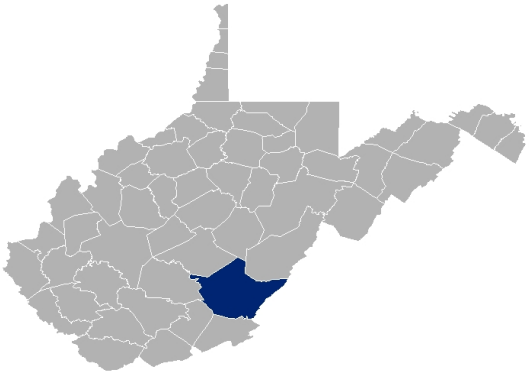
FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 2



GREENBRIER COUNTY, WEST VIRGINIA

AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
FALLING SPRINGS, CORPORATION OF	540243
GREENBRIER COUNTY, UNINCORPORATED AREAS	540040
LEWISBURG, CITY OF*	540281
QUINWOOD, TOWN OF*	540244
RAINELLE, TOWN OF	540228
RONCEVERTE, CITY OF	540043
RUPERT, TOWN OF	540044
WHITE SULPHUR SPRINGS, CITY OF	540045

*No Special Flood Hazard Areas Identified

FEMA

REVISED:

TBD

PRELIMINARY
09/30/2021

FLOOD INSURANCE STUDY NUMBER
54025CV001B
Version Number 2.6.4.6

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Flood Insurance Rate Map (FIRM)

FLOOD INSURANCE STUDY REPORT
GREENBRIER COUNTY, WEST VIRGINIA

SECTION 1.0 – INTRODUCTION

1.1 The National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a voluntary Federal program that enables property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods.

For decades, the national response to flood disasters was generally limited to constructing flood-control works such as dams, levees, sea-walls, and the like, and providing disaster relief to flood victims. This approach did not reduce losses nor did it discourage unwise development. In some instances, it may have actually encouraged additional development. To compound the problem, the public generally could not buy flood coverage from insurance companies, and building techniques to reduce flood damage were often overlooked.

In the face of mounting flood losses and escalating costs of disaster relief to the general taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances, and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for the protection.

The U.S. Congress established the NFIP on August 1, 1968, with the passage of the National Flood Insurance Act of 1968. The NFIP was broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994 and the Flood Insurance Reform Act of 2004. The NFIP is administered by the Federal Emergency Management Agency (FEMA), which is a component of the Department of Homeland Security (DHS).

Participation in the NFIP is based on an agreement between local communities and the Federal Government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction and substantially improved structures in Special Flood Hazard Areas (SFHAs), the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The community's floodplain management regulations must meet or exceed criteria established in accordance with Title 44 Code of Federal Regulations (CFR) Part 60, *Criteria for Land Management and Use*.

SFHAs are delineated on the community's Flood Insurance Rate Maps (FIRMs). Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "Pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for Pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the Federal Government. Congress also recognized that most of these floodprone buildings were built

by individuals who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after the effective date of the initial FIRM for the community or after December 31, 1974, whichever is later. These buildings are generally referred to as “Post-FIRM” buildings.

1.2 Purpose of this Flood Insurance Study Report

This Flood Insurance Study (FIS) Report revises and updates information on the existence and severity of flood hazards for the study area. The studies described in this report developed flood hazard data that will be used to establish actuarial flood insurance rates and to assist communities in efforts to implement sound floodplain management.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive than the minimum Federal requirements. Contact your State NFIP Coordinator to ensure that any higher State standards are included in the community’s regulations.

1.3 Jurisdictions Included in the Flood Insurance Study Project

This FIS Report covers the entire geographic area of Greenbrier County, West Virginia**.**

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the United States Geological Survey (USGS) 8-digit Hydrologic Unit Code (HUC-8) sub-basins affecting each, are shown in Table 1. The FIRM panel numbers that affect each community are listed. If the flood hazard data for the community is not included in this FIS Report, the location of that data is identified.

The location of flood hazard data for participating communities in multiple jurisdictions is also indicated in the table.

Jurisdictions that have no identified SFHAs as of the effective date of this study are indicated in the table. Changed conditions in these communities (such as urbanization or annexation) or the availability of new scientific or technical data about flood hazards could make it necessary to determine SFHAs in these jurisdictions in the future.

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Alderson, Town of	540041	05050003	N/A	Monroe County FIS Report, 2002
Falling Springs, Corporation of	540243	05050003	54025C0475F	

Table 1: Listing of NFIP Jurisdictions *(continued)*

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Greenbrier County, Unincorporated Areas	540040	05050003, 05050005	54025C0025E[2] 54025C0050E[2] 54025C0075F 54025C0100F 54025C0125F 54025C0150F 54025C0170F 54025C0175F 54025C0180F 54025C0185F 54025C0190F 54025C0195F 54025C0225F 54025C0250F 54025C0275F 54025C0300F 54025C0325F 54025C0350F 54025C0356F 54025C0357F 54025C0358F 54025C0359F 54025C0370F 54025C0380F 54025C0385F 54025C0390F 54025C0395F 54025C0425F 54025C0450F 54025C0475F 54025C0500F 54025C0525F 54025C0550E[2] 54025C0575F 54025C0600F 54025C0605F 54025C0610F	

Table 1: Listing of NFIP Jurisdictions *(continued)*

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
			54025C0615F 54025C0620F 54025C0630F 54025C0635F 54025C0639F 54025C0640E[2] 54025C0645F 54025C0655F 54025C0660F 54025C0665F 54025C0670F 54025C0700F 54025C0725F 54025C0730F 54025C0735F 54025C0751F 54025C0752F 54025C0755F 54025C0760F 54025C0765F 54025C0770E[2] 54025C0800F	
Lewisburg, City of[1]	540281	05050003	54025C0630F 54025C0635F 54025C0640E[2] 54025C0645F	
Quinwood, Town of[1]	540244	05050005	54025C0180F 54025C0190F	
Rainelle, Town of	540228	05050005	54025C0356F 54025C0357F 54025C0358F 54025C0359F	
Ronceverte, City of	540043	05050003	54025C0639F 54025C0640E[2] 54025C0735F 54025C0751F 54025C0752F	

Table 1: Listing of NFIP Jurisdictions *(continued)*

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Rupert, Town of	540044	05050005	54025C0380F 54025C0385F	
White Sulphur Springs, City of	540045	05050003	54025C0660F 54025C0665F 54025C0670F	

[1] No Special Flood Hazard Areas Identified
[2] Panel Not Printed

1.4 Considerations for using this Flood Insurance Study Report

The NFIP encourages State and local governments to implement sound floodplain management programs. To assist in this endeavor, each FIS Report provides floodplain data, which may include a combination of the following: 10-, 4-, 2-, 1-, and 0.2-percent annual chance flood elevations (the 1-percent-annual-chance flood elevation is also referred to as the Base Flood Elevation (BFE)); delineations of the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains; and 1-percent-annual-chance floodway. This information is presented on the FIRM and/or in many components of the FIS Report, including Flood Profiles, Floodway Data tables, Summary of Non-Coastal Stillwater Elevations tables, and Coastal Transect Parameters tables (not all components may be provided for a specific FIS).

This section presents important considerations for using the information contained in this FIS Report and the FIRM, including changes in format and content. Figures 1, 2, and 3 present information that applies to using the FIRM with the FIS Report.

- Part or all of this FIS Report may be revised and republished at any time. In addition, part of this FIS Report may be revised by a Letter of Map Revision (LOMR), which does not involve republication or redistribution of the FIS Report. Refer to Section 6.5 of this FIS Report for information about the process to revise the FIS Report and/or FIRM.

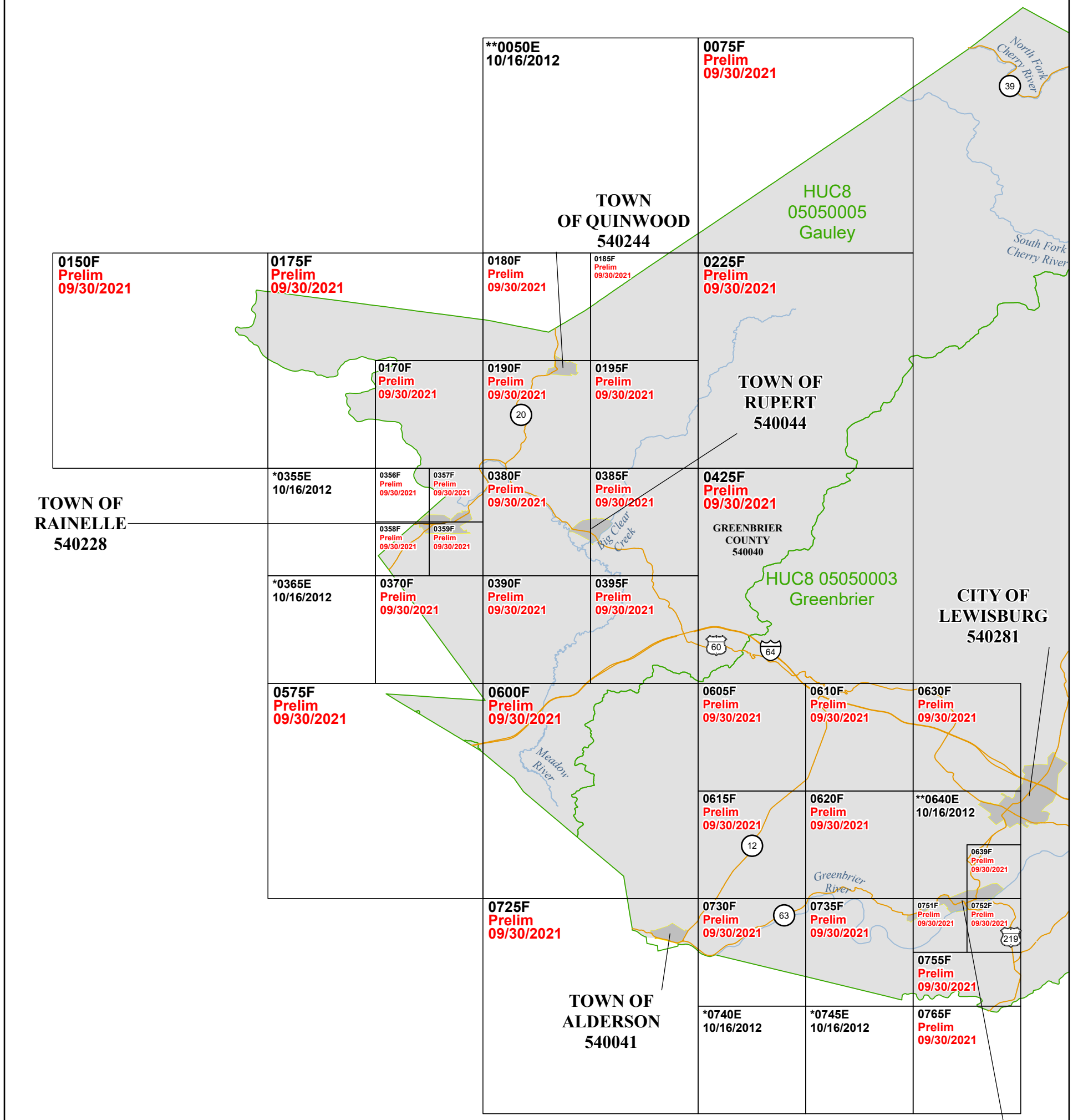
  It is, therefore, the responsibility of the user to consult with community officials by contacting the community repository to obtain the most current FIS Report components. Communities participating in the NFIP have established repositories of flood hazard data for floodplain management and flood insurance purposes. Community map repository addresses are provided in Table 30, "Map Repositories," within this FIS Report.

- New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for the purposes of the NFIP.

  The initial Countywide FIS Report for Greenbrier County became effective on October 16, 2012. Refer to Table 27 for information about subsequent revisions to the FIRMs.

- FEMA has developed a *Guide to Flood Maps* (FEMA 258) and online tutorials to assist users in accessing the information contained on the FIRM. These include how to read panels and step-by-step instructions to obtain specific information. To obtain this guide and other assistance in using the FIRM, visit the FEMA Web site at www.fema.gov/flood-maps/tutorials.

The FIRM Index in Figure 1 shows the overall FIRM panel layout within Greenbrier County, and also displays the panel number and effective date for each FIRM panel in the county. Other information shown on the FIRM Index includes community boundaries, flooding sources, watershed boundaries, and USGS HUC-8 codes.



N

1 inch = 22,598 feet 1:271,177

feet

0 10,000 20,000 40,000 60,000

Map Projection:
GCS WGS 1984
Vertical Datum: NAVD88

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTPS://MSC.FEMA.GOV

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

* PANEL NOT PRINTED - AREA OUTSIDE COUNTY BOUNDARY
**PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP INDEX

GREENBRIER COUNTY, WEST VIRGINIA And Incorporated Areas

PAGE 1 OF 2

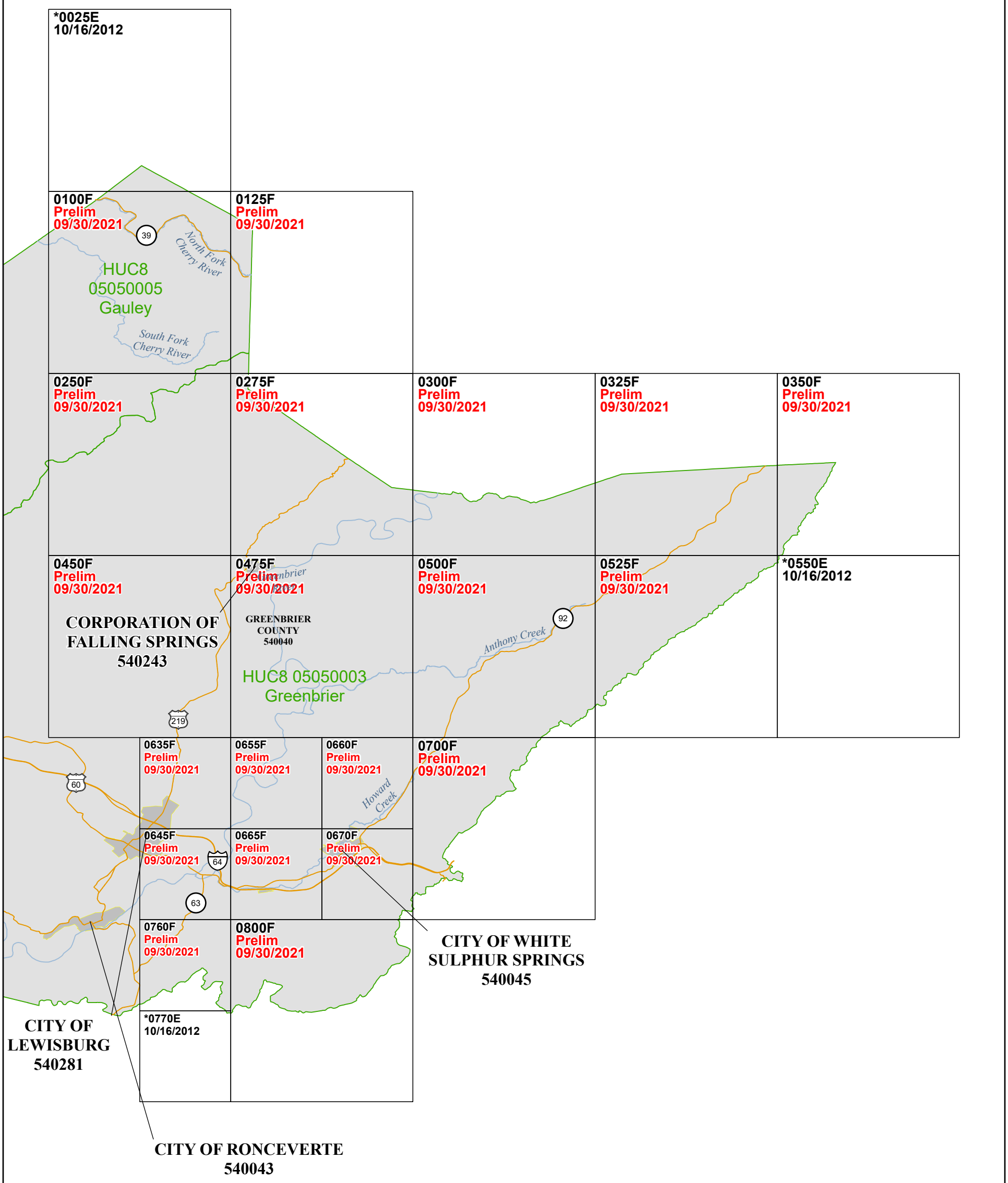
PANELS PRINTED:

0075, 0150, 0170, 0175, 0180, 0185, 0190, 0195, 0225, 0356, 0357, 0358, 0359, 0370, 0380, 0385, 0390, 0395, 0425, 0575, 0600, 0605, 0610, 0615, 0620, 0630, 0639, 0725, 0730, 0735, 0751, 0752, 0755, 0765

FEMA

MAP NUMBER
54025CIND1F

EFFECTIVE DATE
Prelim Issue Date: 09/30/2021



1 inch = 25,109 feet 1:301,308

feet
0 10,000 20,000 40,000 60,000

Map Projection:
GCS WGS 1984
Vertical Datum: NAVD88

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTPS://MSC.FEMA.GOV

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

* PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP INDEX

GREENBRIER COUNTY, WEST VIRGINIA And Incorporated Areas

PAGE 2 OF 2

PANELS PRINTED:

0100, 0125, 0250, 0275, 0300, 0325, 0350, 0450, 0475, 0500, 0525, 0635, 0645, 0655, 0660, 0665, 0670, 0700, 0760, 0800

FEMA

MAP NUMBER
54025CIND2F

EFFECTIVE DATE
Prelim Issue Date: 09/30/2021

Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on that map. However, the FIRM panel does not contain enough space to show all the notes that may be relevant in helping to better understand the information on the panel. Figure 2 contains the full list of these notes.

Figure 2: FIRM Notes to Users

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Mapping and Insurance eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Flood Map Service Center website or by calling the FEMA Mapping and Insurance eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to Table 27 in this FIS Report.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PRELIMINARY FIS REPORT: FEMA maintains information about map features, such as street locations and names, in or near designated flood hazard areas. Requests to revise information in or near designated flood hazard areas may be provided to FEMA during the community review period, at the final Consultation Coordination Officer's meeting, or during the statutory 90-day appeal period. Approved requests for changes will be shown on the final printed FIRM.

The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.

BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Non-Coastal Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.

Figure 2. FIRM Notes to Users

FLOODWAY INFORMATION: Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the FIS Report for this jurisdiction.

FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may have reduced flood hazards due to flood control structures. Refer to Section 4.3 "Dams and Other Flood Hazard Reduction Measures" of this FIS Report for information on flood control structures for this jurisdiction.

PROJECTION INFORMATION: The projection used in the preparation of the map was Universal Transverse Mercator (UTM) Zone 17N**.** The horizontal datum was the North American Datum of 1983 NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

ELEVATION DATUM: Flood elevations on the FIRM are referenced to **the** North American Vertical Datum of 1988**.** These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov.

Local vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community listed in Table 30 of this FIS Report.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by the USGS National Map and various other sources. For information about base maps, refer to Section 6.2 “Base Map” in this FIS Report.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Greenbrier County, West Virginia, corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to Table 27 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

Figure 2. FIRM Notes to Users

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Greenbrier County, West Virginia, effective **TBD**.

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Greenbrier County.

Figure 3: Map Legend for FIRM

SPECIAL FLOOD HAZARD AREAS: The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown.

	Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)
Zone A	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
Zone AE	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone.
Zone AH	The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.
Zone AO	The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the hydraulic analyses are shown within this zone.
Zone AR	The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
Zone A99	The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.
Zone V	The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.
Zone VE	Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.
	Regulatory Floodway determined in Zone AE.

Figure 3: Map Legend for FIRM

OTHER AREAS OF FLOOD HAZARD

Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.

Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.

Area with Reduced Flood Hazard due to Accredited or Provisionally Accredited Levee System: Area is shown as reduced flood hazard from the 1-percent-annual-chance or greater flood by a levee system. Overtopping or failure of any levee system is possible.

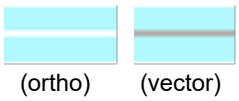
Area with Undetermined Flood Hazard due to Non-Accredited Levee System: Analysis and mapping procedures for non-accredited levee systems were applied resulting in a flood insurance rate zone where flood hazards are undetermined, but possible.

OTHER AREAS

Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

Unshaded Zone X: Areas of minimal flood hazard.

FLOOD HAZARD AND OTHER BOUNDARY LINES



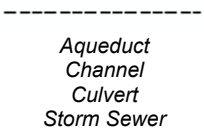
Flood Zone Boundary (white line on ortho-photography-based mapping; gray line on vector-based mapping)

Limit of Study

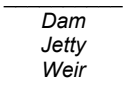
Jurisdiction Boundary

Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet

GENERAL STRUCTURES



Channel, Culvert, Aqueduct, or Storm Sewer



Dam, Jetty, Weir

Levee, Dike, or Floodwall

Figure 3: Map Legend for FIRM

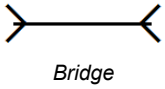
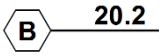
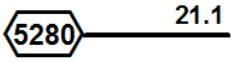
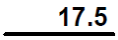
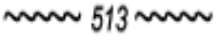
	Bridge
REFERENCE MARKERS	
	River mile Markers
CROSS SECTION & TRANSECT INFORMATION	
	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Coastal Transect
	Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.
	Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.
	Base Flood Elevation Line
ZONE AE (EL 16)	Static Base Flood Elevation value (shown under zone label)
ZONE AO (DEPTH 2)	Zone designation with Depth
ZONE AO (DEPTH 2) (VEL 15 FPS)	Zone designation with Depth and Velocity
BASE MAP FEATURES	
	River, Stream or Other Hydrographic Feature
	Interstate Highway
	U.S. Highway
	State Highway
	County Highway

Figure 3: Map Legend for FIRM

MAPLE LANE	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
RAILROAD	Railroad
	Horizontal Reference Grid Line
	Horizontal Reference Grid Ticks
+	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
$^{42}76^{000m}E$	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16' 52.5"	Corner Coordinates (Latitude, Longitude)

SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS

2.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance (500-year) flood is employed to indicate additional areas of flood hazard in the community.

Each flooding source included in the project scope has been studied and mapped using professional engineering and mapping methodologies that were agreed upon by FEMA and Greenbrier County as appropriate to the risk level. Flood risk is evaluated based on factors such as known flood hazards and projected impact on the built environment. Engineering analyses were performed for each studied flooding source to calculate its 1-percent-annual-chance flood elevations; elevations corresponding to other floods (e.g. 10-, 4-, 2-, 0.2-percent annual chance, etc.) may have also been computed for certain flooding sources. Engineering models and methods are described in detail in Section 5.0 of this FIS Report. The modeled elevations at cross sections were used to delineate the floodplain boundaries on the FIRM; between cross sections, the boundaries were interpolated using elevation data from various sources. More information on specific mapping methods is provided in Section 6.0 of this FIS Report.

Depending on the accuracy of available topographic data (Table 22), study methodologies employed (Section 5.0), and flood risk, certain flooding sources may be mapped to show both the 1-percent and 0.2-percent-annual-chance floodplain boundaries, regulatory water surface elevations (BFEs), and/or a regulatory floodway. Similarly, other flooding sources may be mapped to show only the 1-percent-annual-chance floodplain boundary on the FIRM, without published water surface elevations. In cases where the 1-percent and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM. Figure 3, “Map Legend for FIRM”, describes the flood zones that are used on the FIRMs to account for the varying levels of flood risk that exist along flooding sources within the project area. Table 2 and Table 3 indicate the flood zone designations for each flooding source and each community within Greenbrier County, respectively.

Table 2, “Flooding Sources Included in this FIS Report,” lists each flooding source, including its study limits, affected communities, mapped zone on the FIRM, and the completion date of its engineering analysis from which the flood elevations on the FIRM and in the FIS Report were derived. Descriptions and dates for the latest hydrologic and hydraulic analyses of the flooding sources are shown in Table 12. Floodplain boundaries for these flooding sources are shown on the FIRM (published separately) using the symbology described in Figure 3. On the map, the 1-percent-annual-chance floodplain corresponds to the SFHAs. The 0.2-percent-annual-chance floodplain shows areas that, although out of the regulatory floodplain, are still subject to flood hazards.

Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data. The procedures to remove these areas from the SFHA are described in Section 6.5 of this FIS Report.

Table 2: Flooding Sources Included in this FIS Report

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Alum Run	Greenbrier County, Unincorporated Areas	Confluence with Muddy Creek	140 feet upstream of Flint Hollow Road	05050003	2.5	N	A	2020
Anglins Creek	Greenbrier County, Unincorporated Areas	County boundary	0.4 miles upstream of county boundary	05050005	0.4	N	A	2020
Anthony Creek	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	Confluences of Middle Fork Anthonys Creek, North Fork Anthony Creek, and Meadow Creek	05050003	15.5	N	A	2020
Anthony Creek Tributary 1	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek	1,100 feet upstream of Big Draft Road	05050003	1.9	N	A	2020
Anthony Creek Tributary 2	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek	1.6 miles upstream of confluence of Anthony Creek Tributary 2A	05050003	3.7	N	A	2020
Anthony Creek Tributary 2A	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek Tributary 2	0.4 miles upstream of confluence with Anthony Creek Tributary 2	05050003	0.4	N	A	2020
Anthony Creek Tributary 3	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek	80 feet upstream of Waids Draft Road	05050003	2.0	N	A	2020
Bear Run	Greenbrier County, Unincorporated Areas	Confluence with North Fork Cherry River	1.2 miles upstream of Highland Trace	05050005	1.3	N	A	2020
Beaver Creek	Greenbrier County, Unincorporated Areas	Confluence with Little Clear Creek	0.4 miles upstream of Rockcliff Road	05050005	3.5	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Becky Run	Greenbrier County, Unincorporated Areas	Confluence with South Fork Cherry River	1,100 feet upstream of Johnstown Road	05050005	1.4	N	A	2020
Beech Run	Greenbrier County, Unincorporated Areas	Confluence with Laurel Creek (III)	1.2 miles upstream of confluence with Laurel Creek (III)	05050005	1.2	N	A	2020
Beverly Fork	Greenbrier County, Unincorporated Areas	Confluence with Spring Creek	800 feet upstream of confluence with Spring Creek	05050003	0.2	N	A	2020
Big Clear Creek	Greenbrier County, Unincorporated Areas; Rupert, Town of	Confluence with Meadow River	1,100 feet upstream of Clearco Road	05050005	16.5	N	A	2020
Boggs Creek	Greenbrier County, Unincorporated Areas	Confluence with Little Sewell Creek	0.5 miles upstream of Bucks Lane	05050005	5.6	N	A	2020
Boggs Run	Greenbrier County, Unincorporated Areas	Confluence with Robbins Run	1,300 feet upstream of Boggs Run Road	05050003	0.3	N	A	2020
Boulder Run	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	1,500 feet upstream of confluence with Greenbrier River	05050003	0.3	N	A	2020
Broad Run	Greenbrier County, Unincorporated Areas	Confluence with Tuckahoe Run	500 feet upstream of Broad Run Road	05050003	0.6	N	A	2020
Brown Creek	Greenbrier County, Unincorporated Areas	Confluence with Big Clear Creek	2 miles upstream of Browns Creek Road	05050005	3.3	N	A	2020
Buffalo Creek	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	3.5 miles upstream of Interstate 64	05050005	3.8	N	A	2020
Burdette Creek	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	1.3 miles upstream confluence of Piney Creek	05050005	1.9	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Burns Run	Greenbrier County, Unincorporated Areas	Confluence with Culberson Creek	1,800 feet downstream of Lonesome Dove Road	05050003	1.7	N	A	2020
Callahan Branch	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	1,200 feet downstream of Holliday Run Road	05050005	1.2	N	A	2020
Coats Run	Greenbrier County, Unincorporated Areas	Confluence with North Fork Cherry River	500 feet upstream of Highland Trace	05050005	0.1	N	A	2020
Cold Knob Fork	Greenbrier County, Unincorporated Areas	Confluence with South Fork Cherry River	3.9 miles upstream of confluence with South Fork Cherry River	05050005	3.9	N	A	2020
Cold Spring Branch	Greenbrier County, Unincorporated Areas	Confluence with Laurel Creek (III)	1.4 miles upstream of confluence with Laurel Creek (III)	05050005	1.4	N	A	2020
Culberson Creek	Greenbrier County, Unincorporated Areas	0.7 miles downstream of confluence of Burns Run	1.5 miles upstream of confluence of Culberson Creek Tributary 4	05050003	9.9	N	A	2020
Culberson Creek Tributary 1	Greenbrier County, Unincorporated Areas	Confluence with Culberson Creek	0.5 miles upstream confluence with Culberson Creek	05050003	0.5	N	A	2020
Culberson Creek Tributary 2	Greenbrier County, Unincorporated Areas	Confluence with Culberson Creek	1,700 feet upstream of Trout Road	05050003	0.4	N	A	2020
Culberson Creek Tributary 3	Greenbrier County, Unincorporated Areas	Confluence with Culberson Creek	0.6 miles upstream of confluence with Culberson Creek	05050003	1.0	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Culberson Creek Tributary 4	Greenbrier County, Unincorporated Areas	Confluence with Culberson Creek	0.6 miles upstream of confluence with Culberson Creek	05050003	0.6	N	A	2020
Davy Run	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	1.4 miles upstream of confluence with Greenbrier River	05050003	1.4	N	A	2020
Dodson Branch	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	1.7 miles upstream of Anthony Ridge Road	05050003	2.1	N	A	2020
Dry Creek	Greenbrier County, Unincorporated Areas; White Sulphur Springs, City of	Confluence with Howard Creek	150 feet downstream of Tuckahoe Road	05050003	2.4	N	A	2020
Dry Creek	Greenbrier County, Unincorporated Areas	150 feet downstream of Tuckahoe Road	Confluence of Broad Run and Tuckahoe Run	05050003	4.1	Y	AE	2020
Dry Run	Greenbrier County, Unincorporated Areas	Confluence with Spring Creek	1,500 feet upstream of Band of Hope Road	05050003	1.8	N	A	2020
Eagle Branch	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	500 feet upstream of Puckett Road	05050005	1.2	N	A	2020
Fleming Run	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek	2 miles upstream of confluence of Fleming Run Tributary	05050003	3.4	N	A	2020
Fleming Run Tributary	Greenbrier County, Unincorporated Areas	Confluence with Fleming Run	1.6 miles upstream of confluence with Fleming Run	05050003	1.6	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Flynn Creek	Greenbrier County, Unincorporated Areas	Confluence with Sinking Creek	1.1 miles upstream of Flynns Creek Road	05050003	1.9	N	A	2020
Greenbrier River	Falling Springs, Corporation of; Greenbrier County, Unincorporated Areas; Ronceverte, City of	1,200 feet upstream of Interstate 64	County Boundary	05050003	36.1	N	A	2020
Greenbrier River	Greenbrier County, Unincorporated Areas	County Boundary	1,200 feet upstream of Interstate 64	05050003	20.4	Y	AE	2020
Greenbrier River Tributary 1	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	0.7 miles upstream of confluence with Greenbrier River	05050003	0.7	N	A	2020
Greenbrier River Tributary 2	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	0.8 miles upstream of Low Gap Road	05050003	1.8	N	A	2020
Greenbrier River Tributary 3	Greenbrier County, Unincorporated Areas; Ronceverte, City of	Confluence with Greenbrier River	400 feet downstream of Clutter Hollow Drive	05050003	0.8	N	A	2020
Greenbrier River Tributary 4	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	0.4 miles upstream of Rorer Road	05050003	0.7	N	A	2020
Harts Run	Greenbrier County, Unincorporated Areas	Confluence with Howard Creek	1,700 feet upstream of Harts Run Road	05050003	5.4	N	A	2020
Hogcamp Run	Greenbrier County, Unincorporated Areas	Confluence with Laurel Creek (III)	0.8 feet upstream of confluence with Laurel Creek (III)	05050005	0.8	N	A	2020
Hominy Creek	Greenbrier County, Unincorporated Areas	County boundary	1.5 miles upstream of county boundary	05050005	1.5	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Howard Creek	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	0.9 miles downstream of Montague Drive	05050003	9.5	Y	AE	2020
Howard Creek	Greenbrier County, Unincorporated Areas; White Sulphur Springs, City of	0.9 miles downstream of Montague Drive	1,200 feet upstream of Slash Lick Road	05050003	4.8	N	A	2020
Howard Creek (Lateral Divert)	Greenbrier County, Unincorporated Areas; White Sulphur Springs, City of	Confluence with Howard Creek	Approximately 1,600 feet above confluence with Howard Creek	05050003	0.3	N	AE	2020
Howard Creek Tributary	Greenbrier County, Unincorporated Areas	Confluence with Howard Creek	0.4 miles upstream of Monroe Draft	05050003	3.9	N	A	2020
Hughart Creek	Greenbrier County, Unincorporated Areas	600 feet downstream of confluence of Hughart Creek Tributary	2.5 miles upstream of Shoestring Trail	05050003	5.0	N	A	2020
Hughart Creek Tributary	Greenbrier County, Unincorporated Areas	Confluence with Hughart Creek	0.7 miles upstream of confluence with Hughart Creek	05050003	0.7	N	A	2020
Hunters Run	Greenbrier County, Unincorporated Areas	Confluence with North Fork Cherry River	1,700 feet upstream of Highland Trace	05050005	0.3	N	A	2020
Improvement Branch	Greenbrier County, Unincorporated Areas	Confluence with Little Laurel Creek	2.1 miles upstream of confluence with Little Laurel Creek	05050005	2.1	N	A	2020
Indian Creek	Greenbrier County, Unincorporated Areas	Confluence with Culberson Creek	0.7 miles upstream of Friars Hill Road	05050003	2.2	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Jericho Draft	Greenbrier County, Unincorporated Areas	Confluence with Howard Creek	1,000 feet downstream of Big Draft Road	05050003	3.2	N	A	2020
Jericho Draft Tributary	Greenbrier County, Unincorporated Areas	Confluence with Jericho Draft	1,500 feet upstream of Dutch Hollow Road	05050003	2.3	N	A	2020
Job Knob Branch	Greenbrier County, Unincorporated Areas	Confluence with South Fork Big Clear Creek	1.8 miles upstream of confluence with South Fork Big Clear Creek	05050005	1.7	N	A	2020
Job Knob Branch (I)	Greenbrier County, Unincorporated Areas	Confluence with Laurel Creek (III)	1,300 feet upstream of confluence with Laurel Creek (III)	05050005	0.2	N	A	2020
Kincaid Run	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	1,300 feet upstream of confluence with Greenbrier River	05050003	0.2	N	A	2020
Kitchen Creek	Greenbrier County, Unincorporated Areas	Confluence with Muddy Creek	2.1 miles upstream Blue Sulphur Springs Road	05050003	7.9	N	A	2020
Kitchen Creek Tributary	Greenbrier County, Unincorporated Areas	Confluence with Kitchen Creek	200 feet upstream of Sawmill Hollow Road	05050003	1.7	N	A	2020
Kuhn Branch	Greenbrier County, Unincorporated Areas	Confluence with Little Clear Creek	0.8 miles upstream of confluence with Little Clear Creek	05050005	0.8	N	A	2020
Laurel Branch	Greenbrier County, Unincorporated Areas	Confluence with Tuckahoe Run	0.7 miles upstream of Tuckahoe Road	05050003	0.7	N	A	2020
Laurel Creek	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	1.5 miles upstream of Midland Trail West	05050003	1.6	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Laurel Creek (I)	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek	0.8 miles upstream of confluence with Anthony Creek	05050003	0.8	N	A	2020
Laurel Creek (II)	Greenbrier County, Unincorporated Areas	Confluence with Little Clear Creek	2 miles upstream of confluence with Little Clear Creek	05050003	2.0	N	A	2020
Laurel Creek (III)	Greenbrier County, Unincorporated Areas	County boundary	2.3 miles upstream of confluence of Cold Spring Branch	05050003	8.2	N	A	2020
Laurel Run	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	2.3 miles upstream of Peach Orchard Road	05050003	7.9	N	A	2020
Laurel Run (I)	Greenbrier County, Unincorporated Areas	Confluence with Meadow Creek	3 miles upstream of Sherwood Lake Road	05050003	3.1	N	A	2020
Little Clear Creek	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	2.1 miles upstream of confluence of Kuhn Branch	05050005	13.0	N	A	2020
Little Creek	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek	3.4 miles upstream of Slab Camp Road	05050005	8.3	N	A	2020
Little Creek (I)	Greenbrier County, Unincorporated Areas	Confluence with Sewell Creek	County boundary	05050003	0.5	N	A	2020
Little Laurel Creek	Greenbrier County, Unincorporated Areas	County boundary	4.2 miles upstream of Greenbrier Road South	05050005	6.5	N	A	2020
Little Roaring Creek	Greenbrier County, Unincorporated Areas	Confluence with Roaring Creek	0.5 miles upstream of Cold Knob Road	05050003	0.8	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Little Sewell Creek	Greenbrier County, Unincorporated Areas; Rainelle, Town of	Confluence with Sewell Creek	Approximately 0.5 miles upstream of James River and Kanawha Turnpike	05050005	1.5	Y	AE	2020
Little Sewell Creek	Greenbrier County, Unincorporated Areas	Approximately 0.5 miles upstream of James River and Kanawha Turnpike	1.1 miles upstream of Crag Road	05050005	3.5	N	A	2020
McMillion Creek	Greenbrier County, Unincorporated Areas	Confluence with Laurel Creek (III)	1,200 feet downstream of Bentley Lane	05050005	2.5	N	A	2020
Meadow Creek	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek	10.2 miles upstream of Sherwood Lake Road	05050005	14.3	N	A	2020
Meadow Creek (I)	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	200 feet upstream of Home Drive	05050005	7.8	N	A	2020
Meadow River	Greenbrier County, Unincorporated Areas	0.28 miles downstream of confluence of Sewell Creek	0.9 miles downstream of confluence of Big Clear Creek	05050005	7.7	Y	AE	2020
Meadow River (Upstream Zone A)	Greenbrier County, Unincorporated Areas; Rupert, Town of	0.9 miles downstream of confluence of Big Clear Creek	1,300 feet upstream of Keeney Mountain Road	05050005	21.9	N	A	2020
Meadow River	Greenbrier County, Unincorporated Areas	County boundary	Approximately 0.28 miles downstream of confluence of Sewell Creek	05050005	18.9	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Methodist Branch	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	0.9 miles upstream of James River and Kanawha Turnpike	05050005	2.8	N	A	2020
Middle Branch Laurel Creek	Greenbrier County, Unincorporated Areas	Confluence with Laurel Creek (III)	1.7 miles upstream of confluence with Laurel Creek (III)	05050005	1.7	N	A	2020
Middle Fork Anthonys Creek	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek	2.8 miles upstream of Hefner Lane	05050003	11.7	N	A	2020
Mill Creek	Greenbrier County, Unincorporated Areas	Confluence with Muddy Creek	5.9 miles upstream of Alta Drive	05050003	8.5	N	A	2020
Mill Creek (I)	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	0.8 miles downstream of Big Mountain Road	05050005	4.4	N	A	2020
Mill Creek Tributary	Greenbrier County, Unincorporated Areas	Confluence with Mill Creek	0.5 miles upstream of Sam Anderson Road	05050003	0.5	N	A	2020
Milligan Creek	Greenbrier County, Unincorporated Areas	2.2 miles downstream of Herns Mill Road	1,100 feet upstream of Miller Mountain Road	05050003	8.2	N	A	2020
Milligan Creek Tributary 1	Greenbrier County, Unincorporated Areas	Confluence with Milligan Creek	1.5 miles upstream of Midland Trail East	05050003	2.6	N	A	2020
Milligan Creek Tributary 2	Greenbrier County, Unincorporated Areas	Confluence with Milligan Creek	1,500 feet upstream of Midland Trail East	05050003	0.6	N	A	2020
Milligan Creek Tributary 3	Greenbrier County, Unincorporated Areas	1,400 feet downstream of Raders Valley Road	0.7 miles upstream of Raders Valley Road	05050003	1.5	N	A	2020
Morris Fork	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	0.8 miles upstream of Morris Branch Road	05050005	3.0	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Muddy Creek	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	1,400 feet upstream of Piercy Mill Road	05050003	21.0	N	A	2020
North Fork Anthony Creek	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek	0.5 miles upstream of Public Road 96	05050003	8.5	N	A	2020
North Fork Cherry River	Greenbrier County, Unincorporated Areas	County boundary	0.7 miles upstream of confluence of Bear Run	05050005	11.1	N	A	2020
Old Field Branch	Greenbrier County, Unincorporated Areas	Confluences with South Fork Big Clear Creek	2.1 miles upstream of confluence with South Fork Big Clear Creek	05050005	2.0	N	A	2020
Otter Creek	Greenbrier County, Unincorporated Areas	Confluence with Methodist Branch	40 feet upstream of Gray Gables Road	05050005	4.5	N	A	2020
Panther Camp Creek	Greenbrier County, Unincorporated Areas	Confluence with Spring Creek	1.4 miles upstream of Panther Camp Road	05050003	2.8	N	A	2020
Patterson Creek	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	County boundary	05050005	0.8	N	A	2020
Peaser Branch	Greenbrier County, Unincorporated Areas	Confluence with Hominy Creek	0.5 miles upstream of confluence with Hominy Creek	05050005	0.5	N	A	2020
Piney Creek	Greenbrier County, Unincorporated Areas	Confluence with Burdette Creek	0.4 miles upstream of confluence with Burdette Creek	05050005	0.4	N	A	2020
Renick Creek	Greenbrier County, Unincorporated Areas	Confluence with Kitchen Creek	4.2 miles upstream of confluence with Kitchen Creek	05050003	4.2	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Roaring Creek	Greenbrier County, Unincorporated Areas	0.5 miles downstream of Pembroke Road	2.4 miles upstream of confluence of Little Roaring Creek	05050003	3.4	N	A	2020
Robbins Run	Greenbrier County, Unincorporated Areas	Confluence with Spring Creek	County boundary	05050003	0.1	N	A	2020
Robbins Run	Greenbrier County, Unincorporated Areas	Confluence with Spring Creek	County boundary	05050005	5.2	N	A	2020
Rockcamp Run	Greenbrier County, Unincorporated Areas	Confluence with Spring Creek	1,100 feet upstream of Rock Camp Road	05050003	0.8	N	A	2020
Rocky Run	Greenbrier County, Unincorporated Areas	Confluence with South Fork Cherry River	4.5 miles upstream of confluence with South Fork Cherry River	05050005	4.5	N	A	2020
Sam Creek	Greenbrier County, Unincorporated Areas	Confluence with Big Clear Creek	1.1 miles upstream of Anjean Road	05050005	1.1	N	A	2020
Second Creek	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	County boundary	05050003	4.3	N	A	2020
Sewell Creek	Greenbrier County, Unincorporated Areas; Rainelle, Town of	Confluence with Meadow River	County Boundary	05050005	5.7	Y	AE	2020
Simms Run	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek	1.2 miles upstream of confluence with Anthony Creek	05050003	1.2	N	A	2020
Sinking Creek	Greenbrier County, Unincorporated Areas	1.6 miles downstream of Sinking Creek Road	0.7 miles upstream of Childs Lane	05050003	14.1	N	A	2020
Sinking Creek Tributary 1	Greenbrier County, Unincorporated Areas	Confluence with Sinking Creek	500 feet upstream of Tyree Road	05050003	0.4	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Sinking Creek Tributary 2	Greenbrier County, Unincorporated Areas	Confluence with Sinking Creek	1,200 feet upstream of Nolen Lane	05050003	3.0	N	A	2020
Sinking Creek Tributary 3	Greenbrier County, Unincorporated Areas	Confluence with Sinking Creek	1,900 feet upstream of confluence with Sinking Creek	05050003	0.4	N	A	2020
Sinking Creek Tributary 4	Greenbrier County, Unincorporated Areas	Confluence with Sinking Creek	1,800 feet upstream of confluence with Sinking Creek	05050003	0.3	N	A	2020
Slabcamp Run	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	1,500 feet downstream of Slab Camp Road	05050003	3.9	N	A	2020
Slash Lick Run	Greenbrier County, Unincorporated Areas	Confluence with Howard Creek	1.1 miles upstream of Slash Lick Road	05050003	1.5	N	A	2020
Smokehouse Branch	Greenbrier County, Unincorporated Areas	Confluence with South Fork Big Clear Creek	1 mile upstream of confluence with South Fork Big Clear Creek	05050005	1.0	N	A	2020
Snake Run	Greenbrier County, Unincorporated Areas	Confluence with Kitchen Creek	60 feet downstream of Shaw Mountain Road	05050003	3.9	N	A	2020
Snodgrass Run	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	1.2 miles upstream of confluence with Greenbrier River	05050003	1.2	N	A	2020
South Fork Big Clear Creek	Greenbrier County, Unincorporated Areas	Confluence with Big Clear Creek	Confluences of Job Knob Branch and Old Field Branch	05050005	5.8	N	A	2020
South Fork Cherry River	Greenbrier County, Unincorporated Areas	County boundary	4.7 miles upstream of confluence of Cold Knob Fork	05050005	14.2	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Spice Run	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	5.2 miles upstream of confluence with Greenbrier River	05050003	0.1	N	A	2020
Spring Creek	Greenbrier County, Unincorporated Areas	Confluence with Greenbrier River	0.8 miles upstream of Upper Spring Creek Road	05050003	22.1	N	A	2020
Spring Creek Tributary	Greenbrier County, Unincorporated Areas	0.7 miles downstream of Seneca Trail North	1,300 feet upstream of Old Renick Valley Road	05050003	1.2	N	A	2020
Spruce Run	Greenbrier County, Unincorporated Areas	Confluence with Burns Run	0.6 miles upstream of confluence with Burns Run	05050003	0.5	N	A	2020
Stony Run	Greenbrier County, Unincorporated Areas	Confluence with Sinking Creek	1 mile upstream of confluence with Sinking Creek	05050003	1.0	N	A	2020
Sulphur Lick Run	Greenbrier County, Unincorporated Areas	Confluence with Howard Creek	1.9 miles upstream of Pocahontas Trail	05050003	1.9	N	A	2020
Toms Creek	Greenbrier County, Unincorporated Areas	Confluence with Meadow River	400 feet downstream of Hurricane Ridge Road	05050005	0.9	N	A	2020
Tuckahoe Run	Greenbrier County, Unincorporated Areas	Confluence with Dry Creek	0.9 miles upstream of confluence of Laurel Branch	05050003	2.8	N	A	2020
Tuckahoe Run Tributary	Greenbrier County, Unincorporated Areas	Confluence with Tuckahoe Run	1,800 feet upstream of Tuckahoe Road	05050003	0.4	N	A	2020
Twomile Run	Greenbrier County, Unincorporated Areas	Confluence with North Fork Anthony Creek	900 feet upstream of Public Road 96	05050003	0.2	N	A	2020

Table 2: Flooding Sources Included in this FIS Report *(continued)*

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Wades Creek	Greenbrier County, Unincorporated Areas	Confluence with Howard Creek	At Interstate 64	05050003	2.1	Y	AE	2020
Wades Creek	White Sulphur Springs, City of	At Interstate 64	1.3 miles upstream of Interstate 64	05050003	1.3	N	A	2020
Wiley Run	Greenbrier County, Unincorporated Areas	Confluence with Anthony Creek	0.7 miles upstream of Pocahontas Trail	05050003	0.9	N	A	2020
Wolfpen Creek	Greenbrier County, Unincorporated Areas; Rainelle, Town of	Confluence with Sewell Creek	0.5 miles upstream of Sewell Street South	05050005	0.7	N	A	2020
Youngs Creek	Greenbrier County, Unincorporated Areas	County boundary	3 miles upstream of county boundary	05050005	3.1	N	A	2020

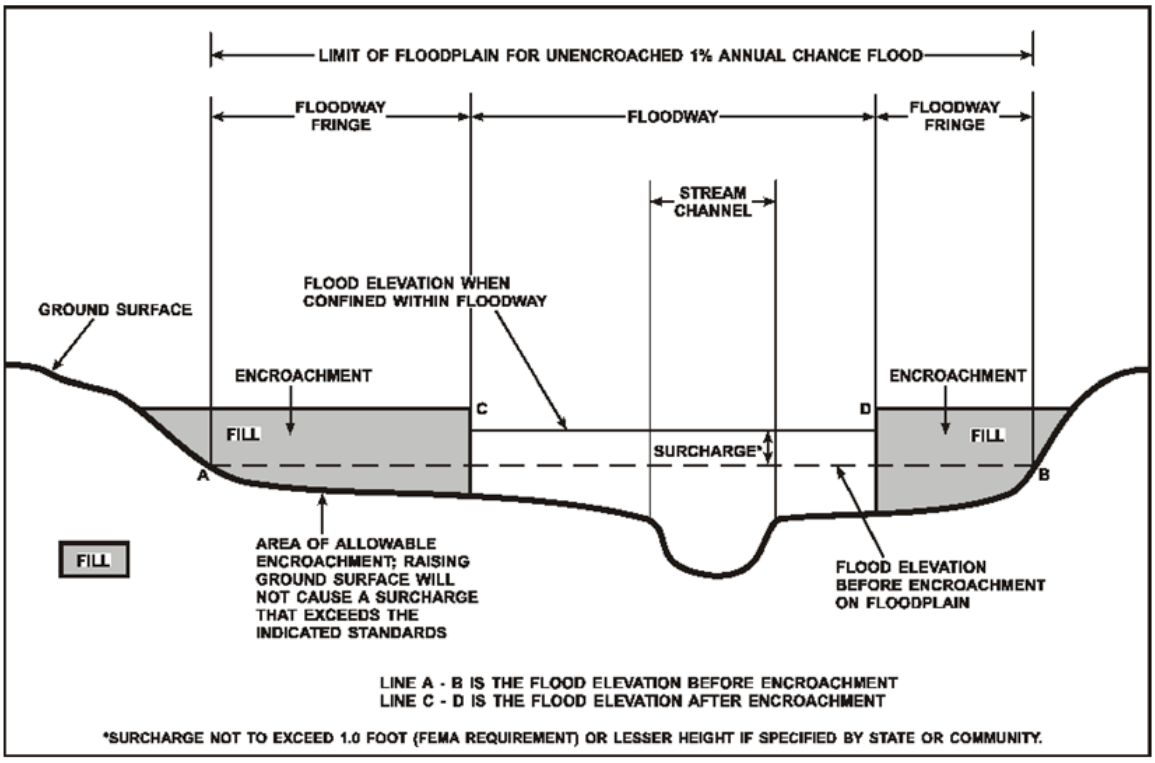
2.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard.

For purposes of the NFIP, a floodway is used as a tool to assist local communities in balancing floodplain development against increasing flood hazard. With this approach, the area of the 1-percent-annual-chance floodplain on a river is divided into a floodway and a floodway fringe based on hydraulic modeling. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order to carry the 1-percent-annual-chance flood. The floodway fringe is the area between the floodway and the 1-percent-annual-chance floodplain boundaries where encroachment is permitted. The floodway must be wide enough so that the floodway fringe could be completely obstructed without increasing the water surface elevation of the 1-percent-annual-chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 4.

To participate in the NFIP, Federal regulations require communities to limit increases caused by encroachment to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this project are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway projects.

Figure 4: Floodway Schematic



Floodway widths presented in this FIS Report and on the FIRM were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. For certain stream segments, floodways were adjusted so that the amount of floodwaters conveyed on each side of the floodplain would be reduced equally. The results of the floodway computations have been tabulated for selected cross sections and are shown in Table 23, "Floodway Data."

All floodways that were developed for this Flood Risk Project are shown on the FIRM using the symbology described in Figure 3. In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown on the FIRM. For information about the delineation of floodways on the FIRM, refer to Section 6.3.

2.3 Base Flood Elevations

The hydraulic characteristics of flooding sources were analyzed to provide estimates of the elevations of floods of the selected recurrence intervals. The BFE is the elevation of the 1-percent-annual-chance flood. These BFEs are most commonly rounded to the whole foot, as shown on the FIRM, but in certain circumstances or locations they may be rounded to 0.1 foot. Cross section lines shown on the FIRM may also be labeled with the BFE rounded to 0.1 foot. Whole-foot BFEs derived from engineering analyses that apply to coastal areas, areas of ponding, or other static areas with little elevation change may also be shown at selected intervals on the FIRM.

BFEs are primarily intended for flood insurance rating purposes. Cross sections with BFEs shown on the FIRM correspond to the cross sections shown in the Floodway Data table and Flood Profiles in this FIS Report. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. For example, the user may use the FIRM to determine the stream station of a location of interest and then use the profile to determine the 1-percent annual chance elevation at that location. Because only selected cross sections may be shown on the FIRM for riverine areas, the profile should be used to obtain the flood elevation between mapped cross sections. Additionally, for riverine areas, whole-foot elevations shown on the FIRM may not exactly reflect the elevations derived from the hydraulic analyses; therefore, elevations obtained from the profile may more accurately reflect the results of the hydraulic analysis.

2.4 Non-Encroachment Zones

This section is not applicable to this Flood Risk Project.

2.5 Coastal Flood Hazard Areas

This section is not applicable to this Flood Risk Project.

2.5.1 Water Elevations and the Effects of Waves

This section is not applicable to this Flood Risk Project.

Figure 5: Wave Runup Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.2 Floodplain Boundaries and BFEs for Coastal Areas

This section is not applicable to this Flood Risk Project.

2.5.3 Coastal High Hazard Areas

This section is not applicable to this Flood Risk Project.

Figure 6: Coastal Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.4 Limit of Moderate Wave Action

This section is not applicable to this Flood Risk Project.

SECTION 3.0 – INSURANCE APPLICATIONS

3.1 National Flood Insurance Program Insurance Zones

For flood insurance applications, the FIRM designates flood insurance rate zones as described in Figure 3, “Map Legend for FIRM.” Flood insurance zone designations are assigned to flooding sources based on the results of the hydraulic or coastal analyses. Insurance agents use the zones shown on the FIRM and depths and base flood elevations in this FIS Report in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

The 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (e.g. Zones A, AE, V, VE, etc.), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of additional flood hazards.

Table 3 lists the flood insurance zones in Greenbrier County.

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Falling Springs, Corporation of	A, X
Greenbrier County, Unincorporated Areas	A, AE, X
Lewisburg, City of	X
Quinwood, Town of	X
Rainelle, Town of	A, AE, X
Ronceverte, City of	A, AE, X
Rupert, Town of	A, X
White Sulphur Springs, City of	AE, X

SECTION 4.0 – AREA STUDIED

4.1 Basin Description

Table 4 contains a description of the characteristics of the HUC-8 sub-basins within which each community falls. The table includes the main flooding sources within each basin, a brief description of the basin, and its drainage area.

Table 4: Basin Characteristics

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (square miles)
Gauley	05050005	Meadow River	Located within the western half of Greenbrier County	3,518
Greenbrier	05050003	Greenbrier River	Largest watershed within Greenbrier County, encompassing more than half the county	13,539

4.2 Principal Flood Problems

Table 5 contains a description of the principal flood problems that have been noted for Greenbrier County by flooding source.

Table 5: Principal Flood Problems

Flooding Source	Description of Flood Problems
Greenbrier River, Howard Creek, Little Sewell Creek, Meadow River, Sewell Creek	On June 24, 2016, relentless torrent of rain caused flooding that devasted many communities across central West Virginia. Repeated rounds of thunderstorms dumped more than nine inches of rain in the hardest hit areas. This caused millions of dollars' worth of damage to infrastructure and economic resources. This event was the third deadliest flood event in state history.

Table 6 contains information about historic flood elevations in the communities within Greenbrier County**.**

Table 6: Historic Flooding Elevations

Flooding Source	Location	Historic Peak (Feet NAVD88)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Anthony Creek	Anthony Creek Near Anthony, WV	21.4	1996	*	USGS gage
Greenbrier River	Greenbrier River at Buckeye, WV	23.2	1986	*	USGS gage
Greenbrier River	Greenbrier River at Hilldale, WV	26.9	1996	*	USGS gage
Meadow River	Meadow River at Nallen, WV	24.8	2016	*	USGS gage
Second Creek	Second Creek Near Second Creek, WV	9.4	1972	*	USGS gage

*Data not available

4.3 Dams and Other Flood Hazard Reduction Measures

Table 7 contains information about non-levee flood hazard reduction measures within Greenbrier County such as dams or jetties. Levee systems are addressed in Section 4.4 of this FIS Report.

Table 7: Dams and Other Flood Hazard Reduction Measures

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Dry Creek	N/A	Dam	N/A	A dam has been constructed on Dry Creek in Greenbrier County. This dam lowers flood discharges for both Dry and Howard Creeks in the City of White Sulphur Springs (FEMA, 2012).
Howard Creek	N/A	Dam	See description	There are two low dams across Howard Creek on the Greenbrier Golf Course for prevention of erosion. These dams do not significantly affect flood levels (FEMA, 2012).
Sewell Creek/ Little Sewell Creek	N/A	Channel	See description	The Meadow River has been channelized below its confluence with Sewell Creek/Little Sewell Creek for approximately 7,900 feet. Approximately 5,500 feet of Sewell Creek/Little Sewell Creek has been channelized beginning at the confluence with the Meadow River. Stream slopes are very flat, being approximately 2 feet per mile on the Meadow River and approximately 4 feet per mile on Sewell Creek/Little Sewell Creek. The 15 design and construction of the channel project were performed by the U.S. Army Corps of Engineers (USACE), Huntington District. The maintenance for the channelization of Sewell Creek/Little Sewell Creek is performed by the Town of Rainelle (FEMA, 2012).

4.4 Levee Systems

This section is not applicable to this Flood Risk Project.

Table 8: Levee Systems

[Not Applicable to this Flood Risk Project]

SECTION 5.0 – ENGINEERING METHODS

For the flooding sources in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded at least once on the average during any 10-, 25-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 25-, 50-, 100-, and 500-year floods, have a 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance, respectively, of being equaled or exceeded during any year.

Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of annual exceedance) during the term of a 30-year mortgage is approximately 26 percent (about 3 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

In addition to these flood events, the “1-percent-plus”, or “1%+”, annual chance flood elevation has been modeled and included on the flood profile for certain flooding sources in this FIS Report. While not used for regulatory or insurance purposes, this flood event has been calculated to help illustrate the variability range that exists between the regulatory 1-percent-annual-chance flood elevation and a 1-percent-annual-chance elevation that has taken into account an additional amount of uncertainty in the flood discharges (thus, the 1% “plus”). For flooding sources whose discharges were estimated using regression equations, the 1%+ flood elevations are derived by taking the 1-percent-annual-chance flood discharges and increasing the modeled discharges by a percentage equal to the average predictive error for the regression equation. For flooding sources with gage- or rainfall-runoff-based discharge estimates, the upper 84-percent confidence limit of the discharges is used to compute the 1%+ flood elevations.

5.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied. Hydrologic analyses are typically performed at the watershed level. Depending on factors such as watershed size and shape, land use and urbanization, and natural or man-made storage, various models or methodologies may be applied. A summary of the hydrologic methods applied to develop the discharges used in the hydraulic analyses for each stream is provided in Table 12. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges is provided in Table 9. Stream gage information is provided in Table 11.

Table 9: Summary of Discharges

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Dry Creek	At Main Street	22.6	2,550	3,420	4,170	4,960	7,040
Dry Creek	Approximately 2,600 ft upstream of upstream corporate limits of City of White Sulphur Springs	21.5	2,170	2,910	3,550	4,230	6,050
Greenbrier River	Just upstream of confluence of Wolf Creek (outside Greenbrier County)	1,500.0	57,252	68,299	76,615	85,078	10,5420
Greenbrier River	At USGS gage at City of Alderson	1,364.0	55,540	66,240	74,140	81,990	100,300
Greenbrier River	Approximately 1,000 feet upstream of Keton Church Road	1,124.0	48,316	57,736	64,747	71,602	87,932
Howard Creek	Approximately 340 feet upstream of confluence with Greenbrier River	91.0	9,440	13,460	17,020	20,995	31,815
Howard Creek	At Monroe Draft Road	83.0	8,740	12,450	15,730	19,380	29,360
Howard Creek	At Harts Run Road	70.0	7,740	10,890	13,680	16,770	25,140
Howard Creek	At U.S. Route 60	66.0	7,440	10,430	13,080	16,020	23,950
Howard Creek	At Big Draft Road	60.5	6,880	9,615	12,030	14,710	21,900
Howard Creek	At Garden Street	38.0	5,240	7,340	9,185	11,240	16,690
Howard Creek	Approximately 2,670 feet upstream of Garden Street	29.0	3,840	5,375	6,730	8,250	12,230
Howard Creek	At upstream corporate limits of City of White Sulphur Springs	27.0	3,720	5,200	6,515	7,980	11,800

Table 9: Summary of Discharges *(continued)*

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Howard Creek (Lateral Divert)	At the divergence on Howard Creek	*	**	**	**	625	3910
Little Sewell Creek	Approximately 750 feet upstream from Seventh Street bridge	16.6	1,580	2,039	2,413	2,811	3,811
Meadow River	At railroad crossing	202.0	8,488	11,292	13,811	16,697	25,501
Meadow River	Above confluence with Sewell Creek/ Little Sewell Creek	164.0	7,305	9,739	11,936	14,430	22,132
Sewell Creek	At confluence with Meadow River	40.2	3,295	4,197	4,927	5,703	7,631
Sewell Creek	Approximately 80 feet upstream of confluence with Little Sewell Creek	23.3	2,094	2,689	3,172	3,687	4,973
Sewell Creek	Approximately 520 feet upstream of confluence with Wolfpen Creek	18.7	1,744	2,247	2,657	3,092	4,185
Sewell Creek	Approximately 230 feet upstream of confluence with Little Creek	12.8	1,273	1,649	1,956	2,283	3,107
Wades Creek	Approximately 150 ft upstream of Mill Hill Drive	7.8	1,800	2,420	2,960	3,520	5,010
Wades Creek	Approximately 1,200 ft upstream of upstream corporate limits of City of White Sulphur Springs	5.8	1,570	2,110	2,570	3,070	4,350

*Not calculated as discharges are diverted from Howard Creek

**Events not overtopping the lateral structure

Figure 7: Frequency Discharge-Drainage Area Curves

[Not Applicable to this Flood Risk Project]

Table 10: Summary of Non-Coastal Stillwater Elevations

[Not Applicable to this Flood Risk Project]

Table 11: Stream Gage Information used to Determine Discharges

Flooding Source	Gage Identifier	Agency that Maintains Gage	Site Name	Drainage Area (Square Miles)	Period of Record	
					From	To
Anthony Creek	03182700	USGS	Anthony Creek Near Anthony, WV	144	06/21/1972	01/23/1996
Greenbrier River	03182500	USGS	Greenbrier River at Buckeye, WV	540	11/18/1929	06/23/2016
Greenbrier River	03183500	USGS	Greenbrier River at Alderson, WV	1,364	03/30/1896	05/25/2017
Greenbrier River	03184000	USGS	Greenbrier River at Hilldale, WV	1,619	03/18/1936	05/25/2017
Meadow River	03190000	USGS	Meadow River at Nallen, WV	287	03/10/1909	05/13/2017
Second Creek	03183000	USGS	Second Creek Near Second Creek, WV	81	01/07/1946	04/19/1998

5.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Base flood elevations on the FIRM represent the elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations. These whole-foot elevations may not exactly reflect the elevations derived from the hydraulic analyses. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

For streams for which hydraulic analyses were based on cross sections, locations of selected cross sections are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 6.3), selected cross sections are also listed in Table 23, “Floodway Data.”

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 12. Roughness coefficients are provided in Table 13. Roughness coefficients are values representing the frictional resistance water experiences when passing overland or through a channel. They are used in the calculations to determine water surface elevations. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

Table 12: Summary of Hydrologic and Hydraulic Analyses

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Alum Run	Confluence with Muddy Creek	140 feet upstream of Flint Hollow Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Anglins Creek	County boundary	0.4 miles upstream of county boundary	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Anthony Creek	Confluence with Greenbrier River	Confluences of Middle Fork Anthonys Creek, North Fork Anthony Creek, and Meadow Creek	Regional Regression Equations weighted by Gage Analysis (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Anthony Creek Tributary 1	Confluence with Anthony Creek	1,100 feet upstream of Big Draft Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Anthony Creek Tributary 2	Confluence with Anthony Creek	1.6 miles upstream of confluence of Anthony Creek Tributary 2A	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Anthony Creek Tributary 2A	Confluence with Anthony Creek Tributary 2	0.4 miles upstream of confluence with Anthony Creek Tributary 2	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Anthony Creek Tributary 3	Confluence with Anthony Creek	80 feet upstream of Waids Draft Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Bear Run	Confluence with North Fork Cherry River	1.2 miles upstream of Highland Trace	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Beaver Creek	Confluence with Little Clear Creek	0.4 miles upstream of Rockcliff Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Becky Run	Confluence with South Fork Cherry River	1,100 feet upstream of Johnstown Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Beech Run	Confluence with Laurel Creek (III)	1.2 miles upstream of confluence with Laurel Creek (III)	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Beverly Fork	Confluence with Spring Creek	800 feet upstream of confluence with Spring Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Big Clear Creek	Confluence with Meadow River	1,100 feet upstream of Clearco Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Boggs Creek	Confluence with Little Sewell Creek	0.5 miles upstream of Bucks Lane	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Boggs Run	Confluence with Robbins Run	1,300 feet upstream of Boggs Run Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Boulder Run	Confluence with Greenbrier River	1,500 feet upstream of confluence with Greenbrier River	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Broad Run	Confluence with Tuckahoe Run	500 feet upstream of Broad Run Road	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Brown Creek	Confluence with Big Clear Creek	2 miles upstream of Browns Creek Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Buffalo Creek	Confluence with Meadow River	3.5 miles upstream of Interstate 64	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Burdette Creek	Confluence with Meadow River	1.3 miles upstream confluence of Piney Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Burns Run	Confluence with Culberson Creek	1,800 feet downstream of Lonesome Dove Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Callahan Branch	Confluence with Meadow River	1,200 feet downstream of Holliday Run Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Coats Run	Confluence with North Fork Cherry River	500 feet upstream of Highland Trace	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Cold Knob Fork	Confluence with South Fork Cherry River	3.9 miles upstream of confluence with South Fork Cherry River	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Cold Spring Branch	Confluence with Laurel Creek (III)	1.4 miles upstream of confluence with Laurel Creek (III)	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Culberson Creek	0.7 miles downstream of confluence of Burns Run	1.5 miles upstream of confluence of Culberson Creek Tributary 4	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Culberson Creek Tributary 1	Confluence with Culberson Creek	0.5 miles upstream confluence with Culberson Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Culberson Creek Tributary 2	Confluence with Culberson Creek	1,700 feet upstream of Trout Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Culberson Creek Tributary 3	Confluence with Culberson Creek	0.6 miles upstream of confluence with Culberson Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Culberson Creek Tributary 4	Confluence with Culberson Creek	0.6 miles upstream of confluence with Culberson Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Davy Run	Confluence with Greenbrier River	1.4 miles upstream of confluence with Greenbrier River	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Dodson Branch	Confluence with Greenbrier River	1.7 miles upstream of Anthony Ridge Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Dry Creek	Confluence with Howard Creek	150 feet downstream of Tuckahoe Road	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	AE w/ Floodway	
Dry Creek	150 feet downstream of Tuckahoe Road	Confluence of Broad Run and Tuckahoe Run	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Dry Run	Confluence with Spring Creek	1,500 feet upstream of Band of Hope Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Eagle Branch	Confluence with Meadow River	500 feet upstream of Puckett Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Fleming Run	Confluence with Anthony Creek	2 miles upstream of confluence of Fleming Run Tributary	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Fleming Run Tributary	Confluence with Fleming Run	1.6 miles upstream of confluence with Fleming Run	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Flynn Creek	Confluence with Sinking Creek	1.1 miles upstream of Flynns Creek Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Greenbrier River	1,200 feet upstream of Interstate 64	County Boundary	Regional Regression Equations (USGS 2010) weighted by Gage Analysis (USGS 2018)	HEC-RAS (USACE 2019)	03/01/2020	A	
Greenbrier River	County Boundary	1,200 feet upstream of Interstate 64	Regional Regression Equations (USGS 2010) weighted by Gage Analysis (USGS 2017)	HEC-RAS (USACE 2019)	03/01/2020	AE w/ Floodway	
Greenbrier River Tributary 1	Confluence with Greenbrier River	0.7 miles upstream of confluence with Greenbrier River	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Greenbrier River Tributary 2	Confluence with Greenbrier River	0.8 miles upstream of Low Gap Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Greenbrier River Tributary 3	Confluence with Greenbrier River	400 feet downstream of Clutter Hollow Drive	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Greenbrier River Tributary 4	Confluence with Greenbrier River	0.4 miles upstream of Rorer Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Harts Run	Confluence with Howard Creek	1,700 feet upstream of Harts Run Road	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Hogcamp Run	Confluence with Laurel Creek (III)	0.8 feet upstream of confluence with Laurel Creek (III)	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Hominy Creek	County boundary	1.5 miles upstream of county boundary	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Howard Creek	Confluence with Greenbrier River	0.9 miles downstream of Montague Drive	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	AE w/ Floodway	
Howard Creek	0.9 miles downstream of Montague Drive	1,200 feet upstream of Slash Lick Road	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Howard Creek (Lateral Divert)	Confluence with Howard Creek	Approximately 1,600 feet above confluence with Howard Creek	Derived from Howard Creek discharges	HEC-RAS (USACE 2019)	03/01/2020	AE w/ Floodway	
Howard Creek Tributary	Confluence with Howard Creek	0.4 miles upstream of Monroe Draft	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Hughart Creek	600 feet downstream of confluence of Hughart Creek Tributary	2.5 miles upstream of Shoestring Trail	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Hughart Creek Tributary	Confluence with Hughart Creek	0.7 miles upstream of confluence with Hughart Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Hunters Run	Confluence with North Fork Cherry River	1,700 feet upstream of Highland Trace	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Improvement Branch	Confluence with Little Laurel Creek	2.1 miles upstream of confluence with Little Laurel Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Indian Creek	Confluence with Culberson Creek	0.7 miles upstream of Friars Hill Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Jericho Draft	Confluence with Howard Creek	1,000 feet downstream of Big Draft Road	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Jericho Draft Tributary	Confluence with Jericho Draft	1,500 feet upstream of Dutch Hollow Road	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Job Knob Branch	Confluence with South Fork Big Clear Creek	1.8 miles upstream of confluence with South Fork Big Clear Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Job Knob Branch (I)	Confluence with Laurel Creek (III)	1,300 feet upstream of confluence with Laurel Creek (III)	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Kincaid Run	Confluence with Greenbrier River	1,300 feet upstream of confluence with Greenbrier River	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Kitchen Creek	Confluence with Muddy Creek	2.1 miles upstream Blue Sulphur Springs Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Kitchen Creek Tributary	Confluence with Kitchen Creek	200 feet upstream of Sawmill Hollow Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Kuhn Branch	Confluence with Little Clear Creek	0.8 miles upstream of confluence with Little Clear Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Laurel Branch	Confluence with Tuckahoe Run	0.7 miles upstream of Tuckahoe Road	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Laurel Creek	Confluence with Meadow River	1.5 miles upstream of Midland Trail West	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Laurel Creek (I)	Confluence with Anthony Creek	0.8 miles upstream of confluence with Anthony Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Laurel Creek (II)	Confluence with Little Clear Creek	2 miles upstream of confluence with Little Clear Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Laurel Creek (III)	County boundary	2.3 miles upstream of confluence of Cold Spring Branch	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Laurel Run	Confluence with Greenbrier River	2.3 miles upstream of Peach Orchard Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Laurel Run (I)	Confluence with Meadow Creek	3 miles upstream of Sherwood Lake Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Little Clear Creek	Confluence with Meadow River	2.1 miles upstream of confluence of Kuhn Branch	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Little Creek	Confluence with Anthony Creek	3.4 miles upstream of Slab Camp Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Little Creek (I)	Confluence with Sewell Creek	County boundary	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Little Laurel Creek	County boundary	4.2 miles upstream of Greenbrier Road South	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Little Roaring Creek	Confluence with Roaring Creek	0.5 miles upstream of Cold Knob Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Little Sewell Creek	Confluence with Sewell Creek	Approximately 0.5 miles upstream of James River and Kanawha Turnpike	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	AE w/ Floodway	
Little Sewell Creek	Approximately 0.5 miles upstream of James River and Kanawha Turnpike	1.1 miles upstream of Crag Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
McMillion Creek	Confluence with Laurel Creek (III)	1,200 feet downstream of Bentley Lane	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Meadow Creek	Confluence with Anthony Creek	10.2 miles upstream of Sherwood Lake Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Meadow Creek (I)	Confluence with Meadow River	200 feet upstream of Home Drive	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Meadow River	0.28 miles downstream of confluence of Sewell Creek	0.9 miles downstream of confluence of Big Clear Creek	Regional Regression Equations (USGS 2010) weighted by Gage Analysis (USGS 2017)	HEC-RAS (USACE 2019)	03/01/2020	AE w/ Floodway	
Meadow River (Upstream Zone A)	0.9 miles downstream of confluence of Big Clear Creek	1,300 feet upstream of Keeney Mountain Road	Regional Regression Equations (USGS 2010) weighted by Gage Analysis (USGS 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Meadow River	County boundary	Approximately 0.28 miles downstream of confluence of Sewell Creek	Regional Regression Equations weighted by Gage Analysis (USGS 2010))	HEC-RAS (USACE 2019)	03/01/2020	A	
Methodist Branch	Confluence with Meadow River	0.9 miles upstream of James River and Kanawha Turnpike	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Middle Branch Laurel Creek	Confluence with Laurel Creek (III)	1.7 miles upstream of confluence with Laurel Creek (III)	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Middle Fork Anthonys Creek	Confluence with Anthony Creek	2.8 miles upstream of Hefner Lane	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Mill Creek	Confluence with Muddy Creek	5.9 miles upstream of Alta Drive	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Mill Creek (I)	Confluence with Meadow River	0.8 miles downstream of Big Mountain Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Mill Creek Tributary	Confluence with Mill Creek	0.5 miles upstream of Sam Anderson Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Milligan Creek	2.2 miles downstream of Herns Mill Road	1,100 feet upstream of Miller Mountain Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Milligan Creek Tributary 1	Confluence with Milligan Creek	1.5 miles upstream of Midland Trail East	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Milligan Creek Tributary 2	Confluence with Milligan Creek	1,500 feet upstream of Midland Trail East	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Milligan Creek Tributary 3	1,400 feet downstream of Raders Valley Road	0.7 miles upstream of Raders Valley Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Morris Fork	Confluence with Meadow River	0.8 miles upstream of Morris Branch Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Muddy Creek	Confluence with Greenbrier River	1,400 feet upstream of Piercy Mill Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
North Fork Anthony Creek	Confluence with Anthony Creek	0.5 miles upstream of Public Road 96	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
North Fork Cherry River	County boundary	0.7 miles upstream of confluence of Bear Run	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Old Field Branch	Confluences with South Fork Big Clear Creek	2.1 miles upstream of confluence with South Fork Big Clear Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Otter Creek	Confluence with Methodist Branch	40 feet upstream of Gray Gables Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Panther Camp Creek	Confluence with Spring Creek	1.4 miles upstream of Panther Camp Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Patterson Creek	Confluence with Meadow River	County boundary	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Peaser Branch	Confluence with Hominy Creek	0.5 miles upstream of confluence with Hominy Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Piney Creek	Confluence with Burdette Creek	0.4 miles upstream of confluence with Burdette Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Renick Creek	Confluence with Kitchen Creek	4.2 miles upstream of confluence with Kitchen Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Roaring Creek	0.5 miles downstream of Pembroke Road	2.4 miles upstream of confluence of Little Roaring Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Robbins Run	Confluence with Spring Creek	County boundary	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Robbins Run	Confluence with Spring Creek	County boundary	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Rockcamp Run	Confluence with Spring Creek	1,100 feet upstream of Rock Camp Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Rocky Run	Confluence with South Fork Cherry River	4.5 miles upstream of confluence with South Fork Cherry River	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Sam Creek	Confluence with Big Clear Creek	1.1 miles upstream of Anjean Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Second Creek	Confluence with Greenbrier River	County boundary	Regional Regression Equations weighted by Gage Analysis (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Sewell Creek	Confluence with Meadow River	County Boundary	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	AE w/ Floodway	
Simms Run	Confluence with Anthony Creek	1.2 miles upstream of confluence with Anthony Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Sinking Creek	1.6 miles downstream of Sinking Creek Road	0.7 miles upstream of Childs Lane	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Sinking Creek Tributary 1	Confluence with Sinking Creek	500 feet upstream of Tyree Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Sinking Creek Tributary 2	Confluence with Sinking Creek	1,200 feet upstream of Nolen Lane	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Sinking Creek Tributary 3	Confluence with Sinking Creek	1,900 feet upstream of confluence with Sinking Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Sinking Creek Tributary 4	Confluence with Sinking Creek	1,800 feet upstream of confluence with Sinking Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Slabcamp Run	Confluence with Greenbrier River	1,500 feet downstream of Slab Camp Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Slash Lick Run	Confluence with Howard Creek	1.1 miles upstream of Slash Lick Road	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Smokehouse Branch	Confluence with South Fork Big Clear Creek	1 mile upstream of confluence with South Fork Big Clear Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Snake Run	Confluence with Kitchen Creek	60 feet downstream of Shaw Mountain Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Snodgrass Run	Confluence with Greenbrier River	1.2 miles upstream of confluence with Greenbrier River	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
South Fork Big Clear Creek	Confluence with Big Clear Creek	Confluences of Job Knob Branch and Old Field Branch	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
South Fork Cherry River	County boundary	4.7 miles upstream of confluence of Cold Knob Fork	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Spice Run	Confluence with Greenbrier River	5.2 miles upstream of confluence with Greenbrier River	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Spring Creek	Confluence with Greenbrier River	0.8 miles upstream of Upper Spring Creek Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Spring Creek Tributary	0.7 miles downstream of Seneca Trail North	1,300 feet upstream of Old Renick Valley Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Spruce Run	Confluence with Burns Run	0.6 miles upstream of confluence with Burns Run	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Stony Run	Confluence with Sinking Creek	1 mile upstream of confluence with Sinking Creek	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Sulphur Lick Run	Confluence with Howard Creek	1.9 miles upstream of Pocahontas Trail	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Toms Creek	Confluence with Meadow River	400 feet downstream of Hurricane Ridge Road	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Tuckahoe Run	Confluence with Dry Creek	0.9 miles upstream of confluence of Laurel Branch	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Tuckahoe Run Tributary	Confluence with Tuckahoe Run	1,800 feet upstream of Tuckahoe Road	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Twomile Run	Confluence with North Fork Anthony Creek	900 feet upstream of Public Road 96	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Wades Creek	Confluence with Howard Creek	At Interstate 64	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	AE w/ Floodway	
Wades Creek	At Interstate 64	1.3 miles upstream of Interstate 64	HEC-HMS (USACE 2017)	HEC-RAS (USACE 2019)	03/01/2020	A	
Wiley Run	Confluence with Anthony Creek	0.7 miles upstream of Pocahontas Trail	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses *(continued)*

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Wolfpen Creek	Confluence with Sewell Creek	0.5 miles upstream of Sewell Street South	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	
Youngs Creek	County boundary	3 miles upstream of county boundary	Regional Regression Equations (USGS 2010)	HEC-RAS (USACE 2019)	03/01/2020	A	

Table 13: Roughness Coefficients

Flooding Source	Channel “n”	Overbank “n”
Alum Run	0.045	0.050-0.120
Anglins Creek	0.045	0.100
Anthony Creek	0.045	0.025-0.120
Anthony Creek Tributary 1	0.045	0.060-0.120
Anthony Creek Tributary 2	0.045	0.035-0.120
Anthony Creek Tributary 2A	0.045	0.045-0.120
Anthony Creek Tributary 3	0.045-0.060	0.035-0.120
Bear Run	0.040	0.120
Beaver Creek	0.045-0.050	0.035-0.100
Becky Run	0.040-0.045	0.120
Beech Run	0.045	0.100
Beverly Fork	0.045	0.060-0.100
Big Clear Creek	0.025-0.045	0.020-0.120
Boggs Creek	0.045	0.016-0.120
Boggs Run	0.045	0.060-0.100
Boulder Run	0.045	0.100
Broad Run	0.045	0.050-0.120
Brown Creek	0.045-0.055	0.020-0.100
Buffalo Creek	0.045-0.055	0.045-0.120
Burdette Creek	0.040-0.045	0.016-0.120
Burns Run	0.045	0.050-0.100
Callahan Branch	0.045	0.045-0.100
Coats Run	0.040	0.016-0.120
Cold Knob Fork	0.040	0.016-0.120
Cold Spring Branch	0.045	0.045-0.100
Culberson Creek	0.045	0.045-0.100
Culberson Creek Tributary 1	0.045	0.100
Culberson Creek Tributary 2	0.045	0.013-0.100
Culberson Creek Tributary 3	0.045	0.050-0.100
Culberson Creek Tributary 4	0.045	0.045-0.100
Davy Run	0.045	0.060-0.100
Dodson Branch	0.045	0.045-0.100
Dry Creek (Zone A)	0.040-0.045	0.016-0.120
Dry Creek (Zone AE)	0.035-0.045	0.016-0.120
Dry Run	0.045	0.055-0.100
Eagle Branch	0.045	0.045-0.120
Fleming Run	0.045	0.050-0.120
Fleming Run Tributary	0.045-0.100	0.045-0.120
Flynn Creek	0.045	0.045-0.100
Greenbrier River (Zone A)	0.040	0.016-0.120
Greenbrier River (Zone AE)	0.025-0.080	0.016-0.120

Table 13: Roughness Coefficients *(continued)*

Flooding Source	Channel "n"	Overbank "n"
Greenbrier River Tributary 1	0.045	0.025-0.100
Greenbrier River Tributary 2	0.045	0.050-0.100
Greenbrier River Tributary 3	0.045	0.035-0.100
Greenbrier River Tributary 4	0.045	0.045-0.100
Harts Run	0.040	0.016-0.120
Hogcamp Run	0.045	0.100
Hominy Creek	0.045-0.100	0.045-0.120
Howard Creek (Lateral Divert)	0.050-0.050	0.016-0.070
Howard Creek (Zone A)	0.045-0.050	0.020-0.120
Howard Creek (Zone AE)	0.030-0.055	0.013-0.120
Howard Creek Tributary	0.040	0.016-0.120
Hughart Creek	0.045	0.045-0.100
Hughart Creek Tributary	0.045	0.050-0.100
Hunters Run	0.040	0.120
Improvement Branch	0.040	0.016-0.120
Indian Creek	0.045	0.050-0.100
Jericho Draft	0.045	0.050-0.120
Jericho Draft Tributary	0.045	0.045-0.100
Job Knob Branch	0.045	0.045-0.100
Job Knob Branch (I)	0.045	0.055-0.100
Kincaid Run	0.045	0.100
Kitchen Creek	0.045	0.010-0.100
Kitchen Creek Tributary	0.045-0.100	0.045-0.100
Kuhn Branch	0.045	0.050-0.100
Laurel Branch	0.045	0.050-0.100
Laurel Creek	0.045	0.020-0.100
Laurel Creek (I)	0.045	0.060-0.120
Laurel Creek (II)	0.045	0.045-0.100
Laurel Creek (III)	0.045	0.045-0.100
Laurel Run	0.045	0.060-0.100
Laurel Run (I)	0.045	0.045-0.120
Little Clear Creek	0.045	0.050-0.100
Little Creek	0.045	0.050-0.120
Little Creek (I)	0.045	0.055-0.100
Little Laurel Creek	0.040	0.016-0.120
Little Roaring Creek	0.045	0.045-0.100
Little Sewell Creek (Zone A)	0.035-0.040	0.016-0.120
Little Sewell Creek (Zone AE)	0.040-0.042	0.016-0.120
McMillion Creek	0.045	0.050-1.000
Meadow Creek	0.045	0.020-0.120
Meadow Creek (I)	0.040-0.120	0.016-0.120
Meadow River (Upstream Zone A)	0.040-0.045	0.035-0.120

Table 13: Roughness Coefficients *(continued)*

Flooding Source	Channel "n"	Overbank "n"
Meadow River (Zone A)	0.035-0.120	0.016-0.120
Meadow River (Zone AE)	0.035-0.040	0.016-0.120
Methodist Branch	0.045	0.025-0.100
Middle Branch Laurel Creek	0.045	0.055-0.100
Middle Fork Anthonys Creek	0.045-0.100	0.025-0.120
Mill Creek	0.045	0.050-0.120
Mill Creek (I)	0.045	0.035-0.100
Mill Creek Tributary	0.045	0.050-0.100
Milligan Creek	0.045	0.050-0.120
Milligan Creek Tributary 1	0.045	0.045-0.120
Milligan Creek Tributary 2	0.045	0.050-0.120
Milligan Creek Tributary 3	0.045	0.050-0.100
Morris Fork	0.045-0.050	0.045-0.120
Muddy Creek	0.045-0.100	0.035-0.120
North Fork Anthony Creek	0.045	0.045-0.120
North Fork Cherry River	0.040	0.016-0.120
Old Field Branch	0.045	0.055-0.100
Otter Creek	0.045-0.100	0.025-0.100
Panther Camp Creek	0.045	0.045-0.120
Patterson Creek	0.045	0.045-0.100
Peaser Branch	0.045	0.045-0.120
Piney Creek	0.040	0.100
Renick Creek	0.045	0.045-0.100
Roaring Creek	0.045	0.045-0.100
Robbins Run	0.045	0.050-0.120
Rockcamp Run	0.045	0.010-0.100
Rocky Run	0.040	0.016-0.120
Sam Creek	0.045	0.060-0.100
Second Creek	0.045	0.035-0.120
Sewell Creek	0.035-0.045	0.016-0.120
Simms Run	0.045-0.120	0.050-0.120
Sinking Creek	0.045	0.020-0.120
Sinking Creek Tributary 1	0.045	0.050-0.100
Sinking Creek Tributary 2	0.045	0.050-0.100
Sinking Creek Tributary 3	0.045	0.050-0.100
Sinking Creek Tributary 4	0.045	0.050-0.100
Slabcamp Run	0.045	0.025-0.120
Slash Lick Run	0.045	0.050-0.120
Smokehouse Branch	0.045	0.055-0.100
Snake Run	0.045	0.035-0.100
Snodgrass Run	0.045	0.100
South Fork Big Clear Creek	0.045	0.045-0.100
South Fork Cherry River	0.040	0.040-0.120

Table 13: Roughness Coefficients *(continued)*

Flooding Source	Channel “n”	Overbank “n”
Spice Run	0.045	0.025-0.120
Spring Creek	0.045	0.025-0.120
Spring Creek Tributary	0.045	0.035-0.100
Spruce Run	0.045	0.100
Stony Run	0.045	0.050-0.120
Sulphur Lick Run	0.045	0.050-0.120
Toms Creek	0.045	0.025-0.120
Tuckahoe Run	0.040-0.045	0.016-0.120
Tuckahoe Run Tributary	0.045	0.050-0.100
Twomile Run	0.045	0.060-0.120
Wades Creek (Zone A)	0.040	0.016-0.120
Wades Creek (Zone AE)	0.040-0.045	0.012-0.120
Wiley Run	0.045	0.050-0.120
Wolfpen Creek	0.045	0.020-0.100
Youngs Creek	0.045	0.100-0.120

5.3 Coastal Analyses

This section is not applicable to this Flood Risk Project.

Table 14: Summary of Coastal Analyses

[Not applicable to this Flood Risk Project]

5.3.1 Total Stillwater Elevations

This section is not applicable to this Flood Risk Project.

Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas

[Not Applicable to this Flood Risk Project]

Table 15: Tide Gage Analysis Specifics

[Not applicable to this Flood Risk Project]

5.3.2 Waves

This section is not applicable to this Flood Risk Project.

5.3.3 Coastal Erosion

This section is not applicable to this Flood Risk Project.

5.3.4 Wave Hazard Analyses

This section is not applicable to this Flood Risk Project.

Table 16: Coastal Transect Parameters

[Not applicable to this Flood Risk Project]

Figure 9: Transect Location Map

[Not applicable to this Flood Risk Project]

5.4 Alluvial Fan Analyses

This section is not applicable to this Flood Risk Project.

Table 17: Summary of Alluvial Fan Analyses

[Not applicable to this Flood Risk Project]

Table 18: Results of Alluvial Fan Analyses

[Not applicable to this Flood Risk Project]

SECTION 6.0 – MAPPING METHODS

6.1 Vertical and Horizontal Control

All FIS Reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS Reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the completion of the North American Vertical Datum of 1988 (NAVD88), many FIS Reports and FIRMs are now prepared using NAVD88 as the referenced vertical datum.

Flood elevations shown in this FIS Report and on the FIRMs are referenced to NAVD88**.** These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at www.ngs.noaa.gov.

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the archived project documentation associated with the FIS Report and the FIRMs for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks in the area, please visit the NGS website at www.ngs.noaa.gov.

The datum conversion locations and values that were calculated for Greenbrier County are provided in Table 19.

Table 19: Countywide Vertical Datum Conversion

Quadrangle Name	Quadrangle Corner	Latitude	Longitude	Conversion from NGVD29 to NAVD88 (feet)
Alvon	SE	37.875	-80.125	-0.433
Anthony	SE	37.875	-80.250	-0.449
Asbury	SE	37.750	-80.500	-0.541
Camden-On-Gauley	SE	38.250	-80.500	-0.430
Corliss	SE	38.000	-80.750	-0.502
Cornstalk	SE	37.875	-80.500	-0.633
Dawson	SE	37.750	-80.625	-0.640
Denmar	SE	38.000	-80.125	-0.328
Droop	SE	38.000	-80.250	-0.312
Duo	SE	38.000	-80.500	-0.394
Fork Mountain	SE	38.125	-80.375	-0.280
Lake Sherwood	SE	38.000	-80.000	-0.328
Lewisburg	SE	37.750	-80.375	-0.492
Nettie	SE	38.125	-80.625	-0.446
Quinwood	SE	38.000	-80.625	-0.384
Rainelle	SE	37.875	-80.750	-0.479
Richwood	SE	38.125	-80.500	-0.331
Rupert	SE	37.875	-80.625	-0.479
Summersville Dam	SE	38.125	-80.875	-0.541
Trout	SE	38.000	-80.375	-0.470
Webster Springs SW	SE	38.250	-80.375	-0.292
White Sulphur Springs	SE	37.750	-80.250	-0.453
Williamsburg	SE	37.875	-80.375	-0.495
Average Conversion from NGVD29 to NAVD88 = -0.441 feet				

Table 20: Stream-Based Vertical Datum Conversion

[Not applicable to this Flood Risk Project]

6.2 Base Map

The FIRMs and FIS Report for this project have been produced in a digital format. The flood hazard information was converted to a Geographic Information System (GIS) format that meets FEMA's FIRM Database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local GIS and be accessed more easily by the community. The FIRM Database includes most of the tabular information contained in the FIS Report in such a way that the data can be

associated with pertinent spatial features. For example, the information contained in the Floodway Data table and Flood Profiles can be linked to the cross sections that are shown on the FIRMs. Additional information about the FIRM Database and its contents can be found in FEMA's *Guidelines and Standards for Flood Risk Analysis and Mapping*, www.fema.gov/flood-maps/guidance-partners/guidelines-standards.

Base map information shown on the FIRM was derived from the sources described in Table 21.

Table 21: Base Map Sources

Data Type	Data Provider	Data Date	Data Scale	Data Description
Digital Orthophoto	USGS National Map	2021	1:12,000	Aerial Imagery
Political boundaries	Greenbrier County GIS Department	2012	1:6,000	Political boundaries both county and municipal
Surface Water Features	FEMA (FEMA 2012)	2012	1:6,000	Water lines and water area features within Greenbrier County. Derived from NHD data
Transportation Features	Greenbrier County Assessor's Office	2020	1:6,000	Road/Street centerlines within Greenbrier County (https://greenbriercounty.net/departments/assessor/)
Transportation Features	U.S. Census Bureau (USCB 2019)	2019	1:4,800	Railroad features within Greenbrier County
USGS 7.5-Minute Series Topographic Maps	U.S. Geological Survey (USGS 2009)	2009	1:6,000	FIRM Panel outlines

6.3 Floodplain and Floodway Delineation

The FIRM shows tints, screens, and symbols to indicate floodplains and floodways as well as the locations of selected cross sections used in the hydraulic analyses and floodway computations.

For riverine flooding sources, the mapped floodplain boundaries shown on the FIRM have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using the topographic elevation data described in Table 22.

In cases where the 1-percent and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

The floodway widths presented in this FIS Report and on the FIRM were computed for

certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. Table 2 indicates the flooding sources for which floodways have been determined. The results of the floodway computations for those flooding sources have been tabulated for selected cross sections and are shown in Table 23, “Floodway Data.”

Table 22: Summary of Topographic Elevation Data used in Mapping

Community	Flooding Source	Source for Topographic Elevation Data			
		Description	Vertical Accuracy	Horizontal Accuracy	Citation
Greenbrier County and Incorporated Areas	All within HUC 05050003 and 05050005	Hydro-Flattened Digital Elevation Model based (DEM) on Light Detection and Ranging data (LiDAR)	0.1259 meters non vegetated vertical accuracy and 0.2409 meters vegetated vertical accuracy	N/A	Quantum, 2017

BFEs shown at cross sections on the FIRM represent the 1-percent-annual-chance water surface elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report.

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,778	215	821	6.0	1,855.8	1,855.8	1,855.9	0.1
B	2,612	45	383	12.9	1,860.2	1,860.2	1,860.4	0.2
C	4,913	59	463	9.1	1,876.2	1,876.2	1,876.5	0.3
D	7,178	61	428	9.9	1,891.8	1,891.8	1,892.4	0.6
E	9,742	211	765	4.5	1,914.0	1,914.0	1,914.3	0.3
F	12,647	57	373	9.3	1,938.7	1,938.7	1,938.8	0.1

[1] Feet above confluence with Howard Creek

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY

GREENBRIER COUNTY, WV

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: DRY CREEK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,030	614/383[2]	13,582	6.3	1,547.6	1,547.6	1,548.5	0.9
B	3,824	1,018/551[2]	19,349	4.2	1,549.6	1,549.6	1,550.5	0.9
C	10,491	560/106[2]	11,456	7.2	1,555.4	1,555.4	1,556.3	0.9
D	13,976	290/82[2]	5,256	15.6	1,558.3	1,558.3	1,558.9	0.6
E	21,249	210	4,880	16.8	1,575.3	1,575.3	1,575.7	0.4
F	23,620	220	5,513	14.9	1,580.2	1,580.2	1,580.9	0.7
G	26,066	542	12,656	6.5	1,586.3	1,586.3	1,586.7	0.4
H	29,897	286	7,176	11.4	1,590.3	1,590.3	1,590.6	0.3
I	33,817	352	7,259	11.3	1,594.6	1,594.6	1,595.0	0.4
J	37,298	262	5,894	13.9	1,600.3	1,600.3	1,600.6	0.3
K	40,434	464	11,290	7.2	1,607.5	1,607.5	1,608.1	0.6
L	43,572	320	7,107	11.5	1,610.4	1,610.4	1,611.0	0.6
M	46,794	321	8,802	9.3	1,617.4	1,617.4	1,618.4	1.0
N	49,663	473	9,571	8.6	1,620.7	1,620.7	1,621.3	0.6
O	53,194	887	16,599	4.9	1,625.3	1,625.3	1,626.2	0.9
P	55,579	456	11,365	7.2	1,630.5	1,630.5	1,630.9	0.4
Q	57,738	462	8,550	9.6	1,631.6	1,631.6	1,632.0	0.4
R	61,022	448	9,098	9.0	1,635.5	1,635.5	1,635.6	0.1
S	65,044	439	9,459	7.6	1,639.9	1,639.9	1,640.2	0.3
T	69,071	290	6,227	11.6	1,643.3	1,643.3	1,643.4	0.1

[1] Feet above Summers/Greenbrier County boundary

[2] Total floodway width/width within Greenbrier County

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY

GREENBRIER COUNTY, WV

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: GREENBRIER RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
U	72,508	305	6,523	11.1	1,646.8	1,646.8	1,647.4	0.6
V	74,892	295	6,966	10.4	1,649.4	1,649.4	1,650.0	0.6
W	77,509	372	8,935	8.1	1,652.5	1,652.5	1,653.1	0.6
X	79,502	430	10,285	7.0	1,654.5	1,654.5	1,655.1	0.6
Y	82,353	350	8,595	8.3	1,656.2	1,656.2	1,656.6	0.4
Z	85,067	285	7,009	10.2	1,658.1	1,658.1	1,658.6	0.5
AA	88,259	412	8,320	8.6	1,661.3	1,661.3	1,661.8	0.5
AB	92,611	385	7,494	9.6	1,665.2	1,665.2	1,666.1	0.9
AC	95,773	314	7,770	9.2	1,669.1	1,669.1	1,670.0	0.9
AD	98,374	432	8,631	8.3	1,671.0	1,671.0	1,671.9	0.9
AE	101,525	459	9,756	7.3	1,674.6	1,674.6	1,675.1	0.5
AF	105,360	312	7,418	9.7	1,678.7	1,678.7	1,679.2	0.5
AG	108,129	375	8,612	8.3	1,683.2	1,683.2	1,683.8	0.6
AH	111,157	679	16,256	4.4	1,687.1	1,687.1	1,687.6	0.5
AI	114,225	1,569	21,866	3.3	1,688.0	1,688.0	1,688.5	0.5
AJ	117,858	879	15,585	4.6	1,690.4	1,690.4	1,690.8	0.4
AK	123,237	678	11,162	6.1	1,696.3	1,696.3	1,696.4	0.1

[1] Feet above Summers/Greenbrier County boundary

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY

GREENBRIER COUNTY, WV

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: GREENBRIER RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	3,790	232[2]	2,285	8.5	1,695.9	1,695.9	1,696.2	0.3
B	6,053	197[2]	2,088	9.3	1,707.5	1,707.5	1,707.5	0.0
C	6,723	105	1,551	12.5	1,712.5	1,712.5	1,713.5	1.0
D	8,285	88	1,279	15.1	1,722.7	1,722.7	1,722.7	0.0
E	9,859	165	2,277	8.5	1,731.7	1,731.7	1,732.0	0.3
F	13,898	173	2,497	7.8	1,753.8	1,753.8	1,754.6	0.8
G	16,005	267	2,903	6.7	1,758.6	1,758.6	1,758.8	0.2
H	17,840	240	2,293	7.3	1,763.5	1,763.5	1,764.3	0.8
I	20,955	337	2,757	6.1	1,774.2	1,774.2	1,774.6	0.4
J	29,181	259	1,767	9.1	1,805.2	1,805.2	1,805.5	0.3
K	36,075	452	2,905	5.5	1,828.9	1,828.9	1,829.5	0.5
L	38,343	520	3,664	4.4	1,838.1	1,838.1	1,838.8	0.7
M	40,487	288[2]	1,548	10.4	1,845.2	1,845.2	1,845.7	0.5
N	41,383	230[2]	1,731	6.5	1,850.7	1,850.7	1,851.2	0.5
O	43,991	212	1,326	6.2	1,861.8	1,861.8	1,861.9	0.1
P	44,609	357	1,806	4.6	1,864.4	1,864.4	1,864.9	0.5
Q	46,252	174	1,018	8.1	1,870.6	1,870.6	1,870.9	0.3
R	47,541	495	2,355	3.5	1,876.3	1,876.3	1,876.6	0.3
S	48,543	495	2,097	3.9	1,879.4	1,879.4	1,879.8	0.4

[1] Feet above confluence with Greenbrier River

[2] While a bare earth Digital Elevation Model is used for this study, some buildings are modeled as obstructions in the HEC RAS model. Floodway width reported by HEC-RAS excludes obstructions therefore is different from the floodway width measured on the map.

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY

GREENBRIER COUNTY, WV

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: HOWARD CREEK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,500	193[2]	1,196	2.4	2,393.1	2,393.1	2,393.9	0.8
B	2,991	225	1,080	2.6	2,393.4	2,393.4	2,394.3	0.9
C	4,501	60	567	5.0	2,394.9	2,394.9	2,395.9	1.0
D	6,378	55	394	7.1	2,398.8	2,398.8	2,399.1	0.3
E	7,961	78	675	4.2	2,404.0	2,404.0	2,404.4	0.4

[1] Feet above confluence with Sewell Creek

[2] While a bare earth Digital Elevation Model is used for this study, some buildings are modeled as obstructions in the HEC-RAS model. Floodway width reported by HEC-RAS excludes obstructions therefore is different from the floodway width measured on the map.

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY

GREENBRIER COUNTY, WV

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: LITTLE SEWELL CREEK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	-1,415	214	3,554	4.7	2,392.3	2,392.3	2,392.6	0.3
B	1,946	367	3,483	4.1	2,393.7	2,393.7	2,394.4	0.7
C	4,702	263	2,763	5.2	2,397.1	2,397.1	2,397.6	0.5
D	7,868	220	3,123	4.6	2,399.2	2,399.2	2,400.0	0.8
E	9,639	250	3,770	3.8	2,400.0	2,400.0	2,400.9	0.9
F	13,971	180	3,190	4.5	2,401.4	2,401.4	2,402.4	1.0
G	15,565	400	6,044	2.4	2,402.2	2,402.2	2,403.2	1.0
H	20,434	380	5,124	2.6	2,404.6	2,404.6	2,405.4	0.8
I	23,680	611	7,257	1.8	2,405.7	2,405.7	2,406.6	0.9
J	27,894	620	7,634	1.7	2,407.1	2,407.1	2,408.0	0.9
K	29,985	587	8,098	1.6	2,407.7	2,407.7	2,408.5	0.8
L	32,386	787	11,878	1.1	2,408.8	2,408.8	2,409.3	0.5
M	37,733	1,773	21,135	0.6	2,409.2	2,409.2	2,409.6	0.4

[1] Feet above Limit of Detailed Study (Limit of Detailed Study is approximately 1,483 feet downstream from the confluence of Sewell Creek)

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY

GREENBRIER COUNTY, WV

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: MEADOW RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,999	84	1,132	5.0	2,393.0	2,390.0[2]	2,390.2	0.2
B	3,761	316[3]	1,961	1.9	2,393.0	2,391.9[2]	2,392.9	1.0
C	5,219	65	940	3.9	2,393.0	2,392.5[2]	2,393.4	0.9
D	9,418	85	673	5.5	2,394.5	2,394.5	2,395.0	0.5
E	17,626	450	1,499	2.1	2,399.8	2,399.8	2,400.7	0.9
F	22,699	570	2,078	1.5	2,403.5	2,403.5	2,404.2	0.7
G	27,072	142	609	5.1	2,407.0	2,407.0	2,407.9	0.9
H	29,373	66	529	4.3	2,410.8	2,410.8	2,411.4	0.6

[1] Feet above confluence with Meadow River

[2] Elevation computed without consideration of backwater effects from Meadow River

[3] While a bare earth DEM is used for this study, some building are modeled as block obstructions in the HEC-RAS model. Floodway width reported by HEC-RAS excludes obstructions therefore is different from the floodway width measured on the map.

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

GREENBRIER COUNTY, WV

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: SEWELL CREEK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	904	117	439	8.0	1,859.1	1,859.1	1,859.5	0.4
B	3,827	165	636	4.8	1,887.9	1,887.9	1,888.7	0.8
C	5,627	120	713	4.3	1,909.9	1,909.9	1,910.5	0.6
D	7,814	75	234	7.7	1,934.2	1,934.2	1,934.2	0.0
E	10,817	53	199	9.1	1,976.3	1,976.3	1,976.3	0.0

[1] Feet above confluence with Howard Creek

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY

GREENBRIER COUNTY, WV

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: WADES CREEK

Table 24: Flood Hazard and Non-Encroachment Data for Selected Streams

[Not applicable to this Flood Risk Project]

6.4 Coastal Flood Hazard Mapping

This section is not applicable to this Flood Risk Project.

Table 25: Summary of Coastal Transect Mapping Considerations

[Not applicable to this Flood Risk Project]

6.5 FIRM Revisions

This FIS Report and the FIRM are based on the most up-to-date information available to FEMA at the time of its publication; however, flood hazard conditions change over time. Communities or private parties may request flood map revisions at any time. Certain types of requests require submission of supporting data. FEMA may also initiate a revision. Revisions may take several forms, including Letters of Map Amendment (LOMAs), Letters of Map Revision Based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs) (referred to collectively as Letters of Map Change (LOMCs)), Physical Map Revisions (PMRs), and FEMA-contracted restudies. These types of revisions are further described below. Some of these types of revisions do not result in the republishing of the FIS Report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood-hazard data (shown in Table 30, "Map Repositories").

6.5.1 Letters of Map Amendment

A LOMA is an official revision by letter to an effective NFIP map. A LOMA results from an administrative process that involves the review of scientific or technical data submitted by the owner or lessee of property who believes the property has incorrectly been included in a designated SFHA. A LOMA amends the currently effective FEMA map and establishes that a specific property is not located in a SFHA.

To obtain an application for a LOMA, visit www.fema.gov/flood-maps/change-your-flood-zone and download the form "MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill". Visit the "Flood Map-Related Fees" section to determine the cost, if any, of applying for a LOMA.

FEMA offers a tutorial on how to apply for a LOMA. The LOMA Tutorial Series can be accessed at www.fema.gov/flood-maps/tutorials.

For more information about how to apply for a LOMA, call the FEMA Mapping and Insurance eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627).

6.5.2 Letters of Map Revision Based on Fill

A LOMR-F is an official revision by letter to an effective NFIP map. A LOMR-F states FEMA's determination concerning whether a structure or parcel has been elevated on fill above the base flood elevation and is, therefore, excluded from the SFHA.

Information about obtaining an application for a LOMR-F can be obtained in the same manner as that for a LOMA, by visiting www.fema.gov/flood-maps/change-your-flood-zone for the "MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill" or by calling the FEMA Mapping and Insurance eXchange, toll free, at 1-877-FEMA MAP (1-877-336-2627). Fees for applying for a LOMR-F, if any, are listed in the "Flood Map-Related Fees" section.

A tutorial for LOMR-F is available at www.fema.gov/flood-maps/tutorials.

6.5.3 Letters of Map Revision

A LOMR is an official revision to the currently effective FEMA map. It is used to change flood zones, floodplain and floodway delineations, flood elevations and planimetric features. All requests for LOMRs should be made to FEMA through the chief executive officer of the community, since it is the community that must adopt any changes and revisions to the map. If the request for a LOMR is not submitted through the chief executive officer of the community, evidence must be submitted that the community has been notified of the request.

To obtain an application for a LOMR, visit www.fema.gov/flood-maps/change-your-flood-zone and download the form "MT-2 Application Forms and Instructions for Conditional Letters of Map Revision and Letters of Map Revision". Visit the "Flood Map-Related Fees" section to determine the cost of applying for a LOMR. For more information about how to apply for a LOMR, call the FEMA Mapping and Insurance eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627) to speak to a Map Specialist.

Previously issued mappable LOMCs (including LOMRs) that have been incorporated into the Greenbrier County FIRM are listed in Table 26.

Table 26: Incorporated Letters of Map Change

[Not applicable to this Flood Risk Project]

6.5.4 Physical Map Revisions

A Physical Map Revisions (PMR) is an official republication of a community's NFIP map to effect changes to base flood elevations, floodplain boundary delineations, regulatory floodways and planimetric features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas or correction to base flood elevations or SFHAs.

The community's chief executive officer must submit scientific and technical data to FEMA to support the request for a PMR. The data will be analyzed and the map will be revised if warranted. The community is provided with copies of the revised information and is afforded a review period. When the base flood elevations are changed, a 90-day appeal period is provided. A 6-month adoption period for formal approval of the revised map(s) is also provided.

For more information about the PMR process, please visit www.fema.gov and visit the Floods & Maps "Change Your Flood Zone Designation" section.

6.5.5 Contracted Restudies

The NFIP provides for a periodic review and restudy of flood hazards within a given community. FEMA accomplishes this through a national watershed-based mapping needs assessment strategy, known as the Coordinated Needs Management Strategy (CNMS). The CNMS is used by FEMA to assign priorities and allocate funding for new flood hazard analyses used to update the FIS Report and FIRM. The goal of CNMS is to define the validity of the engineering study data within a mapped inventory. The CNMS is used to track the assessment process, document engineering gaps and their resolution, and aid in prioritization for using flood risk as a key factor for areas identified for flood map updates. Visit www.fema.gov to learn more about the CNMS or contact the FEMA Regional Office listed in Section 8 of this FIS Report.

6.5.6 Community Map History

The current FIRM presents flooding information for the entire geographic area of Greenbrier County**.** Previously, separate FIRMs, Flood Hazard Boundary Maps (FHBMs) and/or Flood Boundary and Floodway Maps (FBFMs) may have been prepared for the incorporated communities and the unincorporated areas in the county that had identified SFHAs. Current and historical data relating to the maps prepared for the project area are presented in Table 27, "Community Map History." A description of each of the column headings and the source of the date is also listed below.

- *Community Name* includes communities falling within the geographic area shown on the FIRM, including those that fall on the boundary line, nonparticipating communities, and communities with maps that have been rescinded. Communities with No Special Flood Hazards are indicated by a footnote. If all maps (FHBM, FBFM, and FIRM) were rescinded for a community, it is not listed in this table unless SFHAs have been identified in this community.

- *Initial Identification Date (First NFIP Map Published)* is the date of the first NFIP map that identified flood hazards in the community. If the FHBM has been converted to a FIRM, the initial FHBM date is shown. If the community has never been mapped, the upcoming effective date or "pending" (for Preliminary FIS Reports) is shown. If the community is listed in Table 27 but not identified on the map, the community is treated as if it were unmapped.

- *Initial FHBM Effective Date* is the effective date of the first FHBM. This date may be the same date as the Initial NFIP Map Date.

- *FHBM Revision Date(s)* is the date(s) that the FHBM was revised, if applicable.

- *Initial FIRM Effective Date* is the date of the first effective FIRM for the community.

- *FIRM Revision Date(s)* is the date(s) the FIRM was revised, if applicable. This is the revised date that is shown on the FIRM panel, if applicable. As countywide studies are completed or revised, each community listed should have its FIRM dates updated accordingly to reflect the date of the countywide study. Once the FIRMs exist in countywide format, as PMRs of FIRM panels within the county are completed, the FIRM Revision Dates in the table for each community affected by the PMR are updated with the date of the PMR, even if the PMR did not revise all the panels within that community.

The initial effective date for the Greenbrier County FIRMs in countywide format was 10/16/2012.

Table 27: Community Map History

Community Name	Initial Identification Date	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Falling Springs, Corporation of	11/15/1974	11/15/1974	08/01/1975	09/24/1984	TBD 10/16/2012
Greenbrier County (Unincorporated Areas)	07/18/1975	07/18/1975	02/19/1982	01/15/1988	TBD 10/16/2012 09/18/1991
Lewisburg, City of[1,2]	10/16/2012	N/A	N/A	10/16/2012	TBD
Quinwood, Town of[1]	11/15/1974	11/15/1974	07/30/1976	02/27/1981	TBD 10/16/2012
Rainelle, Town of	02/11/1977	02/11/1977	N/A	11/19/1987	TBD 10/16/2012
Ronceverte, City of	02/14/1975	02/14/1975	N/A	05/17/1990	TBD 10/16/2012
Rupert, Town of	06/21/1974	06/21/1974	07/02/1976	08/24/1984	TBD 10/16/2012
White Sulphur Springs, City of	05/31/1974	05/31/1974	09/12/1975	08/01/1978	TBD 10/16/2012 01/02/2004 04/15/1992

[1] No Special Flood Hazard Areas Identified

[2] This community did not have a FIRM prior to the first countywide FIRM for Greenbrier County