



UPDATE

Virginia Keeps America Moving

Winter 1996

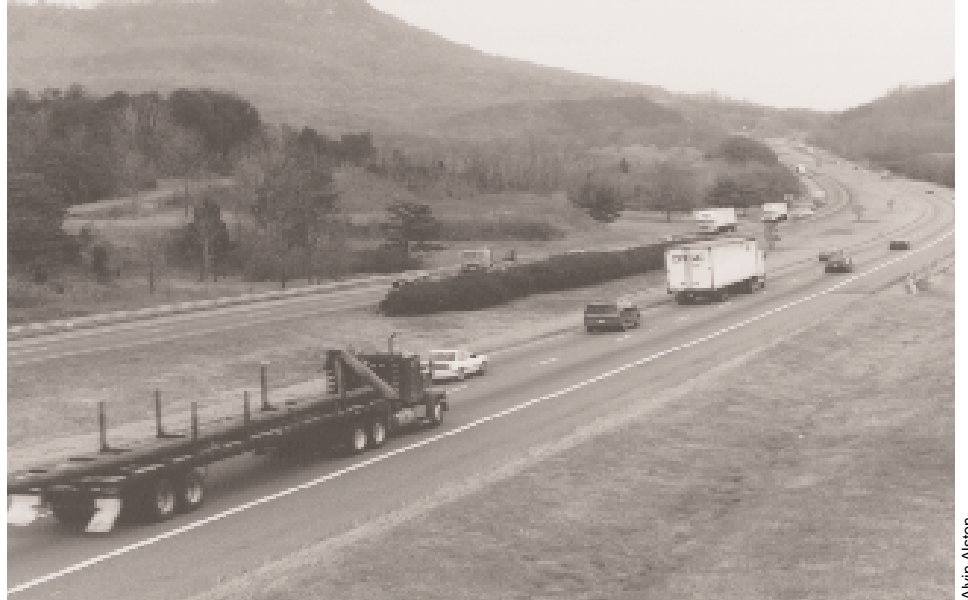
VDOT launches I-81 improvement study

The Virginia Department of Transportation has begun a major effort to plan and design road improvements for Interstate 81. Most notably, the department is in the very early stages of studying I-81 and developing a plan to widen and improve Virginia's segment of the interstate. If approved, the plan could take more than 20 years to carry out.

"VDOT is taking a broad look at the entire interstate and planning for changes that will keep Virginians – and Americans – moving safely through our state," said David R. Gehr, Commonwealth Transportation Commissioner. "We want citizens and organizations outside VDOT involved in the planning to see that all feasible road design options and new technologies are considered before we break ground."

VDOT, research and planning groups involved

Within VDOT several different technical divisions are working on I-81 improvements. One effort, led by the agency's Location and Design division, is coordinating 10 "conceptual studies" to decide the best way to widen sections of the interstate. VDOT's Traffic



Alvin Alston

Traffic volume on scenic Interstate 81 has nearly tripled in the last 25 years.

Engineering division is leading a group in exploring ways to use new technologies – known as Intelligent Transportation Systems – to keep traffic moving on I-81 during and after construction.

Meanwhile, VDOT is encouraging truck-stops and other private businesses to build more rest stops and parking areas on the interstate. And the Transportation Planning division, as part of an ongoing effort, is forecasting traffic trends for communities along I-81.

In addition, organizations like the Virginia Transportation Research Council, Virginia Tech's Center for Transportation Research, and local planners are developing plans and ideas for improving I-81.

Increasing traffic has led to safety concerns

The increasing traffic volume has created safety problems and traffic congestion on

the four-lane interstate. I-81, which is 30 years old, is carrying more and heavier vehicles than it was originally designed to handle. Traffic has nearly tripled in 25 years from 2.7 million daily vehicle miles traveled in 1970 to more than eight million in 1995.

Another significant change has been the increase in truck traffic. Originally designed to handle only 15 percent truck traffic, the aging interstate now carries anywhere from 19 to 40 percent truck traffic, depending on the location.

Truck traffic will grow due to market demands

Truck traffic will continue to grow as American businesses increase their reliance on trucks to transport goods. In 1992, trucks carried 80 percent of all freight in Virginia, according to figures provided by

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Status of I-81 improvements

Meeting times listed below are estimates. VDOT will hold two public meetings in each study area – and will announce the specific date, time and place of meetings in local newspapers several weeks before each meeting.

Study Area 1

Washington County from Exit 7 north to Exit 22 south of Meadowview.

Scope of study: To determine the best roadway-widening location and number of additional lanes needed.

Status: Traffic counts completed; study should be finished by summer 1997.

☛ **First public meeting:** Early 1997 for public to review and comment on road-widening locations and design options.

Study Area 3

Wythe County from I-81/77 overlap near Wytheville to I-77 near Ft. Chiswell.

Scope of study: Study the feasibility of widening I-81 from six to eight lanes.

Status: Preliminary engineering study began December 1996. Study will determine whether it is technically feasible to widen this narrow section of interstate.

☛ **First public meeting:** Summer 1997 to discuss study findings and to hear public comments.

Study Area 2

Washington, Smyth and Wythe counties from 1 mile (1.6 km) north of Route 704 at Exit 22 between Abingdon and Meadowview to I-77 near Wytheville.

Scope of study: To determine the best road-widening location and number of new lanes needed to ease traffic flow.

Status: VDOT consultants start work on the 18-month engineering study in early 1997.

☛ **First public meeting:** By fall 1997 to discuss road-widening design options with local citizens.

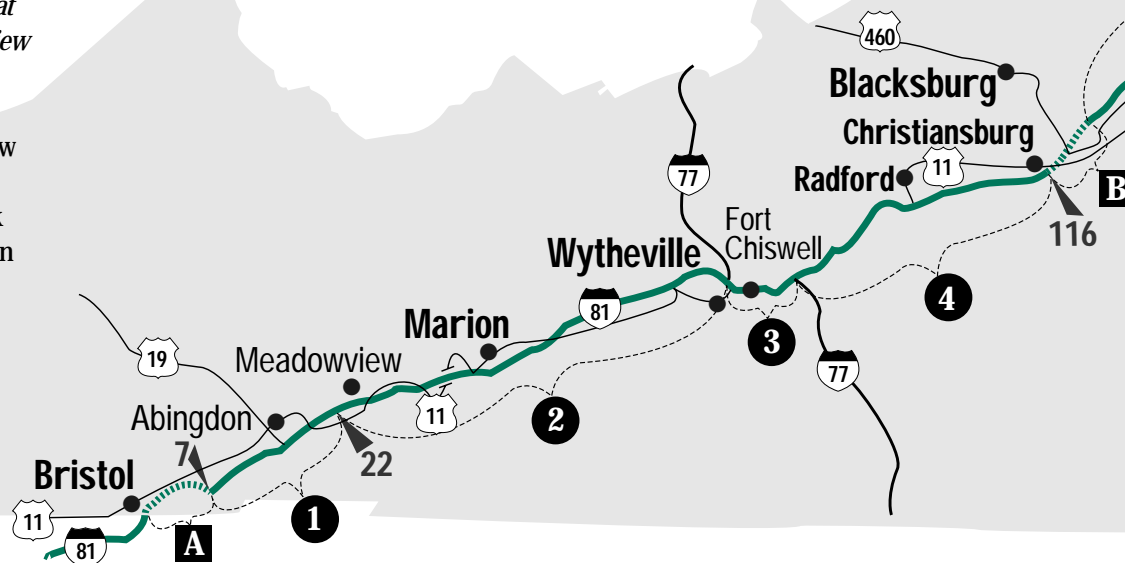
Study Area 4

Wythe, Pulaski and Montgomery counties from I-77 near Ft. Chiswell to 2.1 miles (3.4 km) south of Route 460/11 near Christiansburg.

Scope of study: To determine the best road-widening location and number of new lanes needed.

Status: VDOT consultants begin work on the 18-month engineering study in early 1997.

☛ **First public meeting:** By fall 1997 to present road design options and to hear public comments.



Study Area 5

Montgomery, Roanoke and Botetourt counties from 1.2 miles (1.9 km) north of Route 460/11 near Christiansburg to 1 mile (1.6 km) north of Route 11 south of Buchanan.

Scope of study: To widen I-81 from four to either six or eight lanes, depending on traffic needs.

Status: VDOT consultants will complete traffic analysis in the study area by early 1997. The consultants will complete their study by late fall 1997.

☛ **First public meeting:** Early 1997 to present road-widening options.

Study Area 6

Botetourt and Rockbridge counties, 16-mile section of I-81 from 1 mile (1.6 km) north of Route 11 south of Buchanan to 0.6 mile (1 km) south of Route 11 at Natural Bridge.

Scope of study: To determine the best road-widening option and number of new lanes needed to accommodate traffic flow in both directions.

Status: VDOT engineers and consultants will begin the 18-month study by early 1997.

☛ **First public meeting:** Summer 1997 to update local citizens on road-widening design options and to seek public comment.

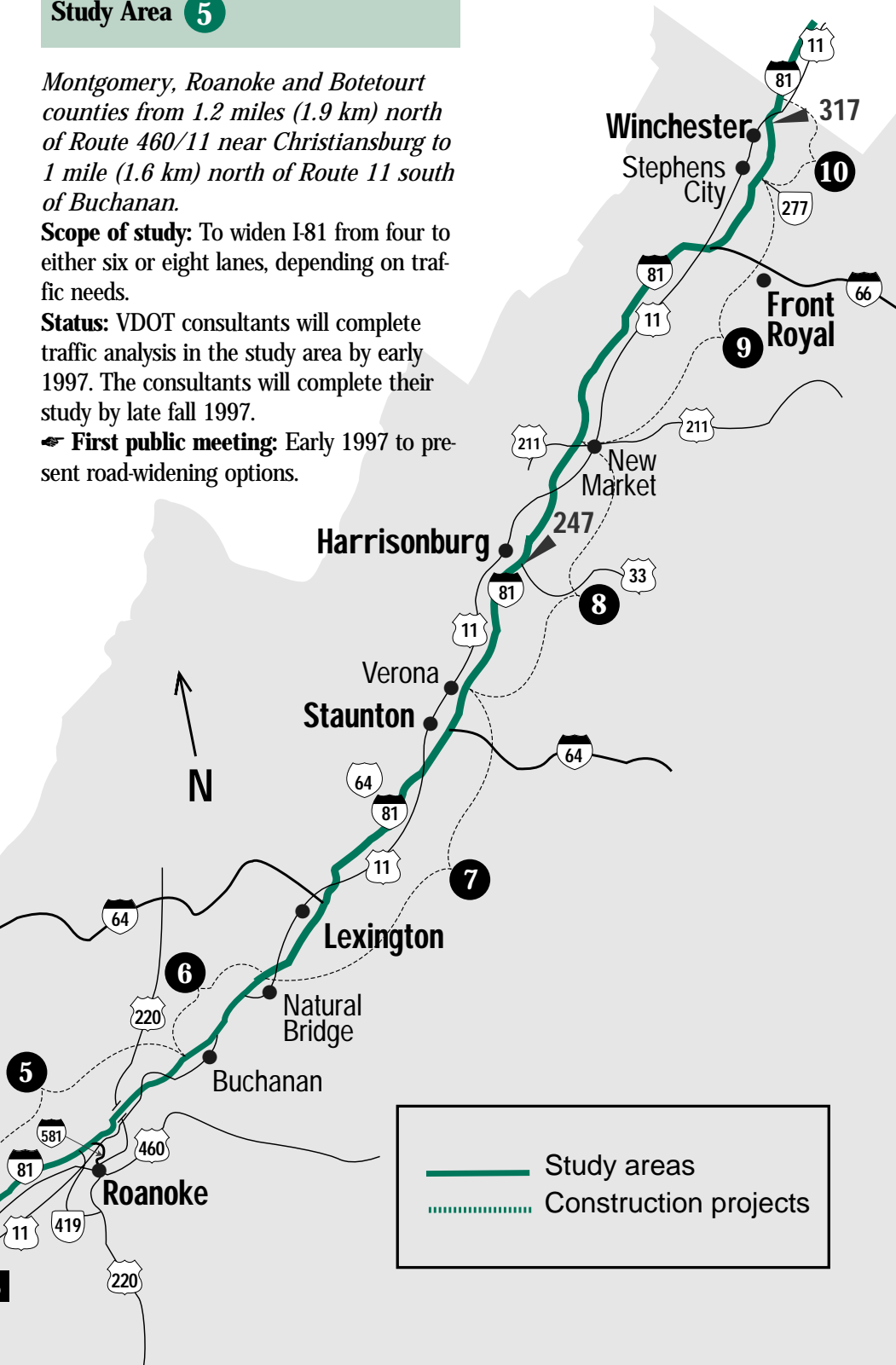
Study Area 7

Rockbridge and Augusta counties from 0.6 mile (1 km) south of Route 11 at Natural Bridge to 0.9 mile (1.5 km) north of Route 612 at Verona.

Scope of study: To determine the best road design options for widening I-81 – and locating the following climbing lanes: northbound and southbound south of Buffalo Creek, northbound for a three-mile section near Natural Bridge, and northbound for a two-mile section near the south Augusta County line.

Status: Preliminary engineering study began in spring 1996. Traffic analysis is under way; final study to be completed by September 1997.

☛ **First public meeting:** By early 1997 to present road-widening options and to hear citizen comments.



Study Area 8

Augusta, Rockingham and Shenandoah counties from 0.9 mile (1.5 km) north of Route 612 at Verona to 1 mile (1.6 km) south of Route 211 at New Market.

Scope of study: To determine the best road-widening location and number of lanes needed to keep traffic moving smoothly, especially near the city of Harrisonburg and James Madison University.

Status: Preliminary engineering studies will begin by December 1996 and will be completed by May 1998.

☛ **First public meeting:** By summer 1997 to update local citizens on road-widening options and to hear local comments.

Construction Projects

A In a separate effort to improve I-81 traffic flow in the Bristol area, VDOT will begin construction by early 1998 to widen I-81 from four to six lanes from the Virginia-Tennessee line to Exit 7. VDOT engineers have designed this project to coordinate with future interstate improvements.

B In a separate effort to improve traffic flow and safety, VDOT will construct a new Christiansburg area interchange and collector-distributor roads that will move traffic on and off I-81 more smoothly. Construction should begin by spring 1998. VDOT is designing the project to coordinate with future I-81 improvements. ■

Study Area 9

Shenandoah and Frederick counties from 1 mile (1.6 km) south of Route 211 at New Market to 2.1 mile (3.4 km) south of Route 277 at Stephens City.

Scope of study: To determine the best road-widening location and number of new lanes needed.

Status: VDOT consultants will begin the engineering study in early 1997.

Study will take 18 months to complete.

☛ **First public meeting:** Summer 1997 to discuss preliminary findings on road-widening options and to hear public comment.

Study Area 10

Frederick County from 2.1 miles (3.4 km) south of Route 277 at Stephens City to Virginia/West Virginia state line.

Scope of study: To determine whether to widen this section to six or eight lanes, depending on traffic needs.

Status: Traffic analysis will be completed by early 1997. Completed preliminary engineering report due by December 1997.

☛ **First public meeting:** Spring 1997 to discuss road-widening options and to hear public comment.

I-81 Profile

Vital statistics:

- Extends from Dandridge, Tennessee to the U.S./Canada border
- In Virginia, 325 miles long – longest interstate in Virginia
- 30 years old; 90 interchanges
- Two lanes each direction, except for three lanes each way near Wytheville
- Rolling terrain with view of Appalachian mountain range throughout Virginia
- Speed limit 65 mph; metro Bristol, 55 mph
- 20,000 to 50,000 vehicles per day travel the interstate; in last 20 years, traffic has more than doubled, and in urban areas, tripled.
- 19 to 40 percent truck traffic; designed to carry only 15 percent trucks

Distinguishing characteristics:

- Voted one of ten most scenic interstates in the U.S. and the only one in the Southeast by American Automobile Association
- Near I-81: 11 state parks, 21 state recreational areas, two national forests, Blue Ridge Parkway, Appalachian Trail
- Corridor has 48 historic sites nearby, mostly battlefields and Civil War sites
- 29 colleges and universities nearby, representing about 30 percent of state's college enrollment
- In Virginia, I-81 travels through 21 cities and towns and 32 counties with a total population of 1.2 million

Safety issues:

- Work zone accidents have been steadily increasing for the last five years; a total of 68 accidents occurred between 1991 and 1994
- Top two causes of work zone accidents: “driver inattention” and “exceeding safe speed limit”
- 35 percent of I-81 fatal accidents involved a truck

Sources: Virginia Department of Transportation, Virginia Tech Center for Transportation Research

Studies under way to widen I-81

If you travel I-81 often, you are likely to see a steady stream of improvements made to the interstate over the next 20 years.

VDOT is in the very early stages of studying how to widen the interstate. The interstate has four lanes except in the Wytheville area where there are six lanes at the I-81 and I-77 overlap.

In 1992, when the Commonwealth Transportation Board authorized the I-81 conceptual studies, VDOT engineers thought that the entire length of the interstate needed only one additional lane in each direction. But some sections may need two additional lanes in each direction to handle traffic flow. Two examples of such congested areas include the sections between Buchanan and Christiansburg and the I-77 overlap at Wytheville.

Coordination and public involvement: key objectives

For planning and study purposes, VDOT has divided the interstate into ten separate study areas (see map inside). The department has hired private engineering firms to study each of the ten areas and to recommend roadway-widening and design options. Each consultant study will take about 18 months to complete. Some studies began as early as January 1996; others will start by January 1997. During the studies, the consultants and VDOT engineers will conduct land surveys, traffic counts, environmental and historical studies, and develop design alternatives.

Consistent planning, project coordination and public involvement are important objectives of the conceptual studies. VDOT already held a series of public meetings – called I-81 User Meetings – earlier in 1996 to hear public suggestions for improving

I-81. Participants, most of whom represented the trucking industry and local governments, suggested a variety of improvements: more rest areas and climbing lanes, wider interchanges and greater use of technology. VDOT consultants will hold two more public meetings in each of the ten project areas to review road design options. (See project list inside for anticipated meeting times.)

The results of each conceptual study will go to the Commonwealth Transportation Board for comment. The next step will be to set priorities for projects and add them to the VDOT Six-Year Plan, a schedule for designing and constructing road and bridge projects. VDOT estimates that widening the

interstate could cost at least \$2 billion and take over twenty years to complete. Most of the money would come from federal highway funds.

VDOT will promote safe work zones, timely traffic reports

Work zone safety for workers and drivers will be a critical part of the construction phase. “We will stagger construction schedules for each project area and keep two lanes of traffic moving past work areas,” said VDOT’s Fred Kiiffner, of the Location and Design office. Once construction begins, VDOT will also give timely traffic updates.

The first roadway-widening construction is likely to occur as early as next summer: VDOT will widen a seven-mile section of I-81 in the Bristol area from the Virginia-Tennessee line to just north of Exit 7. Other areas likely to be candidates for first-priority status are the congested Roanoke and Christiansburg areas and Harrisonburg’s James Madison University area. ■

Continued from page 1 Improvement plan

the state’s trucking industry. By the year 2000, the volume of freight is expected to increase by as much as 28 percent.

Safety is a major concern as increasing numbers of heavy trucks, recreational vehicles and cars travel the interstate. I-81, with its rolling terrain, can be tricky for even experienced drivers to navigate, especially during fog, rain or snow.

During a series of I-81 User Meetings held by VDOT last winter, truck freight haulers expressed concerns about the limited number of rest areas on I-81. On one northbound stretch of the interstate between Blacksburg and Staunton there is no rest stop for more than 100 miles. VDOT has been in touch with local businesses along this section to generate private interest in adding a truck parking area. And there are public-private efforts to expand two existing truck stops and to build an additional truck parking area. ■

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TTY users only, call the Virginia Relay Center at 1-800-828-1120
VDOT Website: <http://www.vdot.state.va.us>

For information about specific improvement projects, call your local VDOT office.

What will technology do for I-81?

Road building and traffic management just aren't what they used to be. Today's transportation engineer or planner has a greatly expanded tool kit for the job: the traditional road engineering practices and a growing list of new technologies.

VDOT is exploring the use of Intelligent Transportation Systems (ITS) as part of the I-81 improvement. The first two ITS projects listed below are in the testing stages now:

■ CVISN (pronounced "C-vision" for Commercial Vehicle Information Systems and Networks)

The Commonwealth of Virginia, the State of Maryland and the Federal Highway Administration held joint demonstrations in October of Commercial Vehicle Information Systems and Networks (CVISN). By using CVISN technologies, such time-consuming tasks as weighing, inspecting and registering

trucks can be performed more quickly and efficiently.

The backbone of the CVISN initiative is a network of computers and devices linking state and federal transportation offices, weigh stations, trucking companies and commercial vehicles. Some of the CVISN devices include: "reader" devices mounted along the roadside that can electronically read a vehicle's registration and safety records; sensors embedded in the pavement that check a vehicle's weight as it approaches a weigh station; and hand-held computers that aid in faster safety inspections. Because of the heavy truck traffic on I-81, CVISN technology is a promising new tool for the trucking industry that will result in safer vehicles and fewer delays.

■ ITS for Highway Emergencies and Maintenance

VDOT engineers are exploring how new technology could improve the way VDOT conducts many of its operations, including snow removal, sinkhole repairs, and accident response. The idea is to link VDOT, the State Police and other emergency workers together electronically so they can more quickly set and address response priorities.

Meanwhile, the department is working with the Virginia Tech Center for Transportation Research, which recently sponsored a conference on ITS opportunities for I-81. Following are projects VDOT and the center are working on:

■ Work Zone Traffic Management ITS

Motorists may have noticed the recent addition of variable message signs on the roadsides. The signs light up with short, specific messages as motorists approach work zones or traffic trouble spots. Engineers foresee using such signs not just as a warning of what lies ahead – but as a way to minimize traffic congestion. Next winter, VDOT will invite private companies to demonstrate proven technologies on sections of I-81. The technologies will electronically detect traffic backups and trigger message signs to give quick traffic information and detour options.

■ The Smart Road – The Ultimate ITS Vision

The Commonwealth Transportation Board has already approved the design for the Smart Road near Blacksburg. The Smart Road concept, in its most ambitious form, creates an interactive network among motorists, highway officials, and quite literally, the road itself.

The road, equipped with electronic sensors, communicates timely traffic and safety information to individual motorists via car radio or through a special Smart Car device. For example, the road could "tell" the motorist about icy roads and traffic delays – or even that the motorist's car is too close to the car ahead. Though not specifically envisioned for I-81 at this time, the approved Smart Road will intersect the interstate and will be used to develop new technologies. ■

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