

FLOOD RISK VISUALIZATION TOOLS

A collection of movies, animations, story maps, and other flood visualization tools available at the building and community levels for communicating and understanding flood risk in West Virginia.

a) Visualization Content  
Flood Frequency Probability & Magnitude  
ii) Damage Assessments  
iii) Mitigated and unmitigated properties

Visualization Products (select products include narrations). A map index provides a spatial gateway to flood visualizations and videos.

i) **Building-Level** Visualizations  
(1) Building Flood Profiles for different sized storms  
(2) Building Flood Depth and Damage Assessment (WV Flood Tool)

ii) **Community-Level** Visualizations (graphic or narrated movies at community or viewshed levels)

iii) Story Maps  
iv) Other video or visualization products

Frequency: Probability that a flood of a specific size will be equaled or exceeded in any given year.



FEMA			
Flood Recurrence Interval and Flood Size	Annual Probability	Cumulative Probability - Flooding at least once over 30 years	FEMA Risk Description
500 yr (1 in 500)	0.2%	6%	Moderate Risk
100 yr (1 in 100) Plus confidence error	1%+		
100 yr (1 in 100)	1%	26%	High Risk
50 yr (1 in 50)	2%	45%	High Risk
25 yr (1 in 25)	4%	71%	High Risk
10 yr (1 in 10)	10%	96%	High Risk

Relationship between flood recurrence intervals and the probability of an event occurring within a given period.

Rainelle

182 Seventh Street, Rainelle, WV, 25962

	HEIGHT (ft.)
BUILDING	
First Floor Height	9
Freeboard (FBD)	2
FLOOD DEPTH	
FEMA 10% (10-Yr)	NA
FEMA 4% (25-Yr)	NA
FEMA 2% (50-Yr)	1.9
2016 Flood HWM	7.5
FEMA 1% (100-Yr)	3.1
FEMA 100-Yr + FBD	5.1
FEMA 1%+ (84% CL)	9.9
FEMA 0.2% (500-Yr)	9.9
FSF 0.2% (500-Yr) Climate	12.2

12.2' (FSF 0.2% / 500-Yr)

9.9' (FEMA 0.2% / 500-Yr)

9.9' FEMA 1%+ (84% CL)

7.5' (2016 High Water)

3.1' (FEMA 1% / 100-Yr)

1.9' (FEMA 10% / 10-Yr)

Richwood

113 Valley Ave, Richwood, WV

	HEIGHT (ft.)
BUILDING	
First Floor Height	8
Freeboard (FBD)	2
FLOOD DEPTH	
FEMA 10% (10-Yr)	0
FEMA 4% (25-Yr)	0
FEMA 2% (50-Yr)	2.8
2016 Flood HWM	1.0
FEMA 1% (100-Yr)	3.5
FEMA 100-Yr + FBD	5.5
FEMA 1%+ (84% CL)	9.0
FEMA 0.2% (500-Yr)	8.3
FSF 0.2% (500-Yr)	6.7

White Sulphur Springs

138 Mill Street, White Sulphur Springs, WV, 24986

	HEIGHT (ft.)
BUILDING	
First Floor Height	6.4
Freeboard (FBD)	2.0
FLOOD DEPTH	
FEMA 10% (10-Yr)	0.7
FEMA 4% (25-Yr)	2.0
FEMA 2% (50-Yr)	3.4
2016 Flood HWM	6.5
FEMA 1% (100-Yr)	5.4
FEMA 100-Yr + FBD	7.4
FEMA 1%+ (84% CL)	6.4
FEMA 0.2% (500-Yr)	7.2
FSF 0.2% (500-Yr)	7.4

Clendenin

306 Maywood Ave., Clendenin, WV, 25045

	HEIGHT (ft.)
BUILDING	
First Floor Height	12.0
Freeboard (FBD)	2.0
FLOOD DEPTH	
FEMA 10% (10-Yr)	2.0
FEMA 4% (25-Yr)	6.0
FEMA 2% (50-Yr)	9.5
2016 Flood HWM	10.5
FEMA 1% (100-Yr)	12.3
FEMA 100-Yr + FBD	14.3
FEMA 1%+ (84% CL)	16.5
FEMA 0.2% (500-Yr)	20.5
FSF 0.2% (500-Yr)	24.6

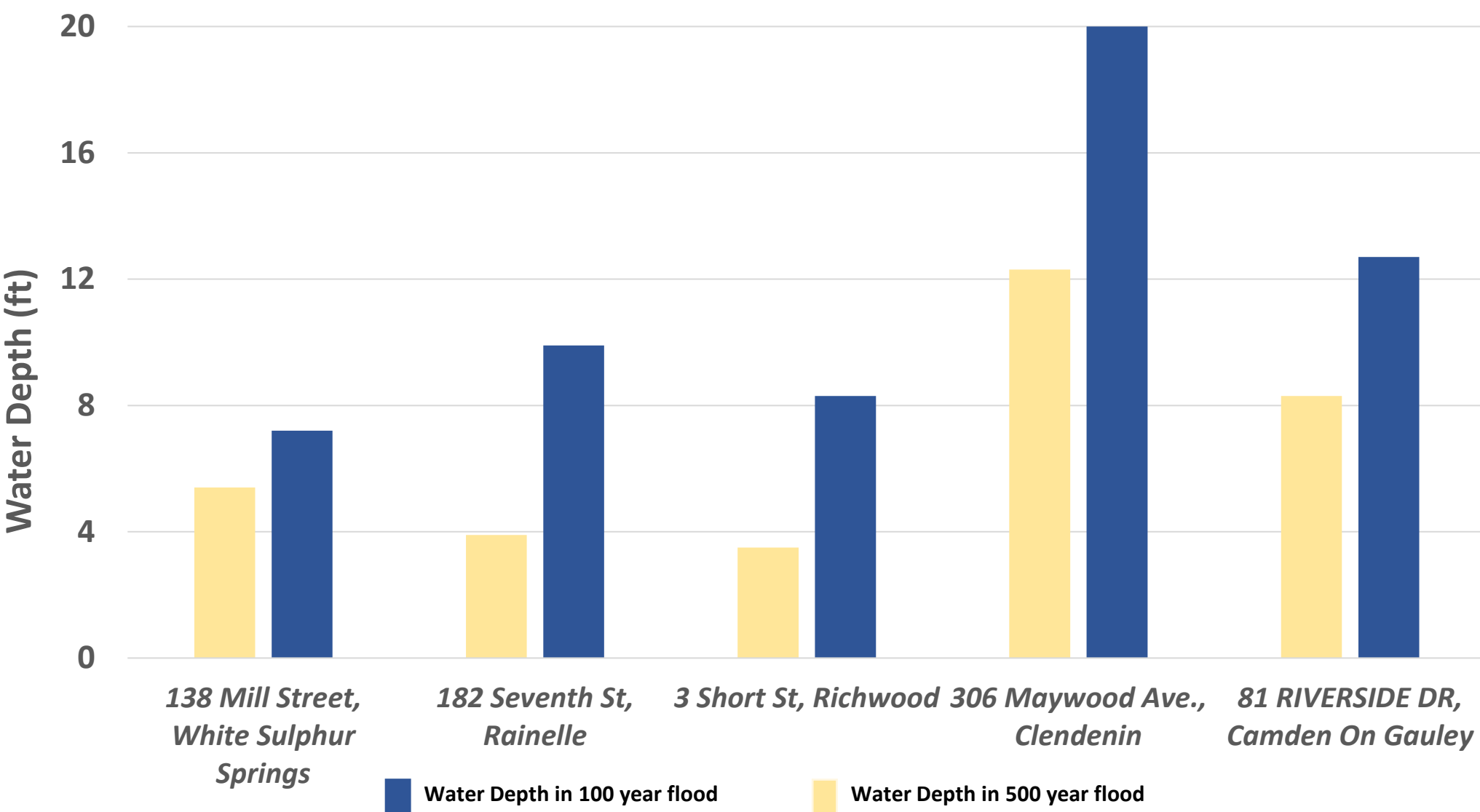
91 RIVERSIDE DR, Camden On Gauley, WV, 26208

Camden on Gauley

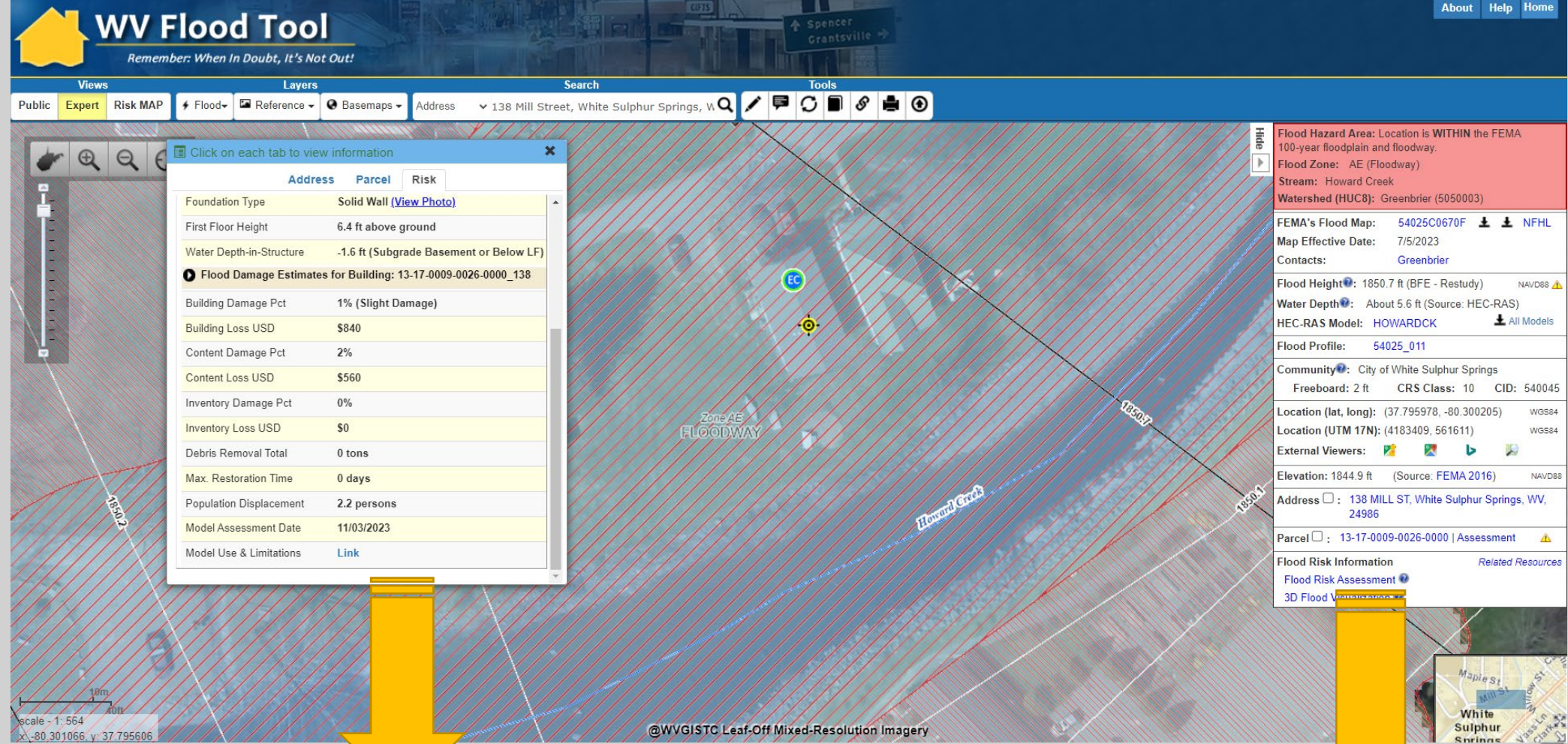
	HEIGHT (ft.)
BUILDING	
First Floor Height	4
Freeboard (FBD)	2
FLOOD DEPTH	
FEMA 10% (10-Yr)	1.9
FEMA 4% (25-Yr)	4.4
FEMA 2% (50-Yr)	6.7
2016 Flood HWM	9.1
FEMA 1% (100-Yr)	8.3
FEMA 100-Yr + FBD	10.3
FEMA 1%+ (84% CL)	10.7
FEMA 0.2% (500-Yr)	12.7
FSF 0.2% (500-Yr) Climate	14.8

Flood Profile

Comparing Flood Depths in Five Pilot Communities



Building Flood Depth and Damage Assessment (WV Flood Tool)



First Floor Height	6.4 ft above ground
Water Depth-in-Structure	-1.6 ft (Subgrade Basement or Below LF)
Flood Damage Estimates for Building: 13-17-0009-0026-0000_138	
Building Damage Pct	1% (Slight Damage)
Building Loss USD	\$840
Content Damage Pct	2%
Content Loss USD	\$560

Flood Height: 1850.7 ft (BFE - Restudy) NAVD88

Water Depth: About 5.6 ft (Source: HEC-RAS)

HEC-RAS Model: HOWARDCK All Models

Community	Physical Address	Flood Depth in Ft (Current Study)						
		Effective Date	10 year (10%)	25 year (4%)	50 year (2%)	100 year (1%)	100 year Plus(1%+)	500 year (0.2%)
White Sulphur Springs	138 Mill Street, White Sulphur Springs, WV, 24986	Effective: 2023	0.2	2.0	3.4	5.4	6.4	7.2
Rainelle	182 SEVENTH ST, Rainelle, WV, 25962	Effective: 2023	NA	0.1	1.9	3.9	9.9	9.9
Richwood	3 Short St, Richwood, WV, 26261	Effective: 2021	NA	NA	2.8	3.5	9.0	8.3
Clendenin	306 Maywood Ave., Clendenin, WV, 25045	Effective: 2023	2.0	6.0	9.5	12.3	16.5	20.5
Camden	81 RIVERSIDE DR, Camden On Gauley, WV, 26208	Effective: 2022	1.9	4.4	6.7	8.3	10.7	12.7