Beneath the surface, the Beltway crumbles

By Ashley Halsey III

The Capital Beltway, a politically iconic and locally vital highway, is dying beneath your turning wheels.

Under the surface of all but some recently restored segments, fissures are spreading, cracks are widening and the once-solid road bed that carries about a quarter-million cars a day is turning to mush.

In a perfect world, it would be torn up — the asphalt and concrete, and the bed of crushed stone below — right down to the bare earth. From that fresh start a new and stable highway would grow. But this is the Beltway, and closing down whole sections of it would tie one of the most congested regions in the nation into a Gordian knot.

"With the older base layers under the asphalt, the surface is not able to absorb the pounding the way it used to," said Doug Simmons, deputy highway administrator in Maryland, home to almost two-thirds of the 64-mile Beltway and the more serious of the highway’s problems. "It is at that 50- year age point, which is too close to [the end of its life]. It’s a good example of the challenges we’re going to be facing not only in Maryland but other places in the country."

Ultimately, the Beltway will not be allowed to die. It is too central to life in this region and to the national highway system. But it stands as a symbol, one roadway among the tens of thousands at the end of a long and fruitful life span into which 21st century America was born.

Now, 210 million U.S. drivers, and the commerce on which they rely, are riding on baby-boom-generation roadways, which like the boomers themselves are no longer so steady and sound.

As reality sinks in, states have moved to raise taxes to fix their roads before it’s too late.

Maryland and Virginia just passed tax increases to address transportation needs, high among them deteriorating highways such as the Beltway. But it will take time more than money to tackle the Beltway’s worst sections, because simply closing several lanes for months would have nightmares consequences.

The best of roads might last 40 or 50 years, perhaps longer if set in a forgiving climate. But once age gets the best of a road, smacking a fresh coat of asphalt on it is like pinning leaves on a dead tree.

Simply put, the underbed of a roadway develops potholes very much like the ones seen on the surface. That process of erosion advances with the age of the road, and new asphalt or concrete becomes a waste of time and money.

"There’s too much money spent on just patching, on the quick fix, rather than the long term, and eventually it’s going to catch up on us," said Edward G. Rendell, former Philadelphia mayor and Pennsylvanina governor who now heads an infrastructure advocacy group.

It’s catching up now.

Nearly a third of the nation’s major roads need significant repair or replacement, with a far higher percentage in the busiest urban areas. In Washington and its suburbs, it soar to 92 percent.

Forty-two percent of urban roadways suffer from congestion, costing an estimated $101 billion in wasted time and gasoline each year, according to a study released earlier this month by the American Society of Civil Engineers.

Like many of the warnings about the need for investment of trillions of dollars to salvage America’s aging infrastructure system, the bottom-line number is so huge that it is difficult for most people to digest.

The ASCE says federal, state and local governments need to spend $79 billion more each year just on roads.

That’s $250 more a year for every American, a smaller though still somewhat abstract number. But there are more meaningful individual costs associated with driving on roadways that are falling apart.

In addition to the cost of traffic delays, the average Washington area driver pays $576 a year for wear and tear caused by rough roads, according to calculations by the nonprofit transportation research group TRIP, which is backed by highway improvement advocates.

Delays and bad roads also cost truckers, who deliver $25 billion in goods nationwide every day, and that added expense is passed on to price tags at supermarkets and department stores.

"Traffic congestion is costing the freight transportation network nearly $8 billion per year," according to a report by the American Association of State Highway and Transportation Officials. "Higher transportation costs mean higher consumer prices."

If bad roads cause sticker creep at the checkout aisle, the cost of fixing them is about to cause sticker shock at the gas pump.

Aware that they can’t rely on austerity-minded Congress to triple spending for roadways, states have begun to step in with tax increases.

"State legislatures seem to be coming out of a period of denial," said Frank Moretti, director of policy and research for TRIP. "For years they thought ‘Maybe Washington will send us lots of money,’ or ‘We’ll just push it off another year or two.’ This problem has gone beyond the point where it can just be a political football that gets put off for a few more years."

In all, close to two dozen states have looked for new ways to fund road projects this year.

With a push from Republican Gov. Robert F. McDonnell, Virginia overhauled the way it pays for transportation programs. A $1.4 billion plan replaces a 17.5-cents-per-gallon tax on gasoline with a 3.5 percent wholesale tax on motor fuels that will keep pace with economic growth and inflation.

It’s a complex stew of new taxes that tacks about 11.5 cents on to the current cost of a gallon of gas, according to industry estimates.

Drivers in Maryland will be paying pennies more per gallon by summer under a bill that passed the Maryland Senate on March 28, backed by Gov. Martin O’Malley (D), who has promised to sign the measure. Within three years, the new sales tax would rise until it reaches 13 to 20 cents per gallon, according to legislative analysts. It is expected to raise $4.4 billion for roads and transit over six years.

"The Beltway is not a normal roadway as far as the loading underbed and the asphalt," said Simmons, the highway administrator.

When the surface needs more frequent repaving, traffic will back up.

"The way Simmons will have to deal with it is one lane at a time. The most effective, least expensive way to tackle the job would be to tear out several lanes at a time. If that were the plan in either Maryland or Virginia, someone could calculate a bottom-line cost for the project. But it simply can’t be done."

"With the Capital Beltway being the Capital Beltway, you’re not going to come in to shut down the Capital Beltway to fully reconstruct it, so that’s the challenge we deal with," Simmons said.

"It gets very challenging to be able to go with a one-lane perspective and it’s very expensive," he said. "The more stages you have, the more expensive. When you can only work in the middle of the night, the cost goes up, but you get out of the way of rush hour."

Right now, major segments of the Maryland part of the Beltway are in a downward spiral, notably those in the eastern part that curves through Prince George’s County. The underbed is rotten, so a fresh asphalt surface doesn’t last. As the surface gets rough, traffic slows and backups begin. When the surface needs more frequent repaving, traffic backs up. And when the time comes that it is torn up for replacement, traffic will back up.

"There is going to come a point in time when we’re going to need to consider that we’re going to be in the thick of reconstruction versus resurfacing," Simmons said. "But we want to be able to keep people moving as best we can."