NRCS West Virginia

Preliminary Investigation Feasibility Report (PIFR)

Buffalo Creek

10-digit HUC 0503010601

September 18, 2024

Table of Contents

Summary

In September 2022, the West Virginia (WV) Northern Panhandle Conservation District (NPCD) submitted a request to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) for assistance addressing resource concerns including flooding on Buffalo Creek, particularly in HUC 12 050301060105 Sugarcamp Run-Buffalo Creek and HUC 12 050301060106 Painters Run-Buffalo Creek. While 050301060106 is fully within WV, 050301060105 crosses the state line into Pennsylvania (PA) (see Figure 2).

The primary PL-566 project purpose is flood prevention, with additional project purposes including watershed protection and water quality management.

The watershed is in Brooke and Ohio Counties in West Virginia and Washington County in Pennsylvania. Wellsburg is the county seat of Brooke County and lies partially within and adjacent to the Buffalo Creek watershed to the north. Wheeling is the county seat of Ohio County but is not within or adjacent to the Buffalo Creek watershed. Washington is the county seat of Washington County and lies adjacent to the Buffalo Creek watershed to the east. The watershed is rural with small farms and communities. Because the current project sponsor is a West Virginia specific conservation district, parts of this PIFR will focus on the portions of the watershed in West Virginia.

The project is Program PL566 compatible because it aims to provide flood prevention, watershed protection, and water quality management, further the utilization and disposal of water, and ensure proper utilization of land. The watershed is less than 250,000 acres, and, with populations of less than 50,000, communities within and adjacent to the watershed are considered rural based on the USDA definition. In addition, the project has a local sponsor in the WVCA.

The project is significant because it has the potential to provide flood prevention, watershed protection, and water quality management within the watershed. The project could provide long-term relief with positive impacts to the environment, the economy, and to residents and business owners in the watershed.

Potential alternatives for addressing the sponsors concerns are the installation of new flood control dams, construction of flood control channels, stream restoration, land treatment, low impact development, floodplain buyouts, a combination of these alternatives, and a no action alternative. The baseline condition without Federal investment is a situation of continued flooding, negatively impacting residents, businesses, and the aquatic environment. The alternatives that were developed include structural and non-structural measures consisting of land treatment practices and possible construction of new infrastructure.

Applicable Agency Authority and Authorized Purposes

The table below provides documentation that the project is eligible for federal assistance and will meet statutory requirements.

Describe the potential project watershed area; how does the area meet the requirements outlined in NRCS's National Watershed Program Manual (See 506.50 NWPM Glossary - TTT. Watershed).		
Response: The Northen Panhandle Conservation District (NPCD) requested assistance with conducting a Preliminary Investigation and Feasibility Report (PIFR) for a potential watershed project in the **Buffalo Creek Watershed, Brooke and Ohio Counties, WV, and Washington County, PA.** 10-digit HUC 0503010601, Buffalo Creek. This PIFR will focus only on the parts of the watershed in West Virginia. This assistance is authorized under the Watershed Protection and Flood Prevention Act (Public Law 83-566). The NPCD is interested in being a sponsor for a watershed project in the watershed and meets the PL 83-566 criteria for a sponsor. Watershed protection and water quality management would be the likely purposes of a potential watershed project.		
Will the project area exceed 250,000 acres in size? [1,2]	☐ YES	☒NO
If over 250,000 acres, will it be divided into sub-watersheds in one plan?	☐ YES	☒NO
Potential Project Area Size: **104,129** acres total; 32,216 acres within WV		
Will any single structure provide more than 12,500 acre-feet of floodwater detention capacity, or have 25,000 acre-feet of total capacity?	☐ YES[3]	☒NO
How many recreational developments will be included in the project area?		
• One development in a project area less than 75,000 acres	☐ YES	☒NO
• Two developments in a project area between 75,000 and 150,000 acres	☐ YES	☒NO
• Three developments in a project area greater than 150,000 acres	☐ YES	☒NO

Which authorized purposes will the project address? (Indicate only one purpose as primary):		
	Primary	Other
• Flood prevention	☒	☐
• Watershed Protection	☐	☒
• Public Recreation	☐	☐
• Public Fish and Wildlife	☐	☐
• Agricultural Water Management	☐	☐
• Municipal or Industrial Water Supply	☐	☐
• Water Quality Management	☐	☒

Will the project produce substantial benefits to the general public, to communities, and to groups of landowners?	☒YES	☐NO[3]
Can the project be installed by individual or collective landowners under alternative cost-sharing assistance?	☐ YES[3]	☒NO
Will the project have strong local citizen and sponsor support through agreements to obtain land rights, permits, contribute the local cost of construction, and carry out operation and maintenance.	☒YES	☐ NO[3]
Will the project take place in a Special Designated Area? (if yes, check applicable area below.)	☒YES	☐NO

Appalachia ☒	Delaware River Basin ☐	Susquehanna River Basin ☐	Tennessee Valley ☐

1. For specific appropriations, the 250,000 acres is waived except for watershed projects with the flood prevention purpose.

2- Watersheds exceeding 250,000 acres can be broken up into smaller sub-watersheds.

3- The project will not meet the statutory requirements.

References:

16 USC 18 - §1004, Conditions for Federal assistance 7 CFR 611 - 11, Eligible Watershed Projects

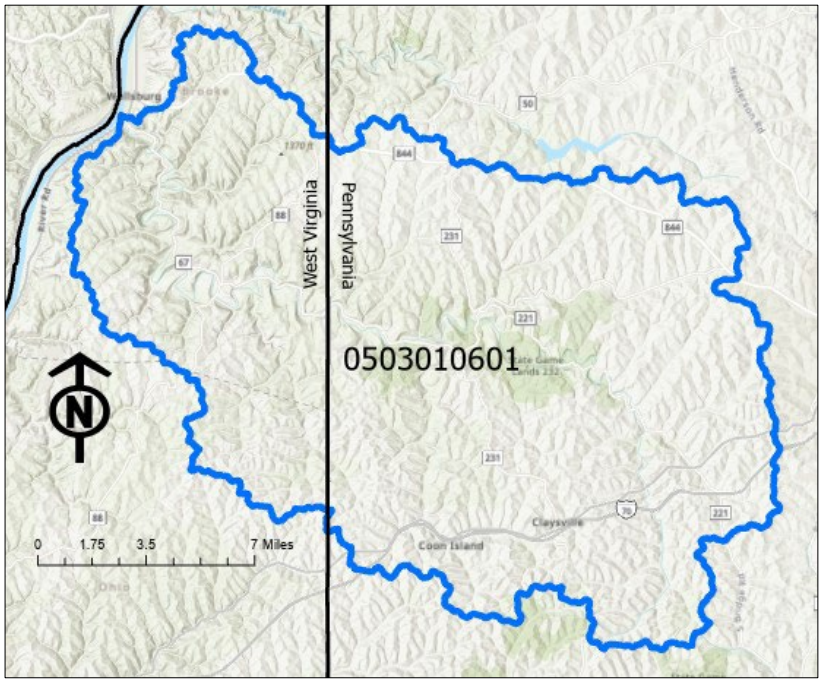
Title 390, NWPM – 500.3 Eligible Purposes

Potential for 20% Agricultural (Rural) Benefits

Brooke County, WV had a population of 22,559 people reported on the 2020 Census. Ohio County, WV had a population of 42,425 people reported on the 2020 Census. Washington County, PA had a population of 209,349 people reported on the 2020 Census, the vast majority of which reside outside of the Buffalo Creek watershed in Washington and the suburbs of Pittsburg. No town within the county or within the watershed has a population of 5,000 or more people. As per the USDA definition, Brooke and Ohio Counties are rural because they have fewer than 50,000 people. Because the watershed consists of rural counties and rural communities, at least 20% of the benefits will meet the agricultural (rural) requirement. Populations potentially benefitting from a project would include agricultural producers, homeowners and renters, business owners, and the public.

References:
16 USC 18 - §1002, Definitions
Title 390, NWPM – 506.50 Glossary, MMM. Rural or Rural Communities

Project Overview

Proposed Project Name	Buffalo Creek Watershed,10-digit HUC (0503010601)
State	West Virginia, Pennsylvania
County	Brooke and Ohio Counties, WV; Washington County, PA
Congressional District	2nd Congressional District (WV); 14th Congressional District (PA)
USGS Hydrologic Unit Code (HUC) and Watershed Name	10-digit HUC 0503010601, Buffalo Creek 
General Coordinates of the Watershed	Latitude 40.186° , Longitude -80.485°
Potential Project Area - Size	104,129 acres total; 32,216 acres in WV

Project Setting	Buffalo Creek drains parts of Brooke and Ohio Counties in West Virginia and Washington County in Pennsylvania. Buffalo Creek flows into the Ohio River south of Wellsburg, WV. The Ohio River joins the Mississippi River at Cairo, Illinois. The Mississippi flows into the Gulf of Mexico. The total watershed drainage area is 104,129 acres, of which 26,709 acres are in Brooke County, WV, 5,507 acres are in Ohio County, WV, and the remaining 71,913 acres are in Washington County, PA. The topography in the watershed ranges from an elevation of approximately 1,520' MSL in the headwaters near Pleasant Grove, PA, to a low point of approximate elevation 620' MSL at the confluence of Buffalo Creek with Ohio River. The watershed, which lies entirely in Major Land Resource Area (MLRA) 126, Central Allegheny Plateau, is characterized by a dissected plateau underlain mainly by horizontally bedded sedimentary rocks. The narrow, level valleys and narrow, sloping ridgetops are separated by long, steep to very steep side slopes. West Virginia and western Pennsylvania have a humid continental climate. The area experiences moderately cold winters and warm, humid summers. West Virginia has the highest average elevation east of the Mississippi River, which helps moderate summer temperatures. The jet stream is located near or over the northeast during the winter bringing frequent storm systems to the watershed.

Figure 1: Location of HUC 10 05030010601 Buffalo Creek in West Virginia.

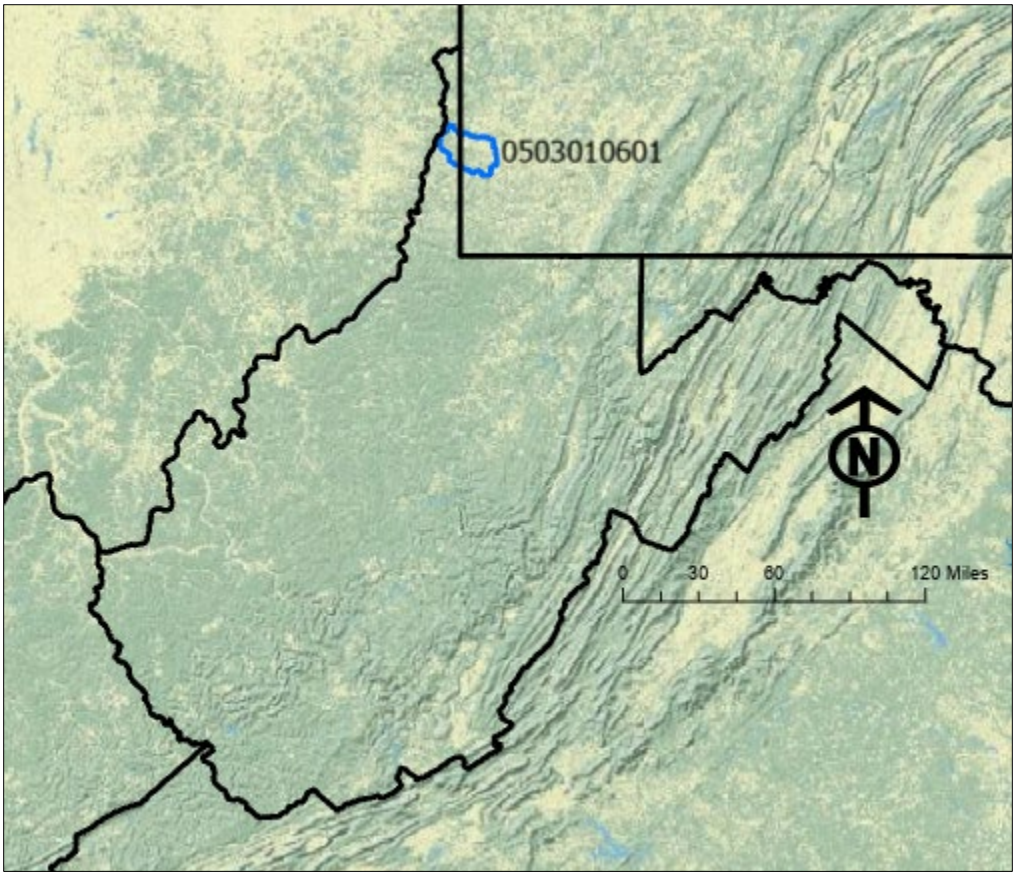
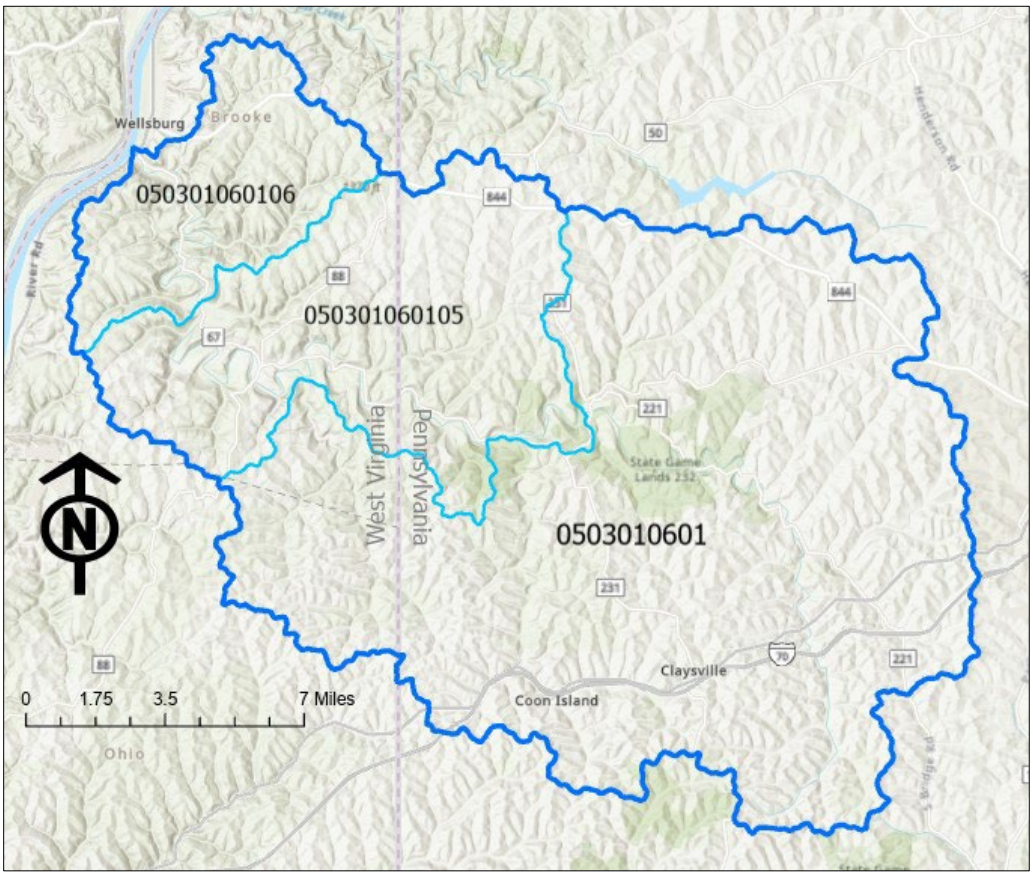


Figure 2: Location of HUC 12 050301060105 Sugarcamp Run-Buffalo Creek and HUC 12 050301060106 Painters Run-Buffalo Creek within HUC 10 0503010601 Buffalo Creek.

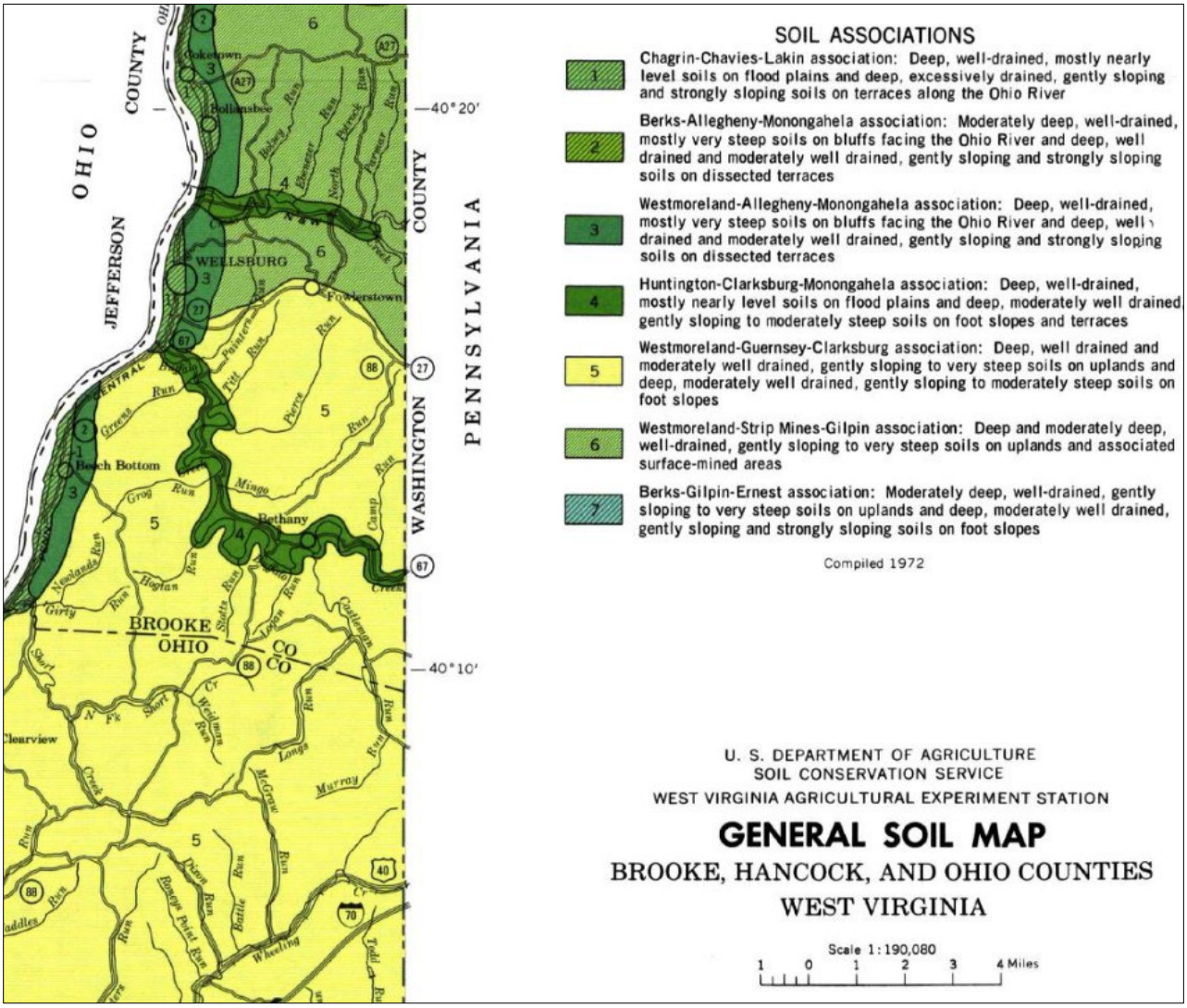


Resource Information

Soils	The project area lies within Major Land Resource Area (MLRA) 126, Central Alleghany Plateau. This MLRA consists of a dissected plateau with narrow, level valley floors, narrow, sloping ridgetops, and long steep to very steep side slopes. The plateau is underlain by flat-lying cyclic beds of shale, sandstone, mudstone, and minor amounts of limestone and coal. The dominant soil orders are Alfisols, Utisols, and Inseptisols. The project area has uniform elevation on the ridgetops, except when broken by saddles and high knobs. The streams of the area have a dendritic drainage pattern. Soils formed from residuum parent material are in upland areas, from colluvium on foot slopes, and from old alluvium on high terraces, and recent alluvium on high and low floodplains. The soils formed from residuum are the most extensive and have a wide range of characteristics, most of which are well-drained and moderately deep. Soils formed in the sloping areas where runoff is moderate to rapid are usually well drained, have a bright colored, unmottled subsoil, and are leached to a greater depth in most cases than wetter soils in the same area. In level areas or slight depressions where the water table is near the surface for longer amounts of time, the soils show gray or dark colored thick surface layers and are typically strongly mottled and/or have gray subsoil. The common soils in the area are Gilpin-Upshur complex, strip mines, and Clarksburg silt loam. The main soil associations in the watershed are the Huntington-Clarksburg-Monongahela association, found primarily in the floodplains along Buffalo Creek and its larger tributaries, and the Westmoreland-Guernsey-Clarksburg association, found throughout the upland areas of the watershed (see Figure 3). Major resource concerns include sheet and rill erosion, land slippage, subsidence resulting from underground mining, streambank erosion, surface compaction, and reduced content of organic matter on cropland.
Water	Buffalo Creek and several tributaries, including Sugarcamp Run and Brush Run to the north and Castleman Run and Dutch Fork to the south, are the main streams in the watershed. Buffalo Creek meets the Ohio River downstream from the watershed. Castleman Run Lake is a 22 acre impoundment within the Castleman Run Wildlife Management Area managed by the WV Department of Natural Resources. Dutch Fork Lake is a 91 acre impoundment managed by the PA Fish and Boat Commission for public recreation.
Air	Washington County, PA is designated as “nonattainment” of the 2008 8-hour Ozone Standard by US EPA. The designation is specific to the Pittsburg-Beaver Valley area of the county but may affect parts of the Buffalo Creek watershed. Dust and fumes from project activity may temporarily adversely impact air quality in specific project areas.
Plants	The watershed provides for both agricultural crops as well as naturally vegetated forested areas utilized as wildlife habitat. As reported by US FWS, there are no threatened or endangered plant species, and no critical habitat is present within the watershed. See appendix E for more information.
Animals	The watershed is largely forested and has animal resources consisting of game, non-game, and invasive species. There are two endangered and one proposed endangered bat species and a candidate insect species within the watershed, but no critical habitat is present. See Appendix E for more information.

Energy	This area has various active and abandoned infrastructure associated with resource extraction for energy production, transmission, and distribution.
Human	**Demographics**: The 2020 U.S. Census reports the population of Brooke County, WV at 22,559 residents, Ohio County Wv, at 42,440 residents, and Washinton County, PA, at 209,349 residents. Approximately 94% of Brooke County residents and 91% of Ohio and Washington County residents are non-Hispanic whites, with African Americans making up approximately 2% of the Brooke County, 4% of the Ohio County, and 3% of the Washington County populations. The population density of Brooke County is 253 people per square mile, Ohio County is 400 people per square mile, and Washington County is 244 people per square mile, compared to averages of 74.6 in West Virginia and 93.8 nationally. For the years 2018-2022, per capita income was $30,400 in Brooke County, $36,191 in Ohio County, and $42,859 in Washington County, while median household income was $51,963 in Brooke County, $55,521 in Ohio County, and $74,403 in Washinton County. The owner-occupied housing unit rate was 74.7% in Brooke County, 68.4% in Ohio County, and 76.0% in Washington County, with median values of owner-occupied housing units of approximately $115,000 in Brooke County, $153,000 in Ohio County, and $205,600in Washington County. Median monthly rent was $591 in Brooke County, $773 in Ohio County, and $879 in Washington County. For the years 2018-2022, people under age 65 with a disability made up 13.8% of Brooke County residents, 9.9% of Ohio County residents, and 9.7% of Washington County residents, compared to 13.8% in West Virginia and 8.9% nationally. 21.9% of Harrison County residents, 33.2% of Ohio County residents, and 32.4% of Washinton County residents had a bachelor's degree or higher. compared to 22.7% of WV residents and 34.3% nationally. **Transportation:** Major highways within the watershed include US Interstate 70 and US Rt. 40, which run east to west through the southeast portion of the watershed in Pennsylvania. WV State Rt. 67 follows Buffalo Creek through Brook County, while WV State Rt. 88 cuts north to south across the watershed in Brook County. Small county roads run throughout the watershed, as well as utility infrastructure including power and telecommunication lines and gas pipelines. Other transportation infrastructure associated with an urban/suburban environment are present near Wellsburg and other more densely populated areas, including but not limited to city streets, overhead and buried power and telecommunication lines, and natural gas distribution lines. **Recreation:** The WVDNR manages the Castleman's Run Lake Wildlife Management Area (WMA), which is 465 acres with a 22-acre lake in Brooks and Ohio Counties. Bear Rocks Lake WMA and the Cross Creek WMA, both managed by the WV DNR, are in close proximity to the watershed. Buffalo Creek is stocked with trout by WV DNR. Brooke County Parks and Recreation manages Brooke Hill Park, with golf, swimming, fishing, shelters, camping, and more recreation opportunities.

Figure 3: USDA Soil Associations in Brooke and Ohio Counties in WV. .



Resources of Special Concern

Clean Water Act	Permitted actions may involve or likely result in the discharge or placement of dredged or fill material in or other pollutants into waters of the US. Ephemeral, intermittent, and perennial streams and certain wetlands will be considered to be waters of the US. Mitigation for unavoidable impacts should be expected under Sec. 404 of the Clean Water Act.
Clean Air Act	Washington County, PA is designated as "nonattainment" of the 2008 8-hour Ozone Standard by US EPA. The designation is specific to the Pittsburg-Beaver Valley area of the county but may affect parts of the Buffalo Creek watershed. Dust and fumes from project activity may temporarily adversely impact air quality in specific project areas.
Coastal Zone Management	NA
Coral Reefs	NA
Cultural Resources	There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, West Virginia State Historic Preservation Officer, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.
Endangered & Threatened Species	The US Fish and Wildlife Service identifies 4 Federally listed threatened, endangered, or candidate species found in this watershed. According to the USFWS Information for Planning and Consultation (IPaC) regulatory review process, the project will potentially affect 3 listed bat species: Indiana bat *myotis sodalist* (endangered), northern long-eared bat *myotis septentrionalis* (endangered), and tricolored bat *perimyotis subflavus* (proposed endangered). Further consultation with USFWS is underway, and time of year restrictions may be placed on some project activity. See Appendix E for a complete USFWS IPaC Species list, determination letters, species survey guidelines, and project design guidelines aimed at minimizing impacts to T&E species.
Environmental Justice	The watershed is completely within the Appalachian Region. Brooke and Ohio Counties in WV and Washington County in PA are not designated as "limited-resource area" by USDA. All three counties are designated as "transitional" by the Appalachian Regional Commission, indicating that they are below the national average in one of the three indicators, including unemployment rate, per capita market income, and poverty rate.
Essential Fish Habitat	There are no know essential fish habitats within the watershed. Buffalo Creek is stocked with trout by WV DNR.

Floodplain Management	Brooke County has a floodplain management ordinance that requires permits for repair, relocation, or construction of buildings, provides minimum standards for construction, and spells out penalties for violations of the ordinance. FEMA has designated much of the area adjacent to Buffalo Creek and its tributaries as Zone A. Much of this area is developed for agricultural and urban uses.
Invasive Species	Invasive species are found in the watershed. EDDMaps provides a web-based mapping system for documenting invasive species and pest distribution. See Appendix E for complete species lists. Note that the list is for Brooke, Ohio, and Washington Counties and is not specific to the watershed or project area.
Migratory Birds/Bald & Golden Eagle Protection Act	Migratory birds and eagles utilize the Buffalo Creek watershed habitats. There are 14 USFWS listed Birds of Conservation Concern (BCC), including bald eagles, in the area. See Appendix E for a complete list.
Natural Areas	**Federal:** The US FWS manages the Ohio River Islands National Wildlife Refuge, a portion of which is in the Buffalo Creek watershed near the confluence with the Ohio River. **State:** The WVDNR manages the Castleman's Run Lake Wildlife Management Area (WMA), which is 465 acres with a 22-acre lake in Brooks and Ohio Counties. Bear Rocks Lake WMA and the Cross Creek WMA, both managed by the WV DNR, are in close proximity to the watershed.
Prime and Unique Farmlands	Within the WV portion of the Buffalo Creek watershed, there are 1,787 acres of Prime Farmland, which accounts for 2% of land in the watershed. Additionally, there are 18,468 acres of Farmland of Statewide Importance and 0 acres of Farmland of Local Importance (see Figure 5). Similar data for the PA portion of the watershed was not readily available. There are no farmland protection boards actively conserving land in the watershed. Threat of conversion is considered low.
Riparian Area	There are riparian areas present in the watershed. Riparian areas found in this region are generally characterized as vegetated and un-vegetated. These areas are often forested or utilized as agricultural, urban, or residential purposes.
Scenic Beauty	Areas of potential scenic beauty in this watershed are typical of the Central Alleghany Plateau physiographic province and common to the region.
Wetlands	Within the Buffalo Creek watershed, there are 1,778 acres of wetland, consisting of 125 acres of Freshwater Emergent Wetlands, 85 acres of Freshwater Forested/Shrub Wetlands, 171 acres of Freshwater Pond, 74 acres of lake, and 1,323 acres of Riverine (see Figure 6).
Wild and Scenic Rivers	No designated Wild and Scenic Rivers are in or near the project area.

Figure 5: West Virginia portion of Buffalo Creek watershed farmland classification map.

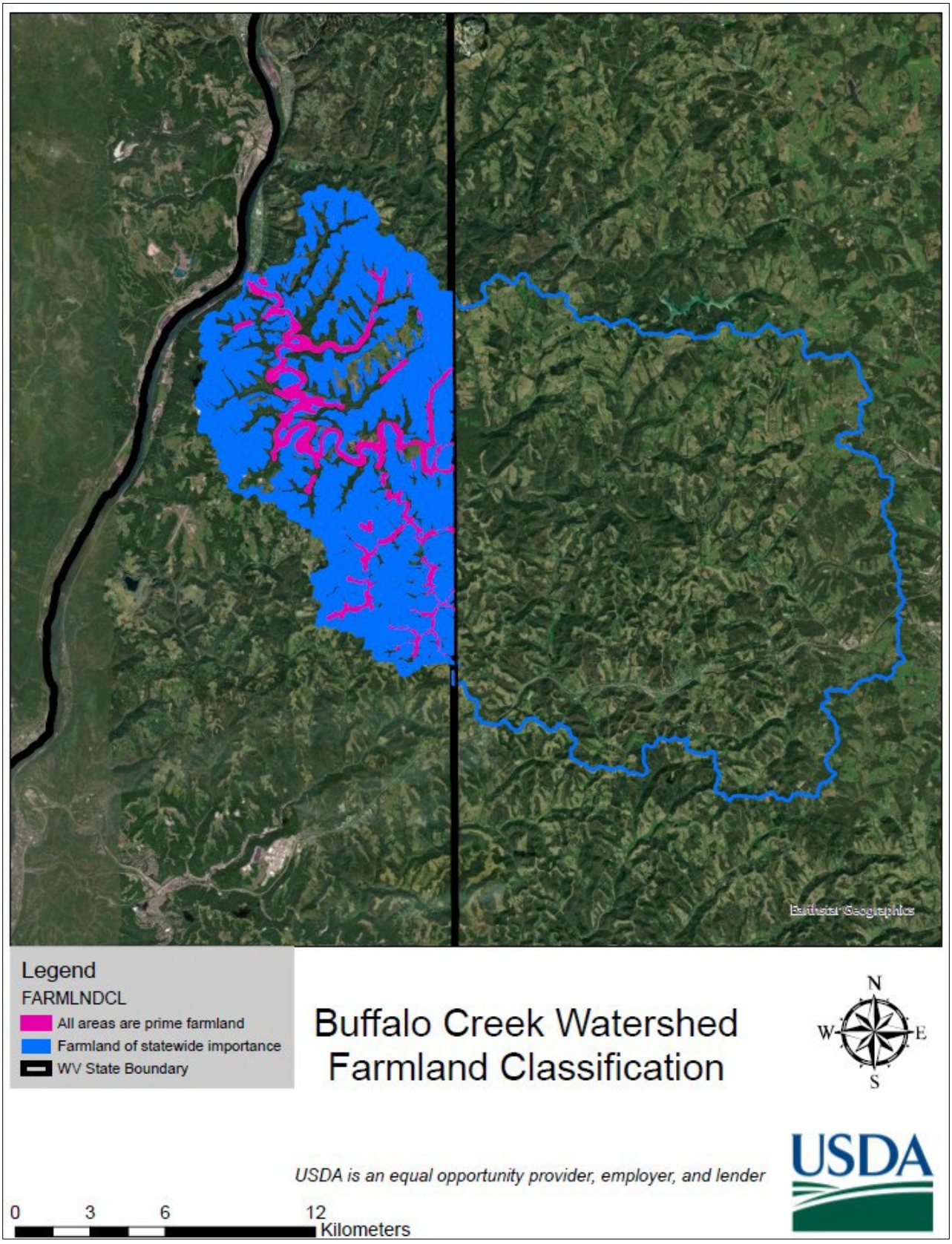
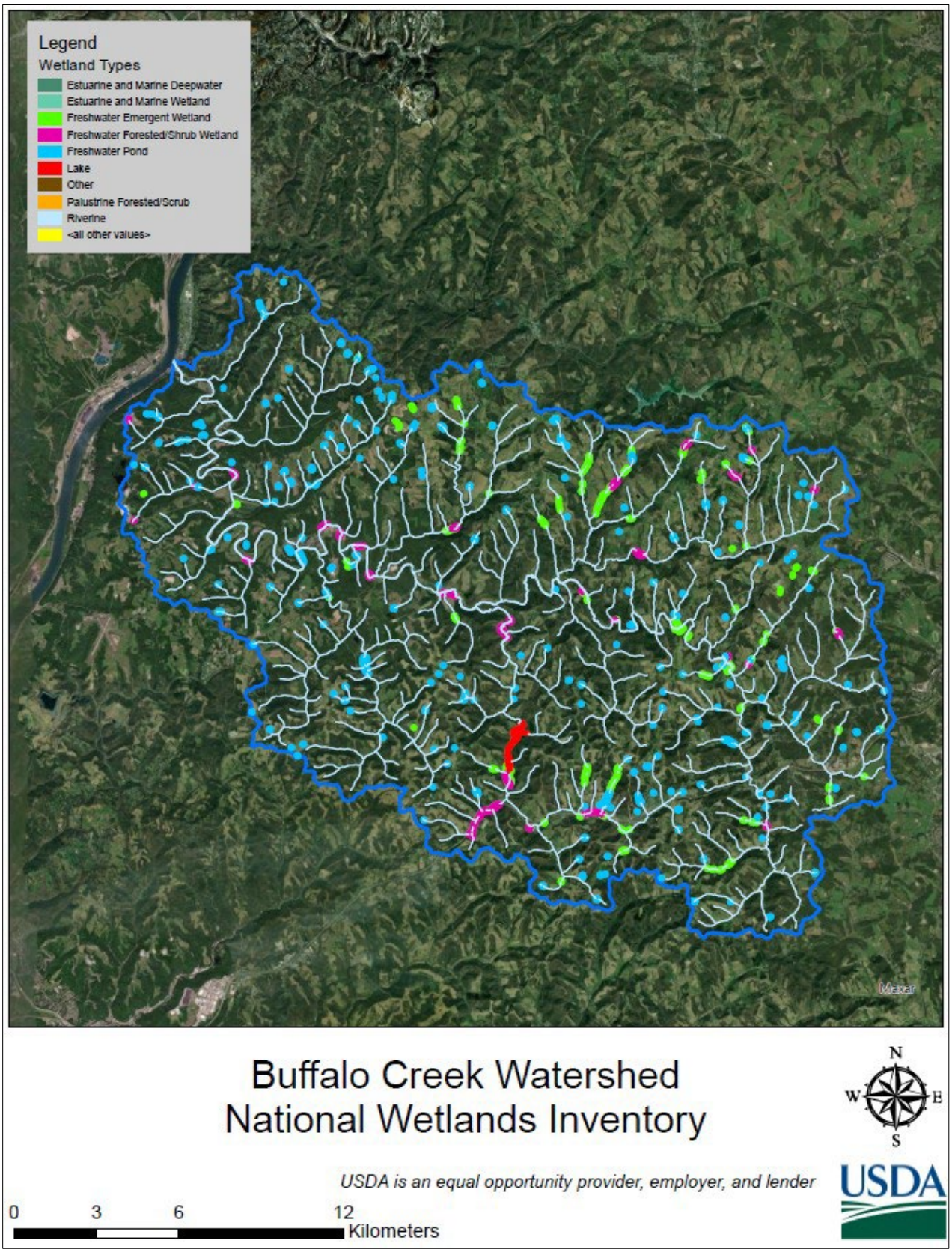


Figure 6: Buffalo Creek watershed USFWS National Wetlands Inventory map.



Proposed Project Purpose and Need Statement

The purpose of the proposed project is to address resource concerns in the Buffalo Creek watershed. The PL 566 primary project purposes will be flood prevention, with watershed protection and water quality management as additional objectives.

Resource Concerns and Opportunities

The Federal Objective or the goal for the planning study according to the Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies (PR&G) is a water resources project that reflects national priorities, protects the environment, and encourages economic development. The Buffalo Creek Watershed contains water resources concerns and opportunities that offer the potential for a watershed project that achieves this Federal Objective.

Resources	**Concerns**	**Opportunities**
Water	• Flooding • Water Quality	• Reduce flood impacts • Address flood risk management concerns
Soil	• OM depletion is likely due to soil loss, compaction resulting in reduced infiltration on agricultural lands and urban lands, impervious surfaces.	• Reduce impacts to soils and improve soil health
Air	• No air quality issues present	• Monitor state air data for potential issues
Plant	• Lack of plant species diversity and presence of invasive species.	• Increase of plant diversity with the establishment of regionally appropriate native species.
Animals	• Lack of game and non-game species diversity and habitat diversity	• Provide appropriate game and non-game habitat.
Energy	• Potential damage to energy infrastructure from flooding	• Efficiencies in energy use • Improvements to air quality
Human	• Decreasing living standards due to flood risk	• Improvements to quality of life
Recreation	• Disparate recreational access • Underutilization of water-based recreation potential	• Increase accessibility to recreation for local residents • Increased water recreation opportunities
Environmental Justice	• Persistent poverty • Flooding of neighborhoods • Declining tax revenues for towns	• Overcome barriers to economic and human development
Cultural Resources / Historic Properties	• Full range of archaeological sites (Paleo-Indian to recent past) and historic properties eligible for listing on the National Registry of Historic Places	• Tribal and SHPO consultation

State, Tribal, Federal Stakeholder Engagement

Notification letters were sent out to Tribal Nations, the Northern Panhandle Conservation District, the West Virginia Conservation Agency, and the Office of the Governor of West Virginia. There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, West Virginia State Historic Preservation Officer, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.

Because the project sponsor is WV entity and their required authority does not extend across the state line into PA, notifications have not been sent to Tribal Nations or state agencies in PA. As the project progresses and potential sponsors with required authorities and jurisdiction in the PA portions of the watershed are identified, additional notifications and consultations with the appropriate tribal nations, state agencies, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.

Potential Alternatives

During the PIFR process, broad categories of measures were identified to meet the stated purpose and need for the proposed project and alternatives were formulated according to PR&G criteria of completeness, effectiveness, efficiency, and acceptability. While all the potential alternatives listed may not be carried forward for full analysis during the planning process, this table documents that there are reasonable alternatives available to analyze and develop. The WV planning team also recognizes that during the planning process the NRCS team and local sponsors are likely to determine that the best alternative for the watershed is a combination of both nonstructural and structural measures.

Alternatives	Possible Positive Impacts and Effects	Possible Adverse Impacts and Effects
No Action	-No new costs to taxpayers or sponsors -no new maintenance requirements	-no flood protection -no public works project(s) -Structures remain out of compliance -hazard to public and infrastructure increases -maintenance becomes more expensive

Alt 1-New Flood Control Dams-Installation of additional flood control dams in the watershed to increase flood protection	-Increased flood protection -recreation opportunities -water supply, rural, ag, municipal, & industrial -aquatic habitat -short term construction jobs -Increased federal investment into local infrastructure -increased public safety -possible power generation capabilities included -ag water management	-Loss of private land through condemnation/easements -Loss of local tax base -Loss of farmland and/or terrestrial habitat -loss of stream habitat -aquatic organism passage barrier -long term maintenance burden on sponsors -potential relocations of homes, roads, & utilities -may require some local cost share funds
Alt 2-New Flood Control Channel-Channelization work in heavier populated area of the watershed to increase flood protection	-Increased flood protection in more urban areas -short term construction jobs -increased federal investment into local infrastructure -reduce significant risk to loss of life -provide maintenance easements alongside the constructed channel thus prohibiting future development in these areas and protecting existing urban wildlife habitat	-Loss of private land through condemnation/easements -long term maintenance burden on sponsors -potential relocations of utilities -may require some local cost share funds -loss of stream habitat & riparian areas -may only reduce flooding from higher frequency storms
Alt 3 - Stream Restoration	-restoring stream and riparian habitat -reduced long term maintenance cost -short term construction jobs -majority or all federal funds -reduction in sediment and nutrients -increased outdoor recreation -relatively low cost -improved water quality -increase in fish and wildlife populations	-no flood protection -requires a fenced and maintained riparian area for cattle exclusion -possible loss of pasture due to fencing

Alt 4 - Land Treatment	-restoring forests and ag land to their production potential -no long-term maintenance cost -majority or all federal funds -reduction in sediment and nutrients -increased outdoor recreation -relatively low cost -improved water quality -increase in fish and wildlife populations -typically voluntary programs	-no flood protection -no public works project(s)
Alt 5 - Green Infrastructure/Low Impact Development	-aquatic habitat uplift -aesthetic improvements -improved water quality -extend life of flood control structures -permanent jobs maintaining structures -possible retrofitting existing structures for hydro power generation	-minor loss of land -maintenance burden on landowners/sponsors -increased cost of development
Alt 6- Floodplain Buyout, flood proofing affected homes, relocation of homes	-Elimination of threat to life and property. -Floodplain converted to nature conservatory including wetlands. -Increased wildlife habitat. -Enhanced learning and recreational opportunities	-Relocation of cemeteries and/or utilities. -Loss of cultural values in the community. -Displacement of local businesses, schools, and public facilities. -Increased resistance to relocation and property condemnation. -Increased cost of development
Alt 7 – Combination of All Alternatives: Land Treatment, Stream Restoration, Rehab, Repair, Channelization, Green Infrastructure, New Structures, Buyouts	-combination of all the above -large amount of federal money provided -several years of construction jobs -improved flood protection, water quality, recreation, & water supply -improved productivity on ag and forest land	-combination of all the above -large amount of cost share required from local sponsors -maintenance cost and burden increases

Potential Effects of Proposed Alternatives

Potential Effects of Proposed Alternatives on SWAPA + E + H Resources and Resources of Special Concern Use:

+ - Positive Impact - - Negative Impact 0 - No Impact * - effects for Alt 2 unknown at this stage

Resource Concerns: SWAPA + Energy + Human		
	Alt 1 – No Federal Action Description: The sponsor does not implement measures using federal funds	**Alt 2 – Federal Action:** Description: Combination of measures using federal funds
Soil	-	+
Water	-	+
Air	0	0
Plants	-	+
Animals	-	+
Energy	0	0
Human	-	+
Clean Air Act	0	0
Clean Water Act/Waters of the U.S.	0	0
Coastal Zone Management	0	0
Coral Reefs	0	0
Cultural Resources/Historic Properties	0	*
Endangered & Threatened Species	0	*
Environmental Justice	0	*
Essential Fish Habitat	0	0
Floodplain Management	0	+
Invasive Species	0	*
Migratory Birds/Bald and Golden Eagle Protection Act	0	*
Natural Areas	0	*

Facilitating Factors

- The Northern Panhandle Conservation District is willing to work with NRCS to see the project through completion.

Obstructing Factors

- Local funding is dependent on state appropriations and local government budgets.

Environmental Document

Potentially viable alternatives to address flood prevention will be further defined in the next phase of planning. Additional needs such as watershed protection and water quality management will be assessed in more detail if planning is authorized. At this point in the planning process, the interdisciplinary team has determined that the Environmental Document for the project may be an Environmental Assessment. However, it is acknowledged that an Environmental Impact Statement could be required if significant or controversial issues arise during further planning.

Sponsors

The Northern Panhandle Conservation District is ready, willing, and able to sponsor a potential watershed project in the Buffalo Creek watershed. They meet the PL 83-566 sponsorship criteria for this potential watershed project. The Northern Panhandle Conservation District has completed the WS-4, PIFR Sponsor Declaration form. A summary of the sponsor responses is included below. The completed WS-4 - PIFR Sponsor Declaration is included in Appendix B.

Sponsor Will:	Assist in Planning	Land Rights / Eminent Domain	Local Cost Share	O/M Funds	Permits	Land Treatment	In-Kind MOU
Northern Panhandle Conservation District	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sponsor will:

- Assist in the locally led planning effort.
- Obtain needed land rights including the use of power of eminent domain, if necessary.
- Provide local cost-share funds and/or in-kind services to provide the required portion of total project costs.
- Provide funds for continuing operation and maintenance actions.
- Obtain required permits and approvals at sponsor cost.
- Provide leadership to help ensure adequate conservation land treatment measures are maintained on at least 50% of the watershed area above retention reservoirs.
- Before being credited with the value of any in-kind contribution for any in-kind services and/or acquisition of land rights, sponsor will sign a Memorandum of Understanding (MOU) with NRCS.

Potential Cooperating Agencies

Agency	Contact Information	Type of Involvement
US Army Corps of Engineers	USACE – Pittsburgh District Planning Division Regulatory Functions/Permits 2 1000 Liberty Ave Ste 2200 Pittsburgh, PA 15222 (412) 395-7500	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]
US Fish and Wildlife Services	USFWS 6263 Appalachian Highway Davis, WV 26260 501-513-4470 FW5_WVFO@fws.gov	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]
West Virginia Department of Environment Protection (WVDEP)	WVDEP 601 57th Street SE Charleston, WV 25304 (304) 926-0499	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]
USDA Farm Service Agency	USDA-FSA 1550 Earl Core Road Morgantown, WV 26505 (304) 284-4800	Regulatory [ ]
		Informed [X]
		Prepare permits or letters of permission document [ ]
		Provide input [ ]
West Virginia Historic Preservation Office (WVSHPO)	WVSHPO Capitol Complex 1900 Kanawha Boulevard, East Charleston, WV 25305-0300 (304) 558-0220	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]

Potential Stakeholders

Stakeholder	Role	Resources	Contribution
Northern Panhandle Conservation District	Sponsor	Cost-share funds	For Plan/EA attain permits and assists with Public Scoping Meetings, Mailings, and overall administration of the project.
West Virginia Conservation Agency	Support	Technical Support	For Plan/EA attain permits and assists with Public Scoping Meetings, Mailings, and overall administration of the project.
USDA-NRCS	Lead Agency for Plan- EA, FA/TA, Reviews	Funding assistance, Technical Reviews	Reviews for project location, inventory needs, Plan-EA supplement
Army Corps of Engineers (USACE)	Section 404 permit, Section 10 permit, Section 408 review	Technical Reviews, Wetlands-Waters of the U.S. Jurisdiction	Permitting, technical review
Osage Nation - THPO Andrea A. Hunter	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Osage Nation - Principal Chief Geoffrey Standing Bear	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Seneca-Cayuga Nation – Chief Charles Diebold	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Seneca-Cayuga Nation - THPO William Tarrant	Permit- Cultural Review	Review of Project APE	Permit for Project APE
West Virginia State Historic Preservation Office (WVSHPO)	Permit- Cultural Review	Review of Project APE	Permit for Project APE
WVDEP	Permits	Review for Permits	Review for Permits

Notifications

Entity/Agency	Method and Date Notified
Governor (WV)	Mail, 5/15/2024
US Fish and Wildlife Service	Email, 4/19/2023
US Army Corps of Engineers	Email, 4/19/2023
Osage Nation	Mail, 8/1/2023
Seneca-Cayuga Nation	Mail, 8/1/2023

Because the project sponsor is WV based and their required authority does not extend across the state line into PA, notifications have not been sent to Tribal Nations or state agencies in PA. As the project progresses and potential sponsors with required authorities and jurisdiction in the PA portions of the watershed are identified, additional notifications and consultations with the appropriate tribal nations, state agencies, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.

Estimated Project Implementation Timeline

Alternative X (assumes 1 rehab site) funding dependent, multiple sites could be worked concurrently.

Planning Start*	December	2025
Planning End*	December	2028 (36 months typically)
Design Start*	February	2029
Design End*	February	2031 (24 months typically)
Construction Start*	May	2031
Construction End*	January	2035 (~42 months typically)

**Dependent on funding*

Recommendation

This preliminary investigation and feasibility report has been completed and submitted for approval to:

Jon Bourdon, West Virginia State Conservationist.

By:

Name: Clayton Scott Title: Resource Conservationist – Watershed Planner Date: September 18, 2024

Organization: Natural Resources Conservation Service (NRCS)

It has been determined that this potential PL-566 watershed operations project:

Does	Does Not	
☒	☐	meet the statutory acreage, volume/capacity of structure and recreational limit requirements;
☒	☐	meet the requirements of one or more Watershed Operations authorized purposes;
☒	☐	have the potential for a minimum of 20% agricultural, or rural, benefits;
☒	☐	have one or more viable alternatives;
☒	☐	have potential project sponsor(s) that meet and agree to all terms of responsibilities;
☐	☒	have apparent insurmountable obstacles.

Preparers Signature: Signature: CLAYTON SCOTT Digitally signed by CLAYTON SCOTT Date: 2024.09.20 15:02:07 -04'00' Date: _____

State Watershed Operations Program Manager: Signature: CHRISTI HICKS Digitally signed by CHRISTI HICKS Date: 2024.09.26 13:57:20 -04'00' Date: _____

State Technical Lead (SRC, SCE, Other): Signature: LEWTON DEICHERT Digitally signed by LEWTON DEICHERT Date: 2024.09.29 08:31:25 -04'00' Date: _____

	Not Recommended for Planning Funding
X	Accepted and Recommended for Planning Funding

State Conservationist: Signature: JON BOURDON Digitally signed by JON BOURDON Date: 2024.10.02 16:41:47 -04'00' Date: _____

Appendix

- Appendix A: Sponsor Letter of Request
- Appendix B: WS-4 – PIFR Sponsor Declaration Forms
- Appendix C: Preliminary Environmental Evaluation (CPA 52)
- Appendix D: Supporting Information Appendix (T&E and Invasive Species)

Appendix A:

Sponsor Letter of Request

Northern Panhandle
Conservation District
1 Ball Park Drive
McMechen, WV 26040
Telephone: 304-238-1231
E-mail: npcd@wvca.us

September 26, 2022

State Conservationist Jon Bourdon
Natural Resources Conservation
Service 1550 Earl Core Road
Suite 200
Morgantown, WV 26505

Dear State Conservationist Bourdon:

We request NRCS Watershed Program planning assistance for a potential Public Law (PL) 83- 566 project in Brooke County in the Buffalo Creek Watershed, hydrologic unit code (HUC) HUC 12 – 050301060105 and 050301060106.

The Buffalo Creek watershed has several resource concerns leading to poor water quality and negative impacts. We would like for the NRCS to determine the feasibility of in stream work and land treatment practices to implement in the watershed which would mitigate or resolve these impacts.

We look forward to working with NRCS staff to complete a Preliminary Investigation Feasibility Report (PIFR) to provide reasonable assurance that a potential watershed project can be developed that addresses a PL 83-566 purpose and that there are no apparent insurmountable obstacles to the completion of that project.

Sincerely,

Mark Fitzsimmons
NPCD Chairman

Appendix B:

WS-4; Sponsor Authority and Role Declaration(s)

Watershed Programs Standard Memorandum
Preliminary Investigation – Feasibility Report
Sponsor Authority and Role Declaration

Form Number: WS-4
Version 2021-03-04

State: WV County: Brooke, Ohio Watershed: Buffalo Creek

Project Name: Buffalo Creek Watershed

Sponsor's Name:	**Northern Panhandle Conservation District**		
Sponsor's Mailing Address:	**1 Ball Park Drive** **McMechen, WV 26040**		
Contact Name:	**Mark Fitzsimmons**	**Phone:**	**304-238-1231**
Title:	**NPCD Chairman**	**Email:**	**ncpd@wvca.us**
Sponsor Website:	**https://www.wvca.us/district/npcd.cfm**		

Description of the existing condition in the watershed that would be addressed through a Watershed Flood Prevention Operations program project.

Several resource concerns leading to poor water quality and associated negative impacts.

Potential benefits of a Watershed Flood Prevention Operations program project.

Land treatment practices and stream restoration could mitigate water quality impacts by reducing erosion and sedimentation and improving aquatic habitat and stream function while protecting farmland.

Watershed Programs Standard Memorandum
Preliminary Investigation – Feasibility Report
Sponsor Authority and Role Declaration

Form Number: WS-4
Version 2021-03-04

State: WV County: Brooke, Ohio Watershed: Buffalo Creek

Project Name: Buffalo Creek Watershed

SPONSOR WILL:

- Assist in the locally led planning effort: YES __X___ NO _____
- Obtain needed land rights including the use of power of eminent domain, if necessary: YES __X___ NO _____
- Provide local cost-share funds and/or in-kind services to provide the required portion of total project costs: YES __X___ NO _____
- Provide Funds for continuing Operation and Maintenance actions: YES __X___ NO _____
- Obtain required permits and approvals at Sponsor cost: YES __X___ NO _____
- Provide leadership to help ensure adequate conservation land treatment measures are maintained on at least 50% of the watershed area above retention reservoirs: N/A _____ YES __X___ NO _____
- Before being credited with the value of any in-kind contribution for any in-kind services and/or acquisition of land rights, Sponsor will sign a Memorandum of Understanding (MOU) with NRCS: YES __X___ NO _____

Authorized Representative of Sponsor

Name (printed): Mark Fitzsimmons **Title:** NPCD Chairman

Signature: Mark B. Fitzsimmons **Date:** 7-29-24

Appendix C:

Preliminary Environmental Evaluation (CPA 52)

U.S. Department of Agriculture | NRCS-CPA-52
Natural Resources Conservation Service | 11/2019

ENVIRONMENTAL EVALUATION WORKSHEET

A. Client Name:

B. Conservation Plan ID # (as applicable): Buffalo Creek PIFR
Program Authority (optional): PL-566

C. Identification # (farm, tract, field #, etc. as required):
Buffalo Creek Watershed, Brooke and Ohio County, WV HUC (0503010601)

D. Client's Objective(s) (purpose):
The purpose of this project is to provide measures for flood prevention, watershed protection and agricultural water management in the Buffalo Creek Watershed.

E. Need for Action:
The baseline condition without federal investment is a lack of flood protection, recreation, rural water supply, and other amenities associated with impoundments. Flooding is persistent and results in loss of property and crops, stream bank erosion, and sedimentation of streams.

H. Alternatives

No Action √ if RMS ☐	*Alternative 1* √ if RMS ☐	*Alternative 2* √ if RMS ☐
Flooding, sedimentation, and erosion would continue to be an issue for residents. As problems persist, land values and population decrease and land degradation continues. Water supply would still be a concern for local residents. There would be no additional federal funds expended with this alternative.	New Flood Control Dams- Installation of flood control dams in the watershed to increase flood protection. Focused funding for technical and financial assistance through the Watershed Protection and Flood Prevention Act would result in reduced sedimentation, improved water quality, protection of prime farmland, and reduce flooding in the Buffalo Creek Watershed.	New Flood Control Channel- Channelization work in more heavily populated areas of the watershed to increase flood protection. Focused funding for technical and financial assistance through the Watershed Protection and Flood Prevention Act would result in reduced sedimentation, improved water quality, protection of prime farmland, and reduce significant loss of life in the Buffalo Creek Watershed.

Resource Concerns

In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).

I. Effects of Alternatives

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	*No Action*		*Alternative 1*		*Alternative 2*	
	Amount, Status, Description *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**
SOIL						
Sheet and rill erosion Sedimentation caused by erosion in the uplands of the watershed negatively impact Buffalo Creek and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages.	Continued degradation of the resource without any federal action.	☐ NOT meet PC	Increased flood control and holding capacity would decrease sediment loading within streams and reduce flooding impacts on stream bank erosion due to reduced flows.	☐ NOT meet PC	Channelization would reduce streambank erosion and sedimentation by protecting adjacent streambanks.	☐ NOT meet PC
WATER						
Ponding and flooding Flooding is a continuing resource concern in the watershed, and the risk of flooding increases over the next few decades as storms become more frequent and severe, as the infrastructure ages, and as development encroaches on the floodplain. Flooding is a threat to property, access to utilities, emergency services, transportation, agricultural land, and crops.	Residences, businesses, and agricultural lands would continue to endure periodic flooding as storm frequency and intensity trends continue.	☐ NOT meet PC	Increased flood protection provided by installation of flood retention dams would reduce impacts of flooding within the watershed.	☐ NOT meet PC	Channelization would reduce the risk of flooding in more urban areas.	☐ NOT meet PC
Sediment transported to surface water Sedimentation caused by erosion in the uplands of the watershed negatively impact Buffalo Creek and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages. Scour of adjacent floodplains increase the sediment load during flood events.	Resources would continue to be degredated. Frequent flooding will continues to scour streambanks, increasing sedimentation within streams and reducing channel capacity.	☐ NOT meet PC	Increased flood control and holding capacity would decrease sediment loading within streams and reduce flooding impacts on stream banks.	☐ NOT meet PC	Channelization would reduce streambank erosion and sedimentation by protecting adjacent streambanks.	☐ NOT meet PC

Nutrients transported to surface water Water quality is negatively affected by nutrients, metals, and runoff from rural landscapes within the watershed. Many streams within the watershed have elevated levels of fecal coliform from pasture/cropland, failing septic systems, and residential stormwater sources. There are also elevated iron from oil and gas operations, stormwater sources, unpaved roads, barren land, abandoned mines, forestry operations, and streambank erosion.	Continued degradation of the resource without any federal action.	☐ NOT meet PC	Increased flood protection provided by constrution of flood retention dams would reduce impacts of flooding within the watershed. The risk of flood waters entering homes, businesses, and livestock feeding operations causing debris and other nutrients transported down the watershed would be reduced.	☐ NOT meet PC	The creation of the channel would likely result in the need for flood plain easements on properties adjacent to the streams that may not have functioning septic systems, thus reducing the fecal coliform in the stream.	☐ NOT meet PC

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	**I. (continued)**					
	No Action		***Alternative 1***		***Alternative 2***	
	Amount, Status, Description *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**
AIR						
No resource concern identified Air quality is not currently a resource concern in the watershed.	Air quality would not be impacted with no action.	☐ NOT meet PC	Air quality may be slightly adversely impacted locally during construction activities (dust and exhaust from construction equipment). The impacts are expected to remain well within the air quality standards and would be temporary.	☐ NOT meet PC	Air quality may be slightly adversely impacted locally during construction activities (dust and exhaust from construction equipment). The impacts are expected to remain well within the air quality standards and would be temporary.	☐ NOT meet PC
PLANTS						
Plant structure and composition The watershed provides for both agricultural crops as well as naturally vegetated areas that provide wildlife habitat. There is a lack of plant species diversity, specifically along streams in riparian areas, and a presence of invasive species.	Agricultural crops and wildlife habitat would continue to be impacted by flooding.	☐ NOT meet PC	Agricultural crops and wildlife habitat would be enhanced from a reduction in flooding and decrease in sedimentation.	☐ NOT meet PC	Agricultural crops and wildlife habitat would be enhanced from a reduction in flooding and decrease in sedimentation.	☐ NOT meet PC
ANIMALS						
Terrestrial habitat for wildlife and invertebrates Game and non-game species of wildlife are found within the watershed, however habitat is not ideal. There are 4 threatened, endangered, or candidate species found in the watershed.	Wildlife will continue to be temporarily displaced during flood events. Changing vegetation along stream banks due to flood damage will continue to support invasive species over native, thus reducing the quality of wildlife habitat, food and shelter.	☐ NOT meet PC	Displacement of wildlife due to excessive flooding within the watershed would likely decrease. Habitat that supports this wildlife would be less likely to be disturbed and thus reduce the spread of invasive species. Terrestrial habitat would be disturbed in the short term due to construction.	☐ NOT meet PC	Channelization could result in a loss of riparian areas in some locations, but provide wildlife habitat in more urban areas through the removal of structures along the stream and future protection of the areas through conservation easements.	☐ NOT meet PC
Aquatic habitat for fish and other organisms Sedimentation and nutrients are negatively effecting aquatic fish and invertebrate species habitat.	Continued degradation of the resources with continued sedimentation in the stream negatively impacting aquatic invertebrate habitat.	☐ NOT meet PC	Aquatic habitat would be improved downstream of structures due to reduced sedimentation. Dams could pose a threat to aquatic habitat by restricting passage, depending on location in the watershed.	☐ NOT meet PC	Potential to negatively impact stream structure and habitat for aquatic species. Riparian areas could be decrease in some areas but enhanced in others though the removal of structures along stream and future protection of the areas through conservation easements.	☐ NOT meet PC

ENERGY							
No resource concern identified This area has various active and abandoned infrastructure associated with resource extraction for energy production, transmission, and distribution.	No effect	☐ NOT meet PC	Hydroelectric power generation could be included as an element in the design of the structures to provide clean energy to the region.	☐ NOT meet PC	No effect	☐ NOT meet PC
Human Economic and Social Considerations						
Public Health and Safety Damaging unpredictable floods with increasing severity over the past few decades. Flooding impacts residents' access to emergency services, results in loss of land, and creates unsanitary conditions in effected residences and businesses.	Local landowners, residents, businesses, farmers, transportation infrastructure, and emergency services will continued to be negatively affected by continued flooding.		Installation of structures would increase flood protection of the local residences and business. It would also provide the opportunity for rural water supply, recreation opportunities, and a short term creation of jobs during construction.		Channelization would increase flood protection in more urban areas, create short term jobs during construction, and reduce significant risk to loss of life, however it may only reduce flooding from higher frequency storm events.	

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.

In Section "G" complete and attach Environmental Procedures Guide Sheets for documentation as applicable. Items with a "●" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.

G. Special Environmental Concerns (Document existing/ benchmark conditions)	J. Impacts to Special Environmental Concerns					
	No Action		***Alternative 1***		***Alternative 2***	
	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action
●Clean Air Act *Guide Sheet* Washington Co, PA is designated as a non-attainment area for the US EPA 2008 8-hr ozone standard.	No Effect	☐	No Effect It is likely that no permitting or authorization is necessary. The activity is expected to only have minor local impacts to air quality during construction and would not be expected to violate standards. Advise the client to contact the appropriate air quality regulatory agency for verification.	☐	No Effect It is likely that no permitting or authorization is necessary. The activity is expected to only have minor local impacts to air quality during construction and would not be expected to violate standards. Advise the client to contact the appropriate air quality regulatory agency for verification.	☐
●Clean Water Act / Waters of the U.S. *Guide Sheet* Permitted actions may involve or likely result in the discharge or placement of dredged or fill material in or other pollutants into waters of the US. Ephemeral, intermittent, and perennial streams and certain wetlands will be considered as waters of the US. Mitigation for unavoidable impacts should be expected under Sec. 404 of the Clean Water Act.	No Effect	☐	May Affect Installation of any water control structures will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation for stream impacts may also be required.	☐	May Affect Installation of any structures within the stream that will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation for stream impacts may also be required.	☐
●Coastal Zone Management *Guide Sheet* There are no costal zones present in or near the watershed.	No Effect	☐	No Effect	☐	No Effect	☐
Coral Reefs *Guide Sheet* There are no coral reefs present in or near the watershed.	No Effect	☐	No Effect	☐	No Effect	☐

●Cultural Resources / Historic Properties *Guide Sheet* There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, WV SHPO, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	No Effect	☐	May Affect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐	May Affect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐
●Endangered and Threatened Species *Guide Sheet* There is a total of 4 Federally listed threatened, endangered, or candidate species potentially found in this watershed listed by the US Fish and Wildlife Service (USFWS), monarch butterfly, Indiana bat, Northern long-eared bat, and tricolored bat.	May Affect No action may have the potential to negatively impact federally listed aquatic species through continued flooding and habitat disruption.	☐	May Affect The structural alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Federal, state, and local wildlife agencies will be consulted prior to construction.	☐	May Affect The structural alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Federal, state, and local wildlife agencies will be consulted prior to construction.	☐
Environmental Justice *Guide Sheet* The watershed is completely within the Appalachian Region. Brooke and Ohio Counties in WV and Washington County in PA are not designated as "limited-resource area" by USDA. All three counties are designated as "transitional" by the Appalachian Regional Commission, indicating that they are below the national average in one of the three indicators, including unemployment rate, per capita market income, and poverty rate.	No Effect	☐	No Effect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐	No Effect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐
●Essential Fish Habitat *Guide Sheet* This area is not designated as Essential Fish Habitat.	No Effect	☐	No Effect	☐	No Effect	☐
Floodplain Management *Guide Sheet* Brooke County has a floodplain management ordinance that requires permits for repair, relocation, or construction of buildings, provides minimum standards for construction, and spells out penalties for violations of the ordinance. FEMA has designated much of the area adjacent to Buffalo Creek and its tributaries as Zone A. Much of this area is developed for agricultural and urban uses.	No Effect Continued risk of flooding.	☐	May Affect This alternative will result in the protection of the floodplain due to decreased flooding impacts.	☐	May Affect This alternative will result in the protection of the floodplain due to decreased flooding impacts	☐
Invasive Species *Guide Sheet* Invasive species are found in the watershed.	No Effect Continued expansion on invasive species.	☐	May Affect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	☐	May Affect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	☐

•Migratory Birds/Bald and Golden Eagle Protection Act *Guide Sheet* Migratory birds and eagles utilize the Buffalo Creek Watershed habitats. There is a total of 14 federally listed birds in the area. The birds listed are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in the project location.	No Effect	☐	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐
Natural Areas *Guide Sheet* Federal: The U.S. Fish and Wildlife Service owns the Ohio River Islands National Wildlife Refuge in the watershed. State: The West Virginia Division of Natural Resources manages Castlemans Run Wildlife Management Area within the watershed. The WV DNR also manages the Cross Creek Wildlife Management Area, which is not within the watershed but in close proximity to the watershed.	No Effect	☐	No Effect	☐	No Effect	☐
Prime and Unique Farmlands *Guide Sheet* Presently in the WV portion of the watershed, there are 1,787 acres of Prime Farmland, which accounts for 2% of land in the watershed. Additionally, there are 0 acres of Farmland of Local Importance and 18,468 acres of Farmland of Statewide Importance. There are no Farmland Protection Boards actively conserving land. The threat of conversion is low. No similar data for PA was readily available.	No Effect Continued potential threat to loss of prime farm land from streambank erosion.	☐	No Effect Alternative would provide protection of prime farmland through the reduction of streambank erosion.	☐	No Effect Alternative would provide protection of prime farmland through the reduction of streambank erosion.	☐
Riparian Area *Guide Sheet* There are riparian areas present in or near the project area. Riparian areas found in this region are generally characterized as vegetated and un-vegetated. These areas are often utilized for agricultural purposes.	No Effect Continued degradation of riparian land as streambanks erode and invasive species dominate regrowth.	☐	May Affect Riparian areas present in or near the project area have the potential to be impacted.	☐	May Affect Riparian areas present in or near the project area have the potential to be impacted.	☐
Scenic Beauty *Guide Sheet* Areas of potential scenic beauty in this watershed are typical of adjacent Appalachian Plateau area and common to the region.	No Effect	☐	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Ridge and Valley physiographic province.	☐	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Ridge and Valley physiographic province.	☐

●Wetlands *Guide Sheet* There are 1,778 acres of wetlands within the Buffalo Creek watershed which consist of the following: 125 acres of Freshwater Emergent Wetlands; 85 acres of Freshwater Forested/Shrub Wetlands; 171 acres of Freshwater Pond; 74 acres of Lake; and 1,323 acres of Riverine. Data collected from the US Fish and Wildlife Service National Wetlands Inventory.	No Effect	☐	No Effect Action is not likely to negatively impact any wetlands in the watershed.	☐	No Effect Action is not likely to negatively impact any wetlands in the watershed.	☐	
●Wild and Scenic Rivers *Guide Sheet* No designated Wild and Scenic Rivers are in or near the project area.	No Effect	☐	No Effect	☐	No Effect	☐	
K. Other Agencies and Broad Public Concerns	***No Action***		***Alternative 1***		***Alternative 2***		
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.	None		Installation of any water control structures will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation may also be required.		New Flood Control Channel-Channelization work in more heavily populated areas of the watershed to increase flood protection.		
Cumulative Effects Narrative (Describe the cumulative impacts considered, including past, present and known future actions regardless of who performed the actions)	Absent the proper and increased application of conservation practices, cumulative effects will likely lead to continued environmental degradation.		Installation of flood control dams would increase flood protection for the community, provide recreational opportunities, and potentially supply water and energy. There would be increase burden on local sponsors for maintenance and cost share would be required from the sponsor.		Channelization of streams would increase flood protection for the more urban sections of the community. There would be increase burden on local sponsors for maintenance and cost share would be required from the sponsor.		
L. Mitigation (Record actions to avoid, minimize, and compensate)	None		Mitigation would likely be required for the length of streams impacted by construction of new impoundments. Vegetation will be established on disturbed areas immediately following construction to a vegetative plan developed conjunction with NRCS and local sponsors.		Mitigation could be required for the length of streams impacted by the channel. Vegetation will be established on disturbed areas immediately following construction to a vegetative plan developed conjunction with NRCS and local sponsors.		
M. Preferred Alternative	√ preferred alternative	☐	☐		☐		
	Supporting reason		Installation of additional flood control dams in the watershed to increase flood protection.		Installation of flood control channel in more heavily populated areas in the watershed to increase flood protection.		
N. Context (Record context of alternatives analysis)		local		local		local	
The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.							

U.S. Department of Agriculture | NRCS-CPA-52
Natural Resources Conservation Service | 11/2019

ENVIRONMENTAL EVALUATION WORKSHEET

A. Client Name: West Virginia Conservation Agency

B. Conservation Plan ID # (as applicable): Buffalo Creek PIFR
Program Authority (optional): PL-566

C. Identification # (farm, tract, field #, etc. as required):
Buffalo Creek Watershed, Brooke and Ohio County, WV HUC (0503010601)

D. Client's Objective(s) (purpose):
The purpose of this project is to provide measures for flood prevention, watershed protection and agricultural water management in the Buffalo Creek Watershed.

E. Need for Action:
The baseline condition without federal investment is a lack of flood protection, recreation, rural water supply, and other amenities associated with impoundments. Flooding is persistent and results in loss of property and crops, stream bank erosion, and sedimentation of streams.

H. Alternatives

Alternative 3 √ if RMS ☐	*Alternative 4* √ if RMS ☐	*Alternative 5* √ if RMS ☐
Natural Stream Restoration would restore the stream and riparian habitat to its natural function. Watershed Protection and Flood Prevention Act funding in conjunction with traditional Farm Bill programs, such as EQIP or NWQI, would focus technical and financial assistance to install practices typically associated with natural stream restoration.	Land Treatment- Conservation practice installation across all landuses to prevent soil loss, improve wildlife habitat, and improve water quality. Watershed Protection and Flood Prevention Act funding in conjunction with traditional Farm Bill programs, such as EQIP or NWQI, would focus technical and financial assistance to install practices typical for the region.	Green Infrastructure/Low Impact Development- Adaptation of practices such as wetland management/creation, rain gardens, pervious concrete, and tree plantings to assist the watershed in its capacity to handle flood waters. Technical and/or financial assistance could be available through Conservation Technical Assistance (CTA), traditional Farm Bill programs such as EQIP and NWQI, and local sponsors.

Resource Concerns

In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)

I. Effects of Alternatives

	Alternative 3		*Alternative 4*		*Alternative 5*	
	Amount, Status, Description *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**
SOIL						
Sheet and rill erosion Sedimentation caused by erosion in the uplands of the watershed negatively impact Buffalo Creek and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages.	No effect to upland erosion. Sedimentation caused by stream bank erosion would be decreased by the stabilization of streambanks.	☐ NOT meet PC	Forest stand improvement, prescribed grazing and associated practices, cover crop, reduced tillage, and other related land treatment practices typical for the region would decrease sheet and rill erosion on upland slopes and decrease sedimentation in the stream.	☐ NOT meet PC	Reduction in soil erosion from reduced velocities of water conveyance during high rain events.	☐ NOT meet PC
WATER						
Ponding and flooding Flooding is a continuing resource concern in the watershed, and the risk of flooding increases over the next few decades as storms become more frequent and severe, as the infrastructure ages, and as development encroaches on the floodplain. Flooding is a threat to property, access to utilities, emergency services, transportation, agricultural land, and crops.	Natural stream restoration could increase the channel's capacity to hold flood waters.	☐ NOT meet PC	Proper management of upland slopes would reduce erosion and sedimentation in the stream. sedimentation. This would allow the stream to maintain its capacity and thus reduce flooding impacts.	☐ NOT meet PC	Flooding would be mitigated through installation of green infrastructure by increasing the water holding capacity and natural functions of wetlands and installation of rain gardens. The infrastructure would reduce damages caused by flash flood events.	☐ NOT meet PC
Sediment transported to surface water Sedimentation caused by erosion in the uplands of the watershed negatively impact Buffalo Creek and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages. Scour of adjacent floodplains increase the sediment load during flood events.	There would be a reduction in sediments entering the Chesapeake Bay. Water quality would be beneficially effected and result in more outdoor recreation opportunities.	☐ NOT meet PC	There would be a reduction in sediments entering the Chesapeake Bay. Water quality would be beneficially effected and result in more outdoor recreation opportunities.	☐ NOT meet PC	Reduction in sediment entering the watershed and the Chesapeake Bay due to reduced velocities of water conveyance during high rain events.	☐ NOT meet PC

Nutrients transported to surface water Water quality is negatively affected by nutrients, metals, and runoff from rural landscapes within the watershed. Many streams within the watershed have elevated levels of fecal coliform from pasture/cropland, failing septic systems, and residential stormwater sources. There are also elevated iron from oil and gas operations, stormwater sources, unpaved roads, barren land, abandoned mines, forestry operations, and streambank erosion.	There would be a reduction of nutrients in surface water with the exclusion of livestock from the stream in conjunction with natural stream and riparian area restoration.	☐ NOT meet PC	There would be a reduction of nutrients in surface water with the installation of conservation practices such as Nutrient Management, Prescribed Grazing, and Access Control.	☐ NOT meet PC	Enhancements and installation of wetlands and other green infrastructure can reduce nutrients transported to surface water within the local watershed as well as the Chesapeake Bay	☐ NOT meet PC	
F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	**I. (continued)**						
	Alternative 3		***Alternative 4***		***Alternative 5***		
	Amount, Status, Description *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	
AIR							
No resource concern identified Air quality is not currently a resource concern in the watershed.	No effect	☐ NOT meet PC	Localized odors and particulate matter concerns could be addressed through conservation practices such as Waste Storage Facilities or Windbreaks/Shelterbelts.	☐ NOT meet PC	No effect	☐ NOT meet PC	
PLANTS							
Plant structure and composition The watershed provides for both agricultural crops as well as naturally vegetated areas that provide wildlife habitat. There is a lack of plant species diversity, specifically along streams in riparian areas, and a presence of invasive species.	Improved riparian areas will provide more naturally occurring plant species. Fencing streams and restoration of riparian areas could result in a loss of pasture or crop land.	☐ NOT meet PC	Plant structure and composition would benefit from properly managed grazing (Prescribed Grazing and associated practices) as well as through implementation of Forest Stand Improvement in the watershed.	☐ NOT meet PC	Plant structure and composition would be improved through the installation of green infrastructure- wetlands, rain gardens, tree plantings, etc.	☐ NOT meet PC	
ANIMALS							
Terrestrial habitat for wildlife and invertebrates Game and non-game species of wildlife are found within the watershed, however habitat is not ideal. There are 4 threatened, endangered, or candidate species found in the watershed.	Terrestrial habitat would be improved through the creation of riparian areas.	☐ NOT meet PC	Terrestrial wildlife habitat would be improved through proper livestock grazing in pastures, invasive species control across all landuses, and implementation of forest stand improvement in woodlands.	☐ NOT meet PC	Terrestrial habitat would be improved through the installation of green infrastructure- wetlands, rain gardens, tree plantings, etc.	☐ NOT meet PC	
Aquatic habitat for fish and other organisms Sedimentation and nutrients are negatively effecting aquatic fish and invertebrate species habitat.	Aquatic habitat would be improved by installing practices return the streambed to a more natural value and function.	☐ NOT meet PC	Aquatic habitat would be improved by the reduction in sedimentation of the stream caused by upland soil erosion through the installation of conservation practices typical of the region.	☐ NOT meet PC	Aquatic habitat would be improved by the reduction and sedimentation of stream caused by high velocities of water during storm events. Aquatic habitat would also benefit from enhancement and installation of wetlands.	☐ NOT meet PC	
ENERGY							
No resource concern identified This area has various active and abandoned infrastructure associated with resource extraction for energy production, transmission, and distribution.	No effect	☐ NOT meet PC	No effect	☐ NOT meet PC	Existing structures could be retrofitted for hydroelectricity production.	☐ NOT meet PC	

Human Economic and Social Considerations			
Public Health and Safety Damaging unpredictable floods with increasing severity over the past few decades. Flooding impacts residents' access to emergency services, results in loss of land, and creates unsanitary conditions in effected residences and businesses.	While this alternative does not provide substantial, additional protection from flooding and risk of loss of life, it would create opportunities for increased outdoor recreation that is associated with healthy streams. Implementation of this alternative would likely reduce erosion, sedimentation, and flooding of roads and bridges, resulting in increased safety for the public and reduction in maintenance activates. There would also be less disruptions to regular traffic, as well as emergency vehicles.	While this alternative does not provide substantial, additional protection from flooding and risk of loss of life, it would create opportunities for increased outdoor recreation that is associated with healthy streams. Implementation of this alternative would likely reduce erosion, sedimentation, and flooding of roads and bridges, resulting in increased safety for the public and reduction in maintenance activates. There would also be less disruptions to regular traffic, as well as emergency vehicles.	This alternative would provide a reduction of damages from flash flooding events resulting in loss of life and transportation disruptions.

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.

In Section "G" complete and attach Environmental Procedures Guide Sheets for documentation as applicable. Items with a "●" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.

G. Special Environmental Concerns (Document existing/ benchmark conditions)	J. Impacts to Special Environmental Concerns					
	Alternative 3		***Alternative 4***		***Alternative 5***	
	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action
●Clean Air Act *Guide Sheet* Washington Co, PA is designated as a non-attainment area for the US EPA 2008 8-hr ozone standard.	May Affect It is likely that no permitting or authorization is necessary. The activity is expected to only have minor local impacts to air quality during construction and would not be expected to violate standards. Advise the client to contact the appropriate air quality regulatory agency for verification.	☐	No Effect Land treatment practices are not likely to negatively effect air quality.	☐	May Affect It is likely that no permitting or authorization is necessary. The activity is expected to only have minor local impacts to air quality during construction and would not be expected to violate standards. Advise the client to contact the appropriate air quality regulatory agency for verification.	☐
●Clean Water Act / Waters of the U.S. *Guide Sheet* Permitted actions may involve or likely result in the discharge or placement of dredged or fill material in or other pollutants into waters of the US. Ephemeral, intermittent, and perennial streams and certain wetlands will be considered as waters of the US. Mitigation for unavoidable impacts should be expected under Sec. 404 of the Clean Water Act.	May Affect Installation of any water control structures will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation for stream impacts may also be required.	☐	No Effect Land treatment practices are not likely to negatively effect Waters of the US.	☐	May Affect Installation of any water control structures will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins.	☐
●Coastal Zone Management *Guide Sheet* There are no costal zones present in or near the watershed.	No Effect	☐	No Effect	☐	No Effect	☐
Coral Reefs *Guide Sheet* There are no coral reefs present in or near the watershed.	No Effect	☐	No Effect	☐	No Effect	☐

●Cultural Resources / Historic Properties *Guide Sheet* There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, WV SHPO, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	May Affect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐	May Affect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐	May Affect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐
●Endangered and Threatened Species *Guide Sheet* There is a total of 4 Federally listed threatened, endangered, or candidate species potentially found in this watershed listed by the US Fish and Wildlife Service (USFWS), monarch butterfly, Indiana bat, Northern long-eared bat, and tricolored bat.	May Affect This alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Federal, state, and local wildlife agencies will be consulted prior to construction.	☐	May Affect This alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Conservation practices will be evaluated on a plan by plan basis through the Interagency Coordinator Tool and all required avoidance strategies will be followed.	☐	May Affect This alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Federal, state, and local wildlife agencies will be consulted prior to construction.	☐
Environmental Justice *Guide Sheet* The watershed is completely within the Appalachian Region. Brooke and Ohio Counties in WV and Washington County in PA are not designated as "limited-resource area" by USDA. All three counties are designated as "transitional" by the Appalachian Regional Commission, indicating that they are below the national average in one of the three indicators, including unemployment rate, per capita market income, and poverty rate.	May Affect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐	May Affect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐		☐
●Essential Fish Habitat *Guide Sheet* This area is not designated as Essential Fish Habitat.	No Effect	☐	No Effect	☐	No Effect	☐
Floodplain Management *Guide Sheet* Brooke County has a floodplain management ordinance that requires permits for repair, relocation, or construction of buildings, provides minimum standards for construction, and spells out penalties for violations of the ordinance. FEMA has designated much of the area adjacent to Buffalo Creek and its tributaries as Zone A. Much of this area is developed for agricultural and urban uses.	May Affect Floodplain management would be a consideration during the design process of natural stream restoration and would likely be benefited.	☐	No Effect Land treatment practices are not likely to negatively effect flood plains. Annual flooding would likely be reduced to the decreased sedimentation of the stream.	☐	No Effect Annual flooding would likely be reduced to the decreased sedimentation of the stream and increase water holding capacities in wetlands and rain gardens.	☐
Invasive Species *Guide Sheet* Invasive species are found in the watershed.	May Affect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	☐	May Affect Invasive species occur within the watershed and would be controlled through scheduled land treatment activates on privately owned or operated lands.	☐	May Affect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	☐

●Migratory Birds/Bald and Golden Eagle Protection Act *Guide Sheet* Migratory birds and eagles utilize the Buffalo Creek Watershed habitats. There is a total of 14 federally listed birds in the area. The birds listed are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in the project location.	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐
Natural Areas *Guide Sheet* Federal: The U.S. Fish and Wildlife Service owns the Ohio River Islands National Wildlife Refuge in the watershed. State: The West Virginia Division of Natural Resources manages Castlemans Run Wildlife Management Area within the watershed. The WV DNR also manages the Cross Creek Wildlife Management Area, which is not within the watershed but in close proximity to the watershed.	No Effect	☐	No Effect	☐	No Effect	☐
Prime and Unique Farmlands *Guide Sheet* Presently in the WV portion of the watershed, there are 1,787 acres of Prime Farmland, which accounts for 2% of land in the watershed. Additionally, there are 0 acres of Farmland of Local Importance and 18,468 acres of Farmland of Statewide Importance. There are no Farmland Protection Boards actively conserving land. The threat of conversion is low. No similar data for PA was readily available.	No Effect Conversion of prime and unique farmlands is not anticipated with this alternative.	☐	No Effect Conversion of prime and unique farmlands is not anticipated with this alternative.	☐	No Effect Conservation of prime and unique farmlands is not anticipated with this alternative.	☐
Riparian Area *Guide Sheet* There are riparian areas present in or near the project area. Riparian areas found in this region are generally characterized as vegetated and un-vegetated. These areas are often utilized for agricultural purposes.	May Affect Riparian areas will be enhanced as part of this alternative.	☐	May Affect Riparian areas will be enhanced as part of this alternative.	☐	May Affect Riparian areas will be enhanced as part of this alternative.	☐
Scenic Beauty *Guide Sheet* Areas of potential scenic beauty in this watershed are typical of adjacent Appalachian Plateau area and common to the region.	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Ridge and Valley physiographic province.	☐	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Ridge and Valley physiographic province.	☐	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Ridge and Valley physiographic province.	☐

●Wetlands *Guide Sheet* There are 1,778 acres of wetlands within the Buffalo Creek watershed which consist of the following: 125 acres of Freshwater Emergent Wetlands; 85 acres of Freshwater Forested/Shrub Wetlands; 171 acres of Freshwater Pond; 74 acres of Lake; and 1,323 acres of Riverine. Data collected from the US Fish and Wildlife Service National Wetlands Inventory.	No Effect Action is not likely to negatively impact any wetlands in the watershed.	☐	No Effect Action is not likely to negatively affect any wetlands in the watershed.	☐	May Affect Action is likely to have a positive impact on wetlands.	☐
●Wild and Scenic Rivers *Guide Sheet* No designated Wild and Scenic Rivers are in or near the project area.	No Effect	☐	No Effect	☐	No Effect	☐
K. Other Agencies and Broad Public Concerns	***Alternative 3***		***Alternative 4***		***Alternative 5***	
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.	Implementation of natural stream restoration structures must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins.		No easements or permits are likely to be needed. Installation of all land treatment practices will comply with all applicable local, state, and federal laws. Any required permits will be obtained prior to construction.		Implementation of all infrastructure must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins.	
Cumulative Effects Narrative (Describe the cumulative impacts considered, including past, present and known future actions regardless of who performed the actions)	Natural stream restoration would benefit the overall health of the stream and provide additional outdoor recreational opportunities. When applied through out the watershed, the cumulative effects would reduce the impacts of flooding.		Income stability for landowners and farmers in the area, water quality improvements, and improvements to overall environmental health when practices are applied within the same region on many farms. The implementation would cumulatively reduce the impacts of flooding.		Green Infrastructure would benefit the over health of the stream and reduce impacts of flash flooding.	
L. Mitigation (Record actions to avoid, minimize, and compensate)	None		None		None	
M. Preferred Alternative √ preferred alternative	☐		☐		☐	
Supporting reason	Natural stream restoration would benefit the overall heath of the stream.		Implementation of conservation practices to prevent upland erosion causing sediment loading of the water ways.		Reduced impacts of flash flooding and improvement of stream health.	
N. Context (Record context of alternatives analysis)	local		local		local	
The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.						

U.S. Department of Agriculture | NRCS-CPA-52
Natural Resources Conservation Service | 11/2019

ENVIRONMENTAL EVALUATION WORKSHEET

A. Client Name:

B. Conservation Plan ID # (as applicable): Buffalo Creek PIFR
Program Authority (optional): PL-566

C. Identification # (farm, tract, field #, etc. as required):
Buffalo Creek Watershed, Brooke and Ohio County, WV HUC (0503010601)

D. Client's Objective(s) (purpose):
The purpose of this project is to provide measures for flood prevention, watershed protection and agricultural water management in the Buffalo Creek Watershed.

E. Need for Action:
The baseline condition without federal investment is a lack of flood protection, recreation, rural water supply, and other amenities associated with impoundments. Flooding is persistent and results in loss of property and crops, stream bank erosion, and sedimentation of streams.

H. Alternatives

Alternative 6	√ if RMS ☐	*Alternative 7*	√ if RMS ☐	√ if RMS ☐
Floodplain Buyout and Restoration- Address repetitve flood damage by removing structures from the floodplain through demolition or relocation and employing conservation pratices to restore the floodplain to a natural condition. This alternative would address resource concerns associated with flooding, erosion and sedimentation, water quality, recreational opportunities, and fish and wildlife habitat. Appropriate conservation practices will be employed at areas where structures are removed to reestablish natural floodplain habitats. Technical and financial assistance would be focused in the area through the Watershed Protection and Flood Prevention Act as well as traditional Farm Bill programs.		Combination of all alternatives - Land Treatment, Stream Restoration, Channelization, Green Infrastructure, and New Structures. Strategic installation of a combination of all practices and structures evaluated in other alternatives could more fully address concerns associated with flooding, erosion and sedimentation, water quality, recreation, and water supply. Technical and financial assistance would be focused in the area through the Watershed Protection and Flood Prevention Act as well as traditional Farm Bill programs such as CTA, EQIP and NWQI, along with funding and in kind services provided by local sponsors		

Resource Concerns

In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).

I. Effects of Alternatives

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	*Alternative 6* **Amount, Status, Description** *(Document both short and long term impacts)*	√ if does NOT meet PC	*Alternative 7* **Amount, Status, Description** *(Document both short and long term impacts)*	√ if does NOT meet PC	**Amount, Status, Description** *(Document both short and long term impacts)*	√ if does NOT meet PC
SOIL						
Sheet and rill erosion Sedimentation caused by erosion in the uplands of the watershed negatively impact Buffalo Creek and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages.	Removing structures and applying conservation practices in floodplains buy-out areas would reduce soil erosion across all land uses and reduce sediment loads in waterways.	☐ NOT meet PC	Strategic installation of flood control structures, land treatment practices, natural stream restoration and green infrastructure would reduce soil erosion across all land uses and reduce sediment loads in waterways.	☐ NOT meet PC		☐ NOT meet PC
WATER						
Ponding and flooding Flooding is a continuing resource concern in the watershed, and the risk of flooding increases over the next few decades as storms become more frequent and severe, as the infrastructure ages, and as development encroaches on the floodplain. Flooding is a threat to property, access to utilities, emergency services, transportation, agricultural land, and crops.	Removing structures and applying conservation practices in floodplains buy-out areas would reduce the impact of flooding on both private property and on public utilities, emergency services, and transportation.	☐ NOT meet PC	Strategic installation of flood control structures, land treatment practices, natural stream restoration and green infrastructure would reduce sedimentation of streams to allow more capacity during flood events and allow for more water retention and controlled flow from flood control dams and rain gardens/wetlands.	☐ NOT meet PC		☐ NOT meet PC

Sediment transported to surface water Sedimentation caused by erosion in the uplands of the watershed negatively impact Buffalo Creek and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages. Scour of adjacent floodplains increase the sediment load during flood events.	Removing structures and applying conservation practices in floodplains buy-out areas would reduce sediment loads in waterways by reducing exposed and bare land within the flood plain and by providing a vegetated riparian buffer zone along the stream to reduce surface runoff from adjacent areas.	☐ NOT meet PC	Strategic installation of flood control structures, land treatment practices, natural stream restoration and green infrastructure would reduce sediment loads in waterways.	☐ NOT meet PC		☐ NOT meet PC
Nutrients transported to surface water Water quality is negatively affected by nutrients, metals, and runoff from rural landscapes within the watershed. Many streams within the watershed have elevated levels of fecal coliform from pasture/cropland, failing septic systems, and residential stormwater sources. There are also elevated iron from oil and gas operations, stormwater sources, unpaved roads, barren land, abandoned mines, forestry operations, and streambank erosion.	Removing structures and applying conservation practices in floodplains buy-out areas would reduce nutients transported to surface waters by eliminating straigh pipe and failing septic systems within the flood plain and by providing a vegetated riparian buffer zone along the stream to reduce surface runoff from adjacent areas.	☐ NOT meet PC	Strategic installation of flood control structures, land treatment practices, natural stream restoration and green infrastructure nutrient transportation to waterways and the Chesapeake Bay	☐ NOT meet PC		☐ NOT meet PC

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	**I. (continued)**					
	Alternative 6		***Alternative 7***			
	Amount, Status, Description *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**
AIR						
No resource concern identified Air quality is not currently a resource concern in the watershed.	Air quality may be slightly adversely impacted locally during construction activities (dust and exhaust from construction equipment). The increases are expected to remain well within the air quality standards and would be temporary.	☐ NOT meet PC	Air quality may be slightly adversely impacted locally during construction activities (dust and exhaust from construction equipment). The increases are expected to remain well within the air quality standards and would be temporary.	☐ NOT meet PC		☐ NOT meet PC
PLANTS						
Plant structure and composition The watershed provides for both agricultural crops as well as naturally vegetated areas that provide wildlife habitat. There is a lack of plant species diversity, specifically along streams in riparian areas, and a presence of invasive species.	Plant structure and composition would be improved in restored floodplain riparian areas. Native vegetation and hydrophytic vegetation would benefit from floodplain and wetland restoration.	☐ NOT meet PC	Plant structure and composition would be improved on cropland and pasture land, riparian areas would be restored to natural, native vegetation, hydrophytic vegetation would benefit from wetland restoration and green infrastructure.	☐ NOT meet PC		☐ NOT meet PC
ANIMALS						
Terrestrial habitat for wildlife and invertebrates Game and non-game species of wildlife are found within the watershed, however habitat is not ideal. There are 4 threatened, endangered, or candidate species found in the watershed.	Terrestrial streambank and floodplain habitats, including wetlands, would be increased and improved in floodplain buy-out areas through the implimentation of appropriate conservation practices.	☐ NOT meet PC	Terrestrial habitat would be improved through the implementation of wildlife oriented land treatment practices, riparian areas created as part of natural stream restoration and green infrastructure, and creation/enhancement of wetlands. Displacement of wildlife and destruction of habitat due to flooding would be significantly reduced.	☐ NOT meet PC		☐ NOT meet PC

Aquatic habitat for fish and other organisms Sedimentation and nutrients are negatively effecting aquatic fish and invertebrate species habitat.	The effects of sedimentation and nutrient enrichment on aquatic habitat would be reduced by eliminating sources of both and providing a restored floodplain riparian zone to reduce impacts from other areas.	☐ NOT meet PC	The effects of sedimentation on aquatic wildlife would be significantly controlled with a strategic implementation of all alternatives previously evaluated.	☐ NOT meet PC		☐ NOT meet PC
ENERGY						
No resource concern identified This area has various active and abandoned infrastructure associated with resource extraction for energy production, transmission, and distribution.	Applicants that would choose to participate in a floodplain buyout would decrease energy use in the area.	☐ NOT meet PC	Hydroelectric power generation could be included as an element in the design of the structures to provide clean energy to the region.	☐ NOT meet PC		☐ NOT meet PC
Human Economic and Social Considerations						
Public Health and Safety Damaging unpredictable floods with increasing severity over the past few decades. Flooding impacts residents' access to emergency services, results in loss of land, and creates unsanitary conditions in effected residences and businesses.	Removing structures and applying conservation practices in floodplains buy-out areas would reduce flood impacts to residences and businesses. It would also reduce the impact of flooding on emergency services, public utilities, and transportattion. Further, it would create short term structure demolision or relocation related jobs and could provide improved recreation opportunities through increased stream access.		Strategic planning and installation of all previously evaluated alternatives would increase flood protection of the counties' residences and business. It would also provide the opportunity for rural water supply, recreation opportunities, and a short term creation of jobs during construction. Over all watershed and stream health would be improved.			

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.

In Section "G" complete and attach Environmental Procedures Guide Sheets for documentation as applicable. Items with a "●" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.

G. Special Environmental Concerns (Document existing/ benchmark conditions)	**J. Impacts to Special Environmental Concerns**					
	Alternative 6		***Alternative 7***			
	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action
●Clean Air Act *Guide Sheet* Washington Co, PA is designated as a non-attainment area for the US EPA 2008 8-hr ozone standard.	May Affect It is likely that no permitting or authorization is necessary. The activity is expected to only have minor local impacts to air quality during construction and would not be expected to violate standards. Advise the client to contact the appropriate air quality regulatory agency for verification.	☐	No Effect It is likely that no permitting or authorization is necessary. The activity is expected to only have minor local impacts to air quality during construction and would not be expected to violate standards. Advise the client to contact the appropriate air quality regulatory agency for verification.	☐		☐
●Clean Water Act / Waters of the U.S. *Guide Sheet* Permitted actions may involve or likely result in the discharge or placement of dredged or fill material in or other pollutants into waters of the US. Ephemeral, intermittent, and perennial streams and certain wetlands will be considered as waters of the US. Mitigation for unavoidable impacts should be expected under Sec. 404 of the Clean Water Act.	May Affect Removal of structures, including buried septic lines or existing resident installed bank stabilization features, within the floodplain must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation for stream impacts may also be required.	☐	No Effect Installation of any water control structures will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation for stream impacts may also be required.	☐		☐
●Coastal Zone Management *Guide Sheet* There are no costal zones present in or near the watershed.	No Effect	☐	No Effect	☐		☐

Coral Reefs *Guide Sheet* There are no coral reefs present in or near the watershed.	No Effect	☐	No Effect	☐		☐
●Cultural Resources / Historic Properties *Guide Sheet* There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, WV SHPO, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	May Affect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐	No Effect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐		☐
●Endangered and Threatened Species *Guide Sheet* There is a total of 4 Federally listed threatened, endangered, or candidate species potentially found in this watershed listed by the US Fish and Wildlife Service (USFWS), monarch butterfly, Indiana bat, Northern long-eared bat, and tricolored bat.	May Affect Removing structures and applying conservation practices in floodplains buy-out areas may impact habitat for threatened, endangered, or rare species. Federal, state, and local wildlife agencies will be consulted prior to construction.	☐	May Affect The structural alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Federal, state, and local wildlife agencies will be consulted prior to construction.	☐		☐
Environmental Justice *Guide Sheet* The watershed is completely within the Appalachian Region. Brooke and Ohio Counties in WV and Washington County in PA are not designated as “limited-resource area” by USDA. All three counties are designated as “transitional” by the Appalachian Regional Commission, indicating that they are below the national average in one of the three indicators, including unemployment rate, per capita market income, and poverty rate.	No Effect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐	No Effect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐		☐
●Essential Fish Habitat *Guide Sheet* This area is not designated as Essential Fish Habitat.	No Effect	☐	No Effect	☐		☐
Floodplain Management *Guide Sheet* Brooke County has a floodplain management ordinance that requires permits for repair, relocation, or construction of buildings, provides minimum standards for construction, and spells out penalties for violations of the ordinance. FEMA has designated much of the area adjacent to Buffalo Creek and its tributaries as Zone A. Much of this area is developed for agricultural and urban uses.	May Affect This alternative will result in the protection of floodplains due to the decreased impacts of flooding.	☐	No Effect This alternative will result in the protection of floodplains due to the decreased impacts of flooding.	☐		☐

Invasive Species *Guide Sheet* Invasive species are found in the watershed.	May Affect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	☐	No Effect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	☐		☐
●Migratory Birds/Bald and Golden Eagle Protection Act *Guide Sheet* Migratory birds and eagles utilize the Buffalo Creek Watershed habitats. There is a total of 14 federally listed birds in the area. The birds listed are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in the project location.	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐		☐
Natural Areas *Guide Sheet* Federal: The U.S. Fish and Wildlife Service owns the Ohio River Islands National Wildlife Refuge in the watershed. State: The West Virginia Division of Natural Resources manages Castlemans Run Wildlife Management Area within the watershed. The WV DNR also manages the Cross Creek Wildlife Management Area, which is not within the watershed but in close proximity to the watershed.	No Effect	☐	No Effect	☐		☐
Prime and Unique Farmlands *Guide Sheet* Presently in the WV portion of the watershed, there are 1,787 acres of Prime Farmland, which accounts for 2% of land in the watershed. Additionally, there are 0 acres of Farmland of Local Importance and 18,468 acres of Farmland of Statewide Importance. There are no Farmland Protection Boards actively conserving land. The threat of conversion is low. No similar data for PA was readily available.	May Affect Alternative would provide protection of prime farmland through the reduction of streambank erosion, sheet and rill erosion, and sedimentation of streams.	☐	May Affect Alternative would provide protection of prime farmland through the reduction of streambank erosion, sheet and rill erosion, and sedimentation of streams.	☐		☐
Riparian Area *Guide Sheet* There are riparian areas present in or near the project area. Riparian areas found in this region are generally characterized as vegetated and un-vegetated. These areas are often utilized for agricultural purposes.	May Affect Riparian areas would be enhanced through the installation of natural stream restoration, land treatment programs, and green infrastructure.	☐	May Affect Riparian areas would be enhanced through the installation of natural stream restoration, land treatment programs, and green infrastructure.	☐		☐
Scenic Beauty *Guide Sheet* Areas of potential scenic beauty in this watershed are typical of adjacent Appalachian Plateau area and common to the region.	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Appalachian Plateau physiographic province.	☐	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Ridge and Valley physiographic province.	☐		☐

●Wetlands *Guide Sheet* There are 1,778 acres of wetlands within the Buffalo Creek watershed which consist of the following: 125 acres of Freshwater Emergent Wetlands; 85 acres of Freshwater Forested/Shrub Wetlands; 171 acres of Freshwater Pond; 74 acres of Lake; and 1,323 acres of Riverine. Data collected from the US Fish and Wildlife Service National Wetlands Inventory.	May Affect Alternative would enhance the values and functions of wetlands and surrounding ecosystems.	☐	No Effect Alternative would enhance the values and functions of wetlands and surrounding ecosystems.	☐	☐
●Wild and Scenic Rivers *Guide Sheet* No designated Wild and Scenic Rivers are in or near the project area.	No Effect	☐	No Effect	☐	☐
K. Other Agencies and Broad Public Concerns	***Alternative 6***		***Alternative 7***		
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.	Removing structures, including buried septic lines or existing resident installed bank stabilization features, and applying conservation practices in floodplains buy-out areas must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation may also be required.		Installation of any water control structures will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation may also be required.		
Cumulative Effects Narrative (Describe the cumulative impacts considered, including past, present and known future actions regardless of who performed the actions)	Removing structures and applying conservation practices in floodplains buy-out areas will improve the areas overall resilience to flooding and improve quality of life for the ecosystems and the residents.		Strategic installation of all previously evaluated alternatives across the watershed will improve the areas overall resilience to flooding and improve quality of life for the ecosystems and the residents.		
L. Mitigation (Record actions to avoid, minimize, and compensate)	Mitigation would likely be required for the length of streams impacted. Vegetation will be established on disturbed areas immediately according to a vegetative plan developed conjunction with NRCS and local sponsors.		Mitigation would likely be required for the length of streams impacted. Vegetation will be established on disturbed areas immediately following construction to a vegetative plan developed conjunction with NRCS and local sponsors.		
M. Preferred Alternative	√ preferred alternative	☐	☐		☐
	Supporting reason	Removing structures and applying conservation practices in floodplains buy-out areas will reduce the impact of flooding.	Installation of various flood control and land treatment practices will provide a holistic approach to flood resiliency.		

N. Context (Record context of alternatives analysis) | local | local |

The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.

O. To the best of my knowledge, the data shown on this form is accurate and complete:

In the case where a non-NRCS person (e.g. a TSP) assists with planning they are to sign the first signature block and then NRCS is to sign the second block to verify the information's accuracy.

Signature (TSP if applicable)	Title	Date

Signature (NRCS)	Title	Date
CHRISTI HICKS Digitally signed by CHRISTI HICKS Date: 2024.09.26 13:58:37 -04'00'		

If preferred alternative is not a federal action where NRCS has control or responsibility and this NRCS-CPA-52 is shared with someone other than the client then indicate to whom this is being provided.

The following sections are to be completed by the Responsible Federal Official (RFO)

NRCS is the RFO if the action is subject to NRCS control and responsibility (e.g., actions financed, funded, assisted, conducted, regulated, or approved by NRCS). These actions do not include situations in which NRCS is only providing technical assistance because NRCS cannot control what the client ultimately does with that assistance and situations where NRCS is making a technical determination (such as Farm Bill HEL or wetland determinations) not associated with the planning process.

P. Determination of Significance or Extraordinary Circumstances

To answer the questions below, consider the severity (intensity) of impacts in the contexts identified above. Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

If you answer ANY of the below questions "yes" then contact the State Environmental Liaison as there may be extraordinary circumstances and significance issues to consider and a site specific NEPA analysis may be required.

Yes	No	
☐	☑	• Is the preferred alternative expected to cause significant effects on public health or safety?
☐	☑	• Is the preferred alternative expected to significantly affect unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?
☐	☑	• Are the effects of the preferred alternative on the quality of the human environment likely to be highly controversial?
☐	☑	• Does the preferred alternative have highly uncertain effects or involve unique or unknown risks on the human environment?
☐	☑	• Does the preferred alternative establish a precedent for future actions with significant impacts or represent a decision in principle about a future consideration?
☐	☑	• Is the preferred alternative known or reasonably expected to have potentially significant environment impacts to the quality of the human environment either individually or cumulatively over time?
☑	☐	• Will the preferred alternative likely have a significant adverse effect on ANY of the special environmental concerns? Use the Evaluation Procedure Guide Sheets to assist in this determination. This includes, but is not limited to, concerns such as cultural or historical resources, endangered and threatened species, environmental justice, wetlands, floodplains, coastal zones, coral reefs, essential fish habitat, wild and scenic rivers, clean air, riparian areas, natural areas, and invasive species.
☐	☑	• Will the preferred alternative threaten a violation of Federal, State, or local law or requirements for the protection of the environment?

Q. NEPA Compliance Finding (check one)

The preferred alternative:		**Action required**
☐	1) is **not a federal action** where the agency has control or responsibility.	Document in "R.1" below. No additional analysis is required
☐	2) is a federal action **ALL** of which is **categorically excluded** from further environmental analysis **AND** there are **no extraordinary circumstances as identified in Section "P".**	Document in "R.2" below. No additional analysis is required
☐	3) is a federal action that has been **sufficiently analyzed** in an existing Agency state, regional, or national NEPA document **and** there are no predicted significant adverse environmental effects or extraordinary circumstances.	Document in "R.1" below. No additional analysis is required.
☐	4) is a federal action that has been sufficiently analyzed in another Federal agency's NEPA document (EA or EIS) that addresses the proposed NRCS action and its' effects **and has been formally adopted by NRCS**. NRCS is required to prepare and publish its own Finding of No Significant Impact for an EA or Record of Decision for an EIS when adopting another agency's EA or EIS document. (**Note: This box is not applicable to FSA)**	Contact the State Environmental Liaison for list of NEPA documents formally adopted and available for tiering. Document in "R.1" below. No additional analysis is required
☑	5) is a federal action that has **NOT** been sufficiently analyzed or may involve predicted significant adverse environmental effects or extraordinary circumstances and may require an EA or EIS.	Contact the State Environmental Liaison. Further NEPA analysis required.

R. Rationale Supporting the Finding	
R.1 Findings Documentation	At this point in the planning process, the interdisciplinary team has determined that the Environmental Document for the project may be an Environmental Assessment. However, it is acknowledged that an Environmental Impact Statement could be required if significant or controversial issues arise during further planning.
R.2 Applicable Categorical Exclusion(s) **(more than one may apply)** 7 CFR Part 650 *Compliance With NEPA* , subpart 650.6 *Categorical Exclusions* states prior to determining that a proposed action is categorically excluded under paragraph (d) of this section, the proposed action must meet six sideboard criteria. See NECH 610.116.	

I have considered the effects of the alternatives on the Resource Concerns, Economic and Social Considerations, Special Environmental Concerns, and Extraordinary Circumstances as defined by Agency regulation and policy and based on that made the finding indicated above.

S. Signature of Responsible Federal Official:

JON BOURDON

Digitally signed by JON BOURDON
Date: 2024.10.02 16:42:26 -04'00'

Signature	Title	Date

Additional notes

Appendix D:

Supporting Information (T&E and Invasive Species)

Endangered species

Listed species and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

Additional information on endangered species data is provided below.

The following species are potentially affected by activities in this location:

THUMBNAILS | LIST

Mammals

NAME	STATUS
Indiana Bat CH Myotis sodalis Wherever found	Endangered
Northern Long-eared Bat Myotis septentrionalis Wherever found	Endangered
Tricolored Bat Perimyotis subflavus Wherever found	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

This location overlaps the following National Wildlife Refuge lands:

LAND	ACRES
OHIO RIVER ISLANDS NATIONAL WILDLIFE REFUGE	3,282.15 acres

Fish hatcheries

There are no fish hatcheries at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

RELATED LINKS

Birds of Conservation Concern

Measures for avoiding and minimizing impacts to birds

Nationwide conservation measures for birds

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

THUMBNAILS | LIST

PROBABILITY OF PRESENCE SUMMARY

NAME / LEVEL OF CONCERN	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* Non-BCC Vulnerable	Breeds Sep 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* BCC Rangewide (CON)	Breeds May 15 to Oct 10
Black-capped Chickadee *Poecile atricapillus practicus* BCC - BCR	Breeds Apr 10 to Jul 31
Bobolink *Dolichonyx oryzivorus* BCC Rangewide (CON)	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* BCC Rangewide (CON)	Breeds May 20 to Aug 10
Cerulean Warbler *Dendroica cerulea* BCC Rangewide (CON)	Breeds Apr 27 to Jul 20

Chimney Swift Chaetura pelagica BCC Rangewide (CON)	Breeds Mar 15 to Aug 25
Golden-winged Warbler Vermivora chrysoptera BCC Rangewide (CON)	Breeds May 1 to Jul 20
Kentucky Warbler Oporornis formosus BCC Rangewide (CON)	Breeds Apr 20 to Aug 20
Northern Saw-whet Owl Aegolius acadicus acadicus BCC - BCR	Breeds Mar 1 to Jul 31
Prairie Warbler Dendroica discolor BCC Rangewide (CON)	Breeds May 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus BCC Rangewide (CON)	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus BCC - BCR	Breeds elsewhere
Wood Thrush Hylocichla mustelina BCC Rangewide (CON)	Breeds May 10 to Aug 31

(https://ipac.ecosphere.fws.gov/location and upload shapefile of watershed)

Listing status

The Endangered Species Act (ESA) and the guidance and policies of the U.S. Fish and Wildlife Service (Service) define many categories of listing statuses for species. As a general rule, IPaC uses the term "listed species" to generically refer to species that may belong to any of the categories.

Endangered (E)

Any species which is in danger of extinction throughout all or a significant portion of its range. Endangered species are protected by the take prohibitions of section 9 under the ESA.

Threatened (T)

Any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Threatened species are protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA.

Candidate (C)

Any species for which the Service has sufficient information on its biological status and threats to propose it as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. Candidate species are not protected by the take prohibitions of section 9 of the ESA.

Proposed endangered (PE)

Any species the Service has determined is in danger of extinction throughout all or a significant portion of its range and the Service has proposed a draft rule to list as endangered. Proposed endangered species are not protected by the take prohibitions of section 9 of the ESA until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

Proposed threatened (PT)

Any species the Service has determined is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and the Service has proposed a draft rule to list as threatened. Proposed threatened species are not protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA, until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

Similarity of Appearance, Endangered (SAE)

Any species listed as endangered due to similarity of appearance with another species that is listed as endangered. Species listed under a similarity of appearance are not biologically endangered and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from an endangered species and where the additional threat posed to the endangered species by the similarity of appearance. Species listed under a similarity of appearance may be protected by the take prohibitions of section 9 under the ESA, where they overlap with the listed entity they were listed to protect.

Similarity of Appearance, Threatened (SAT)

Any species listed as threatened due to similarity of appearance with another species that is listed as threatened. Species listed under a similarity of appearance are not biologically endangered and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from a threatened species and where the additional threat posed to the threatened species by the similarity of appearance. Species listed under a similarity of appearance may be protected by the take prohibitions of section 9 under the ESA, where they overlap with the listed entity they were listed to protect.

Proposed Similarity of Appearance, Endangered (PSAE)

Any species proposed for listing as endangered due to similarity of appearance with another species that is listed as endangered, but a final rule to list has not yet been published. Species proposed for listing under a similarity of appearance are not biologically endangered and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from an endangered species and where the additional threat posed to the endangered species by the similarity of appearance. Proposed similarity of appearance are not protected by the take prohibitions of section 9 of the ESA until the rule is finalized.

Proposed Similarity of Appearance, Threatened (PSAT)

Any species proposed for listing as threatened due to similarity of appearance with another species that is listed as threatened, but a final rule to list has not yet been published. Species proposed for listing under a similarity of appearance are not biologically threatened and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from a threatened species and where the additional threat posed to the threatened species by the similarity of appearance. Proposed threatened species are not protected by the take prohibitions of section 9 of the ESA until the rule is finalized.

Emergency listing, Endangered (EmE)

Any species for which the Secretary of the Department of the Interior (Secretary) has determined it is at significant immediate risk of survival and publishes an emergency listing as endangered. The emergency listing is temporary (240 days). During this time the Service evaluates the species under standard listing protocols. Emergency-listed endangered species are afforded all the protections afforded by the ESA.

Emergency listing, Threatened (EmT)

Any species for which the Secretary has determined it is at significant immediate risk of survival and publishes an emergency listing as threatened. The emergency listing is temporary (240 days). During this time the Service evaluates the species under standard listing protocols. Emergency-listed threatened species are protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA.

Experimental population, Essential (EXPE)

A population that has been established within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has determined an essential population is necessary for the continued existence of the species. Essential experimental populations are treated as threatened species and afforded all the protections afforded to threatened species by the ESA.

Experimental population, Non-essential (EXPN)

A population that has been established within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has determined a non-essential population is not necessary for the continued existence of the species. For the purposes of consultation, non-essential experimental populations are treated as threatened species on National Wildlife Refuge and National Park land (require consultation under 7(a)(2) of the ESA) and as a proposed species on private land (no section 7(a)(2) requirements, but Federal agencies must not jeopardize their existence (section 7(a)(4))).

Proposed experimental population, Essential (PEXPE)

A population that has been proposed for establishment within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has proposed an essential population is necessary for the continued existence of the species. Proposed essential experimental populations will be treated as threatened species and afforded all the protections afforded to threatened species by the ESA when finalized. Prior to a final designation under section 10(j) of the ESA, proposed experimental populations do not require consultation under section 7(a)(2) of the ESA and are not protected by the take prohibitions of section 9. Federal agencies must confer with the Service for any actions that may jeopardize the continued existence of proposed species.

Proposed experimental population, Non-essential (PEXPN)

A population that has been proposed for establishment within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has determined a non-essential population is not necessary for the continued existence of the species. Once finalized, for the purposes of consultation, non-essential experimental populations are treated as threatened species on National Wildlife Refuge and National Park land (require consultation under 7(a)(2) of the ESA) and as a proposed species on private land (no section 7(a)(2) requirements, but Federal agencies must not jeopardize their existence (section 7(a)(4))). Federal agencies must confer with the Service for any actions that may jeopardize the continued existence of proposed species.

Birds of Conservation Concern (BBC)

Bird Conservation Region (BBR)

Continental United States and Alaska (CON)

USFWS Information for Planning and Consultation tool (IPac)

(https://ipac.ecosphere.fws.gov/status/list)

Federally Threatened and Endangered Species in West Virginia

Federally Endangered Species		Critical Habitat	Year Listed
Indiana bat	*Myotis sodalis*	Y	1967
gray bat (accidental)	*Myotis grisescens*		1976
Pink mucket pearlymussel	*Lampsilis abrupta*		1976
Virginia big-eared bat	*Corynorhinus townsendii virginianus*	Y	1979
running buffalo clover *	*Trifolium stoloniferum*		1987
harperella	*Ptilimnium nodosum*		1988
shale barren rockcress	*Arabis serotina*		1989
fanshell	*Cyprogenia stegaria*		1990
purple cat's paw pearlymussel	*Epioblasma obliquata obliquata*		1990
northeastern bulrush *	*Scirpus ancistrochaetus*		1991
northern riffleshell	*Epioblasma torulosa rangiana*		1993
clubshell	*Pleurobema clava*		1993
James spinymussel	*Pleurobema collina*		1998
snuffbox	*Epioblasma triquetra*		2012
rayed bean	*Villosa fabalis*		2012
spectaclecase	*Cumberlandia monodonta*		2012
sheepnose	*Plethobasus cyphyus*		2012
Diamond Darter	*Crystallaria cincotta*	Y	2013
Guyandotte River crayfish	*Cambarus veteranus*	proposed	2016
rusty patched bumble bee	*Bombus affinis*		2017
Candy Darter	*Etheostoma osburni*	proposed	2018
tubercled-blossom pearly mussel	*Epioblasma torulosa torulosa*	extirpated	

Federally Threatened Species		Critical Habitat	4(d) rule	Year Listed
flat-spired three-toothed land snail	*Triodopsis platysayoides*			1978
Madison Cave isopod	*Antrolana lira*	Y		1982
small whorled pogonia	*Isotria medeoloides*			1982
Cheat Mountain salamander	*Plethodon nettingi*			1989
Virginia spiraea	*Spiraea virginiana*			1990
northern long-eared bat	*Myotis septentrionalis*		Y	2015
Big Sandy crayfish	*Cambarus callainus*	proposed		2016
eastern black rail (accidental)	*Laterallus jamaicensis jamaicensis*		Y	2020

Species Propopsed for Listing		Critical Habitat	Status	Year Listed
round hickorynut	*Obovaria subrotunda*	Y	Thr.	2020
longsolid	*Fusconaia subrotunda*	Y	Thr.	2020

* Proposed for delisting

Revised: 30 September 2020

Invasive species examples:

- **Garlic mustard, Japanese honeysuckle** and **kudzu**- invaders of moist forest edges, even those without disturbance.
- **Purple loosestrife**- an incredibly invasive exotic now blanketing emergent wetlands along the Ohio River, and increasing along other major rivers throughout the state. In some cases it replaces native vegetation, threatens rare plant species, and destroys small wetlands.


Garlic mustard

- **Mile-a-minute**- a spiny vine found climbing 10-20 feet into trees, often smothering native shrubs and shading out herbaceous plants along the Ohio River and rivers in the Eastern Panhandle.


Spotted knapweed

- **Japanese knotweed and sachaline knotweed**- two stout, perennial clonal herbs that can out-compete all other vegetation in certain areas.
- **Spotted knapweed, barren brome and tree of heaven**- invaders of shale barrens, limestone glades and barrens, and native grassland communities.

What can you do?

- Become aware of the differences between native and non-native plants and the potential for invasive species to damage native ecosystems. The following items are available from the WVDNR:
  - ❖*Checklist of the Vascular Flora of West Virginia*, a checklist of the native and naturalized vascular plants of the state.
  - ❖*Native Shrubs in Wildlife Landscaping*, a series of information sheets about the use of 50 native shrubs in wildlife planting, produced by the West Virginia Native Plant Society and the West Virginia Wildlife Diversity program.
  - ❖A list of companies within the mid-Atlantic region from which alternative native stock can be purchased.
- Evaluate in advance the wisdom of introducing non-native plants into our state.
- Minimize habitat disturbance in natural areas, reducing the chance for invasion by non-native aggressive plants.
- In extreme cases, consider the eradication of highly problematic non-native invasive plant species, but carefully consider the potential consequences on the entire ecosystem and the likelihood of success. In less severe cases, try to minimize the impact of the invasive plant on the natural area.
- Help educate individuals of the seriousness of the problem and explore the use of native plant species in the management of public lands.
- If you find an unfamiliar plant and it appears to be spreading, have it identified by your local extension agent. If it is a potential invader, members of the WV Invasive Species Working Group will conduct an assessment and make recommendations.

Who is helping?

- The ***West Virginia Invasive Species Working Group***, an inclusive statewide group whose mission is to facilitate communication and collaboration for the prevention or reduction of the negative impacts of invasive species.
- The ***West Virginia Native Plant Society*** encourages nurserymen to cultivate plants native to West Virginia that could be used in conservation and ornamental projects throughout the state as alternatives to non-native invasive plant species.
- The ***West Virginia Garden Club, Inc.,*** the West Virginia Native Plant Society and the WV Division of Natural Resources jointly produced this brochure.
- The ***West Virginia Native Plant Society*** and the ***West Virginia Natural Heritage Program*** have developed informative presentations about invasive plants. Please contact the DNR Elkins office *(below)* to arrange a presentation.
- Several organizations sponsor workshops on identifying problematic plant species.

West Virginia Division of Natural Resources
in cooperation with:
West Virginia Garden Clubs, Inc.
West Virginia Native Plant Society

Cover photos: Background image of Japanese knotweed by Jil M. Swearinger, USDI National Park Service, www.forestryimages.org and Purple loosestrife (inset) by Linda Haugen, USDA Forest Service, www.forestryimages.org

Wildlife Diversity Program
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WVDNR WILDLIFE RESOURCES SECTION

Invasive Plants of West Virginia

www.wvdnr.gov


Kudzu

What are non-native invasive plants?

People have been moving Earth's plants from place to place for centuries. Many of the exotic plants we have introduced to our landscape by intention or accident have been beneficial to us and have had no unfortunate ecological impacts on natural communities. But a small percentage have spread from where they first became established, and have become serious threats to wetlands, shale barrens, prairies, glades and other rare ecosystems.

Invasive plants often get started in areas disturbed by such human activities as road and trail building, timbering, mining, and other activities that remove native vegetation, disturb the soil, or dramatically change the amount of sunlight or moisture that reaches the land. From such situations, a relatively small number of invasive species have moved into natural areas. These species have reproduced rapidly, forming stands that exclude nearly all other plant species. In the worst cases, they radically altered ecosystem processes and natural areas, and displaced native species.

Concerned citizens have long been sounding alarms about the effects of pollution and misuse of land on our native plant and animal communities.

Recently, increasing concern has been expressed that non-native plant species are invading and changing natural areas. These aggressive "weeds" are non-native invasive plants, sometimes referred to as exotic pest plants.

We value Natural Areas!

Natural areas are generally areas of limited development where naturally occurring, functioning ecosystems are supporting the greatest amount of natural biological diversity the nonliving resources (soil, sunlight, minerals, etc.) of that area can support.

- Healthy natural areas have seemingly endless interrelationships among the living and non-living parts of their ecosystems. Life thrives in such areas!
- Natural areas often support rare, threatened and endangered species of plants, animals, and fungi. The natural communities themselves are often rare enough or of such quality that society recognizes the value of conserving them.


Loosestrife infestation.

- Natural areas are valuable parts of the global landscape from which future generations can continue to learn about ecological processes. Areas such as Cranberry Glades, Cranesville Swamp, shale barrens, limestone glades and riverine marshes are a few West Virginia examples.

Non-native invasive plant species, in numerous examples around the world, have reduced available habitat for native species and/or eliminated associated native species altogether. This process has the potential to significantly reduce natural biological diversity.

How do they differ from native species?

Generally, the native plant species of West Virginia are those that were part of plant communities when North America was first settled by Europeans. Change in plant communities is a natural part of life. As Dr. John Randall (The Nature Conservancy) and Janet Marinelli (Brooklyn Botanic Garden), point out in their handbook, *Invasive Plants: Weeds of the Global Garden*:

"New species move in as the climate changes and as soils build up and become richer, or erode and become less fertile.

In the normal course of events, the arrival of new species may be the result of a single catastrophic event like a hurricane, or of gradual change over thousands of years. Humans have vastly accelerated the movement of plants, carrying thousands of species that could not have crossed natural barriers like oceans, mountain ranges and deserts, to new areas.


Stilt grass overtaking an interior mud-flat wetland at Ohio River Island.


Mile-a-minute

Species that have flourished and spread on their own, only after people transported them across barriers they could not otherwise surmount, are considered non-natives. In many areas these plants have overwhelmed the native plants and animals."

What challenges are there in controlling invasive plants?

The number of non-native invasive plant species in West Virginia is rising

Approximately 600 species, nearly 25% of vascular plants found in West Virginia outside of cultivation, are non-native. Each year, ecologists become more aware of the number of invasive plant species within the state and the threats they pose to natural communities.

Native stock plants are available

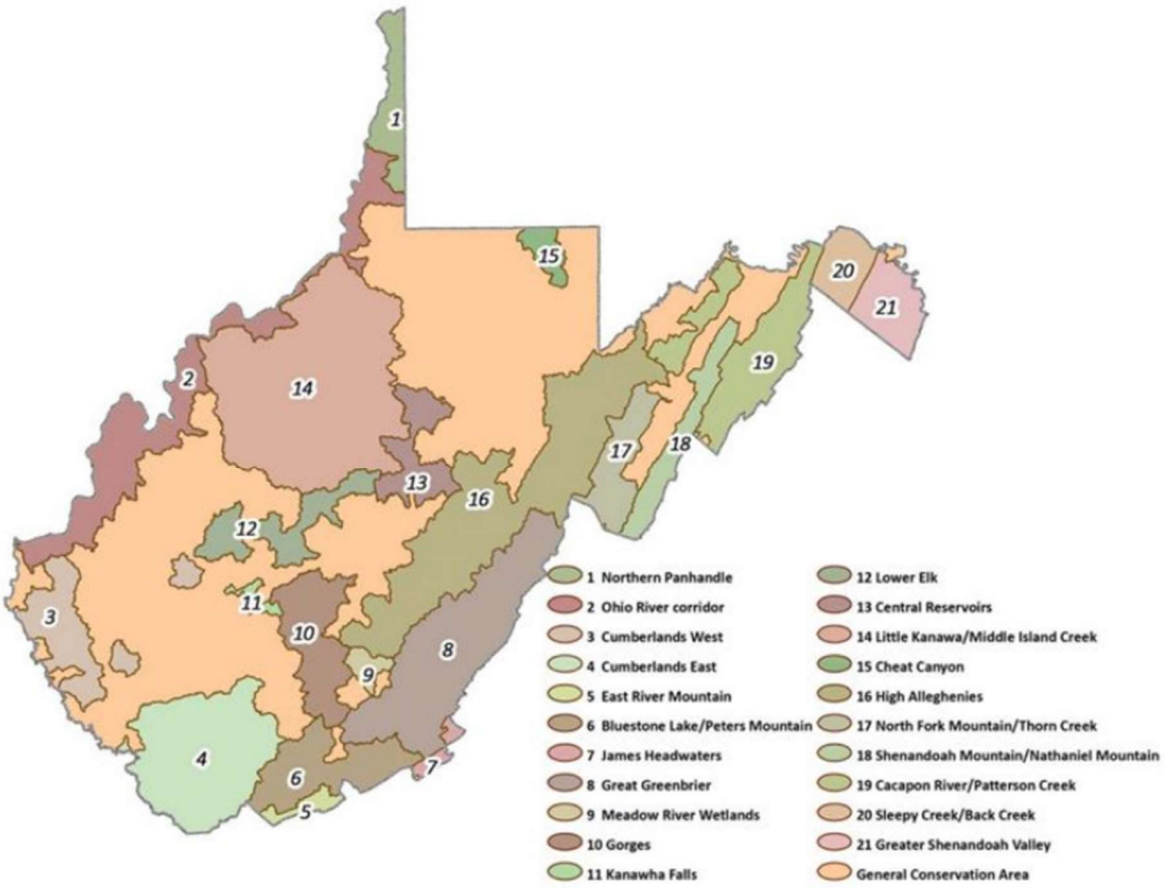
Many agencies and private landowners are using native alternatives for conservation purposes, and many West Virginia nurseries sell varieties derived from local communities to be sold as alternatives to exotic species.


Joe-Pye weed, a valuable native

[InvasivePlants.indd (wvdnr.gov)]

[listed species cheat sheet.xlsx (wvdnr.gov)]

WVDNR Conservation Focus Areas



[WV DNR Conservation Focus Areas]

Species of Greatest Conservation Need Found In Buffalo Creek Watershed

Common Name	Scientific Name	Name Category	G Rank	S Rank
Appalachian Sedge	*Carex appalachica*	Vascular Plant	G4	S3
Bald Eagle	*Haliaeetus leucocephalus*	Vertebrate Animal	G5	S3B,S3N
Barn Owl	*Tyto alba*	Vertebrate Animal	G5	S2B,S2N
Bear Creek Slitmouth	*Stenotrema simile*	Invertebrate Animal	G2G3	S2
Black Striate	*Striatura ferrea*	Invertebrate Animal	G5	S3
Blue-winged Warbler	*Vermivora cyanoptera*	Vertebrate Animal	G5	S3
Bobolink	*Dolichonyx oryzivorus*	Vertebrate Animal	G5	S3
Brislted Slitmouth	*Stenotrema barbatum*	Invertebrate Animal	G5	S3
Broad-winged Hawk	*Buteo platypterus*	Vertebrate Animal	G5	S3
Bronze Copper	*Lycaena hyllus*	Invertebrate Animal	G5	S2
Cerulean Warbler	*Setophaga cerulea*	Vertebrate Animal	G4	S2
Channel Darter	*Percina copelandi*	Vertebrate Animal	G4	S2,S3
Cliff Swallow	*Petrochelidon pyrrhonota*	Vertebrate Animal	G5	S3B
Corymbed Rattlesnake-root	*Prenanthes crepidinea*	Vascular Plant	G4	S1
Eastern Hellbender	*Cryptobranchus alleganiensis*	Vertebrate Animal	G3	S2
Eastern Meadowlark	*Sturnella magna*	Vertebrate Animal	G5	S3
Fatmucket	*Lampsilis siliquoidea*	Mussel	G5	S3
Field Sparrow	*Spizella pusilla*	Vertebrate Animal	G5	S3
File Thorn	*Carychium nannodes*	Invertebrate Animal	G5	S3
Fine-ribbed Striate	*Striatura milium*	Invertebrate Animal	G5	S3
Fluted-shell	*Lasmigona costata*	Mussel	G5	S3
Glass Spot	*Punctum vitreum*	Invertebrate Animal	G5	S2
Grasshopper Sparrow	*Ammodramus savannarum*	Vertebrate Animal	G5	S3
Great Blue Heron	*Ardea herodias*	Vertebrate Animal	G5	S3B,S4N
Greater Straw Sedge	*Carex normalis*	Vascular Plant	G5	S3
Hill Glyph	*Glyphyalinia cumberlandiana*	Invertebrate Animal	G4	S3
Indiana Bat	*Myotis sodalis*	Vertebrate Animal	G2	S1
Kentucky Warbler	*Geothlypis formosa*	Vertebrate Animal	G5	S3
Meadow Jumping Mouse	*Zapus hudsonius*	Vertebrate Animal	G5	S3,S4
Natural Bridge Supercoil	*Paravitrea pontis*	Invertebrate Animal	G3	S2
Netted Chainfern	*Woodwardia areolata*	Vascular Plant	G5	S2
Northern Leopard Frog	*Rana pipiens*	Vertebrate Animal	G5	S1
Northern Long-eared Bat	*Myotis septentrionalis*	Vertebrate Animal	G3	S3
Oldfield Coil	*Lucilla scintilla*	Invertebrate Animal	G4	SH
Pubescent Sedge	*Carex hirtifolia*	Vascular Plant	G5	S3
River Carpsucker	*Carpiodes carpio*	Vertebrate Animal	G5	S3
Running Buffalo Clover	*Trifolium stoloniferum*	Vascular Plant	G3	S3
Sealed Globelet	*Mesodon mitchellianus*	Invertebrate Animal	G4	S3
Shagreen Snail	*Inflectarius inflectus*	Invertebrate Animal	G5	S2
Slender Wild Rye	*Elymus trachycaulus ssp. trachycaulus*	Vascular Plant	G5T5	S2
Smooth Button	*Mesomphix perlaevis*	Invertebrate Animal	G4G5	S3
Smooth Hedge-nettle	*Stachys tenuifolia*	Vascular Plant	G5	S3
Sora	*Porzana carolina*	Vertebrate Animal	G5	S1
Southeastern Gem	*Hawaiia alachuana*	Invertebrate Animal	G4G5Q	S3
Southern Bog Lemming	*Synaptomys cooperi*	Vertebrate Animal	G5	S3
Spreading Sedge	*Carex laxiculmis var. copulata*	Vascular Plant	G5T4	S2
Temperate Coil	*Helicodiscus shimeki*	Invertebrate Animal	G4G5	S2
Troublesome Sedge	*Carex molesta*	Vascular Plant	G4	S2S3
Wood Thrush	*Hylocichla mustelina*	Vertebrate Animal	G5	S3
Yellow-breasted Chat	*Icteria virens*	Vertebrate Animal	G5	S3

Definitions for interpreting NatureServe's global (range-wide) conservation status ranks can be found at the following: [Statuses | NatureServe Explorer]

Nonindigenous Aquatic Species

None (Data taken from USGS NAS Alert System on a county level)

https://nas.er.usgs.gov/AlertSystem/default.aspx

Invasive Species

Animals:

Common Name	Scientific Name
wandering broadhead planarian	*Bipalium adventitium*

Diseases:

Common Name	Scientific Name
butternut canker	*Ophiognomonia clavigignenti-juglandacearum*
chestnut blight or canker	*Cryphonectria parasitica*
dogwood anthracnose	*Discula destructive*
rose rosette disease (RRD)	*Emaravirus RRD*
white pine blister rust	*Cronartium ribicola*

Insects:

Common Name	Scientific Name
brown marmorated stink bug	*Halyomorpha halys*
common pine shoot beetle, larger pine shoot beetle	*Tomicus piniperda*
emerald ash borer	*Agrilus planipennis*
hemlock woolly adelgid	*Adelges tsugae*
Japanese beetle	*Popillia japonica*
large aspen tortrix	*Choristoneura conflictana*
mile-a-minute weevil	*Rhinoncomimus latipes*
multicolored Asian lady beetle	*Harmonia axyridis*
southern pine beetle	*Dendroctonus frontalis*
spongy moth (formerly gypsy moth)	*Lymantria dispar*
spotted lanternfly	*Lycorma delicatula*

Plants:

Common Name	Scientific Name
alfalfa	*Medicago sativa*
alfalfa	*Medicago sativa ssp.sativa*
alsike clover	*Trifolium hybridum*
American burnweed	*Erechtites hieracifolius*
Amur honeysuckle	*Lonicera maackii*
annual bluegrass	*Poa annua*

Common Name	Scientific Name
annual ragweed	*Ambrosia artemisiifolia var. elatior*
annual sowthistle	*Sonchus oleraceus*
annual wormweed	*Artemisia annua*
apple-of-Peru	*Nicandra physalodes*
Asiatic dayflower	*Commelina communus*
asparagus	*Asparagus officinalis*
autumn olive	*Elaeagnus umbellate*
bald brome	*Bromus racemosus*
barnyardgrass	*Echinochloa crus-galli*
big chickweed	*Cerastium fontanum ssp. Vulgare*
birdsfoot trefoil	*Lotus corniculatus*
birdsrape mustard	*Brassica rapa*
bittersweet nightshade	*Solanum dulcamara*
bittersweets	*Celastrus spp.*
black locust	*Robinia pseudoacacia*
black medic	*Medicago lupulin*
black mustard	*Brassica nigra*
border privet	*Ligustrum obtusifolium*
Boston ivy	*Parthenocissus tricuspidata*
bouncingbet	*Saponaria officinalis*
bristlegrass	*Setaria spp.*
bridalwreath spiraea	*Spiraea prunifolia*
broadleaf dock	*Rumex obtusifolius*
broomsedge bluestem	*Andropogon virginicus*
buckhorn plantain	*Plantago lanceolata*
bull thistle	*Cirsium vulgare*
burcucumber	*Sicyos angulatu*
bush honeysuckles (exotic)	*Lonicera spp.*
Canada bluegrass	*Poa compressa*
Canada thistle	*Cirsium arvense*
Canadian horseweed	*Erigeron canadensis*
canarygrass	*Phalaris canariensis*
carpet bugle	*Ajuga reptans*
catnip	*Nepeta cataria*
cheatgrass, downy brome	*Bromus tectorum*

Common Name	Scientific Name
chicory	*Cichorium intybus*
Chinese silvergrass	*Miscanthus sinensis*
clover dodder	*Cuscuta epithymum*
coltsfoot	*Tussilago farfara*
common barberry	*Berberis vulgaris*
common burdock, lesser burdock	*Arctium minus*
common chickweed	*Stellaria media*
common chickweed	*Stellaria pallida*
common cocklebur	*Xanthium strumarium*
common dandelion	*Taraxacum officinale ssp. officinale*
common hawthorn	*Crataegus monogyna*
common horse chestnut	*Aesculus hippocastanum*
common lilac	*Syringa vulgaris*
common mallow	*Malva neglecta*
common mouse-ear chickweed	*Cerastium fontanum*
common mullein	*Verbascum Thapsus*
common pear	*Pyrus communis*
common periwinkle	*Vinca minor*
common pokeweed	*Phytolacca americana*
common ragweed	*Ambrosia artemisiifolia*
common selfheal	*Prunella vulgaris*
common speedwell	*Veronica officinalis*
common St. Johnswort	*Hypericum perforatum*
common teasel	*Dipsacus fullonum*
common velvetgrass	*Holcus lanatus*
common viper's bugloss,blueweed	*Echium vulgare*
corn cockle	*Agrostemma githago*
corn gromwell	*Buglossoides arvensis*
corn speedwell	*Veronica arvensis*
crack willow	*Salix fragilis*
cranberry viburnum, European highbush cranberry	*Viburnum opulus ssp. opulus*
creeping bellflower	*Campanula rapunculoides*
creeping buttercup	*Ranunculus repens*
creeping yellow loosestrife, creeping Jenny	*Lysimachia nummularia*
cultivated currant	*Ribes rubrum*

Common Name	Scientific Name
cup rosinweed	*Silphium perfoliatum*
curly dock	*Rumex crispus*
curly dock	*Rumex Crispus ssp. crispus*
curly leaf pondweed	*Potamogeton crispus*
cutleaf blackberry	*Rubus laciniatus*
cutleaf teasel	*Dipsacus laciniatus*
dames rocket	*Hesperis matronalis*
dandelion	*Taraxacum officinale*
Deptford pink	*Dianthus armeria*
dodder	*Cuscuta spp. (generic)*
dog rose	*Rosa canina*
dotted smartweed	*Persicaria punctata*
dwarf honeysuckle	*Lonicera xylosteum*
dwarf snapdragon	*Chaenorhinum minus*
eastern poison-ivy	*Toxicodendron radicans*
eastern redcedar	*Juniperus virginiana*
eastern white pine	*Pinus strobus*
elecampane	*Inula helenium*
English ivy	*Hedera helix*
European common reed, Phragmites	*Phragmites australis ssp. australis*
European cranberrybush	*Viburnum opulus*
European mountain-ash	*Sorbus aucuparia*
European privet	*Ligustrum vulgare*
everlasting peavine	*Lathyrus latifolius*
fall panicum	*Panicum dichotomiflorum*
false strawberry	*Potentilla indica*
field bindweed	*Convolvulus arvense*
field horsetail	*Equisetum arvense*
field pennycress	*Thlaspi arvense*
field pepperweed	*Lepidium campestre*
fortune meadowsweet	*Spiraea japonica var. fortunei*
foxglove	*Digitalis purpurea*
fuzzy pride-of-Rochester	*Deutzia scabra*
garden loosestrife	*Lysimachia vulgaris*
garlic mustard	*Alliaria petiolate*

Common Name	Scientific Name
giant chickweed	*Myosoton aquaticum*
giant knotweed	*Reynoutria sachalinensis*
giant ragweed	*Ambrosia trifida*
glossy buckthorn	*Frangula alnus*
greater celandine	*Chelidonium majus*
green bristlegrass	*Setaria viridis var. viridis*
green foxtail	*Setaria viridis*
ground ivy	*Glechoma hederacea*
hairy cat's ear	*Hypochaeris radicata*
hairy galinsoga	*Galinsoga quadriradiata*
hairy vetch	*Vicia villosa*
halberdleaf orach	*Atriplex patula*
hedge mustard	*Sisymbrium officinale*
hemp dogbane	*Apocynum cannabinum*
henbit	*Lamium amplexicaule*
hop clover	*Trifolium aureum*
horsenettle	*Solanum carolinense*
houndstongue	*Cynoglossum officinale*
Indian mustard	*Brassica juncea*
ivyleaf morning-glory	*Ipomoea hederacea*
Japanese barberry	*Berberis hederacea*
Japanese honeysuckle	*Lonicera japonica*
Japanese hop	*Humulus japonicus*
Japanese knotweed	*Reynoutria japonica*
Japanese snowball	*Viburnum plicatum*
Japanese spiraea	*Spiraea japonica*
Japanese stiltgrass	*Microstegium vimineum*
jetbead	*Rhodotypos scandens*
jimsonweed	*Datura stramonium*
johnsongrass	*Sorghum halepense*
Kentucky Bluegrass	*Poa pratensis*
kudzu	*Pueraria montana var. lobata*
ladysthumb	*Persucaria maculosa*
lambsquarters	*Chenopodium album*
large crabgrass	*Digitaria sanguinalis*

Common Name	Scientific Name
large hop clover	*Trifolium campestre*
little starwort	*Stellaria graminea*
Lombardy poplar	*Populus nigra*
longleaf groundcherry	*Physalis longifolia*
low cudweed	*Gnaphalium uliginosum*
Mahaleb cherry	*Prunus mahaleb*
marsh-pepper smartweed	*Persicaria hydropiper*
meadow brome	*Bromus erectus*
meadow fescue	*Festuca pratensis*
meadow foxtail	*Alopecurus pratensis*
meadow hawkweed	*Hieracium caespitosum*
mexicantea	*Dysphania ambrosioides*
mile-a-minute vine, Asiatic tearthumb	*Persicaria perfoliata*
mimosa	*Albizia julibrissin*
moist sowthistle	*Sonchus arvensis ssp. uliginosus*
Morrow's honeysuckle	*Lonicera morrowii*
moth mullein	*Verbascum blattaria*
motherwort	*Leonurus cardiaca*
mugwort	*Artemisia vulgaris*
multiflora rose	*Rosa multiflora*
narrowleaf bittercress	*Cardamine impatiens*
New Zealand spinach	*Tetragonia tetragonioides*
nimblewill	*Muhlenbergia schreberi*
northern white cedar	*Thuja occidentalis*
Norway maple	*Acer platanoides*
orchardgrass	*Dactylis glomerata*
Oriental lady's thumb	*Persicaria longiseta*
Oriental lady's thumb	*Polygonum posumbu*
osage-orange	*Maclura pomifera*
oxeye daisy	*Leucanthemum vulgare*
pale dock	*Rumex altissimus*
pale smartweed	*Polygonum lapathifolium*
pale yellow iris, yellow flag iris	*Iris pseudacorus*
paper-mulberry	*Broussonetia papyrifera*
paradise apple	*Malus pumila*

Common Name	***Scientific Name***
peppermint	*Mentha x piperita*
perennial ryegrass	*Lolium perenne*
perennial ryegrass	*Lolium perenne ssp. perenne*
perennial sowthistle	*Sonchus arvensis*
periwinkle	*Vinca spp.*
poison hemlock	*Conium maculatum*
prickly lettuce	*Lactuca serriola*
princess-feather	*Persicaria orientalis*
princesstree	*Paulownia tomentosa*
privet	*Ligustrum spp.*
prostrate knotweed	*Polygonum aviculare*
purple crown-vetch	*Securigera varia*
purple cudweed	*Gamochaeta purpurea*
purple deadnettle	*Lamium purpureum*
purple loosestrife	*Lythrum salicaria*
purpleosier willow	*Salix purpurea*
quackgrass	*Elymus repens*
Quenn Anne's lace	*Daucus carota*
radish	*Raphanus sativus*
rapeseed	*Brassica napus*
red clover	*Trifolium pratense*
red sorrel	*Rumex acetosella*
redtop	*Agrostis gigantea*
reed canarygrass	*Phalaris arundinacea*
roughstalk bluegrass	*Poa trivialis*
round leaf bittersweet	*Celastrus orbiculatus*
Scots pine	*Pinus sylvestris*
Seaside rose	*Rosa rugosa*
sericea lespedeza	*Lespedeza cuneata*
shepherd's-purse	*Capsella bursa-pastoris*
Siberian elm	*Ulmus pumila*
slender meadow foxtail	*Alopecurus myosuroides*
smallflower galinsoga	*Galinsoga parviflora*
smooth brome	*Bromus inermis*
southern catalpa	*Catalpa bignonioides*

Common Name	***Scientific Name***
spanishneedles	*Bidens bipinnata*
spearmint	*Mentha spicata*
spiny plumeless thistle	*Carduus acanthoides*
spiny sowthistle	*Sonchus asper*
spotted knapweed	*Centaurea stoebe ssp. micranthos*
spotted spurge	*Euphorbia maculate*
spotted waterhemlock	*Cicuta maculate*
spring whitlowgrass	*Draba verna*
star-of-Bethlehem	*Ornithogalum umbellatum*
stinging nettle	*Urtica dioica*
stinking chamomile	*Anthemis cotula*
sulfur cinquefoil	*Potentilla recta*
sweet cherry	*Prunus avium*
sweet vernalgrass	*Anthoxanthum odoratum*
sweetbriar	*Rosa rubiginosa*
tall fescue	*Festuca arundinacea*
tall lettuce	*Lactuca canadensis*
tall oatgrass	*Arrhenatherum elatius*
Tatarian honeysuckle	*Lonicera tatarica*
tawny daylily	*Hemerocallis fulva*
thymeleaf speedwell	*Veronica serpyllifolia*
thymeleaf speedwell	*Veronica serpyllifolia ssp. serpyllifolia*
timothy	*Phleum pratense*
toothed spurge	*Euphorbia dentata*
tree-of-heaven	*Ailanthus altissima*
true forget-me-not	*Myosotis scorpioides*
velvetleaf	*Abutilon theophrasti*
Venice mallow	*Hibiscus trionum*
Virginia pepperweed	*Lepidium virginicum*
watercress	*Nasturtium officinale*
waterpurslane	*Ludwigia palustris*
weeping lovegrass	*Eragrostis curvula*
weeping willow	*Salix x sepulcralis*
white campion	*Silene latifolia*
white clover	*Trifolium repens*

Common Name	***Scientific Name***
white cockle	*Silene latifolia ssp. alba*
white mulberry	*Morus alba*
white poplar	*Populus alba*
white willow	*Salix alba*
wild buckwheat	*Fallopia convolvulus*
wild four-o'clock	*Mirabilis nyctaginea*
wild garlic	*Allium vineale*
wild mustard	*Sinapis arvensis*
wild onion	*Allium canadense*
wild parsnip	*Pastinaca sativa*
wine raspberry	*Rubus phoenicolasius*
Wisconsin weeping willow	*Salix x pendulina*
yellow daylily	*Hemerocallis lilioasphodelus*
yellow fieldcress	*Rorippa sylvestris*
yellow foxtail	*Setaria pumila*
yellow nutsedge	*Cyperus esculentus*
yellow rocket	*Barbarea vulgaris*
yellow sweet-clover	*Melilotus officinalis*
yellow toadflax	*Linaria vulgaris*
yellow woodsorrel	*Oxalis stricta*

Data taken from EDDMaps status of invasive species report on a county level. (www.eddmaps.org/)

Essential Fish Habitat

None for WV

Data taken from National Oceanic and Atmospheric Administration (NOAA).
(https://habitat.noaa.gov/appa/efhmapper/?page=page_3)