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Cities: A Smart Alternative to Cars

Creating compact communities—and eliminating the need to drive everywhere—may be the best way to slash greenhouse gas emissions from vehicles

By Alex Steffen

The answer to the problem of the American car is not under its hood.

Today's cars are costly, dangerous, and an ecological nightmare. Transportation generates more than a quarter of U.S. greenhouse gases, according to the Environmental Protection Agency. A portion of that comes from moving freight around but more than 20% is personal transportation. Our vehicle emissions are a major climate change contributor, but what comes out of the tailpipe is only a fraction of the total climate impact of driving a car, and the climate impact is in turn only a part of the environmental and social damage cars cause. Improving mileage will not fix these problems.

The best car-related innovation we have is not to improve the car but to eliminate the need to drive it everywhere we go. In the U.S., we need to stop sprawl and build well-designed compact communities. The land-use patterns in our communities dictate not only how much we drive, but how sustainable we can be on all sorts of fronts. And sprawled-out land uses generate enormous amounts of automotive greenhouse gases. A recent major study, *Growing Cooler*, published by Smart Growth America, a coalition of national, state, and local organizations that addresses urban planning, makes the point clearly: If 60% of new developments were even modestly more compact, we'd emit 85 million fewer metric tons of tailpipe [car emissions] CO₂ each year by 2030—as much as would be saved by raising the national mileage standards to 32 mpg.

So we know that density reduces driving. We know we're capable of building really dense new neighborhoods with plenty of open space, welcoming public places, thriving neighborhood retail, and a tangible sense of place. Just look at Vancouver, which has redeveloped its downtown core into a dense mix of retail, jobs, and housing. Not only is the result one of the most liveable cities in North America, but 40% of all downtown Vancouver households are car-free.

Overhauling the American City

We're also capable of using good design, infill development (new, denser development in vacant or underused lots), and infrastructure investments to transform existing medium-low density neighborhoods into walkable compact communities. Creating communities dense enough to save those 85 million metric tons of tailpipe emissions is (politics aside) easy. It is

within our power to go much farther: to build whole metropolitan regions where the vast majority of residents live in communities that eliminate the need for daily driving, and make it possible for many people to live without private cars altogether.

Generally, we think of cars as things which are quickly replaced and buildings as things which rarely change. That will not be the case over the next few decades. Because of population growth, the ongoing development churn in cities with buildings being remodeled or replaced, citywide infrastructure projects and changing tastes, half of the American-built environment will be rebuilt between now and 2030. Done right, that new construction could enable a complete overhaul of the American city.

This is especially true since we don't need to change every home to transform a neighborhood. Many cities prevent denser development through bad building codes. But many inner-ring suburban neighborhoods, for instance, could become terrific places simply by allowing infill development. Strip-mall arterials could be converted to walkable mixed-use streets. This transition can happen in a few years.

We Can't Wait For Changing Auto Design

In comparison, it takes at least 16 years to replace 90% of our automotive fleet, and since it takes years to move a car design from prototype to production, it looks likely that the cars most people in the U.S. have available to drive in 2030 will not be all that different from the more efficient cars today. I'm optimistic that at least some radically engineered, nontoxic, fully recyclable electric cars will be on the road by then, but it's extremely unlikely that (barring massive government intervention) they'll be anything like the norm. We should not wait for automobile design to fix this problem.

There's no need to delay building bright green cities. Better design solutions for buildings, communities and, in many cases, infrastructure either already exist or are mid-development. And new innovation is exploding. Car-sharing is the best-known and perhaps most illustrative example but it's far from the only one. Barcelona runs the phenomenally successful "Bicing" program, renting bikes to anyone with a swipe card. Wired urban living might very well soon evolve into a series of systems for letting us live affluent, convenient lives without actually owning a lot of things.

When you build closer together, you also create the conditions for dramatic energy and cost savings. Researchers at Brookings note: "Transportation costs are a significant part of the average household budget. The average transportation expenditures for the median income household in the U.S. in 2003 was 19.1%, the highest expenditure after housing."

Dense Can Mean Efficient

But that 19.1% figure is the median. How much individual households spend varies enormously, and how much we pay for transportation is determined largely by the location of our homes.

People who are living in extremely dense areas, getting around mostly on foot, by bike, and by transit, with the occasional use of a car-share vehicle, can find themselves paying a small fraction of that 19.1%.

What's more, the public burdens created by car-free or car-light lifestyles are so minimal that some municipalities (like Seattle) are actually finding that it makes good fiscal sense to encourage people to give up their cars by subsidizing transit passes and car-sharing memberships.

People in compact urban areas also pay substantially less in other energy costs. Dense neighborhoods are far more energy-efficient than even "green" sprawl, and innovation trends in green building seem to me to benefit compact development. Carbon taxes can incentivize even more energy-efficient developments—as they may soon in Portland.

Compact Communities Can Enhance Quality of Life

Pollution from a car isn't limited to its emissions and leakages. That new car smell? Toxic. We currently have no replacements for most of the bad components, and we don't appear to be much closer to a truly recyclable car. The best try of which I'm aware is the Model U, William McDonough's collaboration with Ford ([F](#)), which is an interesting start but a long, long way from a closed-loop car. Yes, there are a bunch of smart folks hard at work on these issues and on some pretty exciting designs—[the 100-mpg Aptera, for instance](#), or the proposed VDS Vision 200, a "hyperefficient four-to-six-passenger vehicle earmarked for India that will demonstrate a 95% reduction in embodied energy, materials, and toxicity," according to the Vehicle Design Summit.

But whether green cars arrive, building bright green cities is a winning strategy. Most arguments against land-use change presume that building compact communities is a trade-off; that by investing in walkable, denser neighborhoods we lose some or a lot of our affluence or quality of life. But what if the gains actually far outweigh the costs not only in ecological and fiscal terms but in lifestyle and prosperity terms as well?

Green, compact communities, smaller, well-built homes, walkable streets, and smart infrastructure can actually offer a far better quality of life than living in McMansion hindersprawl in purely material terms: more comfort, more security, more true prosperity. But even more to the point, they offer all sorts of nonmaterialistic but extremely real benefits that suburbs cannot. Opponents of smart growth talk about sacrificing our way of life, but it's not a sacrifice if what you get in exchange is superior.

Just as a home is more than the building in which it resides, a life is more than the stuff we pile up around it. We all know this to be true. In building bright green cities we do more than help avert a monstrous disaster for which we are largely responsible. We might just awaken on the other side of this fight to find ourselves prosperously at home in the sort of communities we thought lost forever, leading more creative, connected, and carefree lives.