



NOVEMBER 2023

West Virginia Department of Transportation

# CARBON REDUCTION STRATEGY





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## Introduction

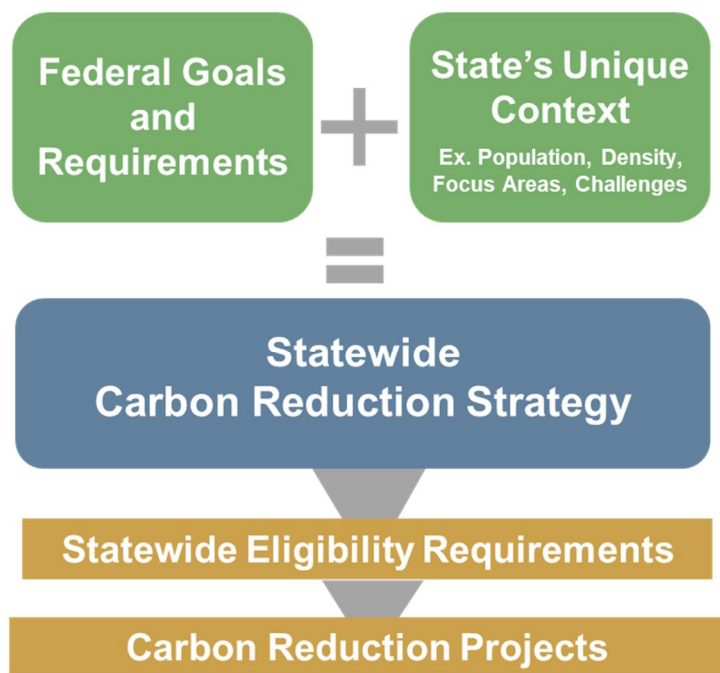
### Background and Purpose

The West Virginia Department of Transportation (WVDOT) has developed the West Virginia Carbon Reduction Strategy (WVCRS) to align with federal requirements and guidance to reduce carbon emissions produced by the transportation sector. These requirements were established as part of the Carbon Reduction Program (CRP), authorized by the Infrastructure Investment and Jobs Act (IIJA) adopted in 2021 and codified in 23 U.S.C. 175.

The IIJA is a generational investment in our nation’s infrastructure, notably our transportation network. This law charges the Carbon Reduction Program to combine federal goals and requirements with each state’s unique context to fund infrastructure projects that reduce carbon dioxide (CO<sub>2</sub>) emissions (Figure 1).

The federal government’s goals for the country’s transportation system relate to **safety, equity, climate resiliency, a strong workforce, and an efficient freight network**. The Federal Highway Administration (FHWA), which has been tasked with apportioning CRP funds for the 5-year duration of the program, encourages the use of CRP funds for projects that not only reduce emissions, but also directly advance one or more of these federal goals.

Figure 1. CRP Purpose







## National and Statewide Trends

Understanding and monitoring current trends and conditions can assist in future planning, funding decisions, and policymaking for transportation projects. By better understanding both present and anticipated changes, WV DOT will be better equipped to meet the state's needs.

### Greenhouse Gas Emissions by Sector

In 2021, transportation was the leading source of greenhouse gas emissions in the United States, accounting for 29%.<sup>1</sup> However, in West Virginia transportation trails behind both the electric power sector and industry sector, with transportation accounting for only 12% of emissions, less than half the national average.

Figure 2. 2021 Emissions by Sector, **National** (emissions in million metric tons of CO<sub>2</sub> equivalent)

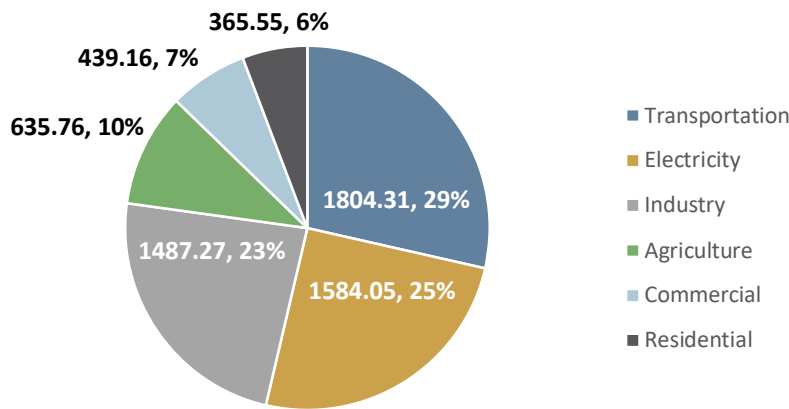
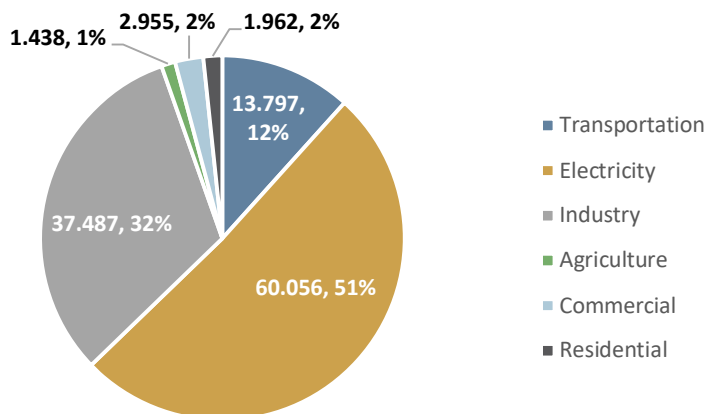


Figure 3. 2021 Emissions by Sector, **West Virginia** (emissions in million metric tons of CO<sub>2</sub> equivalent)



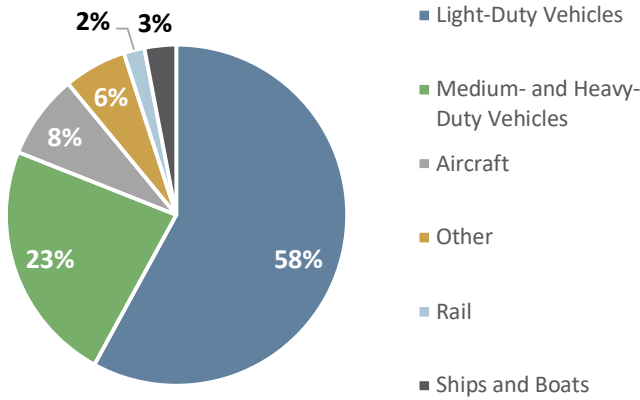
<sup>1</sup> EPA Fast Fact on Transportation GHG Emissions



## National Transportation Related Emissions by Mode

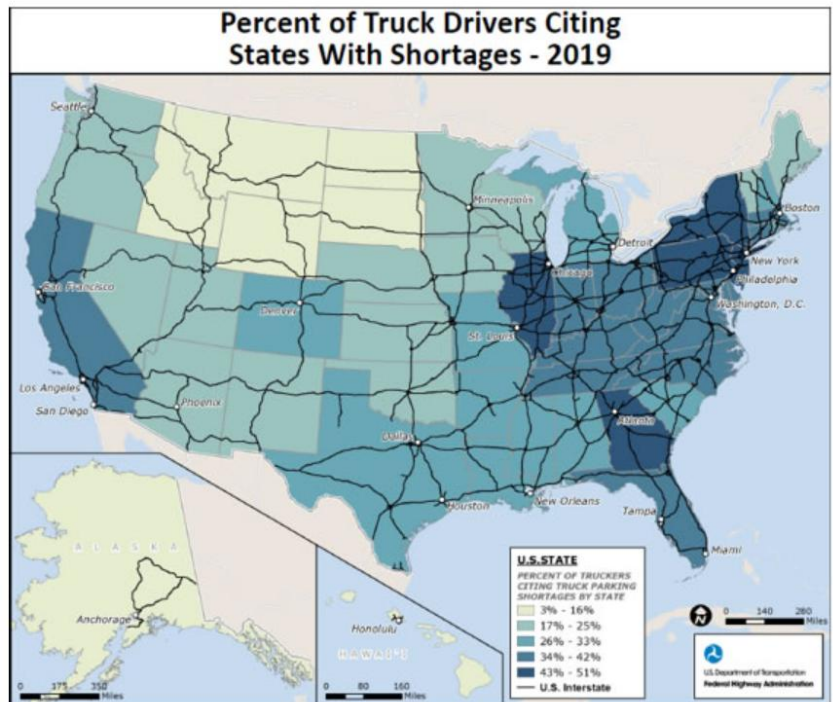
In 2021, over 80% of emissions in the transportation sector came from cars and trucks.

Figure 4. National Transportation Related Emissions by Mode



## Truck Parking

On average, truck drivers spend 56 minutes per day searching for parking. Almost all truck drivers say they struggle to find parking. Of this, 98% of drivers say struggling to find parking is a regular (one or more times a week) issue.<sup>2</sup> Naturally, this additional time spent on the road or idling while searching for available parking leads to an increase in carbon emissions. This is particularly relevant as the WV State Freight Plan places an emphasis on technology as a way to increase access to existing truck parking and making freight more environmentally sustainable.

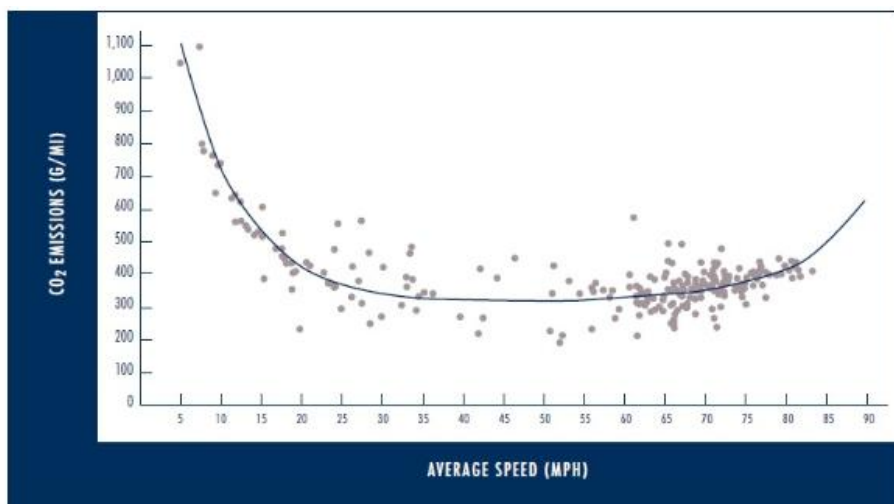


<sup>2</sup> FHWA National Coalition on Truck Parking Working Group, Dec 2020



## Traffic Congestion and Carbon Emissions

The graph below shows CO<sub>2</sub> emissions at various average speeds. As speeds decrease (often due to traffic congestion), the CO<sub>2</sub> emissions from vehicles rises sharply to nearly 1,100 grams per mile (g/mi). As vehicles approach speeds consistent with smoothly flowing traffic (roughly 35 to 65 miles per hour (mph)), emissions plateau at a much lower point (approximately 300 g/mi).<sup>3</sup> Incorporating techniques that alleviate congestion—on busy city streets or along highways—can reduce transportation-sector carbon emissions. Understanding and addressing congestion can have a direct impact on carbon emissions and supports multiple goals within the 2050 WV Statewide Long Range Transportation Plan, such as focusing on addressing highway reliability.



<sup>3</sup> Traffic Congestion and Greenhouse Gases, Access Magazine, 2009



## Delay per Auto Commuter

Texas A&M Transportation Institute (TTI) releases the Urban Mobility Report (UMR)<sup>4</sup> which measures congestion in urban areas across the United States using INRIX vehicle speed data. The table below shows the yearly delay per auto commuters who travel in the peak period (6 to 10 AM and 3 to 7 PM) in 2019 for West Virginia’s urban areas in comparison to a few neighboring areas with similar population size for reference. Commuters in West Virginia experience much lower delay than much of the country. Notably, West Virginia is much more rural than many other states and the largest Urban Area, Huntington, is still significantly smaller than that of many other states.

Table 1. 2019 Annual Delay per Commuter, TTI Urban Mobility Report

Urban Area	Annual Hours of Delay per Auto Commuter	2019 Population
Parkersburg WV-OH	11	70,000
Beckley WV	12	66,000
Morgantown WV	12	77,000
Hagerstown MD-WV-PA	16	197,000
Weirton-Steubenville WV-OH-PA	17	72,000
Charleston WV	17	177,000
Kingsport TN-VA	18	111,000
Johnson City TN	18	127,000
Huntington WV-KY-OH	19	207,000
Cumberland MD-WV-PA	23	53,000
Bristol TN-VA	23	72,000
Roanoke VA	25	217,000
Wheeling WV-OH	26	99,000
Lynchburg VA	28	127,000
Fredericksburg VA	31	160,000
Charlottesville VA	38	105,000

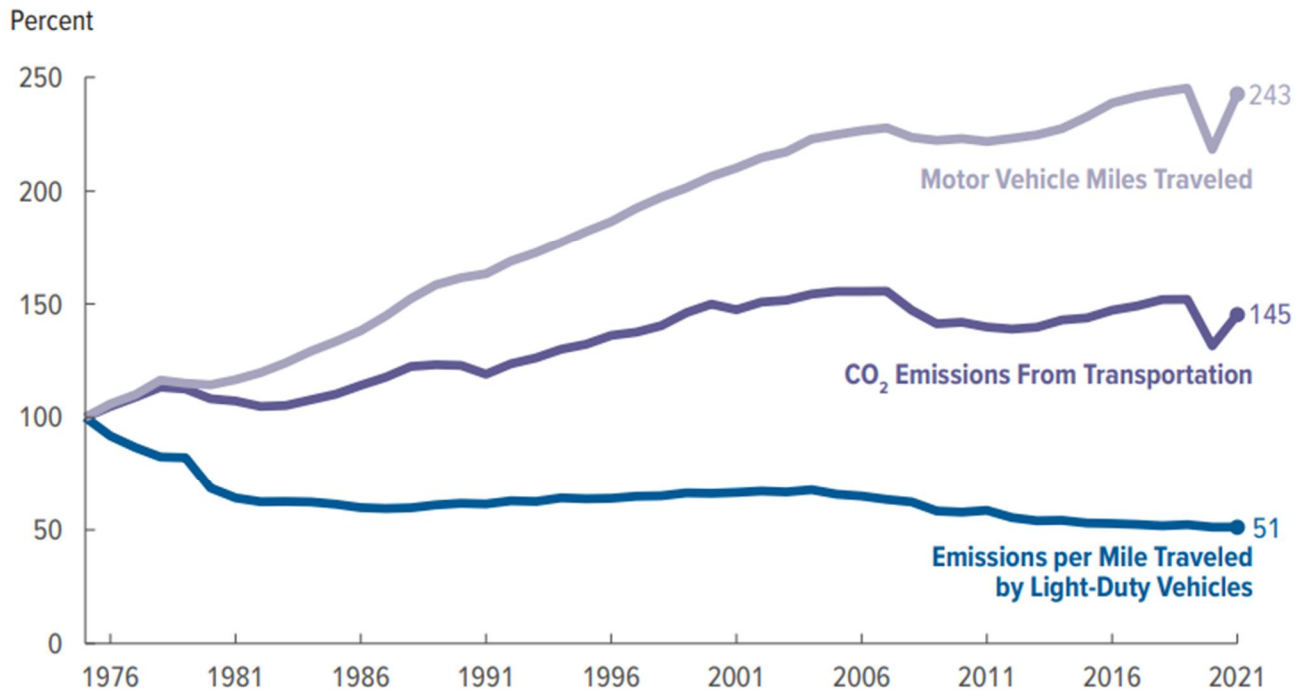
<sup>4</sup> <https://mobility.tamu.edu/umr/report/>





## Fuel Economy and Vehicle Miles Traveled (VMT)

While fuel economy has greatly improved over time across the on-road vehicle fleet, the increase in VMT has risen more rapidly and offsets the benefit of increased fuel economy.<sup>5</sup> This graph, from the Congressional Budget Office’s report Emissions of Carbon Dioxide in the Transportation Sector, shows the values measured as a percentage of their value in 1975. CO<sub>2</sub> emissions are 145% of what they were in 1975, emissions per mile are 51% of what they were in 1975, and VMT is 243% what it was in 1975.



## Equity and Justice 40

In West Virginia, 56% of the population lives in a census tract designated as a disadvantaged community according to the CEJST 2010 census tracts. The Justice40 Initiative was created to deliver 40% of overall benefits of federal investments in climate and clean energy, including sustainable transportation, to disadvantaged communities<sup>6</sup>. Signed as Executive Order 14008, Justice40 has a myriad of programs that support this initiative, one of which is the Carbon Reduction Program<sup>7</sup>. WVDOT commits to at least 40% of program investments are to disadvantaged communities. Similar to other programs, the WVDOT Civil Rights Compliance Division will develop a tracking and reporting plan. The plan is anticipated to include tracking funding disbursement as well as associated air quality changes.

<sup>5</sup> Emissions of Carbon Dioxide in the Transportation Sector, Congressional Budget Office, Dec 2022

<sup>6</sup> <https://www.transportation.gov/equity-Justice40>

<sup>7</sup> [https://www.whitehouse.gov/wp-content/uploads/2022/07/Justice40-Covered-Programs-List\\_v1.1\\_07-15-2022.pdf](https://www.whitehouse.gov/wp-content/uploads/2022/07/Justice40-Covered-Programs-List_v1.1_07-15-2022.pdf)



## IIJA and the Carbon Reduction Program

### Infrastructure Investment and Jobs Act: Contextualizing the Carbon Reduction Program

The IIJA paves the way for a renewed partnership between FHWA and State departments of transportation to prioritize investments in our transportation system. This includes updating the condition of streets, highways, trails, and bridges to make them safer; modernizing the transportation network to accommodate all users to foster a more equitable future; and making the transportation sector more sustainable and resilient.

The IIJA will accomplish this in part through the new Carbon Reduction Program (CRP), and other funding programs like the Bridge Investment Program, the National Electric Vehicle Infrastructure (NEVI) Program, and the Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) Formula Program.

### CRP Requirements

The CRP requires every state to develop a strategy that:

- Supports the reduction of transportation emissions in the State, and efforts to reduce transportation emissions
- Identifies projects and strategies to reduce transportation emissions
- Facilitates the use of vehicles or modes of travel that result in lower transportation emissions as compared to existing approaches
- Is appropriate to the population density and context of the State, including any Metropolitan Planning Organization (MPO) designated within the State

In accordance with these federal requirements, the WVCRS supports efforts statewide to reduce transportation-related carbon emissions through projects and strategies that reflect West Virginia's unique context, values, and goals.

### Eligible Activities

The below project types are eligible activities under the CRP, including:

- Traffic monitoring, management, and control programs, including truck stop electrification systems
- Public transportation projects, such as bus rapid transit (BRT) or dedicated bus lanes
- Alternate mode transportation projects, such as on- and off-road trail facilities for pedestrians, bicyclists, and other nonmotorized modes
- Congestion management techniques



- Intelligent transportation system (ITS) and vehicle-to-infrastructure communications systems
- Energy-efficient streetlight or traffic control device upgrades
- Development of a local carbon reduction strategy
- Congestion pricing strategy or project
- Projects to reduce environmental or community impacts from freight, including truck parking facilities
- Projects or programs that support deployment of alternative fuel vehicles/zero-emission vehicles and construction equipment
- Diesel engine retrofit projects for fleet vehicles
- Projects eligible under the Congestion Mitigation and Air Quality (CMAQ) Program to improve traffic flow
- Projects that advance port electrification
- Other projects not listed above that demonstrate reduction in transportation emissions over the project's lifecycle

In addition, West Virginia supports the use of CRP funds to supplement Congestion Mitigation and CMAQ funds. This is allowable, as long as the projects or programs meet all requirements of both the CRP and the CMAQ program. Examples of CMAQ eligible projects and programs<sup>8</sup> include:

- Diesel engine retrofits and other advanced truck technologies
- Idle reduction
- Congestion reduction and traffic flow improvements
- Freight and intermodal
- Transportation control measures
- Transit improvements
- Bicycle and pedestrian facilities and programs
- Travel demand management
- Public education and outreach activities
- Transportation management associations
- Carpooling and vanpooling
- Carsharing
- Extreme low temperature cold start program
- Training
- Inspection and maintenance programs
- Alternative fuels and vehicles

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<sup>8</sup> Congestion Mitigation and Air Quality Improvement (CMAQ) Program, FHWA, Oct 2017



## Expected Funding Levels

The estimated overall annual CRP funding is as follows:

Table 2. Expected Funding Levels FY 2022 to FY 2026

	National	West Virginia
FY 2022	\$1.234B	\$13.9M
FY 2023	\$1.258B	\$14.3M
FY 2024	\$1.283B	\$14.6M
FY 2025	\$1.309B	\$14.8M
FY 2026	\$1.335B	\$15.1M

**Over the course of the 5-year Carbon Reduction Program, West Virginia is estimated to receive \$72,814,410.**

Figure 5. 5-Year Carbon Reduction Program by State, WV Estimated Funding

CRP funds are available for obligation to State DOTs until September 30, 2025. They are available for obligation for 3 years after the last day of the fiscal year during which the funds are authorized.

35% of the CRP funds may be obligated in any area of the State. The remaining 65% of these funds must be suballocated to projects for the following areas based on a percentage of their relative population share:

- Urbanized areas with a population of more than 200,000
- Urbanized areas with a population of 50,000 to 200,000
- Urbanized areas with a population of 5,000 to 49,999
- Other areas of the State with a population of less than 5,000

Additionally, WVDOT may transfer up to 50% of CRP funds made available each fiscal year to any other apportionment of the state, including:

- National Highway Performance Program (NHPP)
- Surface Transportation Block Grant Program (STBG)
- Highway Safety Improvement Program (HSIP)
- Congestion Mitigation and Air Quality Improvement (CMAQ) Program
- National Highway Freight Program (NHFP)
- Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) Formula Program





West Virginia’s total CRP apportionment for FY 2023 is valued at roughly **\$14.3 million**.

Table 3. FY 2023 WVDOT Suballocation

	West Virginia CRP Funding FY 2023
<b>65% of CRP Funds for Suballocation</b>	\$9,276,630
<b>35% of CRP Funds Available for Any Area in State</b>	\$4,995,108
<b>Total</b>	<b>\$14,271,738</b>

**Examples of other funding programs to combine with CRP funds include:**

- CMAQ
- STBG
- HSIP
- And Others

As previously mentioned, if all eligibility requirements and applicable local matches/non-federal share for each program are met, CRP funds can be leveraged with other eligible USDOT funding for projects that support the reduction of transportation emissions (Figure 6). WVDOT supports the use of CRP funds to supplement CMAQ funding.

Figure 6. Examples of Federal Funds Eligible for Combination with CRP



## West Virginia MPO Coordination

Per federal guidance, WVDOT has coordinated with each MPO in the state to develop the WVCRS. This way, the strategy will become an integral part of the transportation planning processes occurring throughout the state, including transportation improvement programs (TIPs) and metropolitan transportation plans (MTPs).

This coordination is vital to meeting another federal requirement for the WVCRS: any projects identified for CRS funding must be identified in the State Transportation Improvement Program (STIP) and any MPO TIPs. They must also be consistent with any Long Range Transportation Plans (LRTPs), including the statewide LRTP and each MPO's MTP. A list of MPOs in West Virginia are:

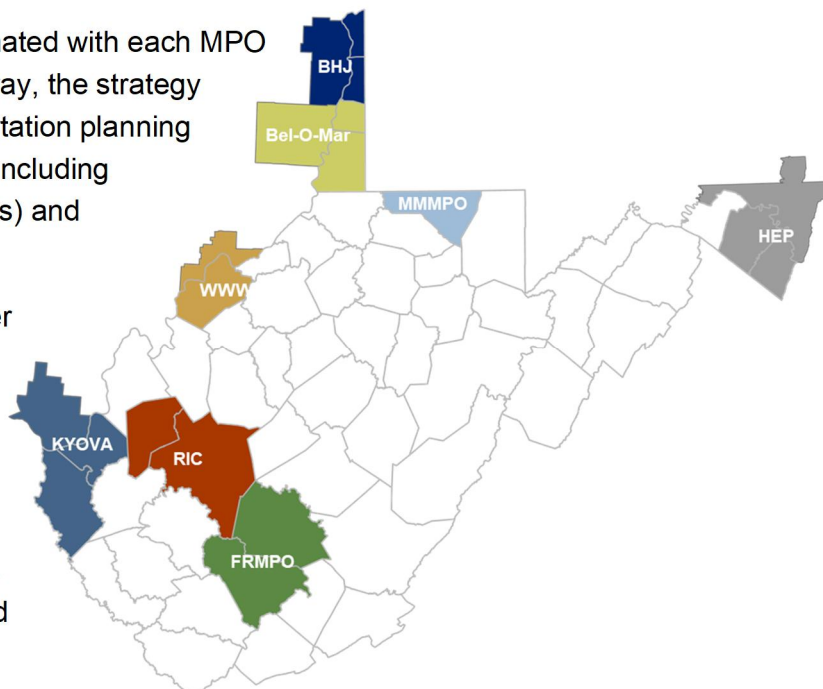


Figure 7. West Virginia Metropolitan Planning Organizations

**Brooke-Hancock-Jefferson (BHJ) Metropolitan Planning Commission** | Serving Steubenville, OH and Weirton, WV (Brooke and Hancock Counties, WV; Jefferson County, OH)

**Bel-O-Mar Regional Council** | Serving Wheeling, WV (Ohio and Marshall Counties, WV; Belmont County, OH)

**KYOVA Interstate Planning Commission** | Serving Huntington, WV, Ironton, OH, and Ashland, KY (Cabell and Wayne Counties, WV; Boyd and Greenup Counties, KY; Lawrence County, OH)

**Regional Intergovernmental Council** | Serving Charleston Metropolitan Area (Kanawha and Putnam Counties, WV)

**Wood-Washington-Wirt (W-W-W) Interstate Planning Commission** | Serving Parkersburg, WV, Marietta and Belpre, OH (Wood County, WV and Washington County, OH)

**Morgantown/Monongalia County Transportation Planning Organization** | Serving the greater Morgantown area (Monongalia County, WV)

**Hagerstown / Eastern Panhandle Metropolitan Planning Organization** | Serving Hagerstown, MD and Martinsburg, WV (Berkeley and Jefferson Counties, WV; Washington County, MD)

**Fayette / Raleigh Metropolitan Planning Organization** | Serving Oak Hill, Mt. Hope, Fayetteville, and Beckley, WV (Fayette and Raleigh Counties, WV)



## CRS Development

### Stakeholder Engagement

WVDOT met with each of the state's eight MPOs three times throughout the development of the CRS. In addition to the one-on-one meetings, WVDOT staff presented at three West Virginia Association of Metropolitan Planning Organization (WVAMPO) meetings and distributed information and updates regarding the carbon reduction program and statewide efforts. WVDOT also spoke with the Office of Energy about the CRS and their upcoming work to develop a Comprehensive Climate Action Plan (CCAP) under the EPA's Climate Pollution Reduction Grant program. The Office of Energy will be developing a greenhouse gas baseline analysis, inclusive of the transportation sector, early next year in support of the CCAP. WVDOT will support the effort and work with the Office of Energy to reflect any elements from within the Carbon Reduction Strategy, as well as other WVDOT initiatives and programs.



Figure 8. Presentation to WVAMPO

The objective of each coordination meeting with MPOs is briefly summarized below.

#### WVAMPO Meeting #1

Meeting #1 focused on an overview of the CRP and the upcoming process for developing the strategy and coordinating with MPOs. MPOs were given the opportunity to share information and ask questions of the project team. The project team in turn requested that MPOs share relevant regional planning efforts to be reviewed.

#### MPO One-on-One Meetings

After Meeting #1, WVDOT met individually with MPOs on the Carbon Reduction Program. During this meeting, MPOs engaged in dialogue with WVDOT staff and answered the questions outlined below. Responses from MPOs played a key role in the direction of the CRS and are summarized in Appendix.

- What carbon reduction strategies are your agencies taking now?
- When considering the categories of project types, which are you most likely to leverage?
- What information would be helpful for you to receive from WV's Carbon Reduction Strategy for use in your MTP?
- Are there any trends and characteristics that your MPO is already measuring or that would be of particular value to understand?



- For Bi-, Tri-State MPOs—where are you in the process of consultation with your other state DOT(s)? Are there any opportunities for alignment or direction we should be considering in WV?

## **WVAMPO Meeting #2**

Meeting #2 focused on a review of national and statewide trends revolving around carbon emissions. The trends were shared for discussion with MPOs. Additionally, WVDOT shared the annotated outline of the CRS with MPO partners for their review. MPOs and WVDOT engaged in conversation about the project selection process and guidance provided in the STIP and TIP Operating Procedures.

## **WVAMPO Meeting #3**

Meeting #3 will be held later in 2023 to introduce MPOs the project submittal form and provide guidance and instruction on how to use it moving forward.





## CRS Vision

West Virginia's transportation investments are guided by a variety of plans, many of which highlight key themes and trends that tie back to the federal goals for the carbon reduction program and guide the West Virginia CRS. Key plans referenced to influence the development of the CRS include (among others):

- The 2050 West Virginia Statewide Long-Range Transportation Plan
- West Virginia National Electric Vehicle Infrastructure (NEVI) Deployment Plan
- West Virginia Bicycle System Plan
- West Virginia State Freight Plan
- West Virginia State Rail Plan
- Strategic Highway Safety Plan

The new carbon reduction program will support and bolster the goals outlined in these plans and help address the following challenges:



**Constrained revenues pose a challenge to developing and maintaining a robust and efficient multimodal transportation network.** Between 2021 and 2050, the 2050 LRTP reports an up to 50% decline in motor fuel tax revenue in the state. Aligning asset management with federal goals for safety, environmental sustainability, and VMT reduction will allow West Virginia to better position these investments with federal funding, such as CMAQ and CRP funding. Several eligible CRP strategies, like green construction practices such as pavement recycling, provide cost effective solutions to roadway maintenance, while directly contributing to CRP goals for carbon emission reduction.

**As VMT continues rising, it will become increasingly important to provide a variety of multimodal options for passenger and freight trips.** As passenger and freight VMT continues to rise (and outpace increases in fuel efficiency), the transportation system will need to make use of a toolkit of strategies to reduce VMT, improve safety, combat congestion, and extend the useful life of the state's roadways. Many of the eligible programs within the CRP support reducing VMT or lessening its impact, reducing carbon emissions. These include technological solutions, like intelligent transportation systems (ITS), or alternative mode projects like pedestrian and bicycle pathways and transit.



**Statewide planning efforts have placed renewed emphasis on freight access and efficiency.** 299.8 million tons of freight moved through West Virginia in 2018<sup>9</sup>, and freight movement continues to be a major industry within the state. Truck freight will remain a vital part of the freight network, even if freight movement shifts from natural resources extraction to biotechnology and chemicals manufacturing. Prioritizing improvements that maximize safety, efficiency, and access for truck drivers—such as providing adequate truck parking amenities—is an eligible CRP activity that will support the LRTP goal for “economic vitality and freight movement.”

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<sup>9</sup> [https://transportation.wv.gov/highways/programplanning/LRTP/Documents/Freight\\_FactSheet\\_Final.pdf](https://transportation.wv.gov/highways/programplanning/LRTP/Documents/Freight_FactSheet_Final.pdf)



## Carbon Reduction Strategies

### Carbon Reduction Strategy Toolbox

In consultation with our MPO partners, WVDOT identified four overarching categories of transportation strategies and project types that can support carbon reduction in West Virginia (Figure 9).

Figure 9. Carbon Reduction Categories



Outlined in the following pages are specific projects and strategies that lay the foundation of how WVDOT will reduce carbon emissions throughout the State’s transportation system. When possible, projects and strategies seek to overlap with CMAQ eligible projects, given WVDOT’s focus on supplementing CMAQ funding with CRP funds.

Many of the strategies outlined below are eligible for both CRP and CMAQ funds. WVDOT, State MPOs, and local jurisdictions can use this list to identify projects and strategies appropriate to specific areas and local context.

More information on specific WVDOT activities with examples can be found in Appendix A.



## Transportation Technology

**Strategies that use innovative technological solutions to improve roadway operations through improved information sharing, data analytics, and traffic control methods.**

### *Traffic Management and Control Facilities*

Traffic monitoring or control facilities, especially those that collect and disseminate real-time traffic data to media, users, and other agencies. Staff use the information to monitor roadway operations and implement strategies, such as adaptive signal controls, to control traffic operations, as needed (especially in response to traffic incidents).

### *Intelligent Transportation Systems*

Capital improvements, such as traffic signal control systems, ramp metering, dynamic message signs, connected vehicle infrastructure, work zone management programs, weather information systems, and more.

### *Signal Performance Improvements*

Improvements to the performance on key transportation corridors by optimizing existing capacity and operations using signal retiming and optimization, signal replacement, turn lane improvements, and access management control and consolidation.



## Congestion Management/Mitigation<sup>10</sup>

**Strategies that reduce congestion through design solutions and by reducing the demand for roadway trips.**

### *Travel Demand Management*

Activities and strategies designed to maximize traveler choice. Often, these strategies are used in tandem to reduce the number of trips and ease congestion on roadways. Examples include public transit (capital), carshare/rideshare, biking, and telecommuting.

### *Freight and Intermodal*

Strategies designed to adjust how freight vehicles move on roadways, including how, where, and when freight can use the roadway. Potential solutions include additional truck parking, truck lane restrictions, truck incentives (to encourage off-peak hour travel) and use restrictions (e.g., restricting trucks from the far-left lane), commercial vehicle accommodations (e.g., climbing lanes in locations with steep grade changes), and dynamic truck restrictions (e.g., adjustable restrictions based on travel flow).

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<sup>10</sup> How to Fix Congestion, Texas A&M Transportation Institute, 2023



## *Transportation Control Measures and Traffic Flow Improvements*

Activities and strategies to improve traffic flow and reduce idle time. Examples include access management improvements, variable speed limits, one-way streets, median U-turn intersections, roundabouts, and continuous flow intersections.

## *Truck Parking*

Additional parking specifically designated for trucks to provide drivers with safe locations to park to meet federal regulations for hours-of-service, rest breaks, or staging ahead of delivery or pickup, as well as dynamic signage alerting drivers to the locations and capacities of public truck parking.



## **Active Transportation and VMT Reduction**

**Strategies that encourage users to take trips via non-vehicular modes, such as active transportation or public transit.**

### *Bicycle and Pedestrian Facilities and Programs*

Facilities that make traveling as a pedestrian and bicyclist safe and accessible, including sidewalks, greenways and trails, crosswalks, curb ramps, pedestrian overpasses, etc. This includes facilities that are not recreational but seek to reduce VMT by providing a viable alternative mode. Other eligible activities include education to promote bicycling and walking, bike/pedestrian programs, and shared micromobility programs and initiatives.

### *Transit Improvements*

Provision of and investment in mass transit that lead to more efficient operations and higher ridership. Projects which seek to increase transit capacity and ridership are eligible, such as transit facilities, vehicle purchases, diesel engine retrofits, and operations and expansion costs.

### *Alternative Fuel Vehicles and Diesel Engine Retrofits*

While not directly related to overall VMT reduction, programs that support the use of alternative fuel and vehicles have an effect on VMT reduction from fuel-burning vehicles and are eligible. This includes supportive infrastructure, such as charging stations and the purchase of alternative fuel non-transit publicly owned vehicles.

### *Micromobility Support*

Programs and infrastructure to support the use of lightweight vehicles, such as e-bikes and scooters as well as regulations to maintain safety and management of these uses in the right-of-way. Projects are newly eligible for CMAQ funding through the IIJA. Micromobility projects will need to take into consideration any local legislation or city ordinances regarding the use of motorized bicycles or mobility devices.





## Energy Efficient and Green Construction Processes

**Strategies that encourage roadway construction techniques that reduce carbon emissions, while maximizing the life of the roadway.**

*Note: Inspection and maintenance programs are eligible under CMAQ and, when combined with green construction processes that reduce carbon emissions, would be eligible for CRP funds as well.*

### ***Sustainable Pavements***

The use of pavements that reduce carbon footprint, increase safety, and improve stormwater conditions. Examples include warm mix asphalt (WMA), which allows the mixture to be cool when laid and reduces air pollution, and permeable friction course mixtures, which reduce noise pollution from highways and improve safety through increased visibility during wet conditions.

### ***Shoulder Pavement Upgrades***

Upgrading shoulder pavements to allow for shoulders to be used when needed to improve traffic flow and reduce congestion. This includes during construction projects and during crash events.

### ***Pavement Recycling***

The process of repairing roadways by breaking up old pavement and reusing it as base materials for the final surface.

### ***Low- and Zero-Emission Construction Equipment***

Using low-emission and zero-emission construction equipment decreases the fossil fuel energy consumed during construction and maintenance of roadway facilities. Steps in this process include prioritizing specific equipment types and certifying equipment that emit less carbon. Purchasing this equipment as existing equipment is phased out is an economical way to slowly incorporate low- and zero-emission construction equipment.

### ***Energy Efficient Streetlights***

Replacing existing streetlights with LED alternatives to cut costs and save energy. LED alternatives have longer lifespans, lower maintenance costs, and use up to 50% less energy.



## Cost Effectiveness of Select Strategies

To help WVDOT and partner agencies better understand the cost-effectiveness of certain strategies, the 2020 CMAQ Cost-Effectiveness Tables Report was reviewed and is shown on the following page. Projects funded by the CMAQ Improvement Program were analyzed using the U.S. Environmental Protection Agency’s Motor Vehicle Emissions Simulator (MOVES) software to better quantify the cost-effectiveness in dollars per ton of emissions reduced. This information is shared to aid WVDOT in making decisions that stretch Carbon Reduction Program funding to achieve the greatest carbon reduction benefits.

Figure 10. Summary of Median Cost-Effectiveness Analyses from the 2020 CMAQ Cost-Effectiveness Tables Report

Project Type	CO	NOx	VOCs	PM <sub>10</sub>	PM <sub>2.5</sub>	Total Median Cost per Ton	Median Cost-Effectiveness (Dollars per Ton Reduced)
Dust Mitigation				A	B	\$ 15,932	A <10,000
Idle Reduction Strategies	A	A	A	B	B	\$ 58,999	B 10,000 - 50,000
Diesel Engine Retrofit Technologies	B	B	C	D	D	\$ 407,684	C 50,000 - 100,000
Intermodal Freight Facilities and Programs	B	A	C	D	D	\$ 494,834	D 100,000 - 500,000
Carsharing	A	B	B	D	E	\$ 766,199	E 500,000 - 1,000,000
Incident Management	B	B	D	D	D	\$ 1,071,991	F 1,000,000 - 5,000,000
Transit Service Expansion	A	C	C	E	F	\$ 2,766,431	G 5,000,000 - 10,000,000
Traffic Signal Synchronization	C	D	F	D	F	\$ 3,042,950	H 10,000,000 - 20,000,000
Park and Ride	A	C	D	E	F	\$ 3,622,288	I >20,000,000
Natural Gas Re-Fueling Infrastructure	A	B	D	F	F	\$ 3,675,107	
Electric Vehicle Charging Stations	A	C	D	F	F	\$ 6,380,581	
Transit Amenity Improvements	B	D	D	F	G	\$ 7,457,446	
Rideshare Programs	B	D	D	F	G	\$ 8,194,085	
Roundabouts	D	D	F	G	F	\$ 8,786,402	
Extreme Temperature Cold-start Technologies	B	F	D	F	F	\$ 10,850,034	
Bikesharing	B	G	F	F	G	\$ 13,834,816	
Bicycle and Pedestrian Improvement Projects	B	D	E	F	H	\$ 19,423,016	
Intersection Improvements	D	F	F	H	H	\$ 30,823,921	
Employee Transit Benefits	D	F	F	H	I	\$ 50,281,268	
Subsidized Transit Fares	D	F	F	H	I	\$ 50,281,268	
Heavy-Duty Vehicle Replacements	D	D	F	I	I	\$ 69,830,233	

Additionally, the Environmental Protection Agency (EPA) has many tools to help estimate the impacts of emissions, including their Simplified GHG Emissions Calculator<sup>11</sup>. The calculator enables the user to understand emissions from a myriad of mobile sources including fleet vehicles, medium and heavy duty trucks, and commuting trends.

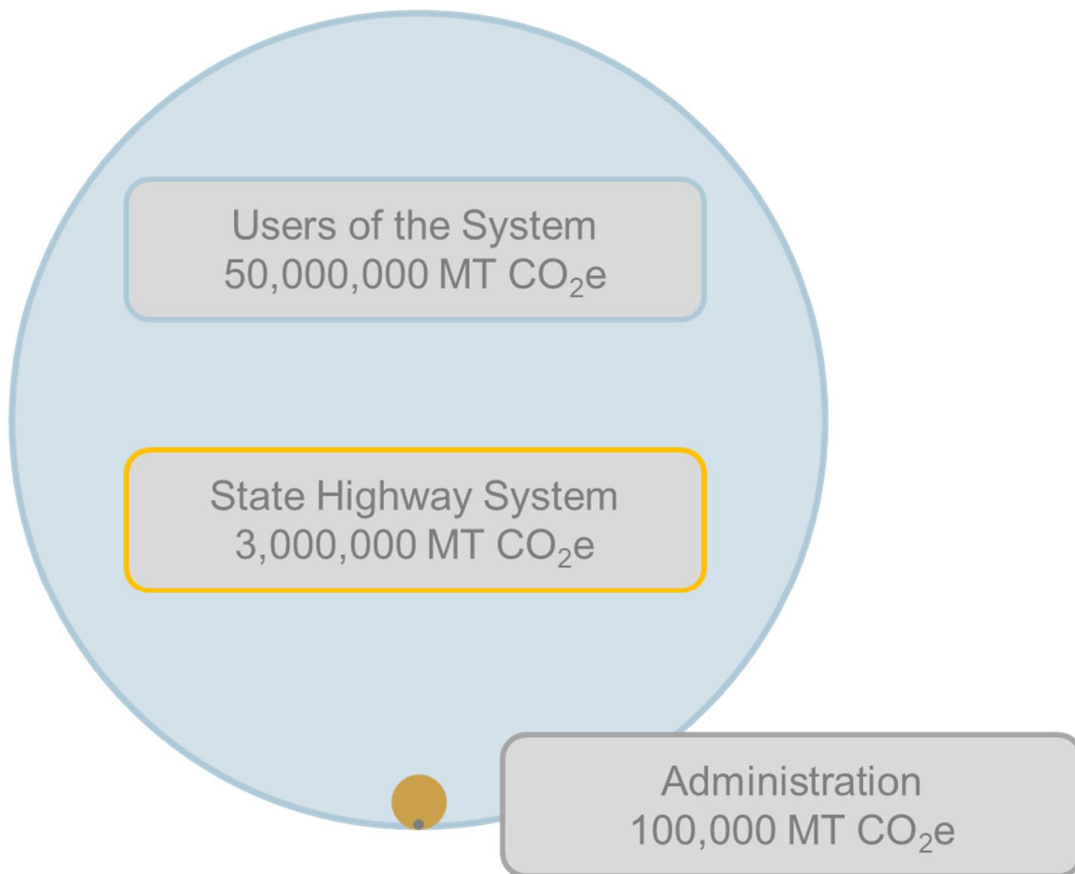
<sup>11</sup> <https://www.epa.gov/climateleadership/simplified-ghg-emissions-calculator>



## Implementation Plan

### WVDOT's Role in Carbon Reduction

As the State works to obligate and program CRP funding, it is important to highlight the extent of WVDOT's influence in reducing carbon from transportation. A recent National Cooperative Highway Research Program (NCHRP) project shares that the emission sources under direct control of DOTs is limited compared to that of system users. NCHRP estimates that within a "typical" State about 94% of emissions are from system users, while the remaining 6% are from construction, maintenance, and operations of the system and 0.2% are from the DOT's administrative activities such as buildings and light-duty fleet vehicles.<sup>12</sup>



This underscores the importance of engaging in partnerships with other state agencies, regional and local governments, as well as the business community. These groups have authority or jurisdiction over many elements that move the needle on carbon reduction that WVDOT may not.

<sup>12</sup> Methods for State DOTs to Reduce Greenhouse Gas Emissions from the Transportation Sector (2022), NCHRP Project 25-26



## **Opportunity for Continued Partnership**

### *Other State Agencies*

WVDOT should continue existing partnerships with agencies such as the Department of Environmental Protection and the Office of Energy. WVDOT has historically worked with these agencies on initiatives such as the administration of Diesel Emissions Reduction Act (DERA) funding to replace construction equipment with cleaner alternatives and the administration of funding from the Volkswagen Settlement. Over the next couple of years, WVDOT will be participating in and supporting the Office of Energy's efforts to create a plan for reducing climate pollution as part of their recently awarded Climate Pollution Reduction Grant.

### *Regional Councils and MPOs*

WVDOT should continue the partnership with regional councils and MPOs initiated through the development of the Carbon Reduction Strategy. The regional expertise of these organizations adds value to WVDOT when it comes to relationships with local jurisdictions, understanding local context, and helping implement projects.

### *Local Jurisdictions*

Local municipalities within the state have jurisdiction over many elements that prove effective in reducing carbon emissions, such as land use decisions, development patterns, and local policy. WVDOT can continue to partner with local jurisdictions to provide education and technical assistance to better understand the benefits and impacts of different carbon reduction strategies.

### *Transit Agencies*

Both urban and rural transit providers play a critical role in reducing carbon emissions. WVDOT should continue to partner with local transit providers across the state to identify and assess projects that may be mutually beneficial to reducing carbon emissions.

### *Business Community*

The business community and industry partners can contribute to the reduction of transportation-related emissions in West Virginia. Employers may be able to initiate commute-trip reduction programs or incentivize employees to leverage carpool and vanpool options. Freight and shipping companies may elect to use vehicles that minimize emissions whether it be through transition to electric vehicles or idle reduction technologies. Finally, the private sector will be essential to supporting the electrification of personal vehicles – whether that be the automotive manufacturers or those providing charging infrastructure.



## Identifying and Obligating Projects

### State-led Projects

As noted in the introduction, 35% of CRP funding goes to the state for their programming in rural areas. WVDOT will leverage the list of strategies included within the CRS, as well as the goals and policies contained within the State's long-range transportation plan, as the starting point for identifying eligible projects. As projects are identified, WVDOT will coordinate and consult with the relevant MPO, Regional Council, or local jurisdiction.

### MPO-led Projects

For the portion of CRP funding suballocated to MPOs, project obligation is outlined in WVDOT's STIP and TIP Operating Procedures. MPOs must do the following to obligate CRP funding:

- Submit a written request to WVDOT and complete a Project Request Form
  - IF the project is in alignment with a state priority, WVDOT may consider providing the matching funds.
  - IF NOT, the MPO will be responsible for identifying the local project sponsor to provide the match.

Additionally, many of the MPOs in the state have either created or updated their project selection guidelines to include guidance for CRP funding. This guidance outlines the project selection and project scoring process, as well as how CRP funding may be paired with other sources of funding for projects that address multiple goals, such as the Highway Safety Improvement Program (HSIP).

### Public Engagement

Public engagement for projects eligible for CRP funding will occur through a variety of means. Many projects will first be identified through local planning processes such as corridor studies, metropolitan transportation plans (MTP), or other locally-led planning initiatives. Eligible projects will ultimately be included within the financially constrained portion of an MPO's MTP and their transportation improvement program (TIP), each of which include public outreach in accordance with their adopted Public Involvement Process Plans. State-led projects will have similar engagement opportunities through the FHWA approved WVDOT Public Involvement Process and the WVDOT Procedures for Consultation with Non-Metropolitan Local Officials.



## Update Process

The West Virginia Carbon Reduction Program must be updated every four years. As WVDOT has the opportunity to update the plan, it will be important to reflect on the effectiveness of the Carbon Reduction Strategy, including understanding:

- What strategies are being leveraged most often?
- What types of projects are being programmed and where in the state?
- Has consideration for carbon reduction been included in other statewide planning efforts?

Additionally, [a proposed rule by FHWA](#) may require WVDOT and MPOs to establish performance measures and targets for greenhouse gas emissions. When and if these targets are set, WVDOT and MPOs must show progress toward achieving the targets. The Carbon Reduction Strategy and coordination held with MPOs throughout its development creates a strong starting point for making transportation investments that will ultimately reduce transportation-related greenhouse gas emissions. However, if the proposed rule progresses, WVDOT will need to consider the implications of this in the updated Carbon Reduction Strategy.





## Appendix A – CURRENT PROJECT EXAMPLES



The West Virginia Department of Transportation hasn't been idle regarding carbon emissions reduction on our transportation system. In fact, carbon emission reduction is a direct result of most of our system improvement efforts. Any project that improves mobility and efficiency, by definition, reduces carbon emissions. The new Carbon Reduction Program and this Strategy document will serve to focus our efforts even more.

## Transportation Technology Category

- **Traffic Management and Control Facilities**

Informed drivers -- especially informed *local* drivers -- seek more efficient alternative travel, and thereby reduce overall carbon emissions.

**EXAMPLE:** The West Virginia 511 Traveler Information System provides real-time traffic information, including congestion, construction, lane closures, road conditions and severe weather information on all West Virginia interstates and other major highways. The resource is available 24 hours a day via phone by dialing 511 or online at WV511.org. WV 511 advisories are also available from the WV 511 Drive Safe mobile app and social media presence.

- **Intelligent Transportation Systems**

West Virginia's focus in this area has primarily been in the areas of traffic signal control systems and dynamic message sign deployment and operation. The former coordinates sequential traffic signals along arterial corridors, the latter provides real-time information to drivers. Efficient travel and informed drivers result in reduced overall carbon emissions.

**EXAMPLE:** Dynamic Message Board Installation, I-77, Jackson County

- **Signal Performance Improvements**

West Virginia has a very long list of past, present, and future projects dedicated to this Strategy. In fact, virtually every traffic signal project has some component resulting in signal performance improvement: geometrics, vehicle detection, phasing and timing, and auxiliary lanes are improvements that reduce total vehicle delay and, therefore, carbon emissions.

**EXAMPLE:** Parkersburg CBD Traffic Signal Upgrades, 30+ downtown intersections. Wood County

## Congestion Management and Mitigation Category

- **Travel Demand Management**

West Virginia has past, present, and future projects that include providing/expanding/maintaining over seventy park-and-ride facilities, supporting public transit routes, buses, and vanpool programs, developing bike routes, providing bike racks on transit buses, and other projects intended to reduce single vehicle trips and, thereby, reduce carbon emissions.



**EXAMPLE:** Mountain Line Transit Vanpool, Morgantown, Monongalia County

- **Freight and Intermodal**

West Virginia's mountainous terrain has made truck climbing lanes and left-lane restrictions vital to motor vehicle mobility at many locations. These strategies reduce passenger vehicle delay and, thereby, reduce carbon emissions.

**EXAMPLE:** US33 Truck Climbing Lane, Shavers Mountain, Randolph County

- **Transportation Control Measures and Traffic Flow Improvements**

West Virginia DOT is well-acquainted with these strategies as part of the long-established Congestion Mitigation and Air Quality (CMAQ) Program. Round-a-bouts, center-left-turn lanes, and even a recent award-winning Restricted Crossing U-Turn (RCUT) project have all served to reduce vehicle idle time and, thereby, carbon emissions.

**EXAMPLE:** US119 (Corridor G) RCUT Improvements, Kanawha County

- **Truck Parking**

Yes, West Virginia DOT has invested in truck parking facilities in the past. This Strategy will remain a focus under the Carbon Reduction Program. The lack of truck parking facilities results in more miles travelled by operators seeking safe, legal, and readily accessible parking to comply with hours-of-service and rest break regulations.

**EXAMPLE:** I-79 Truck Parking Facility, Burnsville Rest Area, Lewis County

## Active Transportation and VMT Reduction Category

- **Bicycle and Pedestrian Facilities and Programs**

West Virginia DOT has placed emphasis on bike and pedestrian accommodations in the past. This includes new construction, renovations, retrofits, Transportation Alternatives grant program awards, and a multitude of ADA sidewalk compliance projects. All of these promote biking and walking as an alternative to motorized transportation.

**EXAMPLE:** Huntington's Paul Ambrose Trail for Health (PATH), Cabell County

- **Transit Improvements**

West Virginia has often supported public transit efforts in cooperation with State's MPOs and public transit agencies, especially through the CMAQ Program.

**EXAMPLE:** Charleston-to-Huntington Transit Route, CMAQ to FTA Grant Transfer



- **Alternative Fuel Vehicles and Diesel Retrofits**

West Virginia's experience in this area is due to this Strategy being eligible for CMAQ funding and due to West Virginia DOT's cooperative experience with the West Virginia Office of Energy and the nominations of Alternative Fuel Corridors. Most recently, West Virginia's Electric Alternative Fuel Corridors have been targeted for large-scale electric vehicle charging stations under the new National Electric Vehicle Infrastructure (NEVI) Program. West Virginia has acknowledged the diesel retrofits strategy for many years as eligible for CMAQ funding, and will continue to consider this Strategy as part of both CMAQ and the CRP.

**EXAMPLE:** See West Virginia's NEVI State Implementation Plan at [go.wv.gov/nevi](http://go.wv.gov/nevi)

- **Micromobility Support**

West Virginia DOT has limited experience with this Strategy but acknowledges its potential for carbon reduction.

**EXAMPLE:** None.

## Energy Efficient and Green Construction Processes Category

- **Sustainable Pavements**

West Virginia DOT has limited experience with this Strategy but acknowledges its potential for carbon reduction.

**EXAMPLE:** None.

- **Shoulder Pavement Upgrades**

West Virginia DOT has been paving shoulders of certain roadways as part of the asphalt roadway resurfacing program for several years as part of a policy initiative established by former Governor Joe Manchin.

**EXAMPLE:** WV2 Resurfacing and Widening, Jackson County.

- **Pavement Recycling**

West Virginia DOT has included Reclaimed Asphalt Pavement (RAP) in its hot-mix asphalt specifications for many years.

- 

**EXAMPLE:** See WVDOH Standard Specification Section 401.4-COMPOSITION OF MIXTURES:



- **Low- and Zero-Emission Construction Equipment**

West Virginia DOT Equipment Division recently benefited from the Volkswagen Mitigation Trust Agreement by replacing older, on-road diesel fleet trucks with \$8.5 million worth of brand new, cleaner, more efficient diesel trucks. West Virginia DOT Equipment Division also pursues equipment replacement grants through the Diesel Emissions Reduction Act (DERA) program administered by the USEPA.

**EXAMPLE:** WVDOH Diesel Fleet Replacement, fifty-one 2009-or-older vehicles, Volkswagen Program.

- **Energy Efficient Streetlights**

West Virginia DOT has been converting roadway lighting, traffic signals, and overhead sign structures to energy-efficient LED luminaire technology. This will continue to be a focus of our Carbon Reduction Program. After all, reducing electric bills is reducing carbon emissions, across the board.

**EXAMPLE:** I-79/I-77/I-64 Roadway Lighting Replacement Upgrades, Charleston, Kanawha County



**Appendix B**





## RIC Meeting Notes

- **What carbon reduction strategies are you agencies taking now?**
  - A couple of things that we are doing that could be considered Carbon Reduction
    - Promote alternative transportation through the bike ped advisory committee
    - ADA transition plan Assistance program - offer to member jurisdictions
    - Assist member municipalities with alternative transportation grants
    - RSA - This ties into Some alternative improvements
  - Talked about with Perry/Brian and others - think about how best to convey strategies in a broad range way
- **Are they things you would like to expand into that you aren't doing as much of yet?**
  - Existing EV charging infrastructure and identify gaps in the publicly available stations
  - Informational point of view - street light replacing and what is out of date or disrepair and this would be nice to see this updated, even for safety projects.
- **When considering the categories of project types, which are you most likely to leverage?**
  - Transportation alternatives; replacing street lighting; development of EV charging infrastructure
  - Some of the construction practices/diesel engine retrofits would require a lot more education to member jurisdictions
  - NEVI - need to do full build out on AFCs; in the future looking to coordinate with MPOs on Level 2 chargers - but for now fully focused on the full build out of AFCs across the state
- **What information would be helpful for you to receive from WV's Carbon Reduction Strategy for use in your MTP?**
  - A couple of ideas
    - Examples of projects and statewide priorities to tie it into the MTP and understand what the state may be willing to support matching funds for - especially since our member jurisdictions are unable to provide matching funds
    - Would like to see bicycle and pedestrian counts across the state/region to see if our implementation is impactful
- **Member jurisdictions?**
  - Informational pamphlet could be useful - would at least allow us to know we are effectively communicating it and make sure our members don't miss out because we didn't do a good job explaining it
- **Are there any trends and characteristics that you MPO is already measuring or that would be of particular value to understand?**
  - It would be nice to understand systemwide sidewalk presence
  - DOT's open data portal doesn't include a lot of details about the characteristics of the route and would be nice for tracking moving forward and would help with systemwide analysis of pedestrian facilities
  - Could tie this into transit as well
  - MTP and travel demand model look into mode share - seeing a trend in people living in Putnam county suburbs and driving into Charleston for work. Especially with the new bridge - be curious to see if this trend continues and what is driving it - housing?
    - Long term growth shift
- WVDOT - RIC does get the lion share of CRP funding, it still is small in the grand scheme of things. Think we will see a lot of the MPOs working in the same direction



## HEPMPO Meeting Notes

- **What carbon reduction strategies are you agencies taking now?**

Our focus to date has been on pedestrian signal projects tied to safety, which are eligible for 100% federal share. We are also exploring new commuter bus service, though FHWA has determined to us CRP is eligible for transit capital but not operating.

- We are finding ourselves trying to accommodate the planning aspects that are necessary to support the carbon reduction strategies and most of our MPOs are working through procedures for identifying CRP projects in alignment with the STIP Operating Guidelines.
- Mostly focused on Ped projects trying to reduce VMT - likely similar across the state
- Recent meetings it has been impressed up on MPOs that we need to get these procedures in place and last time we met there was only 1 project in the STIP actually programmed.
- Not unique to WVDOT, seeing the same thing in MDOT due to the haste.
- For pedestrian projects - focused on signal and safety projects because they don't require cost share. And this, while small, allows us to be more nimble since local jurisdictions can't modify budgets so easily
- Technical Committee and Policy Board are somewhere between total apathy and we trust you with everything
  - Intend that our August meeting will put forth a policy for recommending CRP projects in the future
- Policy - 2 already and have policy in place (RIC and Morgantown). RIC right now has an open call for CRP candidates. Simple document 5 to 6 pages, details and point systems. A lot of information about eligibility. Seven of the MPOs are going to look pretty similar. For HEP point system may be slightly different. RIC had a heavy safety emphasis and functional class of roads.
- HEP draft relies more heavily on some of the things that we have pretty good research or previous studies completed.

- **When considering the categories of project types, which are you most likely to leverage?**

Most likely smaller pedestrian and sidewalk improvements in our more urban areas due to the amount of suballocated funds we receive and availability of non-federal match.

- Local match is such a big deal and there is no way around it. We don't have local match. Would like to support transit where we can, but the fact that it can't be used for operations makes this difficult. Working with folks to understand charging, fleet transition, etc, but didn't get many bites or traction. EPTA is just beginning to dip their toes in it. RAISE grant and FLAP grants recently awarded for transit projects. Going to begin working on TSMO plan for I-81 and could see CRP funding go towards this.
- Want to know what the states priorities are and how we can partner funds together.
- Transit, EV, ITS would be a great step beyond bike/ped
- Hagerstown, MD will be doing a revamp of their downtown signal system - CRP will likely be a big part of the funding puzzle as they create a larger adaptive system

- **What information would be helpful for you to receive from WV's Carbon Reduction Strategy for use in your MTP?**

How as a new federal funding program this might increase financial forecasts for eligible projects in our area, how CRP might be paired with pedestrian safety to improve PM1 targets, MTP goals especially related to environmental sustainability and technology



- Difficult for the MPOs - not as much a messaging thing; bigger challenge is that urbanized areas are only allocated so much. Have \$350k in a FY and grateful for this, but it's such a small amount that they can't get people excited about it.
- Curious if we ever move to a point of quantifying this; difficult due to controversy around the topic in certain geographies; demonstrating value will be contingent on quality projects coming out that fulfill the spirit of the program
- **Are there any trends and characteristics that you MPO is already measuring or that would be of particular value to understand?**  
CRP Project Prioritization modeling as it relates to State priorities, distribution of State CRP funds and how could pair with MPO sub-allocated funds
  - Wouldn't say we are a heavy data collection agency. A lot of our data is gathered from feds or state dots. Don't know that we have a formal tracking procedure or process. Most MPOs aren't adopting any other targets/measures. Tracking is really just trying to see when things are programmed if they line up with the plans we have?
- **For Bi-, Tri-State MPOs - where are you in the process of consultation with "X"DOT? Are there any opportunities for alignment or direction we should be considering in WV?**  
Attached is MDOT's Draft CRS. It is believed much of MDOT's allocated CRS will be going to buses and EV infrastructure in the Baltimore area. In the short term my understanding is, while MPOs were asked to recommend projects (see attached letter), for FY22 and FY23 suballocated funds MDOT is looking for eligible elements in existing projects (one example is a large Interstate widening project that could be outfitted with LED lights).
  - Have to do work to follow up with them because their TIP/STIP manuals don't do a good job of outlining projects for small projects. Do a lot of grouping. Throw a lot of that at buses in Baltimore and this is unique since they are running this.
  - We've received no direct feedback from either state based on our recommendations.



## Belomar Notes

- **What carbon reduction strategies are you agencies taking now?**
  - Using sub-allocated funds (including CMAQ) funds in Ohio
    - Using funds to leverage larger projects
    - Projects in Ohio with the TAP grant
  - Plan to use CRP funds as part of bigger project in WV
    - Sub-allocated funds or state project
- **When considering the categories of project types, which are you most likely to leverage?**
  - Bike/Ped Trails
  - Replace/upgrade existing infrastructure
    - Lighting (LED conversion)
    - Traffic lights
    - Camera tracking - CCTV?
  - Question from Perry: any ADA transition plans? ADA opportunities?
    - Several ADA ramp projects at DOT level (in Belomar TIP)
    - Nothing at the MPO level
- **What information would be helpful for you to receive from WV's Carbon Reduction Strategy for use in your MTP?**
  - The statewide strategy is what's most important
    - And recommendations
  - Document the statewide strategy of keeping funding flexible
- **Are there any trends and characteristics that you MPO is already measuring or that would be of particular value to understand?**
  - Information on local match requirements
- **For Bi-, Tri-State MPOs - where are you in the process of consultation with "X"DOT? Are there any opportunities for alignment or direction we should be considering in WV?**
  - Working with Ohio DOT currently
    - Talked with Central Office—communicated that all eligible projects available for CRP funds
  - Use partial funding—CMAQ + CRP—to leverage larger projects (all CMAQ eligible projects available for CRP funding)
    - Auxiliary lanes
    - Roundabouts



## KYOVA Meeting Notes

- **What carbon reduction strategies are you agencies taking now?**
  - Bike and ped\*
  - Intersection improvements\*
    - Will request CRP funding for Wayne County project
    - Cabot County as well
  - Charging infrastructure
  - TOD
  - Bike/ped and intersection improvements are the low-hanging fruit
  - Roundabouts (more interest in Ohio and Kentucky)

\* Key focus areas for KYOVA

- **When considering the categories of project types, which are you most likely to leverage?**
  - KYOVA will focus on non-motorized projects (particularly bike/ped)
  - Intersection improvements
  - Particularly leveraging multiple funding sources for these projects
- **What information would be helpful for you to receive from WV's Carbon Reduction Strategy for use in your MTP?**
  - Keep eligibility requirements clear and as simple as possible
    - Eligibility toolbox
  - Helpful to communicate where funds can be used
  - How funds can be combined with other funding sources
  - Groupable projects
- **Are there any trends and characteristics that you MPO is already measuring or that would be of particular value to understand?**
  - CRP influence on freight
    - Truck parking eligibility
- **For Bi-, Tri-State MPOs - where are you in the process of consultation with "X"DOT? Are there any opportunities for alignment or direction we should be considering in WV?**
  - Funded two projects with CRP in Ohio and Kentucky
    - South Point (using CRP funds and TE funds)
  - Ohio/Kentucky provided training on eligibility to MPOs
  - Consultant engaged to complete the CRS in Kentucky
    - HDR



## WWW Meeting Notes

- **What carbon reduction strategies are your agencies taking now?**
  - No official strategy on the MPO side, but are participating in development of strategies for ODOT and on the WV side
  - Pursuing projects that contribute to CO2 reduction
    - NEVI project
    - Advocated for charging stations on WV side of 77
    - CMAQ projects
  - With sub-allocated funding, some requests for CRP funding
    - Requested projects for CRP fund use (cut sheets available)
      - Bridge replacement project on WV 14 (popular bike/ped route)
      - 2 ADA projects
      - Multiuse trail WV 14
      - Roundabout in Williamstown
    - Mentioned developing GHG reduction performance measures in TIP
      - In WV and OH
- **When considering the categories of project types, which are you most likely to leverage?**
  - Similar to projects you'd pursue for CMAQ? Or is there anything different?
    - **Easier funding to access—doesn't require CMAQ analysis**
      - Fiber-optic signals, e.g. (difficult to provide that quantitative analysis)
    - Don't anticipate using CRP funds for transit
      - **Our strategy is to keep it broad, use the federal categories, so as to not limit MPOs**
  - Freight is a hot topic recently
    - Truck parking
- **What information would be helpful for you to receive from WV's Carbon Reduction Strategy for use in your MTP?**
  - Guidance to include in MPO documents (MTP/TIP/etc.)
  - List of considerations for qualifying projects
    - Evaluation criteria (ranking, etc.)
    - What are key priorities that can make projects stand out/check those boxes?
- **Are there any trends and characteristics that your MPO is already measuring or that would be of particular value to understand?**
  - Safety key to WWW
  - Active transportation
  - Freight (specifically truck parking)
- **For Bi-, Tri-State MPOs—where are you in the process of consultation with "X"DOT? Are there opportunities for alignment or direction we should be considering in WV?**
  - In consultation with ODOT
    - Concepts developed
    - Presentation to MPO membership
  - Not everyone in agreement on priorities
    - Buzzwordy





## MMPO Meeting Notes

- **What carbon reduction strategies are you agencies taking now?**
  - Developing a draft work program to do a skeletal charging station plan for the area - part of the staff work program during this fiscal year
    - Identify the proper locations and then see what the interest is applying for them or using suballocated funds to construct them. Going from the general to the specific - bare bones plan will allow us to have an advantage in the long run
  - Hope to have something before the end of the fiscal year - spring of next year
  - Explored the funding opportunities available for the suballocated CRP funding
    - Understand well enough to explain to our member jurisdictions
  - Have heard from our municipalities that are interested in the activities listed
    - Applications this month and policy board in October
  - Truck traffic downtown - may or may not get an application along this line
  - Safety and pedestrian accommodations
  - Share the memo with us
  - Allocated 200k for intersection (carbon reduction program) for this FY
- **When considering the categories of project types, which are you most likely to leverage?**
  - Depending on applications we get from our member agencies - MPO may also consider doing proposed projects and funding them with CRP and PE with on-call
  - 100% eligible for federal funding projects first
    - Strategy in lieu of begging for match
    - How design stage transitions and working with DOH
- **What information would be helpful for you to receive from WV's Carbon Reduction Strategy for use in your MTP?**
  - USDOT's focus on performance measures - not sure how this spills over
  - If there are PMs for carbon reduction - how they are all going to fold together
  - Especially if most MPOs in the state are in compliance - air quality issue is sorta on hold
  - Still think about it - don't imagine USDOT will back away from it
- **Are there any trends and characteristics that you MPO is already measuring or that would be of particular value to understand?**
  - Haven't delved into 2020 census data - been side tracked
  - Journey to work data - typically 6 to 7% is non-motorized
    - Haven't looked at 2020 data, but this could be interesting and relevant
  - Really interested in overall impact of covid and WFH on the journey to work trends
    - Really easy to track
  - Aging populations