

NRCS West Virginia  
*Preliminary  
Investigation Feasibility  
Report (PIFR)*

Warm Springs Run Watershed (HUC #020700040503)



August 2022

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## Abbreviations

CFR – Code of Federal Regulations

NECH – National Environmental Compliance

Handbook NWPH – National Watershed

Program Handbook

NWPM – National Watershed

Program Manual PIFR – Preliminary

Investigation Feasibility Report USC –

United States Code

## References

- NRCS National Environmental Compliance Handbook, Title 190, Part 610, May 2016
- NRCS National Watershed Program Manual, April 2014
- NRCS National Watershed Program Handbook, April 2014
- DM 9500-013 – Guidance For Conducting Analyses Under The Principles, Requirements, And Guidelines For Water And Land Related Resources Implementation Studies And Federal Water Resource Investments, January 2017
- Principles and Requirements for Federal Investments in Water Resources, March 2013
- NB 390-21-4 PDM - Watershed and Flood Prevention Operations Program Funding Guidance - Preliminary Investigation Feasibility Reports and Remedial Projects, July 2022

Note: This watershed is part of the Pick-Sloan Flood Control Act of 1944, otherwise known as PL534. For the purposes of this report, PL566 is considered to cover projects that are technically PL534.



## Summary

The following PIFR is a summary report of resource concerns and opportunities in the Warm Springs Run watershed that may be eligible for a planning study according to the Watershed Protection and Flood Prevention Act (PL 83-566). The watershed is in Morgan County in the Eastern Panhandle. The Eastern Panhandle Conservation District requested formal assistance from the NRCS Watershed Operations Program.

The study area is in the Potomac drainage and is part of the Chesapeake Bay drainage.

The Warm Springs Run watershed area contains one of the oldest watershed projects constructed by NRCS. Warm Springs Run was a pilot project, constructed prior to the enactment of PL534 and PL566. The project, although still serviceable, has exceeded its federally obligated operations and maintenance agreement terms. The Warm Springs Run Watershed Project was designed to provide an estimated \$600 thousand in annual economic benefits in today's inflation-adjusted dollars.

Potential solutions to resource problems and opportunities contained in this report could provide long-term relief with positive impacts to environmental, economic, and social aspects of living in the watershed. The baseline condition without Federal investment is a situation of deteriorating infrastructure and potential loss of flood protection, incidental recreation, incidental water supply, and other amenities associated with existing impoundments. The alternatives that were developed for the PIFR include structural and non-structural measures consisting of land treatment practices, various levels of rehabilitation of the existing dams, and possible construction of new infrastructure.

Alternatives require local sponsorship and participation by private landowners to implement. The sponsoring organization has partnered with the NRCS in the past to install land treatment practices on private land. Examples of benefits include reduced flood damage, improved watershed protection, increased rural water supply, and increased recreational options.

## 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 Eastern Panhandle Conservation District (EPCD) requested assistance with conducting a Preliminary Investigation and Feasibility Report (PIFR) for a potential watershed project in the Warm Springs Run Watershed (12-digit HUC (020700040503). This assistance is authorized under the Watershed Protection and Flood Prevention Act (Public Law 83-566). The EPCD is interested in being a sponsor for a watershed plan project in the Warm Springs Run Watershed and meets the PL 83-566 criteria for a sponsor. Agricultural and forested lands compose most of the watershed. Watershed protection, flood prevention, and agricultural water management would be the most likely purposes of a potential watershed project.									
Will the project area exceed 250,000 acres in size? <sup>1,2</sup>								<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
If over 250,000 acres will it be divided into sub-watersheds in one plan?								<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Potential Project Area Size: <b>9,600</b> acres									
Will any single structure provide more than 12,500 acre-feet of floodwater detention capacity, or have a 25,000 acre-feet of total capacity?								<input type="checkbox"/> YES <sup>3</sup>	<input checked="" type="checkbox"/> NO
How many recreational developments will be included in the project area?									
• One development in a project area less than 75,000 acres								<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
• Two developments in a project area between 75,000 and 150,000 acres								<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
• Three developments in a project area greater than 150,000 acres								<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Which authorized purposes will the project address? (Indicate only one purpose as primary):									
						Primary	Other		
• Flood prevention						<input type="checkbox"/>	<input checked="" type="checkbox"/>		
• Watershed Protection						<input checked="" type="checkbox"/>	<input type="checkbox"/>		
• Public Recreation						<input type="checkbox"/>	<input type="checkbox"/>		
• Public Fish and Wildlife						<input type="checkbox"/>	<input type="checkbox"/>		
• Agricultural Water Management						<input type="checkbox"/>	<input checked="" type="checkbox"/>		
• Municipal or Industrial Water Supply						<input type="checkbox"/>	<input type="checkbox"/>		
• Water Quality Management						<input type="checkbox"/>	<input type="checkbox"/>		
Will the project produce substantial benefits to the general public, to communities, and to groups of landowners?								<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO <sup>3</sup>
Can the project be installed by individual or collective landowners under alternative cost-sharing assistance?								<input type="checkbox"/> YES <sup>3</sup>	<input checked="" type="checkbox"/> 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.								<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO <sup>3</sup>
Will the project take place in a Special Designated Area? (if yes, check applicable area below.)								YES	
Appalachia	<input checked="" type="checkbox"/>	Delaware River Basin	<input type="checkbox"/>	Susquehanna River Basin	<input type="checkbox"/>	Tennessee Valley	<input type="checkbox"/>	<input type="checkbox"/> NO	

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

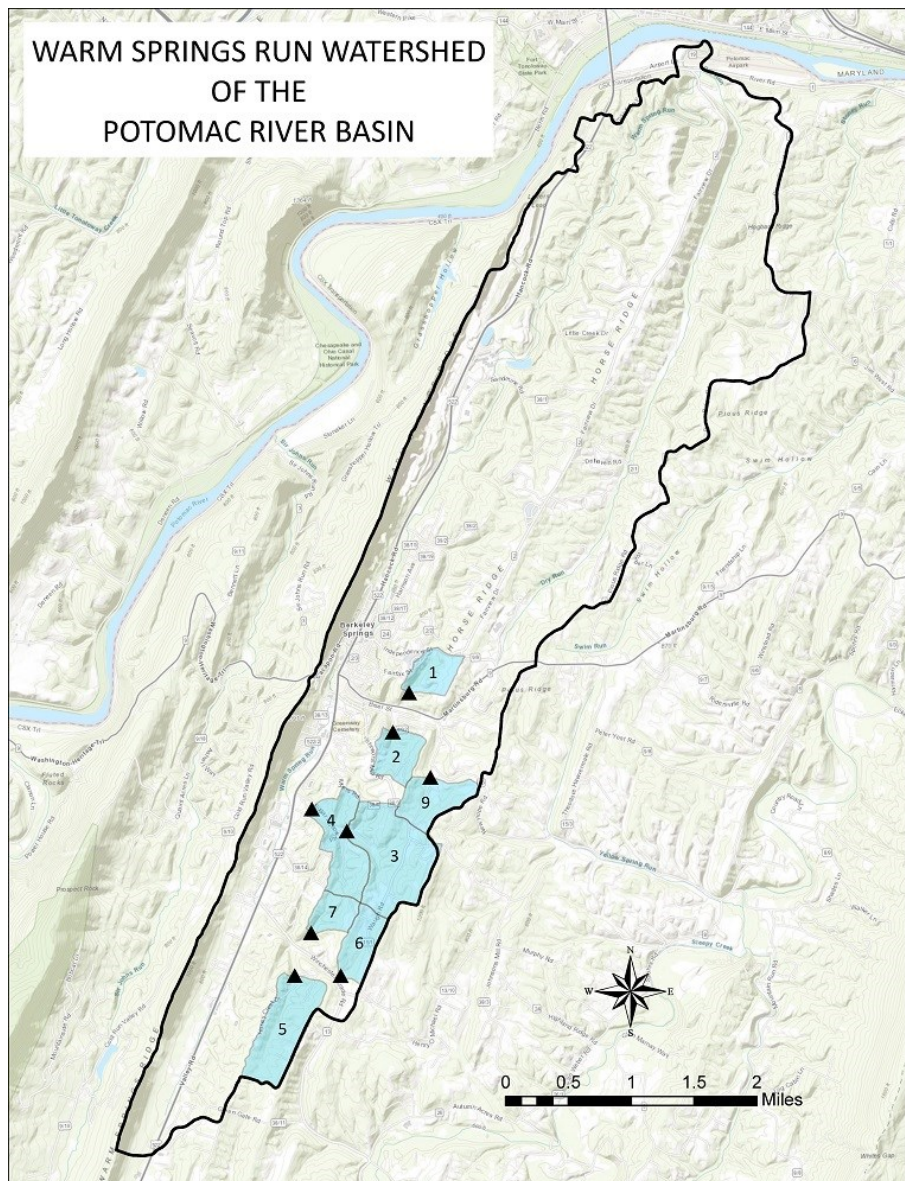
Morgan County is a rural county with a population of approximately 17,000 people. The average population density 74.5 people per square mile. In comparison, the population density for the state of West Virginia is 77 people per square mile and nationally the population density is 94 people per square mile. As per the USDA definition, Morgan County is considered rural because there are no population centers with more than 50,000. Because this county is rural, at least 20% of the benefits will meet the agricultural (rural) requirement. Populations potentially benefitting from a project would include rural residents, small businesses, and the general public.

**References:**

16 USC 18 - §1002, Definitions  
Title 390, NWPM – 506.50 Glossary, MMM. Rural or Rural Communities  
<https://worldpopulationreview.com/states/west-virginia-population>  
<https://statisticalatlas.com/county/West-Virginia/>

Project Overview	
Proposed Project Name	Warm Springs Run Watershed (HUC #020700040503)
State	West Virginia
County/Parish	Morgan County
Congressional District	2 <sup>nd</sup> Congressional District

USGS Hydrologic  
Unit Code (HUC)  
and Watershed  
Name



**Map of Warm Springs Run Watershed of the Potomac River Basin**  
**Morgan County, WV**  
12-digit HUC (020700040503)

There are eight NRCS-assisted watershed dams in the Warm Springs Run Watershed.

The dams were designed and constructed as single-purpose floodwater retarding dams with a High Hazard Classification and are delineated by blue shading.

**Total Watershed Drainage Area: 9,600 acres of which 1,035 acres is controlled.**

General  
Coordinates of the  
Watershed

Latitude 39.618333° , Longitude -78.222500°

## Project Setting



The Warm Springs Run Watershed of the Potomac River Watershed is located in the MLRA (147), Northern Appalachian Ridges and Valleys Warm Springs Run flows in a northeast direction to its' confluence with the Potomac River near Hancock, Maryland. The Potomac River flows into the Chesapeake Bay.

The total watershed drainage area is 9,600 acres, solely in Morgan County.

The topography in the watershed ranges from an elevation of 1,115' MSL on Warm Spring Ridge to a low point of approximate elevation 390' MSL at the confluence of Warm Spring Run with the Potomac River.

Warm spring Run flows through Berkeley Springs.

Uplift, folding and geologic erosion have had a major influence on the landforms of the Warm spring Run Sub-watershed. The relative resistance to erosion of various rocks coupled with the folding have affected the topography of the watershed. The parallel ridges and valleys are oriented in a northeast-southwest direction. Rock outcrops follow this orientation, and the erosion resistant sandstones make up the ridge tops and the softer, erosive shale formations make up the valleys. The uplifted and folded geology has made the area rugged, scenic, and attractive to tourists and to outdoor recreation. The geology also causes problems. The height of flooding is increased above the water gaps where streams flow through narrow breaks in the anticlines. The steeply dipping bedrock on the flanks of anticlines may act as a plane along which soils sometimes slide when they become saturated with water.

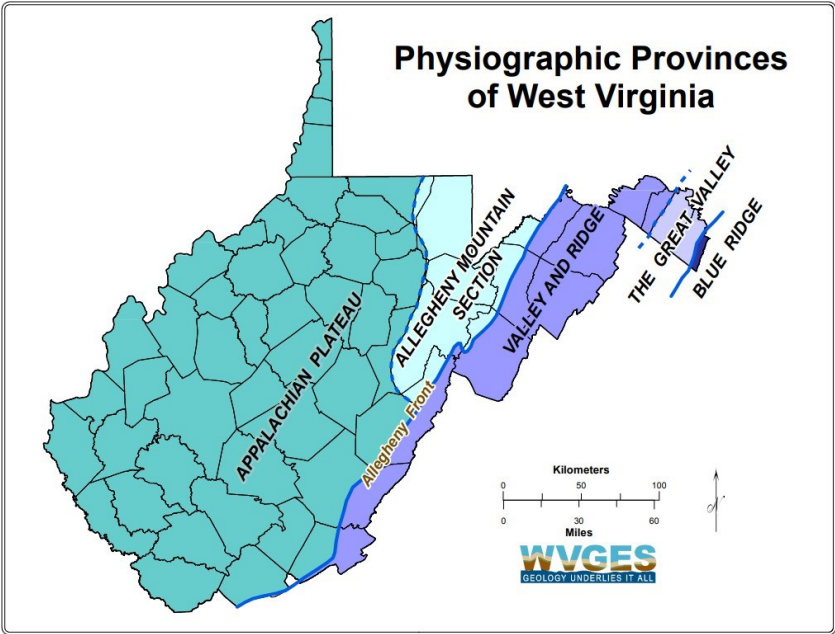
West Virginia has a humid continental climate. The eastern panhandle of West Virginia, much like the rest of the state, experiences moderately cold winters and warm, humid summers. West Virginia has the highest average elevation east of the Mississippi River which helps moderate summer temperatures. The climate of the eastern panhandle is also influenced by its proximity to the Atlantic slope.

The jet stream is located near or over the northeast during the winter bringing frequent storm systems to the watershed. The watershed is affected by a variety of extreme events such as floods, droughts, heat and cold waves, ice storms, remnants of hurricanes, and snowstorms including nor'easters. The hurricane remnants typically cause significant flooding. Hurricane Juan in 1985 and Hurricane Fran in 1996 caused catastrophic flooding in the watershed.

Morgan County, in an average year, receives 39 inches of rain and 37 inches of snow. The average summer high is 85 degrees Fahrenheit in July, and the average winter low is 21 degrees Fahrenheit in January.

The majority of the total land area in the Warm spring Run Sub-watershed is forestland representing 71.2% of the land area. The next major land use in the watershed is operated for farming.

There are approximately 201 Acres (2.1%) of cropland, 1182 Acres (12.3%) of grassland, and 69.5 Acres (0.7%) of pasture.



Potential Project Area - Size	Warm Springs Run Watershed of the Potomac River Basin (HUC 020700040503) is 9,600 acres.
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Resource Information	
Soils	<p>The project area lies within Major Land Resource Area (MLRA) 147. This MLRA is characterized by sandstone ridges separated by valleys that trend northeast to southwest. The soils in this watershed are primarily composed of silt with varying amounts of sand and clay depending on their parent materials. The ridges are mostly formed in residuum derived from sandstone and are acid. They are commonly shallow to deep to bedrock and are somewhat excessively to well drained. Mountain backslopes are formed in colluvium from sandstone, shale, or limestone. These soils are very deep and may have a fragipan that perches water for a portion of the year. These soils are somewhat poor to well drained. In the valley the soils on the shale hills formed in residuum and are shallow to moderately deep mostly. These soils contain lots of shale or limestone fragments and are droughty being well to somewhat excessively drained. Terraces exist at varying heights above the streams. These soils formed from old alluvium and are typically very deep. They are poorly to moderately well drained and may contain high amounts of clay in the wettest soils. Finally, the floodplain soils formed in the most recent alluvial sediments. These soils are deep to very deep and well to poorly drained. They range from sandy and gravelly to clayey but are mostly loamy. Hydric soils are most likely to occur on the floodplains and terraces but may be found in the drains of higher lying landforms. Surface coverage of rock outcrops or loose stones and boulders are common especially in areas influenced by sandstone.</p>
Water	<p>The quality of water making up the watershed is affected by non-point pollution in the urban areas. The upland areas of the watershed produce high sediment loads during runoff producing rains. Floodplain scour of adjacent floodplains also increase the sediment load of floodwaters during flood events. The watershed has areas with a surplus of water quantity and areas with depleted water quantity in normal conditions.</p>
Air	<p>Actions by the U.S. Environmental Protection Agency and its state partners have led to significant reductions in one of the major sources of pollution impacting the Chesapeake Bay watershed and tidal Bay the atmospheric deposition of nitrogen oxides, or NOx. The steady decline in nitrogen pollution that is carried by winds and falls to the Bay's waters and lands has been a key factor in the overall progress to date in meeting water quality goals of the historic Chesapeake Bay Total Maximum Daily Load.</p>



Source: US Environmental Protection Agency

Plants	The watershed provides for both agricultural crops as well as naturally vegetated areas utilized as wildlife habitat.
Animals	This area has animal resources consisting of game and non-game. No invasive species found in the watershed.
Energy	This area has various electrical, oil, and gas transmission facilities.



## Human

**Demographics:**

Morgan County reported a population of 17,873 in the 2020 Census, growing by 2.2% since the 2010 Census. In contrast, between the 2010 and 2020 census, the population of West Virginia decreased by 3.2%.

***Morgan County WV Data & Demographics (As of July 1, 2021)***

POPULATION		HOUSING	
Total Population	18,779 (100%)	Total HU (Housing Units)	10,751 (100%)
Population in Households	18,656 (99.3%)	Owner Occupied HU	7,198 (67.0%)
Population in Families	15,026 (80.0%)	Renter Occupied HU	668 ( 6.2%)
Population in Group Quarters <sup>1</sup>	123 ( 0.7%)	Vacant Housing Units	2,885 (26.8%)
Population Density	82	Median Home Value	\$193,773
Diversity Index <sup>2</sup>	11	Average Home Value	\$213,657
		Housing Affordability Index <sup>3</sup>	161

INCOME		HOUSEHOLDS	
Median Household Income	\$53,638	Total Households	7,866
Average Household Income	\$69,030	Average Household Size	2.37
% of Income for Mortgage <sup>4</sup>	15%	Family Households	5,301
Per Capita Income	\$28,920	Average Family Size	3
Wealth Index <sup>5</sup>	69		

<https://usafacts.org/data/topics/people-society/population-and-demographics/our-changing-population/state/west-virginia/county/morgan-county?endDate=2020-01-01&startDate=2010-01-01>

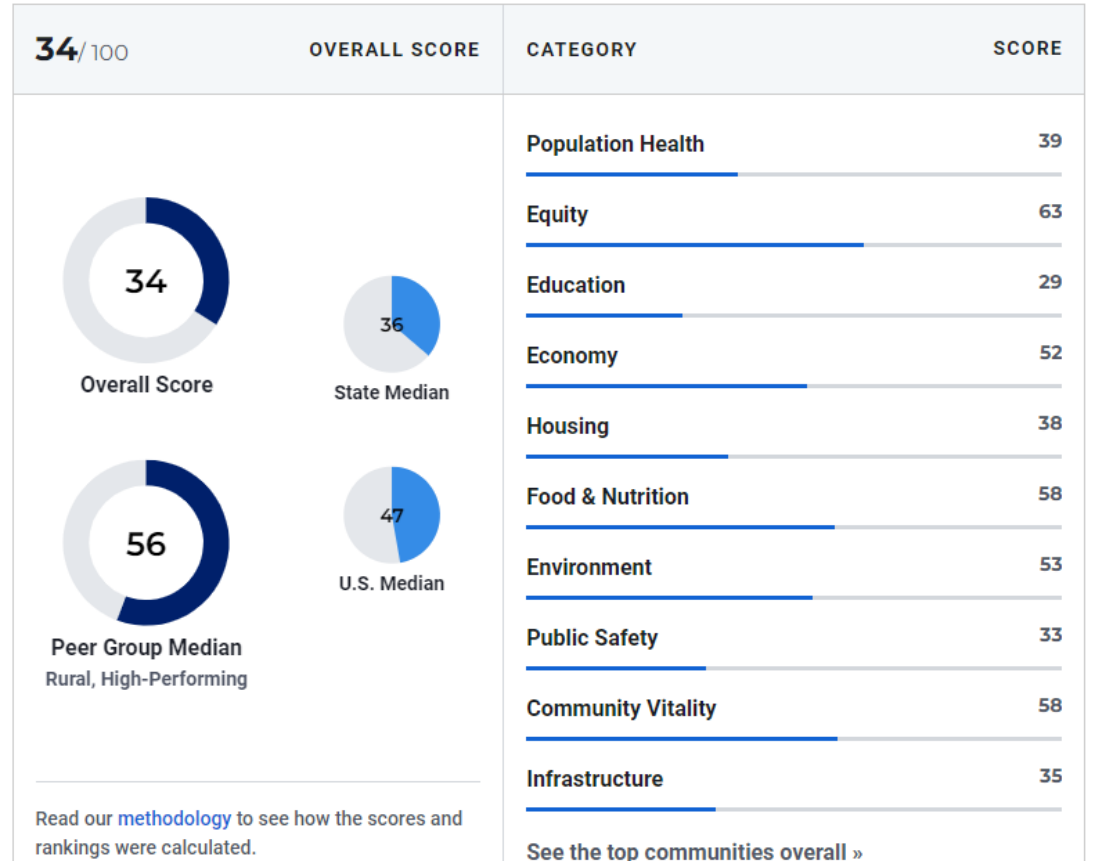
**Transportation:**

The average commute time in Morgan County is 35.1 minutes, according to the Data USA website. Most workers commute to and from work in a vehicle without other passengers.

**Quality of Life:** According to USNews, Morgan County scores slightly less than the state and national averages in quality-of-life indicators.

## Overview of Morgan County, WV

[See COVID-19 Data for Morgan County, WV »](#)



<https://www.usnews.com/news/healthiest-communities/west-virginia/morgan-county>

Resources of Special Concern	
Clean Water Act	Permitted actions may involve or will 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.
Clean Air Act	The watershed is not in an area recognized for regularly having impaired air quality or significant air quality issues. <a href="https://www3.epa.gov/airquality/urbanair/sipstatus/reports/wv_areabypoll.html">https://www3.epa.gov/airquality/urbanair/sipstatus/reports/wv_areabypoll.html</a>
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	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). According to West Virginia Department of Natural Resources (WVDNR), WV is a permanent home to 22 federally endangered species (17 animals, 4 plants) and 7 federally threatened species (5 animals, 2 plants). WVDNR's State Wildlife Action Plan (SWAP) recognizes 22 Conservation Focus Areas (CFA) throughout the state that includes Species of Greatest Conservation Need (SGCN). See Appendix E for a complete USFWS IPaC Species list, WVDNR state listings, map of WV CFAs, and a list of SGCN for this watershed.

Environmental Justice	<p>Environmental justice seeks fair treatment and meaningful involvement of all people and requires the identification of any disproportionately high and adverse effects from a proposed project on protected groups.</p> <p>Morgan County is completely within the Appalachian Region. The county is not designated as limited resource counties by USDA. However, it is designated as ‘transitional’ by the Appalachian Regional Commission, indicating that local economies still need improvement. <a href="#">Distressed Designation and County Economic Status Classification System - Appalachian Regional Commission (arc.gov)</a></p> <p>Morgan County is predominately white. Census data shows the population is 95.3% white, with Black or African American residents comprising less than 2%.</p> <p>The poverty rate Morgan County is 11%. WV poverty rate is 15.8% compared to the national rate of 11.4%.</p> <p><a href="#">U.S. Census Bureau QuickFacts: West Virginia</a></p>
Essential Fish Habitat	NA
Floodplain Management	<p>The purpose of floodplain management is to reduce flood damage. Floodplain management is the operation of community programs for preventative and corrective measures. These measures take a variety of forms and generally include zoning, division or building requirements, and special-purpose floodplain ordinances.</p> <p>Communities agree to adopt and enforce floodplain management ordinances to make flood insurance available to home and business owners. To date, 55 counties and 214 communities in West Virginia have voluntarily adopted and are enforcing local floodplain management ordinances that provide flood loss reduction building standards for new and existing development.</p> <p>Morgan County has a major risk of flooding over the next few decades. In addition to damage on properties, flooding can impact access to utilities, emergency services, transportation, damage to agricultural lands and crops, and adversely impacts the overall well-being of both urban and rural communities located in the floodplain.</p>

	<p>For Morgan County there is a:</p> <ul style="list-style-type: none"> <li>-major flooding risk to 1,158 of 9,503 residences</li> <li>-severe flooding risk to 484 out of 1,515 miles of roads</li> <li>-severe risk of flooding to 133 out of 335 commercial properties</li> <li>-major risk of flooding to 3 out of 16 infrastructure facilities</li> <li>-major risk of flooding to 10 out of 34 social facilities</li> </ul> <p>Sources: <a href="http://www.Emd.wv.gov">www.Emd.wv.gov</a>  <a href="https://firststreet.org/risk-factor/flood-factor/">https://firststreet.org/risk-factor/flood-factor/</a></p>
Invasive Species	<p>Invasive species are found in the watershed. EDDMaps provides a web-based mapping system for documenting invasive species and pest distribution. According to USGS there are no nonindigenous aquatic species recorded in the watershed. See Appendix E for complete species lists. The lists are not specific to the watershed. However, they are based on a WV county level in which the watershed is located.</p>
Migratory Birds/Bald & Golden Eagle Protection Act	<p>Migratory birds and eagles utilize the Warm Springs Run Watershed habitats. There is a total of 15 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. See Appendix E for complete list.</p>
Natural Areas	<p>Federal: none</p> <p>State: The WV Division of Natural Resources (DNR) manages the 422 acre Widmeyer Wildlife Management Area and WV State Parks manages the 6,115 acre Cacapon Resort adjacent to the Warm Springs Watershed. The George Washington Heritage Trail and the Tuscarora Hiking trail also run through the watershed. The historical Berkeley Springs State Park is situated within the town of Berkeley Springs.</p>
Prime and Unique Farmlands	<p>Presently there are 150 acres of Prime Farmland, which accounts for 2% of land in the study area. Additionally, there are 4,700 acres of Farmland of Local Importance and 76 acres of Farmland of Statewide Importance. Farmland protection boards are actively conserving land. The threat of conversion in the watershed, however, is not drastic.</p>

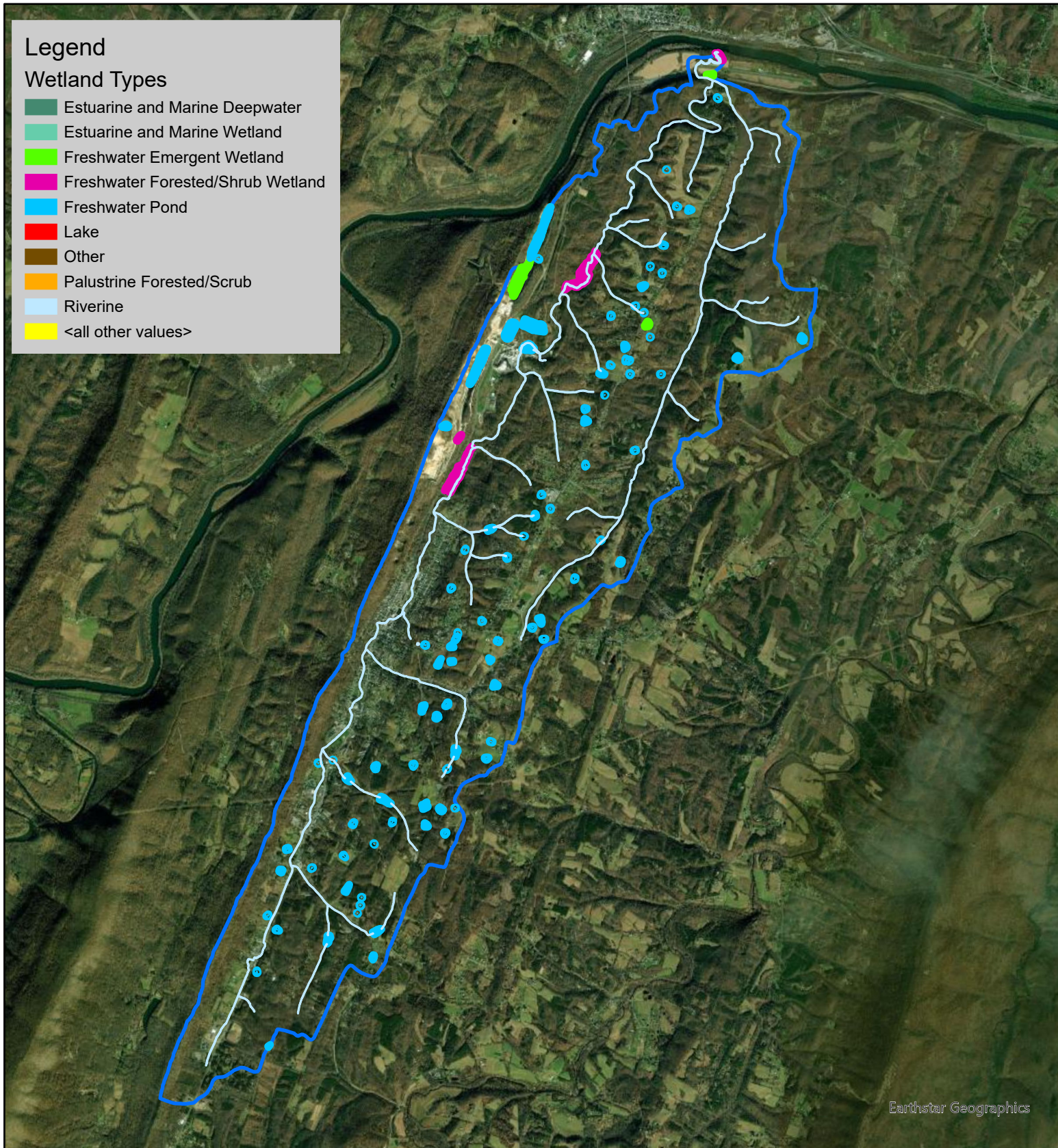
Riparian Area	There are riparian areas present in or near the project area. Riparian areas found in this region are generally characterized as vegetated and un-vegetated. Riparian areas have been impacted by urban sprawl and development.
Scenic Beauty	Areas of potential scenic beauty in this watershed are typical of Ridge and Valley physiographic province and common to the region.
Wetlands	There are 200 acres of wetlands within the Warm Springs Run watershed which consist of the following: 10 acres of Freshwater Emergent Wetlands; 23 acres of Freshwater Forested/Shrub Wetland; 62 acres of Freshwater Pond; and 105 acres of Riverine. Data collected from the US Fish and Wildlife Service National Wetlands Inventory.
Wild and Scenic Rivers	No designated Wild and Scenic Rivers are in or near the project area, however waters in Cacapon State Park are designated as Critical Resource Waters.



## Legend

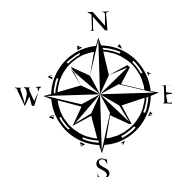
### Wetland Types

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Palustrine Forested/Scrub
- Riverine
- <all other values>



Earthstar Geographics

# Warm Springs Run Watershed National Wetlands Inventory



*USDA is an equal opportunity provider, employer, and lender*

0 0.5 1 2 3 4  
Kilometers

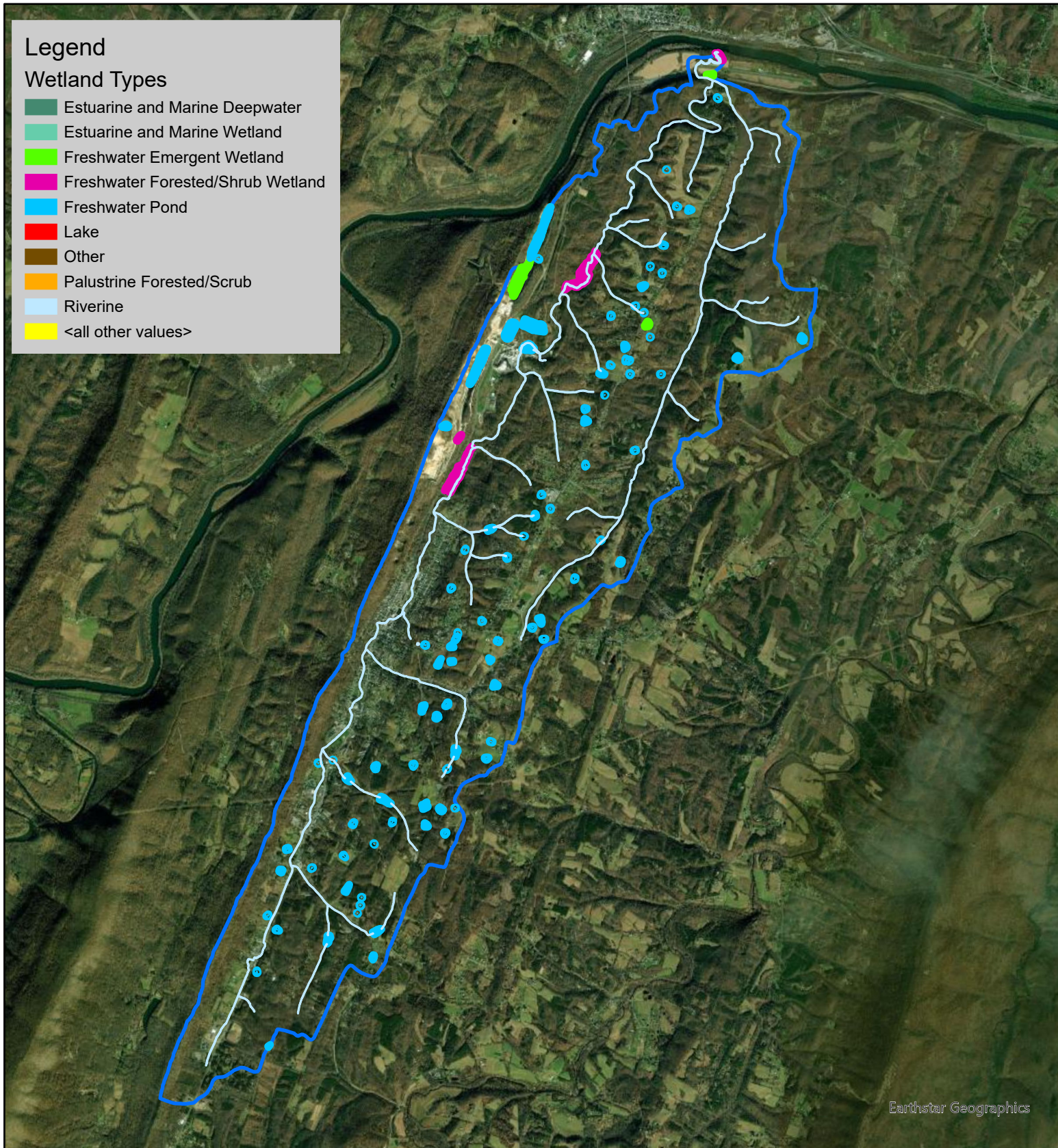




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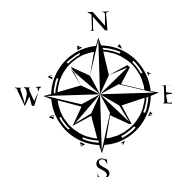
### Wetland Types

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Palustrine Forested/Scrub
- Riverine
- <all other values>



Earthstar Geographics

# Warm Springs Run Watershed National Wetlands Inventory



*USDA is an equal opportunity provider, employer, and lender*

0 0.5 1 2 3 4  
Kilometers





## Proposed Project Purpose and Need Statement

The purpose of the proposed project is to address resource concerns in the Warm Springs Run Watershed. It is anticipated that the PL 566 project purpose will be watershed protection, flood prevention, and potentially agricultural water management. There is a need for additional recreation, stream restoration, reduced erosion and sediment from streambanks, timber management, and nutrient management on crop and pastureland.

The Warm Springs Run Watershed was a pilot watershed project in the 1950's and the is now past its planned economic evaluated life. Some existing structures need repair, and some are in need of a more comprehensive engineering update. However, much of the project would be considered currently serviceable. Additionally, changes in climate and land use over the last 50 years have resulted in flooding in the watershed that may not have been accounted for in the original design of the watershed plan and could potentially be addressed now.

The town of Berkeley Springs and rural residents and agricultural producers experience flooding and limited water supply. There are opportunities to increase flood protection and improve other resource concerns in the watershed.

## 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 Warm Springs Run watershed contains water resources concerns and opportunities that offer the potential for a watershed project that achieves the Federal Objective.

Resources	Concerns	Opportunities
Water	<ul style="list-style-type: none"> <li>• Flooding</li> <li>• Impact of excessive nutrients on surface waters</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce flood impacts</li> <li>• Protect, improve water quality</li> <li>• Reduce erosion and sediment</li> <li>• Improve farming profitability</li> <li>• Enhance recreation</li> <li>• Improve nutrient management at farming operations</li> </ul>
Soil	<ul style="list-style-type: none"> <li>• Soil loss is likely due to OM depletion, compaction resulting in reduced infiltration on agricultural lands and urban lands, impervious surfaces. Erosion on farms is most likely from overgrazing and bare soil areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce impacts to soils and improve soil health</li> </ul>
Air	<ul style="list-style-type: none"> <li>• No air quality issues present</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor state air data for potential issues</li> </ul>
Plant	<ul style="list-style-type: none"> <li>• Lack of plant species diversity and presence of invasive species.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase of plant diversity with the establishment of native regionally appropriate species</li> <li>• Controlling invasive species</li> </ul>
Animals	<ul style="list-style-type: none"> <li>• Lack of game and non-game species diversity and habitat diversity</li> </ul>	<ul style="list-style-type: none"> <li>• Provide appropriate game and non-game habitat.</li> </ul>
Energy	<ul style="list-style-type: none"> <li>• Potential damage to energy infrastructure from flooding</li> </ul>	<ul style="list-style-type: none"> <li>• Efficiencies in energy use</li> </ul>
Human	<ul style="list-style-type: none"> <li>• Maintaining or improving the living standards</li> <li>• Rate of reproduction less than replacement rate</li> </ul>	<ul style="list-style-type: none"> <li>• Improvements to quality of life</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>• Lack of recreational access</li> <li>• Underutilization of water-based recreation potential</li> <li>• Trout streams are essential recreational asset in region</li> </ul>	<ul style="list-style-type: none"> <li>• Increased water recreation opportunities that help overcome historical barriers to water-based recreation for aging and disabled populations</li> <li>• Increase accessibility to recreation for local residents</li> <li>• Continued stewardship of pristine trout streams. Improvement of trout streams that have streambank erosion or other impairments</li> </ul>
Environmental Justice	<ul style="list-style-type: none"> <li>• Flooding</li> <li>• Maintaining or improving tax revenues for towns</li> </ul>	<ul style="list-style-type: none"> <li>• Overcome barriers to economic and human development</li> </ul>

Cultural Resources / Historic Properties	<ul style="list-style-type: none"> <li>• Full range of archaeological sites (Paleo- Indian to recent past) and historic properties eligible for listing on the National Registry of Historic Places.</li> </ul>	<ul style="list-style-type: none"> <li>• Tribal and SHPO consultation</li> </ul>
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**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)**

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

## Opportunities

Opportunities exist to provide watershed protection, improve soil and plant health, reduce flooding, manage excessive nutrients and enhance recreational access. There are opportunities to rehabilitate the existing Warm Springs Run structures, bringing them up to current standards and extending their service lives.

The sponsors are willing to participate in the PL-566 Watershed Program, allowing NRCS to potentially implement a combination of structural practices, non-structural practices, and land treatment measures that are designed to address resource concerns. There is a need to rehabilitation existing structures. All of the existing watershed structures have been assessed for rehabilitation needs. Rehabilitation Assessments are on file at the NRCS WV State Office.

## State, Tribal, Federal Stakeholder Engagement

Notification letters were sent out to the Eastern Panhandle Conservation District and the West Virginia Conservation Agency.

## 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.

## Warm Springs List of Alternatives

	Alternatives	Possible Positive Impacts & Effects	Possible Adverse Impacts & Effects
<b>Structural (NEW)</b>	<p>Alt 1-New Flood Control Dams- Installation of additional flood control dams in the watershed to increase flood protection</p> <p>Estimated Construction Cost: No construction costs, but economic losses increase as infrastructure fails</p>	<ul style="list-style-type: none"> <li>-Increased flood protection</li> <li>-recreation opportunities</li> <li>-water supply, rural, ag, municipal, &amp; industrial</li> <li>-aquatic habitat</li> <li>-short term construction jobs</li> <li>-Increased federal investment into local infrastructure</li> <li>-increased public safety</li> <li>-possible power generation capabilities included</li> <li>-ag water management</li> </ul>	<ul style="list-style-type: none"> <li>-Loss of private land through condemnation/easements</li> <li>-Loss of local tax base</li> <li>-Loss of farmland and/or terrestrial habitat</li> <li>-loss of stream habitat</li> <li>-aquatic organism passage barrier</li> <li>-long term maintenance burden on sponsors</li> <li>-potential relocations of homes, roads, &amp; utilities</li> <li>-may require some local cost share funds</li> </ul>
<b>Structural (NEW)</b>	<p>Alt 2-New Flood Control Channel- Channelization work in heavier populated area of the watershed to increase flood protection</p> <p>Estimated Construction Cost: \$104,000,000 Estimated Project Life: 50 years</p>	<ul style="list-style-type: none"> <li>-Increased flood protection in more urban areas</li> <li>-short term construction jobs</li> <li>-increased federal investment into local infrastructure</li> <li>-reduce significant risk to loss of life</li> <li>-provide maintenance easements alongside the constructed channel thus prohibiting future development in these areas and protecting existing urban wildlife habitat</li> </ul>	<ul style="list-style-type: none"> <li>-Loss of private land through condemnation/easements</li> <li>-long term maintenance burden on sponsors</li> <li>-potential relocations of utilities</li> <li>-may require some local cost share funds</li> <li>-loss of stream habitat &amp; riparian areas</li> <li>-may only reduce flooding from higher frequency storms</li> </ul>
<b>Structural (Existing)</b>	<p>Alt 3-Rehabilitation of existing NRCS structures in Watershed</p> <p>Estimated Construction Cost: \$7,922,600 Estimated Project Life: 15 years</p>	<ul style="list-style-type: none"> <li>-Increased flood protection</li> <li>-recreation opportunities</li> <li>-water supply, rural, ag, municipal, &amp; industrial</li> <li>-aquatic habitat</li> <li>-short term construction jobs</li> <li>-Increased federal investment into local area infrastructure</li> <li>-Bring structures into compliance with WV DEP Dam Safety Regulations and current NRCS criteria</li> <li>-increased public safety</li> <li>-extend structure life</li> <li>-possible reduction of long term maintenance costs</li> <li>-possible power generation capabilities added</li> <li>-ag water management</li> </ul>	<ul style="list-style-type: none"> <li>-require local cost share funds (35%)</li> <li>-may require additional easements</li> <li>-continued maintenance by sponsors</li> </ul>

**Structural  
(Existing)**

Alt 4- Repair (Non-NRCS Driven)  -Planning \$100,000/each Plan -Design \$100,000/ each Design -Construction ~\$1,000,000/ each Site	-continues flood protection -continued present usage -short term construction jobs -continued public safety -extend structure life -possible reduction of long term maintenance costs	-may require additional easements -continued maintenance by sponsors -possibility of no federal funds -no current federal program for "repairs" -repairs may not bring structures into compliance with WVDEP Dam Safety Regulations and current NRCS criteria
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**Structural  
(Existing)**

Alt 5 - Decommissioning of Structures  -Planning \$300,000/each Plan -Design \$500,000/ each Design -Construction ~\$4,000,000/ each Site	-restoring stream and riparian habitat -no long term maintenance cost -return of local tax base with land usage -short term construction jobs -majority or all federal funds -re-introduction of natural occurring sediments back into the stream system	-loss of flood protection -some local funding may be required -loss of recreation & water supply -loss of aquatic habitat -Loss of several years of sediment storage from man made acts which would adversely impact downstream watersheds.
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**Non  
Structural**

Alt 6 - Stream Restoration  -Planning \$50,000/each Plan/ Design -Construction ~\$396,000/ each Mile	-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
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**Non  
Structural**

Alt 7 - Land Treatment  -Planning \$50,000/each Plan/ Design -Construction ~\$100/ each Acre	-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)
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**Non  
Structural**

<p>Alt 8 - Green Infrastructure/Low Impact Development</p> <p>Planning \$100,000/each Plan -Design \$100,000/ each Design -Construction ~\$200,000/ each Site</p>	<ul style="list-style-type: none"> <li>-Decreased flash flood events</li> <li>-aquatic habitat uplift</li> <li>-aesthetic improvements</li> <li>-reduction in sediment and nutrients</li> <li>-improved water quality</li> <li>-extend life of flood control structures</li> <li>-permanent jobs maintaining structures</li> <li>-possible retrofitting existing structures for hydro power generation</li> </ul>	<ul style="list-style-type: none"> <li>-funds needed for maintenance</li> <li>-minor loss of land</li> <li>-maintenance burden on landowners/sponsors</li> <li>-increased cost of development</li> </ul>
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**Combined  
Works**

<p>Alt 9 - Land Treatment, Stream Restoration, Rehab, Repair, Channelization, Green Infrastructure, New Structures</p>	<ul style="list-style-type: none"> <li>-combination of all of the above</li> <li>-huge amount of federal money provided</li> <li>-several years of construction jobs</li> <li>-improved flood protection, water quality, recreation, &amp; water supply</li> <li>-improved productivity on ag and forest land</li> </ul>	<ul style="list-style-type: none"> <li>-combination of all of the above</li> <li>-large amount of cost share required from local sponsors</li> <li>-maintenance cost and burden increases</li> </ul>
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**No Work**

<p>Alt 10 - No work</p>	<ul style="list-style-type: none"> <li>-No new costs to taxpayers or sponsors</li> <li>-no new maintenance requirements</li> </ul>	<ul style="list-style-type: none"> <li>-no flood protection</li> <li>-no public works project(s)</li> <li>-Structures remain out of compliance</li> <li>-hazard to public and infrastructure increases</li> <li>-maintenance becomes more expensive</li> </ul>
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## Facilitating Factors

- The EPCD is willing to work with NRCS and each other to see the project through completion.
- The existence of the 1950s Warm Springs Run Pilot Watershed Project demonstrates the public benefits that are possible from an NRCS watershed project.

## Obstructing Factors

Maintenance of the existing watershed project has been the responsibility of conservation districts and local governmental entities, with assistance from the WV Conservation Agency. Local funding is dependent on state appropriations and local government budgets

## Environmental Document

A potentially viable alternative for a proposed watershed project involves the repair of the existing Warm Springs Run structures through the rehabilitation program. Existing assessments can be used to further plan rehabilitation work. Additional needs such as recreation, watershed protection, or agricultural water 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 EPCD is ready, willing, and able to be a sponsor for a potential watershed project in the Warm Springs Run Watershed. The EPCD meets the PL 83-566 sponsorship criteria for this potential watershed project and has demonstrated success on past projects. All sponsors who take an active role in project will complete the WS-4, PIFR Sponsor Declaration form. A summary of the sponsor responses will be included in this section. Completed WS-4 - PIFR Sponsor Declaration is included in Appendix B.

Sponsor Will:	Assist in Planning	Land Rights / Eminent Doman	Local Cost Share	O/M Funds	Permits	Land Treatment	In- Kind MOU
Eastern Panhandle Conservation District	Yes	Yes	Yes	Yes	Yes	Yes	Yes
West Virginia Conservation Agency	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 – Baltimore District Planning Division Regulatory Functions/Permits 2 Hopkins Plaza Baltimore, MD 21201 Planning: (401) 962-2809 Regulatory: (410) 962-3670	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 57 <sup>th</sup> 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]
		Office Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]

## Potential Stakeholders

Stakeholder	Role	Resources	Contribution
Eastern Panhandle Conservation District	Co-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	Co-sponsor	Cost-share funds	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	Technical Reviews, Wetlands-Waters of the U.S. Jurisdiction	Permitting, technical review
West Virginia Historic Preservation Office	Permit- Cultural Review	Review of Project APE	Permit for Project APE
WVDEP	Permits	Review for Permits	Review for Permits
WVDNR	Partner	Review of Plan – ED	Review of Plan - ED

Notifications

If a watershed plan – environmental assessment is undertaken, the NRCS must publish a notice of intent to the public and notify key federal and state agencies as described in the National Watershed Manual. (Executive Order 10584 Section 3). Notification letters were sent on 04-20-2023 to WV Governor’s Office; WV USFWS Field Office; and Army Corps of Engineers District Offices in Baltimore, Huntington, and Pittsburgh regions.

Estimated Project Implementation Timeline

\*\*Dependent on funding  
Alternative X (assumes 1 rehab site) funding dependent, multiple sites could be worked concurrently

Planning Start	April	2023
Planning End	October	2024 (36 months typically)
Design Start	December	2024
Design End	December	2025 (24 months typically)
Construction Start	March	2026
Construction End	November	2029 (~42 months typically)

## Recommendation

This preliminary investigation and feasibility report has been completed and submitted for approval to:  
Jon Bourdon, West Virginia State Conservationist.

By:

Name: Don Dodd Title: Water Resources Planning Specialist Date: : July 12, 2022

Organization: Natural Resources Conservation Service (NRCS)

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

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

Preparers Signature

Signature: PAMELA YOST Digitally signed by PAMELA YOST  
Date: 2022.09.28 18:30:27 -04'00' Date: \_\_\_\_\_

State Watershed Operations  
Program Manager

Signature: DONALD DODD Digitally signed by DONALD DODD  
Date: 2022.09.29 09:06:10 -04'00' Date: \_\_\_\_\_

State Technical Lead (SRC, SCE, Other)

Signature: LEWTON DEICHERT Digitally signed by LEWTON DEICHERT  
Date: 2022.11.07 18:42:51 -05'00' Date: \_\_\_\_\_

	Not recommended for planning funding
X	Accepted and recommended for Planning Funding

State Conservationist

Signature: JON BOURDON Digitally signed by JON BOURDON  
Date: 2022.11.08 12:38:58 -05'00' Date: \_\_\_\_\_

## Glossary

Rural – All territories of a State that are not within the outer boundary of any city or town that has a population of 50,000 or more according to the latest decennial census of the United States ([2010 Census Urban and Rural Classification and Urban Area Criteria](#)). [Source Title 390 – NWPM Part 506.50 Glossary, MMM]

## Appendix

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

Appendix A.  
Sponsor Letter of Request





*West Virginia*  
Conservation Agency

January 14, 2022

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

Dear Jon:

The West Virginia Conservation Agency respectfully requests Natural Resources Conservation Service Watershed Program planning assistance for several potential Public Law (PL) 83-566 projects and one PL-534 project in West Virginia.

Each of these watersheds contain high-hazard, small watershed flood-control structures, and several have exceeded their service life. Due to downstream development in the intervening years, hazard classifications on several of these dams have increased from significant to high.

The WVCA would like NRCS to evaluate the following structures to determine if additional structures may benefit the watershed by providing increased flood control, public water supply, and recreational opportunities.

**PL-566 Projects**

• Salt Lick Creek Watershed	HUC 0503020303
• Harmon Creek Watershed	HUC 0503010111
• Upper Deckers Creek Watershed	HUC 0502000302
• Upper Grave Creek	HUC 0503010608
• New Creek Watershed	HUC 0207000204
• Marlin Run Watershed	HUC 0505000302
• Mill Creek Watershed	HUC 0503020206
• Dave Fork-Christian Fork Watershed	HUC 0505000205
• Salem Fork Watershed	HUC 0502000205
• Polk Creek Watershed	HUC 0502000201
• Upper Buffalo Creek Watershed	HUC 0502000303

**PL-534 Projects**

Warm Springs Run Watershed	HUC 0207000405
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**NRCS PL566, 534 Planning**

**Page 2**

**January 14, 2022**

We also understand the following requirements of sponsorship:

- This is a local project and the role of USDA-NRCS is to provide technical and financial assistance to the local sponsor in order to carry out the project. As a local sponsor, we will be engaged in the planning process and decision-making aspects of these projects.
- Several guidance documents will be jointly developed throughout this project that define the roles and responsibilities of the local sponsors and NRCS. These documents may include a Memorandum of Understanding, a Watershed Agreement, and a Project Agreement. Additional documents may be developed as agreed to by all parties.
- Local sponsors are responsible, if necessary, for obtaining real property rights associated with these projects.
- Local sponsors are responsible for the non-federal cost share funds of these projects and commit to obtaining the non-federal match.

The WVCA looks forward to working with NRCS to complete a Preliminary Investigation Feasibility Report (PIFR). If you have any questions, please contact Gene Saurborn, WVCA Watershed Projects Director, at our Morgantown Field Office, 201 Scott Avenue, Morgantown, WV 26508. Phone: 304 285-3118

Sincerely,



Brian Farkas  
Executive Director

cc: Don Dodd, Pam Yost, Julie Stutler, NRCS; Gene Saurborn, WVCA

## **PIFR Plan of Work**

### **In House:**

- |  |                     |
|--|---------------------|
| <b>-Funding awarded-</b>   | <b>week 1</b>       |
| <b>-Implement staffing multidisciplinary staffing plan to begin PIFR</b> | <b>week 2</b>       |
| <b>-Gather all existing Data for the watershed/site</b>                  | <b>month 1 to 3</b> |
| <b>-Review Data – Field Visit as necessary</b>                           | <b>month 3 to 4</b> |
| <b>-Write recommendations/review &amp; Finish process</b>                | <b>month 4 to 6</b> |

### **Outside Contract:**

- |   |                     |
|---|---------------------|
| <b>-Funding awarded-</b>                                | <b>week 1</b>       |
| <b>-Award contract to complete PIFR</b>                 | <b>week 2</b>       |
| <b>-Gather all existing Data for the watershed/site</b> | <b>month 1 to 3</b> |
| <b>-NRCS progress review</b>                            |                     |
| <b>-Review Data – Field Visit as necessary</b>          | <b>month 3 to 4</b> |
| <b>-NRCS progress review</b>                            |                     |
| <b>-Write recommendations &amp; Finish process</b>      | <b>month 4 to 6</b> |
| <b>-NRCS review and approval</b>                        |                     |

Appendix B.

PIFR Sponsor Declaration Forms

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

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

State: WV County: Morgan Watershed: Warm Springs Run

Project Name: WARM SPRINGS RUN WATERSHED

<b>Sponsor's Name:</b>	<b>WEST VIRGINIA CONSERVATION AGENCY</b>		
<b>Sponsor's Mailing Address:</b>	<b>1900 Kanawha Blvd., East Fax: (304) 558-1635 Charleston, WV 25305</b>		
<b>Contact Name:</b>	<b>Brian Farkas</b>	<b>Phone:</b>	<b>304-285-3118</b>
<b>Title:</b>	<b>Exeicutive Director</b>	<b>Email:</b>	<a href="mailto:bfarkas@wvca.us">bfarkas@wvca.us</a>
<b>Sponsor Website:</b>	<a href="https://www.wvca.us">https://www.wvca.us</a>		

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

Frequent flooding occurs in the Warm Springs Run Watershed. The flooding causes severe damages to neighborhood areas, crops, and infrastructure located in the floodplain. Sediment laden runoff on the surrounding areas is reducing the capacity of the creeks and drainage ditches to carry flood flows. Previously completed watershed projects are past their service life and O&M obligations and aren't functioning to full design capabilities. There is a need to provide reduction in floodwater damages and sediment being delivered into the Warm Springs Run Watershed.

**Potential benefits of a Watershed Flood Prevention Operations program project.**

Benefits of a project could provide watershed protection and agricultural water management by reducing floodwater damages, erosion and sediment loading to intensified agricultural areas, residential, and infrastructure in the Warm Springs Run Watershed located in Morgan County.

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

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

State: WV County: Morgan Watershed: Warm Springs Run

Project Name: WARM SPRINGS RUN WATERSHED

**SPONSOR WIL**

- 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 X YES        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): Brian Farkas Title: Executive Director

Signature:  Date: Sep 28, 2022  
Brian Farkas (Sep 28, 2022 10:54 EDT)

Appendix C.

Preliminary Environmental Evaluation (CPA 52)

U.S. Department of Agriculture Natural Resources Conservation Service ENVIRONMENTAL EVALUATION WORKSHEET		NRCS-CPA-52 11/2019		<b>A. Client Name:</b> West Virginia Conservation Agency																																																							
				<b>B. Conservation Plan ID #</b> (as applicable): Warm Springs Run PIFR <b>Program Authority</b> (optional): PL-566																																																							
<b>D. Client's Objective(s) (purpose):</b> The purpose of this project is to provide watershed protection and agricultural water management by reducing flood water damages, erosion and sedimentation loading in the Warm Springs Run Watershed.		<b>C. Identification #</b> (farm, tract, field #, etc. as required): Warm Springs Run Watershed of the Potomac River Basin Morgan County, WV 12-digit HUC (020700040503)																																																									
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<p><b>Sediment transported to surface water</b></p> <p>Sedimentation caused by erosion in the uplands of the watershed negatively impact Warm Spring Run and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages. Floodplain scour of adjacent floodplains also increase the sediment load of floodwaters during flood events.</p>	<p>Resources would continue to be degraded. Frequent flooding will continues to scour streambanks, increasing sedimentation within streams and reducing channel capacity.</p>	<input type="checkbox"/>  NOT meet PC	<p>Increased flood control and holding capacity would decrease sediment loading within streams and reduce flooding impacts on stream bank erosion due to reduced flows.</p>	<input type="checkbox"/>  NOT meet PC	<p>Channelization would reduce streambank erosion and sedimentation by protecting adjacent streambanks.</p>	<input type="checkbox"/>  NOT meet PC
<p><b>Nutrients transported to surface water</b></p> <p>Water quality is negatively affected by nutrients, failing septic systems, 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.</p>	<p>Continued degradation of the resource without any federal action.</p>	<input type="checkbox"/>  NOT meet PC	<p>Increased flood protection provided by additional 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.</p>	<input type="checkbox"/>  NOT meet PC	<p>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.</p>	<input type="checkbox"/>  NOT meet PC
<p><b>F. Resource Concerns and Existing/ Benchmark Conditions</b> (Analyze and record the existing/benchmark conditions for each identified concern)</p>	<p><b>I. (continued)</b></p>					
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<p><b>AIR</b></p>						
<p>No resource concern identified</p>	<p>Air quality would not be impacted with no action.</p>	<input type="checkbox"/>  NOT meet PC	<p>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.</p>	<input type="checkbox"/>  NOT meet PC	<p>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.</p>	<input type="checkbox"/>  NOT meet PC
<p>Air quality is not a resource concern within the watershed</p>						
<p><b>PLANTS</b></p>						
<p>Plant structure and composition</p>	<p>Agricultural crops and wildlife habitat would continue to be impacted by flooding.</p>	<input type="checkbox"/>  NOT meet PC	<p>Agricultural crops and wildlife habitat would be enhanced from a reduction in flooding and decrease in sedimentation.</p>	<input type="checkbox"/>  NOT meet PC	<p>Agricultural crops and wildlife habitat would be enhanced from a reduction in flooding and decrease in sedimentation.</p>	<input type="checkbox"/>  NOT meet PC
<p>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.</p>						
<p><b>ANIMALS</b></p>						
<p>Terrestrial habitat for wildlife and invertebrates</p>	<p>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.</p>	<input type="checkbox"/>  NOT meet PC	<p>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.</p>	<input type="checkbox"/>  NOT meet PC	<p>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.</p>	<input type="checkbox"/>  NOT meet PC
<p>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.</p>						

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.	<input type="checkbox"/>  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.	<input type="checkbox"/>  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.	<input type="checkbox"/>  NOT meet PC
<b>ENERGY</b>						
No resource concern identified	No effect	<input type="checkbox"/>  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.	<input type="checkbox"/>  NOT meet PC	No effect	<input type="checkbox"/>  NOT meet PC
This area has various electrical, oil, and gas transmission facilities.						
<b>Human Economic and Social Considerations</b>						
<b>Public Health and Safety</b> Damaging floods occur on an annual basis 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.	Agricultural landowners, residents, local businesses, transportation systems, and emergency services will continued to be negatively affected by continued flooding.		Installation of additional structures 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.		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.	
<b>Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.</b>						
<b>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.</b>						
<b>G. Special Environmental Concerns</b> (Document existing/benchmark conditions)	<b>J. Impacts to Special Environmental Concerns</b>					
	<b>No Action</b>		<b>Alternative 1</b>		<b>Alternative 2</b>	
	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 <a href="#">Guide Sheet</a> The watershed is not in an area recognized for regularly having impaired air quality or significant air quality issues.	No Effect	<input type="checkbox"/>	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.	<input type="checkbox"/>	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.	<input type="checkbox"/>
•Clean Water Act / Waters of the U.S. <a href="#">Guide Sheet</a> 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	<input type="checkbox"/>	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.	<input type="checkbox"/>	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.	<input type="checkbox"/>

<p>●Coastal Zone Management <a href="#">Guide Sheet</a></p> <p>There are no costal zones present in or near the watershed.</p>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<p>Coral Reefs <a href="#">Guide Sheet</a></p> <p>There are no coral reefs present in or near the watershed.</p>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<p>●Cultural Resources / Historic Properties <a href="#">Guide Sheet</a></p> <p>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.</p>	No Effect	<input type="checkbox"/>	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.	<input type="checkbox"/>	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.	<input type="checkbox"/>
<p>●Endangered and Threatened Species <a href="#">Guide Sheet</a></p> <p>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). According to West Virginia Department of Natural Resources (WVDNR), WV is a permanent home to 22 federally endangered species (17 animals, 4 plants) and 7 federally threatened species (5 animals, 2 plants). WVDNR's State Wildlife Action Plan (SWAP) recognizes 22 Conservation Focus Areas (CFA) throughout the state that includes Species of Greatest Conservation Need (SGCN). See Appendix E for a complete USFWS IPaC Species list, WVDNR state listings, map of WV CFAs, and a list of SGCN for this watershed.</p>	No action may have the potential to negatively impact federally listed aquatic species through continued sedimentation and habitat destruction.	<input type="checkbox"/>	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.	<input type="checkbox"/>	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.	<input type="checkbox"/>
<p>Environmental Justice <a href="#">Guide Sheet</a></p> <p>Morgan County is completely within the Appalachian Region. The county is not designated as limited resource counties by USDA. However, it is designated as 'transitional' indicating that local economies still need improvement. Morgan County is predominately white. Census data shows the population is 95.3% white, with Black or African American residents comprising less than 2%. The poverty rate Morgan County is 11%. WV poverty rate is 15.8% compared to the national rate of 14.4%.</p>	No Effect	<input type="checkbox"/>	No Effect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	<input type="checkbox"/>	No Effect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	<input type="checkbox"/>
<p>●Essential Fish Habitat <a href="#">Guide Sheet</a></p> <p>This area is not designated as Essential Fish Habitat.</p>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>

<b>Floodplain Management</b> <a href="#">Guide Sheet</a> Morgan county has a major risk of flooding over the next few decades.	<b>No Effect</b> Continued risk of flooding.	<input type="checkbox"/>	<b>May Affect</b> This alternative will result in the protection of the floodplain due to decreased flooding impacts.	<input type="checkbox"/>	<b>May Affect</b> This alternative will result in the protection of the floodplain due to decreased flooding impacts	<input type="checkbox"/>
<b>Invasive Species</b> <a href="#">Guide Sheet</a> Invasive species are found in the watershed.	<b>No Effect</b> Continued expansion on invasive species.	<input type="checkbox"/>	<b>May Affect</b> Invasive species occur within the watershed. Care would be taken not to introduce invasive species in <del>disturbed areas</del>	<input type="checkbox"/>	<b>May Affect</b> Invasive species occur within the watershed. Care would be taken not to introduce invasive species in <del>disturbed areas</del>	<input type="checkbox"/>
<b>●Migratory Birds/Bald and Golden Eagle Protection Act</b> <a href="#">Guide Sheet</a> Migratory birds and eagles utilize the Warm Spring Run Watershed habitats. There is a total of 15 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	<b>No Effect</b>	<input type="checkbox"/>	<b>No Effect</b> Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	<input type="checkbox"/>	<b>No Effect</b> Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	<input type="checkbox"/>
<b>Natural Areas</b> <a href="#">Guide Sheet</a> The WV Division of Natural Resources (DNR) manages the 422 acre Widmeyer Wildlife Management Area and WV State Parks manages the 6,115 acre Cacapon Resort adjacent to the Warm Springs Watershed. The George Washington Heritage Trail and the Tuscarora Hiking trail also run through the watershed. There are no federal lands in the watershed.	<b>No Effect</b>	<input type="checkbox"/>	<b>No Effect</b>	<input type="checkbox"/>	<b>No Effect</b>	<input type="checkbox"/>
<b>Prime and Unique Farmlands</b> <a href="#">Guide Sheet</a> Presently there are 150 acres of Prime Farmland, which accounts for 2% of land in the study area. Additionally, there are 4,700 acres of Farmland of Local Importance and 76 acres of Farmland of Statewide Importance. Farmland protection boards are actively conserving land.	<b>No Effect</b> Continued potential threat to loss of prime farm land from streambank erosion.	<input type="checkbox"/>	<b>No Effect</b> Alternative would provide protection of prime farmland through the reduction of streambank erosion.	<input type="checkbox"/>	<b>No Effect</b> Alternative would provide protection of prime farmland through the reduction of streambank erosion.	<input type="checkbox"/>
<b>Riparian Area</b> <a href="#">Guide Sheet</a> 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.	<b>No Effect</b> Continued degradation of riparian land as streambanks erode and invasive species dominate regrowth.	<input type="checkbox"/>	<b>May Affect</b> There are riparian areas present in or near the project area and may have the potential to be impacted.	<input type="checkbox"/>	<b>May Affect</b> There are riparian areas present in or near the project area and may have the potential to be impacted.	<input type="checkbox"/>

<b>Scenic Beauty</b> <i>Guide Sheet</i> Areas of potential scenic beauty in this watershed are typical of the Ridge and Valley physiographic province and common to the region.	No Effect <input type="checkbox"/>	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. <input type="checkbox"/>	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. <input type="checkbox"/>
<b>Wetlands</b> <i>Guide Sheet</i> There are 200 acres of wetlands within the Warm Spring Run watershed, according to the US Fish and Wildlife Service National Wetlands Inventory.	No Effect <input type="checkbox"/>	No Effect Action is not likely to negatively impact any wetlands in the watershed. <input type="checkbox"/>	No Effect Action is not likely to negatively impact any wetlands in the watershed. <input type="checkbox"/>
<b>Wild and Scenic Rivers</b> <i>Guide Sheet</i> No designated Wild and Scenic Rivers are in or near the project area, however waters in Cacapon State Park are designated as Critical Resource Waters.	No Effect <input type="checkbox"/>	No Effect <input type="checkbox"/>	No Effect <input type="checkbox"/>
<b>K. Other Agencies and Broad Public Concerns</b>	<b>No Action</b>	<b>Alternative 1</b>	<b>Alternative 2</b>
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 new 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.
<b>L. Mitigation</b> (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.
<b>M. Preferred Alternative</b>	<input checked="" type="checkbox"/> preferred alternative	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	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.
<b>N. Context</b> (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.			

U.S. Department of Agriculture Natural Resources Conservation Service <b>ENVIRONMENTAL EVALUATION WORKSHEET</b>		NRCS-CPA-52 11/2019		<b>A. Client Name:</b> West Virginia Conservation Agency			
				<b>B. Conservation Plan ID #</b> (as applicable): Warm Springs Run PIFR <b>Program Authority</b> (optional): PL-566			
<b>D. Client's Objective(s) (purpose):</b> The purpose of this project is to provide watershed protection and agricultural water management by reducing flood water damages, erosion and sedimentation loading in the Warm Spring Run Watershed.		<b>C. Identification #</b> (farm, tract, field #, etc. as required): Warm Springs Run Watershed of the Potomac River Basin Morgan County, WV 12-digit HUC (020700040503)					
<b>E. Need for Action:</b> The baseline condition without federal investment is a situation of deteriorating infrastructure and potential loss of flood protection, incidental recreation, rural water supply, and other amenities associated with existing impoundments. Previously completed watershed projects are either past their service life or have been reclassified as high hazard dams.		<b>H. Alternatives</b>					
		<b>Alternative 3</b> ✓ if RMS <input type="checkbox"/>		<b>Alternative 4</b> ✓ if RMS <input type="checkbox"/>			
		Rehabilitation of existing NRCS structures in Watershed. Focused funding for technical and financial assistance through the Watershed Protection and Flood Prevention Act would result in extending the service life of the structures and extend their flood reduction values, as well as meet the new WV Dam Safety and current NRCS criteria.		Repair (Non-NRCS Driven) of existing structures in the watershed led by other local conservation agencies. There would be no federal funding for these repairs.			
				<b>Alternative 5</b> ✓ if RMS <input type="checkbox"/>			
				Decommissioning of Structures through focused technical and financial assistance through the Watershed Protection and Flood Prevention Act would result in restoration of the stream and riparian habitat.			
<b>Resource Concerns</b>							
In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).							
<b>F. Resource Concerns and Existing/ Benchmark Conditions</b> (Analyze and record the existing/benchmark conditions for each identified concern)		<b>I. Effects of Alternatives</b>					
		<b>Alternative 3</b>		<b>Alternative 4</b>		<b>Alternative 5</b>	
		<b>Amount, Status, Description</b> <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC	<b>Amount, Status, Description</b> <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC	<b>Amount, Status, Description</b> <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC
<b>SOIL</b>							
Sheet and rill erosion		No change in the amount of sediment produced by flooding with the rehabilitation of existing structures.		No change in the amount of sediment produced by flooding with the rehabilitation of existing structures.		Decommissioning structures could potentially increase the amount of soil erosion in the short term as disturbed areas are revegetated. There would be a transition back to naturally occurring in the streambed.	
Sedimentation caused by erosion in the uplands of the watershed negatively impact Warm Spring Run and its tributaries. Sediment loading contributes to reduced channel capacity, further exacerbating flood damages.		<input type="checkbox"/>          NOT meet PC		<input type="checkbox"/>          NOT meet PC		<input type="checkbox"/>          NOT meet PC	
<b>WATER</b>							
Ponding and flooding		No change in the current amount of flooding in the watershed, but the rehabilitation would extend the service life of the dams to provide flood protection longer into the future.		No change in the current amount of flooding in the watershed, but the repairs could extend the service life of the dams to provide flood protection longer into the future.		Potential increase in flooding in the watershed without the retention and controlled release of flood waters by structures.	
Flooding has been a historical issue in the watershed with the expected risk of flooding increasing over the next few decades as storms become more frequent and severe, and as the infrastructure ages. Approximately 10% of the residence are in major risk of flooding. Flooding is a threat to property, access to utilities, emergency services, transportation, agricultural land,		<input type="checkbox"/>          NOT meet PC		<input type="checkbox"/>          NOT meet PC		<input type="checkbox"/>          NOT meet PC	

Sediment transported to surface water	No change in the current amount of sedimentation in the watershed.	<input type="checkbox"/>	No change in the current amount of sedimentation in the watershed.	<input type="checkbox"/>	Additional sedimentation in the stream could be expected due to increased flows during flooding events causing increased streambank erosion.	<input type="checkbox"/>
Sedimentation caused by erosion in the uplands of the watershed negatively impact Warm Spring Run and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages. Floodplain scour of adjacent floodplains also increase the sediment load of floodwaters during flood events.		NOT meet PC		NOT meet PC		NOT meet PC
Nutrients transported to surface water	No change in the current amount of nutrients transported within the watershed.	<input type="checkbox"/>	No change in the current amount of nutrients transported within the watershed.	<input type="checkbox"/>	Additional nutrients in the water could be expected due to increased flows during flooding events causing failures to structures, livestock feeding, or chemical storage areas.	<input type="checkbox"/>
Water quality is negatively affected by nutrients, failing septic systems, 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		NOT meet PC		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)					
	Alternative3		Alternative 4		Alternative 5	
	Amount, Status, Description	✓ if does NOT meet PC	Amount, Status, Description	✓ if does NOT meet PC	Amount, Status, Description	✓ if does NOT meet PC
	(Document both short and long term impacts)		(Document both short and long term impacts)		(Document both short and long term impacts)	
AIR						
No resource concern identified	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.	<input type="checkbox"/>	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.	<input type="checkbox"/>	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.	<input type="checkbox"/>
Air quality is not a resource concern within the watershed		NOT meet PC		NOT meet PC		NOT meet PC
PLANTS						
Plant structure and composition	No change to the agricultural crops or natural vegetation.	<input type="checkbox"/>	No change to the agricultural crops or natural vegetation.	<input type="checkbox"/>	Increased flooding and bank erosion could negatively impact species composition in pastureland and cropland, as well as cause disturbances that allow invasives to spread.	<input type="checkbox"/>
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.		NOT meet PC		NOT meet PC		NOT meet PC
ANIMALS						
Terrestrial habitat for wildlife and invertebrates	Terrestrial habitat may be adversely effected in the short term due to construction, however would not be adversely impacted long term.	<input type="checkbox"/>	Terrestrial habitat may be adversely effected in the short term due to construction, however would not be adversely impacted long term.	<input type="checkbox"/>	Terrestrial habitat may be adversely effected in the short term during construction. Once structures are removed, early successional habitat would provide a benefit to wildlife.	<input type="checkbox"/>
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.		NOT meet PC		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.	No change in the sedimentation of the streams, thus aquatic habitat would remain a resource concern.	<input type="checkbox"/> NOT meet PC	No change in the sedimentation of the streams, thus aquatic habitat would remain a resource concern.	<input type="checkbox"/> NOT meet PC	Aquatic habitat would be negatively effected by the increased intensity of flood events. Sedimentation loads would likely adversely affect the Chesapeake Bay.	<input type="checkbox"/> NOT meet PC
<b>ENERGY</b>						
No resource concern identified	Hydroelectric power generation could be included as an element in the design of the structures to provide clean energy to the region.	<input type="checkbox"/> NOT meet PC	No effect	<input type="checkbox"/> NOT meet PC	No effect	<input type="checkbox"/> NOT meet PC
This area has various electrical, oil, and gas transmission facilities.						
<b>Human Economic and Social Considerations</b>						
<b>Public Health and Safety</b> Damaging floods occur on an annual basis 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.	Rehabilitation of existing flood control structures would extend the flood control benefits further into the future and increase public safety by ensure the structures meet modern day safety standards.		Repair of existing flood control structures would extend the flood control benefits further into the future however repairs to the structures may not bring them into compliance with current WV DEP Dam Safety standards.		Decommission of existing structures would result in the loss of flood protection and increase risk of loss of life. There would also be a loss of recreation opportunities and a reduction in water supply for the area.	
<b>Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.</b>						
<b>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</b>						
<b>G. Special Environmental Concerns</b> (Document existing/benchmark conditions)	<b>J. Impacts to Special Environmental Concerns</b>					
	<b>Alternative 3</b>		<b>Alternative 4</b>		<b>Alternative 5</b>	
	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 <a href="#">Guide Sheet</a> The watershed is not in an area recognized for regularly having impaired air quality or significant air quality issues.	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.	<input type="checkbox"/>	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.	<input type="checkbox"/>	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.	<input type="checkbox"/>
•Clean Water Act / Waters of the U.S. <a href="#">Guide Sheet</a> 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 Construction involved with the rehabilitation of the dams could result in 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.	<input type="checkbox"/>	May Affect Construction involved with the repair of the dams could result in 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.	<input type="checkbox"/>	May Affect Construction involved with the removal of the dams could result in 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.	<input type="checkbox"/>



<p>●Coastal Zone Management <a href="#">Guide Sheet</a></p> <p>There are no costal zones present in or near the watershed.</p>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<p>Coral Reefs <a href="#">Guide Sheet</a></p> <p>There are no coral reefs present in or near the watershed.</p>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<p>●Cultural Resources / Historic Properties <a href="#">Guide Sheet</a></p> <p>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.</p>	<p>May Affect</p> <p>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.</p>	<input type="checkbox"/>	<p>No Effect</p> <p>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.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>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.</p>	<input type="checkbox"/>
<p>●Endangered and Threatened Species <a href="#">Guide Sheet</a></p> <p>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). According to West Virginia Department of Natural Resources (WVDNR), WV is a permanent home to 22 federally endangered species (17 animals, 4 plants) and 7 federally threatened species (5 animals, 2 plants). WVDNR's State Wildlife Action Plan (SWAP) recognizes 22 Conservation Focus Areas (CFA) throughout the state that includes Species of Greatest Conservation Need (SGCN). See Appendix E for a complete USFWS IPaC Species list, WVDNR state listings, map of WV CFAs, and a list of SGCN for this watershed.</p>	<p>May Affect</p> <p>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.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>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</p>	<input type="checkbox"/>	<p>May Affect</p> <p>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</p>	<input type="checkbox"/>
<p>Environmental Justice <a href="#">Guide Sheet</a></p> <p>Morgan County is completely within the Appalachian Region. The county is not designated as limited resource counties by USDA. However, it is designated as 'transitional' indicating that local economies Morgan County is predominately white. Census data shows the population is 95.3% white, with Black or African American residents comprising less than 2%. The poverty rate Morgan County is 11%. WV poverty rate is 15.8% compared to the national rate of 11.4%.</p>	<p>No Effect</p> <p>No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.</p>	<input type="checkbox"/>	<p>No Effect</p> <p>No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.</p>	<input type="checkbox"/>	<p>No Effect</p> <p>No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.</p>	<input type="checkbox"/>

<p>●Essential Fish Habitat <a href="#">Guide Sheet</a></p> <p>This area is not designated as Essential Fish Habitat.</p>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<p>Floodplain Management <a href="#">Guide Sheet</a></p> <p>Morgan county has a major risk of flooding over the next few decades.</p>	<p>May Affect</p> <p>This alternative will result continued protection the floodplain by reducing flooding impacts further into the future.</p>	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	<p>May Affect</p> <p>Increased flooding as the result of decommissioning the flood control structures could result in increased active management of floodplains and their functions.</p>	<input type="checkbox"/>
<p>Invasive Species <a href="#">Guide Sheet</a></p> <p>Invasive species are found in the watershed.</p>	<p>May Affect</p> <p>Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.</p>	<input type="checkbox"/>
<p>●Migratory Birds/Bald and Golden Eagle Protection Act <a href="#">Guide Sheet</a></p> <p>Migratory birds and eagles utilize the Warm Spring Run Watershed habitats. There is a total of 15 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.</p>	<p>No Effect</p> <p>Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.</p>	<input type="checkbox"/>	<p>No Effect</p> <p>Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.</p>	<input type="checkbox"/>	<p>No Effect</p> <p>Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.</p>	<input type="checkbox"/>
<p>Natural Areas <a href="#">Guide Sheet</a></p> <p>The WV Division of Natural Resources (DNR) manages the 422 acre Widmeyer Wildlife Management Area and WV State Parks manages the 6,115 acre Cacapon Resort adjacent to the Warm Springs Watershed. The George Washington Heritage Trail and the Tuscarora Hiking trail also run through the watershed. There are no federal lands in the watershed.</p>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<p>Prime and Unique Farmlands <a href="#">Guide Sheet</a></p> <p>Presently there are 150 acres of Prime Farmland, which accounts for 2% of land in the study area. Additionally, there are 4,700 acres of Farmland of Local Importance and 76 acres of Farmland of Statewide Importance. Farmland protection boards are actively conserving land.</p>	<p>May Affect</p> <p>Alternative would provide continued protection of prime farmland through the reduction of streambank erosion further into the future.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>Alternative would provide continued protection of prime farmland.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>Alternative may result in the loss of prime and unique farmlands through projected increase of streambank erosion cutting into farmland.</p>	<input type="checkbox"/>
<p>Riparian Area <a href="#">Guide Sheet</a></p> <p>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.</p>	<p>May Affect</p> <p>There are riparian areas present in or near the project area and may have the potential to be impacted.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>There are riparian areas present in or near the project area and may have the potential to be impacted.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>There are riparian areas present in or near the project area and may have the potential to be impacted.</p>	<input type="checkbox"/>

Scenic Beauty <a href="#">Guide Sheet</a> Areas of potential scenic beauty in this watershed are typical of the Ridge and Valley physiographic province 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.	<input type="checkbox"/>	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.	<input type="checkbox"/>	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.	<input type="checkbox"/>
•Wetlands <a href="#">Guide Sheet</a> There are 200 acres of wetlands within the Warm Spring Run watershed, according to the US Fish and Wildlife Service National Wetlands Inventory.	No Effect Action is not likely to negatively impact any wetlands in the watershed.	<input type="checkbox"/>	No Effect Action is not likely to negatively impact any wetlands in the watershed.	<input type="checkbox"/>	No Effect Action is not likely to negatively impact any wetlands in the watershed.	<input type="checkbox"/>
•Wild and Scenic Rivers <a href="#">Guide Sheet</a> No designated Wild and Scenic Rivers are in or near the project area, however waters in Cacapon State Park are designated as Critical Resource Waters.	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<b>K. Other Agencies and Broad Public Concerns</b>	<i>Alternative 3</i>		<i>Alternative 4</i>		<i>Alternative 5</i>	
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.	Construction related to the rehabilitation of existing structures could 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.		Construction related to the repair of existing structures could 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.		Construction related to the decommissioning of existing structures could 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)	Flood protection would be extended past the current service life of the structures, bring structures up to current engineering standards, and potentially create water supply and energy production for the area. Annual maintenance costs associated with the structures would likely decrease.		Repairs of existing structures would extend the life of their values and functions and possibly reduce the long term maintenance costs, however would not involve any federal cost share.		Decommissioning of structures could help restore the function of the stream and riparian area, provide short term job creation, and return the local tax base with land usage. There would be a nearly total loss in flood protection, recreation, and water supply.	
<b>L. Mitigation</b> (Record actions to avoid, minimize, and compensate)	Mitigation could be required for areas of stream that may be impacted during construction and rehabilitation. Vegetation will be established on disturbed areas following construction to a vegetative plan developed in conjunction with NRCS and local sponsors.		Mitigation could be required for areas of stream that may be impacted during construction and repairs. Vegetation will be established on disturbed areas following construction to a vegetative plan developed in conjunction with NRCS and local sponsors.		Mitigation would likely not be required.	
<b>M. Preferred Alternative</b>	v preferred alternative	<input type="checkbox"/>		<input type="checkbox"/>		
	Supporting reason	Rehabilitation of existing flood control structures in the watershed would extend the life of their function.		Repairs of existing flood control structures in the watershed would extend the life of their function.		Decommissioning of structures within the watershed would result in stream and riparian area restoration.
<b>N. Context</b> (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 Natural Resources Conservation Service <b>ENVIRONMENTAL EVALUATION WORKSHEET</b>		NRCS-CPA-52 11/2019		<b>A. Client Name:</b> West Virginia Conservation Agency			
<b>D. Client's Objective(s) (purpose):</b> The purpose of this project is to provide watershed protection and agricultural water management by reducing flood water damages, erosion and sedimentation loading in the Warm Spring Run Watershed.		<b>B. Conservation Plan ID #</b> (as applicable): Warm Springs Run PIFR <b>Program Authority</b> (optional): PL-566					
		<b>C. Identification #</b> (farm, tract, field #, etc. as required): Warm Springs Run Watershed of the Potomac River Basin Morgan County, WV 12-digit HUC (020700040503)					
<b>E. Need for Action:</b> The baseline condition without federal investment is a situation of deteriorating infrastructure and potential loss of flood protection, incidental recreation, rural water supply, and other amenities associated with existing impoundments. Previously completed watershed projects are either past their service life or have been reclassified as high hazard dams.		<b>H. Alternatives</b>					
		<b>Alternative 6</b> ✓ if RMS <input type="checkbox"/>		<b>Alternative 7</b> ✓ if RMS <input type="checkbox"/>			
		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.			
				<b>Alternative 8</b> ✓ if RMS <input type="checkbox"/>			
				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.			
<b>Resource Concerns</b>							
In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).							
<b>F. Resource Concerns and Existing/ Benchmark Conditions</b> (Analyze and record the existing/benchmark conditions for each identified concern)		<b>I. Effects of Alternatives</b>					
		<b>Alternative 6</b>		<b>Alternative 7</b>		<b>Alternative 8</b>	
		<b>Amount, Status, Description</b> <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC	<b>Amount, Status, Description</b> <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC	<b>Amount, Status, Description</b> <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC
<b>SOIL</b>							
Sheet and rill erosion  Sedimentation caused by erosion in the uplands of the watershed negatively impact Warm Spring Run and its tributaries. Sediment loading contributes to reduced channel capacity, further flood damages.		No effect to upland erosion. Sedimentation caused by stream bank erosion would be decreased by the stabilization of streambanks.	<input type="checkbox"/>	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.	<input type="checkbox"/>	Reduction in soil erosion from reduced velocities of water conveyance during high rain events.	<input type="checkbox"/>
		NOT meet PC		NOT meet PC		NOT meet PC	
<b>WATER</b>							
Ponding and flooding  Flooding has been a historical issue in the watershed with the expected risk of flooding increasing over the next few decades as storms become more frequent and severe, and as the infrastructure ages. Approximately 10% of the residence are in major risk of flooding. 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.	<input type="checkbox"/>	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.	<input type="checkbox"/>	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.	<input type="checkbox"/>
		NOT meet PC		NOT meet PC		NOT meet PC	

Sediment transported to surface water	There would be a reduction in sediments entering the Chesapeake Bay. Water quality would be beneficially effected and result in more outdoor recreation opportunities.	<input type="checkbox"/>  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.	<input type="checkbox"/>  NOT meet PC	Reduction in sediment entering the watershed and the Chesapeake Bay due to reduced velocities of water conveyance during high rain events.	<input type="checkbox"/>  NOT meet PC
Sedimentation caused by erosion in the uplands of the watershed negatively impact Warm Spring Run and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages. Floodplain scour of adjacent floodplains also increase the sediment load of floodwaters during flood events.						
Nutrients transported to surface water	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.	<input type="checkbox"/>  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.	<input type="checkbox"/>  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	<input type="checkbox"/>  NOT meet PC
Water quality is negatively affected by nutrients, failing septic systems, 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.						
<b>F. Resource Concerns and Existing/ Benchmark Conditions</b> (Analyze and record the existing/benchmark conditions for each identified concern)	<b>I. (continued)</b>					
	<b>Alternative 6</b>		<b>Alternative 7</b>		<b>Alternative 8</b>	
	<b>Amount, Status, Description</b>  (Document both short and long term impacts)	<input type="checkbox"/> if does NOT meet PC	<b>Amount, Status, Description</b>  (Document both short and long term impacts)	<input type="checkbox"/> if does NOT meet PC	<b>Amount, Status, Description</b>  (Document both short and long term impacts)	<input type="checkbox"/> if does NOT meet PC
<b>AIR</b>						
No resource concern identified	No effect	<input type="checkbox"/>  NOT meet PC	Localized odors and particulate matter concerns could be addressed through conservation practices such as Waste Storage Facilities or Windbreaks/Shelterbelts.	<input type="checkbox"/>  NOT meet PC	No effect	<input type="checkbox"/>  NOT meet PC
Air quality is not a resource concern within the watershed						
<b>PLANTS</b>						
Plant structure and composition	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.	<input type="checkbox"/>  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.	<input type="checkbox"/>  NOT meet PC	Plant structure and composition would be improved through the installation of green infrastructure- wetlands, rain gardens, tree plantings, etc.	<input type="checkbox"/>  NOT meet PC
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.						
<b>ANIMALS</b>						
Terrestrial habitat for wildlife and invertebrates	Terrestrial habitat would be improved through the creation of riparian areas.	<input type="checkbox"/>  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.	<input type="checkbox"/>  NOT meet PC	Terrestrial habitat would be improved through the installation of green infrastructure- wetlands, rain gardens, tree plantings, etc.	<input type="checkbox"/>  NOT meet PC
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.						

Aquatic habitat for fish and other organisms Sedimentation and nutrients are negatively affecting aquatic fish and invertebrate species habitat.	Aquatic habitat would be improved by installing practices return the streambed to a more natural value and function.	<input type="checkbox"/> 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.	<input type="checkbox"/> 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.	<input type="checkbox"/> NOT meet PC
<b>ENERGY</b>						
No resource concern identified	No effect	<input type="checkbox"/> NOT meet PC	No effect	<input type="checkbox"/> NOT meet PC	Existing structures could be retrofitted for hydroelectricity production.	<input type="checkbox"/> NOT meet PC
This area has various electrical, oil, and gas transmission facilities.						
<b>Human Economic and Social Considerations</b>						
<b>Public Health and Safety</b> Damaging floods occur on an annual basis 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.	
<b>Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.</b>						
<b>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.</b>						
<b>G. Special Environmental Concerns</b> (Document existing/benchmark conditions)	<b>J. Impacts to Special Environmental Concerns</b>					
	<b>Alternative 6</b>		<b>Alternative 7</b>		<b>Alternative 8</b>	
	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 <a href="#">Guide Sheet</a> The watershed is not in an area recognized for regularly having impaired air quality or significant air quality issues.	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.	<input type="checkbox"/>	No Effect Land treatment practices are not likely to negatively effect air quality.	<input type="checkbox"/>	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.	<input type="checkbox"/>
●Clean Water Act / Waters of the U.S. <a href="#">Guide Sheet</a> 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.	<input type="checkbox"/>	No Effect Land treatment practices are not likely to negatively effect Waters of the US.	<input type="checkbox"/>	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.	<input type="checkbox"/>

<p>●Coastal Zone Management <a href="#">Guide Sheet</a></p> <p>There are no costal zones present in or near the watershed.</p>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<p>Coral Reefs <a href="#">Guide Sheet</a></p> <p>There are no coral reefs present in or near the watershed.</p>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<p>●Cultural Resources / Historic Properties <a href="#">Guide Sheet</a></p> <p>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.</p>	<p>May Affect</p> <p>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.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>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.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>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.</p>	<input type="checkbox"/>
<p>●Endangered and Threatened Species <a href="#">Guide Sheet</a></p> <p>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). According to West Virginia Department of Natural Resources (WVDNR), WV is a permanent home to 22 federally endangered species (17 animals, 4 plants) and 7 federally threatened species (5 animals, 2 plants). WVDNR's State Wildlife Action Plan (SWAP) recognizes 22 Conservation Focus Areas (CFA) throughout the state that includes Species of Greatest Conservation Need (SGCN). See Appendix E for a complete USFWS IPaC Species list, WVDNR state listings, map of WV CFAs, and a list of SGCN for this watershed.</p>	<p>May Affect</p> <p>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.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>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.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>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.</p>	<input type="checkbox"/>
<p>Environmental Justice <a href="#">Guide Sheet</a></p> <p>Morgan County is completely within the Appalachian Region. The county is not designated as limited resource counties by USDA. However, it is designated as 'transitional' indicating that local economies still need improvement. Morgan County is predominately white. Census data shows the population is 95.3% white, with Black or African American residents comprising less than 2%. The poverty rate Morgan County is 11%. WV poverty rate is 15.8% compared to the national rate of 11.4%.</p>	<p>May Affect</p> <p>No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.</p>	<input type="checkbox"/>		<input type="checkbox"/>



<p>●Essential Fish Habitat <a href="#">Guide Sheet</a></p> <p>This area is not designated as Essential Fish Habitat.</p>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<p>Floodplain Management <a href="#">Guide Sheet</a></p> <p>Morgan county has a major risk of flooding over the next few decades.</p>	<p>May Affect</p> <p>Floodplain management would be a consideration during the design process of natural stream restoration and would likely be benefited.</p>	<input type="checkbox"/>	<p>No Effect</p> <p>Land treatment practices are not likely to negatively effect flood plains. Annual flooding would likely be reduced to the decreased sedimentation of the stream.</p>	<input type="checkbox"/>	<p>No Effect</p> <p>Annual flooding would likely be reduced to the decreased sedimentation of the stream and increase water holding capacities in wetlands and rain gardens.</p>	<input type="checkbox"/>
<p>Invasive Species <a href="#">Guide Sheet</a></p> <p>Invasive species are found in the watershed.</p>	<p>May Affect</p> <p>Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>Invasive species occur within the watershed and would be controlled through scheduled land treatment activates on privately owned or operated lands.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.</p>	<input type="checkbox"/>
<p>●Migratory Birds/Bald and Golden Eagle Protection Act <a href="#">Guide Sheet</a></p> <p>Migratory birds and eagles utilize the Warm Spring Run Watershed habitats. There is a total of 15 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.</p>	<p>No Effect</p> <p>Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.</p>	<input type="checkbox"/>	<p>No Effect</p> <p>Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.</p>	<input type="checkbox"/>	<p>No Effect</p> <p>Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.</p>	<input type="checkbox"/>
<p>Natural Areas <a href="#">Guide Sheet</a></p> <p>The WV Division of Natural Resources (DNR) manages the 422 acre Widmeyer Wildlife Management Area and WV State Parks manages the 6,115 acre Cacapon Resort adjacent to the Warm Springs Watershed. The George Washington Heritage Trail and the Tuscarora Hiking trail also run through the watershed. There are no federal lands in the watershed.</p>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<p>Prime and Unique Farmlands <a href="#">Guide Sheet</a></p> <p>Presently there are 150 acres of Prime Farmland, which accounts for 2% of land in the study area. Additionally, there are 4,700 acres of Farmland of Local Importance and 76 acres of Farmland of Statewide Importance. Farmland protection boards are actively conserving land.</p>	<p>No Effect</p> <p>Conversion of prime and unique farmlands is not anticipated with this alternative.</p>	<input type="checkbox"/>	<p>No Effect</p> <p>Conversion of prime and unique farmlands is not anticipated with this alternative.</p>	<input type="checkbox"/>	<p>No Effect</p> <p>Conservation of prime and unique farmlands is not anticipated with this alternative.</p>	<input type="checkbox"/>
<p>Riparian Area <a href="#">Guide Sheet</a></p> <p>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.</p>	<p>May Affect</p> <p>Riparian areas will be enhanced as part of this alternative.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>Riparian areas will be enhanced as part of this alternative.</p>	<input type="checkbox"/>	<p>May Affect</p> <p>Riparian areas will be enhanced as part of this alternative.</p>	<input type="checkbox"/>



<b>Scenic Beauty</b> <a href="#">Guide Sheet</a> Areas of potential scenic beauty in this watershed are typical of the Ridge and Valley physiographic province 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.	<input type="checkbox"/>	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.	<input type="checkbox"/>	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.	<input type="checkbox"/>	
	<b>Wetlands</b> <a href="#">Guide Sheet</a> There are 200 acres of wetlands within the Warm Spring Run watershed, according to the US Fish and Wildlife Service National Wetlands Inventory.	No Effect Action is not likely to negatively impact any wetlands in the watershed.	<input type="checkbox"/>	No Effect Action is not likely to negatively affect any wetlands in the watershed.	<input type="checkbox"/>	May Affect Action is likely to have a positive impact on wetlands.	<input type="checkbox"/>
	<b>Wild and Scenic Rivers</b> <a href="#">Guide Sheet</a> No designated Wild and Scenic Rivers are in or near the project area, however waters in Cacapon State Park are designated as Critical Resource Waters.	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>	No Effect	<input type="checkbox"/>
<b>K. Other Agencies and Broad Public Concerns</b>		<b>Alternative 6</b>	<b>Alternative 7</b>		<b>Alternative 8</b>		
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.		
<b>L. Mitigation</b> (Record actions to avoid, minimize, and compensate)		None	None		None		
<b>M. Preferred Alternative</b>	preferred alternative	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		
	Supporting reason	Natural stream restoration would benefit the overall health 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.		
<b>N. Context</b> (Record context of alternatives analysis)		local	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 Natural Resources Conservation Service <b>ENVIRONMENTAL EVALUATION WORKSHEET</b>		NRCS-CPA-52 11/2019		<b>A. Client Name:</b> West Virginia Conservation Agency																																																	
				<b>B. Conservation Plan ID #</b> (as applicable): Warm Springs Run PIFR <b>Program Authority</b> (optional): PL-566																																																	
<b>D. Client's Objective(s) (purpose):</b> The purpose of this project is to provide watershed protection and agricultural water management by reducing flood water damages, erosion and sedimentation loading in the Warm Spring Run Watershed.		<b>C. Identification #</b> (farm, tract, field #, etc. as required): Warm Springs Run Watershed of the Potomac River Basin Morgan County, WV 12-digit HUC (020700040503)																																																			
<b>E. Need for Action:</b> The baseline condition without federal investment is a situation of deteriorating infrastructure and potential loss of flood protection, incidental recreation, rural water supply, and other amenities associated with existing impoundments. Previously completed watershed projects are either past their service life or have been reclassified as high hazard dams.		<b>H. Alternatives</b> <table border="1"> <thead> <tr> <th><b>Alternative 9</b></th> <th>✓ if RMS</th> <th><input type="checkbox"/></th> <th>✓ if RMS</th> <th><input type="checkbox"/></th> <th>✓ if RMS</th> <th><input type="checkbox"/></th> </tr> </thead> <tbody> <tr> <td>Combination of all alternatives- Land Treatment, Stream Restoration, Rehab, Repair, 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.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				<b>Alternative 9</b>	✓ if RMS	<input type="checkbox"/>	✓ if RMS	<input type="checkbox"/>	✓ if RMS	<input type="checkbox"/>	Combination of all alternatives- Land Treatment, Stream Restoration, Rehab, Repair, 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.																																								
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<b>In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).</b>																																																					
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Sediment transported to surface water	Strategic installation of flood control structures, land treatment practices, natural stream restoration and green infrastructure would reduce sediment loads in waterways.	<input type="checkbox"/>	NOT meet PC		<input type="checkbox"/>	NOT meet PC		<input type="checkbox"/>	NOT meet PC
Sedimentation caused by erosion in the uplands of the watershed negatively impact Warm Spring Run and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages. Floodplain scour of adjacent floodplains also increase the sediment load of floodwaters during flood events.									
Nutrients transported to surface water	Strategic installation of flood control structures, land treatment practices, natural stream restoration and green infrastructure nutrient transportation to waterways and the Chesapeake Bay	<input type="checkbox"/>	NOT meet PC		<input type="checkbox"/>	NOT meet PC		<input type="checkbox"/>	NOT meet PC
Water quality is negatively affected by nutrients, failing septic systems, 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.									

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	I. (continued)							
	Alternative 9							
	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 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.	<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>
Air quality is not a resource concern within the watershed.		NOT meet PC		NOT meet PC				NOT meet PC
PLANTS								
Plant structure and composition	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.	<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>
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.		NOT meet PC		NOT meet PC				NOT meet PC
ANIMALS								
Terrestrial habitat for wildlife and invertebrates	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.	<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>
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.		NOT meet PC		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 on aquatic wildlife would be significantly controlled with a strategic implementation of all alternatives previously evaluated.	<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC
<b>ENERGY</b>						
No resource concern identified	Hydroelectric power generation could be included as an element in the design of the structures to provide clean energy to the region.	<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC
This area has various electrical, oil, and gas transmission facilities.						
<b>Human Economic and Social Considerations</b>						
<b>Public Health and Safety</b> Damaging floods occur on an annual basis 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.	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.					
<b>Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.</b>						
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.						
<b>G. Special Environmental Concerns</b> (Document existing/ benchmark conditions)	<b>J. Impacts to Special Environmental Concerns</b>					
	<b>Alternative 9</b>					
	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 <a href="#">Guide Sheet</a> The watershed is not in an area recognized for regularly having impaired air quality or significant air quality issues.	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.	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
●Clean Water Act / Waters of the U.S. <a href="#">Guide Sheet</a> 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.	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

<p>●Coastal Zone Management <a href="#">Guide Sheet</a></p> <p>There are no costal zones present in or near the watershed.</p>	<p>No Effect</p>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<p>Coral Reefs <a href="#">Guide Sheet</a></p> <p>There are no coral reefs present in or near the watershed.</p>	<p>No Effect</p>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<p>●Cultural Resources / Historic Properties <a href="#">Guide Sheet</a></p> <p>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.</p>	<p>May Affect</p> <p>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.</p>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<p>●Endangered and Threatened Species <a href="#">Guide Sheet</a></p> <p>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). According to West Virginia Department of Natural Resources (WVDNR), WV is a permanent home to 22 federally endangered species (17 animals, 4 plants) and 7 federally threatened species (5 animals, 2 plants). WVDNR's State Wildlife Action Plan (SWAP) recognizes 22 Conservation Focus Areas (CFA) throughout the state that includes Species of Greatest Conservation Need (SGCN). See Appendix E for a complete USFWS IPaC Species list, WVDNR state listings, map of WV CFAs, and a list of SGCN for this watershed.</p>	<p>May Affect</p> <p>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.</p>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<p>Environmental Justice <a href="#">Guide Sheet</a></p> <p>Morgan County is completely within the Appalachian Region. The county is not designated as limited resource counties by USDA. However, it is designated as 'transitional' indicating that local economies still need improvement. Morgan County is predominately white. Census data shows the population is 95.3% white, with Black or African American residents comprising less than 2%. The poverty rate Morgan County is 11%. WV poverty rate is 15.8% compared to the national rate of 11.4%.</p>	<p>No Effect</p> <p>No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.</p>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

<p>●Essential Fish Habitat <a href="#">Guide Sheet</a> This area is not designated as Essential Fish Habitat.</p>	No Effect	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<p>Floodplain Management <a href="#">Guide Sheet</a> Morgan county has a major risk of flooding over the next few decades.</p>	May Affect This alternative will result in the protection of floodplains due to the decreased impacts of flooding.	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<p>Invasive Species <a href="#">Guide Sheet</a> Invasive species are found in the watershed.</p>	May Affect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<p>●Migratory Birds/Bald and Golden Eagle Protection Act <a href="#">Guide Sheet</a> Migratory birds and eagles utilize the Warm Spring Run Watershed habitats. There is a total of 15 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.</p>	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<p>Natural Areas <a href="#">Guide Sheet</a> The WV Division of Natural Resources (DNR) manages the 422 acre Widmeyer Wildlife Management Area and WV State Parks manages the 6,115 acre Cacapon Resort adjacent to the Warm Springs Watershed. The George Washington Heritage Trail and the Tuscarora Hiking trail also run through the watershed. There are no federal lands in the watershed.</p>	No Effect	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<p>Prime and Unique Farmlands <a href="#">Guide Sheet</a> Presently there are 150 acres of Prime Farmland, which accounts for 2% of land in the study area. Additionally, there are 4,700 acres of Farmland of Local Importance and 76 acres of Farmland of Statewide Importance. Farmland protection boards are actively conserving land.</p>	No Effect Alternative would provide protection of prime farmland through the reduction of streambank erosion, sheet and rill erosion, and sedimentation of streams.	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<p>Riparian Area <a href="#">Guide Sheet</a> 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.</p>	May Affect Riparian areas would be enhanced through the installation of natural stream restoration, land treatment programs, and green infrastructure.	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

<b>Scenic Beauty</b> <a href="#">Guide Sheet</a> Areas of potential scenic beauty in this watershed are typical of the Ridge and Valley physiographic province and common to the region.	<b>No Effect</b> 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.	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Wetlands</b> <a href="#">Guide Sheet</a> There are 200 acres of wetlands within the Warm Spring Run watershed, according to the US Fish and Wildlife Service National Wetlands Inventory.	<b>May Affect</b> Alternative would enhance the values and functions of wetlands and surrounding ecosystems.	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Wild and Scenic Rivers</b> <a href="#">Guide Sheet</a> No designated Wild and Scenic Rivers are in or near the project area, however waters in Cacapon State Park are designated as Critical Resource Waters.	<b>No Effect</b>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
<b>K. Other Agencies and Broad Public Concerns</b>	<b>Alternative 9</b>				
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.	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)	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.				
<b>L. Mitigation</b> (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 following construction to a vegetative plan developed conjunction with NRCS and local sponsors.				
<b>M. Preferred Alternative</b>	<input checked="" type="checkbox"/> preferred alternative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Supporting reason	Installation of various flood control and land treatment practices will provide a holistic approach to flood resiliency.			
<b>N. Context</b> (Record context of alternatives analysis)		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)

**JULIE STUTLER** Digitally signed by JULIE STUTLER  
Date: 2022.08.04 16:09:26 -04'00'

Signature (NRCS)

Title

Outreach Coordinator  
Level 3 Certified Planner

Title

Date

Date

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

- |                          |                          |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | • Is the preferred alternative expected to cause significant effects on public health or safety?   |
| <input type="checkbox"/> | <input type="checkbox"/> | • 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?  |
| <input type="checkbox"/> | <input type="checkbox"/> | • Are the effects of the preferred alternative on the quality of the human environment likely to be highly controversial?  |
| <input type="checkbox"/> | <input type="checkbox"/> | • Does the preferred alternative have highly uncertain effects or involve unique or unknown risks on the human environment?  |
| <input type="checkbox"/> | <input type="checkbox"/> | • Does the preferred alternative establish a precedent for future actions with significant impacts or represent a decision in principle about a future consideration?  |
| <input type="checkbox"/> | <input type="checkbox"/> | • 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?   |
| <input type="checkbox"/> | <input type="checkbox"/> | • 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. |
| <input type="checkbox"/> | <input type="checkbox"/> | • 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
<input type="checkbox"/>	1) is <b>not a federal action</b> where the agency has control or responsibility.	Document in "R.1" below. No additional analysis is required
<input type="checkbox"/>	2) is a federal action <b>ALL</b> of which is <b>categorically excluded</b> from further environmental analysis <b>AND</b> there are <b>no extraordinary circumstances as identified in Section "P"</b> .	Document in "R.2" below. No additional analysis is required
<input type="checkbox"/>	3) is a federal action that has been <b>sufficiently analyzed</b> in an existing Agency state, regional, or national NEPA document <b>and</b> there are no predicted <u>significant adverse environmental effects or extraordinary circumstances</u> .	Document in "R.1" below. No additional analysis is required.
<input type="checkbox"/>	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 <b>and has been formally adopted by NRCS</b> . 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. <b>(Note: This box is not applicable to FSA)</b>	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
<input checked="" type="checkbox"/>	5) is a federal action that has <b>NOT</b> 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	
<b>R.1</b> Findings Documentation	An Environmental Assessment would be prepared for the project if it proceeds to the planning phase. This potential project meets the salutatory acreage, volume/capacity of structure and recreation limit requirements for a PL-566 project. This potential project also meets the requirements of one or more Watershed Operations authorized purposes: Flood Prevention, Watershed Protection, and Agricultural Water Management. It meets the requirement for a minimum of 20% agricultural or rural benefits. It has sponsors who are ready, willing and able to carry out their responsibilities. There are no apparent insurmountable obstacles to this potential project. Section D of this form is not completed because the preferred alternative will not be known until planning is complete.
<b>R.2</b> Applicable Categorical Exclusion(s) (more than one may apply)	
7 CFR Part 650 <i>Compliance With NEPA</i> , subpart 650.6 <i>Categorical Exclusions</i> 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:**

_____	_____	_____
Signature	Title	Date

Additional notes

Appendix D.

Forecasted NRCS Staffing Needs

## Warm Springs Run Staffing Needs

	Planner	Engineer	Engineer	Biologist	Economist	Admin Asst
<b>Phase 1 -Identify Problems, Opportunities, &amp; Concerns</b>						
Final plan of work	30	16	16	16	16	6
Public Participation plan	20	12	12	12	12	2
Gather Data	50	50	50	50	50	20
Consultation List	6				12	2
Final assessment	18	18	18	18	18	6
<b>Total</b>	<b>124</b>	<b>96</b>	<b>96</b>	<b>96</b>	<b>108</b>	<b>36</b>

### Phase 2 -Determine Objectives

Document Sponsor Objectives	6	6	6	6	6	2
Write purpose & Need statement	10	6	6	6	6	4
Agency consultation/coordination	12	12	12	12	12	4
Tribal consultation	20				20	4
Scoping public meeting	12	10	10	10	10	4
Write scope of plan	10	10	10	10	10	8
<b>Total</b>	<b>70</b>	<b>44</b>	<b>44</b>	<b>44</b>	<b>64</b>	<b>26</b>

### Phase 3 -Inventory Resources

Resource Inventories & watershed assessment						
<i>Economic &amp; Social Assessment</i>						
Collect Population Demographics					15	2
Identify effects to public health & safety					16	2
Identify effects to homes, businesses & ag operations					80	6
Identify visual concerns					15	2
Collect economic data					40	4
Identify non-NEPA laws related to project	4	4	4	4	6	2
Identify approved regional water resource plans in project	2	2	2	2	2	2
Final economic and social assessment					60	6
<i>Archaeological &amp; Historic Assessment</i>						
Literature review				240		10
Coordination with State Historic Preservation Officer				80		6
Final archaeological and historic assessment				350		10
<i>Geologic Assessment &amp; Engineering Assessment</i>						
Review existing geologic investigations		20	20			
Engineering Surveys		80	80			
Evaluate condition of existing structures		30	30			
Final geologic assessment and engineering assessment		100	100			
<b>Total</b>	<b>6</b>	<b>236</b>	<b>236</b>	<b>676</b>	<b>234</b>	<b>52</b>

## Warm Springs Run Staffing Needs

### Phase 4 -Analyze Resource Data

Develop resource existing conditions

#### *Economic & Social Assessment*

Quantify onsite/offsite damages

Economics and social effects (future without project condition)

#### *Archaeological & Historic Assessment*

#### *Geologic Assessment & Engineering Assessment*

Determine geologic investigation needs

Review existing hydrology /hydraulic models

Determine watershed conditions (CN, Tc, rainfall)

Run preliminary hydraulics

Develop hydrologic model for watershed

Run hydrologic models

**Total**

Planner	Engineer	Engineer	Biologist	Economist	Admin Asst
20	20	20	20	20	6
				100	6
				40	6
			16		
	40	40			
	40	40			
	80	80			
	40	40			
	60	60			
	60	60			
<b>20</b>	<b>340</b>	<b>340</b>	<b>36</b>	<b>160</b>	<b>18</b>

### Phase 5 -Formulate Alternatives

#### *Analysis of initial alternatives*

Document alternatives eliminated from detailed study

Document reasonable alternatives

Identify permits, licenses, other entitlements required

Define mitigation strategies

Determine project costs for each alternative

Final plan of work

Final initial alternatives report

**Total**

10	12	12	8	8	10
10	12	12	10	10	10
4	4	4	4	4	2
8	6	6	10	10	4
	22	22			4
8	4	4	4	4	2
50	50	50	50	50	10
<b>90</b>	<b>110</b>	<b>110</b>	<b>86</b>	<b>86</b>	<b>42</b>

## Warm Springs Run Staffing Needs

### Phase 6 -Evaluate Alternatives

Summary & comparison of alternatives  
 Evaluate environmental resources  
     *Geology*  
 Foundation & slope stability  
 Sedimentation  
     *Hydrology & Hydraulics*  
 Run hydrologic models  
 Breach inundation study  
 Develop floodplain maps  
     *Economics*  
 Determine economic benefits for each alternative  
 Trend analysis for alternatives  
 Calculate average annual damages  
 Calculate benefit cost ratio  
 Determine National Economic Efficiency plan  
 Final summary & comparison of alternative table  
 Final environmental consequences narrative

	Planner	Engineer	Engineer	Biologist	Economist	Admin Asst
	12	12	12	12	12	4
	30			30		2
		20	20			4
		40	40			8
		110	110			20
		150	150			20
		120	120			20
					80	10
					10	2
					20	2
					6	
					6	
					180	20
	100			100		20
<b>Total</b>	<b>142</b>	<b>452</b>	<b>452</b>	<b>142</b>	<b>314</b>	<b>132</b>

### Phase 7 -Make Decisions

Compare & review alternatives with sponsor  
 Evaluate environmental resources

	30	10	10	10	10	2
	440	110	110	110	110	40
<b>Total</b>	<b>470</b>	<b>120</b>	<b>120</b>	<b>120</b>	<b>120</b>	<b>42</b>

### Phase 8 -Review & Draft Environmental Document

Response to agencies and other interested parties' comments  
 Response NWMC and SLO review  
 Response to HQ National Programmatic review  
 Complete plan

	24	20	20	20	20	4
	100	40	40	40	40	10
	20	10	10	10	10	2
	30	30	30	30	30	4
<b>Total</b>	<b>174</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>20</b>

Warm Springs Run Staffing Needs,  
assuming NRCS will conduct work with own staff

	Planner	Engineer	Engineer	Bilologist	Economist	Admin Asst	
Total Hours	1096	1498	1498	1300	1186	368	
Hourly Rate (includes overhead)	\$120.00	\$100.00	\$100.00	\$100.00	\$100.00	\$75.00	TOTAL COST
Total Cost	\$131,520.00	\$149,800.00	\$149,800.00	\$130,000.00	\$118,600.00	\$27,600.00	\$707,320.00

## Appendix E.

Supporting Information Appendix (T&E and Invasive Species)

# Endangered species

Listed species 1 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 2).

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

 SPECIES GUIDELINES ▾

## Mammals

NAME	STATUS
Indiana Bat <span>CH</span> <i>Myotis sodalis</i> Wherever found	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found	Threatened

## Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found	Candidate

## Flowering Plants

NAME	STATUS
Harperella <i>Ptilimnium nodosum</i> Wherever found	Endangered

## 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.



# Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act <sup>6</sup> and the Bald and Golden Eagle Protection Act <sup>7</sup>.

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.

<div><div>THUMBNAILS</div><div>LIST</div></div>		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 erythrophthalmus BCC Rangewide (CON)		Breeds May 15 to Oct 10
Black-capped Chickadee Poecile atricapillus praticus 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

<b>Cerulean Warbler</b> <i>Dendroica cerulea</i> <u>BCC Rangewide (CON)</u>	Breeds Apr 27 to Jul 20
<b>Chimney Swift</b> <i>Chaetura pelagica</i> <u>BCC Rangewide (CON)</u>	Breeds Mar 15 to Aug 25
<b>Eastern Whip-poor-will</b> <i>Antrostomus vociferus</i> <u>BCC Rangewide (CON)</u>	Breeds May 1 to Aug 20
<b>Golden Eagle</b> <i>Aquila chrysaetos</i> <u>Non-BCC Vulnerable</u>	Breeds elsewhere
<b>Kentucky Warbler</b> <i>Oporornis formosus</i> <u>BCC Rangewide (CON)</u>	Breeds Apr 20 to Aug 20
<b>Prairie Warbler</b> <i>Dendroica discolor</i> <u>BCC Rangewide (CON)</u>	Breeds May 1 to Jul 31
<b>Prothonotary Warbler</b> <i>Protonotaria citrea</i> <u>BCC Rangewide (CON)</u>	Breeds Apr 1 to Jul 31
<b>Red-headed Woodpecker</b> <i>Melanerpes erythrocephalus</i> <u>BCC Rangewide (CON)</u>	Breeds May 10 to Sep 10
<b>Rusty Blackbird</b> <i>Euphagus carolinus</i> <u>BCC - BCR</u>	Breeds elsewhere
<b>Wood Thrush</b> <i>Hylocichla mustelina</i> <u>BCC Rangewide (CON)</u>	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.

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## 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 cyphus		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.



Garlic mustard

- **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.

- **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 sachie**- 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.

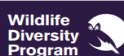
- **The West Virginia Native Plant Society and the West Virginia Natural Heritage Program** have developed informative presentations about invasive plants. Please contact the DNR Elkins office (below) to arrange a presentation.

- 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 J.M. Swearingen, USGS National Park Service, [www.forestryimages.org](http://www.forestryimages.org) and Purple loosestrife (inset) by Linda Haugen, USDA Forest Service, [www.forestryimages.org](http://www.forestryimages.org)



**Wildlife Diversity Program**  
Wildlife Resources  
West Virginia Division of Natural Resources  
P.O. Box 67  
Elkins, WV 26241  
(304) 637-0245  
Fax: (304) 637-0250

It is the policy of the Division of Natural Resources to provide its facilities, services, programs, and employment opportunities to all persons without regard to sex, race, age, religion, national origin or ancestry, disability, or other protected group status.

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## WVDNR WILDLIFE RESOURCES SECTION

# Invasive Plants of West Virginia



[www.wvdnr.gov](http://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.

## 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

## 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.

## 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.



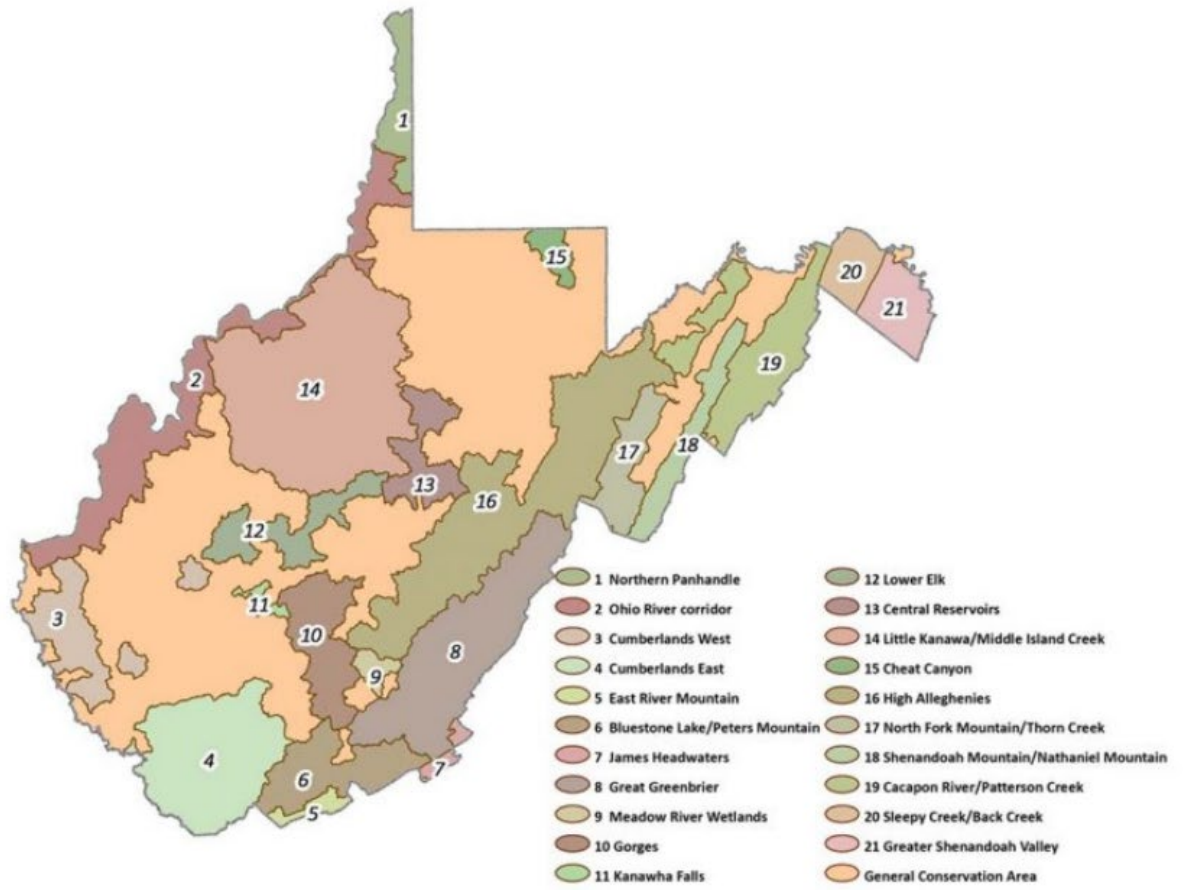
Joe-Pye weed, a valuable native

[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 Warm Springs Run Watershed

Common Name	Scientific Name	Name Category	G Rank	S Rank
Earleaf Foxglove	<i>Agalinis auriculata</i>	Vascular Plant	SH	G3
Earthsnake	<i>Virginia valeriae</i>	Vertebrate Animal	S3	G5
Eastern Smooth Earthsnake	<i>Virginia valeriae valeriae</i>	Vertebrate Animal	S2	G5T5
Eastern Wormsnake	<i>Carphophis amoenus</i>	Vertebrate Animal	S3	G5
Fowler's Toad	<i>Anaxyrus fowleri</i>	Vertebrate Animal	S5	G5
Green Heron	<i>Butorides virescens</i>	Vertebrate Animal	S3B	G5
Hickory Hairstreak	<i>Satyrium caryaevorus</i>	Invertebrate Animal	SH	G4
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	Vertebrate Animal	S2	G4
Milne's Euchlaena Moth	<i>Euchlaena milnei</i>	Invertebrate Animal	S1	G2G4
Northern Dusky Salamander	<i>Desmognathus fuscus</i>	Vertebrate Animal	S5	G5
Northern Two-lined Salamander	<i>Eurycea bislineata</i>	Vertebrate Animal	S5	G5
Pine Barrens Underwing	<i>Catocala herodias gerhardi</i>	Invertebrate Animal	SU	G3T3
Smooth Cliffbrake	<i>Pellaea glabella ssp. glabella</i>	Vascular Plant	S2	G5T5
Wood Thrush	<i>Hylocichla mustelina</i>	Vertebrate Animal	S3B	G4
Wood Turtle	<i>Glyptemys insculpta</i>	Vertebrate Animal	S3	G3

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:** None

**Diseases:**

Common Name	Scientific Name
butternut canker	<i>Ophiognomonia clavigignenti-juglandacearum</i>
chestnut blight or canker	<i>Cryphonectria parasitica</i>
dogwood anthracnose	<i>Discula destructiva</i>
oak wilt	<i>Bretziella fagacearum</i>
rose rosette disease (RRD)	<i>Emaravirus RRD</i>
white pine blister rust	<i>Cronartium ribicola</i>

**Insects:**

Common Name	Scientific Name
bark beetle	<i>Hylastes opacus</i>
brown marmorated stink bug	<i>Halyomorpha halys</i>
common pine shoot beetle, larger pine shoot beetle	<i>Tomicus piniperda</i>
emerald ash borer	<i>Agrilus planipennis</i>
European elm bark beetle, smaller European elm bark beetle	<i>Scolytus multistriatus</i>
gypsy moth	<i>Lymantria dispar</i>
hemlock woolly adelgid	<i>Adelges tsugae</i>
Japanese beetle	<i>Popillia japonica</i>
large aspen tortrix	<i>Choristoneura conflictana</i>
mile-a-minute weevil	<i>Rhinoncomimus latipes</i>
multicolored Asian lady beetle	<i>Harmonia axyridis</i>
southern pine beetle	<i>Dendroctonus frontalis</i>

**Plants:**

Common Name	Scientific Name
alpine knapweed, Tyrol knapweed	<i>Centaurea nigrescens</i>
alsike clover	<i>Trifolium hybridum</i>
American burnweed	<i>Erechtites hieraciifolius</i>
Amur honeysuckle	<i>Lonicera maackii</i>
annual bluegrass	<i>Poa annua</i>
annual ragweed	<i>Ambrosia artemisiifolia</i> var. <i>elatior</i>
annual sowthistle	<i>Sonchus oleraceus</i>
Asiatic dayflower	<i>Commelina communis</i>
autumn olive	<i>Elaeagnus umbellata</i>
bald brome	<i>Bromus racemosus</i>
barnyardgrass	<i>Echinochloa crus-galli</i>

Common Name	Scientific Name
bermudagrass	<i>Cynodon dactylon</i>
big chickweed	<i>Cerastium fontanum ssp. vulgare</i>
bigroot morning-glory	<i>Ipomoea pandurata</i>
birdsrape mustard	<i>Brassica rapa</i>
bittersweets	<i>Celastrus spp.</i>
black locust	<i>Robinia pseudoacacia</i>
black medic	<i>Medicago lupulina</i>
black mustard	<i>Brassica nigra</i>
bouncingbet	<i>Saponaria officinalis</i>
bristlegrass	<i>Setaria spp.</i>
broadleaf dock	<i>Rumex obtusifolius</i>
buckhorn plantain	<i>Plantago lanceolata</i>
bull thistle	<i>Cirsium vulgare</i>
burcucumber	<i>Sicyos angulatus</i>
bush honeysuckles (exotic)	<i>Lonicera spp.</i>
bushy wallflower	<i>Erysimum repandum</i>
California privet	<i>Ligustrum ovalifolium</i>
Canada bluegrass	<i>Poa compressa</i>
Canada thistle	<i>Cirsium arvense</i>
Canadian horseweed	<i>Erigeron canadensis</i>
catnip	<i>Nepeta cataria</i>
cheatgrass, downy brome	<i>Bromus tectorum</i>
chicory	<i>Cichorium intybus</i>
Chinese silvergrass	<i>Miscanthus sinensis</i>
coltsfoot	<i>Tussilago farfara</i>
common burdock, lesser burdock	<i>Arctium minus</i>
common chickweed	<i>Stellaria media</i>
common chickweed	<i>Stellaria pallida</i>
common cocklebur	<i>Xanthium strumarium</i>
common dandelion	<i>Taraxacum officinale ssp. officinale</i>
common duckweed	<i>Lemna minor</i>
common mallow	<i>Malva neglecta</i>
common mouse-ear chickweed	<i>Cerastium fontanum</i>
common mullein	<i>Verbascum Thapsus</i>
common pear	<i>Pyrus communis</i>
common periwinkle	<i>Vinca minor</i>
common pokeweed	<i>Phytolacca americana</i>
common purslane	<i>Portulaca oleracea</i>
common ragweed	<i>Ambrosia artemisiifolia</i>
common selfheal	<i>Prunella vulgaris</i>
common speedwell	<i>Veronica officinalis</i>
common St. Johnswort	<i>Hypericum perforatum</i>

Common Name	Scientific Name
common teasel	<i>Dipsacus fullonum</i>
common velvetgrass	<i>Holcus lanatus</i>
common viper's bugloss, blueweed	<i>Echium vulgare</i>
corn gromwell	<i>Buglossoides arvensis</i>
corn speedwell	<i>Veronica arvensis</i>
cornflower	<i>Centaurea cyanus</i>
curly dock	<i>Rumex crispus</i>
curly dock	<i>Rumex crispus ssp. crispus</i>
cutleaf teasel	<i>Dipsacus laciniatus</i>
dames rocket	<i>Hesperis matronalis</i>
dandelion	<i>Taraxacum officinale</i>
Deptford pink	<i>Dianthus armeria</i>
dwarf snapdragon	<i>Chaenorhinum minus</i>
eastern redcedar	<i>Juniperus virginiana</i>
eastern white pine	<i>Pinus strobus</i>
eclipta	<i>Eclipta prostrata</i>
English ivy	<i>Hedera helix</i>
European common reed, Phragmites	<i>Phragmites australis ssp. australis</i>
everlasting peavine	<i>Lathyrus latifolius</i>
false strawberry	<i>Potentilla indica</i>
field bindweed	<i>Convolvulus arvensis</i>
field pennycress	<i>Thlaspi arvense</i>
field pepperweed	<i>Lepidium campestre</i>
garlic mustard	<i>Alliaria petiolate</i>
giant foxtail	<i>Setaria faberi</i>
giant knotweed	<i>Reynoutria sachalinensis</i>
greater celandine	<i>Chelidonium majus</i>
ground ivy	<i>Glechoma hederacea</i>
hairy cat's ear	<i>Hypochaeris radicata</i>
hairy galinsoga	<i>Galinsoga quadriradiata</i>
hedge bindweed	<i>Calystegia sepium</i>
hemp dogbane	<i>Apocynum cannabinum</i>
henbit	<i>Lamium amplexicaule</i>
horsenettle	<i>Solanum carolinense</i>
hydrilla	<i>Hydrilla verticillate</i>
Indian mustard	<i>Brassica juncea</i>
Japanese barberry	<i>Berberis thunbergia</i>
Japanese clover	<i>Kummerowia striata</i>
Japanese honeysuckle	<i>Lonicera japonica</i>
Japanese knotweed	<i>Reynoutria japonica</i>
Japanese stiltgrass	<i>Microstegium vimineum</i>
johnsongrass	<i>Sorghum halepense</i>

Common Name	Scientific Name
Kentucky bluegrass	<i>Poa pratensis</i>
Korean lespedeza	<i>Kummerowia stipulacea</i>
kudzu	<i>Pueraria montana var. lobata</i>
Kummerowia	<i>Kummerowia spp.</i>
ladysthumb	<i>Persicaria maculosa</i>
lambsquarters	<i>Chenopodium album</i>
large crabgrass	<i>Digitaria sanguinalis</i>
large hop clover	<i>Trifolium campestre</i>
longspine sandbur	<i>Cenchrus longispinus</i>
longstalk cranesbill	<i>Geranium columbinum</i>
meadow fescue	<i>Festuca pratensis</i>
meadow hawkweed	<i>Hieracium caespitosum</i>
mile-a-minute vine, Asiatic tearthumb	<i>Persicaria perfoliate</i>
mimosa	<i>Albizia julibrissin</i>
Morrow's honeysuckle	<i>Lonicera morrowii</i>
moth mullein	<i>Verbascum blattaria</i>
motherwort	<i>Leonurus cardiaca</i>
multiflora rose	<i>Rosa multiflora</i>
musk thistle, nodding thistle	<i>Carduus nutans</i>
narrow-leaved cattail	<i>Typha angustifolia</i>
nimblewill	<i>Muhlenbergia schreberi</i>
northern white cedar	<i>Thuja occidentalis</i>
Norway maple	<i>Acer platanoides</i>
orchardgrass	<i>Dactylis glomerata</i>
oriental bittersweet	<i>Celastrus orbiculatus</i>
Oriental lady's thumb	<i>Persicaria longiseta</i>
Oriental lady's thumb	<i>Polygonum posumbu</i>
oxeye daisy	<i>Leucanthemum vulgare</i>
paradise apple	<i>Malus pumila</i>
peppermint	<i>Mentha x piperita</i>
perilla mint	<i>Perilla frutescens</i>
periwinkle	<i>Vinca spp.</i>
plumeless thistle	<i>Carduus spp.</i>
poison hemlock	<i>Conium maculatum</i>
poverty brome	<i>Bromus sterilis</i>
prostrate knotweed	<i>Polygonum aviculare</i>
prostrate pigweed	<i>Amaranthus blitoides</i>
purple crown-vetch	<i>Securigera varia</i>
purple deadnettle	<i>Lamium purpureum</i>
purple loosestrife	<i>Lythrum salicaria</i>
quackgrass	<i>Elymus repens</i>
Queen Anne's lace, wild carrot	<i>Daucus carota</i>

Common Name	Scientific Name
rabbitfoot clover	<i>Trifolium arvense</i>
rapeseed	<i>Brassica napus</i>
red clover	<i>Trifolium pratense</i>
red fescue	<i>Festuca rubra</i>
red sorrel	<i>Rumex acetosella</i>
redtop	<i>Agrostis gigantea</i>
roughstalk bluegrass	<i>Poa trivialis</i>
Russian thistle	<i>Salsola tragus</i>
rye brome	<i>Bromus secalinus</i>
scarlet pimpernel	<i>Anagallis arvensis</i>
sensitive partridgepea	<i>Chamaecrista nictitans</i>
sericea lespedeza	<i>Lespedeza cuneata</i>
shepherd's-purse	<i>Capsella bursa-pastoris</i>
Siberian crabapple	<i>Malus baccata</i>
small carpetgrass, joint-head grass	<i>Arthraxon hispidus</i>
smallflower galinsoga	<i>Galinsoga parviflora</i>
spiny plumeless thistle	<i>Carduus acanthoides</i>
spiny sowthistle	<i>Sonchus asper</i>
spotted knapweed	<i>Centaurea stoebe ssp. micranthos</i>
spotted spurge	<i>Euphorbia maculate</i>
spotted waterhemlock	<i>Cicuta maculate</i>
star-of-Bethlehem	<i>Ornithogalum umbellatum</i>
stinging nettle	<i>Urtica dioica</i>
sulfur cinquefoil	<i>Potentilla recta</i>
tall fescue	<i>Festuca arundinacea</i>
tall lettuce	<i>Lactuca canadensis</i>
tall oatgrass	<i>Arrhenatherum elatius</i>
tall thistle	<i>Cirsium altissimum</i>
tawny daylily	<i>Hemerocallis fulva</i>
thoroughwort pennycress	<i>Microthlaspi perfoliatum</i>
thymeleaf sandwort	<i>Arenaria serpyllifolia</i>
timothy	<i>Phleum pratense</i>
tree-of-heaven	<i>Ailanthus altissima</i>
Virginia pepperweed	<i>Lepidium virginicum</i>
wallflower mustard	<i>Erysimum cheiranthoides</i>
western salsify	<i>Tragopogon dubius</i>
white campion	<i>Silene latifolia</i>
white clover	<i>Trifolium repens</i>
white willow	<i>Salix alba</i>
wild four-o'clock	<i>Mirabilis nyctaginea</i>
wild garlic	<i>Allium vineale</i>
wild parsnip	<i>Pastinaca sativa</i>

Common Name	Scientific Name
wine raspberry	<i>Rubus phoenicolasius</i>
woodland strawberry	<i>Fragaria vesca</i>
woodland strawberry	<i>Fragaria vesca ssp. vesca</i>
yellow foxtail	<i>Setaria pumila</i>
yellow rocket	<i>Barbarea vulgaris</i>
yellow sweet-clover	<i>Melilotus officinalis</i>
yellow toadflax	<i>Linaria vulgaris</i>
yellow woodsorrel	<i>Oxalis stricta</i>

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](https://habitat.noaa.gov/appa/efhmapper/?page=page_3))