



January 8, 2026

Kevin Sneed, CFM
CTP Project Officer
1700 MacCorkle Avenue, SE, 6th Floor
Charleston, WV 25314
(304) 957-2571
kevin.l.sneed@wv.gov

SUBJECT: Invoice 3 for COMS Tasks B, C, & D; FY24 CTP Community Outreach and Mitigation Strategies (COMS) Grant.

Dear Kevin,

In accordance with the FY24 CTP Service Agreement, this first invoice in the amount of **\$69,000.00** is for **COMS Tasks B, C, & D** in support of the WV Flood Tool Services (Task A) for the WV Flood Tool (www.mapwv.gov/Flood). See the scope of work as outlined the 2024-25 (FY24) CTP Statement of Work Plan dated September 2024, and authorized under a WV-48 service agreement between the WVEMD and WV GIS Technical Center, West Virginia University. Refer to the FY24 COMS [Statement of Work](#) documents for more details about the specific tasks.

Invoice #	Services Rendered	Amount																																																																	
Task B 01082026	[Task B] Update the statewide Building-Level Risk Assessments (BLRA) on the WV Flood Tool's RiskMAP View from new data sources, (e.g., Flood Studies, Tax assessment building characteristics like structure values, and mitigated structures. Updated the building-level risk assessments for 26 counties or 67% (65,435 of 98,072 structures) of all flood-prone structures in high-risk flood zones. All new building-level risk assessments were updated to the Risk MAP View of the WV Flood Tool. Performance period between 4/1/2025 and 12/31/2025.	\$24,000																																																																	
Time Period 10/01/2024 to 12/31/2025	Table COMS-B.1. Counties in which inventoried floodplain buildings and risk assessments were conducted. <table border="1"><thead><tr><th>County</th><th>PDC</th><th>BIE</th><th>BLRA</th><th>Building Count</th></tr></thead><tbody><tr><td>Barbour County</td><td>7</td><td>2025</td><td>2025</td><td>784</td></tr><tr><td>Berkeley County</td><td>9</td><td>2025</td><td>2025</td><td>826</td></tr><tr><td>Boone County</td><td>3</td><td>2025</td><td>2024</td><td>3,926</td></tr><tr><td>Braxton County</td><td>7</td><td>2025</td><td>2025</td><td>823</td></tr><tr><td>Brooke County</td><td>11</td><td>2025</td><td>2025</td><td>1,064</td></tr><tr><td>Cabell County</td><td>2</td><td>2025</td><td>2025</td><td>3,551</td></tr><tr><td>Calhoun County</td><td>5</td><td>2023</td><td>2023</td><td>623</td></tr><tr><td>Clay County</td><td>3</td><td>2025</td><td>2023</td><td>1,041</td></tr><tr><td>Doddridge County</td><td>6</td><td>2023</td><td>2023</td><td>769</td></tr><tr><td>Fayette County</td><td>4</td><td>2025</td><td>2025</td><td>1,736</td></tr><tr><td>Gilmer County</td><td>7</td><td>2025</td><td>2023</td><td>518</td></tr><tr><td>Grant County</td><td>8</td><td>2024</td><td>2023</td><td>319</td></tr></tbody></table>	County	PDC	BIE	BLRA	Building Count	Barbour County	7	2025	2025	784	Berkeley County	9	2025	2025	826	Boone County	3	2025	2024	3,926	Braxton County	7	2025	2025	823	Brooke County	11	2025	2025	1,064	Cabell County	2	2025	2025	3,551	Calhoun County	5	2023	2023	623	Clay County	3	2025	2023	1,041	Doddridge County	6	2023	2023	769	Fayette County	4	2025	2025	1,736	Gilmer County	7	2025	2023	518	Grant County	8	2024	2023	319	
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	Greenbrier County	4	2025	2025	1,884	
	Hampshire County	8	2024	2023	1,157	
	Hancock County	11	2025	2023	548	
	Hardy County	8	2025	2025	605	
	Harrison County	6	2024	2024	2,117	
	Jackson County	5	2025	2025	1,038	
	Jefferson County	9	2025	2025	776	
	Kanawha County	3	2025	2025	14,601	
	Lewis County	7	2025	2023	1,073	
	Lincoln County	2	2025	2025	2,594	
	Logan County	2	2025	2025	5,392	
	Marion County	6	2025	2023	1,701	
	Marshall County	10	2025	2025	1,614	
	Mason County	2	2025	2025	1,570	
	McDowell County	1	2025	2025	3,862	
	Mercer County	1	2025	2025	2,571	
	Mineral County	8	2024	2023	1,167	
	Mingo County	2	2025	2025	3,858	
	Monongalia County	6	2025	2023	1,197	
	Monroe County	1	2025	2023	348	
	Morgan County	9	2025	2025	637	
	Nicholas County	4	2025	2023	997	
	Ohio County	10	2025	2025	3,390	
	Pendleton County	8	2024	2023	472	
	Pleasants County	5	2025	2025	448	
	Pocahontas County	4	2025	2023	977	
	Preston County	6	2025	2023	756	
	Putnam County	3	2025	2025	2,670	
	Raleigh County	1	2025	2025	2,448	
	Randolph County	7	2024	2024	1,954	
	Ritchie County	5	2023	2023	522	
	Roane County	5	2025	2024	1,076	
	Summers County	1	2025	2025	831	
	Taylor County	6	2025	2023	427	
	Tucker County	7	2024	2023	625	
	Tyler County	5	2024	2023	839	
	Upshur County	7	2025	2023	1,432	
	Wayne County	2	2025	2025	2,905	
	Webster County	4	2025	2023	1,122	
	Wetzel County	10	2024	2024	2,129	
	Wirt County	5	2023	2024	522	
	Wood County	5	2025	2023	2,283	
	Wyoming County	1	2025	2025	2,957	
		42	26	98,072		
	<ul style="list-style-type: none"> First step of BLRA Cycle: Building Inventory Enhanced (BIE) completed (blue shade) for 42 counties. Second and third steps of BLRA Cycle: Building-Level Risk Assessments completed for 65,435 floodplain structures, or 67% of inventory, completed (yellow shade) for 26 counties. See BLRA Cycle diagram below. Status graphics of Building Inventory Year Updates & Model-Backed 1% Depth Status 					

- Online Building Level Tables updated for Primary Structures & Significant Facilities as part of WV Risk Explorer's [Building-Level Tools](#).

Figure COMS-B.2. Building-Level Flood Risk Assessment Update Graphic

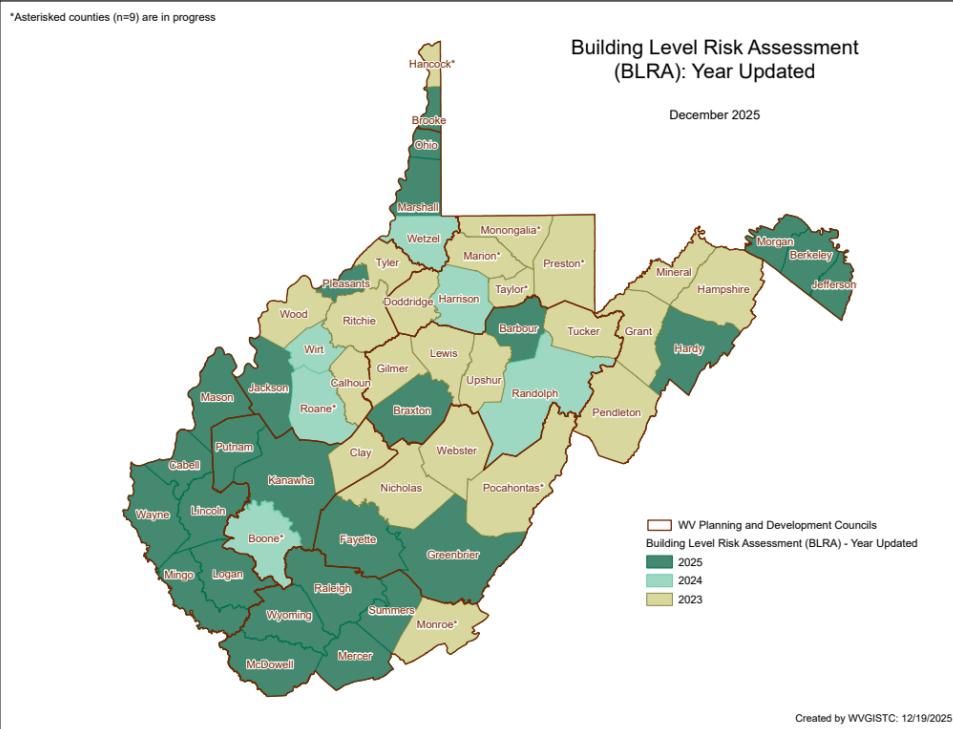
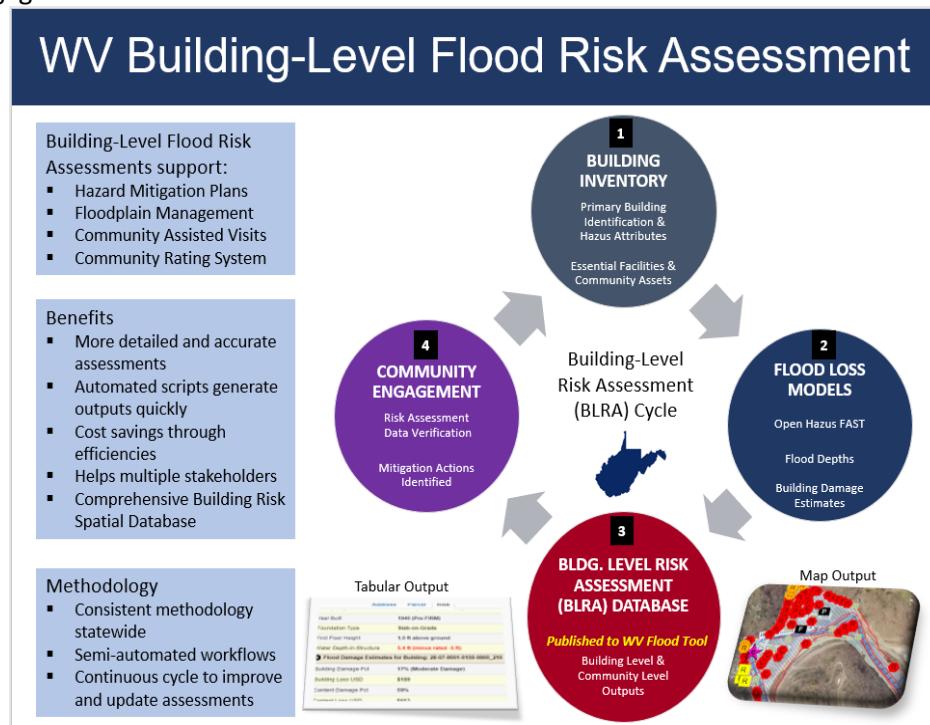
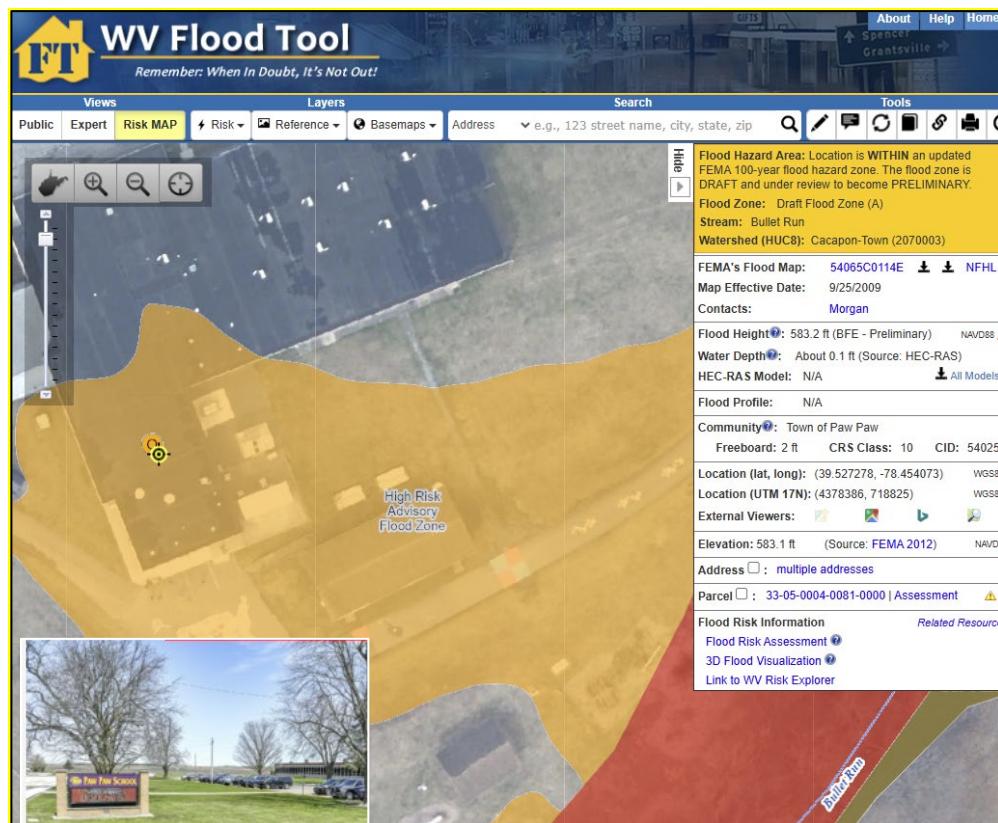


Figure COMS-B.3. Building-Level Flood Risk Assessment Cycle (BLRA). Major processing steps: (1) Building Inventory, (2) Flood Loss Models, (3) Building-Level Risk Assessment outputs published to WV Flood Tool, and (4) Community Engagement.



- **BUILDING LEVEL RISK METHODOLOGY.** View the [WV Flood Risk Assessment Methodology Report](#) in support of hazard mitigation plans.
- **BUILDING LEVEL RISK CYCLE.** Refer to the [Methodology Section](#) of the WV Risk Explorer's Learn More Resources page for detailed documentation about how the building level risk assessment cycle (BLRA) which continuously creates the building-level risk assessments. [BLRA Cycle Report](#) | [BLRA Cycle Diagram](#) | [Building Inventory Workflow Diagram](#)

Figure COMS-B.4. Example RiskMAP View of WV Flood Tool showing essential facility Paw Paw Elementary School (Building ID **33-05-0004-0081-0000_60**) inventoried in the DRAFT 1%-annual-chance floodplain Zone A of Morgan County for a riverine 1%-annual-chance flood event. View [map link](#) on WV Flood Tool or [essential facility](#) on BL Significant Facilities tool.



Task C	<p>[TASK C] Develop, Verify, and Publish Flood Risk Profiles at State, Regional, Community, and Watershed/Stream Levels.</p> <p>For exploring riverine flood risk, updated online interactive riverine Risk Maps and Risk Reports for eight aggregate or geographic scale levels:</p> <p>Table COMS-C.1. Risk Map and Report Links at 8 geographic scales</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #FFDAB9; text-align: center;">RISK MAPS</th><th style="background-color: #D9D9D9; text-align: center;">RISK REPORTS</th></tr> </thead> <tbody> <tr> <td style="background-color: #FFDAB9; vertical-align: top;"> <ul style="list-style-type: none"> • Statewide • 11 Regional Councils • 55 Counties • 284 Communities • 55 Unincorporated Areas • 229 Incorporated Places • 33 Watersheds • 156 Named Streams (Top 2%) </td><td style="background-color: #D9D9D9; vertical-align: top;"> <ul style="list-style-type: none"> • Statewide • 11 Regional Councils • 55 Counties • 284 Communities • 55 Unincorporated Areas • 229 Incorporated Places • 33 Watersheds • 156 Named Streams (Top 2%) </td></tr> </tbody> </table> <p>Depending on the scales of analysis, users can explore property flood risk data for the following purposes:</p> <ul style="list-style-type: none"> • Validating floodplain management practices at the incorporated/unincorporated or community scales • Exploring risk assessments and mitigation actions at the community level • Hazard mitigation planning at the county or regional scales • Resiliency planning at the statewide scale • Collecting information for FEMA's Risk MAP discovery at the watershed scale • Researching loss of property and life at the river/stream scale <p>Because certain risk indicators of the Communities scale follow a bimodal distribution, the 284 Communities are subdivided into 55 Unincorporated Areas and 229 Incorporated Places for more detailed analysis of scales. Of the 284 unincorporated/incorporated communities in West Virginia, 266 or 94% of these communities have mapped Special Flood Hazard Areas (SFHA) or high-risk floodplains.</p> <ul style="list-style-type: none"> • Learn more about Risk Assessments: statewide assessments, local assessments, top rankings, and comparative rankings 	RISK MAPS	RISK REPORTS	<ul style="list-style-type: none"> • Statewide • 11 Regional Councils • 55 Counties • 284 Communities • 55 Unincorporated Areas • 229 Incorporated Places • 33 Watersheds • 156 Named Streams (Top 2%) 	<ul style="list-style-type: none"> • Statewide • 11 Regional Councils • 55 Counties • 284 Communities • 55 Unincorporated Areas • 229 Incorporated Places • 33 Watersheds • 156 Named Streams (Top 2%) 	\$28,000
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Figure COMS-C.2. Example Risk Map for McDowell County (County Scale)

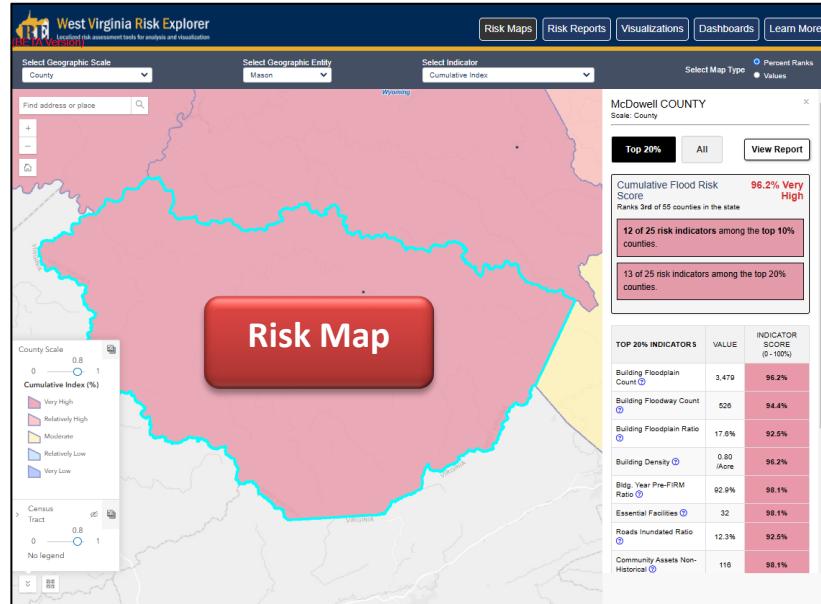


Figure COMS-C.3. Example Risk Report for McDowell County (County Scale)

Flood Risk Index Scores for McDowell County

Table 2. Flood Risk Index Scores: A Cumulative Flood Risk Index of 25 flood factors reveals that McDowell County ranks 3rd of 55 counties in the state with a Cumulative Flood Risk Score of 96.2%. Below are all 25 flood risk indicators used in the risk index with the indicator scores and rankings.

CATEGORY	FLOOD RISK INDICATOR	VALUE FOR McDOWELL	INDICATOR SCORE (0 - 100%)	INDICATOR RATING
Floodplain Characteristics	Floodplain Area	4,378 Acres	11.1%	Very Low
	Floodplain Length	344.8 Miles	70.3%	Relatively High
	Flood Declared Disasters	19	79.6%	Relatively High
	Flood Depth Median	2.1 Ft.	44.4%	Moderate
<i>Floodplain Characteristics Index, 23rd</i>				59.2% Moderate
Building Exposure	Building Floodplain Count	3,479	96.2%	VERY HIGH
	Building Floodway Count	528	94.4%	VERY HIGH
	Building Floodplain Ratio	17.6%	92.5%	VERY HIGH
	Building Density	0.80 /Acre	96.2%	VERY HIGH
<i>Building Exposure Index, 2nd</i>				98.1% VERY HIGH
Building Characteristics	Bldg. Substantial Damage Count	\$14,000	0.0%	Very Low
	Bldg. Substantial Damage Ratio	30.2%	75.0%	Relatively High
	Bldg. Previous Damage Claims	28.1%	72.2%	Relatively High
	Bldg. Repetitive Loss Structures	80.9%	37.0%	Relatively Low
<i>Building Characteristics Index, 29th</i>				48.1% Moderate
Critical Infrastructure	Essential Facilities	32	98.1%	VERY HIGH
	Roads Inundated Ratio	12.3%	92.5%	VERY HIGH
<i>Critical Infrastructure Index, 3rd</i>				94.4% VERY HIGH
Community Assets	Community Assets Historical	14	61.1%	Relatively High
	Community Assets Non-Historical	118	98.1%	VERY HIGH
<i>Community Assets Index, 5th</i>				88.8% Very High
Building Damage Loss	Bldg. Substantial Damage Count	228	88.8%	Very High
	Bldg. Substantial Damage Ratio	6.5%	55.5%	Moderate
	Bldg. Previous Damage Claims	1,049	90.7%	VERY HIGH
	Bldg. Repetitive Loss Structures	168	72.2%	Relatively High
<i>Building Damage Loss Index, 8th</i>				87.0% Very High
People / Social Vulnerabilities	Population in Floodplain Ratio	45.0%	100.0%	VERY HIGH
	Population Displaced Ratio	30.4%	100.0%	VERY HIGH
	WV Social Vulnerability Index	-	100.0%	VERY HIGH
<i>People / Social Vulnerabilities Index, 1st</i>				100.0% VERY HIGH
RISK INDEX				96.2% VERY HIGH
Risk Index Legend				
VERY HIGH: 90% - 100%		Very High: 80% - 100%		Relatively High: 60% - 70.9%
Moderate: 40% - 59.8%		Relatively Low: 20% - 39.9%		Very Low: 0% - 19.9%

Figure COMS-C.4. New [Building-Level \(BL\) Scale Risk Tools](#) created for Primary Structures & Significant Facilities.

The screenshot displays the West Virginia Risk Explorer (WVRE) website. At the top, the logo 'WVRE' is shown next to the text 'West Virginia Risk Explorer' and 'Localized risk assessment tools for analysis and visualization'. Below the header is a photograph of a flooded street in a small town, with buildings and cars submerged in water.

WV Building-Level (BL) Risk

Analyze flood risk at the level of individual structures in detail.

Building-Level Risk Assessment (BLRA)

Primary Structures

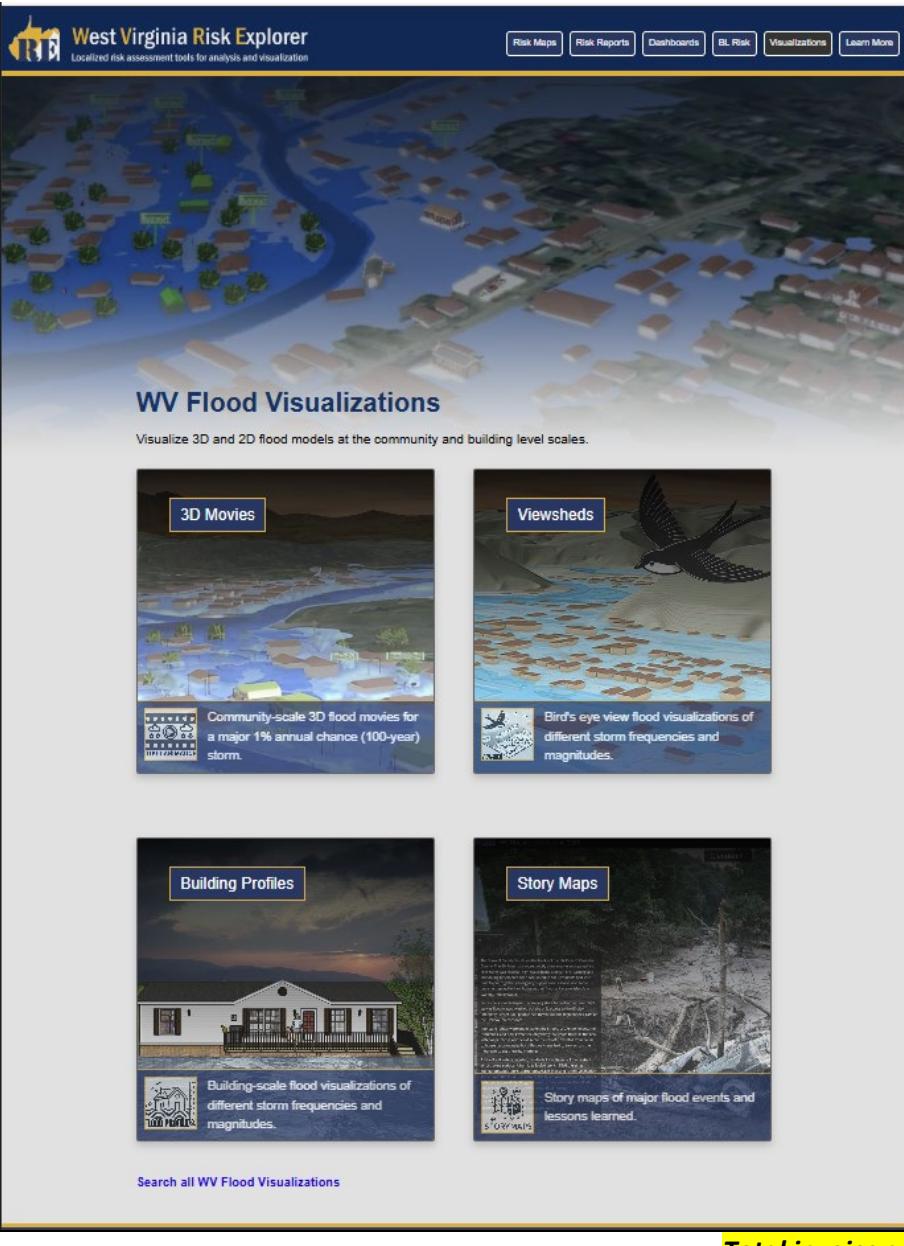
Detailed building inventory developed by pinpointing all primary structures in the high-risk 1% annual chance (100-year) effective and advisory floodplains.

Significant Structures at Risk

Significant Structures

Historical and non-historical community assets in the high-risk 100-year effective and advisory floodplains and essential facilities inventoried to the 500-year flood event.

<https://wvfrf.org/wvre/>

Task D	<p>[TASK D] Develop, Verify, and Publish Flood Risk Profiles at State, Regional, Community, and Watershed/Stream Levels.</p> <p>Created and published 39 WV Flood Visualizations on the WV Flood Hazard Library:</p> <ul style="list-style-type: none"> • 3D Movies (n=8) • Viewsheds (n=11) • Buildings Profiles (n=15) • Story Maps (n=5) <p>Figure COMS-D.1. WV Flood Visualizations: 3D movies, Viewsheds, Building Profiles, & Story Maps</p> 	\$17,000
	<p>Total invoice amount: \$69,000</p>	

Please use the following information for paying electronically:

Payment Transfer Information:

OASIS: 4187 111 1463 1463 6909 H514

WVU Acct: 11. 110530213. 11303179. 4108501. 999. 99999999

If you have any questions, or need clarifications, please do not hesitate to call.

Sincerely,



Kurt Donaldson
Project Manager
WV GIS Technical Center, WVU
e-mail: kdonalds@wvu.edu

CC: WVU Revenue Services - WVUDeposits@mail.wvu.edu