

Fact Sheet – Transportation and the Environment

Protecting public health, preserving West Virginia's unique environment, and supporting our renowned tourism-based economy requires WVDOT to prioritize mitigating threats to human health and welfare, minimizing environmental impacts, and protecting our natural and cultural resources.

Transportation and the environment are inextricably linked with one another. As part of this connection, WVDOT works diligently to ensure that all transportation projects are conducted in compliance with the National Environmental Policy Act (NEPA). Through NEPA considerations and environmental management best practices, the impact of the transportation system on West Virginia's environmental assets is minimized.

Where are We Today?

Air The West Virginia Department of Environmental Protection (WVDEP) Division of Air Quality operates ambient air quality sampling sites throughout West Virginia. The sampling sites assess air quality levels to determine compliance with the National Ambient Air Quality Standards (NAAQS) and sets air quality goals. **As of October 2020, West Virginia is meeting all the U.S. Environmental Protection Agency's health-based NAAQS for the first time since 1978, when the EPA made their initial nonattainment designations under the 1970 Clean Air Act.**¹

Water Transportation activities and maintenance can impact water quality, hydrologic conditions, and stormwater management. West Virginia is divided into 32 watersheds and placed into one of five hydrologic groups to address water quality monitoring and management². According to the West Virginia Integrated Water Quality Monitoring Assessment Report, as required under the Clean Water Act, 1,312 streams and 5,402 stream miles are listed as impaired waters on the Section 303(d) list³. WVDEP is currently developing an updated integrated report for 2018/2020 based on data collected through June 2019. More information is available [here](#).

Habitats and Species Transportation can have detrimental impacts on natural habitats and species biodiversity from construction and operation. The West Virginia Division of Natural Resources (WVDNR) states there are 15 endangered species of animals and four species of plants located in West Virginia, and five species of animals and two species of plants which are listed as threatened according to the Endangered Species Act.⁴ Each transportation project considers the impacts and implements strategies to protect these species.

Community Parks, trails, and recreational facilities benefit water quality and species habitat, while also supporting public health and quality of life. WVDOT works with WVDNR to maintain access to 50 state parks, state



¹ Gov. Justice announces entire state of West Virginia now meeting national air quality standards for the first time since 1978, Press Release - 10/21/2020

² WV Department of Environmental Protection. WV Watersheds. 2020

³ WV Department of Environmental Protection. Water Quality Monitoring Assessment Report. 2016

⁴ WVDNR – Rare, Threatened and Endangered Species, <http://www.wvdnr.gov/wildlife/endangered.shtm>

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forests, and rail trails under their jurisdiction⁵. The West Virginia State Parks system provides multiple outdoor recreational opportunities. Transportation access should help build appreciation for and maintain and improve the sensitive ecology and unique history of these places.

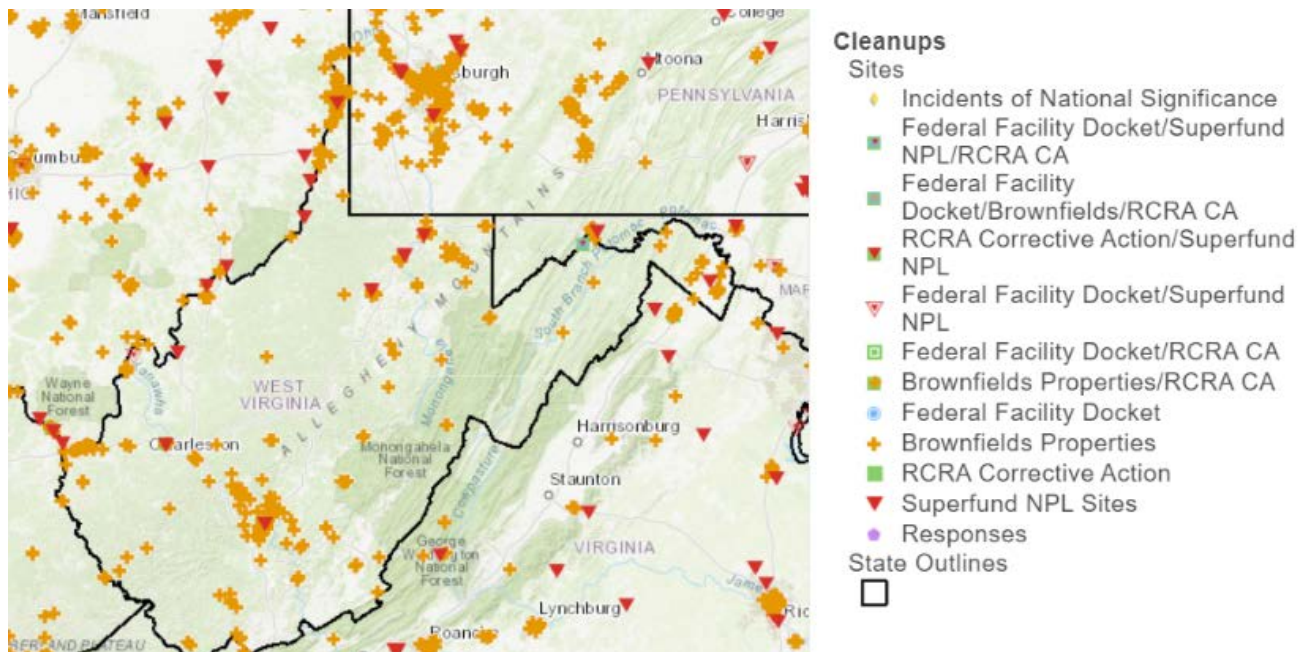
Historic and Cultural West Virginia's historic, archaeological, and natural resources offer a variety of features relative to the state's historic identity. The West Virginia State Historic Preservation Office (WVSHPO) list numerous National Historic Register Places located throughout the state, with a significant portion of the sites concentrated in the Eastern Panhandle, near Harper's Ferry. Some of the historic properties considered during the environmental review process include buildings, sites, objects, and districts.



Other Environmental Considerations in West Virginia

Industrial Sites Identification of contaminated sites is important for WVDOT because the Department may be required to accept financial responsibility for the site if a transportation project impacts the site. The Environmental Protection Agency currently lists ten Superfund Sites on the National Priorities List for the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term (see map below). The ten Superfund Sites are located in Harrison, Jackson, Kanawha, Marion, Marshall, Mason, Mineral, Monongalia, Putnam, and Wood counties.

The EPA's interactive mapping tools, *Cleanups in my Community*⁶ and *NEPAssist*⁷, has identified at least 250 brownfield sites across the state. A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Brownfield properties are spread across West Virginia, with concentrations located in Hancock, Brooke, Ohio, Jefferson, Berkeley, Fayette, Raleigh, and Cabell counties.



⁵ WV State Parks. State Parks in West Virginia. 2020

⁶ <https://www.epa.gov/cleanups/cleanups-my-community>

⁷ <https://nepassisttool.epa.gov/nepassist/nepamap.aspx>

Refer to the Transportation and the Environment Research Paper for more analysis and information.

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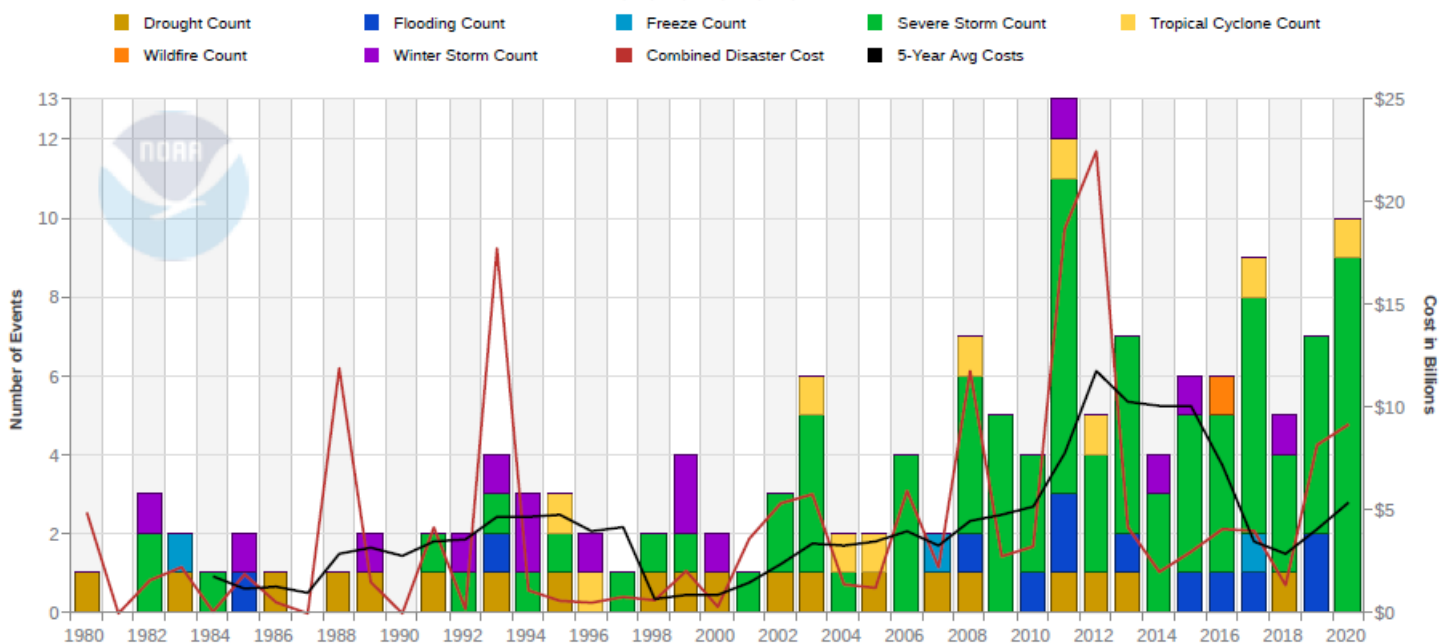


Coal extraction, production, and transport is important to West Virginia's economy. Along with this activity are a number of environmental risks. Recent trends show that the Northern and Southern coal regions were producing roughly equivalent levels of tonnage. Future production between the two regions is market driven - Northern West Virginia's coal output is shipped to domestic coal-fired power plants, in which consumption is likely to remain steady, while Southern West Virginia coal benefits from strong export demand, which fluctuates based on worldwide market shifts.⁸

Environmental Resiliency The most frequent natural hazards West Virginia faces are floods and drought, landslides, mudslides, and severe storms. The frequency of the most significant events is increasing within West Virginia's climate region as described in the below figure from the NOAA National Centers for Environmental Information, which are leading transportation agencies to more proactively invest to protect infrastructure and manage resilience and recovery to these events.

Central Climate Region Billion-Dollar Disaster Events 1980-2020 (CPI-Adjusted)

IL, IN, KY, MO, OH, TN, WV



While the above chart presents billion-dollar events, according to the National Centers for Environmental Information, over 2,300 flood events have occurred in West Virginia since 1993, resulting in an estimated \$1.8 billion in property damage and 103 deaths. One of the most notable of these events occurred in June 2016, where during a period of 24 hours, over ten inches of rainfall fell in the southern part of the state. According to the Federal Emergency Management Agency (FEMA), a State of Emergency was declared in 44 of West Virginia's 55 counties and 12 of the counties received a Presidential Disaster Declaration. Flash floods led to a loss of 23 lives, almost \$53 million in property damage, \$46 million in roadway damage, and impaired infrastructure across the state with more than 1,500 homes and businesses destroyed.



⁸ Coal Production in West Virginia:2018 – 2040, Bureau of Business & Economic Research West Virginia University College of Business and Economics

⁹ <https://www.ncdc.noaa.gov/billions/time-series>

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Where Are We Going?

Two of the leading trends impacting transportation planning and the relationship to the environment are climate change and technological advancement.

Climate Change – Climate change poses a severe threat to the reliability of transportation infrastructure through increased temperatures, severe storm events, and rising water levels. While most transportation infrastructure is expected to withstand the next 50 years, it is important to understand how climate change will affect these investments and how WVDOT can manage the transportation system to be resilient to future disruptions.

Technology – Technology is rapidly changing and with it comes advancements that improve the safety and efficiency of the transportation system and reduce its environmental impacts. The US Energy Information Administration estimates that EVs will comprise 19% of US market share by 2050¹⁰, while other industry estimates have estimated the worldwide share of EV sales by 2040 at over 50%.¹¹

WVDOT Future Direction

Two of the forces impacting WVDOT future direction have a multiplicative impact – for example, traditional funding sources are becoming less productive while expenses are increasing as a result of system preservation needs.

Funding – A fully functional transportation system requires sustained funds to address capital, operating, and long-term maintenance expenses. Primary sources of revenue for funding general maintenance and construction of the WVDOT roadway network and for providing match dollars for Federal funds are derived from fuel taxes, automobile privilege taxes, motor vehicle registration and license fees. **As the vehicle fleet continues to become more efficient, including electric vehicles, fuel tax revenues will stabilize and then decrease relative to economic growth.**

Resiliency – Current transportation and water infrastructure systems are not sufficient to handle the increasing frequency of extreme weather events. WVDOT is responsible for the management of thousands of highway miles and facilities. **By studying and anticipating these types of events, WVDOT can develop strategies to preserve long-term assets and incorporate best management practices systemwide. WVDOT also continues to implement incident and emergency management practices to ensure that the system is resilient to the impact of these events.**

Some of West Virginia's most significant environmental needs, as they relate to transportation, include operations and maintenance of infrastructure and inventory mapping.

Infrastructure Operations and Maintenance – West Virginia, like many other states, needs to maintain and improve its infrastructure by integrating efficient practices that will promote long-term sustainability. Maintaining the quality of infrastructure is an ongoing process and will require additional planning, coordination between agencies, and a sustained increase in financial resources. This includes more environmentally sensitive maintenance procedures including road treatments in advance of winter weather, maintenance and cleaning of stormwater management facilities, more efficient lighting, and use of solar panels to power highway infrastructure.

Inventory Mapping – Environmental inventory mapping is essential to understanding future transportation needs and environmental management. West Virginia currently provide some interactive mapping tools for environmental resources, but the database is incomplete. Many environmental resources in the state have not been inventoried, mapped, updated, and/or made available to the public. Understanding where these assets are located will help WVDOT to better prepare for weather events, identify environmental resources, and better plan for environmental resiliency.

¹⁰ U.S. Energy Information Administration. Annual Energy Outlook 2019

¹¹ BloombergNEF Electric Vehicle Outlook. <https://about.bnef.com/electric-vehicle-outlook/>