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## **Global Warming: Zoning May be Antidote to Climate Change**

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**Abstract:** Through the use of transit oriented development (TOD) several New York municipalities have transformed into more sustainable communities by reducing greenhouse gas emissions. Contrary to popular belief, these municipalities proved that reduction of emissions is possible while still expanding economic growth. This article highlights several success stories in a variety of community landscapes beginning with a look at urban redevelopment in Yonkers, White Plains, and New Rochelle, New York, and then transitions to suburban success stories in Orangetown, and several municipalities along the Bear Mountain Parkway.

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### **Urbanization as a Response to Carbon Loading**

February 2, 2006 will compete with 9/11 for the attention of historians. On that day, the Intergovernmental Panel on Climate Change (IPCC) expressed the consensus of the scientific community that global warming is unequivocal and that its main driver is human activity. On April 7, 2007, the IPCC issued a second report detailing the likely consequences of climate change: widening droughts, more severe storm events, increased inland flooding, sea level rise, and consequent inundation of low lying lands. The Center for Climate Systems Research at Columbia University estimates that sea levels around New York City's boroughs will increase by five inches by 2030, with some estimates predicting up to 12 inches more between 2030 and 2080. The biggest threat to the safety of millions of city dwellers and its trillions of dollars of real property is the prospect of increasingly vicious storms that may propel encroaching waters onto the shore and threaten the stability of vulnerable buildings.

The latest IPCC report followed on the heels of the United States Supreme Court's April 2<sup>nd</sup> ruling, in *Massachusetts v. EPA*,<sup>1</sup> that the Clean Air Act gives the agency the authority to regulate tailpipe emissions of greenhouse gases and that the rationale used by the EPA for not regulating these emissions was inadequate. Other than the majority's unremarkable finding that greenhouse gases are an air pollutant, the case disposed of very little substantively, sending EPA back to the laboratory to find a better rationale for its regulatory forbearance or to move forward with effective prescriptions.

Last week, the Bloomberg administration issued a study that reported that New Yorkers produce nearly 70% less greenhouse gas per capita than the national average. [The average New York City resident is responsible for 7.1 metric tons of gas emissions while the national average is 24.5.] The study explained that this is because less energy is needed to heat, cool, light, and fuel buildings in the city because they are more densely packed and because residences are smaller than the national average. In addition, the density of the population and the mix of residential and commercial uses makes public transit possible and lowers the use of automobiles by City residents.

While the heated battle between the states and the EPA garners major headlines, the zoning laws of New York City have been credited with an astonishing reduction in the gases that are producing climate change and its worrisome consequences. It is, after all, zoning that creates the blueprint for land development and dictates the densities and land uses that give New York City international bragging rights in the struggle to reduce carbon emissions and slow climate change. Meanwhile, land use patterns across the American countryside produce average daily commutes to work of 23 miles roundtrip. Eliminating that trip by putting the commuter on a bus, train, or bike will reduce that person's contribution to carbon dioxide emissions by 6,520 pounds per year.

## **Densities and Transportation Choices**

How we travel from home to work, shop, and recreate is dictated by land use laws that establish population densities and that either separate or mix retail, office, and residential development. When density is increased for both residential and commercial uses, the distance between origin and destination is shorter and walking, bicycling, and mass transit services are more feasible. In order for increased densities to be tolerated, attractive building, landscape, and streetscape design must be employed. Studies have shown that increased population density decreases automobile ownership and the number of vehicle miles traveled. "[D]oubling the population density of a community could reduce per-family driving by as much as 20 to 30 percent."<sup>2</sup> "[O]ne study found that at high density, levels of 10,000 to 50,000 people per square mile, half of all trips

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<sup>1</sup> 75 U.S.L.W. 4149 (2007).

<sup>2</sup> ITE SMART GROWTH TASK FORCE, SMART GROWTH: TRANSPORTATION GUIDELINES 30 (Institute of Transportation Engineers 2003).

were not by automobile, and walking and bicycling increased significantly.”<sup>3</sup> Minimum population densities are also required to support mass transit. Four to eight housing units per acre are necessary to support a transit system at a minimum level and more than 15 units per acre support frequent service. Increased commercial density also increases transit ridership.

The New York Metropolitan area presents a range of studies in land use patterns that contribute varying amounts of carbon dioxide emissions due to transportation choices. New York City, of course, is exemplary and is pressing to improve. The City projects that its population will increase by one million by 2030 and that it must continue to do better concentrating on how buildings can be improved and built to reduce emissions and how on-road travel can be further reduced. A report on how the City will accomplish its results is expected on Earth Day, April 22<sup>nd</sup>. To the City’s immediate north, New Rochelle, Yonkers, and White Plains are emulating its approach to densities and mixed uses, with skyscrapers appearing on the horizon that contain residences, offices, retail, and entertainment. On both sides of the Hudson River in Rockland, Westchester, and Dutchess counties, steps are being taken to use land use solutions to reduce traffic congestion and carbon emissions. This column begins an examination of these trends and how land use planning and regulation can be used as an antidote to climate change.

## **Urban Redevelopment**

### *City of Yonkers Waterfront*

The goal of Yonkers through Hudson Park, a luxury apartment community situated on the Hudson River, and other waterfront projects is the revitalization and prime utilization of the downtown waterfront area. More specifically, the city’s waterfront master plan states that development along the waterfront should encourage a small scale, yet urban, residential atmosphere. To achieve this goal, the waterfront design includes low-rise, high coverage development--interconnected public places wedding the train station to the waterfront. The master plan for the waterfront proposes to extend the urban fabric of downtown Yonkers to the waterfront. Irregular streets, appropriately scaled buildings, and a variety of public open spaces create a pedestrian oriented environment.

The new waterfront plan establishes a mixed-use neighborhood where housing is envisioned as the primary use, supported by appropriately sized retail, recreation, educational, and water based activities. This urban assemblage will provide a variety of day and nighttime activities, which are important to a safe and secure full time community. Main Street square is the commercial center, with ground floor uses that engage the street and attract pedestrian activity. Upper floor uses consist of market rate housing and may include second story

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<sup>3</sup> Id.

office space. The esplanade park on the waterfront has been committed to recreational uses.

The city council recently designated a team of three redevelopment companies to plan and implement a multi-phase \$3.1 billion development program. Its gateway project is a mixed use development topped by a 6,500 seat AAA minor league ballpark, over 800 residences, and over 600,000 square feet of office and hotel use. This project is located in the central business district and complements revitalization projects that have been fostered by its waterfront plan on the Hudson River and next to the Yonkers commuter rail station. The area is served by three train stations and a network of buses.

#### *City of White Plains Downtown*

Over the past few years, downtown White Plains has undergone some dramatic changes. In 1997, White Plains adopted a new comprehensive plan that prioritized the development of cultural and recreational uses, along with additional housing, inside the central business district. The city's primary goal was to find the right mix of land uses and densities to build a strong transit oriented downtown, a solid tax base for the community, and provide employment and housing opportunities, while preserving the essential character of the community. The city envisioned a downtown bustling with commercial and retail activities. Under the plan, development near the railroad station of mixed uses was considered a priority to take advantage of the railroad and other mass transportation facilities. The vision is being realized, as over two million square feet of commercial/office space, over one million square feet of retail space, and over 800 residential units have been constructed in the renewal area.

#### *City of New Rochelle Downtown*

In mid-1990s, New Rochelle adopted a new zoning ordinance and comprehensive plan in which a portion of the downtown was designated a "mixed use development zone." This zoning gave developers the flexibility to propose residential, retail, and hotel projects. The city's goal was to revitalize the central business district and to attract residents and retailers in order to create a pedestrian-oriented downtown area, expand its tax base, and to generate jobs. The residential portion of the redevelopment includes over 1,000 new units and the commercial portion is over one million square feet and includes an entertainment center, retail, hotel, and parking garage all served by the downtown train station. These projects are the result of the combined efforts of the public and private sectors.

### **Emerging Suburban Experiments**

What emerging suburban communities do to adjust their land use regulations is a critical component of accommodating the nation's projected

increase of 100 million people by the year 2043 in a climate-friendly fashion. Land use patterns in suburban New York Metropolitan communities have generated automobile dependence, commutes by car to work that greatly exceed 23 miles, home sizes in excess of the 2,400 square foot national average, and households whose members routinely make from seven to 15 separate trips a day to destinations they can only reach by car.

### *Pilot Sustainable Development Studies*

In an effort to link land use, community design, and transportation planning, the New York Metropolitan Transportation Council (NYMTC) is coordinating pilot sustainable development studies in the Hudson Valley region. Two of the studies, Rt. 303 Corridor and the Rt. 6/35/202/Bear Mountain Parkway Sustainable Development Project, resulted in land use actions taken by developed suburban municipalities that link land use densities and modal choices.

#### Rt. 303 Corridor, Orangetown

The Town of Orangetown is located in Rockland County: the fastest growing county in the region. Route 303 is the main roadway through Orangetown. Residents were interested in making Route 303 safer and improving their own quality of life by addressing issues associated with the roadway. The town joined forces with the county and New York State Department of Transportation (NYSDOT) in 1999 to conduct a sustainable development study of the corridor. Input was gathered from residents and business owners. Computer simulation was used to show various future scenarios for land use and transportation and a final sustainable development plan was selected.

The ultimate goal of the plan is to have three hamlet-like centers on Route 303. These village centers will have increased densities and mixed uses and promote pedestrian safety and a variety of activities and services. By decreasing the distance between origin points and destinations, transit, bicycle and pedestrian travel will be more attractive. The mixed-use centers support home and locally based employment, and promote a variety of housing options. Implementation began with short term safety improvements such as left hand turn signals, synchronized traffic lights, and improved crosswalks and sidewalks and pedestrian and bicycle circulation. The town updated its comprehensive plan and revised its zoning to ensure the plan would be implemented. The town adopted the Route 303 Overlay Zoning District to designate special land use considerations for the roadway.

#### Rt. 6/35/202/Bear Mountain Parkway Sustainable Development Project

The City of Peekskill and the Towns of Cortlandt and Yorktown teamed with Westchester County and NYSDOT to create a sustainable development plan. In 2000, residents met to identify traffic issues and potential solutions.

Various land use and transportation improvements were developed and presented to the public. In August of 2002, the community selected a Preferred Land Use Scenario and Transportation Improvement Bundles. As a result of the study, the three municipalities entered into an intermunicipal agreement to coordinate land use and transportation planning across municipal boundaries.

In 2005, Yorktown revised its comprehensive plan and adopted the bicycle and pedestrian transport recommendations for their road projects. The vision section in the comprehensive plan calls for five designated business districts to become more pedestrian friendly and a town-wide network of bike paths that link business centers, residential areas, regional trails, and parks. The town plans to use traffic calming measures through hamlet centers and to provide continuous sidewalk connections. The comprehensive plan also contains numerous provisions aimed at increasing use of transit, such as jitney service to nearby train stations.

Courtlandt also updated its comprehensive plan to include recommendations from the study. These enhancements are intended to improve traffic flow, safety, including bicycle and pedestrian connections, and bus transit facilities.

### *La Grange Town Center*

La Grange used an innovative land use technique that can be employed by communities to manage and define future growth in a way that creates more livable places, places that are environmentally, socially, and fiscally sound. Specifically, a community may designate through its zoning, mixed-use Priority Growth Districts, or PGDs, that direct development to selected locations and also specify a design that is attractive to the community's residents. The PGD concept is particularly well-suited for outlying suburban and exurban counties, where the rate of growth is significant but there is still a rural character that can be preserved. The pressure to provide new homes in these growth areas can best be addressed through the identification of Priority Growth Districts where roadways and other infrastructure either exist or can be accommodated in ways that reduce the length and number of automobile trips.

The Town of LaGrange worked with Dutchess County to create a PGD type development where there was an existing suburban transportation corridor, including the undeveloped lands surrounding it. It is intended to be a new hamlet, serving new and existing residential development. It introduces the concepts of mixed-use development, a variety of housing types, and walkable design elements that create a main street scale and attractive sense of place. The zone encompasses 616 acres and can include as much as 220,000 square feet of commercial space, including up to 160,000 square feet of retail uses, a supermarket and restaurants, a 50,000 square foot government center with a library, and between 560 to 680 housing units of all types: senior housing and

assisted living units, apartments, townhouses, and single-family residences. It will be served by central water and sewer and is located along a State highway. It is likely to be one of, if not the largest, PGD type developments to be undertaken in the county.