Public Priority Streets

Traffic congestion within the larger metropolitan areas is almost entirely alleviated through the use of public transportation along with special “public priority” streets. These can be narrower than other streets and are reserved for busses, taxis, police, fire/rescue, and city utility and maintenance vehicles. At intersections between public priority and other streets, busses, police and fire/rescue vehicles electronically trigger stoplights on opposing streets allowing free passage for high-priority vehicles.

All busses and most taxis move along these public priority expressways. Large two, three or four module tram-like buses along with bus-stop platforms for on-level boarding and exiting reduces stop times and also travel times between stops. Increased efficiency makes public transportation more attractive for more people. Cables are buried in the streets awaiting the software development that will automate buss operation when the busses will then function like city-wide horizontal elevators.
A primary concept demonstrated in this thesis is the possibility of using Fractal Geometry to develop the distribution of an urban footprint upon the landscape of its region. This geometry extends to this application richly suitable attributes among which are: first, potentiality to structure both discrete and discontinuous elements; second, inherent description of amorphous arrangements; and third, self-similarity from one scale to another. The first attribute is one corollary assertion emanating from using Fractal Geometry in Urban Architecture: it is not necessary to view a city as one continuous mass upon the landscape. A city may be designed to be composed of many physically separate yet proximate development nodes. The second allows flexibility of deformation of rigid geometry into fluid site patterns. Third, multi-scalar self-similarity maps well onto the many scales of an urban region, e.g. major city, small cities, towns, villages, hamlets and settlements and maps well onto the garden-city theory set forth by Ebenezer Howard.
Two topographic variables selected for study in Fractal City theory show the stochastic deformation of the distribution and boundaries of the fractal pattern of urban footprint. Metro City appears as the only footprint element in this analysis. Site selection includes as its first variable the slope of topography. Environmental value placed on steeper slopes determines their preservation from construction. Higher building and transportation costs for steeper slopes contribute another significant factor. The second variable is breadth of protected waterways. The environmental value of waterways to the regional ecosystem establishes a proportionally higher value on land that is closer to rivers and streams. Setting distance boundaries from center of stream or river determines the preservation of those rivers and streams from the deleterious effects of construction and storm-water runoff.

Upper left shows the adumbrated site of the Metro City center. Lower left reveals patterns of increasing river and stream buffers. Upper right reveals patterns of increasing topographic slopes. Lower right combines the patterns of river and stream buffers with topographic slopes. Color coded bars below each diagram shows relative values of each attribute.