



April 15, 2025

Kevin Sneed, CFM
CTP Project Officer
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Charleston, WV 25314
(304) 957-2571
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SUBJECT: Invoice for COMS Task C, Task F, and Task G; 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 C**, **Task F**, and **Task G** 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
04152025	[Task C] MAPPING UPGRADES: Perform Building Cluster Analysis for CNMS Risk MAP Discovery of Potential Approximate A Zones for Upgrade to Zone AE Detailed Mapping.	\$5,000
Time Period 10/1/2023 to 4/1/2025	View Report – Upgrade of Approximate A Stream Reaches to Zone AE	
Task C	<p><i>Objective:</i> This study evaluates potential Approximate A Zone rivers/streams in the Kanawha River Basin for more comprehensive Detailed Flood Studies for clusters of buildings with high flood damage potential. The Kanawha River Basin consists of four watersheds named after their primary rivers: Upper and Lower Kanawha, Coal, and Elk watersheds.</p> <p><i>Zone A Candidates for Detailed Studies.</i> Twelve evaluation factors were utilized for ranking clusters of Approximate A Zone structures based on physical building, depth grid, and mapping cost factors. Using spatial cluster and building-level risk analyses, three streams in the Coal Watershed – West Fork, Marsh Fork, and Crooked Creek – ranked high per the evaluation factors to be restudied as Zone AE including minimal mapping cost. All these Zone A building clusters are adjacent to existing Zone AE streams. The next stream to be considered in the priority rankings should be the Pocatalico River where the Walton Elementary/Middle School is exposed to flooding. The final two Zone A streams to consider for up. grading to Zone AEs should be the Big Horse Creek and Little Birch River.</p>	

Table COMS-C.1. Priority [Ranked Zone A Streams](#) for Upgrading to Zone AE

- TOP RANKING – FIRST TIER
 - **West Fork** (Coal Watershed)
 - **Marsh Fork** (Coal Watershed)
 - **Crooked Creek & Crook Creek Tributary No.2** (Coal Watershed)
- MEDIUM RANKING – SECOND TIER
 - Pocatalico River (Lower Kanawha Watershed)
- LOWER RANKING – THIRD TIER
 - Big Horse Creek (Coal Watershed)
 - Little Birch River (Elk Watershed)

Figure COMS-C.2. Zone A Analysis for [Structure Flood Depths \$\geq 5\$ ft.](#)

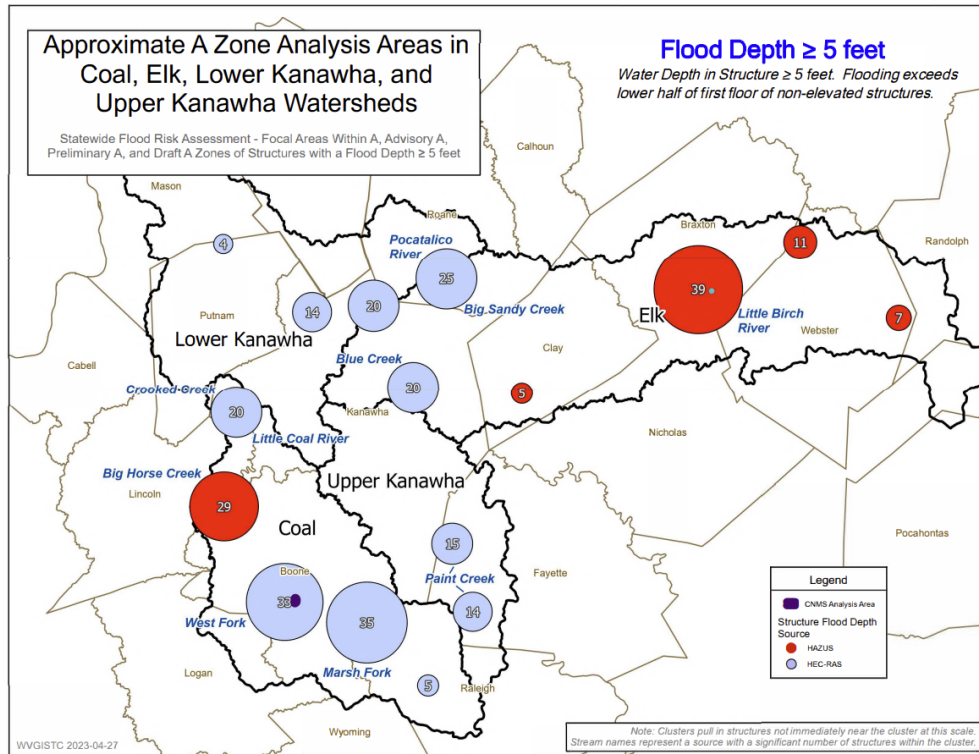


Table COMS-C.3. [Summary table](#) of ranked Zone A cluster analysis rivers/streams according to evaluation factors.

Rank	1	2	3	4	5	6
BUILDING COUNT	<i>Marsh Fork</i> 31	<i>Little Birch River</i> 28	<i>West Fork</i> 21	<i>Big Horse Creek</i> 20	<i>Paint Creek</i> 18	<i>Blue Creek</i> 17
BUILDING DOLLAR EXPOSURE	<i>Pocatalico River</i> \$6.74M	<i>Little Birch River</i> \$1.61M	<i>Marsh Fork</i> \$1.45M	<i>Elk River</i> \$1.18M	<i>Big Horse Creek</i> \$778K	<i>West Fork</i> \$682K
BUILDING DAMAGE LOSS	<i>Pocatalico River</i> \$867K	<i>Little Birch River</i> \$683K	<i>West Fork</i> \$460K	<i>Marsh Fork</i> \$415K	<i>Big Horse Creek</i> \$264K	<i>Blue Creek</i> \$238K
DAMAGE ≥ 50%	<i>West Fork</i> 20	<i>Marsh Fork</i> 17	<i>Little Birch River</i> 14	<i>Pocatalico River*</i> 7	<i>Big Horse Creek*</i> 7	<i>Blue Creek</i> 7
BUILDING DENSITY per mile	<i>West Fork</i> 22.1	<i>Marsh Fork</i> 14.1	<i>Crooked Creek</i> 11.5	<i>Little Birch River</i> 4.7	<i>Pocatalico River</i> 4.0	<i>Big Horse Creek</i> 3.6
Zone AE Cost per mile	<i>Crooked Creek</i> \$634	<i>West Fork</i> \$2,375	<i>Marsh Fork</i> \$5,500	<i>Pocatalico River</i> \$8,200	<i>Big Horse Creek</i> \$13,750	<i>Little Birch River</i> \$14,975

**Pocatalico River, Big Horse Creek, Blue Creek, and Paint Creek all have 7 structures with damage ≥ 50%*
Red stream names indicate less accurate HAZUS depth grids

Task F

[Task F] RISK COMMUNICATIONS: Communicate SFHA Map Changes to Affected Property Owners.

\$8,000

- SFHA Change Letters.
 - Letter Templates: [Mapped-In SFHA Letter Template](#) and [Mapped-Out Letter Template](#) were prepared for Shepherdstown in Jefferson County.
 - Building-Lists: The “SFHA Status” data field of the Building-Level Risk Tool can be filtered to identify buildings mapped in or out of SFHA. The building lists have map links to the WV Flood Tool. Examples for Shepherdstown and Berkeley County Unincorporated:
 - [Shepherdstown Mapped-In SFHA Building List](#)
 - [Shepherdstown Mapped-Out SFHA Building List](#)
 - [Berkeley County Mapped-In SFHA Building List](#)
 - [Berkeley County Mapped-Out SFHA Building List](#)

FigureCOMS-F.1. Online [Mapped-in Structures List](#) for Berkely County Unincorporated for communicating updated flood risk to property owners.

West Virginia Risk Explorer
Localized risk assessment tools for analysis and visualization
(BETA Version)

Select Geographic Scale: State
Select Geographic Entity: West Virginia

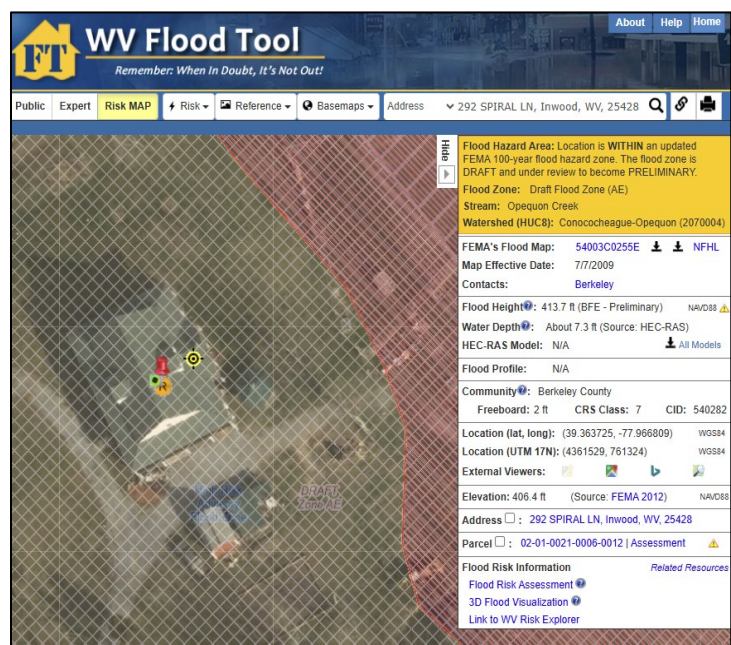
PRIMARY STRUCTURES TABLE
Report Date: March 2025

SQL Filter: Future_Map_Condition IN (Mapped in Floodway-Commercial,Mapped In Floodway-Residential,MAPPED II
SQL Filter: Community_Name = Berkeley County* - Unincorporated Clear all Filters

207 Records Selected. Export to CSV (2000 record limit)

SPATIAL IDENTIFIERS		FLOOD ZONE	
Building ID	E-911 Address	Flood Tool	SFHA Status
02-01-0021-0006-0012_292	292 SPIRAL LN, Inwood, WV, 25428		Draft AE MAPPED IN-Residential
02-01-010A-0005-0000_552	552 EVANS RUN DR, Martinsburg, WV, 25405		Draft AE MAPPED IN-Residential
02-01-006H-0045-0000_70	70 SHOAL CREEK CT, Martinsburg, WV, 25405		Draft AE MAPPED IN-Residential
02-01-010A-0006-0000_570	570 EVANS RUN DR, Martinsburg, WV, 25405		Draft AE MAPPED IN-Residential
02-01-0006-0029-0000_239	239 VINE CIR, Martinsburg, WV, 25405		Draft AE MAPPED IN-Residential
02-01-010A-0007-0000_582	582 EVANS RUN DR, Martinsburg, WV, 25405		Draft AE MAPPED IN-Residential
02-01-010A-0004-0000_536	536 EVANS RUN DR, Martinsburg, WV, 25405		Draft AE MAPPED IN-Residential
02-01-0006-0029-0000_219	219 VINE CIR, Martinsburg, WV, 25405		Draft AE MAPPED IN-Residential
02-01-0006-0029-0000_227	227 VINE CIR, Martinsburg, WV, 25405		Draft AE MAPPED IN-Residential
02-01-0006-0032-0000_130	130 TRAIN CROSSING DR, Martinsburg, WV, 25405		Draft AE MAPPED IN-Residential
02-01-0006-0029-0000_207	207 VINE CIR, Martinsburg, WV, 25405		Draft AE MAPPED IN-Residential
02-01-006D-0002-0000_324	324 HOOK DR, Martinsburg, WV, 25405		Draft AE MAPPED IN-Residential
02-04-021A-0007-0000_562	562 WIMPYS LN, Hedgesville, WV, 25427		Draft A MAPPED IN-Residential

Figure COMS-F.2. Mapped-in structure on WV Flood Tool with highest DRAFT flood depth of 7.1 feet at [292 SPIRAL LN, Inwood, WV, 25428](#) indicates significant increase in BFE.



- Supplemental [Jefferson County Risk Assessment](#) Risk Assessment Slides (with [notes](#)) for Jefferson County CCO Meeting. Example graphic slides of Preliminary Map changes for [Harpers Ferry](#), [Shepherdstown](#), and [Jefferson County Unincorporated](#). View [community summary](#) of map changes.

Figure COMS-F.3. Example [map changes](#) on WV Flood Tool between Effective and DRAFT NFHL. FEMA CSFL map layer consumed by WV Flood Tool if available.

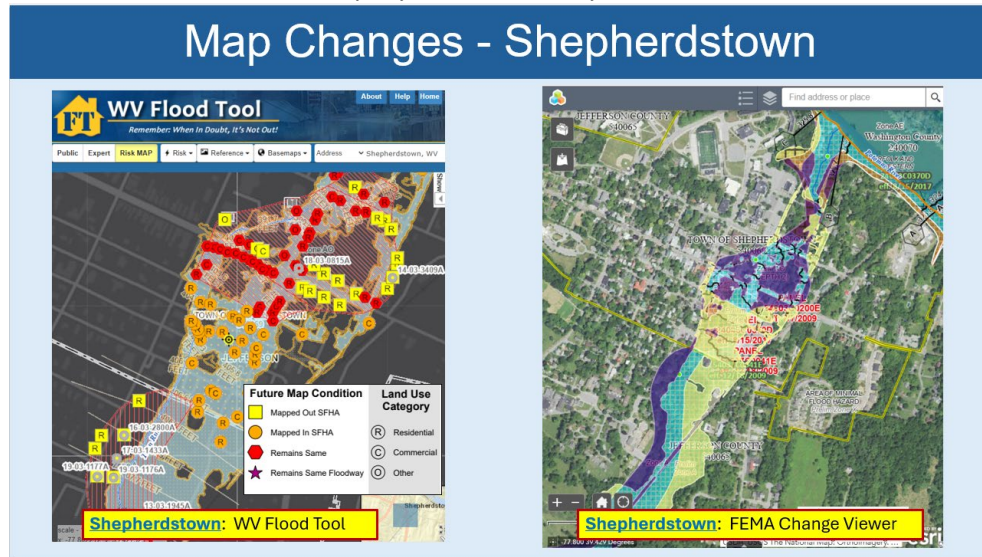
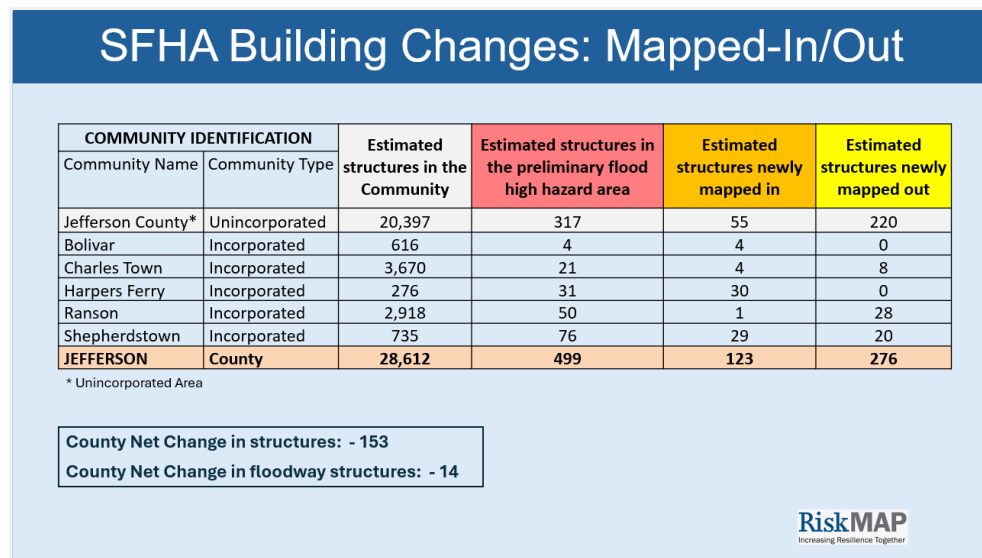


Figure COMS-F.4. Example [community map changes](#) between Effective and DRAFT NFHL



- 3D Flood Movie: A [3D Flood Movie](#) with [notes](#) of Shepherdstown was created to communicate flood risk to the citizens of Jefferson County.

Figure COMS-F.5. [3D Flood Movie](#) created for public to view new map changes for Shepherdstown, WV



Task G

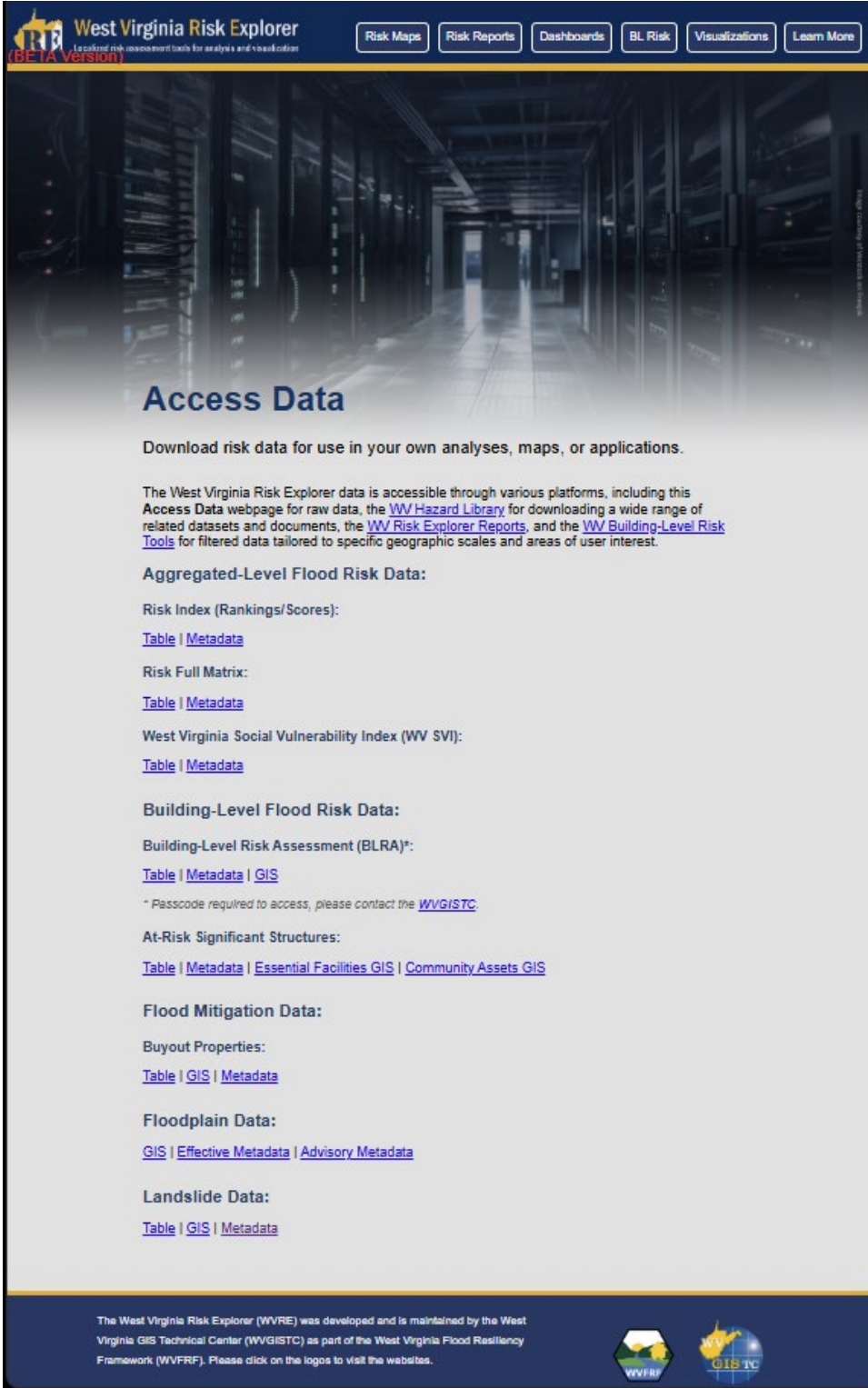
[Task G] HAZARD MITIGATION PLANS: Support Local Hazard Mitigation Plans with Flood/Landslide Risk Assessment Data.

\$7,000

Flood and landslide risk assessment data for local hazard mitigation plans have been published to new web pages of the [WV Risk Explorer](#).

- Flood Risk Data
- Landslide Risk Data

Figure COMS-G.1. [Food Risk Data](#) public access for local hazard mitigation plans



The screenshot displays the 'West Virginia Risk Explorer' website. The header includes a logo with the letters 'RR' and the text 'West Virginia Risk Explorer (BETA Version)'. Navigation buttons for 'Risk Maps', 'Risk Reports', 'Dashboards', 'BL Risk', 'Visualizations', and 'Learn More' are present. The main content area features a background image of server racks and a large heading 'Access Data'. Below this heading, a paragraph states: 'Download risk data for use in your own analyses, maps, or applications. The West Virginia Risk Explorer data is accessible through various platforms, including this Access Data webpage for raw data, the [WV Hazard Library](#) for downloading a wide range of related datasets and documents, the [WV Risk Explorer Reports](#), and the [WV Building-Level Risk Tools](#) for filtered data tailored to specific geographic scales and areas of user interest.'

Aggregated-Level Flood Risk Data:

Risk Index (Rankings/Scores):
[Table](#) | [Metadata](#)

Risk Full Matrix:
[Table](#) | [Metadata](#)

West Virginia Social Vulnerability Index (WV SVI):
[Table](#) | [Metadata](#)

Building-Level Flood Risk Data:

Building-Level Risk Assessment (BLRA)*:
[Table](#) | [Metadata](#) | [GIS](#)

* Passcode required to access, please contact the [WVGISTC](#).

At-Risk Significant Structures:
[Table](#) | [Metadata](#) | [Essential Facilities GIS](#) | [Community Assets GIS](#)

Flood Mitigation Data:

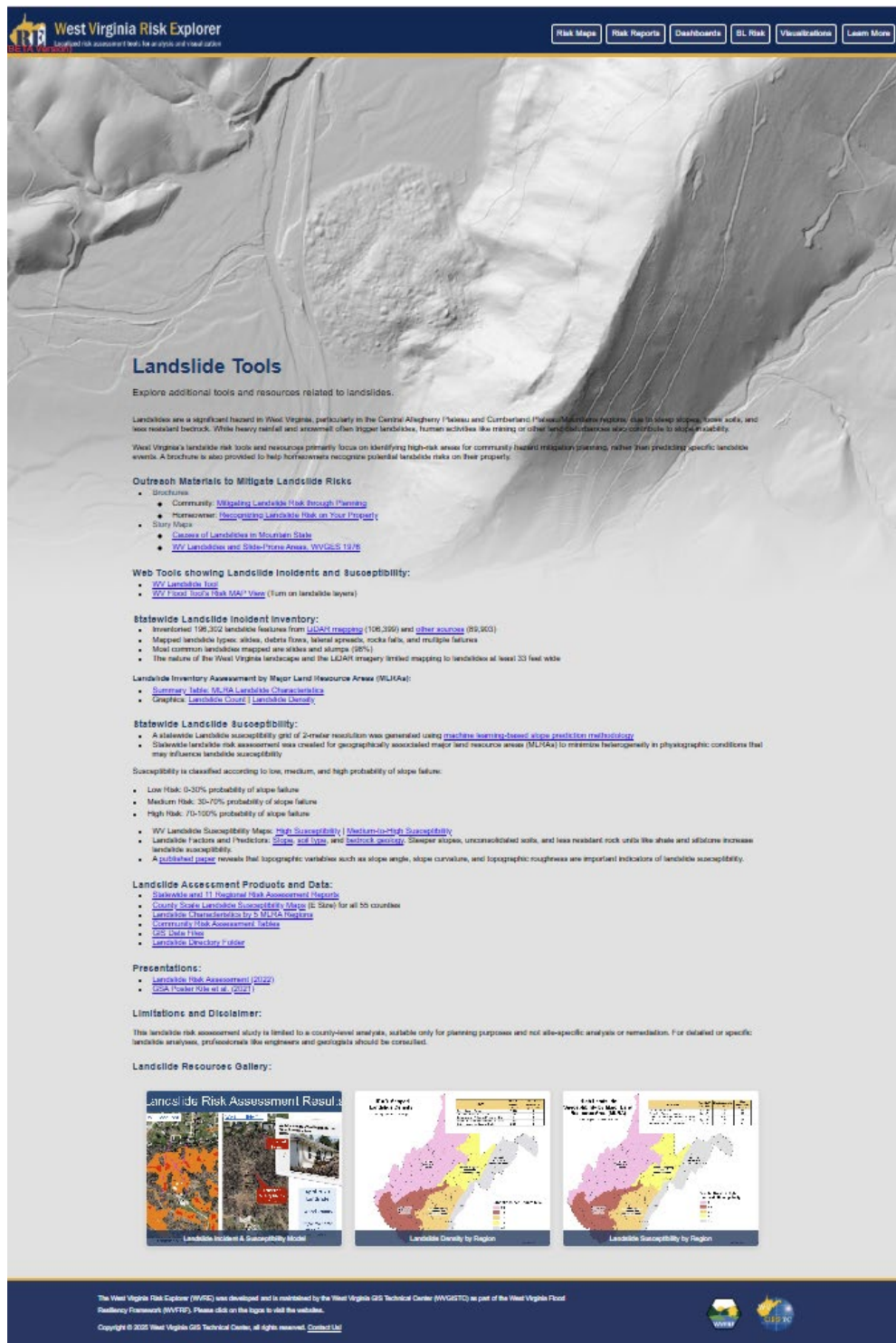
Buyout Properties:
[Table](#) | [GIS](#) | [Metadata](#)

Floodplain Data:
[GIS](#) | [Effective Metadata](#) | [Advisory Metadata](#)

Landslide Data:
[Table](#) | [GIS](#) | [Metadata](#)

The footer contains a paragraph: 'The West Virginia Risk Explorer (WVRE) was developed and is maintained by the West Virginia GIS Technical Center (WVGISTC) as part of the West Virginia Flood Resiliency Framework (WVFRF). Please click on the logos to visit the websites.' It also features two logos: 'WVFRF' and 'GIS TC'.

Figure COMS-G.2. [Landslide Risk Data](#) public access for local hazard mitigation plans



Grand
Total

Total invoice amount: \$20,000

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,

A handwritten signature in black ink that reads "Kurt Donaldson". The script is cursive and fluid.

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

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