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Transit-Oriented Development: Clustered Zoning Approaches Reduce Congestion

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Abstract: The effect of local zoning on our lives usually goes unnoticed despite its profound influence on human behavior. Zoning controls where we live and work, how we get from point A to point B, and what sort of homes we live in. This article provides examples of successful transit-oriented development projects at the local level as well as how state and federal government can contribute to the clustering effort via financing and research programs as well as providing appropriate infrastructure.

Zoning to Reduce Carbon Emissions

Local zoning helps to determine whether it is easier to take the car to work or take the bus or train; whether it is more comfortable to drive for a quart of milk or walk to the corner store; whether or not it is possible to bike to a softball game. Not incidentally, zoning also helps to determine the efficiency of energy transmission, the amount of energy it takes to heat and cool buildings, and even the amount of fuel it takes to bring food from farm to plate. Zoning creates the intricate infrastructure of our everyday routines, yet its utility as an instrument of social change often goes unnoticed.

Through a three-part series in the Journal this spring and summer, we have sought to elevate the profile of zoning as a critical tool in the response to climate change and to highlight, in particular, the importance of Transit Oriented Development (TOD). TOD is a planning approach that encompasses some of the most powerful techniques localities can use to forge more sustainable patterns of development—from locating dense residential zones near transit stations to fostering mixed-use development and creating walkable networks of streets. TOD was born as a response to the negative effects of sprawl: lengthy commutes, air pollution, and loss of natural resources chief among them. Now,

as communities turn to face global warming, the approach takes on added significance.

In our first column this past April, we described the role TOD can play in reducing greenhouse gas (GHG) emissions and described several local examples of TOD in action. We also introduced a country cousin to TOD: Transportation Efficient Development, or TED, an approach that adapts the goals and strategies of TOD for use in non-urban settings. In our July column, we outlined a comprehensive land use regime—ten straightforward steps that localities can use to integrate land use and transportation planning.

In this, the third and final column, we delve more deeply into the benefits of TOD/ TED and introduce further evidence of how these approaches can decrease dependence on fossil fuels. We conclude by identifying key techniques that the federal government and states can use to spur on and support responsible zoning initiatives.

Cutting Carbons

Zoning to reduce carbon emissions can have dramatic effects. An EPA study suggests that, by directing new development to urban infill sites, municipalities can slash new emissions of CO₂—the primary culprit in global warming—by as much as fifty per cent.¹

The EPA's projections reflect, to a great extent, the tight interrelationship between land use and Vehicle Miles Traveled (VMT). Consider this: from 1982-1997, the Boston metro area population increased by seven per cent. Meanwhile, developed land increased forty seven per cent, and daily VMT, by nearly sixty per cent. This is the "business as usual" model of sprawl.

Creating higher population densities and transit accessibility are key to reversing the sprawl scenario. Directing development to infill can reduce additional VMT by nearly half. And locating housing near transit can significantly reduce the number of discrete short trips that residents make by car (which is important, since "cold starts" contribute disproportionately to GHG emissions).

Even where communities cannot implement a full vision of TOD, there is evidence that *modest* increases in density, coupled with improved access to transit and retail, can lead to significant savings in VMT. Moreover, by clustering

¹ U.S. Env'tl. Prot. Agency, *Our Built and Natural Environments: A Technical Review of the Interactions Between Land Use, Transportation, and Environmental Policy*, 46, EPA 231-R-01-002 (Jan. 2001), available at <http://www.epa.gov/smartgrowth/pdf/built.pdf> (citing E. Allen, et al., *The Impacts of Infill vs. Greenfield Development: A Comparative Case Study Analysis* (Sept. 2, 1999)).

development strategically, growing localities position themselves for future service by rail or bus rapid transit (BRT), becoming “transit ready.” Clustering can also protect densely vegetated areas that sequester carbon emissions.

By incorporating sustainable building requirements into building codes and land use regulations, communities can greatly magnify the positive effects of TOD or TED.² The building sector accounts for 70% of electricity use, and upwards of 40% of greenhouse gas emissions. Meanwhile, the average “green building,” as measured by LEED™ standards, cuts energy use by nearly a third, producing 35% fewer carbon emissions.

This is not to suggest that TOD or TED are guaranteed panaceas. Critics raise the specter of TOD communities where vehicular traffic has either decreased marginally, or actually increased.³ And there are instances where TOD has led to other planning headaches, such as inadequate school facilities.⁴

However, one thing is certain: sprawling communities are auto dependent, whereas denser communities offer the hope of increased transit ridership. This may be the moment to endorse transit oriented planning, to build on the powerful examples have emerged, and lay the framework for heightened state and federal support.

Putting TOD to Work

Rosslyn-Ballston Corridor, Arlington County, Va.

One venerable example of use of TOD to reshape an entire metropolitan region is the Rosslyn-Ballston Corridor in Arlington County Virginia.⁵ Arlington was one of first municipalities to recognize that it could leverage public transit in service of revitalization. Its early and crucial victory in this effort was to secure the promise of an underground metrorail line along Wilson Boulevard, the area’s main commercial corridor. This was a far more costly option than the grade-level

² Anthony S. Guardino, *Green Revolution: New Local Regulations Address Global Warming*, N.Y.LJ., Aug. 25, 2007.

³ Editorial: *Smart Growth? Wise Up*, L.A. TIMES, July 11, 2007, available at <http://www.latimes.com/news/opinion/la-ed-smartgrowth11jul11,0,5881270.story?coll=la-opinion-leftrail>.

⁴ See Ken Belson, *In Success of ‘Smart Growth, New Jersey Town Feels Strain*, N.Y. TIMES, Apr. 9, 2007, at B1.

⁵ The case description that follows draws primarily on Dennis Leach, *The Arlington County Case Study: Rosslyn-Ballston Corridor*, in THE NEW TRANSIT TOWN: BEST PRACTICES IN TRANSIT-ORIENTED DEVELOPMENT, 132-153 (Hank Dittmar & Gloria Ohland, eds., 2004).

line being contemplated to run along Interstate 66 through low-density neighborhoods. But the Wilson Boulevard route offered far more development potential, providing the backbone for an aggressive, transit-oriented redevelopment campaign that Arlington has implemented with consistency over nearly four decades.

Arlington authorities use zoning to ensure that high impact development clusters around transit stations, tapering off in height toward neighborhoods dominated by one- and two-family homes. This “bullseye planning” technique preserves a balance of densities and streetscapes. Authorities also use zoning to promote a thoroughgoing mix of uses within high density areas. For instance, in the 1980’s, developers focused on office space rather than residences. The County responded by enacting special zoning districts that required developers to build residential space as a *precondition* to erecting office space at maximum densities. Throughout the corridor, authorities use site plan review to promote connections to walking and biking paths.

The 2000 US Census Journey to Work survey indicates that more than 47 percent of residents along the Rosslyn-Ballston corridor get to work without a car. Better yet, the majority of metrorail passengers reach transit stations on foot or by bus. The corridor evidences the highest use of public transit (and lower ownership of cars) than anywhere in the metropolitan region, save for the District of Columbia itself.

Hudson-Bergen Line

A similar example has been unfolding in our own region, along the Hudson-Bergen light rail line in New Jersey.⁶ Although the project is less far along than Arlington County’s, the Hudson-Bergen corridor evinces high transit ridership to work (upwards of 60% at two stations). Regional authorities have boosted the transit friendliness of their projects by, among other things, imposing strict limits on the production of new parking. New surface parking lots are forbidden; parking spots associated with new construction have to sit within the footprint of the building (through on-street parking, a parking structure, or underground facilities). Parking requirements, meanwhile, are far lower than average: 1 space for every residential unit and .67 spaces for every 1,000 feet of office space.

Planners of the Hudson-Bergen line have also managed to forge partnerships with a variety of developers for a distinctive mix of projects. The

⁶ The following description draws heavily on Dr. Jan S. Wells & Martin Robins, *Hudson Bergen Light Rail Line Case Study, in Communicating the Benefits of TOD*, Report Prepared for U.S. Env’tl. Prot. Agency (Cali Gorewitz & Gloria Ohland, eds., 2006), available at http://www.policy.rutgers.edu/vtc/tod/Communicating_Benefits_TOD.pdf.

Harborside Financial Center--which was one of the first mixed-use projects along the corridor—offers a traditional “high end,” redevelopment, with office buildings, luxury apartments, and a Hyatt Regency hotel. (Residents can reach downtown Manhattan in minutes by car or PATH train.) Meanwhile, developers of the Monroe Center in Hoboken have committed to an arts-forward vision, reworking a Levelor Blinds factory into studio spaces for artists and small-scale entrepreneurs. Designs for an adjacent residential complex feature a fixed percent of moderately-priced residences that will be offered to artists before being opened to the general public.

State Level Help

Municipalities feature prominently in redevelopment stories like this, and it takes community backing and political will to get the job done. But the state can be an equally critical actor.

One key contribution states can make is land. Traditional lenders often shy away from TOD projects. (The mixed use aspect can make it harder for lenders to project financial returns; reduced parking requirements often run afoul of a lender’s own parking standards.) A TOD redevelopment in Morristown, N.J., for instance, actually originated with the New Jersey Transit authority, which realized it owned an underutilized parcel at the station. New Jersey Transit put out a call for proposals and worked with Morristown authorities to rezone the station lot for mixed-use development. New Jersey Transit continues to own the land, but Morristown controls the zoning of the site. Based on this initial project, the town has begun a transit-friendly rethinking of its space and recently re-zoned to encourage new, multi-family housing developments within walking distance of the station.

Often the states—via their Departments of Transportation or other authorities—help by taking on a coordinating or information gathering role. This can be critical given the many actors and levels of coordination involved in successful transit oriented planning. Caltrans, for instance, maintains an on-line TOD database with detailed data on implementation strategies and case studies. For communities that are further along in planning and implementation New Jersey offers the inter-agency Jersey Transit Village Initiative. Once a municipality gains Transit Village designation, it is able to access technical assistance and priority funding from participating agencies. Designated transit villages also receive help in coordinating development plans with a host of state agencies—from NJDOT to the Council on the Arts.

States, of course, can also legislate directly in service of TOD and/or TED. Enabling legislation ensures that municipalities are free to create transit overlays with lowered parking ratios, or to offer density bonuses in exchange for elaborate site plan requirements.

Transit-friendly legislation often extends beyond “pure” zoning provisions, however. In the case of the Hudson-Bergen line, e.g., project success depended on four discrete features of New Jersey law: the Local Redevelopment and Housing Law, which allows communities to bypass site review for redevelopment of targeted, underutilized lands; the Urban Enterprise Zones (UEZ) Act, which offers steep sales tax reductions to retail operations in UEZs; the Brownfield and Contaminated Site Act; and the New Jersey Payment in Lieu of Taxes (PILOT) program. Under PILOT, a developer can receive hefty property tax relief over a period of twenty to twenty five years, once it is designated as an urban renewal company undertaking a project in a UEZ or Redevelopment Zone.

Looking forward, comprehensive, state-level global warming legislation may offer the best support for transit oriented planning. Recently, California announced the Global Warming Response Act, which caps the state’s GHG emissions at 1990 levels by 2020 and to 80% below 1990 levels by 2050. (New Jersey and Hawaii are the only two states to have enacted similar legislation.) The statute does not specify sources of reduction, leaving this to the California Air Resources Board. But in strategy reports, the state’s Climate Action Team has made clear that Smart Growth should contribute nearly 13% of the targeted reductions (27 million metric tons from a total of 217). Legislation like this sets the framework for systemic change, linking transit to building efficiency and to the development of new energy sources. Equally important, by setting a long horizon for change, comprehensive climate change legislation can help to ensure that zoning and planning successes are properly maintained, expanded, and strengthened.

The Federal Level

For practical reasons, land use planning among localities in a transportation region must be coordinated with transportation infrastructure planning and development. These are reciprocal processes. The economics of transit station development and rail and bus lines are dependent upon land use densities; there must be a sufficient number of commuters in a relevant group of adjacent communities to provide a minimal level of ridership throughout the area served by a transit system. Meanwhile, local land use plans and zoning determine how much population can be absorbed over time, which, in turn, shapes demand for transportation services. Transit lines for rail and BRT services cannot be planned in isolation, station-by-station. And where transit service is not feasible, other modes of transportation must be planned.

This is one key place the fed government comes in. Under federal law, transportation funds appropriated by Congress must be spent in accordance with Transportation Improvement Plans created by Metropolitan Transportation Organizations organized at the regional level in metropolitan areas and with State Transportation Improvement Plans developed by state transportation departments. 49 U.S.C.A. sec. 5303 requires MPOs to conduct planning

processes that "provide for consideration of projects and strategies that will...(E) protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and *local planned growth and economic development patterns* (emphasis added)." This same language is made applicable to statewide transportation planning and programming in 23 U.S.C.A. sec. 135, which requires each state to carry out a statewide transportation planning process that achieves these same objectives.

Conclusion

The most recent United States Climate Action Report prepared by the U.S. Department of State notes that "the number of miles driven is another major factor affecting energy use in the highway sector. From 1997 to 2003, ...the total number of vehicle kilometers traveled increased by 16 percent." [footnote: Fourth Climate Action Report to the UN Framework Convention on Climate Change, U.S. Department of State, <http://www.state.gov/g/oes/rls/rpts/car/>] The report states that passenger cars account for over one-third of all the energy consumed in the transportation sector, which "accounts for nearly 28 percent of total U.S. energy demand and approximately one third of GHG emissions from fossil fuels." Our series of articles demonstrates that transit oriented and transportation efficient development can reduce car trips and vehicle miles traveled considerably. The report agrees. It states that the basic factors affecting energy demand in the transportation sector are "increasingly decentralized land-use patterns, population growth, and economic expansion...." TOD and TED, which are clustered approaches to human settlement, must become essential ingredients in any national, state, or local effort to accommodate population and expand the economic base.