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HOGAN'S COMMONSENSE IMPROVEMENTS TO I-270 WILL HELP SOME, BUT MORE WORK IS NEEDED

BY PETER SAMUEL

MARYLAND GOVERNOR LARRY HOGAN'S \$100-MILLION PLAN FOR "INNOVATIVE congestion management" improvements to I-270 is a welcome first step in upgrading the performance of one of Maryland's most important highways. An open request for proposals last June has produced a set of measures that more successfully adapt the existing roadway to current traffic patterns. They should alleviate a noticeable proportion of congestion, helping people to get to work, school, shopping, or social events more reliably and with less hassle, and ensuring that deliveries to stores, worksites, and homes move more efficiently.

The chosen contractor team—led by engineers RK&K and CH2M Hill of Baltimore—focused on the worst of the mini-bottlenecks on I-270 between the I-495 Beltway in Bethesda and I-70 in Frederick. Their proposal, accepted by the Hogan administration, focuses on 14 bottleneck points and adds capacity at each. Most of these are either simple interchange modernizations or lane additions. Interchange entries and exits will get extended acceleration and deceleration lanes alongside existing travel lanes.

Five interchanges get lengthened “accel/decel” lanes with the expectation that entries and exits from the mainline will be smoother, and less inclined to cause drivers behind to hit their brakes, causing turbulence in the traffic flow. Ramp meters, or stop lights on ramps, will hold back entering traffic until gaps appear in the mainline lanes, ensuring smoother flow overall.

The lane additions are key to improved flow in the busiest southern segment from the Beltway to I-370.

Much of the four-roadway section from Rockville through Gaithersburg, presently consisting of two local lanes and four express lanes in each direction, will be expanded to three and five lanes through addition of an auxiliary lane and a travel lane. (Auxiliary lanes join the acceleration lane, following the entry ramp of one interchange with the deceleration lane before the exit ramp of the next interchange, whereas travel lanes continue through the interchange and cater to through traffic.)

In total, the Maryland Department of Transportation (DOT) says 23 extra lane-miles will result from the 14 treatments listed in the Hogan plan. That will take the total lane-miles of the 34-mile highway (I-495 to I-70) from 209 lane-miles to 232—an increase in carrying capacity crudely measured at 11 percent. Most of the extra lane-miles are obtained by restriping and through use of existing breakdown or shoulder pavement for regular moving traffic.

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Projects north of Clarksburg do involve new paving, but they are relatively inexpensive and involve little or no new right of way. Findings of No Significant Impact (FON-SIs) are likely to produce environmental clearances in the same two-year timeframe for design and contract preparations. Construction is estimated to take about a year, with most of it concluding in 2019.

RESULTS EXPECTED IN THREE YEARS

A big plus of the Hogan plan is that it saves a lot of time and money that would otherwise be spent in argument over new construction and widening the right of way. The changes will have a negligible impact on neighbors. Even the accel/decel lane extensions north of Clarksburg need little new right of way and do not bring traffic significantly closer to neighbors.

Smart ramp metering at most entries is another feature of the Hogan initiative. Pioneered in Chicago in the early

1960s, these are now commonplace on interchange ramps in many large metro areas, including Los Angeles, New York, and Philadelphia. They are currently in use on I-395 and I-66 in Arlington County.

The general conclusion is that timing entry from ramps to the mainline to gaps in traffic can usefully reduce turbulence in moderately dense traffic. It can be helpful in delaying breakdown in flow when traffic density is building early in the peak. And it can be helpful at the end of peak periods. But ramp meters are pretty useless in periods of extreme congestion when there are no gaps for vehicles joining the mainline traffic.

The main downside of lost shoulder pavement is that snow removal, breakdowns, and crashes become more difficult to handle. In addition, police enforcement is limited by fewer spaces where they can pull motorists over safely. And when repaving is needed on a 10 or 15-year schedule, there is no spare space for temporary lanes.

The Hogan plan provides for a new system of instrumentation, equipping the interstate with sensors to support what is called a “dynamic intelligent traffic system,” as well as real-time traffic management with extensive messaging to motorists. So-called centralized traffic management, or, in state DOT terminology, “technology-based traffic optimization,” may come into its own when vehicles are self-driving, but as long as only drivers are in control, it has very limited application.

Its “real-time communication” or “dynamic signage” is helpful in managing incidents (crashes and breakdowns) when motorists’ regular routines need to be broken, encouraging some to take an early exit for alternate routes. But in conditions of regular daily congestion due to overload of the road (insufficient lanes to move the traffic), there is little the smartest of smart systems can do to manage traffic.

The restriping of shoulders for extra lanes in the Hogan plan provides extra regular daily capacity at minimal capital cost, but at the expense of some reduction in resiliency due to reduced space for handling disabled vehicles, and greater difficulty getting rescue vehicles in and out. The denser instrumentation and real-time communication can mitigate the loss of shoulder space, if not entirely replace it. Given the huge costs of under-capacity in day-by-day congestion, the extra traffic lane-miles for lost shoulder pavement are probably a good trade-off.

CONGESTION COSTS WARRANT PROMPT IMPROVEMENT

Congestion costs on I-270 are about \$200 million each year, so congestion relief measures promise a high return on investment. The latest State Highway Administration report on Maryland’s top 30 bottlenecks shows eight on I-270. The morning commute shows a longer continuous length of I-270 is classified as “extremely unreliable” for the morning commute versus either of the Maryland Beltways or the I-95 corridor. (Evening commute unreliability

and intensity of congestion overall put the I-270 corridor at fourth worst in the state.)¹

COUNTY LEADERS CRITICIZE THE PLAN

Local government leaders have made some valid criticisms of the Hogan plan for I-270. Montgomery County Council president Roger Berliner slammed it for failing to implement toll express lanes as planned by the Metropolitan Washington Council of Governments—the preferred alternative of the major I-370 to I-70 multimodal study 1994 to 2002. “The governor needs to be much bolder on this issue. It can’t happen on the cheap,” Berliner said.

Frederick County Executive Jan Gardner praised the Hogan plan for I-270 as a useful interim measure only:

The advantage is that these improvements can be implemented fairly quickly and they will optimize the utilization of existing pavement and infrastructure... Even a 15-minute difference in commute times is meaningful and will improve the quality of life of travelers in the corridor.

While these improvements are good news, we need to continue to move toward long-term and more comprehensive improvements to the I-270 corridor including adding another travel lane and expanding transit options. I have heard from some citizens in Frederick County expressing disappointment that there were not more improvements in the Frederick County portion of I-270 and have raised concern that the need for additional travel lanes and transit options not be deferred.

I will continue to advocate in support of the completion of the multi-modal study and the ultimate improvements that are needed to fully resolve traffic congestion on I-270.

Governor Hogan has readily acknowledged his plan is just a start. “This is not going to fix all the problems of 270,” he said in April.²

EXPRESS TOLL LANES

Express toll lanes as implemented on I-95, I-695, and I-395 in Virginia and on Maryland’s I-95 north of the Baltimore Harbor tunnels could be largely self-financing on I-270. They are most urgently needed and most feasible to build from I-370 in Gaithersburg to I-70 in Frederick, and they would work in with a new crossing of the Potomac at White’s Ferry to link VA-28 to MD-200/I-370.

Implementation of a guaranteed free-flow ride on new express toll lanes would also be a boon for transit ridership because it would make feeder buses to the Shady Grove Metro far more attractive than they are now to long-distance commuters.

The planning and permitting of the I-370 to I-70 on I-270 improvement is probably a three or four-year project,

plus two to three years of construction for a total of eight years. Cost would be around \$1 billion but financeable through prospective toll revenues.

It is quite consistent with Governor Hogan’s congestion management plan to design and build improved use of the existing pavement south of I-370 within three years.

DETAILS ON PROPOSED IMPROVEMENTS

The roadway improvements in the Hogan plan starting with southbound are as follows:

- At the MD-80 interchange in Urbana (IC-26), the deceleration lane on I-270 would start earlier, giving traffic from Frederick to Urbana more time to slow for the loop without slowing the right-hand lane of through traffic. Similarly, the on-ramp merge from MD-80 southbound would be eased by a lengthened acceleration lane.
- Frederick County Executive Jan Gardner praised the Hogan plan for I-270 as a useful interim measure only.**
- Similarly, at the MD-109 interchange in Hyattstown (IC-22), the acceleration lane for southbound entering traffic will be extended a distance alongside the through lanes to ease the merge.
 - At I-370 (IC-9), traffic leaving I-270 southbound for MD-200 (the Intercounty Connector) or for Shady Grove Metro parking will diverge more smoothly with the right lane, becoming I-370 only. The second lane from the left will become a choice lane between continuing on I-270 and departing on the two-lane ramp to I-370. Achieved by restriping the lanes, this should reduce the present tendency of departing vehicles to slow unnecessarily while still on I-270, causing backups for through traffic.
 - South at Shady Grove Road (IC-8), the local lanes on the right will see the entry ramp extended 2.4 miles to the next exit at IC-6 MD-28—W. Montgomery Ave. Rockville—forming a new “auxiliary lane.” The third lane in this section should alleviate recurrent congestion in this stretch of the west-most roadway.
 - South of MD-28, another auxiliary lane will be formed between the MD-28 on-ramp south 1.3 miles to the next off-ramp at MD-189 Falls Rd (IC-5.)
 - Over on the left side of the roadway between Montrose Road and Democracy Boulevard on the western spur, an extra travel lane will be created by restriping and use of

some shoulder for a distance of 3.1 miles. This is where the local and express lanes have merged into six lanes. Along with the auxiliary lane on the right side, the extra travel lane will make the final stretch down to the split of the spur eight lanes. Because of the split and close interchanges, it is an area of heavy-weaving movements that presently slow traffic in the available six lanes. The extra two lanes will make this stretch a formidable roadway but hopefully will keep people moving better.

- Further south at the merge of the western spur of I-270 and the Beltway I-495 in Bethesda West there is presently a lane drop for I-270 traffic. In that area, the Beltway will be restriped to have the three lanes of the I-270 spur continue as three Beltway lanes. Lesser traffic on the outer loop of the Beltway itself between the spurs will drop a lane instead to match the five lanes to the American Legion Bridge.

NORTHBOUND

- The last two southbound features just described—the extra auxiliary lane and the extra travel lane—are replicated northbound between Democracy Boulevard on the spur and Montrose Road with about 2.7 miles of restriping and shoulder use. On the western spur, there will be five lanes north from Democracy Boulevard to the merge with eastern spur traffic. And as on the southbound side, there will be a total of eight lanes northbound in full on I-270 instead of the now-six lanes until the roadway separates into express and local lanes roadways. The 16 lanes’ two-directional total will make it one of the nation’s largest ‘freeway’ sections.
- Also, northbound gets a new auxiliary lane in the local lanes roadway from the entry of MD-189 about 1 mile to the exit at MD-28.
- At Shady Grove Road close to the I-370 exit, the interchange IC-9 will be reconfigured to improve operations. The loop ramp for northbound traffic entering I-270 northbound will be replaced a two-lane signalized left turn. This will simplify entries to the I-270 local lanes by combining both directions of traffic in the one entry. A slip ramp from the local to the express lanes of I-270 will also be eliminated and the entry lane extended.

- New auxiliary lanes will continue northbound from MD-124 2.5 miles through the new Watkins Mills interchange (a separate project) to Middlebrook Road.
- The next northbound improvement will be a lengthened deceleration lane for the off-ramp along at IC-15 for traffic to MD-118 or Germantown Road.
- Four miles further on beyond IC-18 at MD-121 in Clarksburg is the notorious I-270 lane drop northbound where the roadway drops from three lanes to two. Under the \$100 million plan there will be a third lane added by laying pavement in part of the median for 0.8 miles as far as the Comus Road over-bridge. The notion is that a stretch of three general-purpose lanes will ease the merge as compared to a situation where HOV vehicles get the first shot at the left of two lanes. I am skeptical this one will help much, but at least it is a small start on real third laning.

FREDERICK COUNTY LEFT OUT OF NORTHBOUND IMPROVEMENT

Frederick County gets left out of any further improvements northbound. Extra lanes can readily be built in the middle of I-270 in most of the 14 miles between the Clarksburg lane drop and I-70 on the south side of Frederick. And although it is quite hilly, the whole length of this heavily congestion 2x2 lane section is rural in character with few neighbors alongside and allows for a pretty painless widening outward as well. Interchanges are sparser, and traffic destined for I-70, US-15, and Frederick destinations dominates, making it ideal for tolls in new lanes. But that’s for the next phase of improvement.

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1. Maryland Department of Transportation, “2015 Maryland State Highway Mobility Report,” December 2015, http://www.roads.maryland.gov/OPPEN/2015%20mobility%20report%20draft_highres_for%20website1.pdf
 2. Katherine Shaver, “Maryland has a \$100 million plan to reduce congestion, improve safety on I-270,” April 19, 2017, *The Washington Post*, https://www.washingtonpost.com/news/dr-gridlock/wp/2017/04/19/maryland-has-a-plan-to-reduce-congestion-improve-safety-on-i-270/?utm_term=.738fd2aea751

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