

To Keep the City out of the Country, Keep the Country out of the City.

And a brief proposal
for an
Extension Delivery System
to
Enable Local Choice for Urban Planning

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Cities sprawl because they want to be like the country: plenty of open green space and fresh air. The resulting expansion often has the *worst* of both worlds rather than the best: polluted air and water, no significant green space, and few opportunities for pedestrian interaction. We still have to drive over a mile to get a quart of milk. Our sprawled cities offer few of the amenities of true urban living, and certainly none of the benefits of rural life. And sprawl is costing us the loss of valuable habitat and irreplaceable farmland. The solution to sprawl is to make our cities *more* like cities, and less like the country.

We naturally favor green pastures over blacktop parking lots. Pure flowing streams over controlled and encased stormsewers. The sound of the wind through the pines over the din of the city. We have a natural distrust of city politics, perhaps because of our not-so-distant rural roots. Now that circumstances force us to live in the city, we want to have as much of the country in it as we can have. And the advent of the automobile and the highway system has made that possible. We live far from the city center, our small castles surrounded by our small pastures, but we really have nothing of value from the country, while we destroyed everything that was of value in the country that we displaced.

One of the benefits of true urban living is proximity to just about everything. In the country, one must travel great distances to get to shopping, entertainment, or business. But that is the price one pays for the bucolic environment. In most of the older central cities, most of life's necessities could be found in walking distance of one's home. And most everything else of interest might be just a short bus or subway ride away. But this is no longer true of our post-war sprawled cities. We have to drive everywhere, just as if we lived in the country. Our children are hostages to their mothers or others until they can drive. There

is no countryside for them to roam and explore, but neither are there nearby city streets with small stores and businesses. We have the benefits of neither the country nor the city in our suburban sprawl.

We know of course that cities pollute. The greater the amount of impervious surface that covers an area, the more polluted the runoff will be. So it makes sense to try to decrease the amount of imperviousness. Less pavement is always better, or so it seems. The more we can get green space in between some of that pavement, the better the chance will be that some of the pollution can be filtered out of the runoff. It follows, then, that less density is better, that large lots are better than smaller lots.

While this imperviousness relationship is true beyond any doubt, certain biophysical thresholds for water and habitat quality on a watershed scale suggest we must be very careful in how we use this information to develop policy. Recent research from the Center for Watershed Protection in Maryland has revealed that relatively small amounts of imperviousness can very significantly impact watershed health. A review of stream quality indicators from around the county suggests serious impact above about 10% imperviousness (Figure 1). This piece of data has some very profound policy implications.

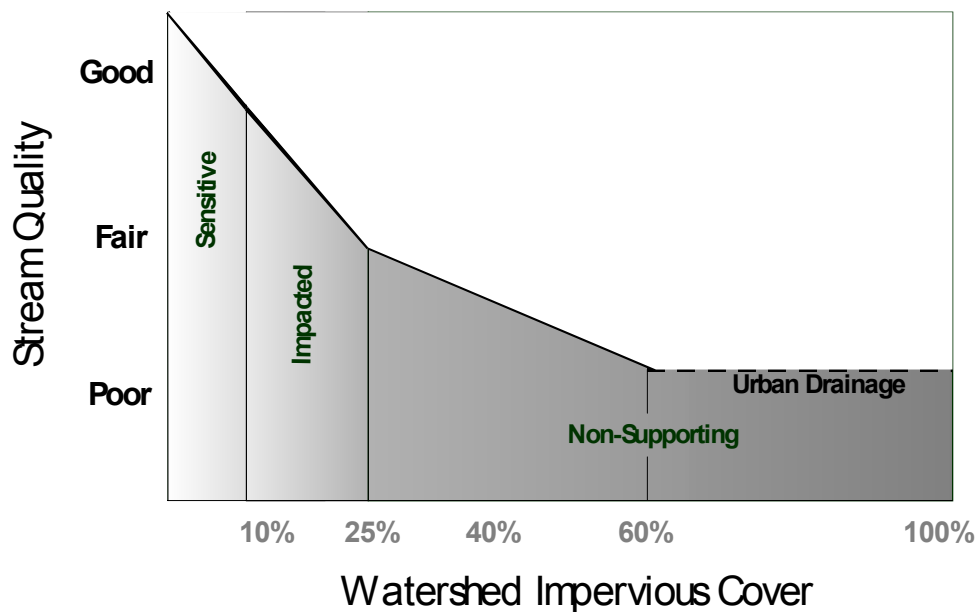


Figure 1. Impervious cover model. Data from the Center for Watershed Protection.

Development in 1-acre lots, often touted as protection against some of the problems with high-density imperviousness, results in about 10% imperviousness, enough to significantly impact watershed health. Quarter-acre

development results in about 27% imperviousness, pushing watershed streams into the non-supporting area.

The implication of this new data is that it doesn't make much sense to try to limit the effects of sprawl, from the point of view of water and habitat quality, by zoning for big-lot development, or, more importantly, by trying to insert buffer zones into dense urban areas. What makes sense is to try to preserve those watersheds that have less than 25% imperviousness, and particularly those with less than 10% imperviousness. In a sense, we have to perform some ecological triage, and make some decisions about which watersheds can be saved and restored.

Keeping development out of some watersheds means that development is going to have to be denser in others. Ecologically it makes sense to concentrate development in areas where we have already exceeded critical thresholds. To go from 25% imperviousness to 80% imperviousness in an already impacted watershed is much less damaging to the overall system than increasing imperviousness from 2% to 15 or 20% in a series of smaller watersheds.

The best way to keep cities out of the less-impacted watersheds is to encourage true urban development, development that is *more* rather than *less* dense. To save the countryside, we are going to have to reinvent our cities. Fortunately, it turns out that denser cities can be much more liveable cities, not less. And denser cities will pollute much less overall because of the very significant reduction in vehicle miles traveled, a reduction that reduces direct air pollution as well as the water pollution that results from deposition of nitrogen from the air, in some watersheds the greatest source of nitrogen in the water. In addition, vehicles are one of the most significant contributors of copper, lead, and other pollutants in our waters.

Encouraging denser development is not consigning the cities to a blighted fate. On the contrary, the great cities of the world, the most liveable cities in the world, are also the densest. High density does not automatically equate with urban decay. There is an abundance of literature on liveable urban patterns (cites available on request). The revitalization of much of downtown Houston suggests that living in a dense urban environment can be very attractive. Loft housing in downtown Houston is in fact some of the most expensive housing in town.

The evolution in thinking that led to this conclusion has not been easy for one trained in natural resources. I have always considered it my duty to help green things up -- certainly not to increase urban density. But I realize now that if we are to save any important habitat or farmland around the cities, we are going to have to encourage the cities to be *more* and not *less* urban. Denser settlement in the cities will paradoxically allow a greater preservation of farmland and natural habitat closer to the city, giving more people better access to fully functional natural areas.

An Extension Delivery System that Enables Local Choice

Sprawl impacts resources to such a degree that forceful legislation mandating more compact settlement patterns would be a reasonable approach to assuring the availability of these resources for coming generations. But such legislation is of course unlikely given the current political climate. And even if we all agreed that sprawl could be legislatively curbed, could a “one-size fits all” solution work in Texas?

In the end, it is all about local choice. The pattern of cities and adjoining countryside is a matter for local governments, working together regionally, to decide. The problem of course is that rational alternatives are not always apparent. Information is often lacking.

The legislature should remove roadblocks and provide the tools that local governments need to be able to effectively make those choices. Most importantly, the legislature must enable planning at a regional level, which is exactly where sprawl happens.

I am confident that abundant testimony has been received by this subcommittee on a variety of policy issues, and that I need not review those issues here. What I want to propose is an Extension delivery system that enhances local and regional choice. After the roadblocks are removed and the necessary tools made available to local governments, then information becomes the limiting factor. How will credible information be delivered to local governments? Will there be a clearinghouse in Texas where local officials and citizens can go to get reliable information tailored to local conditions.

Texas established such a system when rural areas were in crisis at the turn of the last century in the form of the Texas Agricultural Extension Service. The first county agent in the country was in Texas. The Extension system put research and education in the hands of Texas farmers, who went on to become some of the most productive in the world.

An Extension system is now needed to put research and education into the hands of local urban governments and urban citizens. Texas Sea Grant and Texas Cooperative Extension already have significant infrastructure in Texas cities, but little of it is directed at purely urban issues such as planning.

Local governments need information on land use law. What can and can't be done under current Texas law? How do local decisions impact future growth patterns, and how do these growth patterns impact local natural resources? The ability to model the impacts of patterns of imperviousness on water quality and habitat fragmentation is well established in the larger universities of Texas, but this ability is not readily accessible to local governments.

Local governments also need assistance in inventorying and prioritizing local natural resources. Again, the ability to accomplish these tasks is well established in Texas' universities, but not accessible to local governments.

A wealth of information is available in Texas' research universities on land use and sprawl issues. And a model for extending that information to those who

need it most is already available. What is needed is to reinvent the Extension model for the urban environment, and particularly for uniquely urban issues.

Texas Sea Grant and Texas Cooperative Extension have initiated an extension program to address these issues under the working name of the ***Texas Coastal Watershed Center***. In partnership with the Spatial Sciences Laboratory at Texas A&M, we are developing a series of seminars and hands-on demonstrations to help local governments evaluate the impact of land use patterns on coastal water quality. We will use scenarios to explore several “what-if” possibilities with a few selected local officials. The main focus here is to use geospatial technologies to get usable natural resource information into the hands of local officials, and then to develop an educational program that will help them assess land use decisions as they relate to water quality, important because sprawl is perhaps the largest contributor to impaired water quality in the state. These educational programs will involve extensive use of planning and land-use law, and an examination of the principles and practices of much of the New Urbanist and Smart Growth programs.

The Texas Coastal Watershed Center has come into being in large part because of the growing mandates for clean water in our coastal bays and bayous. Stormwater regulations in particular are placing a large burden upon the cities to develop practices that improve water quality and to educate their citizens on appropriate practices as well. The TCWC is a model that could easily be replicated throughout the state. The TCWC is affiliated with the University of Connecticut NEMO program (<http://nemo.uconn.edu>), which links land use to water quality, and technology to town hall.

I propose that the Texas Legislature establish an urban extension program to enable local officials in Texas’ cities to have access to the abundant information on urban sustainability and planning that is available throughout Texas’ universities. I propose the existing extension programs of Texas Sea Grant and Texas Cooperative Extension be used as a foundation for building that program.