

IMPROVE 81

Fall 2025

81 INSIDER

Bridging the Corridor

One of the many challenges of improving I-81 is dealing with dozens of bridges and overpasses – most of them dating back to when the interstate was built during the 1950s and 60s. Bridge design and construction require a high level of environmental stewardship, and present extra complications for keeping traffic moving through the work zone.

Bridges are a major component of the I-81 Corridor Improvement Program (CIP). The current widening project in the Salem area, for example, includes the full replacement of six bridges and the widening of two others. When contractors begin widening the interstate through Harrisonburg in 2026, they will replace eight bridges along the I-81 mainline and a ninth structure that crosses over the interstate.



Bridge construction near Salem



Bridge girder placement near Staunton

The VDOT Staunton District, which serves six counties along the I-81 corridor, has more than 100 bridges carrying interstate traffic. “It takes a considerable amount of manpower and funding to maintain these bridges,” notes Staunton District Bridge Engineer Josh Hall. “These I-81 projects are much needed. The existing bridges were not designed for the loads and volume of traffic on the road today.”

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Bridging the Corridor (continued)

Modern design and construction standards now require more clearance under a bridge and wider shoulders on both sides of travel lanes. “When bridges are replaced or widened, shoulder widths are typically increased to meet current interstate criteria,” explains Bridge Engineer John Bechtold of the VDOT Bristol District, which includes three counties along I-81. “These upgrades help future-proof the corridor and enhance overall functionality for decades to come.”

Promoting Environmental Stewardship

As VDOT eyes the future of the I-81 corridor in Virginia, it also works to preserve wildlife habitats and water quality. This is especially challenging where highways cross rivers and streams.

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Environmental Stewardship efforts include:

- Time-of-year restrictions to avoid disruptions to wildlife mating and migration patterns
- Using causeways or work bridges to reduce sedimentation
- Employing a variety of best-management practices to control erosion



Bridge work on I-81 over Old Dominion Road near Bristol

Bridging the Corridor (continued)

“State and federal commitments to environmental compliance require us to protect sensitive areas – but work has to be done,” says Area Construction Engineer Todd Repass of the VDOT Salem District. “This adds costs to projects but allows for future enjoyment of the valuable assets that make Virginia a beautiful place to live and work.”

Critical decision making

During the early stages of planning and design, VDOT makes a critical decision about each bridge – widen and improve it, or completely replace it. Many factors go into the final decision, but engineers start with this general guideline for the most optimal life cycle cost: If the rehabilitation cost exceeds 65% of replacement cost, opt for a bridge replacement. “It depends on the condition of the existing bridge and the cost of improving it to the desired state - versus the cost of building a new bridge,” Salem District Bridge Engineer Dean Hackett explains. “If it is more economical to improve it, we will.”

Whether a bridge is rehabbed or fully replaced, it is always a challenge for contractors to perform their work safely while keeping I-81 traffic moving. Lane closures are typically restricted to nighttime and overnight hours, when traffic levels are more manageable. Certain phases of construction – such as placing structural beams overhead – require temporary closures for the safety of travelers. VDOT uses a variety of communication tools such as news releases, social media and digital message signs to keep motorists aware of the changes ahead.



Construction of Route 635 bridge over I-81 in Augusta County



Early-stage construction work on I-81 bridges over Peppers Ferry Road near Wytheville



The People Behind the Projects: Todd Repass, P.E., Area Construction Engineer

Todd Repass, a VDOT area construction engineer in the Salem District, manages the I-81 widening project between mile markers 143 and 150. With nearly 25 years of experience in transportation engineering, Todd brings a wealth of experience to this major construction project.

What I-81 CIP projects are you currently involved in?

As an area construction engineer, I'm responsible for the widening project between exits 143 and 150. This project involves adding a third lane on I-81 in both directions, replacing four pairs of bridges, installing more than 1.6 miles of sound barrier and more. This is a design-build project, so we're doing preliminary work in the field right now at the same time as it is being designed.

I also have the exit 94 and exit 105 ramp extension projects in Pulaski and Montgomery counties. Those projects started in September.

How will these I-81 CIP projects benefit drivers on the interstate?

This project (exit 143-150 widening) is going to improve safety and congestion on the interstate. There won't be as many backups because of the third lane. A lot of the older bridges don't have shoulders, so if one lane is down because of a crash, it's going to slow everything down. Having an extra lane is going to help with that.

I live in Wytheville and drive to Christiansburg regularly, so I am familiar with the shorter ramps at exits 94 and 105. The

extensions are going to help traffic flow and improve safety. I also have family in the area, so these projects will help them get to work quicker and improve their quality of life.

What do you think people should know about the overall I-81 CIP?

Results matter, and because this is a design-build project, the contractor is working on the design and construction in the field at the same time. This means the work is getting done faster than traditional projects. The I-81 CIP is also set up to have a dedicated stream of funding. As a result, the CIP projects can move forward independently from the general budget with less time in between.

New pavement and new bridges also help because less maintenance is required for a new bridge compared to a 60-year-old bridge, for example. So, there are future benefits in addition to the immediate improvements.

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People Behind the Projects (continued)

How does this project scale in comparison to other projects that you have worked on, and how has your professional experience prepared you for this project?

As a multi-year, \$360 million project, this is the largest job I have managed. I have experience with projects in the \$30 million to \$40 million range as well as paving schedules in the Bristol District that were normally about \$80 million per year.

All my experiences have come together to prepare me for this job. There's a lot of documentation involved, and my time as an inspector at the Georgia DOT helped prepare

me for that. I then moved into design where I managed contracts and people. Except for the weigh station, all the components of this project are similar to others that I have experience with from roundabouts to traffic signals to bridges. I worked on some of the improvements at exit 150, so I'm already familiar with that section.

What have you enjoyed the most about working on this project?

We're working with a lot of great people who are focused on the job and focused on getting the work done, and that's been good to see. I like that part of it, the collaboration and the experience that everybody brings to the table.



Early phases of I-81 widening project between exit 143 and exit 150

Potential Solution for Linger Issues

In-person and online public input is helping a new round of I-81 improvement projects take shape.

Detailed traffic analysis and an online survey in early spring 2025 combined to identify “hot spots” of higher crash rates or frequent congestion. In July 2025, VDOT revealed 40 potential solutions including interchange ramp extensions, new widening projects, and realignment of travel lanes in areas with challenging curves.

VDOT and its study partners for the I-81 Corridor Improvement Plan (CIP) shared the project concepts during public meetings in Winchester, Weyers Cave, Salem and Bristol. An accompanying online survey drew nearly 1,700 participants and more than 36,000 yes-or-no responses to the potential solutions. Several received a thumbs-up from at least 90% of respondents. Some of those are listed above.

About \$2 billion is expected to be available for possible future projects along the I-81 corridor, and the 40 potential solutions would far exceed that amount. The CIP study team is currently refining and prioritizing the potential solutions and developing initial cost estimates. They will present that information during another round of in-person and online public input, tentatively scheduled for late October.

Final recommendations from the CIP study go to the I-81 Advisory Committee and Commonwealth Transportation Board in late 2025.

Solutions receiving $\geq 90\%$ public input approval:

-  Acceleration lane extensions in both directions at exit 24 (Meadowview)
-  Truck-climbing lanes at two locations in Montgomery County
-  Truck-climbing lanes at two locations in Rockbridge County



Improve81 Construction Updates

Bristol District

(Counties of Wythe, Smyth and Washington)

W-L Construction is in the final stages of a southbound I-81 deceleration-lane extension in Wythe County at exit 81, the junction with I-77 south. The \$3.4 million contract includes a pier-protection wall for the I-77 overpass bridge. Paving work began in August, and the project is expected to be complete in October.

A \$53.6 million construction contract bundles three projects in the Wytheville area, including two that are part of the I-81 CIP: a southbound auxiliary lane between exits 73 and 72, and reconfiguration of the nearby I-77 exit 41 interchange. Branch Civil was awarded the contract, which has a final completion date of late 2027.

Branch has been performing drainage work for the new auxiliary lane and plans to install the base layer of asphalt before the end of 2025. exit 41 interchange work has been dominated by a massive amount of excavation and fill, as crews build new ramps to and from I-77. The contractor tentatively plans to open the new on-ramp by the end of this year.

Also in the Wytheville area, design-build contractor Orders Construction has a \$53.9 million contract to make a series of improvements around the interchange of I-81 and I-77. The work includes replacement of three bridges, acceleration- and deceleration-lane extensions, and a new auxiliary lane between the interstates. Progress during summer and fall 2025 includes new structural beams and concrete decks on the I-81 bridges over Peppers Ferry Road. Southbound I-81 traffic is expected to shift onto a newly constructed travel lane by late 2025.

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Grading and drainage work at I-77 exit 41



I-81 bridge work at Peppers Ferry Road

Improve81 Construction Updates (continued)

The last of three new truck-climbing lanes in southwest Virginia was completed in summer 2025. The additional lanes are between mile markers 32 and 40, in portions of Smyth and Washington counties with steep terrain that is challenging for commercial trucks.

The southernmost project in the I-81 CIP is the widening of southbound I-81 between exits 10 and 7 in the Bristol area. W-L Construction has a \$30.7 million contract for the project, which includes one mile of widening on the northbound side. W-L has finished construction of noise-barrier walls and the first phase of bridge widening at Old Dominion Road. During fall 2025, crews will focus on shoulder construction and the second phase of bridge work.

In early 2026, expect the start of construction on a deceleration lane extension along northbound I-81 at exit 45 (Marion). The project, which requires bridge widening over Matson Drive, was advertised for construction bids in September 2025.

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Widening I-81 southbound from exit 10 to exit 7

Improve81 Construction Updates (continued)

Salem District

(Counties of Botetourt, Roanoke, Montgomery and Pulaski)

Design-build contractor Branch Civil is widening northbound and southbound I-81 in Roanoke and Botetourt counties. The \$361 million project extends interstate widening from exit 143 (I-581 junction) to exit 150 (Route 220), replaces eight bridges and reconstructs part of the exit 150 interchange.

Over the summer the contractor continued design work and shoulder strengthening in preparation for travel-lane shifts. This fall crews begin preparing for excavation in portions of the interstate median, and installing barrier wall to protect the work zones around bridges. VDOT plans a “pardon our dust” community meeting before major construction begins in early 2026.

A \$179 million widening project is in its final year in Roanoke County and the City of Salem. Design-build contractor Archer Western is constructing a third lane in both directions between exit 137 and exit 141, replacing six bridges and widening two others along the way. The project also includes 2.6 miles of noise-barrier wall along northbound I-81.



Widening between exit 143 and exit 150

Bridges and their roadway approaches have been a primary focus over the past several months, and that work will continue through fall 2025. At the same time, crews are working on sound-wall construction, grading and paving along the outside shoulders, and installing new lighting in parts of the project. Final completion is expected in summer 2026.

In summer 2025, Caton Construction Group was awarded a \$6.8 million contract to extend the acceleration lanes at southbound exit 94 (Route 99) near Pulaski and northbound exit 105 (Route 232) in Montgomery County near Radford. Construction is scheduled to begin in mid-September and finish in summer 2026.

In August 2025, VDOT advertised the exit 162 (Buchanan) northbound acceleration lane extension project. Construction should start by the end of this year.

A public hearing about a major northbound and southbound widening is tentatively planned for late fall 2025. The meeting will focus on the northern segment of the project between exit 128 (Ironto) in Montgomery County and exit 137 (Salem) in Roanoke County. A design-build contract for the northern portion is expected to be awarded in spring 2026.

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Widening between exit 137 and exit 141

Improve81 Construction Updates (continued)

Staunton District

(Counties of Frederick, Warren, Shenandoah, Rockingham, Augusta and Rockbridge)

VDOT is adding a third southbound lane to I-81 in Shenandoah and Warren counties between mile markers 300 and 295. Shirley Contracting Company has a \$58.6 million contract that includes replacement or widening of two bridges, and about one mile of noise-barrier wall along northbound I-81 at Strasburg.

During the first several months of construction, crews strengthened the outside shoulders, installed concrete barriers to protect the work zone and built access points for construction equipment. During summer 2025, they started excavation in the median and bridge work at the Cedar Creek and CSX railway crossings. Final completion of the project is about three years away.

Truck-climbing lanes are under construction near Weyers Cave, from about mile marker 234 in Augusta County to mile marker 238 in Rockingham County. Completion is scheduled for late 2027. Branch Civil was awarded a \$61.4 million contract to build the additional lanes, which will reduce congestion and enhance safety in an area with steep terrain. Contractors have started median excavation as well as early-stage work to widen the northbound and southbound bridges over Naked Creek.

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Grading and paving work for I-81 widening near Staunton

Improve81 Construction Updates (continued)

I-81 in the Staunton area is receiving a third lane northbound and southbound between exits 221 (I-64 junction) and 225 (Route 262 north). The project widens five bridges, and the first phase of structural girders have been placed for all five. Contractors have also finished base-layer paving on the median side. Kokosing Inc. has a \$101 million design-build contract for the project, with final completion expected in mid-2027.

Adjacent to the Staunton-area widening is a new southbound auxiliary lane, which eases congestion and gives drivers more room to change lanes between exit 221 (I-64 junction) and exit 220 (Route 262 south). Contractor Fairfield-Echols performed final paving, overhead sign erection and guardrail installation just before opening the new lane in late August 2025. A highlight of the \$7.7 million contract was the replacement of an overpass bridge between the two interchanges.

Widening through the Harrisonburg area – one of the largest projects in the I-81 CIP – is scheduled to advertise for construction in October 2025. It includes a third northbound and southbound lane between mile markers 242 and 248, as well as replacement of nine bridges. Construction will likely begin in early 2026.



Southbound I-81 auxiliary lane open



Final milling and paving for new I-81 auxiliary lane



Bridge widening for Staunton-area I-81 project



Keep in Touch

Have a question or comment regarding the I-81 CIP? Connect with VDOT's Improve81 communications team!

CONTACT THE VDOT CUSTOMER SERVICE CENTER (24/7/365)

 VDOT Customer Service app: <https://my.vdot.virginia.gov/>  vdotinfo@vdot.virginia.gov  800-FOR ROAD (800-367-7623)

An agent will answer your questions and/or forward your questions and comments with contact information to the appropriate I-81 CIP team member.

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