The Era of Suburban Sprawl Has to End. So, Now What?

Decades of unchecked growth have turned Maryland's open land into concentric circles of sprawl with devastating consequences for the environment.

by McKay Jenkins

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Homes are being constructed on lots twice as large as they were in the 1940s. But although the homes are getting larger, they are housing fewer people.

Rich Hall, Maryland's director of planning, with the state agency since 1992, has a bird's eye view of the state's past. Here's what he sees: While it took three centuries to develop the first 650,000 acres in Maryland, the next million acres have been paved over in just the last forty years—and at a rate three times faster than the state's population. In the last half-century, the Era of Suburban Sprawl, Maryland has lost 873,000 acres of farmland and nearly 500,000 acres of forest. The average Marylander now has one of the longest commutes in the country. Many cities around the state—and not just Baltimore—have seen their populations crash, their infrastructure crumble, and their budgets collapse.

Hall can also see into Maryland's future. He knows, for example, that another one million people are going to move here in the next twenty-five years, and that these new residents—and the 500,000 homes they are going to demand—will add enormous pressure on natural and man-made systems that have already been stretched to their breaking point.

Just for starters, by 2035, the state is projected to lose another 226,000 acres of farmland and 176,000 acres of forest. These are deeply worrisome numbers for a state that is already the fifth-most densely populated in the country, and it is Hall's job to stop, or reverse, these trends. His signature sits atop a provocative new document called PlanMaryland, which consolidates a variety of "smart growth" measures first adopted in 1997 and made official policy by Gov. Martin O'Malley in December. The document, in remarkable detail, raises deep questions about the future of the state and makes plain the economic and ecological benefits of building homes and businesses near

existing roads and sewer lines.

But Hall's biggest problems may be philosophical: how to get Marylanders to understand that virtually every person in the state lives within a single living, complex watershed, and that every decision we make—from the houses we buy and the places we shop to the length of our commutes and the way we eat—has an effect not only on the quality and cost of our lives but on the fundamental resources on which our lives are built.

We've sold our farms to suburban developers, so now our food travels, on average, 1,500 miles before it hits our plate. We've cut down our forests to build ever more subdivisions and shopping malls, so now we have climate change and land that is unable to effectively filter drinking water. We've demanded ever-larger single-family homes, which require huge amounts of electricity, so now we have to blow up mountains to feed our coal-fired power plants.

"It's like the boiled frog theory," Hall says. "Put a frog in boiling water and he'll jump out, but put him in warm water and keep increasing the heat, and he won't realize what's happening until it's too late. That's what happens with growth. It seems like it happens overnight, but it doesn't."

Over the next few months, state and local planners will map out what of the state's land ought to be preserved, and what can still be sacrificed. Beginning early next year, state agencies, overseeing everything from road building to school construction, will be required to keep the plan—and the Chesapeake watershed—in mind.

There is no legally binding language in PlanMaryland, and questions remain about whether the state can enforce its vision on rural counties not always inclined to take orders from Annapolis. The only real way the state can inhibit rural development is to refuse to pay for development, roads, sewage treatment, schools, etc. that it doesn't like.

Beyond the data, which is daunting, and the politics, which will be volatile, PlanMaryland in the end poses a simple question: What makes a state a good place to live, not just today but for a long time? Because when it comes right down to it, Maryland can grow like an oak, using its resources wisely and well, staying within its natural limits. Or it can grow like a cancer.

Housing

Name the challenge—abandoned urban centers, deforestation, the loss of farmland, the degradation of the Chesapeake Bay—and after seventy-five years of unchecked growth, it's all tied to the way local governments and real estate developers have turned the state's open land into concentric circles of sprawl.

The numbers in PlanMaryland are ominous: More than a quarter of the state's 6.2 million acres have already been developed, and fully 60 percent of this land—one million acres—has been built since 1973.

Houses are being constructed on lots twice as large as they were in the 1940s, but although homes are getting bigger, they are housing fewer people.

None of this has been by accident. Since the end of the Second World War, but especially since the 1970s, county governments have often encouraged residential and commercial development to abandon cities and towns where infrastructure—roads, sewage systems, schools, hospitals—already existed, and to start all over again on once-rural land. And despite rumors to the contrary, it's not just Baltimore City that has been losing population, although Baltimore did lose a whopping 30 percent of its population over the last forty years. Between 2000 and 2009, even as Maryland's population increased 7.6 percent, nearly a quarter of the state's 157 municipalities lost population, and another 40 percent gained fewer than 100 people. Cumberland, Oxford, and Snow Hill all lost population.

"Where did all those people go that used to live in cities? They didn't move to Florida; they moved out into the counties, at a tremendous cost of infrastructure," says Gerald Winegrad, a sixteen-year veteran of the state legislature who now teaches public policy at the University of Maryland. "The myth that Baltimore lost population because of crime, and that everyone else is thriving, is a bunch of horse manure." Sprawl is exacerbated by population growth and by policy. "Local governments make all the land use decisions, and they haven't cared about sprawl so long as it maximizes their tax coffers," Winegrad says.

Winegrad is sharply critical of a central tenet of the plan, which allows local governments, rather than the state, to determine what land can be developed and what should be preserved. Such local discretion, he fears, will only perpetuate the madcap, fragmenting sprawl that has gone on for seventy-five years.

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The trick for policy makers, then, is not just to prevent sprawl, but to induce people and businesses to move back to cities and towns. In Cleveland, city officials are in the midst of demolishing more than 20,000 abandoned homes and integrating the resulting lots into a web of urban green space. In Detroit, a city with 100,000 empty private and commercial parcels, officials are trying to "shrink" the city with a risky step: convincing residents to move into better neighborhoods by cutting services (like garbage pickup and even sewer services) in blighted ones. Here in Maryland, the city of Frederick took a downtown flood control project and turned it into the $150 million Carroll Creek

PlanMaryland forecasts another 478,000 new homes in the state by 2035.

renovation, with more than 400,000 square feet of office space, 150,000 square feet of commercial and retail space, and nearly 300 residential units—along with brick pedestrian paths, shade trees, and a 350-seat outdoor amphitheater.

The trick is to show people just how many interesting—and established—places there are to live, says Halle van der Gaag, executive director of Blue Water Baltimore, a watershed restoration group.

"If people don't want to live in a rowhouse but in a community on the water, if people want to see birds every day, there are places to do that," she says. "People are entitled to that. We can't just have strip malls in places called The Winds at Duck Cove where they've already paved over the duck cove."

Farms and Forests

Even with a growing interest in supporting local farmers, Maryland has a long way to go to reverse decades of real estate speculation that have driven farmers to sell their land.

From 1982 to 2007, PlanMaryland reports, state farmers sold some 500,000 acres of land—one-fifth of Maryland's total—to developers.

Equally troubling is the destruction of a half-million acres of forestland over the last half-century—and the prospect of losing a couple hundred thousand acres more. Large-scale deforestation has scientists worried about everything from climate change to the land's diminished ability to filter drinking water. Statewide, deforestation "continues to move us towards increasing loads of nitrogen, phosphorous, and sedimentation that all goes straight into the bay," says Walter Boynton, a professor at the University of Maryland's Chesapeake Biological Laboratory. "We've been doing this at a horrendous rate for a long time, and none of that bodes well for the ecology of the bay or the ecology of the 8,000 miles of streams we have in Maryland."

Most of the state's remaining forests are fragmented, and nearly 60 percent is in private hands, which, given development pressure, is always in danger of being sold off and developed. The double insult of cutting down forests and replacing them with suburban sprawl—with all the pavement and pesticides that such development implies—has had a devastating impact on bird habitat, for example. According to Audubon magazine, Cornell University's David Pimentel has estimated that, nationwide, some 72 million birds are killed each year by direct exposure to pesticides.

"It is curious that the news media have drawn our attention to the loss of tropical forests yet have been silent when it comes to how we have devastated our own forests here in the temperate zone," writes Doug Tallamy, an entomologist at the University of Delaware and author of Bringing Nature Home. "Only 15 percent of the Amazonian basin has been logged, whereas over 70 percent of the forests along our eastern seaboard are gone."

Cities around the country are beginning to take reforestation seriously. In Seattle's Beacon Hill neighborhood, a swath of public utility lawn that has sat idle for 100 years has been turned into a 7-acre park and an "edible landscape" known as the Beacon Food Forest, featuring not only berry bushes and vegetable gardens but chestnut, walnut, apple, and mulberry trees. In Philadelphia, officials hope to plant 300,000 trees in the city over the next three years, including donating trees to homeowners with the expectation that they will spare the city further costs by tending the trees themselves.

Locally, the Susquehanna and the Potomac rivers have begun to show the benefit of major forest restoration efforts on farms. Of the country's top dozen counties in preserving land, five are in Maryland, and plans are underway to continue this work. In Baltimore County, for example, limiting water and sewer lines to urban areas has helped permanently protect more than 60,000 acres of land in permanent protection.

In Worcester County, a 2010 county land-use plan seeks to protect 200,000 acres of farmland—nearly two-thirds of the entire county. Baltimore City wants to canopy 40 percent of the city with trees in the next twenty-five years.

To Boynton, this kind of work needs to accelerate, and fast. He and a group of scientists and policy makers have put together a Chesapeake Action Plan calling for the reforestation of at least 85 percent of the watershed's shores and riverbanks. "These loads can go down, and the Bay reads that and responds reasonably quickly," Boynton says. "This is in reality, not just in academic la-la land."

Water

When it comes to drinking water, Marylanders might take comfort that it isn't (yet) like southern California, where disappearing freshwater has residents sipping their own effluent. But with crumbling water and sewer pipes in cities, hundreds of thousands of leaky septic tanks, petrochemicals running off roads and parking lots, and fertilizers and pesticides pouring off industrial farms, the safety of Maryland's drinking water could potentially be compromised in the future.

Exacerbating the problem of clean drinking water is the fact that most municipal water treatment plans were designed 150 years ago to kill pathogens like cholera and typhus. They have a much harder time removing things like pesticides or pharmaceutical drugs, to say nothing of the pollution running downstream from city streets, suburban malls, and rural farms. For example, a recent study by the Associated Press found a vast array of pharmaceutical drugs in the drinking water supplies of some 46 million people in the nation's two dozen largest cities.

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The Jones Falls collects runoff from suburban creeks, carrying pollution to the harbor.

Keeping these contaminants out of the water supply in the first place means, among other things, reforesting streams and rivers, and drastically reducing the pollutants pouring off impervious surfaces like sprawling buildings and parking lots. Groups from Baltimore's Parks & People Foundation to the federal EPA have taken a decidedly holistic, watershed-based approach to rehabilitating urban neighborhoods. With detailed maps of (often buried) streams in hand, Parks & People volunteers and school children have systematically torn up 24 acres of "ultra urban" asphalt and replaced it with thousands of trees and gardens.

Sitting as it does in a basin, Baltimore collects pollutants from all over the region; the city frequently violates EPA limits on urban water pollution, the meeting of which would cost from $35 million to $50 million a year, says Blue Water Baltimore's Halle van der Gaag. "It's like a great big funnel collecting from all those suburban creeks and pouring into the Jones Falls, which then pops into the Inner Harbor," van der Gaag says.

Another problem with replacing farms and forests with rural, low-density housing is that most of these homes rely on septic tanks.

Subdivisions using septic tanks release ten times more nitrogen (the most damaging pollutant in the Chesapeake) per household than homeson sewer lines.

Consider the scale: There were already more than 430,000 septic systems in Maryland in 2009. The forecast is for another 478,000 homes in the state by 2035, and even if only a quarter of them are outfitted with septic tanks, these new homes will still contribute two-thirds of the region's total pollution load.

Counties outside the city typically have not been forced to address the pollution running off their land. Gov. Martin O'Malley asked for a doubling of the "flush fee"—from $2.50 to $5 a month per household, on average—to pay for upgrades to pollution controls on the state's biggest sewage plants. But for the state to deal with storm water runoff would require a bump to $10 a month.

A new idea, already in place in Philadelphia and Wilmington, is to charge landowners for the pollution they create. The owners of shopping malls—with their massive one- or two-story buildings and vast acres of parking lots—would pay more for storm water management than, say, the owner of a twenty-five-story apartment building that sits on a city block.

Another pending issue looms over the state's policy on the natural gas drilling process known as hydraulic fracturing, or fracking, which has been shown to contaminate drinking water supplies. Gov. O'Malley has temporarily banned fracking in western Maryland. But here again, watersheds are more complex than state boundaries: Pennsylvania sits atop gargantuan supplies of gas trapped in the so-called Marcellus shale deposit, and much of that land drains into the Susquehanna River—which in turn drains into the Chesapeake Bay.

Transportation

Once upon a time, Maryland's newest arrivals moved to cities. But even by the 1930s, the arrival of the automobile (and the subsequent explosion of suburban roads and housing developments) was already causing state land-use planners to bemoan the "miserable string-towns" that were rapidly gobbling up the state's farms and forests.

And today?

PlanMaryland reports that in 2010, Marylanders drove more than 56 billion vehicle miles, averaging 10,000 per person—a 40 percent jump since 1990, and a rate that far outpaced both the growth in population and the miles of new road construction. More than three-quarters of these miles were driven by solo drivers.

More numbers: Marylanders spent more than 700 million hours commuting in 2009. The state's average commute time is now nearly thirty-two minutes, longer than both New York and New Jersey and one of the highest numbers in the country. If current trends continue, by 2035 those "miles traveled" will grow from 56 billion to 84 billion per year, and the state will need nearly 15,000 new miles of road, at a cost of $110 billion.

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Meanwhile Maryland public transit ridership has grown by only 1 percent in twenty years. Why? Because although nearly 80 percent of the state's population lives within a ten-minute drive of public transit, suburban development has dispersed jobs and schools and shopping malls far from any train or bus services. Which raises a related question: How

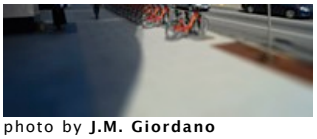

photo by **J.M. Giordano**
The Capital Bikeshare program in Washington, D.C. has recorded nearly one million trips. Baltimore launches a modest bikeshare this year.

much shopping, exactly, do we need? By 1986, the U.S already had the most retail shopping space per person in the world—about 15 square feet per person. By 2003, this had increased by a third, to 20 feet per person, nearly twice the next country on the list, Canada, and three times that of Australia. Sweden has the most retail space in Europe, with 3 feet per person, according to the book Retrofitting Suburbia. The recent economic collapse, of course, has left the corpses of empty malls all over the American landscape.

Busted metropolises around the country are all scrambling to address these issues. Atlanta, which twenty years ago was just beginning to transform itself into a southern Los Angeles, has become an 8,000-square-mile suburban megalopolis where commuters drive an average of 66 miles a day. Reeling from congestion, the city is developing an urban park along an abandoned railroad corridor, with light rail and miles of biking trails. In 2010, the city of Portland agreed to spend more than $600 million on bike infrastructure over the next twenty years, including the designation of some 700 miles of bike lanes. And some new apartment complexes in Portland now cater specifically to cyclists with no parking places for cars.

In Denver, city planners hope to encourage 15 percent of city residents to get to work on foot or by bike by 2020. To jumpstart enthusiasm for the idea, local nonprofits move into empty storefronts and erect—for just a couple of days—everything from sidewalk cafes to art exhibitions. In just its first year of operation, a bike-sharing program in Arlington, Virginia contributed 100,000 bike trips to a regional bike-sharing program, based in Washington, D.C., that totaled nearly one million trips. Other interesting statistics: Bike trips beginning in Arlington averaged just over 1 mile and nineteen minutes each, yet riders cumulatively saved some 6,200 pounds of carbon dioxide from being released into the atmosphere.

Here in Maryland, the proposed 16-mile Purple Line light rail would connect New Carrollton to Bethesda and provide direct connections to the Metro, MARC, and Amtrak. Baltimore's proposed 14-mile Red Line would connect the western suburbs to downtown Baltimore and east to Bayview. And the city is putting the final touches on the 12-mile, $4 million Jones Falls Trail, which will ultimately run from the Inner Harbor all the way to Robert E. Lee Park. Baltimore is also set to begin its own limited bike-sharing plan this summer.

Energy/Climate

ChangeMaryland's carbon dioxide emissions rose by 18 percent between 1990 and 2005, in large part because 60 percent of the state's electricity is still generated by coal-fired power plants, which are the greatest contributors of carbon dioxide pollution.

The result? Regional climate experts consider it perfectly plausible that sea levels on the Maryland coastline will rise 3 feet over the next century; state officials are planning for a 4-foot rise in the state's sixteen coastal counties, and a 6-foot rise is considered possible. Maryland is behind only Louisiana and Florida as most likely to be affected by rising sea levels.

We've long known what to do about rising sea levels: Reduce our use of fossil fuels, especially the coal that lights our homes and the gasoline that powers or cars. Protect and replant forests, which not only absorb carbon dioxide but also enormous quantities of storm water. Protect and replant wetlands, which absorb storm surges. Maryland has more than 7,000 miles of coastline along the Chesapeake, the Coastal Bays, and the Atlantic Ocean, along with 600,000 acres of wetlands, and PlanMaryland explicitly urges these areas be mapped and protected. Failure to do so will only multiply the damage scientists see on the horizon, like the tens of thousands of waterfront acres around the region that are likely to drown in the next century—many of them the very forests and wetlands most needed to prevent further damage. Dorchester County alone stands to lose some 85,000 acres of marsh and forest by 2100, climate experts say.

"On my best days, I think it is technically feasible to have a high-rent society and a clean environment, but those are my good days," the University of Maryland's Boynton says. "What would that mean? Putting growth in areas where there is infrastructure to handle it."

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photo by **J.M. Giordano**
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There has been some regional movement on energy and climate change, but not a lot. Along with nine other states in the Mid-Atlantic and New England, Maryland recently agreed to join a cap-and-trade system to reduce carbon dioxide power plant emissions by 10 percent by 2018. State law requires 20 percent of electricity to come from renewable energy sources by 2022, and state residents can already sign up to have clean electricity (still delivered by BGE) from a company called Clean Currents. And clean energy advocates like the Chesapeake Climate Action Network have cheered the planned September closing of the R. Paul Smith coal-fired power plant southwest of Hagerstown, which the group says will reduce annual CO2 emissions by 200,000 tons a year.

The most hotly debated alternative to coal, of course, is wind power, which Maryland's coastline, with its shallow waters and strong winds, has in abundance. The state's recent approval of the merger between Exelon and Constellation Energy requires the company to invest in 125 megawatts of in-state wind generation, enough to power 40,000 homes. A recent study, published in the journal Renewable Energy by researchers at the University of

Delaware, showed that large offshore wind farms could generate nearly twice the state's total current electricity needs. And installing wind turbines far off the coast of Maryland would not just generate enormous quantities of electricity; it would also create lots of local jobs, says the study's co-author Willett Kempton, professor of marine policy at the university.

As with everything else, solving energy problems always comes back to the way we allow development to happen. People living near cities and towns drive up to 40 percent less. Less driving removes the need to construct nearly 7,400 miles of additional roads and highways, which would in turn reduce the amount of pavement, which would allow forests and farms to absorb more carbon dioxide. And so on.

"There's no magic here," Dru Schmidt-Perkins, of 1,000 Friends of Maryland, says. "We know exactly what we need to do in order to ensure a clean, healthy, profitable Chesapeake Bay watershed. It's a combination of planning the development and making the investment in infrastructure. We know this. It's not magic; it's math."

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