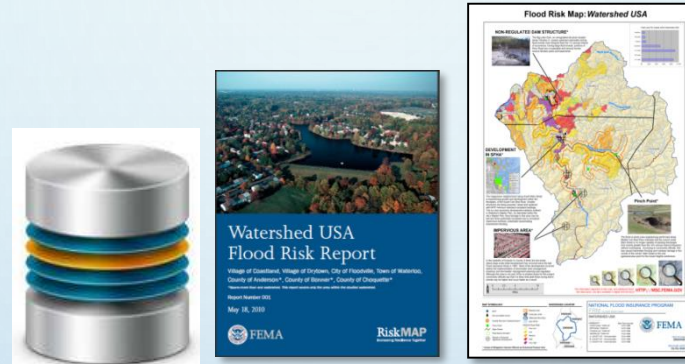


# FEMA FLOOD RISK PRODUCTS

## NON-REGULATORY TOOLS FOR COASTAL AREAS OF DELAWARE BAY COUNTIES

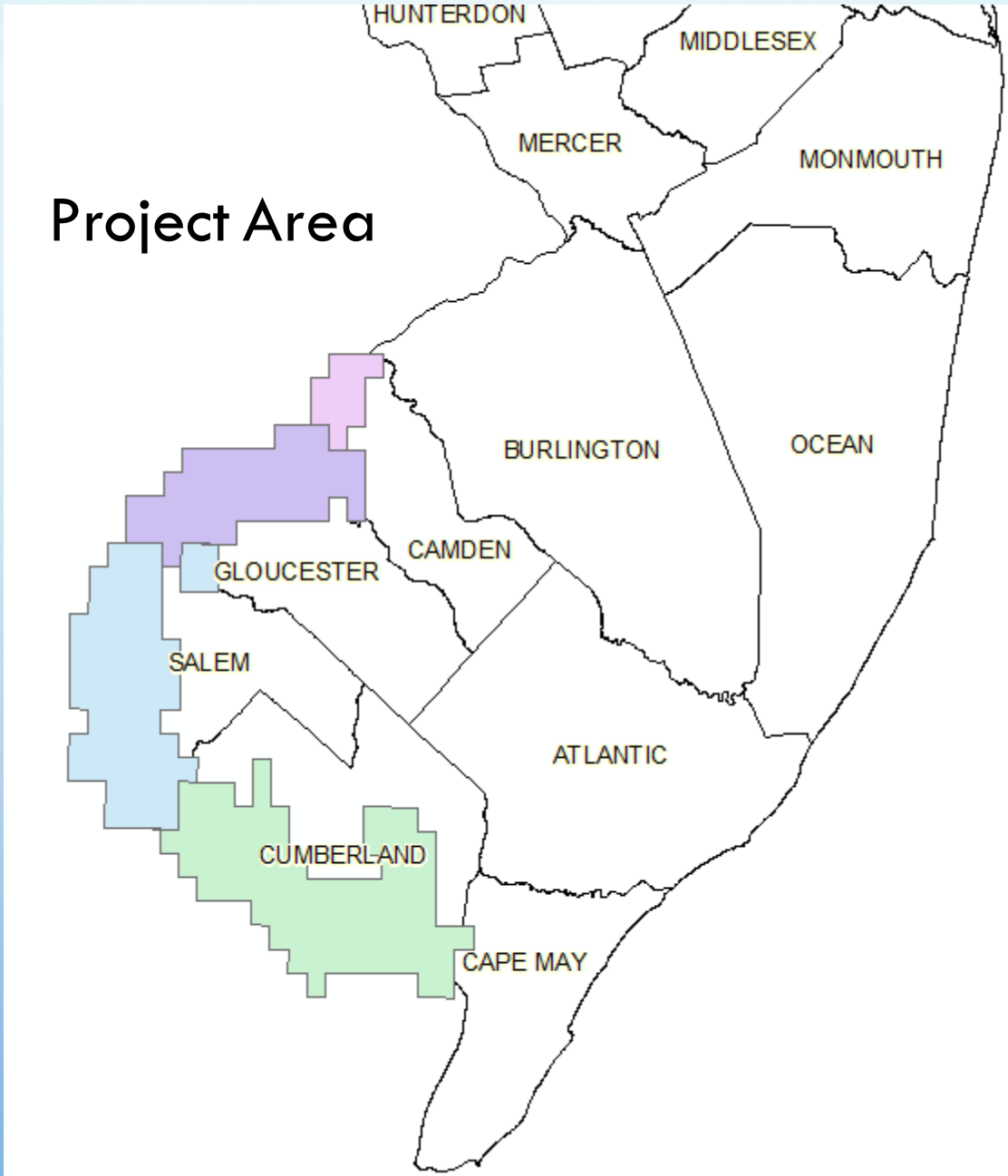
Kunal Patel, PhD, PE, CFM  
Office of Dam Safety & Flood Control, NJDEP  
[kunal.patel@dep.nj.gov](mailto:kunal.patel@dep.nj.gov); 609-292-2296

# NON-REGULATORY FLOOD RISK PRODUCTS AND DATASETS



- FLOOD RISK PRODUCTS
  - FLOOD RISK REPORT, MAP, AND DATABASE
- FLOOD RISK DATASETS
  - STORED IN THE FLOOD RISK DATABASE

# Project Area



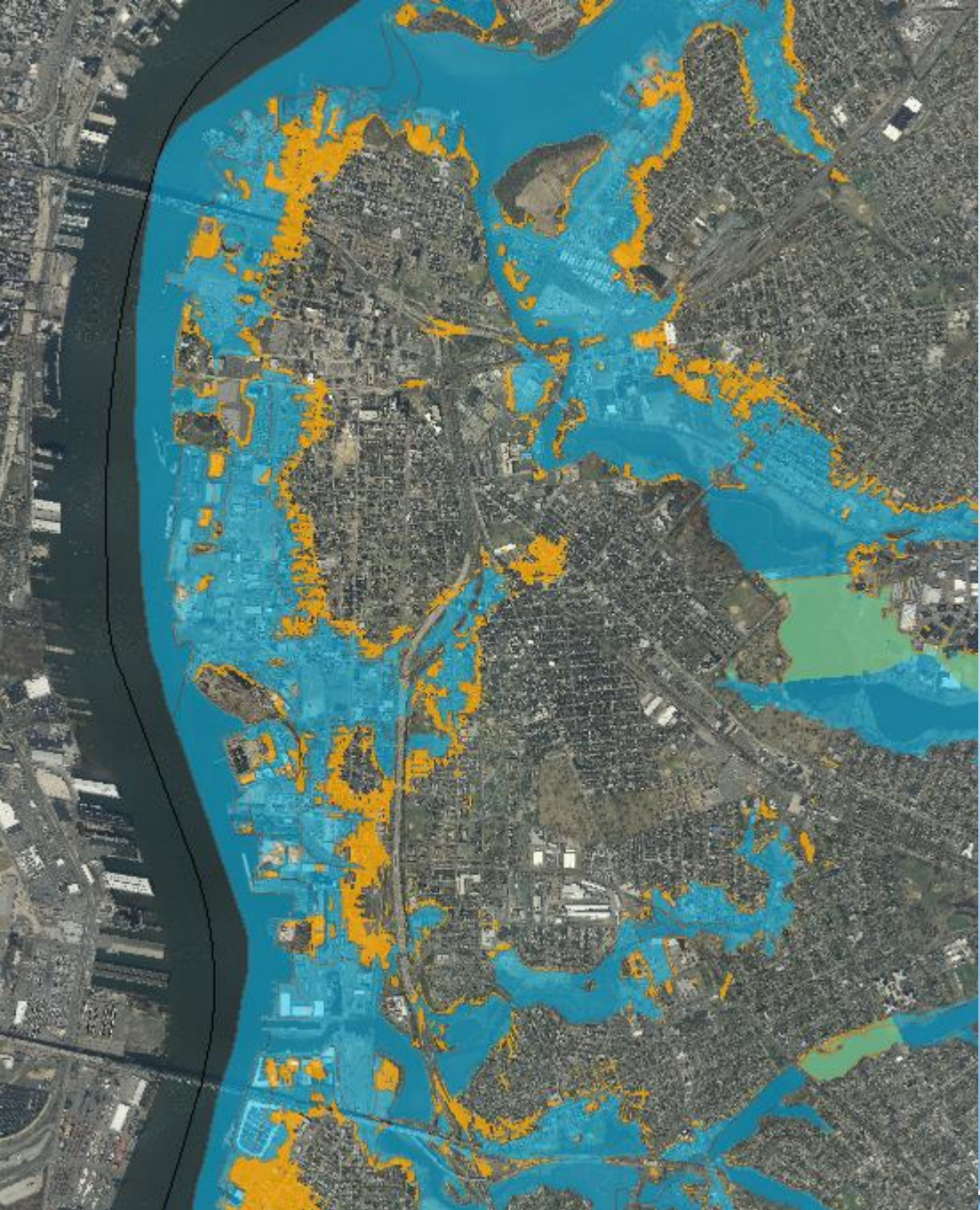
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# Coastal Increased Inundation Area (CIIA) – Camden County, NJ

Blue - 100 year floodplain

Yellow - 1 foot increase in the Base Flood Elevation (BFE)



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# Coastal Increased Inundation Area (CIIA) – Camden County, NJ

Blue - 100 year floodplain

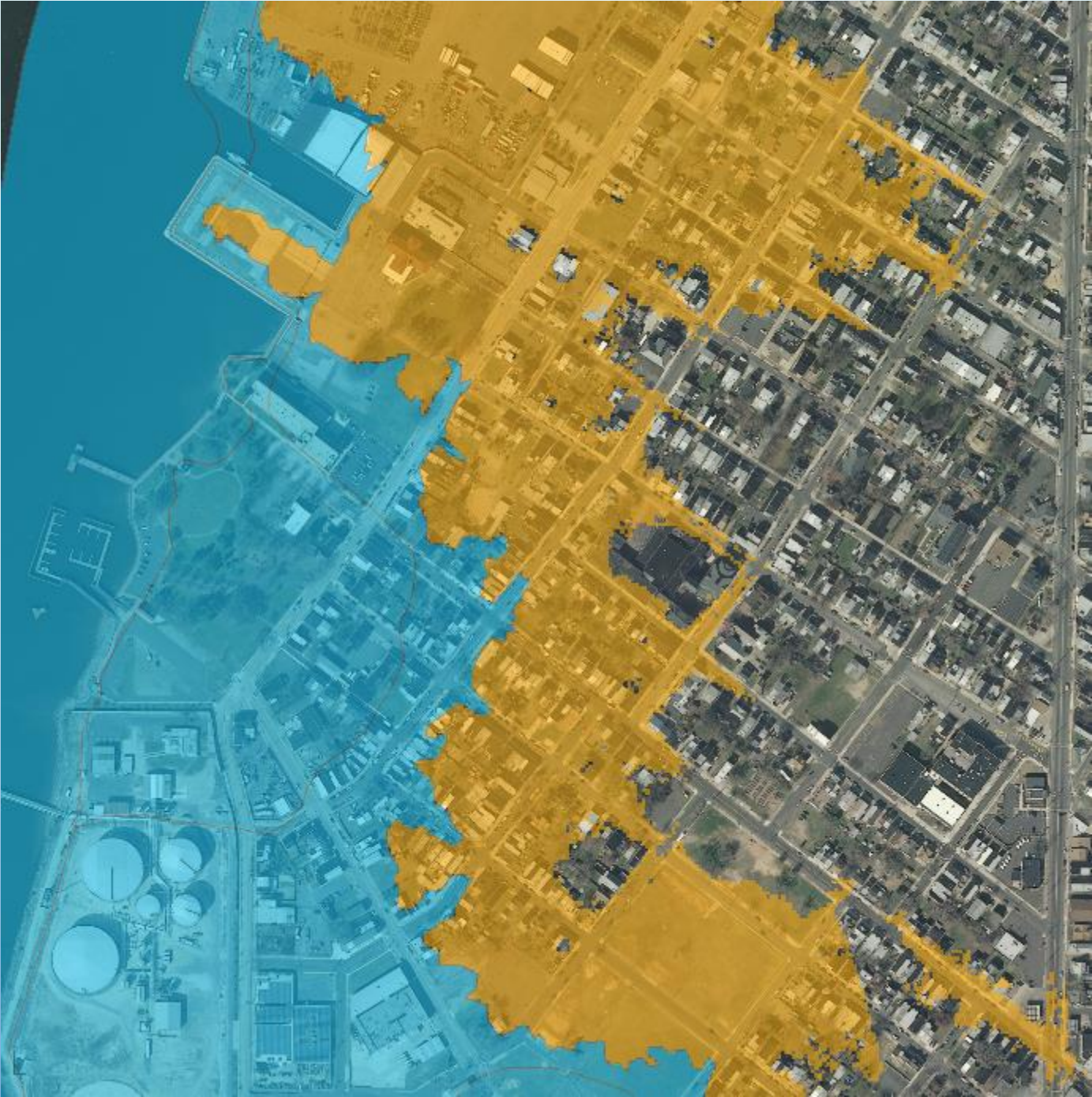
Pink - 3 foot increase in the Base Flood Elevation (BFE)





Blue - 100 year floodplain

Yellow - 1 foot CIA



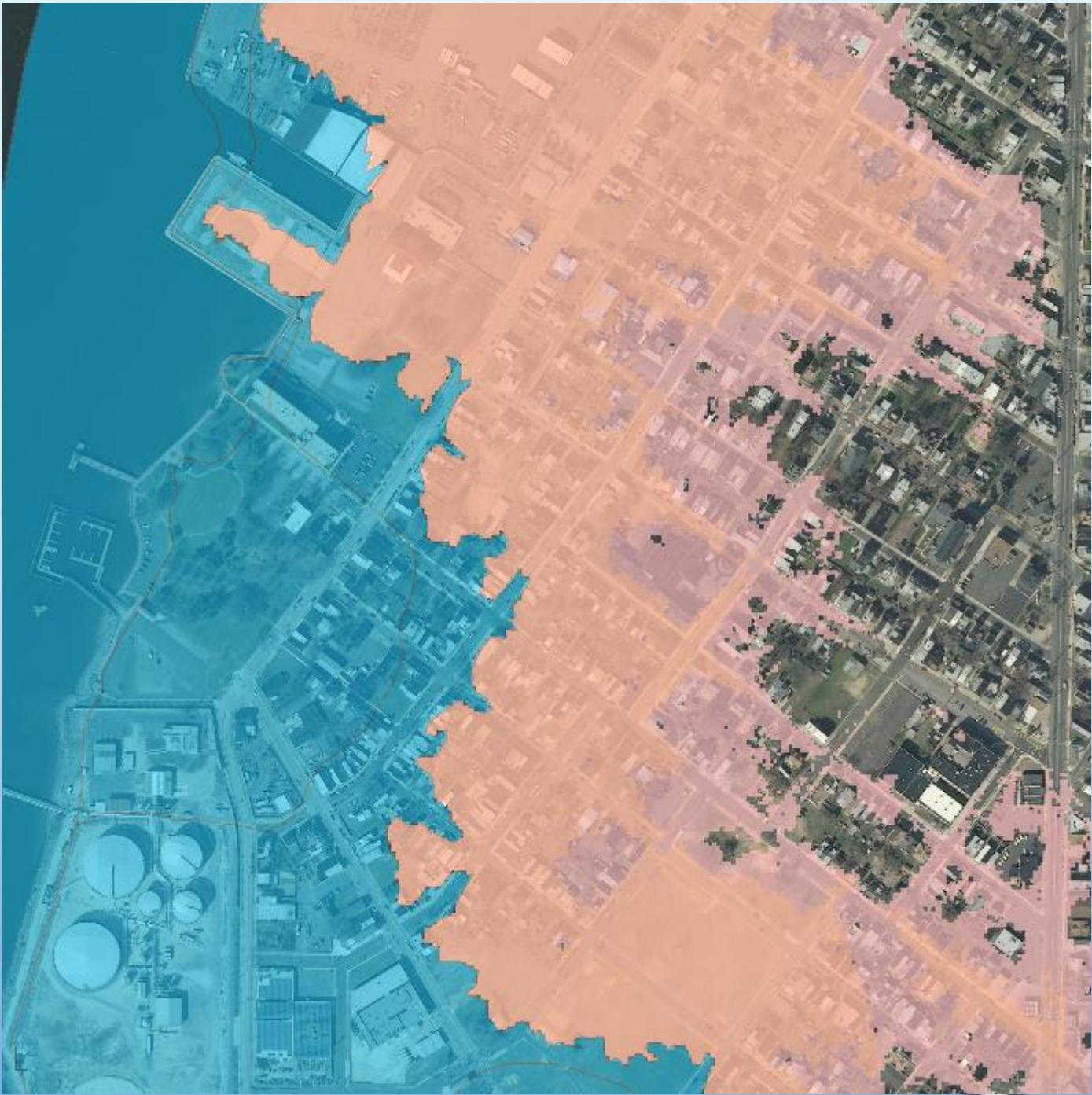
Presented to the DRBC Flood Advisory Committee on Sept. 7, 2016. Contents should not be published or re-posted in whole or in part without the permission of DRBC.



Blue - 100 year floodplain

Yellow - 1 foot CIA

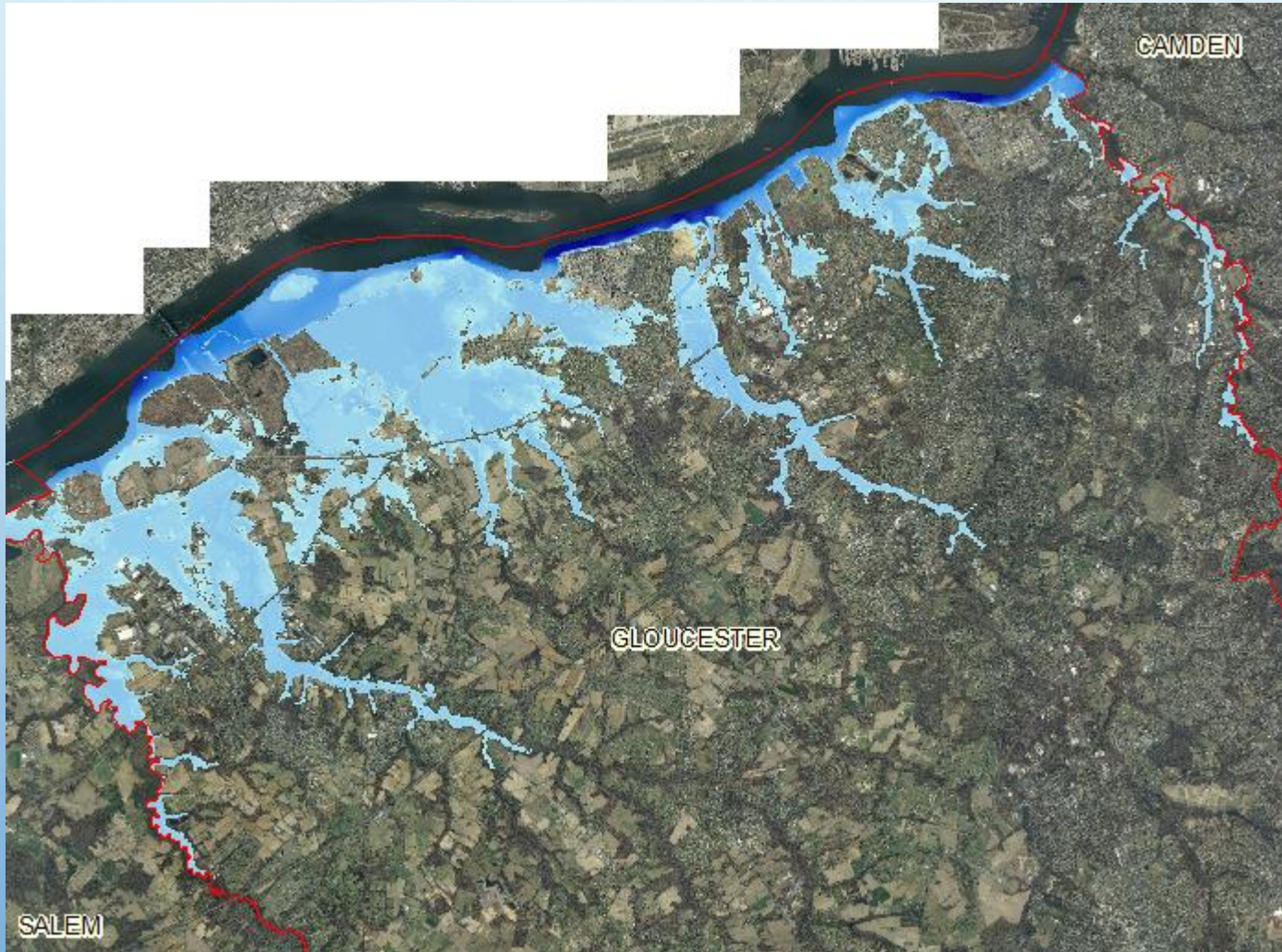
Pink - 3 foot CIA



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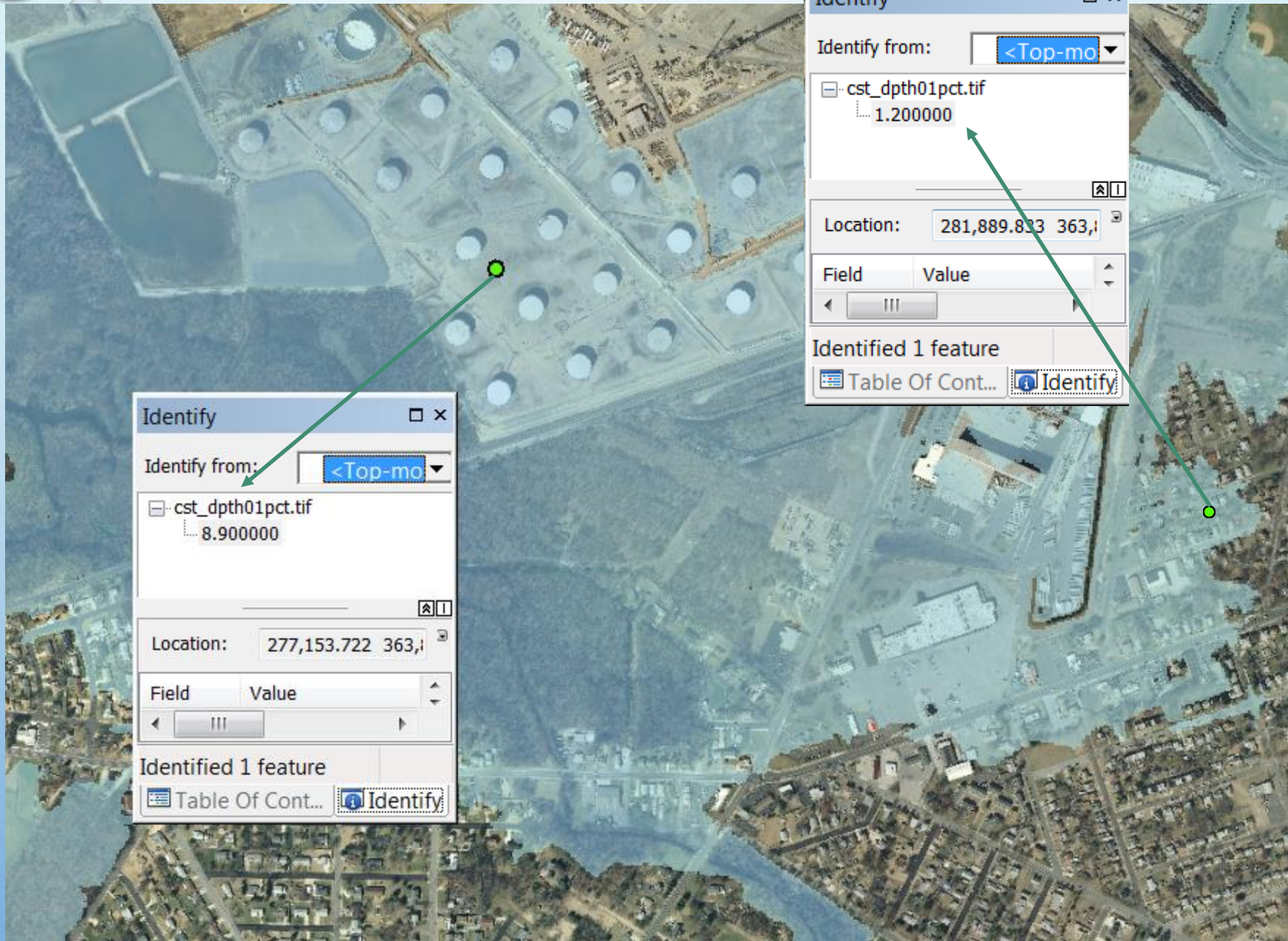


# Depth Grid for 100 year floodplain

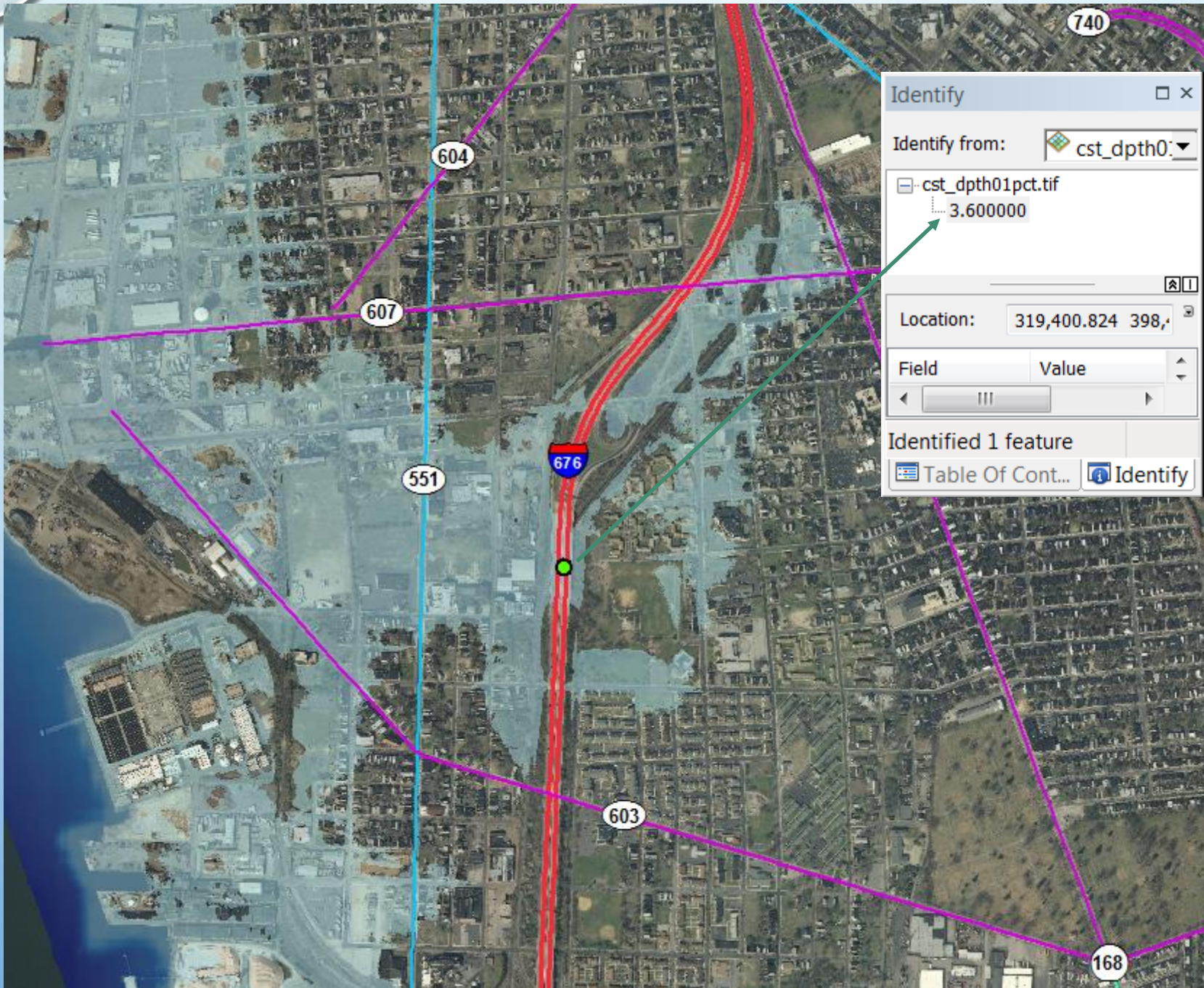


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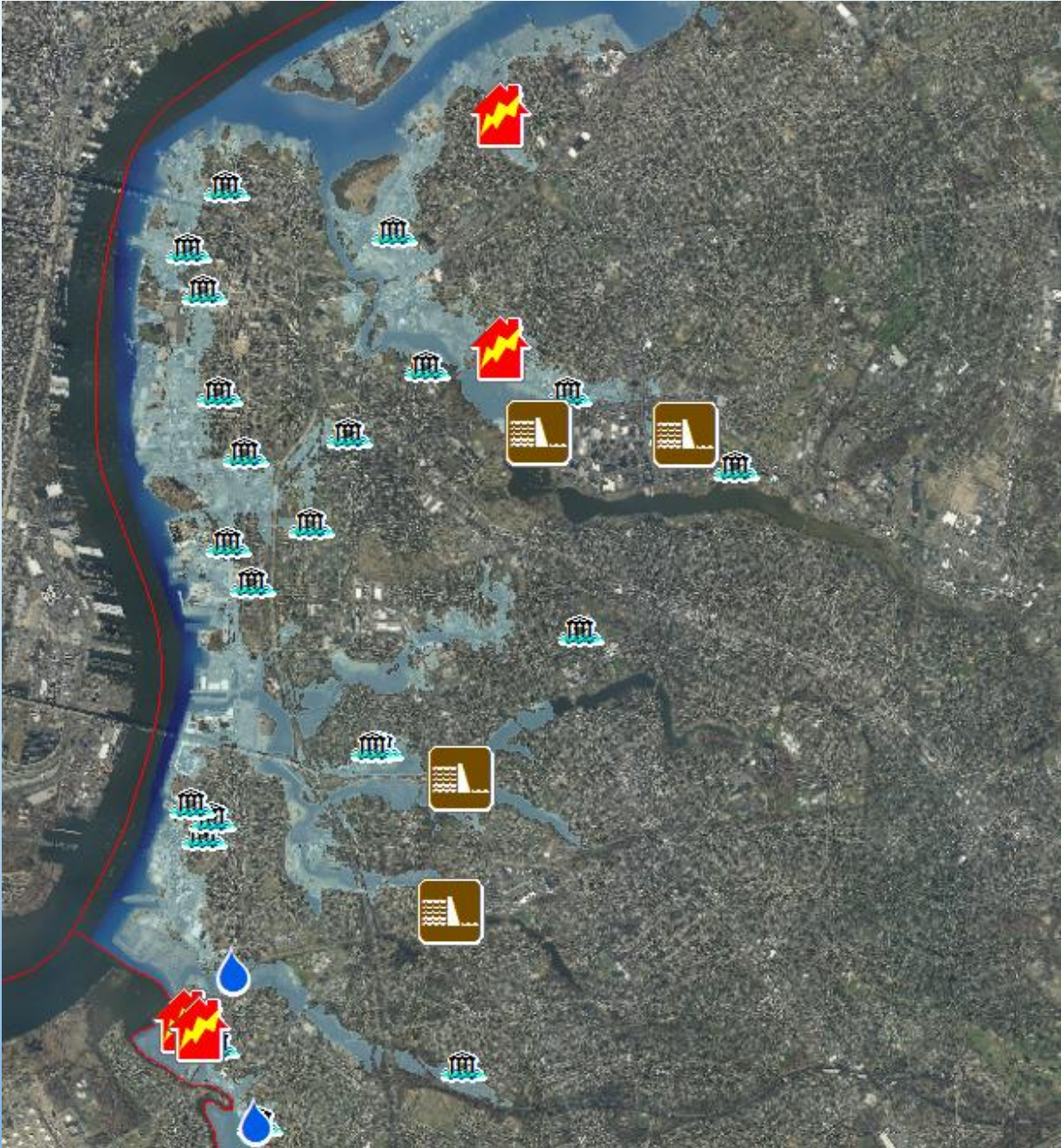


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# Areas of Mitigation Interest

- Areas of Mitigation Interest
- ★ <all other values>
- AOMI\_TYP
- ◆ Accredited Levees
- ▲ Areas of Significant Erosion
- 🏛️ At Risk Essential Facilities
- ⊗ Coastal Structures
- 🏰 Dams
- Individual Assistance (IA) or Put
- 🚧 ROAD FLOODED Key Emergency Routes Overtop
- ◆ Non-Accredited Levees
- ❄️ Non-Levee Embankments
- ★ Other
- 💧 Other Flood Risk Areas
- 🏠 Past Claims Hot Spot



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# Flood Risk Report



## Flood Risk Report

Salem County Coastal Project Area, New Jersey  
 Portions of HUC-8 Watershed: 02040206 (Cohansey-Maurice) and 02040202 (Lower Delaware)

Report Number 001  
 8/3/2016  
 Final



## 3.2 Salem County Coastal Project Area, New Jersey Flood Risk Project Area Summary

Salem County is located in the southwest part of New Jersey and is part of the Delaware Valley area, residing adjacent to Gloucester and Cumberland County. Salem County is 372.33 square miles in size, has 15 municipalities (6 of which are in the coastal project area) and includes extensive industrial, office and residential areas. The 2000 U.S. Census population estimate for Salem County is 64,285.

### 3.2.1 Overview

Salem County Coastal Project Area, located in New Jersey, includes the following communities:

Community Name	CID	Total Community Population (Census 2000)	Percent of Population in Project	Total Community Land Area (sq mi)	Percent of Land Area in Project	NFIP	CRS Rating	Mitigation Plan
Borough of Penns Grove	340419	5,147	100	0.89	100	Yes	10	Y
City of Salem	340423	5,146	100	2.75	100	Yes	10	Y
Township of Alloway	340413	3,467	5.77	33.91	5.87	Yes	10	Y
Township of Carneys Point	340424	8,049	94.96	17.71	94.68	Yes	10	Y
Township of Elsinboro	340415	1,036	100	13.15	100	Yes	10	Y
Township of Lower Alloways Creek	340416	1,770	100	47.94	96.74	Yes	10	Y
Township of Mannington	340417	1,806	59.14	37.85	78.65	Yes	10	Y
Township of Oldmans	340418	1,773	100	20.02	82.70	Yes	10	Y
Township of Pennsville	340512	13,409	100	24.84	100	Yes	10	Y
Township of Pilesgrove	340420	4,016	21.56	35.14	9.62	Yes	10	Y
Township of Quinton	340422	2,666	58.81	24.26	44.95	Yes	10	Y



# Community Overview

## 3.3.12.10 Overview

The City of Camden is one of fourteen communities located within the Project Area. The information below provides an overview of the community's floodplain management program information as of the date of this publication.

Community Name	CID	Total Community Population (Census 2000)	Percent of Population in Project	Total Community Land Area (sq mi)	Percent of Land Area in Project	NFIP	CRS Rating	Mitigation Plan
City of Camden	340128	79,904	100	10.46	100	Y	10	Y

- Participating in the Camden County Multi-Jurisdictional Hazard Mitigation Plan which will expire 10/16/2016
- Past Federal Disaster Declarations for flooding = 5
- National Flood Insurance Program (NFIP) policy coverage (policies/value) = 761 policies totaling approximately \$ 125,627,200
- NFIP-recognized repetitive loss properties = 28
- NFIP-recognized severe repetitive loss properties = 0

# Changes Since Last Firm



The table below summarizes the increases, decreases, and net change of SFHAs for the community.

Area of Study	Total Area (mi <sup>2</sup> )	Increase (mi <sup>2</sup> )	Decrease (mi <sup>2</sup> )	Net Change (mi <sup>2</sup> )
Within SFHA	3.7	0.2	-0.6	-0.4
Within Floodway	0.0	0.0	0.0	0.0
Within Non-SFHA	2.3	0.2	-1.0	-0.8
Within CHHA	0.4	0.4	0.0	0.4



# Flood Risk Assessment

## Township of Lower Alloways Creek - Estimated Potential Losses for Flood Event Scenarios (2010 AAL)

	Total Inventory		10% (10-yr)		2% (50-yr)		1% (100-yr)		0.2% (500-yr)		Annualized (\$/yr)	
	Estimated Value	% of Total	Dollar Losses <sup>1</sup>	Loss Ratio <sup>2</sup>	Dollar Losses <sup>1</sup>	Loss Ratio <sup>2</sup>	Dollar Losses <sup>1</sup>	Loss Ratio <sup>2</sup>	Dollar Losses <sup>1</sup>	Loss Ratio <sup>2</sup>	Dollar Losses <sup>1</sup>	Loss Ratio <sup>2</sup>
Residential Building and Contents Losses	\$160,000,000	87%	\$6,100,000	4%	\$16,300,000	10%	\$19,600,000	12%	\$28,800,000	18%	\$1,200,000	<1%
Commercial Building and Contents Losses	\$13,900,000	8%	\$2,500,000	18%	\$2,600,000	19%	\$2,900,000	21%	\$3,700,000	27%	\$300,000	2%
Other Building and Contents Losses	\$10,700,000	6%	\$1,600,000	15%	\$2,500,000	23%	\$2,700,000	25%	\$3,800,000	36%	\$200,000	2%
Total Building and Contents Losses <sup>3</sup>	\$184,600,000	100%	\$10,200,000	6%	\$21,400,000	12%	\$25,200,000	14%	\$36,300,000	20%	\$1,700,000	<1%
Business Disruption <sup>4</sup>	N/A	N/A	\$300,000	N/A	\$400,000	N/A	\$500,000	N/A	\$700,000	N/A	\$30,000	N/A
<b>TOTAL<sup>5</sup></b>	<b>\$184,600,000</b>	<b>100%</b>	<b>\$10,500,000</b>	<b>6%</b>	<b>\$21,800,000</b>	<b>12%</b>	<b>\$25,700,000</b>	<b>14%</b>	<b>\$37,000,000</b>	<b>20%</b>	<b>\$1,730,000</b>	<b>&lt;1%</b>

Source: Hazus analysis results stored as the Flood Risk Assessment Dataset in the Flood Risk Database.

<sup>1</sup>Losses shown are rounded to nearest \$10,000 for values under \$100,000 and to the nearest \$100,000 for values over \$100,000.

<sup>2</sup>Loss ratio = Dollar Losses ÷ Estimated Value. Loss Ratios are rounded to the nearest integer percent.

<sup>3</sup>Total Building and Contents Losses = Residential Building and Contents Losses + Commercial Building and Contents Losses + Other Building and Contents Losses. Totals are NOT rounded.

<sup>4</sup>Business Disruption = Inventory Loss + Relocation Cost + Income Loss + Rental Income Loss + Wage Loss + Direct Output Loss. Values are rounded per Note 1 above.

<sup>5</sup>Total Loss = Total Building and Contents Losses + Business Disruption.



# Flood Risk Assessment

Township of Lower Alloways Creek - Estimated Potential Losses for Flood Event Scenarios (Refined 1%)												
	Total Inventory		10% (10-yr)		2% (50-yr)		1% (100-yr)		0.2% (500-yr)		Annualized (\$/yr)	
	Estimated Value	% of Total	Dollar Losses <sup>1</sup>	Loss Ratio <sup>2</sup>	Dollar Losses <sup>1</sup>	Loss Ratio <sup>2</sup>	Dollar Losses <sup>1</sup>	Loss Ratio <sup>2</sup>	Dollar Losses <sup>1</sup>	Loss Ratio <sup>2</sup>	Dollar Losses <sup>1</sup>	Loss Ratio <sup>2</sup>
Residential Building and Contents Losses	\$160,000,000	87%	N/A	N/A	N/A	N/A	\$13,700,000	9%	N/A	N/A	N/A	N/A
Commercial Building and Contents Losses	\$13,900,000	8%	N/A	N/A	N/A	N/A	\$900,000	6%	N/A	N/A	N/A	N/A
Other Building and Contents Losses	\$10,700,000	6%	N/A	N/A	N/A	N/A	\$2,000,000	19%	N/A	N/A	N/A	N/A
Total Building and Contents Losses <sup>3</sup>	\$184,600,000	100%	N/A	N/A	N/A	N/A	\$16,600,000	9%	N/A	N/A	N/A	N/A
Business Disruption <sup>4</sup>	N/A	N/A	N/A	N/A	N/A	N/A	\$100,000	N/A	N/A	N/A	N/A	N/A
<b>TOTAL<sup>5</sup></b>	<b>\$184,600,000</b>	<b>100%</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>\$16,700,000</b>	<b>9%</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

Source: Hazus analysis results stored as the Flood Risk Assessment Dataset in the Flood Risk Database.

<sup>1</sup>Losses shown are rounded to nearest \$10,000 for values under \$100,000 and to the nearest \$100,000 for values over \$100,000.

<sup>2</sup>Loss ratio = Dollar Losses ÷ Estimated Value. Loss Ratios are rounded to the nearest integer percent.

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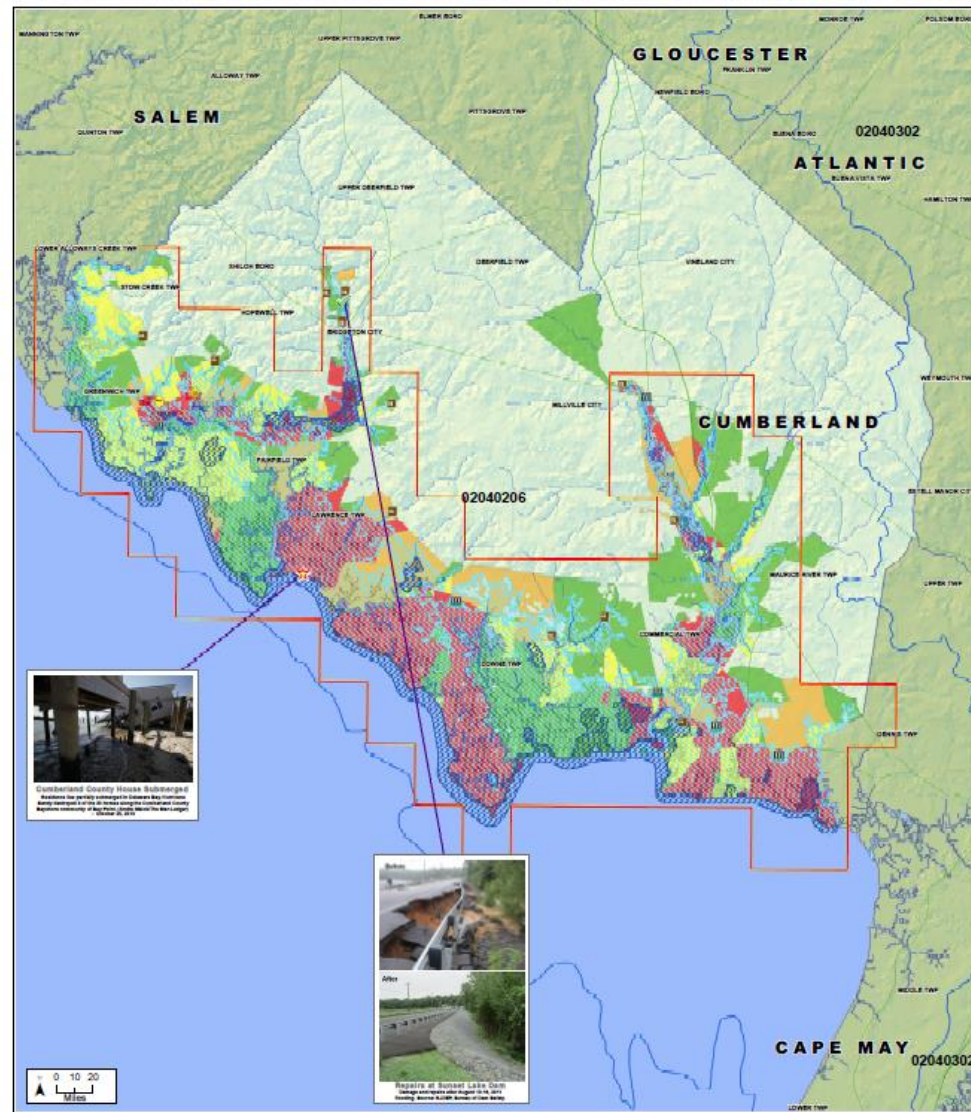
<sup>4</sup>Business Disruption = Inventory Loss + Relocation Cost + Income Loss + Rental Income Loss + Wage Loss + Direct Output Loss. Values are rounded per Note 1 above.

<sup>5</sup>Total Loss = Total Building and Contents Losses + Business Disruption.



# Flood Risk Map

## Flood Risk Map: Cumberland County Coastal Project Area, New Jersey



**MAP SYMBOLOLOGY**

<b>Base Data</b>	<b>Flood Data</b>	<b>Flood Risk (2% chance)</b>	<b>Areas of Mitigation Interest</b>
County	Rivers and Streams	Total Estimated Loss, \$	Accredited Levees
Major Road	Resubdy Area	Very Low (\$ 0 - \$ 100K)	Non-Accredited Levees
Watershed Boundary	Coastal Surge Influenced Area (AC Zone)	Low (\$ 100K - \$ 500K)	Dams
Municipality	Coastal Surge Influenced Area (VC Zone)	Medium (\$ 500K - \$ 1M)	Coastal Structures
State Boundary	Coastal Surge Influenced Area (VZ Zone)	High (\$ 1M - \$ 10M)	Stream Flow Constriptions or Coastal Erosion
		Very High (\$ 10 M+)	Panel Claims Hot Spot
			Key Emergency Route Overlapped During Frequent Flooding Events
			Other Flood Risk Areas
			Areas of Mitigation Success
			At-Risk Essential Facilities
			Clear
			Individual Assistance (IA) & Public Assistance (PA) Data (within the past 5 years and looking forward 5 years)
			Significant Land Use Change
			Areas of Significant Riverine or Coastal Erosion
			Non-Levee Embankments

**PROJECT LOCATOR**

**Risk Mapping, Assessment, and Planning (Risk MAP)**  
 FRM Flood Risk Map  
 Cumberland County Coastal Project Area, New Jersey, USA  
 FEMA  
 Form of HUCS 02040302  
 RELEASE DATE 8/3/2016

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The background is a light blue gradient. There are several realistic-looking water droplets of various sizes in the corners: top-left, top-right, and bottom-right. The word "Questions?" is centered in the middle of the page.

# Questions?