



The
DEATH
of the **SUBURBS**

PART IV

THE TROUBLE WITH ROADS

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We are drowning in a sea of traffic. A recent article in *The Washington Post* confirmed what everyone suspected—D.C. Metro area traffic is the worst in the country.

America is the most car dependent country on earth. The average American spends 47 hours annually sitting in traffic (according to *Time Magazine*, March 2014) and it's not likely to get any better in the future. By 2020 the average driver is expected to spend an additional seven hours per year stuck in traffic and one recent study estimates that by 2030, the cumulative economic cost of traffic congestion in the U.S. will be a staggering 2.8 trillion dollars. The inability to get around will inevitably affect the way we live and work, but the impact upon the homebuilding industry will be especially severe because traffic is the most common objection raised to new development.

There are several causes of the huge increase in traffic but one is our low density, spread out form of development. Paradoxically, low density development actually creates traffic - the more spread out we all are, the more we must drive to fulfill the basic functions of life. Not so long ago, kids simply went outside to play, but now, they must be chauffeured to school, piano lessons, soccer, and everywhere else, and this generates a lot of traffic.

The usual solution proposed to cure traffic congestion is to build more roads, but that is a failed strategy for two reasons. First, it's simply too expensive. There isn't enough money to maintain America's existing aging roads and bridges, much less to build new ones. And second, roads built to cure congestion actually create it because new roads change behavior in ways not usually considered by traffic engineers.

Take for example Interstate 795, the Northwest Expressway in Baltimore. One of the first freeways conceived in Maryland, its planning dates back to at least 1947. The highway was originally designed to relieve congestion along Reisterstown Road, a main thoroughfare out of northwest Baltimore. After years of planning, the Expressway was finally constructed and fully opened in 1987. Initially, it reduced traffic on Reisterstown

Road as expected, but by reducing commuting times, it encouraged development in Owings Mills, Reisterstown, Westminster and even further out. Before long, Reisterstown Road was as congested as it was before I-795 was built. Today the road is overcrowded, used by up to 60,000 cars per day, and widening it is projected to cost hundreds of millions of dollars.

Another paradox about roads is that roads designed to be “safe” aren’t.

Design speed, is an important concept in traffic engineering that is not well understood—even by engineers. It is a selected speed that determines certain geometric features of a road. The higher the design speed, the straighter and flatter the road must be and the greater the required sight distance. But design speed often bears little relation to actual speed. A tenet of modern highway engineering practice is that wider, straighter, and flatter roads are safer and so residential streets are often designed for a certain speed, say 40 mph and then posted at a lower one, say 30 mph. The thinking is that the higher design speed provides a safety factor for the occasional speeder. But it doesn’t work that way. Roads exert a powerful psychological force upon drivers who tend to drive at a speed appropriate for the road rather than the posted one. So roads that are designed straighter and flatter which are supposed to be safer actually aren’t because their design encourages speeding.



Above is a road in Baltimore City. In somewhat older communities such as this, even though the streets are quite flat and straight, the relatively narrow street and parallel parked cars, together with the formal line of trees and over-hanging canopy, tend to create a psychological barrier and a sense of enclosure causing traffic to automatically slow down. A side benefit of not having a road designed like a superhighway through the middle of a neighborhood is that this type of design creates a pleasant, pedestrian-friendly community. Such a road would likely never be permitted by most modern road codes—the street is too narrow, on-street parking would probably be prohibited, and trees would likely not be allowed in the public right-of-way because of maintenance concerns. Yet, these types of communities are the most desirable and expensive in which to live. This street too is posted for 25 mph, but you don’t have to be told, for the design of the street exerts such a powerful influence on the driver. Counter intuitively, narrower more curved roads, which are thought to be more dangerous are actually safer because they force drivers to stay alert and slow down.

One telltale sign a road is over designed is the presence of traffic calming devices.

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Above is a residential community in Anne Arundel County. A median was installed to narrow the roadway and to slow traffic. Notice the 10 warning signs on the little island and yet, inevitably someone will drive right through it. This island was no doubt installed to slow down traffic because people were speeding through the neighborhood. But that begs the question: why was the road designed to be so wide initially if it now needs to be narrowed? The answer is, that’s what the County road code required.

One might wonder how all American road design came to be so similar and might suspect that there is some great guiding hand. Indeed there is: it’s the *Geometric Design of Highways and Streets* published by the American Association of State Highway and Traffic Officials, affectionately known as the “Green Book” from its hard cover days. This is the national road code—a law in a sense—the standard that virtually every jurisdiction and engineer must follow. As you might imagine, a code drafted by traffic engineers gives priority to creating a pleasant environment for cars but largely ignores the needs of humans.

Another element of modern road design, is that streets and architecture are designed independently. In more traditional communities, the two are designed together. The buildings in traditional communities create an architectural façade that have a relationship to the street, with parallel parking and sidewalks creating pedestrian-friendly neighborhoods. The generally straight façades of the buildings help create a sense of place and structure and a pleasant and comfortable human scaled space.

In our view, the roads in residential communities are often significantly over-designed. Not only does that make them financially and environmentally expensive, but because the design of roads is so integral to the way communities function, it tends to make them car dominated, pedestrian unfriendly and simply unpleasant places to live. Development regulations should give less emphasis to making new communities car friendly and more to making them livable. ■

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Above is a typical subdivision road. It is straight, flat, and wide. In fact, it’s too wide for the amount of traffic generated by the community it serves. This road is posted for 25 mph but most people drive it much faster. This road is over-designed. Roads such as this in residential neighborhoods promote speeding and create an unpleasant environment for the residents.

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