



December 27, 2024

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SUBJECT: Invoice for COMS Task B, Task D, and Task H; FY23 CTP Community Outreach and Mitigation Strategies (COMS) Grant.

Dear Kevin,

In accordance with the FY23 CTP Service Agreement dated October 2023, this invoice in the amount of **\$20,000.00** for COMS Task B, Task D, and Task H in support of the WV Flood Tool (www.mapwv.gov/Flood) and WV Risk Explorer (wvfrf.org/WVRE). See the scope of work as outlined in the amended 2023-24 (FY23) CTP Statement of Work Plan dated August 2023, and authorized under a WV-48 service agreement between the WVEMD and WV GIS Technical Center, West Virginia University. Refer to the FY23 COMS [Statement of Work](#) documents for more details about the specific tasks.

Invoice #	Services Rendered	Amount
12272024	TASK B: [Deliver Technical Support Services for LiDAR LOMAs].	\$6,000
Time Period 10/1/2023 to 12/27/2024	<p>LiDAR LOMAs were submitted for qualifying structures using FEMA's Online LOMA portal. The WVU GIS Technical Center supported the state floodplain management community with the submission of LiDAR LOMAs when a field elevation survey was not required. This activity included assisting floodplain managers with the online LiDAR LOMA submissions to FEMA for approval.</p> <p>This activity communicated to these constituents how the "mapped out" structures on the RiskMAP View of the WV Flood Tool, symbolized as yellow squares, may qualify for removal from the SFHA. The only information required for an Online LOMA submission to FEMA are a map layout from the Flood Tool and a copy of the deed. The WV Flood Tool's Print Function generates map layouts for the LiDAR submissions using either the contour or point elevation methods.</p> <ul style="list-style-type: none">LiDAR LOMA resources on the WV Flood Tool. Resources: Instructions Overview Slides and GuideOver 15,000 structures or 16% of buildings in the high-risk flood zones may be eligible for LiDAR LOMAs. View potential floodplain buildings "mapped out" of SFHA Graphic.Example LiDAR LOMA Map Layout for Mineral County generated from WV Flood Tool Print Function.	
Task B		

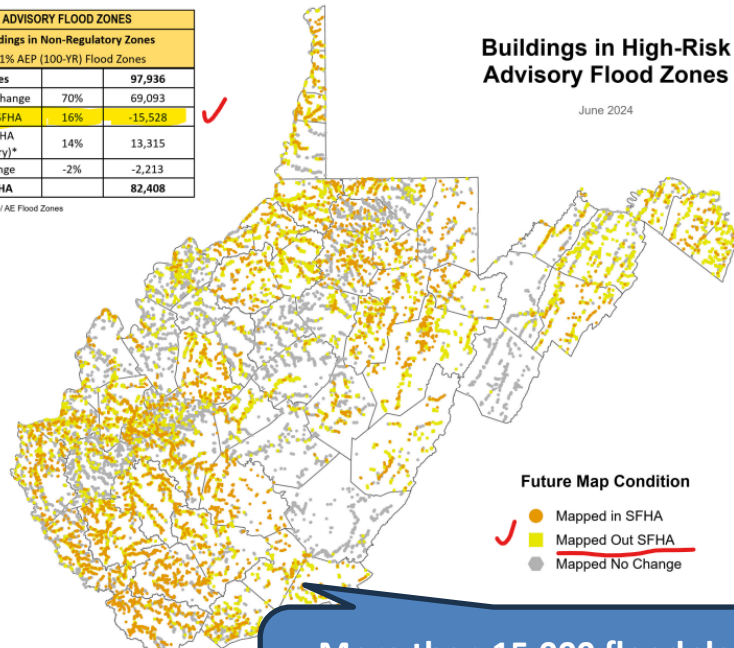
3964 PATTERSON CREEK VILLAGE PIKE



<p>1-Percent Annual-Chance Flood Hazard Area With Base Flood Elevation (BFE)</p> <p>Regulatory Floodway in AE Zone</p> <p>Zone A 1-Percent Annual-Chance Flood Hazard Area Without BFE (may have Advisory Flood Heights)</p> <p>Advisory 1-Percent Annual-Chance High Risk Advisory</p> <p>Download the full legend for all flood tool symbols: https://www.maryland.gov/floodmap/docs/ae_flood_tool_legend.pdf</p> <p>WEB LINKS:</p> <p>WV Flood Tool</p> <p>FEMA 2016-17 LIDAR Metadata</p> <p>Assessment Record Parcel 15-14</p> <p>FEMA LOMA 13-03-1803A</p>	<p>User: Closest Lower Contour (CLC) for primary structure is 583 ft. CLC Notes: 583 ft. - 1 ft. = 582 ft. LAG. The LAG 582 ft. > BFE 576 ft.</p> <p>Flood Hazard Area: Location is WITHIN the FEMA 100-year floodplain.</p> <p>Flood Zone: AE</p> <p>Stream: Patterson Creek</p> <p>Watershed (HUC08): North Branch Potomac (2070002)</p> <p>Flood Height: 576.0 ft (Source: User Defined) (NAVD83)</p> <p>Water Depth: 184.4 ft (Source: FEMA 2016-17) (NAVD83)</p> <p>Elevation: Mineral County (MD: 540129)</p> <p>Community & ID: 5405700105D; Effective Date: 3/19/2013 (39.563022, -78.729904) (WGS84)</p> <p>FEMA Map & Date: 29-04-0015-0014-0000</p> <p>Parcel ID: 3964 PATTERSON CREEK VILLAGE PIKE, Ridgeley, WV, 26733</p>
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HIGH-RISK ADVISORY FLOOD ZONES		
Includes Buildings in Non-Regulatory Zones		
Future Map 1% AEP (100-YR) Flood Zones		
High-Risk Flood Zones		97,936
• Mapped No Change	70%	69,093
• Mapped out SFHA	16%	-15,528
• Mapped in SFHA (non-regulatory)*	14%	13,315
• SFHA net change	-2%	-2,213
Structures est. in SFHA		82,408

*54 counties have Advisory A/AE Flood Zones



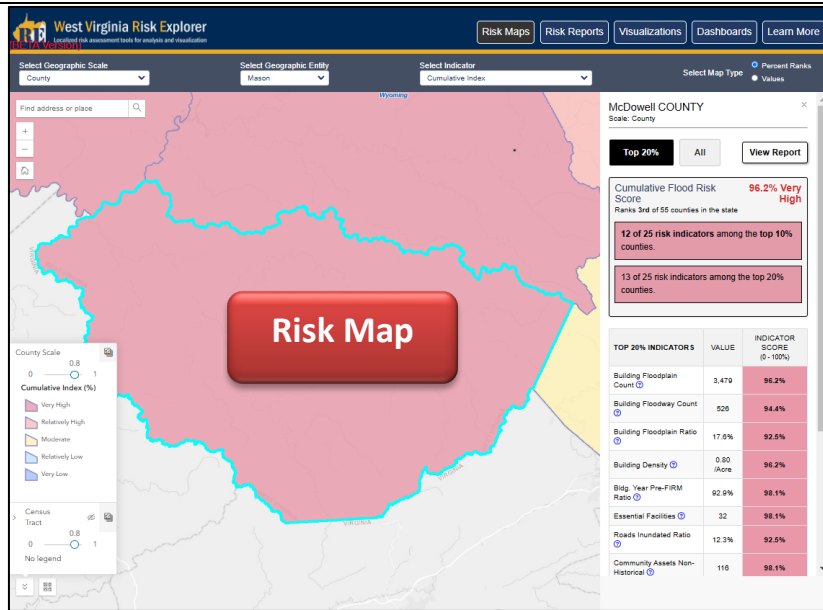
WVGISTC 2024-06-03

Data Source: FEMA's Special Flood Hazard Area (SFHA), 1%-annual-chance

More than 15,000 floodplain structures (yellow symbol) may be eligible for LiDAR LOMAs

Task D	TASK D: [Develop, Verify, and Publish Flood Risk Profiles at State, Regional, Community, and Watershed/Stream Levels]	\$9,000				
	For exploring risk, developed online interactive riverine Risk Maps and Risk Reports for eight aggregate or geographic scale levels:					
	<table><tr><th>RISK MAPS</th><th>RISK REPORTS</th></tr><tr><td><ul style="list-style-type: none">Statewide11 Regional Councils55 Counties284 Communities55 Unincorporated Areas229 Incorporated Places <ul style="list-style-type: none">33 Watersheds156 Named Streams (Top 2%)</td><td><ul style="list-style-type: none">Statewide11 Regional Councils55 Counties284 Communities55 Unincorporated Areas229 Incorporated Places <ul style="list-style-type: none">33 Watersheds156 Named Streams (Top 2%)</td></tr></table>		RISK MAPS	RISK REPORTS	<ul style="list-style-type: none">Statewide11 Regional Councils55 Counties284 Communities55 Unincorporated Areas229 Incorporated Places <ul style="list-style-type: none">33 Watersheds156 Named Streams (Top 2%)	<ul style="list-style-type: none">Statewide11 Regional Councils55 Counties284 Communities55 Unincorporated Areas229 Incorporated Places <ul style="list-style-type: none">33 Watersheds156 Named Streams (Top 2%)
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Depending on the scales of analysis, users can explore property flood risk data for the following purposes:						
<ul style="list-style-type: none">Validating floodplain management practices at the incorporated/unincorporated or community scalesExploring risk assessments and mitigation actions at the community levelHazard mitigation planning at the county or regional scalesResiliency planning at the statewide scaleCollecting information for FEMA’s Risk MAP discovery at the watershed scaleResearching loss of property and life at the river/stream scale						

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.



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	79.8%	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	526	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	Building Median Value	\$14,000	0.0%	Very Low
	Bldg. Mobile Homes Ratio	30.2%	75.9%	Relatively High
	Bldg. Subgrade Basements Ratio	28.1%	72.2%	Relatively High
	Building 1-Story Ratio	80.9%	37.0%	Relatively Low
	Bldg. Year Pre-FIRM Ratio	92.9%	98.1%	VERY HIGH
	Bldg. Year Minus Rated Post-FIRM Ratio	2.3%	11.1%	Very Low
	<i>Building Characteristics Index, 29th</i>		48.1%	Moderate
	Essential Facilities	32	98.1%	VERY HIGH
Critical Infrastructure	Roads Inundated Ratio	12.3%	92.5%	VERY HIGH
	<i>Critical Infrastructure Index, 3rd</i>		94.4%	VERY HIGH
Community Assets	Community Assets Non-Historical	118	98.1%	VERY HIGH
	Community Assets Historical	14	61.1%	Relatively High
Building Damage Loss	Bldg. Subgrade Damage Ratio	226	88.8%	Very High
	Bldg. Previous Damage Claims	6.5%	55.5%	Moderate
	Bldg. Repetitive Loss Structures	1,049	90.7%	VERY HIGH
	<i>Building Damage Loss Index, 8th</i>		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	CUMULATIVE INDEX		96.2%	VERY HIGH

Risk Index Legend

VERY HIGH: 90% - 100%	Very High: 80% - 100%	Relatively High: 60% - 79.9%
Moderate: 40% - 59.9%	Relatively Low: 20% - 39.9%	Very Low: 0% - 19.9%

TASK H: [Perform Detailed Riverine Flood Impact and Mitigation Studies of Vulnerably Disadvantaged Communities using recently published FEMA and First Street Foundation Flood Models]

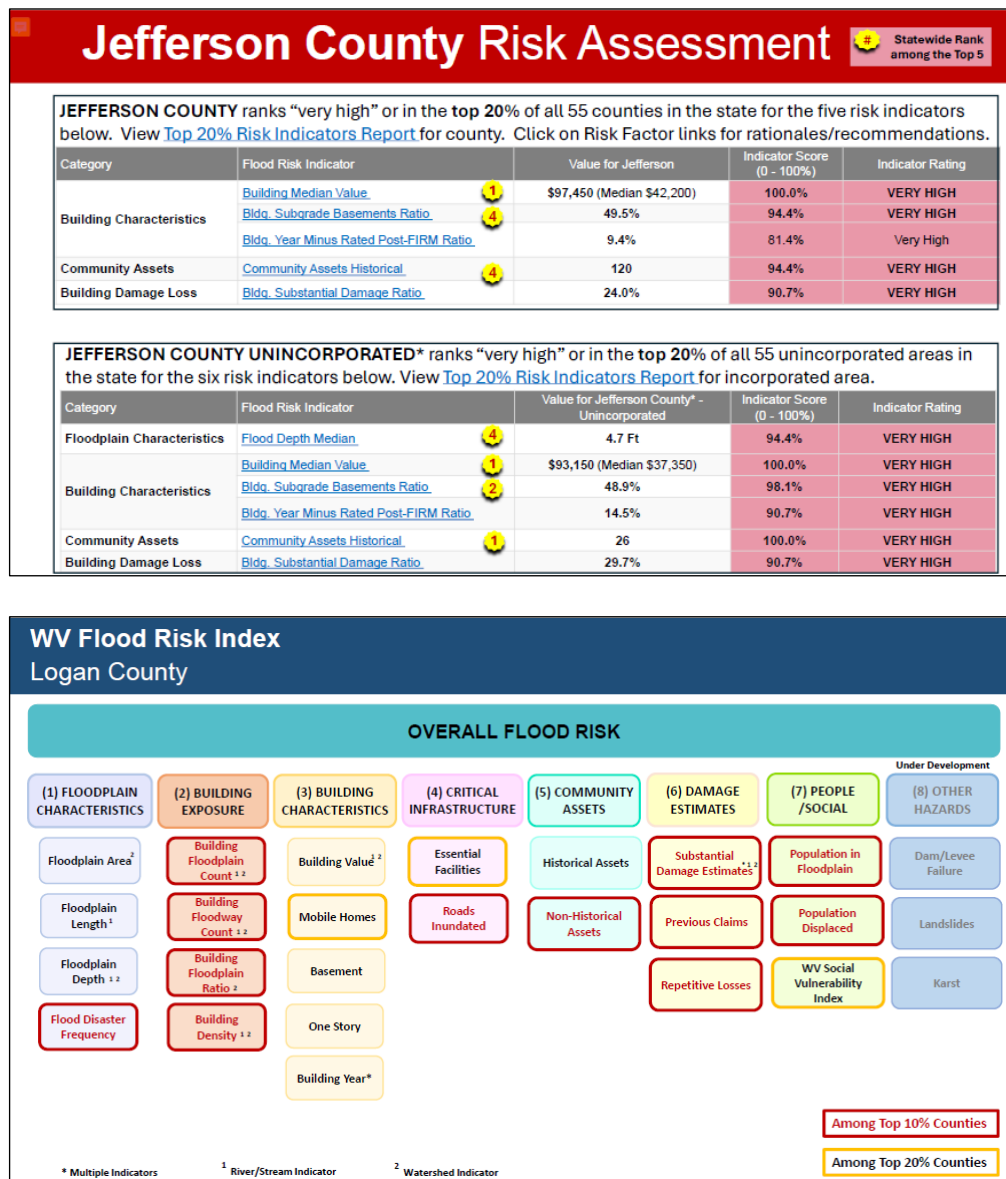
\$5,000

Task H

Performed detailed flood risk assessment studies for the following communities.

- [Greenbrier County](#)
- [Jefferson County](#)
- [Logan County](#)
- [McDowell County](#)

These studies include information or links about rationales and mitigation recommendations of specific flood risk factors affecting floodprone communities. This information is available online on new [WV Risk Explorer](#) tools, a suite of localized risk assessment tools for analysis and visualization.



Grand Total	Total invoice amount:	\$20,000
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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: kdonallds@wvu.edu

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