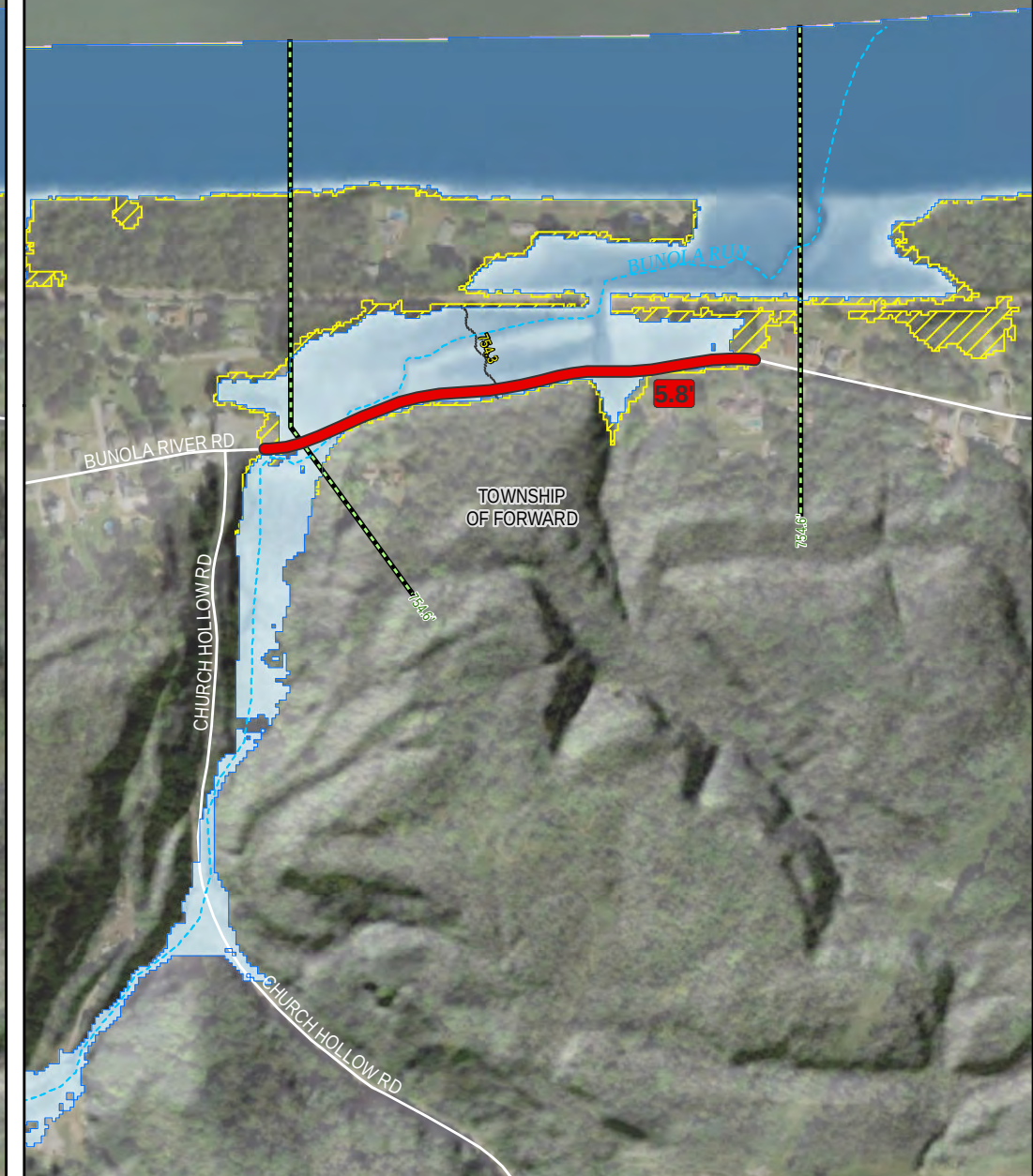
FEMA 100-Year Floodplain (Regulatory SFHA)



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'**
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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

0 Feet
1,000

November 23, 2016



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

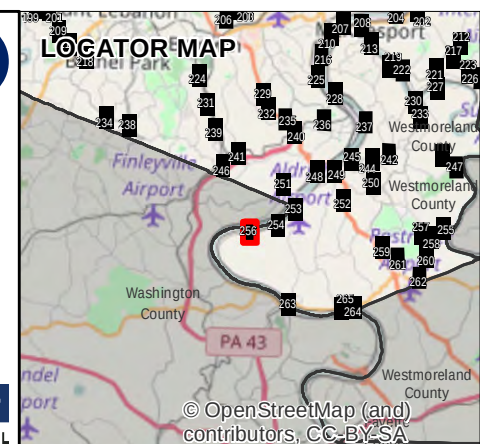
Sheet 256 of 265



DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

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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'**
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EXISTING CONDITIONS

(Based on Depth Grid Boundary)

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(Based on Depth Grid Boundary)

- Projected SFHA Extents

0 Feet
1,000

November 23, 2016



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

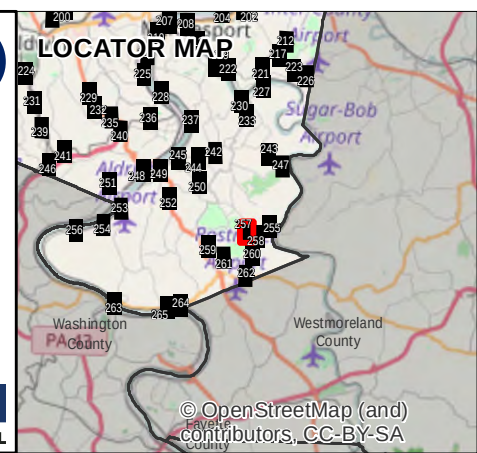
Sheet 257 of 265



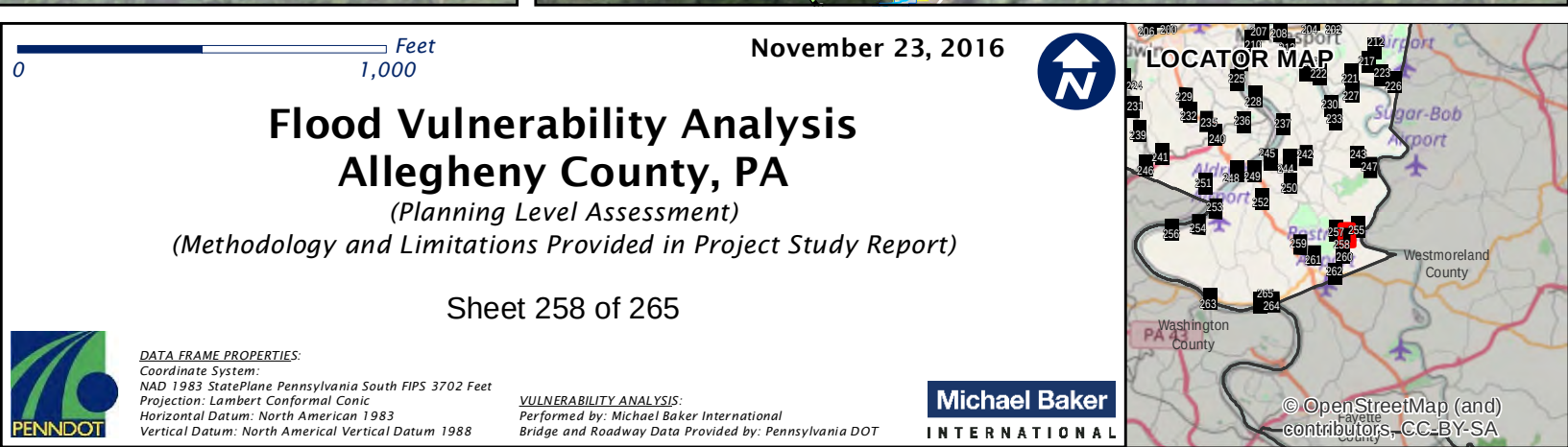
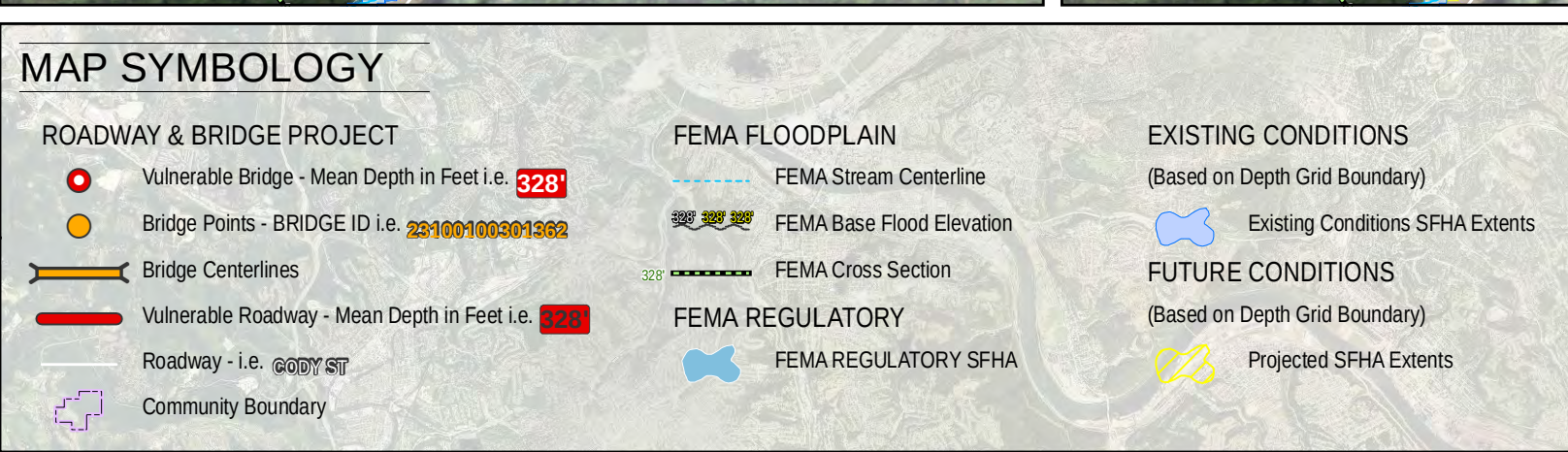
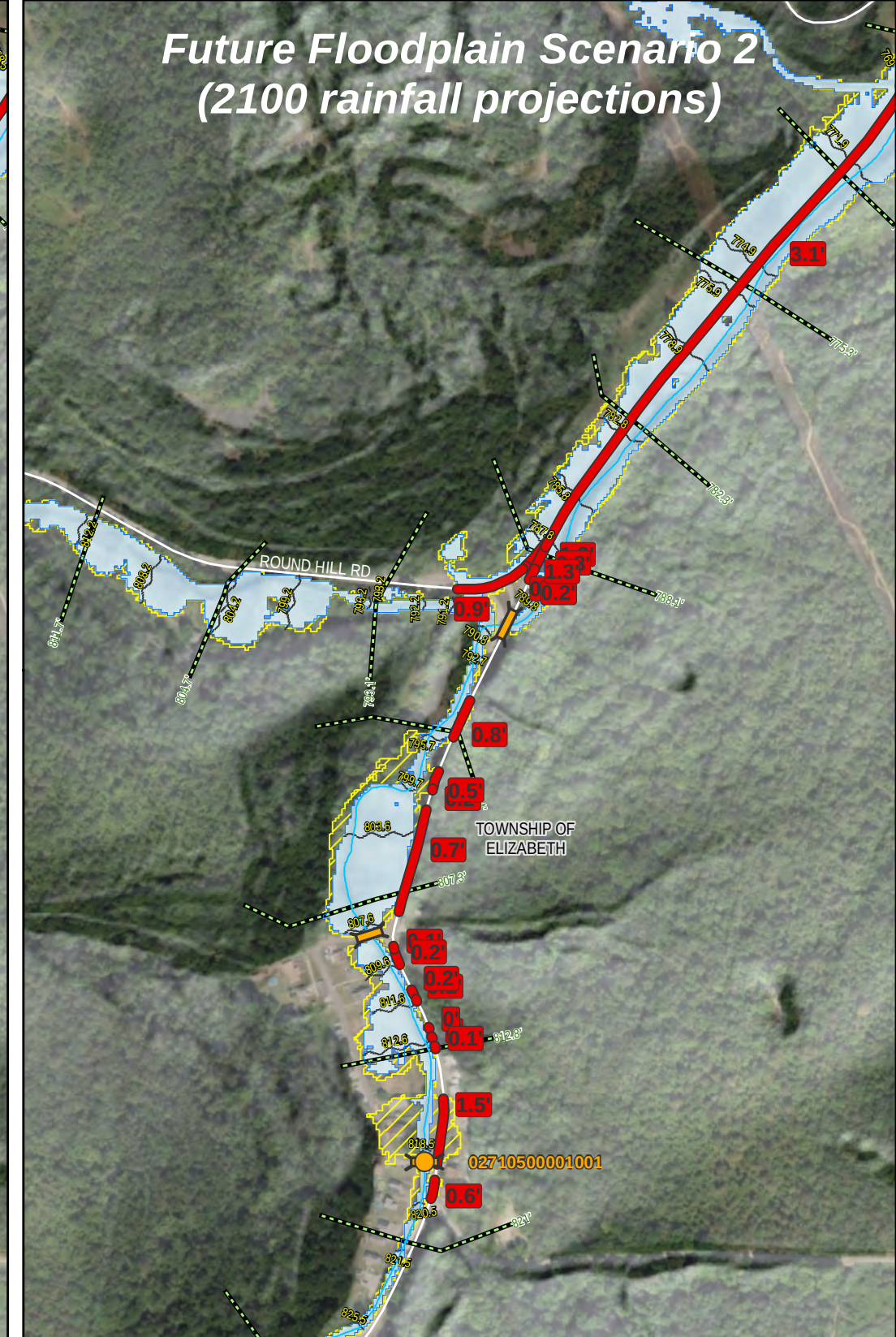
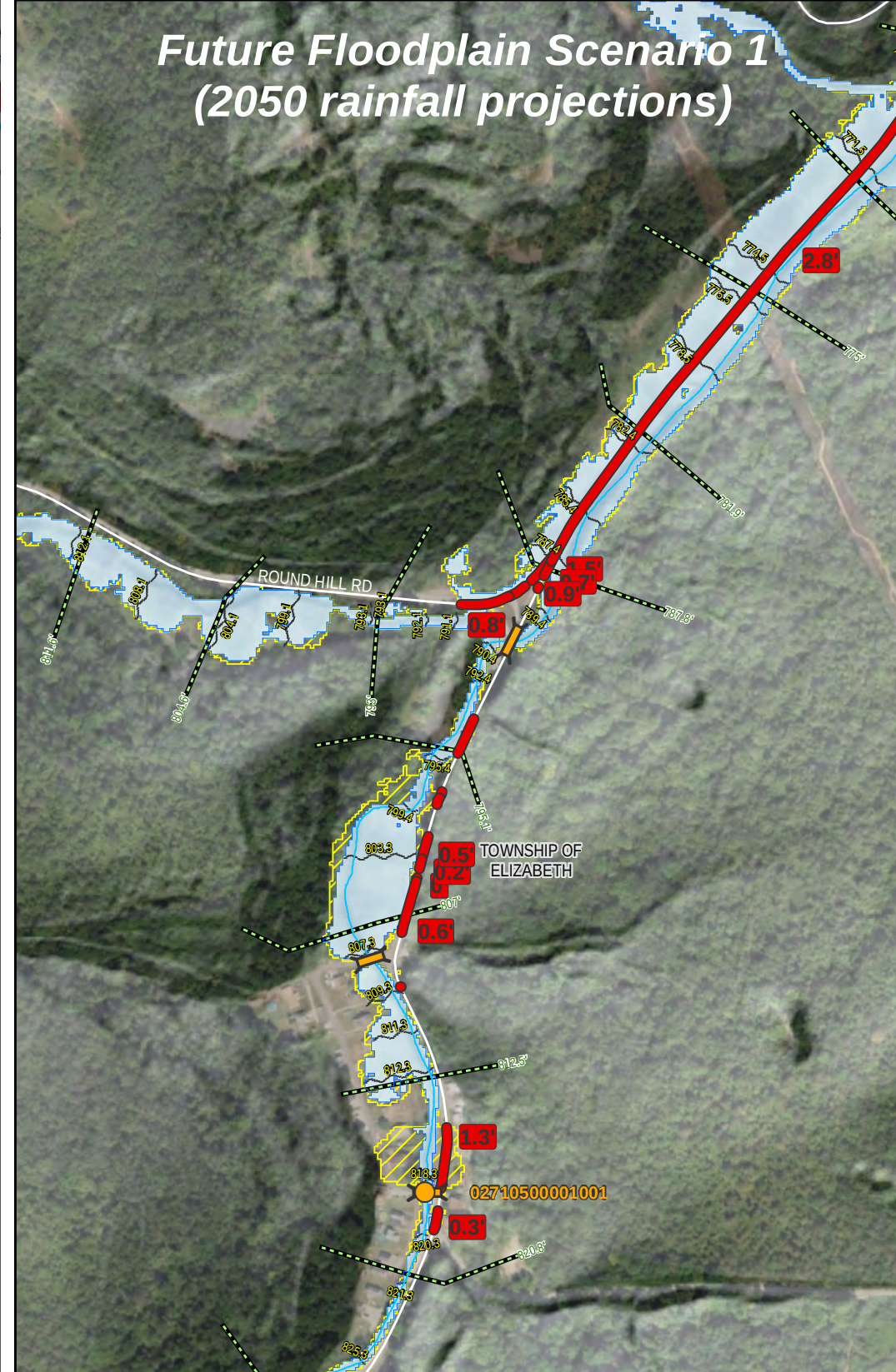
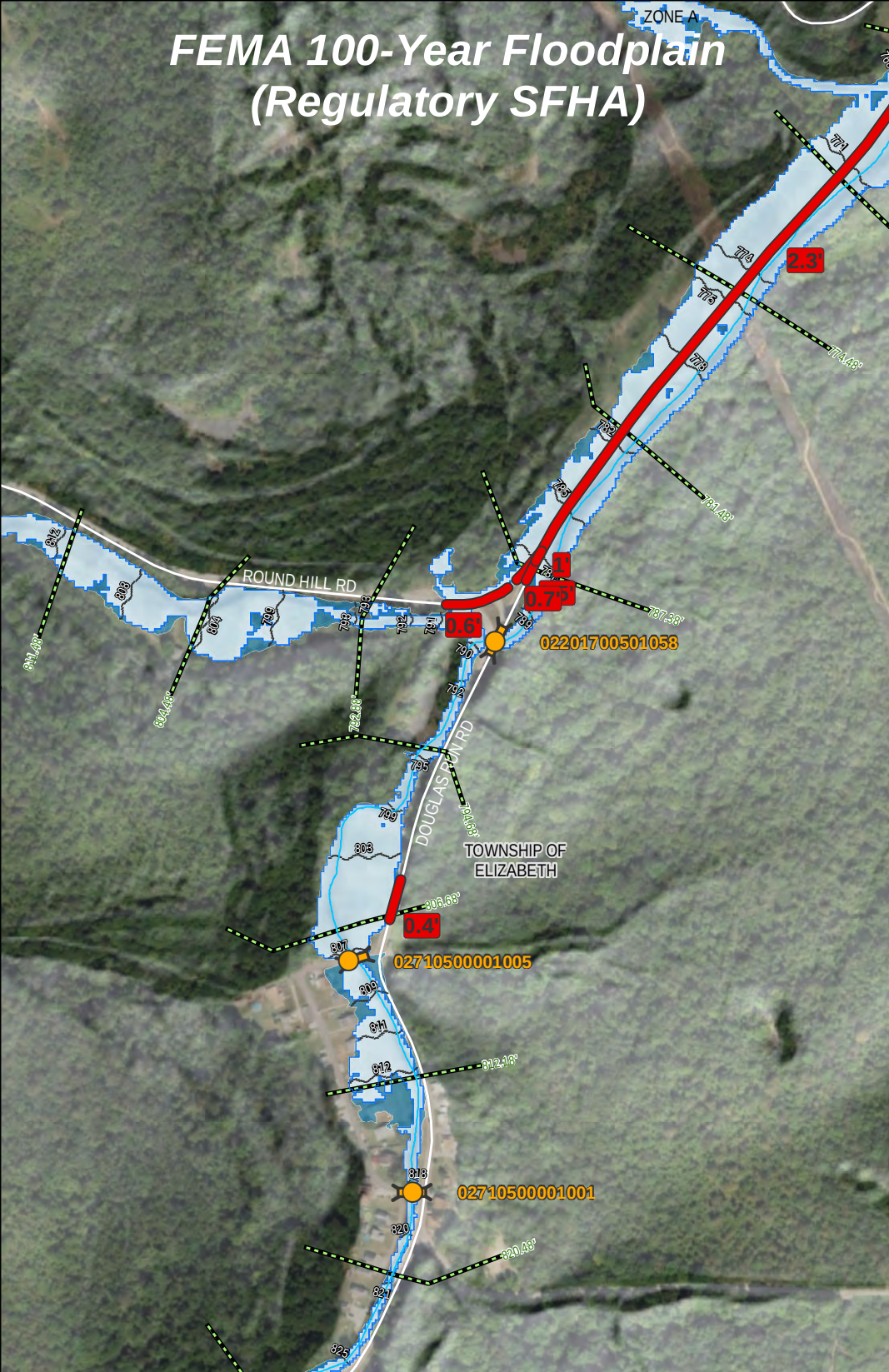
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Coordinate System:
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Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

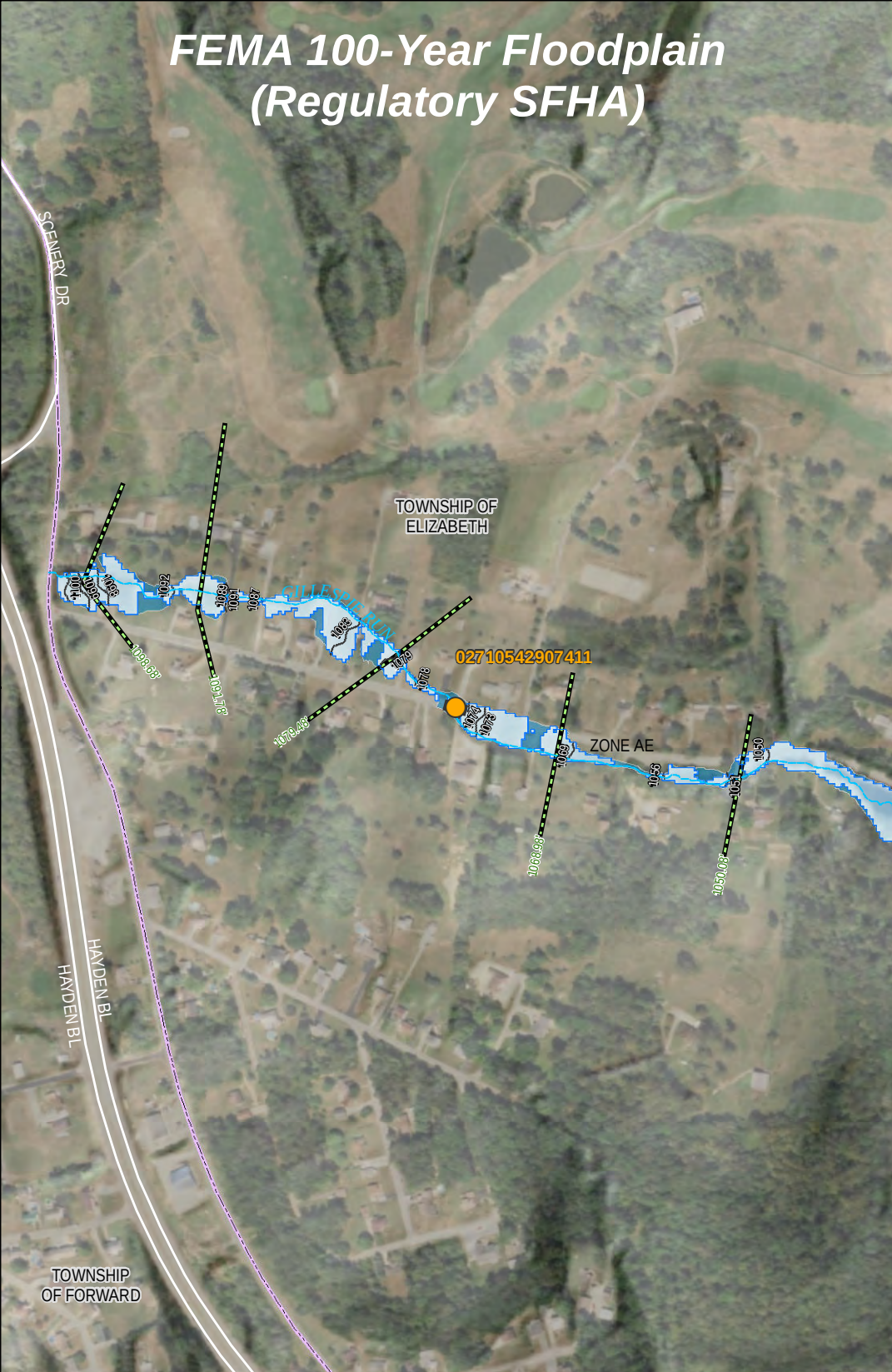
**Michael Baker
INTERNATIONAL**



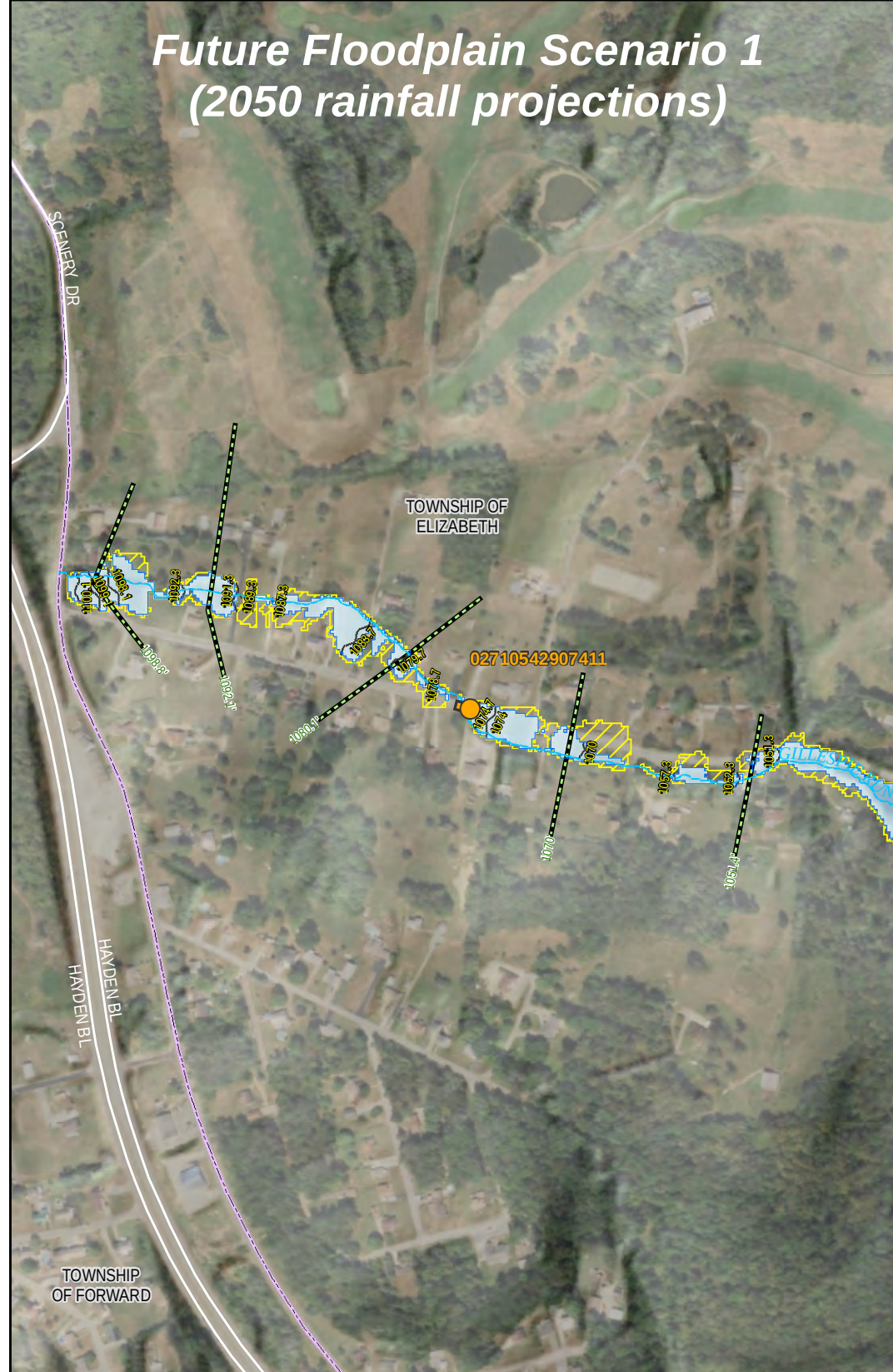
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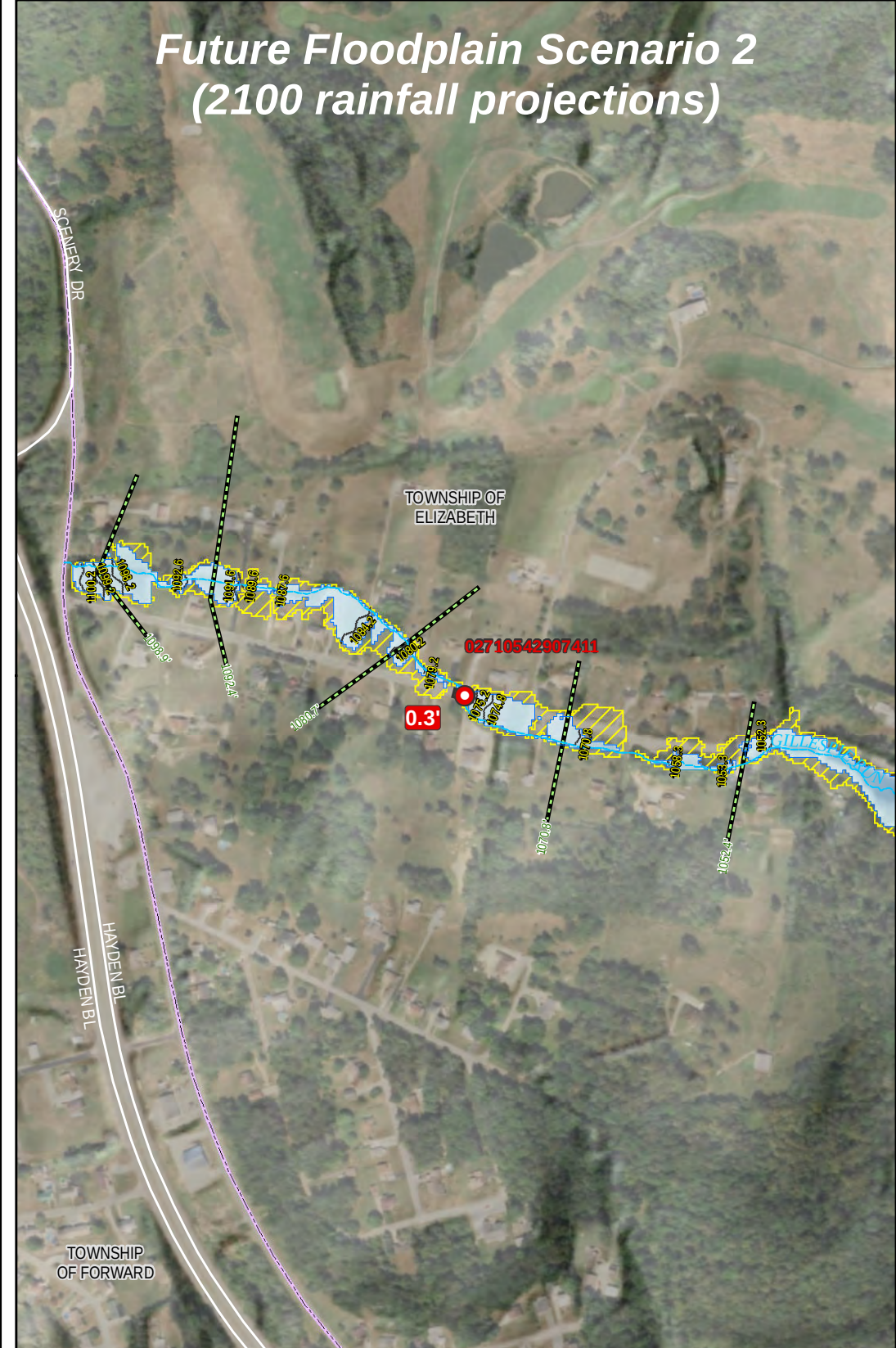
FEMA 100-Year Floodplain (Regulatory SFHA)



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'**
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-  Bridge Centerlines
-  Vulnerable Roadway - Mean Depth in Feet i.e. **328'**
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-  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

0 1,000 Feet

November 23, 2016



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

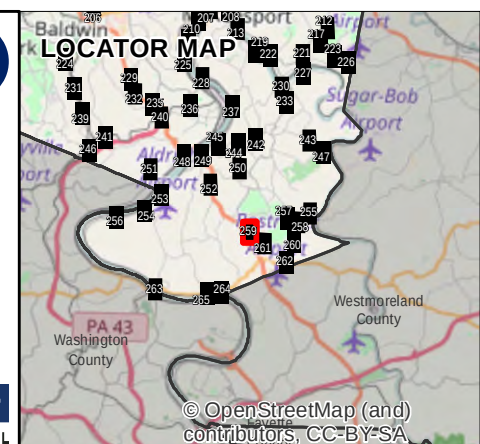
Sheet 259 of 265

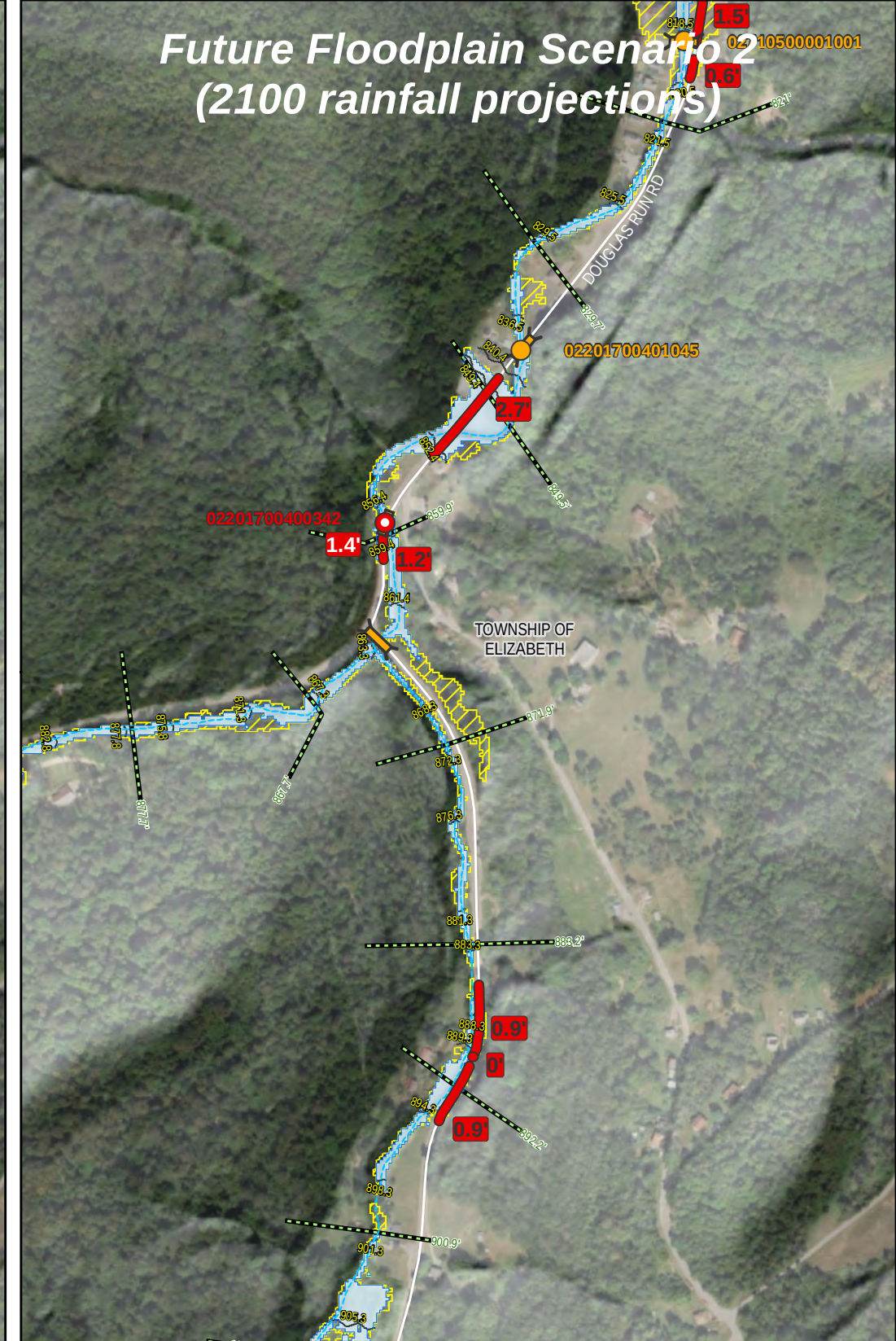
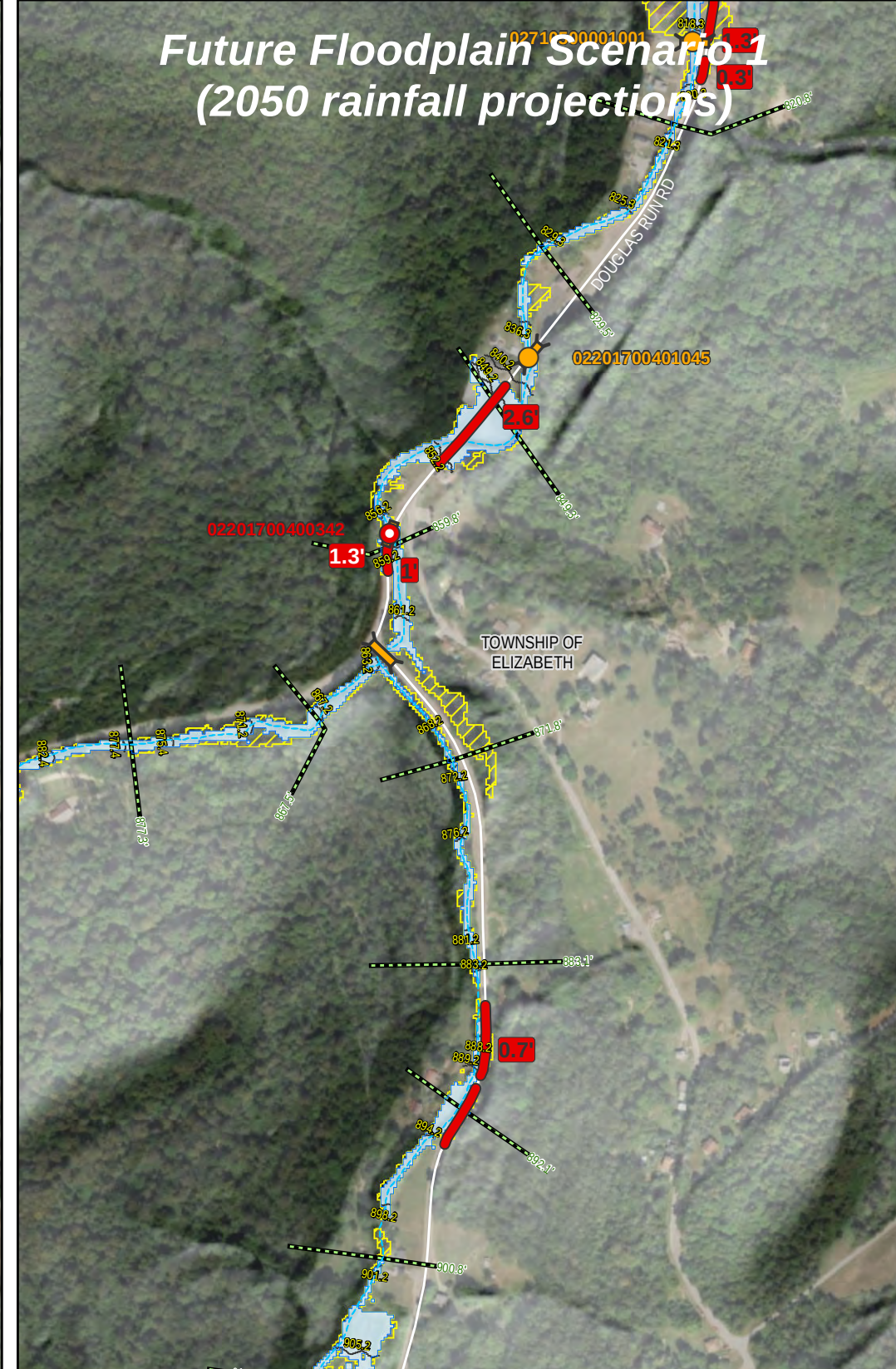


DATA FRAME PROPERTIES:
Coordinate System:
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VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**





MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT	FEMA FLOODPLAIN	EXISTING CONDITIONS (Based on Depth Grid Boundary)
Vulnerable Bridge - Mean Depth in Feet i.e. 328'	FEMA Stream Centerline	Existing Conditions SFHA Extents
Bridge Points - BRIDGE ID i.e. 23100100301362	FEMA Base Flood Elevation 328'	FUTURE CONDITIONS (Based on Depth Grid Boundary)
Bridge Centerlines	FEMA Cross Section 328'	Projected SFHA Extents
Vulnerable Roadway - Mean Depth in Feet i.e. 328'	FEMA REGULATORY	
Roadway - i.e. CODY ST	FEMA REGULATORY SFHA	
Community Boundary		

November 23, 2016

Flood Vulnerability Analysis

Allegheny County, PA

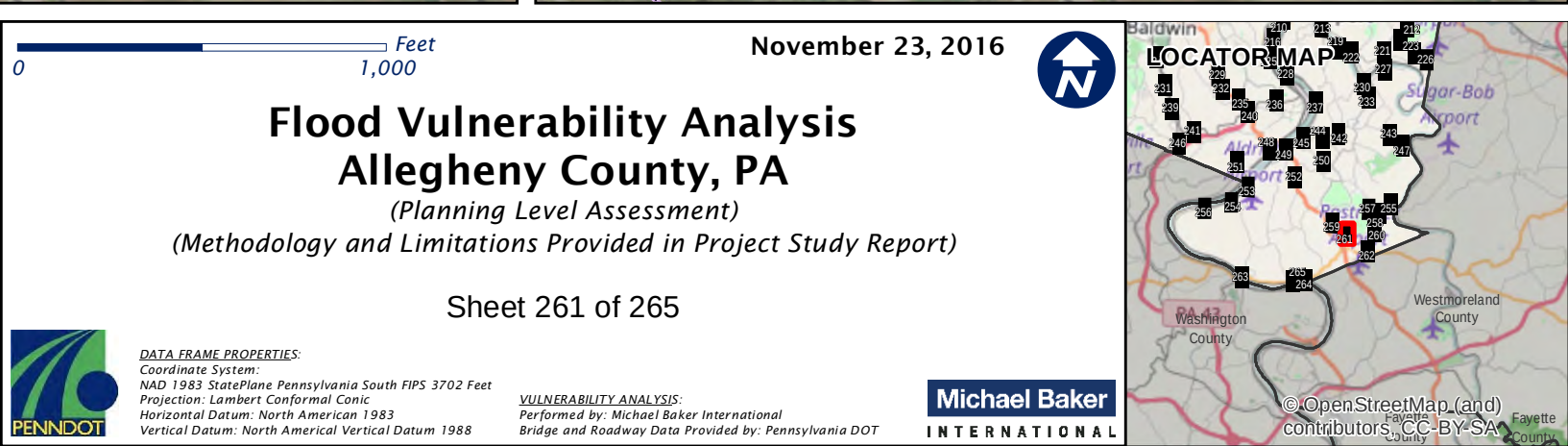
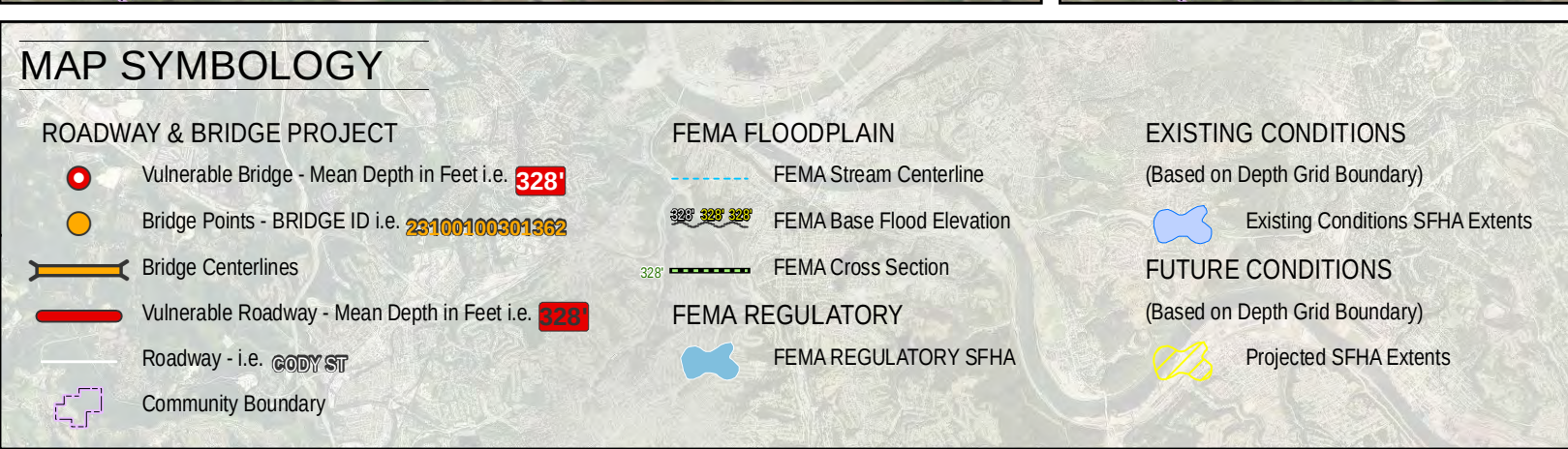
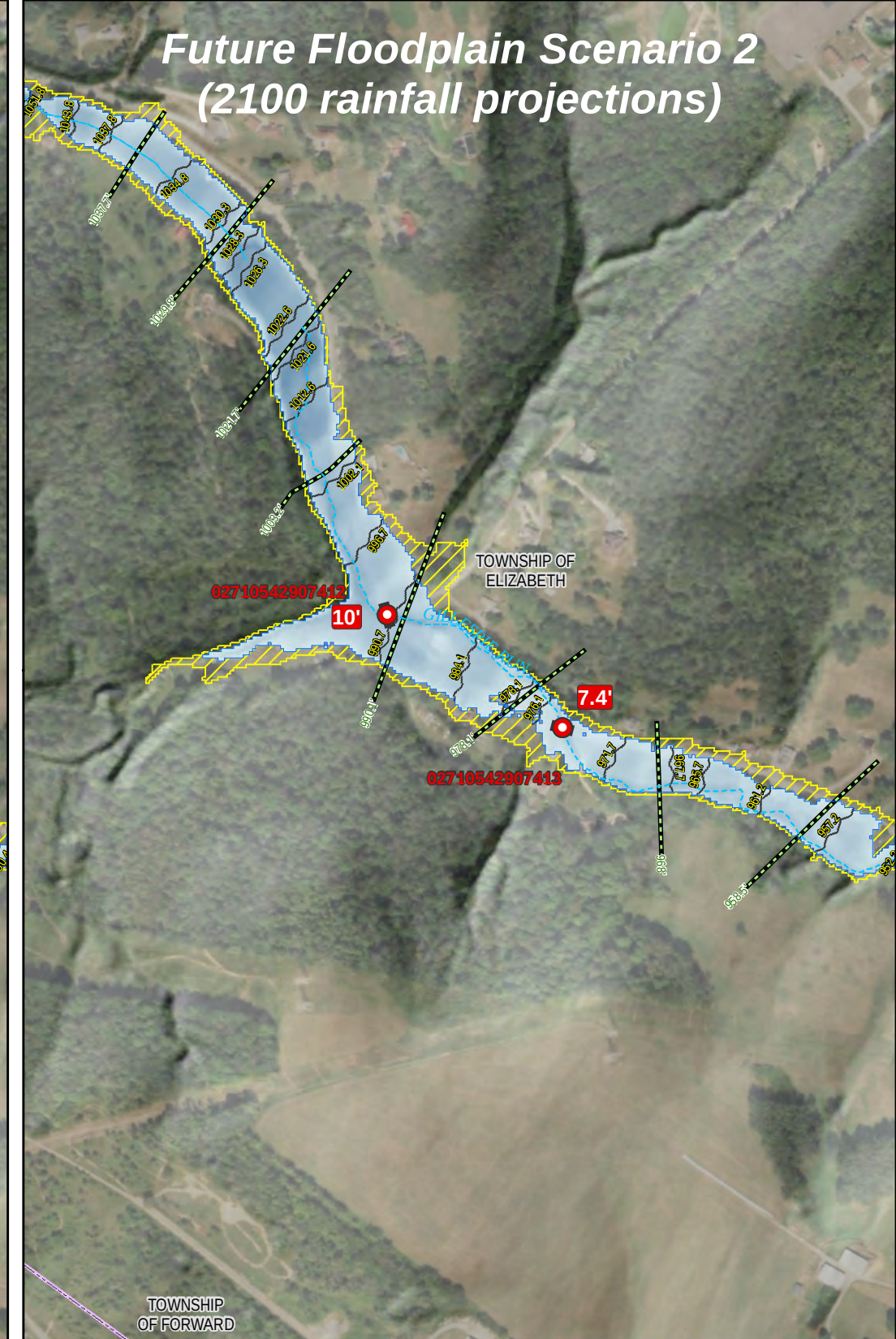
(Planning Level Assessment)
(Methodology and Limitations Provided in Project Study Report)

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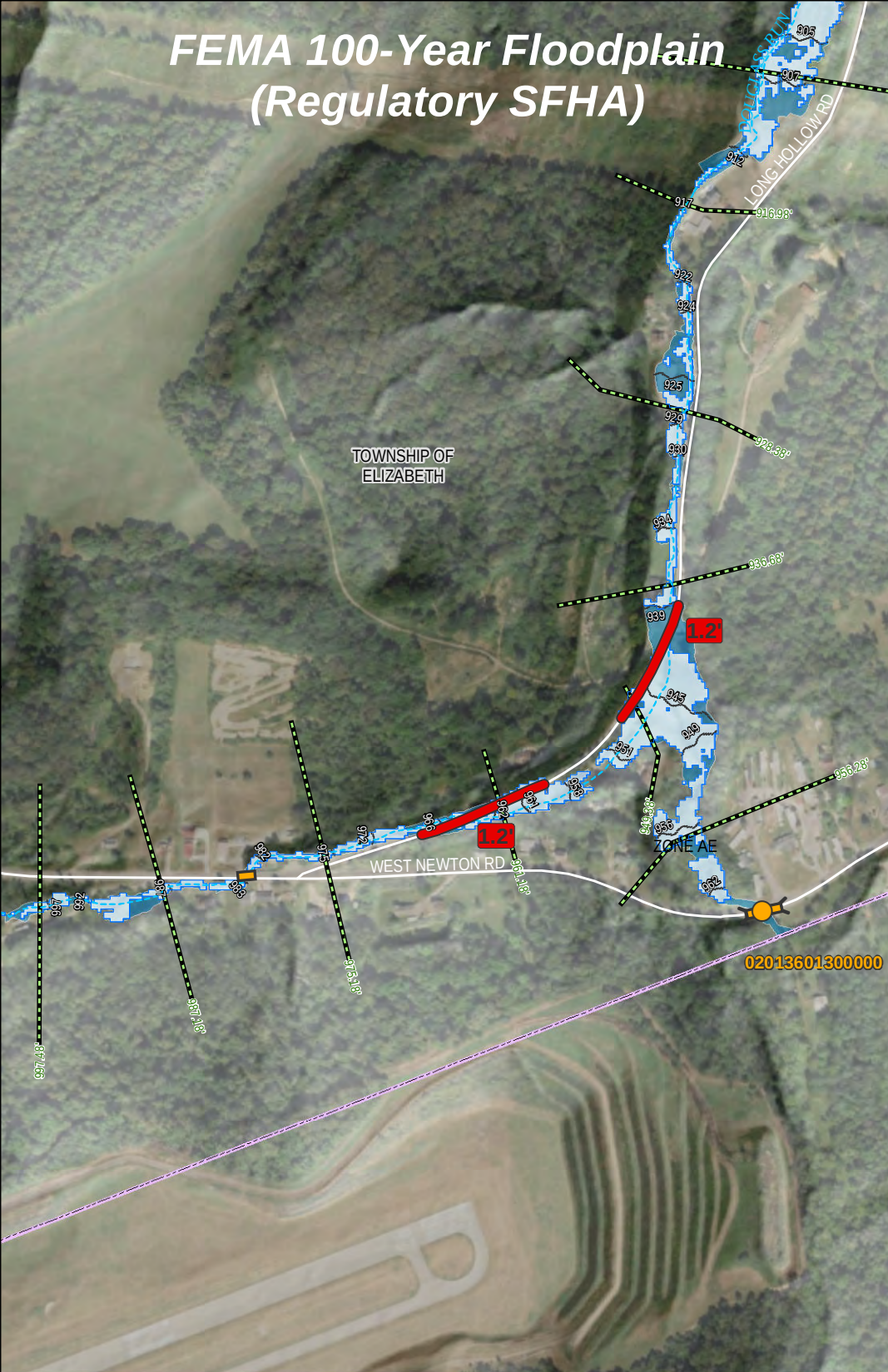
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VULNERABILITY ANALYSIS:
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Bridge and Roadway Data Provided by: Pennsylvania DOT

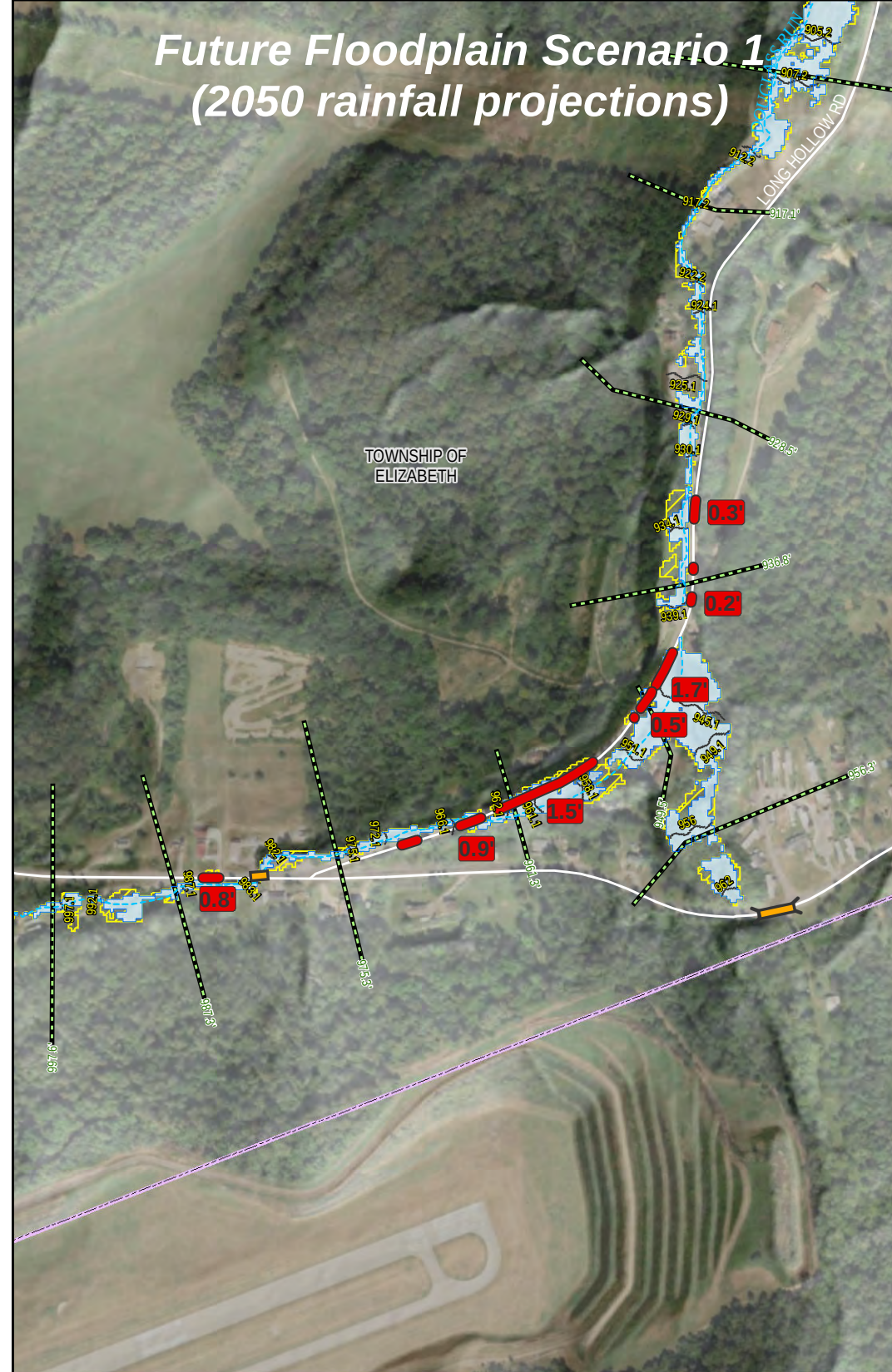
LOCATOR MAP



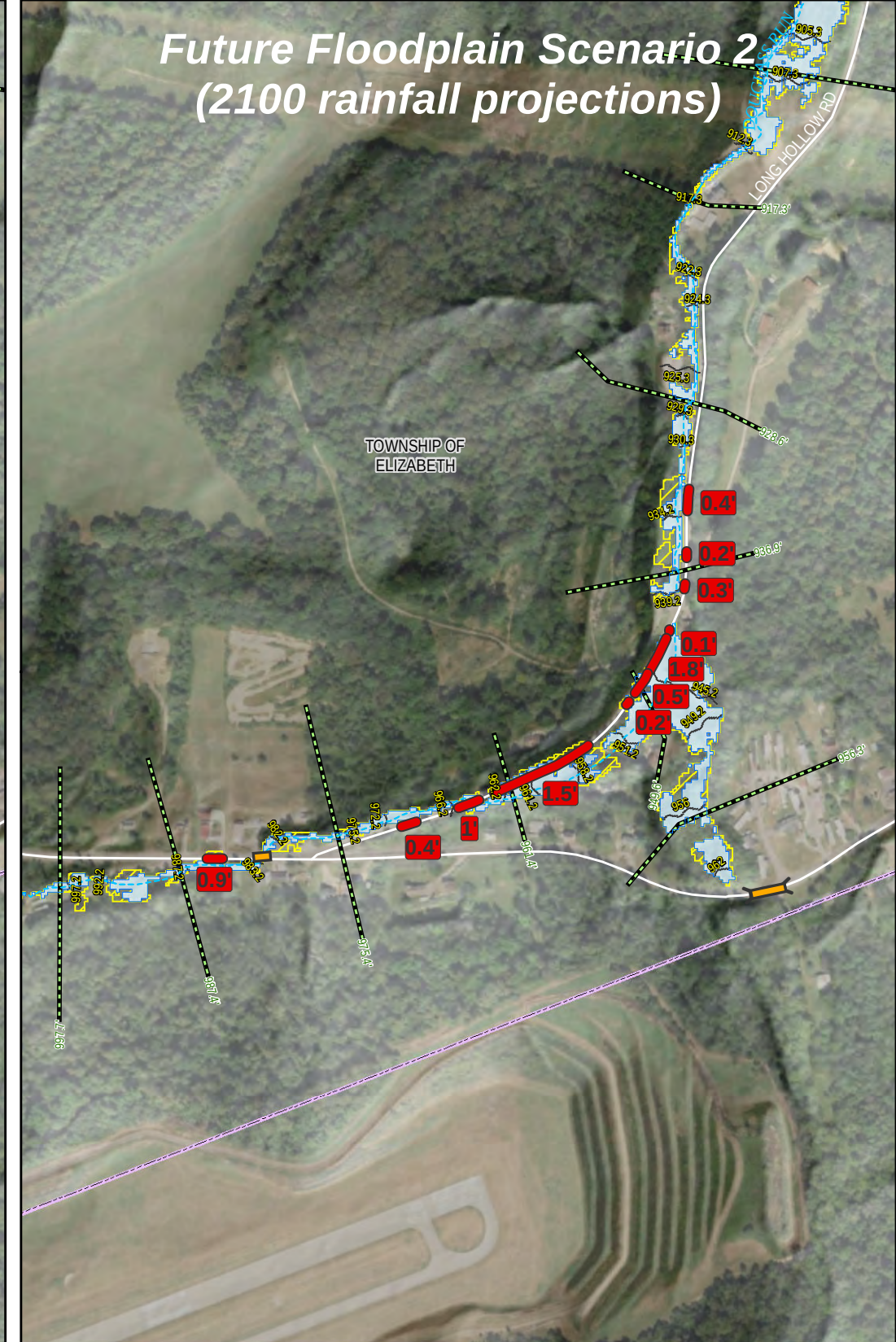
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



MAP SYMBOLOGY

ROADWAY & BRIDGE PROJECT

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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

0 Feet
1,000

November 23, 2016



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

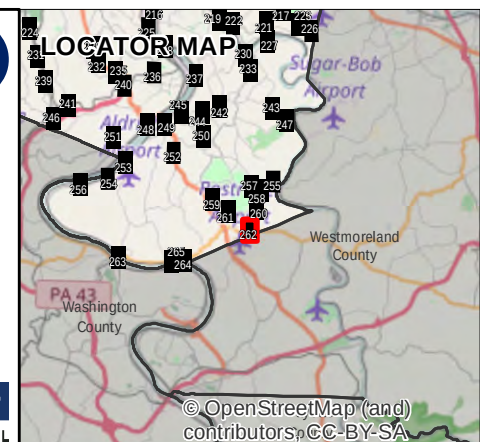
Sheet 262 of 265



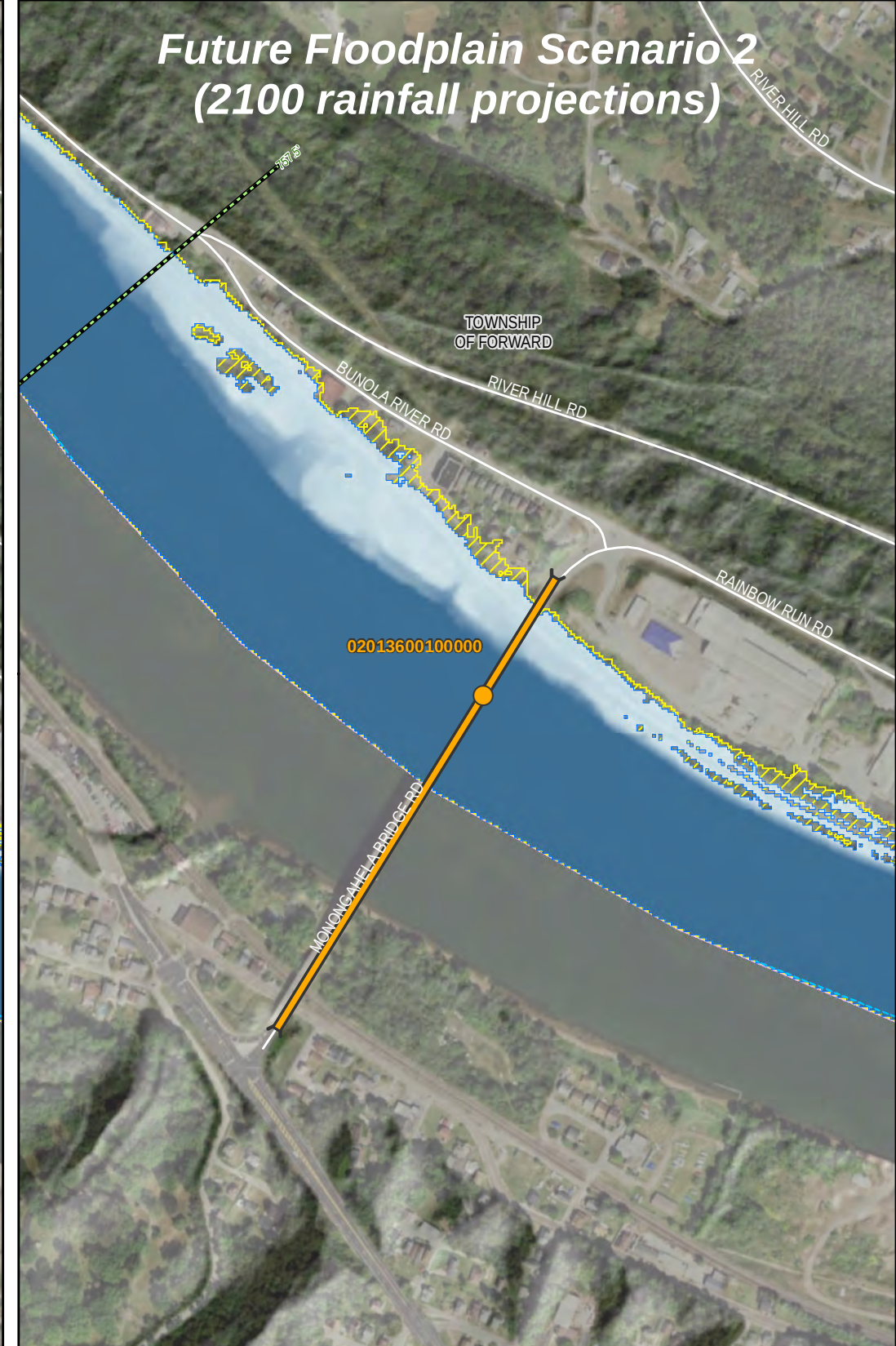
DATA FRAME PROPERTIES:
Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Vertical Datum: North American Vertical Datum 1988

VULNERABILITY ANALYSIS:
Performed by: Michael Baker International
Bridge and Roadway Data Provided by: Pennsylvania DOT

**Michael Baker
INTERNATIONAL**



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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. **CODY ST**
- 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

0 1,000 Feet

November 23, 2016

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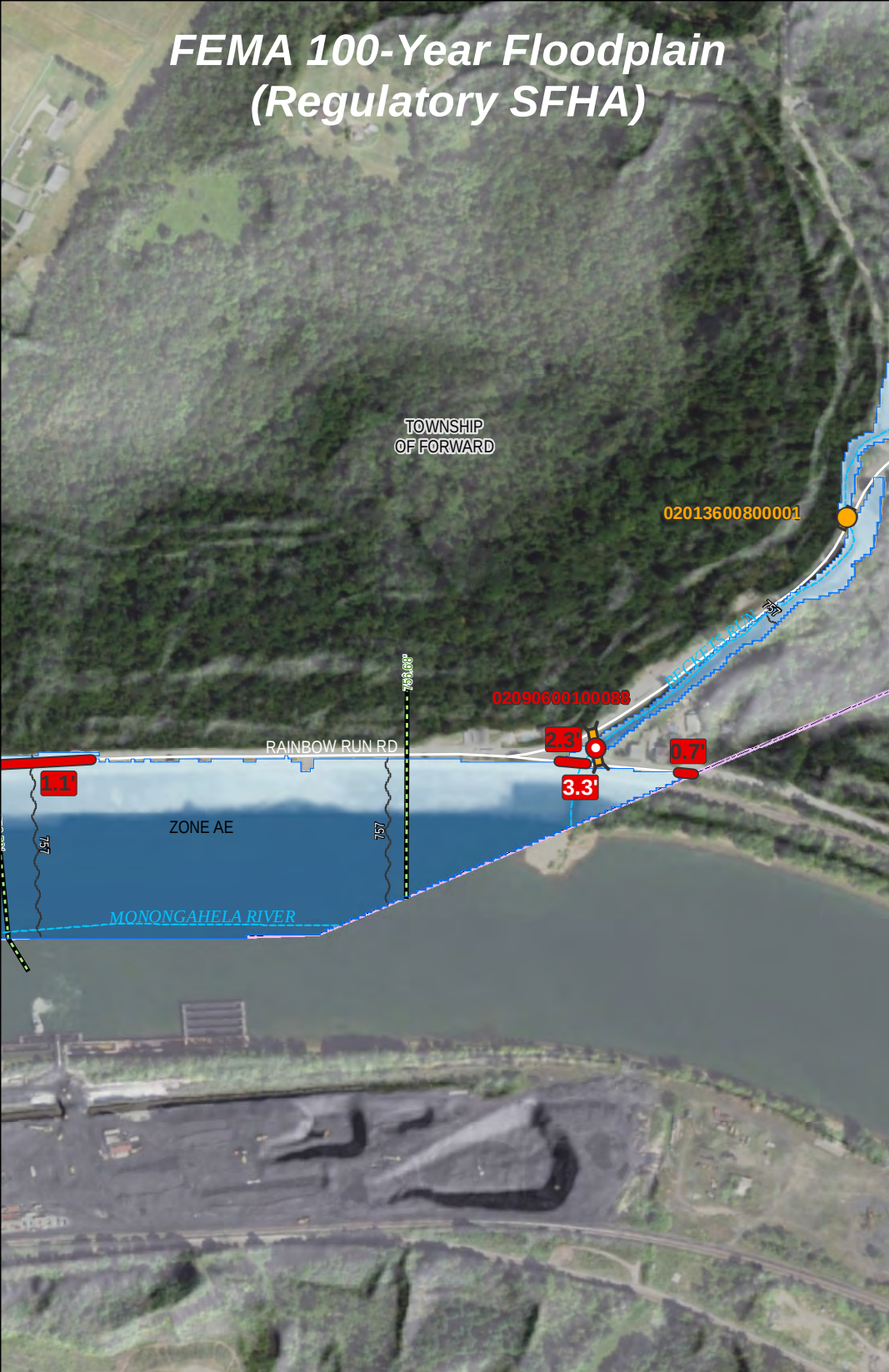
Sheet 263 of 265

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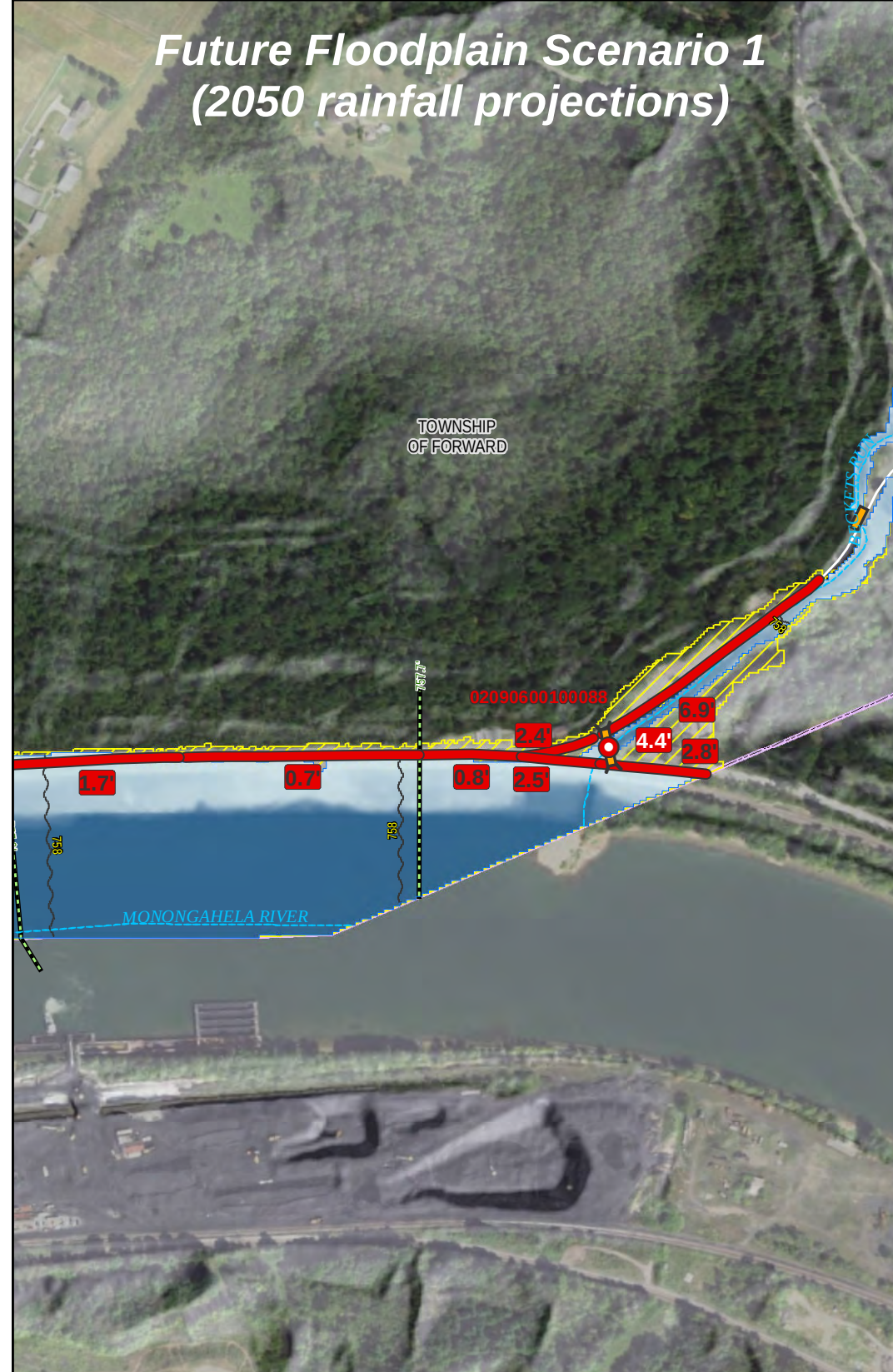
VULNERABILITY ANALYSIS:
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LOCATOR MAP

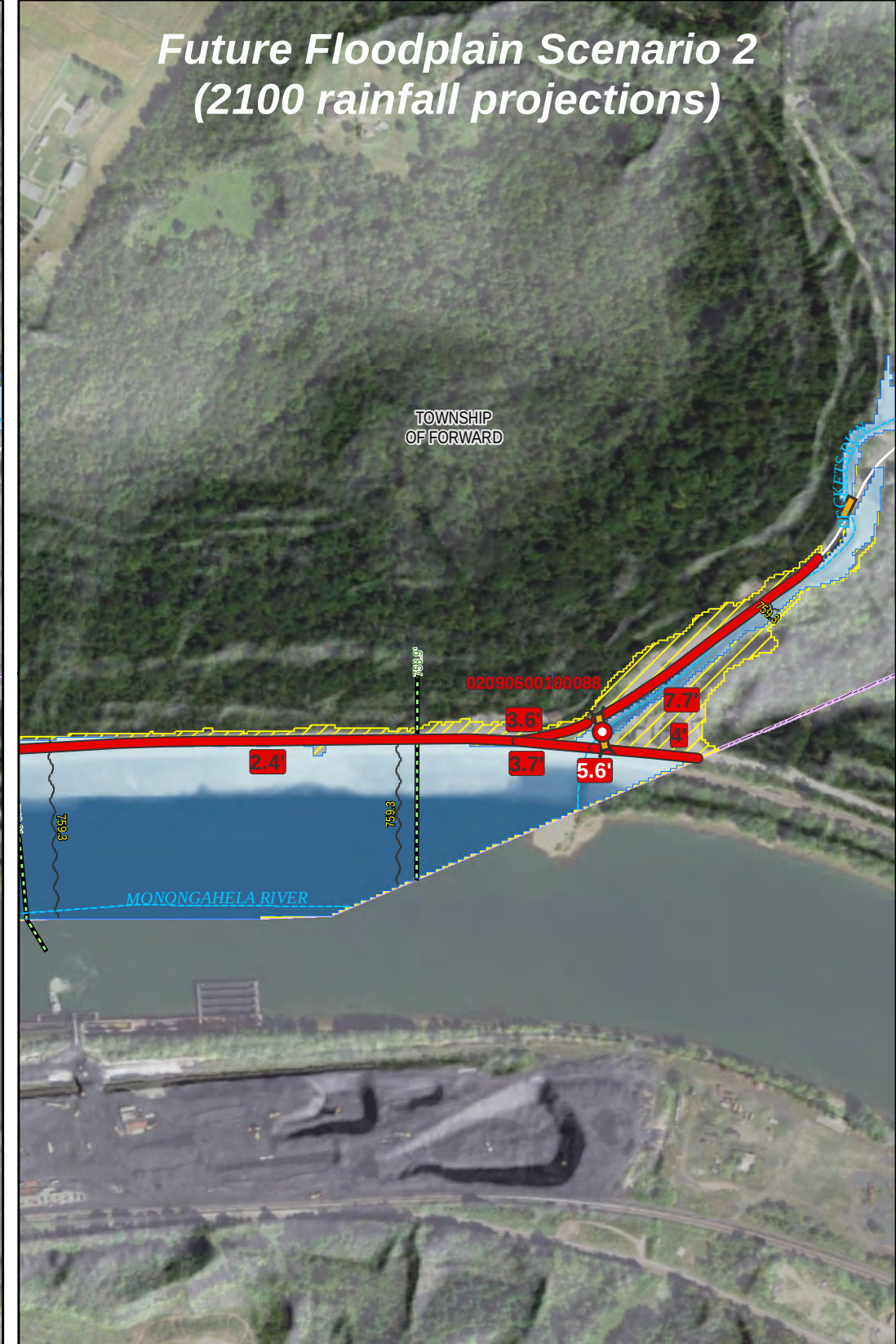
FEMA 100-Year Floodplain (Regulatory SFHA)



Future Floodplain Scenario 1 (2050 rainfall projections)



Future Floodplain Scenario 2 (2100 rainfall projections)



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0 Feet
1,000

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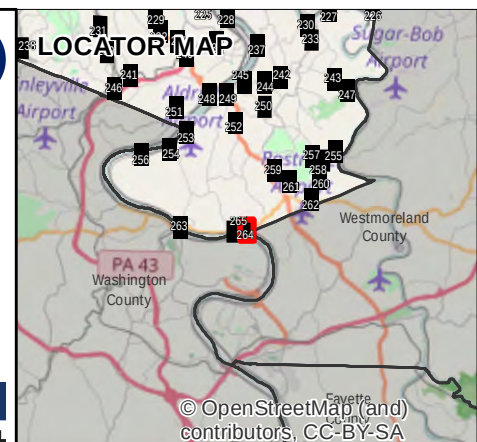
Sheet 264 of 265



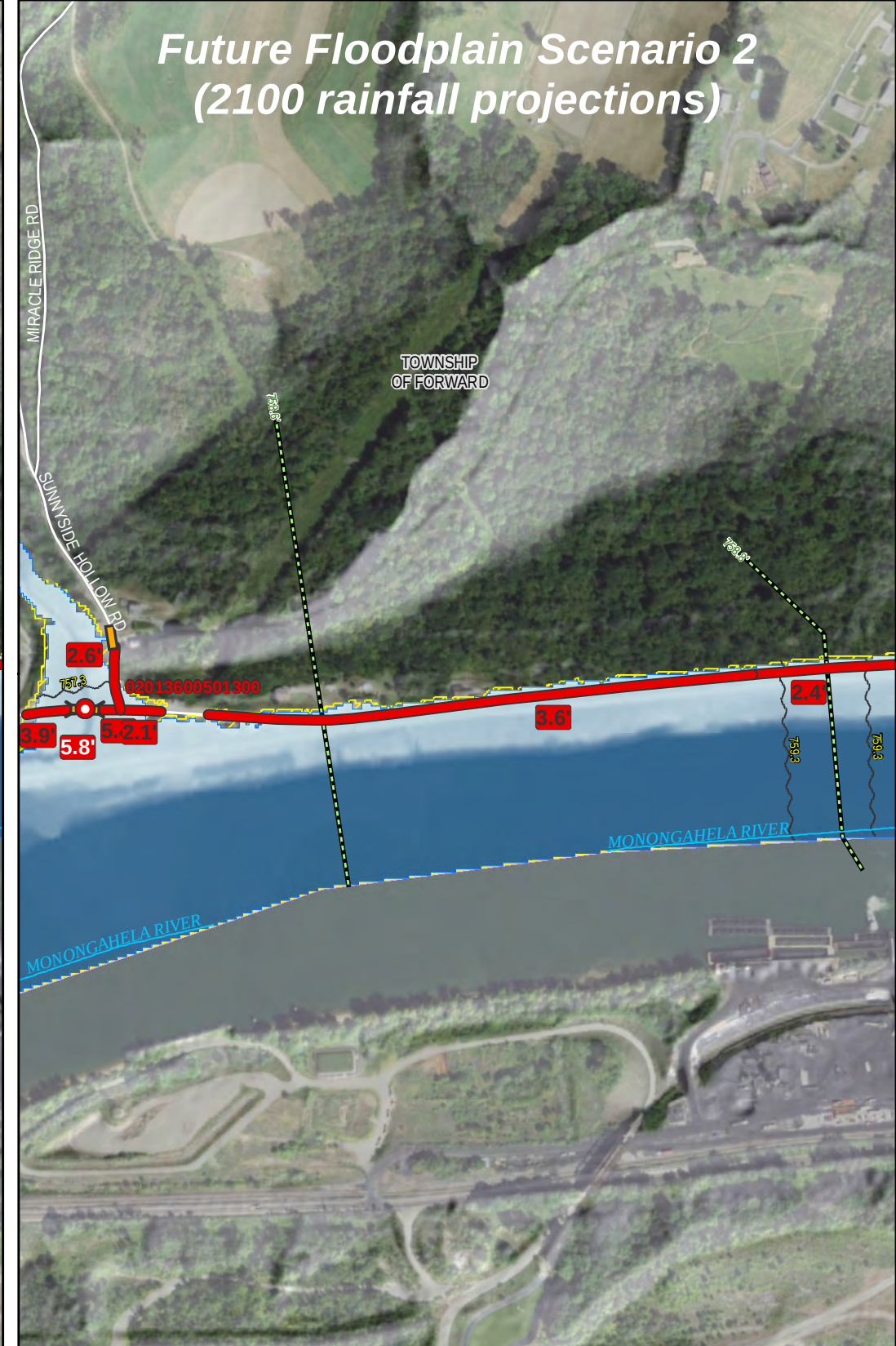
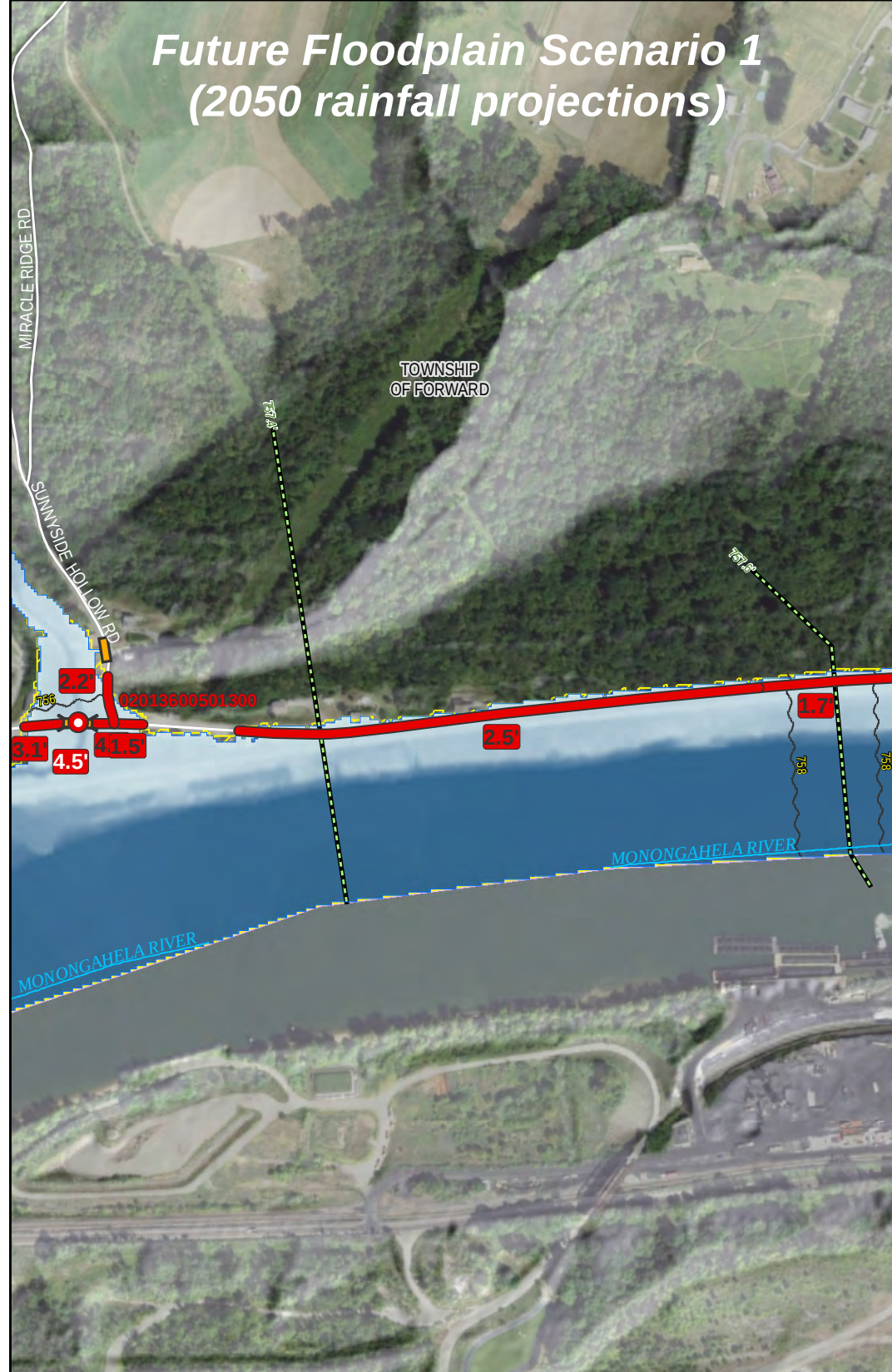
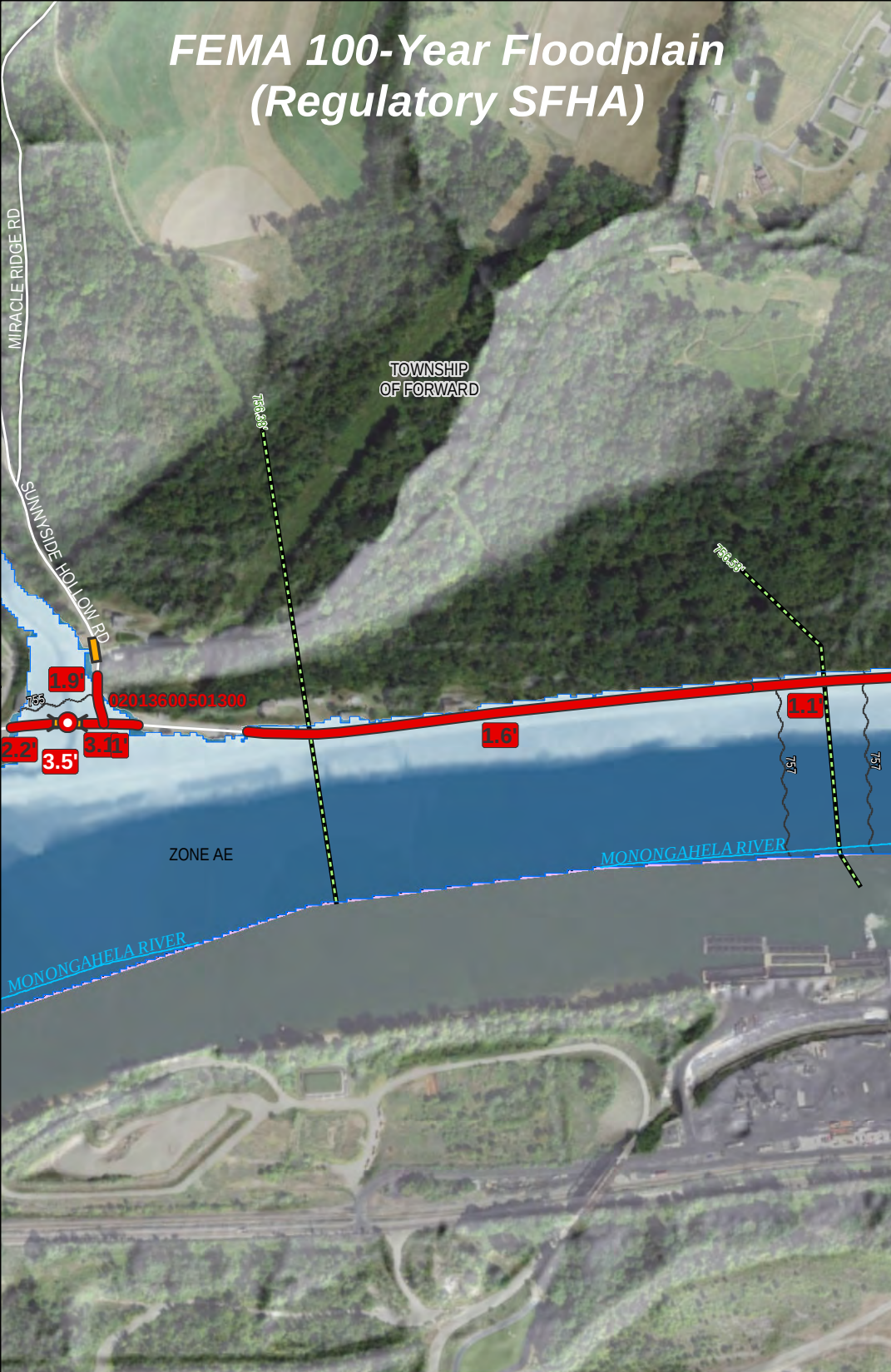
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