



# The Environmental Section

**Who We Are  
and  
What We Do**

# Who We are

Ben Hark is our Environmental Section Head

Sondra Mullins is our NEPA Status Group Leader

**Natural Resources Section** has 4 Biologists

Traci Cummings, Sydney Burke, Nathan Mullins and Ashley Akers

**Historic Resources Section** has 4 Historians

Randy Epperly, Tracy Bakic, Ahleah Boise, and Tyler Wilson

**Archaeological Resources Section** has 5 Archaeologists

Rod Demott, Tim Currey, Jen Babb, Rachel Crawford, and Matt O'Brien

**Engineering Support Section** has 2 Engineers and 2 Biologists

Lovell Facemire, Don Bailey , Tracie Moles and Hillary Mower

# National Environmental Policy Act NEPA

- ❖ The National Environmental Policy Act (NEPA) was one of the first laws ever written that establishes the broad national framework for protecting our environment.
- ❖ NEPA's basic policy is to assure that **ALL** branches of **GOVERNMENT** give proper consideration to the environment prior to undertaking any major federal action that significantly affects the environment.

# A few acts that fall under the NEPA umbrella...

**Section 7** Endangered Species Act

**Section 404** Clean Water Act

**Section 106** Cultural Resources

**Executive order 12898-** Environmental Justice

**Section 4(f)** Parks, recreation areas, refuges, historic properties

**Section 6(f)** use of land and water conservation funds

# Essential elements of NEPA

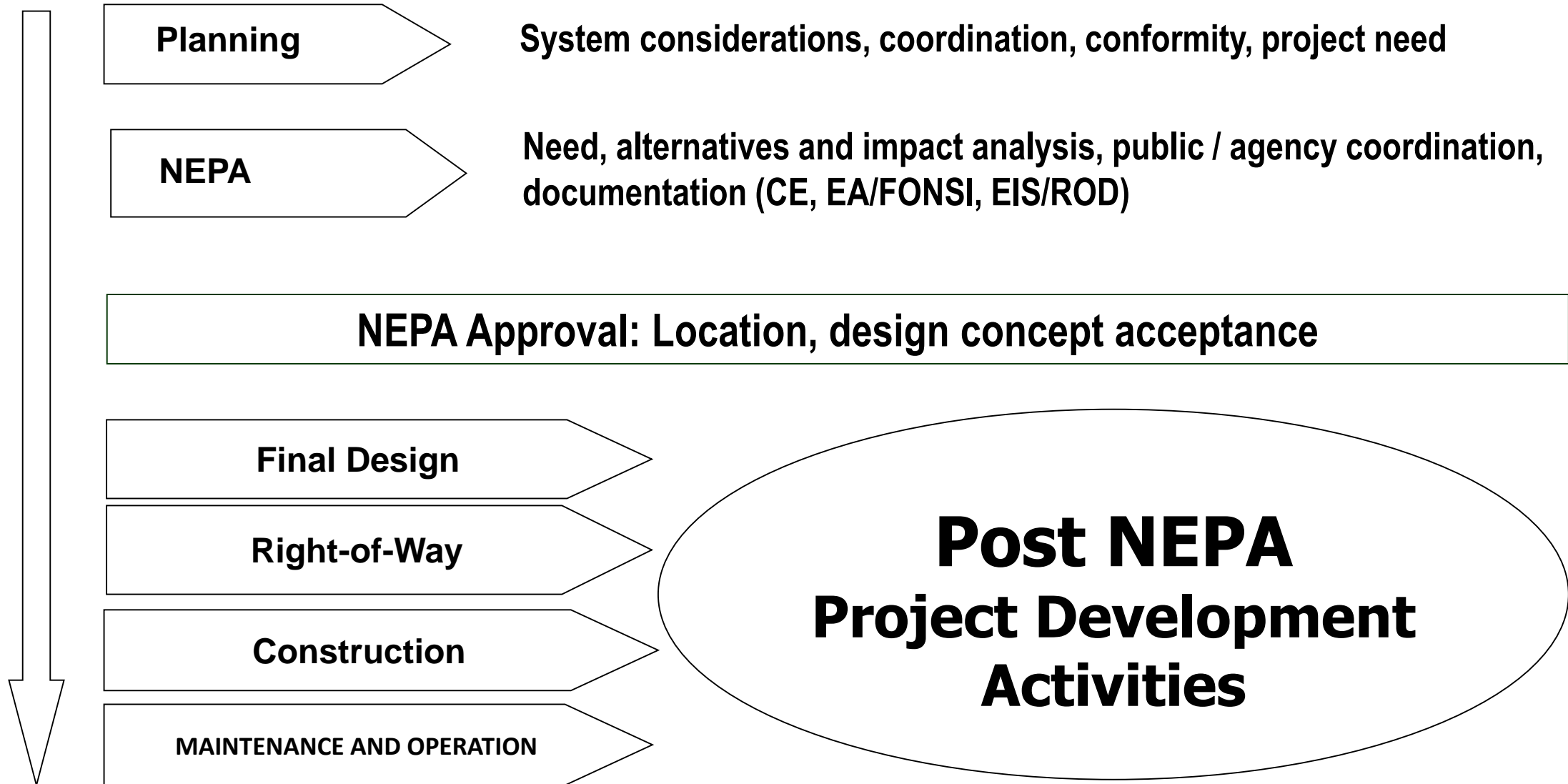
- ❖ Purpose and Need
- ❖ Alternatives
- ❖ Impacts
- ❖ Mitigation
- ❖ Public Involvement
- ❖ Interagency Coordination
- ❖ Documentation

# NEPA DOCUMENT TYPES

On average how long does it take to clear each type?

❖ Programmatic Categorical Exclusion - Type 1	PCE Type 1 (1-2 days)
❖ Programmatic Categorical Exclusion - Type 2	PCE Type 2 (3-4 months)
NEED FHWA APPROVAL	
❖ Categorical Exclusion	CE (6-9 months)
❖ Environmental Assessment/Finding of No Significant Impact	EA (12-18 months)
❖ Environmental Impact Statement/Record of Decision	EIS ( 2-5 years)

# Transportation Project Development Process



# Section 7 of Endangered Species Act of 1973

- ❖ Provides a program for the conservation of plants and animals and the habitats in which they are found.
- ❖ The law also prohibits any action that causes “**taking**” of any listed species.

# Threatened and endangered species

- ❖ In West Virginia there are **17 species of animals** and **4 species of plants** that are considered **endangered**.
- ❖ There are **5 species of animals** and **2 species of plants** that are considered **threatened**.

# Species Survey Schedule Timeline

January	February	March	April	May	June	July	August	September	October	November	December	
				mussels: May 1 - Oct 1								
tree clearing : Nov 15 - Mar 31					bats summer: May 15 - Aug 15				portal: Sep 15 - Oct 31		tree clearing: Nov 15 - Mar 31	
		n.flying squirrel: spring					n.flying squirrel: fall					
	bald eagle: early spring											
Madison Cave Isopod: no time restrictions												
candy darter and diamond darter: no time restrictions												
cold water fish spawn:Sep 15 - Mar 31				warm water fish spawn: Apr 1 - Jun 30					cold water fish spawn: Sep 15 - Mar 31			
		flat-spired 3-toothed land snail: spring, early summer										
							Cheat Mtn. salamander: fall with night temps above 55°F, within 48 hrs following rain					
							northeastern bulrush: Aug 1 - Sep 30					
							harperella: Jul 1 - Sep 30					
				running buffalo clover: May 1 - Sep 30								
							shale barren rockcress: Aug 1 - Sep 30					
					VA spiraea: Jun 1 - Sep 30							
				small whorled pogonia: May 1 - Sep 30								
				benthics: Apr 15 - Oct 15								
crayfish: Sep 10 - Jul 20										crayfish: Sep 10 - Jul 20		

# Section 106 of the National Historic Preservation Act

- ❖ Section 106 requires federal agencies to consider the effects of projects they carry out, approve, or fund on historic properties.
- ❖ Section 106 of the National Historic Preservation Act is crucial to the transportation program. It requires consideration of historic resources on all projects within the state.
- ❖ Section 106 gives the Advisory Council on Historic Preservation, interested parties, and the public the opportunity to comment on projects with historic issues, prior to the agency's decision on them.

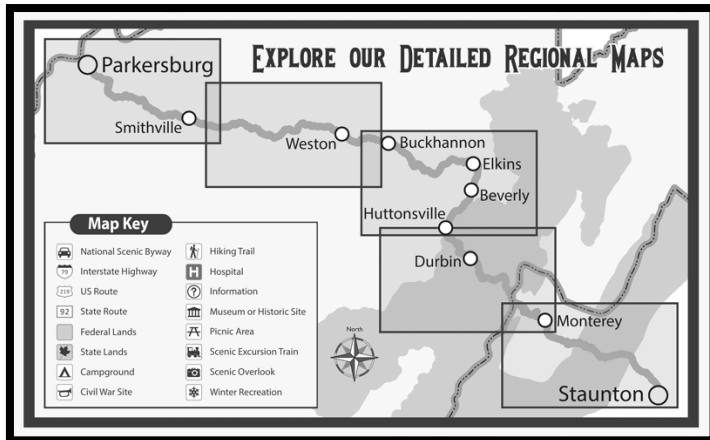
# Section 106 Review

- **To complete Section 106 Review the following must occur:**
  - Gather information to decide which properties in the project area have historic significance (listed, or are eligible for listing, in the National Register of Historic Places (referred to as “historic properties”));
  - Determine how those historic properties might be impacted by the project (review plans);
  - Explore measures (alignment change) to avoid or reduce harm (adverse effect) to historic properties; and
  - Reach agreement with the SHPO/THPO (and the ACHP in some cases) on such measures to resolve any adverse effects. A Memorandum of Agreement is prepared and signed between the SHPO, WVDOT & FHWA.

# National Register Criteria for Evaluation

- **A** -That are associated with **events** that have made a significant contribution to the broad patterns of our history; or
- **B** -That are associated with the lives of **persons** significant in our past; or
- **C** -That embody the **distinctive characteristics** of a type, period, or method of construction, or that represent the work of a master, or that possess **high artistic values**, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- **D** -That have yielded or may be likely to **yield, information** important in prehistory or history.

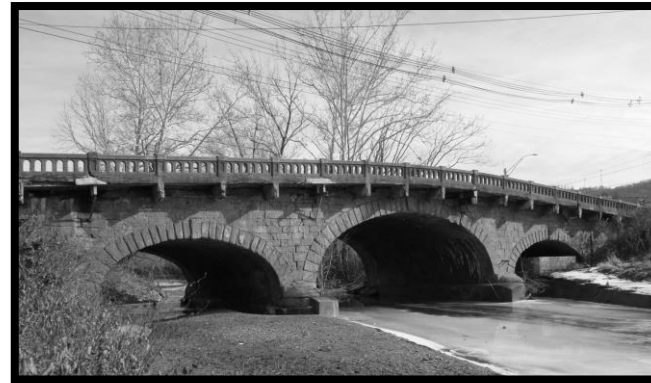
A.



B.



C.



D.



# Historic Resources Section

**The Historic Resources Section is responsible for evaluating a project area for potential historic resources.**

**To be historic, a building must :**

- Be at least 50 years old;
- Fit one of the criteria for the National Register of Historic Places (does *not* have to actually be formally listed);
- have integrity (original materials, etc.).

## **Section 4(F) within the U.S. Department of Transportation Act of 1966**

- ❖ Section 4 (f) refers to the original section within the U.S. Department of Transportation Act of 1966 which provided for consideration of park and recreation lands, wildlife and waterfowl refuges, and historic sites during transportation project development.
- ❖ Section 4 (f) only applies to projects that have federal funding.

## **Section 6(F) of the Land and Water Conservation Fund Act**

- ❖ Section 6(f) of this Act provides matching funds to states or municipalities for planning, improvements, or acquisition of outdoor recreational lands. Any property that was planned, purchased, or improved with LWCF money is considered a 6(f) property. Typically, Section 6(f) properties are recreational lands that are also regulated under Section 4(f) of the Department of Transportation Act.

# What we look for: 7 Aspects of Integrity

- Design
- Materials
- Workmanship
- Location
- Setting
- Feeling
- Association

\*Evaluation of integrity is very subjective

# ARCHAEOLOGICAL RESOURCES

- Our Archaeology Section studies past human cultures through the artifacts (material goods) and features (locations of previous activity) that are left behind.

# What does the archaeologist do?

- Using the project design information an Area of Potential Effect (APE) must be determined.
  - Some locations or portions may be eliminated from further consideration due to the nature and extent of known previous disturbances, or landforms that make encountering archaeological resources unlikely
- Conduct background research
  - All reasonably discoverable sources of information regarding the history and prehistory around the project location should be consulted.
  - Property entry permissions should be requested from the appropriate district's Right of Way agent as soon as possible.
  - The records of the WV SHPO must be consulted before fieldwork can be planned.
- Make a field visit
  - This should happen as soon as the limits of disturbance (LOD) or environmental clearance zone (ECZ) are known.
  - During the field visit photo documentation of the general area will be completed.
  - This documentation can be used for justifying why further testing is unwarranted. If testing will be required, then the affected parcels will be noted.
  - Shovel tests will be completed throughout the LOD where suitable areas are found and they will be documented for reporting to SHPO or use on the review exempt forms.
- Reporting/ Documenting
  - Reports are prepared to be sent to SHPO if required, if not the review exempt forms are completed for project clearance.

# Mitigation



Some projects require us to do different types of mitigation to make up for the impacts we've had to the natural, historic or archaeological resources.



Mitigation can be giving money to organizations or groups for restoration projects.



Providing money for research.



Monitoring the resources that were moved during the construction.



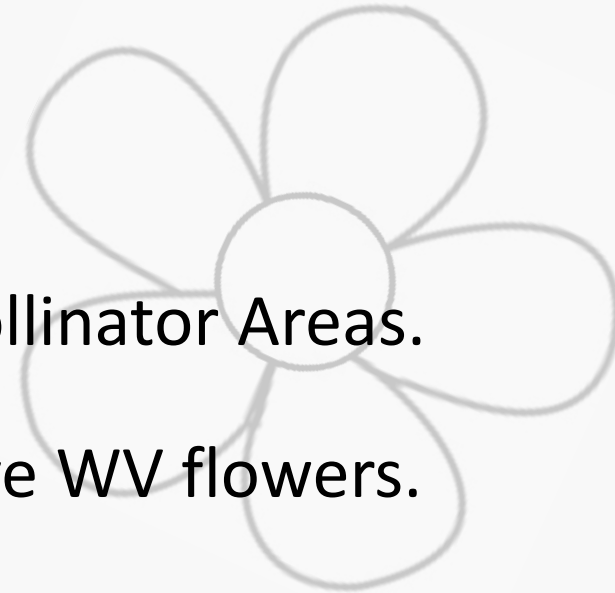
Habitat improvements, etc.

# Mitigation required from Tribal Consultation was the aesthetic details on the parapets.



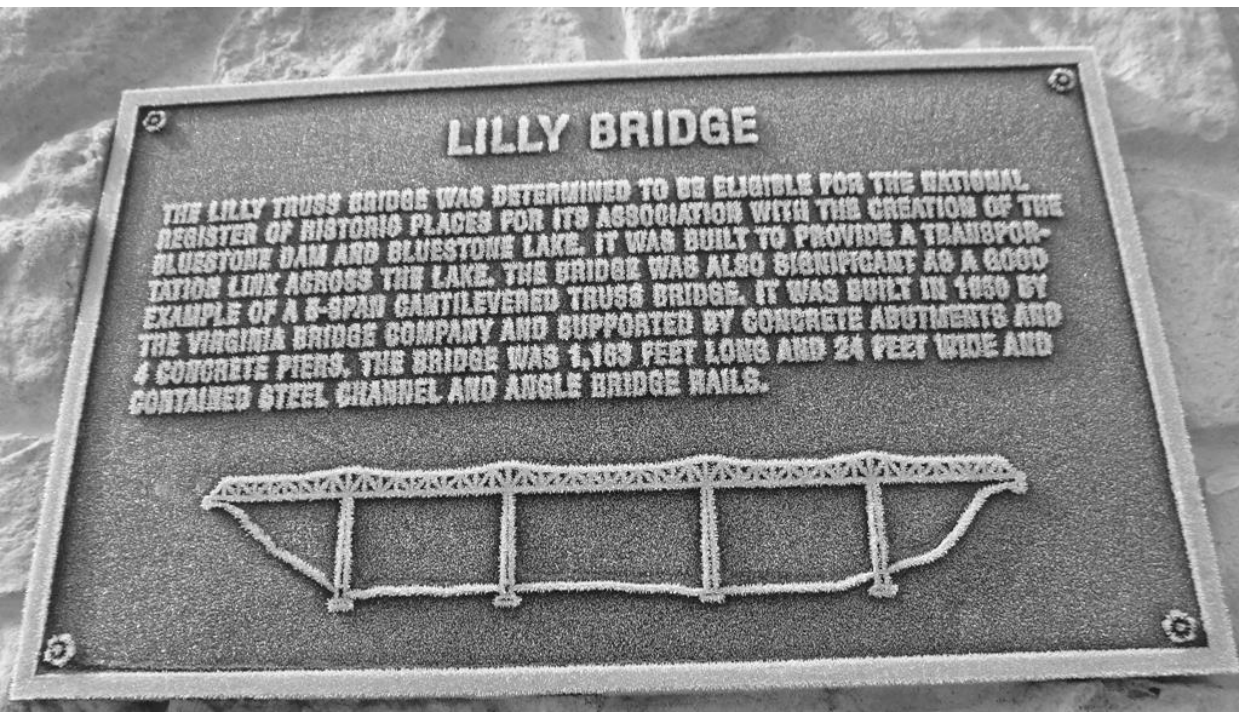
# Pollinator Mitigation

- Changing the WVDOT sponsored Wildflower Plots into Pollinator Areas.
- Using a specialized seed mix for roadsides that have native WV flowers.
- Sydney Burke has designed the signs that will designate these WVDOT Pollinator Areas.
- Also going to have small pollinator plots and signage at our rest areas.
- Mitigation for threatened and endangered pollinator species throughout the state.





# Lilly Bridge Mitigation



# Combining mitigation funds and resources for multiple projects means better quality and greater benefit to the public.

**METAL TRUSS BRIDGES**  
Metal was used for bridge building in the United States starting in the 1840s, when railroads were at the forefront of bridge technology. Early bridges were constructed of wrought or cast iron. It was not until the advancement of the steel-making process after about 1870 that metal bridges became economical for common use on roads. The truss bridge makes use of steel's properties in both compressive and tensile strength. When a load is applied to a truss, some of the members are "squeezed" from end to end (compression) and some are "pulled" (tension). Engineers were busy in the late nineteenth century inventing different configurations of trusses in order to achieve longer spans and use less material. Whipple, Howe, Baltimore, Pennsylvania, Pratt and Warren trusses are just a few examples of the many truss types constructed over the years. West Virginia's oldest known metal truss is the Capon Lake Whipple Truss in Hampshire County, built in 1874. Many Pratt through-trusses, the most common truss type for highway structures, were built through the 1920s, and some very large trusses, such as the Yeager Bridge on the West Virginia Turnpike in Charleston, continued to be built through the 20th century.

**Highways Through History**

**CATALOG BRIDGES**  
Some companies, including the Wrought Iron Bridge Company of Canton, Ohio, published catalogs of different types of metal trusses, and clients could simply order the bridge that suited their needs and budget. In West Virginia, the county courts were responsible for road improvement prior to the establishment of the State Road Commission in 1917, and many counties purchased bridges through catalogs.

**ROSS BOOTH MEMORIAL BRIDGE**  
(Winfield Toll Bridge)  
LOCATION: WV 34, Winfield, Putnam County, spanning Kanawha River  
LENGTH: 1466'-6"  
YEAR CONSTRUCTED: 1955  
DESIGNER: Harrington and Corvelyn, Inc.  
CONTRACTOR: John F. Beasley Construction Company  
The Ross Booth Memorial Bridge, which is a three-span cantilever Warren through-truss, replaced the 130-year-old ferryboat crossing between Winfield and Red House across the Kanawha River, greatly increasing efficiency of travel in the area. The length, size, and cantilever design made the bridge a rarity for the construction time period. This bridge qualifies for the National Register of Historic Places based on its effect on local and regional transportation and its innovative engineering technology. The structure underwent a major rehabilitation in 2010 at the cost of approximately \$15,000,000.

**KANAWHA FALLS BRIDGE**  
LOCATION: CR 13, near Gandy Bridge, Taylor County, spanning the Kanawha River, CR 13/2, CSX Railroad and Norfolk Southern Railroad  
LENGTH: 1091'-4"  
YEAR CONSTRUCTED: 1928  
CONTRACTOR: McClintic-Marshall of Pittsburgh  
The Kanawha Falls Bridge in the New River Gorge originally opened as a toll bridge built for the Kanawha Falls Bridge Company, Inc. The opening of the bridge in 1929 resulted in the end of the Kanawha Falls Ferry that had been in operation for 125 years. The West Virginia Division of Highways acquired the bridge in 1977. It consists of three simple steel Pennsylvania through-truss spans and one simple steel riveted deck girder span. The Pennsylvania truss was developed by the Pennsylvania Railroad in 1875 and was later commonly used for highway bridges. The Kanawha Falls Bridge is one of the few remaining Pennsylvania truss highway bridges in the state and is eligible for the National Register of Historic Places for its architectural and engineering merits.

**PARK'S GAP BRIDGE**  
LOCATION: CR 6, Towadank vicinity, Berkeley County, spanning Back Creek  
LENGTH: 98'-6"  
YEAR CONSTRUCTED: 1892  
CONTRACTOR: Vulcan Road Machine Company / Charles Town, WV  
The Park's Gap Bridge consists of one simple steel pony truss span supported on full-height stone masonry abutments. The bridge is constructed entirely of railroad rails, loop rods and U-bolts. Park's Gap Bridge is listed on the National Register of Historic Places. The bridge is significant as an rare example of an unusual painted bridge truss and construction system. The bridge is unusual in its design, structural system and materials and is one of only three or four Lane truss bridges in the eastern United States. This is the only Lane truss bridge in West Virginia.

**CAPON LAKE WHIPPLE TRUSS**  
LOCATION: WV 259, Yellow Spring vicinity, Hampshire County, spanning the Capon River  
YEAR CONSTRUCTED: 1874  
CONTRACTOR: T.B. White and Sons of New Brighton, Pennsylvania  
The Capon Lake Whipple Truss was built near Romney, WV, in 1874 on US 56, which follows the route of the Northwestern Turnpike. Squier Whipple invented the Whipple truss in 1847 and was one of the first designers to use scientific analysis for structural design. His book, *A Word on Bridge Building*, had a vast impact on bridge engineering. Metal truss bridges were marketed as removable structures that could be dismantled and re-erected elsewhere if necessary. This bridge was moved from its original location to the Capon River in 1958 and was closed to vehicular traffic in 1991. Due to its uncommon innovative design and age, the Capon Lake Whipple Truss is one of West Virginia's most significant bridges. It is maintained as a historical site for pedestrians by the West Virginia Division of Highways.

**GLENVILLE TRUSS BRIDGE**  
LOCATION: Glenville, Gilmer County, spanning the Little Kanawha River  
LENGTH: 247'-6"  
YEAR CONSTRUCTED: 1885  
DESIGNER: Stewart, Shierffs & Co. of Richmond, Virginia  
FABRICATOR: Wrought Iron Bridge Company of Canton, Ohio  
The Glenville Truss Bridge was built in 1885 as part of a series of transportation improvements proposed by Michael Stamp, who was elected the first Surveyor of Lands for Gilmer County in 1845. Stewart, Shierffs & Co. received a contract from the Gilmer County Court to design six wrought iron bridges in order to connect different parts of the county. Glenville Truss Bridge is the only remaining of these six structures, and serves as a reminder of the challenges faced by travelers before road improvement programs were undertaken on a large scale by local and state governments. Structures such as the Glenville Truss Bridge, as well as advances in road construction, were essential to the development of counties, towns, and rural areas throughout the state.

**BRIDGEPORT BRIDGE**  
LOCATION: No longer extant US 40, Wheeling, Ohio County, spanning back channel of the Ohio River  
LENGTH: 409'-6"  
YEAR CONSTRUCTED: 1893  
BUILDER: Wrought Iron Bridge Company of Canton, Ohio  
The Bridgeport Bridge was built to improve the connection between West Virginia and Ohio via US 40 and replaced a covered bridge that was built at the site in 1837. The Wheeling and Belmont Bridge Company operated the bridge and charged tolls until the City of Wheeling acquired the structure in 1941 and conveyed it to the state in 1942. Bridgeport Bridge consisted of three modified howstring steel truss spans and included architectural features such as finials and decorative railings. The bridge was documented with photography, measured drawings and historical information by the Historic American Engineering Record in 1974. Although not every significant bridge can be preserved in place, archiving structures through photography and drawings helps to preserve important information about history and designs for future generations.

- Eligibility known up front for planning purposes.
- Additional review may be necessary, but framework is in place.
- Input from many different experts and others make the plan feasible.
- Some bridges are actually preserved.
- Others can be replaced with less controversy.

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**Together  
Everyone  
Achieves  
More**

Any questions???  
Feel free to contact the  
Environmental Section. 😊

# Question

1. Is the Purpose and need an essential element of NEPA? True or False?

- Answer- True

# Question

2. What are the Five types of NEPA Documents?

- A.) PCE1, EA, EIS, FONSI, and CE
- B.) CE, ESA, EA, EIS, L&D
- C.) PCE1, PCE 2, CE, EA, EIS
- D.) None of the above

• Answer- C

## Question

3. Can you start construction before you have an approved NEPA document?

YES or No?

- Answer- NO

# Question

4. How many Endangered Animal Species are in West Virginia?

A.)7

B.)17

C.)4

D.)38

- Answer- B

# Question

5. What national register criteria does Little Jimmy Dickens fall under?

- A.) Criteria B
- B.) Criteria D
- C.) Criteria A
- D.) Criteria C

- Answer- A

# Question

6. Which one is not one of the 7 aspects of integrity?

A.) Feeling

B.) Age

C.) Association

D.) Location

- Answer- B

## Question

7. Is Archaeology the study of dinosaurs?  
True or False?

- Answer- FALSE