

## 5. Transit Oriented Development

### DETAILED TECHNICAL ANALYSIS

**CASE STUDY**  
Downtown Bellevue,  
Washington  
see Section 5.8

**MODEL ORDINANCE**  
see Section 5.9

Transit is an important component of life in any metropolitan region. In the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, major cities like New York City, Boston, and Chicago were built up around multi-modal transit systems that included railroads, subways, and streetcars. Compact, mixed-use development goes hand-in-hand with transit systems, because they both serve pedestrians and reduce auto-dependency. To this day, people living in those cities rely on transit as a convenient means of getting to work and even for reaching shopping, school, and entertainment destinations.

By the 1890's, Hartford had an extensive and excellent system of streetcars and rail service. At first, Hartford residents were loyal to public transportation and were reluctant to accept the automobile despite the fact that the American automobile industry got its start there.<sup>1</sup> Nevertheless, interest in the automobile grew as its functionality improved and as more affordable models became available. People quickly discovered that the automobile was well-suited to travel in the low-density towns and agricultural areas surrounding Hartford. By 1930, automobiles had replaced the streetcar system as the dominant mode of transportation, and development patterns had started to follow an auto-oriented pattern. In the 1970s, the problems associated with auto-oriented development — traffic congestion, suburban sprawl, downtown decay — generated new interest in Transit Oriented Development (TOD).

Some smaller-sized cities have made remarkable progress in the area of TOD in recent years. In the 1970s, Portland, Oregon embarked upon a strategy to counter the forces of suburban sprawl, investing heavily in the transit system and focusing high-density development in the downtown area and around light-rail stations and bus routes. As a result, Portland has become one of the most transit-friendly cities in the country. The downtown is a vibrant commercial center, and the city is becoming a popular tourist destination.

In the Hartford region, buses carry many workers to their jobs, and many city and some suburban residents use the bus system in off-peak hours for a variety of other trips. Since 1997, ridership in the capital region has been on an upward trend, even though most routes follow older development patterns. CRCOG completed a Regional Transit Strategy in 2001 and is certain that there is unmet transit need in the region that can be tapped, especially if transit operations better reflect current development patterns.

With the planned development of the New Britain/Hartford busway<sup>2</sup>, there is an opportunity to use the new transit line as a framework for TOD. The busway stops, where pedestrians would

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<sup>1</sup> Weaver, Glen. *Hartford: An Illustrated History of Connecticut's Capital*. Hartford: Windsor Publications, 1982. Albert Pope started the Pope Manufacturing Company in Hartford in 1890, and in 1895, Pope and his colleagues produced their first gasoline-powered automobile, the "Pope Hartford". By 1897, Pope unwisely shifted his focus from gasoline to electric automobiles, and Detroit soon took over Hartford's role as the center of gasoline-powered automobile production in the U.S.

<sup>2</sup> A "busway" is defined as a type of express bus system that functions similar to a light rail system. It follows a fixed, exclusive guideway that is not accessible to other vehicles. The busway vehicles are

be boarding and alighting buses, could be surrounded with compact, mixed-use, pedestrian-friendly villages, townhouse neighborhoods, or office clusters. Although such development would not eliminate the need for cars in the Hartford region, it would increase the opportunity and the feasibility of taking transit for some people, particularly for the commute to work, and thus reduce today's dependency on the automobile.

A theoretical example of how development patterns could be restructured — from an auto-oriented to a transit-oriented format — is shown on page 5-3. As diagram suggests, many transit systems are designed in a "park-and-ride" format, where a transit line is superimposed upon a predominantly auto-oriented development. Although the park-and-ride format is an improvement on the auto-oriented environment, the transit-oriented option is even better. In the latter, use, development, and street patterns are actually re-organized in order to encourage walking to and from the station. The station area is not just a parking lot, but an activity center and neighborhood node. Emphasis is placed on architectural detailing and facades, streetscape amenities, landscaping, and parks (in the diagram of TOD, the stream corridor is turned into a linear park) to create a sense of place and high quality of life.

## **5.1 SMART GROWTH REGULATIONS AND INCENTIVES**

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Between 1970 and 2000, new regional rail systems were built in San Francisco, Washington D.C., and Atlanta. New light rail investments were developed in San Jose, Los Angeles, Dallas, Seattle, Boston, St. Paul, Portland (Oregon) and other cities. Busway systems were established in Pittsburgh, Miami, Seattle, and Ottawa (Canada). When the transit "renaissance" started, it was widely believed that transit in and of itself would shape development patterns. Just as property values around new highway interchanges tend to increase, it was thought that the land values around transit stations would increase, attracting high-density housing, offices, and hotels.

As it turned out, this did not happen. Residential property values around transit stations increased only in metropolitan areas with very high residential and employment densities, well-developed transit systems, and an established pattern of compact, pedestrian-oriented development. Non-residential property values increased primarily around downtown transit stations. Some suburban commercial nodes near transit stations experienced increases in land values, if they were located in regions with very extensive rail networks and a transit agency with a proactive real estate arm (i.e., Washington D.C.). In many regions, however, proximity to suburban transit stations had little or no impact on land values.<sup>3</sup> In Atlanta, downtown rezoning encouraged new office development around the central city MARTA stations, but rail stations outside downtown (the West End, Ashby, Vine City, Garnett Street stations) attracted little growth.<sup>4</sup>

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rubber-tire, like a car, not rail. Busway stations are in fixed locations that are more widely spaced than on-street bus stops, and buses would run on a more frequent schedule than local buses, more akin to a rail system, such as a subway or light rail.

<sup>3</sup> Federal Transit Administration, Transit Cooperative Research Program, TCRP Report 16: Transit and Urban Form, vol. 1. Washington D.C.: National Academy Press, 1996, pp. 26-28.

<sup>4</sup> Bert Roughton, Jr. "MARTA: So Far So Good," *Planning*, vol. 55, no. 4, April 1989, pp. 14-18.

Diagram

Although transit does not unilaterally redefine market and development patterns, it can serve as a framework for new and clustered development *when coordinated with TOD planning and zoning techniques*. Transit serves pedestrians. If the areas around the station are zoned for higher-density, mixed-use, pedestrian-friendly development, then those pedestrians can be enticed to walk from the transit station to their destination or from their point of origin to the station. The plan for TOD would:

- Provide real alternatives to driving and reduce auto-dependency;
- Create higher-density living environments in proximity to city amenities (often sought out by young professionals, students, downtown workers, and senior citizens).
- Generate pedestrian activity that can support retail stores; and
- Create opportunities for infill development and redevelopment in underutilized areas.
- Generate more market support for higher-density housing, in part by reducing auto-dependency for commuters.

Much of the literature on TOD has focused on rail systems. However, many of the principles of rail-oriented planning also apply to bus routes and stops. Mixed-use, high-density, and pedestrian-oriented design can promote bus ridership in an urban setting. The main difference between rail and bus is that rail-oriented planning can only be focused at rail stations, whereas bus-oriented planning can be applied along entire corridors. However, a busway — with a dedicated right-of-way and fixed stops — would function more like a rail transit system than a conventional bus system.

The New Britain/Hartford busway will run from downtown Hartford along the Amtrak right-of-way, running just through or near the Asylum Hill and the Parkville neighborhoods of Hartford, the Elmwood section of West Hartford, the northwestern areas of Newington, and into downtown New Britain. Following this path, the busway will cut through extremely different neighborhoods, built with a wide range of land uses and densities. Nearly all areas along the planned New Britain/Hartford busway have already been developed, but there may be opportunities for infill development and intensification, through brownfield reclamation, development of vacant lots or parking lots, and/or redevelopment. In each community through which the busway runs, the character of TOD would have to be tailored to the local conditions.

## **MIXED-USE DEVELOPMENT**

One of the key principles of TOD is mixed-use development. Primary uses would typically be residential or office, with supporting uses including retail, restaurants, entertainment, and parks, as well as cultural, governmental, social and educational institutions. A great deal of attention should be given to these supporting uses because they shape the character and quality of life of a neighborhood, even though they are not necessarily the primary uses.

It should be noted that most shopping is done either at the beginning or end of a transit trip, when people are walking between the transit station and their destination. This suggests that people do some incidental shopping while walking between the transit stop and their destination (i.e., their home or office). By co-locating retail stores and bus stations, riders can stop by the grocery or drug store or pick up dinner on the way home; or they can grab a cup of coffee or drop off their dry cleaning on the way to work. If institutions and community

services are located near the station, parents can pick up their children from day care, buy stamps at the post office, or visit the library on their way home from the station.

Likewise, businesses benefit from greater visibility and foot traffic along the street. A location adjacent to a major transit stop can become a high-value retail site. Notable national examples include the Portland (Oregon) transit mall, Union Station in Washington D.C., and the recently renovated Grand Central Terminal in Manhattan. These are major transit centers that have also become lucrative shopping locales, not only for residents and workers, but also tourists.

## HIGHER INTENSITY

Concentrating housing development around transit stops and corridors allows residents to walk to the bus or the train. If their final destination is also located along the transit line, using transit can become particularly convenient and their preferred mode of travel. In compact cities like Boston, Chicago, and Philadelphia, people can easily circulate without a car. While Hartford does not have the very high densities of some larger cities, it does have a highly concentrated downtown office core and compact neighborhoods that can support frequent transit service. Someone living in one of Hartford's neighborhoods can easily walk to the corner and ride the bus to their office in downtown.

There has been a great deal of scholarly analysis of the relationship between density and transit. The relationship is dependent upon a variety of factors: city size, the type of transit system, parking availability, downtown employment density, and residential densities along a corridor and at transit stops. Studies done by Boris Pushkarev and Jeffrey Zupan in the 1970s made the findings listed below.<sup>5</sup> Although Pushkarev and Zupan did not specifically analyze busways, they did study local on-street bus services, express bus service, and light rail.

- Generally the absolute minimum average residential density required to support any form of regular on-street bus service (about one bus every half-hour) is about 7 units per acre.
- Express bus service (reached on foot; five buses during two-hour peak period; along a transit corridor that is 10 to 15 miles long) requires minimum average densities of about 15 units per acre. "Average" means that there might be pockets of higher- and lower-density development over a 2 square mile tributary area around a bus station.
- Express bus service (reached by car; five to ten buses during two-hour peak period; along a transit corridor that is 10 to 20 miles long) requires minimum average densities of about 3 units per acre. The "average" is calculated over a 20 square mile tributary area around a transit station. The larger tributary area reflects the fact that cars allow people to drive from farther distances to the station. Clearly, car access does allow lower average densities overall but it does little to reduce auto-dependency or to foster more sustainable development patterns in the long run.
- Light rail service (reached on foot or by car; about one train every 5 minutes during one-hour peak period) requires minimum average densities of about 9 units per acre.

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<sup>5</sup> Pushkarev, Boris; Jeffrey Zupan. "Where Transit Works: Urban Densities for Public Transportation," *Urban Transportation: Prospectives and Prospects*. 1982. Reprinted from *Regional Plan News*, no. 99 (New York: Regional Plan Association, 1976).

Here, the “average” is not for the station tributary area, but for the entire transit corridor, which may be 25 to 100 square miles in size.

As the stations along New Britain/Hartford busway will be primarily pedestrian-oriented and will have some of the characteristics of an express bus service, densities of 15 units per acre may be considered appropriate for busway station areas. However, the busway also has characteristics of a light rail system, suggesting that average corridor-wide densities should be about 9 units per acre. Since current densities along the busway corridor are generally much lower than 9 units per acre, densities around the transit stations should be much greater than 9 (and potentially greater than 15) in order to result in higher corridor-wide densities.

As these represent minimum densities, ridership levels in places with 7 to 15 units per acre on average tend to be relatively low and heavily concentrated during commute hours. As densities are increased, ridership increases. Notably, researchers have found that there are sharp increases (a tripling) in ridership as residential densities in areas well-served by transit approach 30 units per acre. In the downtown area, a minimum density of about 50 employees per acre is necessary to support regular transit service, and people do not switch from driving to transit until employment densities reach about 50 to 75 employees per acre.<sup>6</sup>

Although higher-density development is called for around transit stations, municipalities should also tailor densities to the surrounding context. In Hartford and New Britain, where there are already relatively compact densities of development, the intensity of new development should be designed to fit into the pattern of existing housing. A mix of multi-family apartments (10 to 40 units per acre), two- and three-family houses (up to 12 units per acre), and townhouses (up to 12 units per acre) might be appropriate. In West Hartford and Newington, existing residential densities are relatively low, and the busway provides an opportunity to create higher-density nodes that provide an alternative to conventional subdivisions. These nodes could include smaller lot sizes for single-family homes, townhouses with narrow or no setbacks, accessory units on single-family lots, and two- or three-family houses. Such development styles can result in higher densities of development (4 to 12 units per acre), while still fitting into a suburban neighborhood.

Higher-density development would primarily be implemented through rezoning. In addition, as discussed in the Bellevue, Washington example (see Section 5.8), density bonuses could be offered for projects located in proximity to transit stations or in exchange for pedestrian amenities or design features. As of May 2002, the City of Stamford's new Master Plan recommended the use of density bonuses to promote historic preservation and the provision of public amenities, like plazas.<sup>7</sup>

## **PEDESTRIAN-FRIENDLY DESIGN**

Sidewalk-oriented buildings, strong pedestrian linkages, and attractive streetscapes can enhance the area around transit stations and help link the transit station to the neighborhood. Signage, landscaping, benches, bike racks, and lighting can create a comfortable and safe

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<sup>6</sup> Marya Morris, *Planning Advisory Service Report Number 468: Creating Transit-Supportive Land-Use Regulations*, Chicago: American Planning Association, 1996, pp. 41-42.

<sup>7</sup> The Stamford Planning Board, The City Land Use Bureau, *Stamford Master Plan: Citywide Policies Report*, June 2002 Draft, Strategy D1.1, page 38.

environment for walking and biking. Keeping auto-oriented uses (like drive-through uses, gas stations, and auto repair shops) out of transit-intensive areas can also help preserve the transit-friendly environment and discourage car use near the transit station.

Shopping areas near the station, in particular, should be pedestrian-oriented in order to capture transit-based customers. Hartford already has such pedestrian-oriented streets throughout the city, particularly in the Parkville and Asylum Hill neighborhoods. While the shopping nodes in those neighborhood centers provide some parking, they have a traditional development style; they are built up to the sidewalk and have a sidewalk entrance; they are compact in size and built adjacent to other small shops; they have limited on-site parking. Transit station areas along the New Britain/Hartford busway should replicate this compact pattern of pedestrian-oriented shops. In Hoboken, NJ, the City has managed to save, revitalize, and extend the pattern of pedestrian-oriented shops along Washington Street, with a strong connection to the revitalized PATH station, which provides train service into Manhattan. In Stamford, all new development in the immediate vicinity of the Transportation Center must be designed to be pedestrian-friendly, with a mandate for ground-floor retail (according to the City's draft Master Plan).

By way of comparison, suburban-style commercial sites are usually set back from the street and have on-site parking. Suburban municipalities typically require one parking space for every 250 square feet of retail space. Each parking space, including circulation area, takes up about 380 square feet. To adequately serve an exclusively auto-based clientele, it is therefore necessary to devote at least *1.5 times* as much land area to parking as to the building, assuming one-story retail and surface parking. Some retailers seek to provide even more parking, in order to accommodate peak periods of demand (holiday weekends) or simply as a customer draw.

Towns along the busway should consider identifying a select area, within a quarter-mile to a half-mile radius of the transit station, where higher-density pedestrian-oriented housing, retail and other uses will be emphasized. A ¼-mile radius represents the distance and time that most people would be willing to walk to a transit station. Beyond the ¼-mile radius, pedestrian connections (sidewalks and crosswalks) should continue to be provided, but the basic pattern of development can revert to lower densities oriented primarily to the automobile.

## **5.2 COMPLEMENTARY ACTIONS**

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### **PARKING**

Plans for the busway already stipulate that commuter parking lots will not be provided around most of the bus stations, meaning that most will not serve as park-and-ride stops for commuting motorists. This is in part because the main premise of the busway is to re-route existing express bus service onto the busway utilizing remote park-and-ride lots that already exist. Also, most stations are located in or near neighborhoods with high residential populations that can walk to the station. The New Britain downtown station is partially intended to function as a commuter station, as a currently underutilized parking garage adjacent to the station will be used for commuter parking. However, the downtown setting is also conducive to pedestrian access.

Limited parking in the station area can be conducive to the use of the busway system, both in downtown and outside downtown. In downtown, excessive parking at an office or commercial site would encourage commuters to drive rather than ride the bus. Studies have shown that the availability or lack of parking in a destination is one of the major determining factors of whether people in urban areas are willing to drive. If free parking is not readily available in the destination area, people are much more likely to use transit.<sup>8</sup> Thus, parking maximums should be established for the core areas around the downtown busway stations.

Around non-downtown stations, office or commercial development projects should similarly avoid having large parking lots. If there is significant commuter demand at the station, there would be pressure upon the office/commercial property owner to dedicate portions of their parking lots as park-and-ride facilities. Also, as land is turned over to parking, the station area will become that much less pleasant for pedestrians.

Station-area planning conducted along Washington D.C. Metro lines has included parking limitations. At the West Hyattsville station in suburban Prince George's County, Maryland (just beyond the D.C. border), *maximum* parking ratios are imposed within a ½-mile of the station. Office development is limited to 2.0 spaces per 1,000 square feet, and residential development is limited to 1.1 spaces per 1,000 square feet. Although other areas in West Hyattsville are also subject to parking caps, the limits within the half-mile station area are more stringent, allowing less than half the number of spaces permitted outside the station area. The City of Stamford, as part of its Master Plan, is considering similar caps, with the proviso that developers may provide additional parking only as part of a shared parking program.

While excessive parking should be avoided (through parking caps), adequate parking needs to be provided for people living in station areas. Because the Hartford region is predominantly auto-oriented, most households will need at least one car for non-work trips (i.e., shopping trips, social trips), even if they take the bus to work. The busway will not completely replace the car for any household, but the presence of the busway — combined with parking caps — may allow some households to forgo the expense of buying the second car that they otherwise could not live without. In terms of zoning requirements, it may still be necessary to require at least one parking space for each dwelling unit in a station area, but requirements would not need to be any greater.

If commuter parking is built in conjunction with the busway, then the parking lots should be located and designed in such a way as to be pedestrian friendly and integrated with the neighborhood. A large parking lot should not surround the bus station, as it would act as a physical barrier between the station and the neighborhood. Instead, the commuter parking lots should be placed on the outskirts of the TOD neighborhood. That way, commuters would walk through the neighborhood streets and would have the opportunity to patronize local shops on their way to and from the station. Also, rather than one large parking lot, smaller, dispersed parking lots should be used, such that empty expanses of asphalt are avoided. Such smaller dispersed lots could more easily be shared with local businesses and residents as well.

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<sup>8</sup> Transportation Research Board, Transit Cooperative Research Program, *TCRP Report 40: Strategies to Attract Auto Users to Public Transportation*, Washington D.C.: National Academy Press, 1998, pp. 35-36.

## **COORDINATION WITH OUTLYING NEIGHBORHOODS**

As an older city, Hartford is almost fully built out. Many neighborhoods predate the 1920s, when automobiles became affordable to the majority of the population. These neighborhoods were built for pedestrian and transit access, and they continue to support walking and bus operations. Even though some areas of Hartford have detached single-family houses, like the suburbs, these turn-of-the-century neighborhoods still have higher densities than post-war suburban neighborhoods. Also, many of the major corridors in Hartford, like Farmington Avenue and Park Street, are lined with multi-story apartment buildings and two- to six-family homes. Many neighborhoods have traditional neighborhood shopping areas and corner stores that can be reached on foot.

Aside from being transit-friendly, Hartford's traditional neighborhoods are a great character asset for the city and the region. Victorian-era neighborhoods throughout the country (as in San Francisco, St. Paul, Boston, and Providence) have experienced a resurgence in popularity in recent decades. Even in suburban areas, neo-traditional development projects (such as Kentlands, Maryland and Celebration, Florida) have tried to replicate turn-of-the-century architectural styles. To the greatest extent possible, any new TOD should not damage the unique character and scale of these neighborhoods; in fact, they should build off of those design features.

Much of the New Britain/Hartford busway is being built through former industrial areas next to I-84, and therefore, most new station-area development would not occur within existing neighborhoods, but on brownfield industrial sites. However, development around new stations would potentially butt up against older neighborhoods. Because existing neighborhoods are already well-suited for transit, TOD projects should provide connections between the station and existing neighborhoods. In addition, to the greatest extent possible, new development in the station area should be compatible with the character, scale, and land use mix of those existing neighborhoods, providing a seamless connection.

## **PARKS**

One of the biggest attractions of suburban or rural living is open space. In the Hartford region, outlying towns offer wide expanses of woodland and farmland, and new subdivisions offer large private yards, sometimes in excess of two acres in size. In more densely developed suburban and urban areas, residences have smaller yards, if any at all. In downtown locations, a balcony, terrace, or roof garden may serve a resident's private open space. Consequently, the need for public park space is even greater, because residents are more reliant on public parks for open space.

Any contemplation of higher-density development around transit stations should include consideration of new or expanded park development. Parks could be added either inside or outside the 1/4-mile boundary, although park development within the 1/4-mile should be balanced with the need for higher density development in that area. Although the creation of public parks potentially results in the removal of tax lots from the property tax rolls, the properties in the vicinity of a park experience increases in land values — and increasing property tax revenues — that can make up for the loss. Not only would these parks serve the workers and residents in the TOD zone, but they would add to the character, popularity, and

marketability of those places. Parks are popular amenities, and sites adjacent to parks often sell at a premium.

## **PLACE-MAKING**

Building on the idea of making station areas friendly for pedestrians, the areas around the transit stops could be transformed into a neighborhood's "living room." Public plazas, pedestrian malls, outdoor markets, decorative gardens, or other public amenities can provide places for relaxation or congregation. Such public spaces should be strongly connected with the transit station itself and any nearby shopping areas, which would also tend to attract pedestrian activity. Such places can shape the character of a neighborhood, helping to attract investors, residents, workers, and customers.

Vice-versa, transit can reinforce public spaces and institutions that serve as focal points for community life. In some cases, transit not only brings people into a neighborhood, but the visual presence of transit and the bustle of trains and buses can contribute to the urban ambiance. The presence of the MAX line is a key component of Portland's Pioneer Square. Antique cable cars (1880's era) and electric streetcars (1930's era) help create a festive environment along Market and Powell Streets in downtown San Francisco. NJ Transit has retained Project for Public Spaces — a not-for-profit that specializes in placemaking — to design and help implement such amenities for a wide variety of train stations throughout New Jersey.

## **5.3 FISCAL AND ECONOMIC IMPACTS**

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### **HIGH-DENSITY DEVELOPMENT**

As already discussed, the construction of a transit station does not increase the surrounding land values in and of itself. It is also unclear how land values would be impacted by the rezoning of a property for TOD. Any increase in the permissible development intensity would tend to increase the value of the land, reaping positive economic gains on those landowners. Given the current preference for auto-oriented development, any zoning provision that limits parking could erase some of those gains in the short term, but if a station area is well-designed, the diminished auto access will be more than compensated for by the improved pedestrian access. In the long run, property values may be just as high — if not higher — for the pedestrian-oriented zones.

Also, any additional land value afforded to the property owner on account of high-density zoning may only be theoretical, if the real estate market is not able to support or absorb higher-density residential development. If there is little or no demand for high-density office or residential development around a transit station, then any increase in the property value may only increase the owner's tax obligation. This is an issue in Hartford, because the city did not benefit much from the economic boom of the late 1990's and continued to lose population over the course of the decade. According to the U.S. Census, the City of Hartford had a population of 139,700 in 1990 and a population of 124,121 in 2000.

Municipalities along the New Britain/Hartford busway and any future busway lines should be careful not to over-zone areas around the transit stations. Densities should be high enough to support transit activity and create a sense of neighborhood, but densities should also be

consistent with the character of the surrounding neighborhoods. Even if a station area becomes a popular place to live or work, it may be preferable to set the maximum allowable density in the immediate station area below the market demand, so that prospective residents and businesses spill over into adjacent areas. In this way, the TOD project(s) bolster — instead of competing with — adjacent neighborhoods.

### **MIXED USE**

A mix of uses — by creating a vibrant and interesting urban neighborhood — could actually help create a high-value node of development. Allowing a mix of uses would not be expected to have any negative impact on property values, as long as zoning provisions help avoid conflicts between incompatible uses. Uses that are incompatible with residential uses, such as heavy industrial uses and auto-oriented uses, should be prohibited in the transit station area. Artisan shops, outdoor storage yards, contractor's offices, parking (as a principal use), and large shopping centers should also be excluded, but artist lofts, small retail stores, and restaurants would be appropriate and should be permitted.

### **PEDESTRIAN-ORIENTED DEVELOPMENT**

There is often the perception among developers and political leaders that auto-oriented development is the *only* type of development that can be marketable. While there will always be a place in the real estate market for auto-oriented development, there is nothing to lose and much to gain from promoting pedestrian-oriented development in the vicinity of a pedestrian-intensive node like a transit station. There has been an increasing demand nationwide for compact residential and commercial environments where people have the option to walk. Pedestrian-oriented centers throughout the country are some of the most popular and economically viable places for living, working, and shopping.

Some of the best examples of successful pedestrian-oriented development are found in the Portland, Oregon metropolitan area. In Portland's Lloyd District, located east of downtown, Local Improvement Districts were established to coordinate and pay for pedestrian improvements, and zoning provisions required buildings to be built in a pedestrian-oriented format. In coordination with transit planning, high-density development, and mixed land uses, the pedestrian-oriented format helped make the Lloyd District a popular new destination next to downtown.

## **5.4 IMPLEMENTATION STRATEGIES**

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### **REGIONAL STEWARDSHIP<sup>9</sup>**

In one scenario, TOD can be planned and implemented by a single regional agency that has regulatory authority over both land use and transportation. The success of TOD in Portland, Oregon can largely be credited to Metro, the metropolitan area's directly elected regional

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<sup>9</sup> See companion document *A Region in Balance: Building Livable Communities* for a more complete discussion of the role that regional stewardship can play in development and conservation in the Hartford region.

government that spans 3 counties and 24 cities. Metro not only has the authority to undertake land use planning, but also serves as the regional Metropolitan Planning Organization (MPO), which is responsible for developing regional transportation plans, prioritizing capital improvements, and distributing federal funding for transportation projects. Through these consolidated functions, Metro is able to closely coordinate land use and transportation planning and has a section of its planning department dedicated entirely to TOD.<sup>10</sup>

In the Hartford region, planning powers are divided between many different agencies. Local governments retain virtually all decision-making authority over land use planning. The Capitol Regional Council of Governments (CRCOG) serves as the MPO for the Hartford region. The Connecticut Department of Transportation (ConnDOT) is responsible for planning and implementing transportation projects throughout the State and is building the New Britain/Hartford busway. CT Transit is the operator of bus service in the Hartford region. The Greater Hartford Transit District (GHTD) plays a role in transit planning and supervising paratransit services in the Hartford region.

Aside from creating a regional governing body, there are several other ways to improve regional coordination of transportation and land use planning. As an MPO, CRCOG (through its Transportation Committee and Policy Board) makes policy decisions about transportation planning for the entire Hartford region and decides how federal transportation funds are used. However, CRCOG has no decision-making authority relative to the expenditure of State transportation funding, particularly the State's \$0.25 per gallon gasoline tax.<sup>11</sup> This may be something to further examine.

At the same time, ConnDOT — as the entity developing the New Britain/Hartford busway project — should have the ability to undertake joint development with municipalities and/or private developers along the busway route. The ability to sell off the air rights over stations or to develop property left over from the busway project would help sow the seeds of TOD.

## PLANNING AND ZONING

The most successful TOD initiatives have undertaken long-range planning for station areas. Such an approach allows the municipality to plan for land use, development intensity, circulation, parking, and building design in a comprehensive manner, taking into account existing development, natural resources, and community amenities. It can also provide a framework for considering municipal-led redevelopment initiatives and public works investments.

One of the most successful station-area plans was completed for downtown Bethesda, Maryland, in the Washington D.C. metropolitan area. The 1976 *Bethesda Central Business District Sector Plan* reconsidered allowable building intensities, parking, and connections to adjacent residential neighborhoods in light of the newly-developed Metro station. Interestingly, whereas TOD often involves attracting higher-density development, Bethesda's *Sector Plan* actually resulted in a reduction of allowable densities from an FAR of 14.0 to

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<sup>10</sup> Metro, <[www.metro-region.org](http://www.metro-region.org)>, visited March 13, 2002.

<sup>11</sup> Connecticut Department of Transportation, Bureau of Finance and Administration, Special Transportation Fund Overview, FY85 — FY2001, <[www.dot.state.ct.us/bureau/fa/Financial/index.html](http://www.dot.state.ct.us/bureau/fa/Financial/index.html)>, visited March 13, 2002.

FARs of 4.0 and 5.0. This recommendation was implemented in order to encourage a better fit between new development in the station area with the surrounding low-density residential areas. In addition, the revised intensities were more reflective of dominant market trends at the time for suburban office development.

Another notable station-area planning effort was undertaken in the City of Hayward, California in the San Francisco Bay Area. In 1992, the City commissioned the *Core Area Plan* for the area around the Hayward BART Station. The plan called for a mix of townhouses, shops, and a series of public spaces and parks linking the station to the municipal complex and Hayward's historic downtown, which had been suffering from disinvestment for many years. The plan also included redevelopment plans for portions of the station area and a phasing strategy for development. The 1992 plan provided a framework for the rapid growth that ended up occurring in the mid- to late-1990's, when Silicon Valley's explosive economic growth created a regional development boom and housing shortage. Several hundred housing units were built in the station area in the mid-1990's. They sold quickly upon being put up for sale and have been in high demand ever since.

It is critical that such station area plans be translated into concrete zoning regulations and guidelines. While direct public investments — as in Hayward — can be extremely effective in creating a TOD environment, zoning regulates all private-sector development. The zoning in the station area must be supportive of transit, so that the resulting densities, mix of uses, and pedestrian amenities are appropriate.

In the Hartford region, one way to encourage local government to undertake TOD is to require consistency with the *State Plan of Conservation and Development*, which supports the concept of TOD. Transportation Policy B2 calls upon the State to "promote land use policies ... with energy-efficient aspects of density, uses, location, and design that foster State identified transit alternatives." The policy goes on to say that the State shall "encourage regional and local plans and state projects to promote intensive land uses near bus and rail stations and along existing and proposed transportation corridors."<sup>12</sup> Currently, local plans are only required to "take into account" the State plan and to "note any inconsistencies it shall have with said state plan" (Conn. Gen. Stat. § 8-23). A consistency requirement would require towns to explore, plan for, and promote TOD through their zoning regulations. This would not prevent towns from engaging in auto-oriented development, but it would encourage TOD strategies in areas where transit facilities and services exist or are being planned.

Another option is to require consistency with CRCOG's *Regional Plan of Conservation and Development*. Because CRCOG is operated by the elected officials of its member organizations, any such plan reflects the negotiated needs and wants of those communities. Whereas the State plan is a reflection of the State's goals, this regional plan may more closely reflect the challenges faced by towns in the Hartford region.

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<sup>12</sup> State of Connecticut, Office of Policy Management, Conservation and Development Policies Plan, 1998-2003, <[www.opm.state.ct.us/pdpd3/physical/C&DPlan/C&DIntro.htm](http://www.opm.state.ct.us/pdpd3/physical/C&DPlan/C&DIntro.htm)>, visited March 13, 2002.

## **PUBLIC INVESTMENT**

The focus of the Hayward *Core Area Plan* was to coordinate an initiative for public investment, spearheaded by Hayward's Redevelopment Agency. This large, concerted public investment helped make the Hayward plan a success. Public agencies elsewhere have helped promote station area development by building office space or other facilities in those locations. One of the best examples was the federal government's construction of the offices of National Oceanic and Atmospheric Administration near D.C. Metro's Silver Spring, Maryland station area.

More modest public initiatives, working through private investors or a public-private partnership, can be effective as well. For example, public investments in the form of roadway or streetscape improvements and brownfield clean-up efforts can help spark investment in station-area sites. In economically disadvantaged areas, TOD projects may be eligible for CDBG funding. Station-area planning and improvements along the new Los Angeles metro line, for example, has made extensive use of federal, state, and local funding sources. Because the light rail line was built through ailing industrial and commercial areas, the City sought to provide investors with incentives for developing in the station areas by securing these matching funding sources.

Joint development (that is, "joint" public-private partnerships) can also be effective in encouraging TOD. The public entity in a joint development partnership typically refers to the transit agency, rather than the municipal government. The Washington D.C. Metropolitan Area Transit Authority (WMATA) is a national leader in joint development efforts. WMATA offers "system interface" between stations and adjacent projects, in the form of direct pedestrian passageways, elevator connections, or other linkages. The agency also disposes of excess property, including air rights, at or near a station or development, and it conducts preliminary market studies at their station sites in order to determine development feasibility. This "set-up" work helps entice developers by proving the viability of the project and eliminating the need for an initial investigation on the part of the developer.

A "demonstration" project can also be a useful way for a public entity to build confidence in a joint public-private partnership. When WMATA first established its system interface program, it started with a relatively simple project that linked a downtown shopping center into an underground station. WMATA worked to publicize the project and its merits to generate interest in other, similar projects. The demonstration project was extremely effective in building WMATA's reputation as a player in the real estate market and creating interest in joint development ventures.

## **OUTREACH AND EDUCATION**

One of the biggest impediments to TOD to overcome is to reduce resistance from political leaders, developers, or residents who may be skeptical of its benefits or effectiveness. As discussed in Chapter 4, in the context of Village Development, the success of TOD initiatives relies partly upon an effective outreach program, which needs to allay fears of urbanization and, at the same time, illustrate the market vitality of TOD.

## **5.5 IMPLICATIONS AND RECOMMENDATIONS**

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### **STATION AREA PLANNING**

Implementation of TOD in the Hartford region would entail a multi-step process in each municipality along the New Britain/Hartford busway (or any future busway or rail line). The first critical step, as discussed in the previous section, is to undertake a station area planning effort that involves key stakeholders (residents, business leaders, property owners, transit riders, transit officials, etc.) and ultimately results in the amendment of the municipality's comprehensive plan and land use regulations. The plan must address land use, intensity, parks and open space, pedestrian and automobile circulation, place-making, and architectural design.

This step is critical because it involves creating an entirely new vision for a portion of the municipality or town, based on the TOD model. In conducting a public outreach process, it is not enough to solicit public opinion (through surveys or focus groups), but to educate the public about the merits of TOD (through presentations and discussions of model projects). Also, because a station-area plan is site specific, unlike a townwide comprehensive plan, stakeholders can become involved in the design process through charettes. In such charrette settings, meeting participants can work in groups to brainstorm and sketch out ideas for the station area. This process, in addition to eliciting valuable ideas, helps capture the imagination of the people involved, allay fears of excessive or unmarketable development, and build popular support for the TOD initiative.

### **USE OF PUBLIC FUNDING**

A redevelopment authority can be used to great effect in the replanning of station areas. Redevelopment can help eliminate abandoned or dilapidate properties, consolidate properties into larger development parcels, and serve as a catalyst to private-sector investment. Based on State statutes, Connecticut cities and towns have many different redevelopment strategies available, any of which could be applied to areas around a transit station. These options include establishment of a Redevelopment Agency (and related implementation of a Redevelopment Plan or Urban Renewal Plan), a Neighborhood Revitalization Zone, and an Urban Rehabilitation Agency.<sup>13</sup> Currently, these agencies, when established, have considerable authority to develop and implement plans for acquiring, obtaining, and redeveloping property.

Redevelopment may be appropriate in some of the busway station areas, particularly those located in abandoned industrial areas. At the same time, plans should be developed in such a way that they observe the principals of TOD and help integrate new and existing development. CRCOG should work with the State to update legislation for Redevelopment Agencies, Neighborhood Revitalization Zones, and Urban Rehabilitation Agencies, requiring that plans developed by these agencies be sensitive to the uses, densities, and character of the surrounding areas. Also, additional requirements should be imposed in transit station areas, such that redevelopment plans are required to make use of TOD techniques for mixed use, high-density, and pedestrian-oriented development.

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<sup>13</sup> Connecticut General Statutes, Chapters 103a, 118, 130, and 137.

One of the common mistakes made with TOD is that the municipalities over-invest in streetscape improvements and amenities before developing a long-range plan for the station areas. The result is that the amenities are ripped out later to accommodate new development, or the streetscape amenities are overly elaborate for the housing or retail market. There is often the misperception that pedestrian improvements alone will be enough to attract pedestrians and business into a station area. In reality, such pedestrian amenities, no matter how aesthetically attractive, may simply increase expectations and municipal expenditures without actually building up the long-term viability of the station area. The first step toward economic viability is to develop a long-range plan based upon both TOD principles and a realistic assessment of the real estate market.

While basic pedestrian amenities (e.g., well-designed sidewalks wide enough to handle the pedestrian traffic; adequate lighting; safe and clearly marked crosswalks) should be implemented at the same time as the transit station for safety purposes, additional improvements should be provided in conjunction with new development in the station area. Thus, as new apartments and shops are built, the municipality can then invest in antique lighting, benches, street trees, shrubbery, bike racks, and other sidewalk detailing.

## **REZONING**

It could be politically difficult to rezone station areas for higher-density development, if the stations are located in low-density residential areas. In Newington, for example, where densities are relatively low, residents living in areas adjacent to the station could be resistant to increases in density, for fear that such increases would depress property values.

Often, the fear of high-density development stems from the unsubstantiated belief that high-density development is associated with garbage, crime and high-rise construction, and casts shadows and generates traffic. It is for this reason that the visioning process described earlier in this section is so important. That process provides the opportunity to convey the fact that high-density, transit-supportive development can be developed in the form of townhouses, single-family, and two-family homes. In addition, examples of popular and successful townhouse neighborhoods should be provided to prove that crime results from social problems, not from the density or architecture of buildings. Some of the most densely populated neighborhoods in the country are in fact the most expensive and the most popular. Examples include Back Bay in Boston; North Beach in San Francisco; South Beach in the Miami region; Santa Monica in the Los Angeles region; and Georgetown in Washington, D.C.

At the same time, the planning process provides an opportunity to plan good transitions between the station area and the surrounding areas. Compact development provided near the station area could be tiered such that there is a smooth transition in density between the station and the outlying areas. Also, as discussed in Section 5.2, the addition of parks and other community amenities can be used to entice surrounding landowners into accepting the plan. Some of the specific design regulations and incentives discussed in Chapter 6 could also be used for TOD.

## **5.6 RESOURCES FOR MORE INFORMATION**

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### **REPORTS**

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1000 Friends of Oregon. *Making the Connections: A Summary of the LUTRAQ Project: Integrating Land Use and Transportation Planning for Livable Communities*, Volume 7. Portland, Oregon: 1000 Friends of Oregon, 1997.

### **LIBRARIES & BOOKSELLERS**

*See also, NON-PROFIT ORGANIZATIONS, listed below.*

Planning Advisory Service  
American Planning Association  
122 S. Michigan Avenue, Suite 1600  
Chicago, IL 60603  
Phone: (312) 431-9100  
Fax: (312) 431-9985  
<[www.planning.org/pas/pas.html](http://www.planning.org/pas/pas.html)>

### **NON-PROFIT ORGANIZATIONS**

American Planning Association  
122 S. Michigan Avenue, Suite 1600  
Chicago, IL 60603

Phone: (312) 431-9100

Fax: (312) 431-9985

<[www.planning.org](http://www.planning.org)>

Center of Excellence for Sustainable Development  
Energy Efficiency and Renewable Energy Network

U.S. Department of Energy

Boston Regional Office

JFK Federal Building, Suite 675

Boston, MA 02203

Phone: (617) 565-9700

Fax: (617) 565-9723

<[www.sustainable.doe.gov](http://www.sustainable.doe.gov)>

Congress for the New Urbanism

The Hearst Building

5 Third Street, Suite 725

San Francisco, CA 94103

Phone: (415) 495-2255

Fax: (415) 495-1731

<[www.cnu.org](http://www.cnu.org)>

Project for Public Spaces,

153 Waverly Place, 4th floor

New York, NY 10014

Phone: (212) 620-5660

Fax: (212) 620-3821

<[www.pps.org](http://www.pps.org)>

Local Government Commission

(and the Center for Livable Communities)

1414 K St, Ste 600

Sacramento, CA 95814

Phone: (916) 448-1198

Fax: (916) 448-8246

<[www.lgc.org](http://www.lgc.org)>

Smart Growth Network

International City/County Management Association (ICMA)

777 North Capitol St., NE, Suite 500

Washington, DC 20002-4201

Phone: (202) 289-4262

Fax: (202) 962-3500

<[www.smartgrowth.org](http://www.smartgrowth.org)>

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## **5.8 CASE STUDY: DOWNTOWN BELLEVUE, WASHINGTON**

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One of the most successful TOD efforts was undertaken in Bellevue, Washington. Bellevue's program is notable for a number of reasons. First, it was organized entirely around a bus system, whereas many other cities put off TOD planning until rail infrastructure was in place. Second, the Bellevue program closely coordinated all aspects of transportation and land use planning, including parking and travel demand management programs. This comprehensive approach partly explains the success of the program.

One obvious contrast between Bellevue and Hartford is their economic growth. Whereas Bellevue is located in the Seattle/Puget Sound metropolitan area, one of the fastest growing regions in the U.S., Hartford has experienced more than a decade of economic stagnation and population loss. Nevertheless, this contrast does not make Bellevue's zoning policies any less exemplary. It should be noted that those policies were put in place in the early 1980's, long before anyone had imagined the rise of Microsoft and the internet or Seattle's strong role in the computer and high-tech industries.

### **BELLEVUE'S TRANSIT SYSTEM**

Buses regularly serve downtown Bellevue, providing connections both throughout the city and to other major centers in the Seattle metropolitan region. Downtown Bellevue serves as a major transit hub. In fact, it is the largest terminal-transfer point for the region's transit system outside of downtown Seattle. The center has six bus bays, an overhead canopy, benches, information kiosks, and a sheltered waiting area. The bus center is served by 17 different bus routes, most of which operate on 10- to 20-minute headways during morning and evening rush hours.

## **1981 DOWNTOWN PLAN**

Bellevue's TOD planning efforts started with a major overhaul of the downtown plan, which was completed in 1981. The intent of the plan was to transform downtown Bellevue from an auto-oriented suburban crossroads into a vibrant, pedestrian-oriented node with a strong sense of community. Prior to the 1981 plan, downtown was organized around a street grid of large superblocks, navigable most easily by car, and most buildings were free-standing, low-rise structures surrounded by parking.

The 1981 Downtown Plan created a series of pedestrian spines that were well-connected to transit lines and lined with ground-floor retail stores and civic spaces. N.W. 6<sup>th</sup> Street became the main spine, linking Bellevue Square (a major shopping destination) with high-rise office buildings to the east. New zoning provisions emanating from the downtown plan required that buildings along these pedestrian spines provide ground-floor retail and that the buildings and retail uses be oriented to the sidewalk. The immediate area around the transit core was zoned for office development, while the surrounding areas were zoned for a mix of residential and office uses.

## **INCENTIVES FOR TOD**

A number of other transit-support features were introduced in the downtown area. The zoning ordinance provided density bonuses, referred to as the "FAR Amenity Incentive System", in exchange for public plazas, public artwork, childcare facilities, and affordable housing units. The FAR bonus could reach as high as 25 percent. In the late 1980's, the City also passed innovative parking provisions. Office space was limited to a maximum of 2.7 spaces per 1,000 square feet, and zoning provisions allowed up to a 20 percent reduction in required parking for mixed-use development in order to allow shared parking. Also, the City established an incentive to place parking in underground garages. For every two square feet of parking provided below ground, an additional square foot of office space could be added.

Initially, density incentives were also linked to transit service, through an innovative agreement between the metropolitan transportation agency and the City. In the early 1980's, the transportation agency agreed to a schedule for increasing transit services to downtown Bellevue, indexed to increases in employment densities and decreases in parking ratios. By 1984, the City had earned nearly 4,000 additional hours of transit service per year. In 1990, however, the agreement was discontinued, as the pace of development slowed down in the face of a national recession.

## **PROGRAM EFFECTIVENESS**

Bellevue's program was extremely effective. The new zoning provisions helped to concentrate development around the downtown transit hub, and the pedestrian improvements helped to establish a comfortable walking environment conducive to transit use. Despite significant regional competition from downtown Seattle (the region's principal office center) and suburban locations, including the City of Redmond (famous as the headquarters locale of the Microsoft Corporation), Bellevue still had a strong downtown real estate market. In 1999 and 2000 alone, the City issued approvals for nearly 1.7 million square feet of office space and

865 units of multi-family units in downtown.<sup>14</sup> All of this development was required to fit into the downtown planning framework, which was oriented to pedestrians and transit.

## 5.9 MODEL ORDINANCE

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TOD requires amendments to the use, density, and bulk regulations of a local zoning ordinance. The basic regulations that would be necessary for TOD would closely resemble those for village development, as discussed in Chapter 4. In principle, the "villages" discussed in that chapter are identical to the "transit villages" discussed in this chapter, with the exception that the former does not necessarily involve transit service. Thus, rather than repeating much of the model ordinance discussion presented in Chapter 4, this section focuses on how the regulations for transit villages might differ from an ordinary village. In particular, whereas the villages described in Chapter 4 deal primarily with a rural setting, transit villages deal primarily with urban and suburban environments. Thus, the issue of how to integrate the transit village into the surrounding context is critical. Also, there is the issue of what types of incentives can be offered to entice development into transit station areas, particularly in areas in need of economic revitalization.

### MIXED USE ZONING

As in a typical village, a transit village is usually made up of a series of sub-districts: (1) one dominant pedestrian-oriented commercial area; (2) more quiet residential areas, with a smattering of corner stores, public/institutional uses, parks, and home offices; and (3) transitional commercial/residential areas in between the main commercial and residential areas. The zoning can distinguish between these subareas, by regulating uses in slightly different ways in each.

The station in a transit village serves as a major destination that either anchors one end of the village or serves as a focal point at the center of the village. The location, orientation, and amount of different land uses must be carefully considered so that they build off the station's pedestrian activity. Housing, offices, and parking lots — as primary destinations for local residents and workers — should be near the edges of the ¼-mile station area so that people walk from the station to those destinations. The area immediately around the station should be occupied with a mix of uses, but particularly with ground-floor shops and public spaces, which can entice passing pedestrians and help create a sense of place.

For example, many village centers in Westchester County, NY have Metro North stations situated at one end of the village center, with the far ends of the village lined with multi-story housing, a commuter parking garage, and a turn-of-the-century residential neighborhood of quaint single-family homes. Consequently, people have to walk through the village's core (with ground floor shops, upper-story offices and apartments, public buildings, and a park) in order to reach practically any local destination, creating pedestrian activity along downtown streets and adding to the village's charm.

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<sup>14</sup> City of Bellevue, Planning and Community Development, *Downtown Major Projects Issued in 1999*, <[www.ci.bellevue.wa.us](http://www.ci.bellevue.wa.us)>, visited November 12, 2001. City of Bellevue, Planning and Community Development, *Downtown Major Projects Issued in 2000*, <[www.ci.bellevue.wa.us](http://www.ci.bellevue.wa.us)>, visited November 12, 2001.

This approach is slightly different from some of the more conventional planning approaches in transit station areas. Often, there has been the tendency to cluster all intensive development in the innermost core around the station, with decreasing tiers of density extending out from the station area. Although this is generally the most intuitive approach, the potential problem is that in such a model, people may have no reason to walk from the station to any place other than the immediately adjacent buildings. This is true whether the transit station is primarily office or residential in use. In downtown Newark, NJ, for example, the Gateway Center office complex is clustered immediately around downtown's Penn Station, with aerial skyways connecting the offices to the station building. As a result, commuters who use the train to reach these offices never venture any farther into the city. More strategic placement of destinations within walking distance around the transit station area would actually be a better way to generate street life and attract customers into local stores and restaurants.

## HIGHER-DENSITY ZONING

For the purposes of this discussion, the assumption is that sewer infrastructure is available and there is adequate treatment plant capacity to support high-density development. In transit villages, the question of density must be considered in light of three factors. First, how dense is existing development near the station? Second, how much density can be supported by the transit system? Third, what is the appropriate scale, mindful of the community's image and character? The appropriate density should balance what is called for by the transit infrastructure with what is desirable from a neighborhood-planning perspective.

The first and third questions must be addressed on a case-by-case basis through an analysis of existing conditions and community preferences. The second question is a factor of the type of transportation system, the size of the metropolitan area, and the size of the downtown job base. According to studies conducted by Boris Pushkarev and Jeffrey Zupan 1970's,<sup>15</sup> express buses with exclusive pedestrian-access would require minimum densities of about 15 units per acre around a transit station, in major metropolitan areas with a large downtown job concentration. Light rail corridors should have about 9 units per acre on average along the entire route. A transit corridor is the large pie-shaped area pointing into downtown from which the transit route draws its patrons. Such densities can be achieved with a mix of small apartment buildings, townhouses, and small-lot single-family or two-family houses. This pattern of development is similar to much of the City of Hartford's existing housing stock.

A minimum average density of 9 units per acre suggests some areas in the transit corridor would have higher densities and some areas would have lower densities. Because many of the existing areas along the New Britain/Hartford busway have low to moderate residential densities of less than 9 units per acre, densities within the busway station areas may have to be somewhat higher to compensate for lower densities elsewhere, in order to provide optimal levels of transit ridership. Also, densities may have to be higher to make up for areas within the corridor that are set aside for open space or parks. As a counter-balancing consideration, lower densities may be appropriate, depending upon the character of adjacent neighborhoods.

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<sup>15</sup> Pushkarev, Boris; Jeffrey Zupan. "Where Transit Works: Urban Densities for Public Transportation," *Urban Transportation: Prospectives and Prospects*. 1982. Reprinted from *Regional Plan News*, no. 99 (New York: Regional Plan Association, 1976).

Commercial development should generally be compatible with the building scale that would result from residential development at such densities. Assuming that housing is built at 12 units per acre, as a maximum, and that each dwelling unit is 1,500 square feet on average in size, then the total living space for those units per acre would be approximately 18,000 square feet, or roughly equivalent to a floor area ratio (FAR) of 0.40. Office, commercial, and institutional development should be permitted at the same base density. However, a bonus FAR could be offered in exchange for features that are conducive to pedestrian- and transit-oriented development. For example, if apartments or office space are provided on the second floor above a retail commercial establishment (in the TV-1 district), the permissible FAR can be doubled. Also, if public plazas, underground parking, or other similar amenities are provided, then additional FAR can be awarded.

## **DESIGN CONTROLS**

In addition to addressing land use and intensity of development, zoning provisions should include design controls to ensure pedestrian-oriented development patterns. These include a required build-to line along major pedestrian spines, and requirements that the ground-floor use be retail, that there be a pedestrian entrance from the sidewalk into each individual store, and that a minimum percentage of the façade walls along commercial streets have windows that allow views into the stores. This encourages window shopping and strolling along the street. Such controls allow enough flexibility that they can result in a wide range of architectural styles and designs, but they are the minimum necessary to encourage the development of a pedestrian-oriented environment. If any FAR incentives are offered, they should not be offered for these basic design elements, which should be absolutely required.

## **LANGUAGE FOR A MODEL TOD ORDINANCE**

Based on the framework developed in the preceding paragraphs, this section presents language that could be used to develop TOD zoning for an urban or suburban locale.

### **Article I: Transit Villages**

#### Section 101: Purpose

Consistent with the State's zoning enabling legislation (Conn. Gen. Stat. § 8-2), the purposes of this Article are as follows:

- A. To encourage transit use for the commute to work, in order to allow commuters to avoid congested highways and streets during rush hour.
- B. To reduce auto-dependency and encourage transit use, walking, and biking as alternative modes of transportation in residential neighborhoods and business centers.
- C. To promote the development and growth of fully functioning business centers and residential neighborhoods with a mix of commercial, residential, institutional, and park uses.

- D. To revitalize existing business centers and residential neighborhoods through increased transit service, appropriate infill development or redevelopment, historic preservation, increased recreational amenities, and improved community facilities and services.
- E. To connect existing neighborhoods to transit stations through appropriate infill development or redevelopment, pedestrian-friendly design, and attractive architectural design and landscaping.

Section 102: Intent

In order to achieve the purposes stated in § 101 above, this ordinance introduces three new zoning districts intended to foster TOD in the City/Town of \_\_\_\_\_. More specifically, the ordinance:

- A. Promotes higher-density, mixed-use, pedestrian-friendly development in the vicinity of transit stations.
- B. Limits auto-oriented uses near the transit station.
- C. Reduces parking requirements and establishes maximum parking limits near the transit station.

Section 103: Definitions

*Commentary: Some new definitions may need to be added to the zoning ordinance in conjunction with this ordinance, or some existing definitions may need to be revised. In particular, all of the uses included in the Schedule of Use Regulations in § 106 would have to be clearly defined. Definitions for a few of the uses that appear in that section are described below. Refer to the model ordinance in Chapter 9 for additional definitions.*

- A. *Business Service.* Establishments engaged in servicing the equipment or facilities of a business or providing services to businesses as part of that business's production process. Examples include, but are not limited to, professional office cleaning services, photocopying and printing shops, and mechanical repair professionals.
- B. *Drive-through Window.* As part of a business enterprise (typically, but not limited to, banks and fast-food restaurants), a service window that allows patrons to drive up and to be served in their cars.
- C. *Personal Service.* Establishments engaged in selling services that involve the care of a person or his or her personal goods or apparel. Examples include, but are not limited to, hair dressers, shoe repair shops, and television/audio repair shops. Personal services *do not* include medical or dental clinics.
- D. *Townhouse.* A single-family house where one or both of the side walls is "zero-lot line," such that the side walls of two neighboring houses are adjoined.
- E. *Zero-lot Line.* A situation in which no yard space is provided, such that the exterior plane of the wall of a structure is located on the property line.

Section 104: Establishment of Transit Village Zones

The location of the Transit Village Zones shall be as shown on the attached map. There are three subdistricts indicated on the map: Transit Village 1 (TV-1); Transit Village 2 (TV-2); and Transit Village 3 (TV-3).

*Commentary: In general, the TV-1 and TV-2 zones should be located closer to the transit station, with the TV-3 zones in the surrounding area, extending roughly a quarter- to a half-mile away from the station.*

Section 105: General Regulations for the Transit Village Zones.

A. Transit Village 1 (TV-1).

1. *Purpose.* The TV-1 Zone is intended to serve as a node for neighborhood-oriented retail stores and offices, institutional and cultural uses, as well as high-density residential uses. The TV-1 should serve as the neighborhood's social and cultural center and should have a strong pedestrian connection and physical orientation to the transit station.
2. *Permitted Uses.* Permitted uses shall be in accordance with the use schedule in § 106.
3. *Development Standards.* Permitted development shall be in accordance with the development standards schedule in § 107.
4. *Off-Street Parking and Loading.* Development shall provide off-street parking and loading in accordance with the provisions of § 108.
5. *Signs.* Signs are permitted in accordance with the provisions of § 109.
6. *Design Standards.* Permitted uses shall be in accordance with the design standards in § 110.

B. Transit Village 2 (TV-2).

1. *Purpose.* The TV-2 District is intended to serve as a transitional area between the TV-1 (commercial core) and the TV-3 (residential) zones. While commercial uses are permitted use and dimensional restrictions allow for a gradual transition to the quieter residential areas of the TV-3 zone.
2. *Permitted Uses.* Permitted uses shall be in accordance with the use schedule in § 106.
3. *Development Standards.* Permitted development shall be in accordance with the development standards schedule in § 107.
4. *Off-Street Parking and Loading.* Development shall provide off-street parking and loading in accordance with the provisions of § 108.
5. *Signs.* Signs are permitted in accordance with the provisions of § 109.
6. *Design Standards.* Permitted uses shall be in accordance with the design standards in § 110.

C. Transit Village 3 (TV-3).

1. *Purpose.* The TV-3 District is intended to serve as a moderate-density residential neighborhood with supportive retail and institutional uses and abundant park space. Strong pedestrian linkages and pedestrian-friendly design should foster pedestrian activity throughout the neighborhood and between the neighborhood and adjacent TV-1 and TV-2 zones.
2. *Permitted Uses.* Permitted uses shall be in accordance with the use schedule in § 106.
3. *Development Standards.* Permitted development shall be in accordance with the development standards schedule in § 107.
4. *Off-Street Parking and Loading.* Development shall provide off-street parking and loading in accordance with the provisions of § 108.
5. *Signs.* Signs are permitted in accordance with the provisions of § 109.
6. *Design Standards.* Permitted uses shall be in accordance with the design standards in § 110.

Section 106: Schedule of Use Regulations

The schedule on the following page indicates uses that are permitted as of right (P), permitted subject to approval of a Special Permit (SP), and prohibited (X). All uses not listed are prohibited.

*Commentary: For the purposes of this model ordinance, the uses listed in the table are intended to have a "common sense" definition. The specific definition for a use, per the zoning ordinance's listed definitions, can influence the interpretation of the use regulations. Definitions may need to be updated to ensure that the use regulations are interpreted in the manner intended.*

<i>LAND USES</i>	<i>TV-1 (Commercial Core)</i>	<i>TV-2 (Transitional Zone)</i>	<i>TV-3 (Residential Neighborhood)</i>
<u>RESIDENTIAL</u>			
Accessory apartment	X	X	SP
Dwelling, One-family	X	X	P
Dwelling, Two-family	X	P	SP
Dwelling, Multi-family	P	SP	X
Home occupations	SP	SP	SP
Townhouses	P	SP	X
<u>PUBLIC &amp; INSTITUTIONAL</u>			
Cemetery	X	X	P
Day Care Center	SP	SP	SP
Fraternal Organization	P	P	P
Government Offices	P	X	X
Hospital	P	X	X
Parks & Playgrounds	P	P	P
Place of Worship	P	P	P
Schools/Education Centers	P	P	P
<u>RETAIL &amp; HOSPITALITY</u>			
Artisan Shop	P	SP	X
Bank/Financial Institution	P	X	X
- w/ Drive-through Window	X	X	X
Bed-and-Breakfast Inn	X	SP	SP
Business Service	P	X	X
Convenience Store	P	X	X
Farmers Market	P	X	X
Laundromat	P	X	X
Motor Vehicle Repair Shops	X	X	X
Motor Vehicle Sales	X	X	X
Motor Vehicle Service Station	X	X	X
Motor Vehicle Washing	X	X	X
Personal Service	P	SP	X
Restaurant	P	SP	X
- w/ Drive-through Window	X	X	X
- w/ Take-out Window	P	X	X
Restaurant, Fast Food	X	X	X
Retail Store	P	X	X
Shopping Center	SP	X	X
<u>OFFICE</u>			
Medical or Dental Clinic	P	P	X
Office	P	P	X
Veterinary Clinic	SP	SP	X

Section 107: Schedule of Development Regulations

*Commentary: A higher intensity of development, as regulated by FAR, is permitted in the TV-1 and TV-2 districts. A distinction is drawn between the minimum lot sizes for one-family houses, two-family houses, and town houses (on the one hand) and all other development (on the other hand). This distinction ensures large enough parcels for multi-family and commercial development, while still permitting a compact pattern of development with regard to one-family, two-family, and townhouse development.*

	TV-1 (Commercial Core)	TV-2 (Transitional Zone)	TV-3 (Residential Neighborhood)
Maximum Floor Area Ratio	0.75	0.75	0.45
Bonus FAR <sup>1</sup>	0.50	None	none
Minimum Lot Size (sq ft)			
One-family Houses, Two-family Houses, and Townhouses	3,200	4,000	5,000
All Other Uses	9,600	9,600	10,000
Minimum Lot Width (ft)			
	40	40	50
Maximum Residential Density (units per gross acre)			
	15.0	12.0	8.0
Maximum Number of Stories			
	4	3	2.5
Maximum Building Height (ft)			
	50	40	35
Minimum Setbacks (ft)			
Front	0	10	10
Each Side	0	0	5
Side Abutting a Street	0	10	10
Total of Both Sides	0	10	15
Rear	20	20	20

1. In the TV-1 zone, buildings that provide retail uses on the ground floor and office and/or residential uses on an upper floor are eligible for a bonus FAR.

Section 108: Parking and Loading Standards

A. All development in the Transit Village zones shall provide the minimum onsite parking and loading spaces, as required under § xxx of the zoning ordinance, unless stated otherwise in this section.

*Commentary: The "§ xxx" reference is intended to refer to the existing section of the zoning code that includes minimum parking requirements.*

B. The maximum number of parking spaces shall be limited for all development in the Transit Village zones. In no case shall development in the Transit Village zones provide onsite parking spaces such that the total number of parking spaces exceeds the minimum requirement by more than 5 percent.

- C. The minimum required number of parking spaces may be reduced by 30 percent for any development located within a 1/4-mile radius of the transit station. The required number of parking spaces may be reduced by 20 percent for any development located between the 1/4-radius and a 1/2-mile radius.

*Commentary: On average, about 8 percent of work trips to the Hartford Central Business District were made via public transportation in 1990.<sup>16</sup> Assuming that a greater number of work trips to or from a TOD station area would be made via public transportation, parking reduction is set at 20 to 30 percent. Larger or smaller percentage reductions may be appropriate, depending upon actual transit ridership levels.*

- D. The minimum required number of parking spaces may be reduced by the number of on-street parking spaces located along the building frontage. Only those parking spaces that are located on the same side of the street as the development and that do not extend beyond the street frontage of the subject property may count toward the reduction.
- E. Shared Parking.
1. If there is more than one use on a lot, then the total parking requirement shall be equal to the sum of the parking requirement for each individual use.
  2. On lots with more than one use, the total parking requirement may be reduced, provided that the applicant submits credible evidence to the satisfaction of the City/Town Planning Board that the peak parking demand of the uses do not coincide, and that the accumulated parking demand at any one time shall not exceed the total capacity of the facility. Such evidence must take into account the parking demand of residents, employees, customers, visitors, and any other users of the lot. It must also take into account parking demand on both weekends and weekdays, and both during the daytime and overnight.
- F. All surface parking lots shall provide a perimeter landscaping strip around the edges of the entire. The landscaping strip shall contain no fewer than 4 trees for every 100 linear feet, as well as shrubs. In addition, a wall or decorative fence measuring 2.5 to 4.0 feet in height, as measured from grade, may be added to the landscaping strip.
- G. For surface parking lots greater than 20 spaces, at least 15 percent of the interior area shall be planted with trees and shrubs.
1. Each planting area shall be a minimum of 25 square feet in size and have no dimension less than 5 feet.
  2. Each planting area shall have at least one tree.
  3. No row of parking shall be more than 10 spaces wide without being interrupted by a planting area.
- H. Bicycle racks shall be provided onsite at a rate of one bicycle parking space for every 10 automobile parking spaces.

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<sup>16</sup> The Public Purpose, *Urban Transport Fact Book*, <[www.publicpurpose.com/ut-uscbd.htm](http://www.publicpurpose.com/ut-uscbd.htm)>, visited May 2002.

Section 109: Sign Regulations

- A. The following signs shall be permitted in all the Transit Village Zones.
1. Façade signs identifying the occupant and/or the street address.
  2. Directional signs
  3. Temporary signs
- B. In addition to those signs permitted under paragraph (A), the following signs shall be permitted in the TV-1 Zone.
1. Awning or canopy signs.
  2. Hanging signs.
  3. Window signs.
- C. In addition to those signs permitted under paragraph (A), the following signs shall be permitted in the TV-2 and TV-3 Zones.
1. Freestanding ground-mounted signs identifying the occupant and/or the street address.
- D. All other signs shall be prohibited. These include, but are not limited to, moving signs, flashing signs, animated signs, pylon signs, roof-mounted signs, and billboards.
- E. Design Standards. The following standards shall apply to signs in the Transit Village zones:
1. *Materials.* All permanent signs shall be constructed with materials similar to those used on the front façade of the main structure. Temporary signs may be of cloth or vinyl plastic.
  2. *Height.* Freestanding ground-mounted signs shall be no greater than 5 feet in height above the finished grade. No façade sign, awning or canopy sign, or hanging sign shall extend higher than the tallest part of the façade of the structure to which it is situated (for a one-story structure) or higher than the ground-floor story (for a multi-story structure).
  3. *Size.* No façade sign shall exceed 20 percent of the wall area of the ground-floor exterior front wall. No other sign shall exceed 25 square feet in size. With the exception of façade signs, all signs may be double-sided.
  4. *Illumination.* Sign lighting should minimize glare and be consistent with the character of the area. Signs shall not be internally lit.
  6. *Colors.* Colors shall complement the predominant color of the front facade.
  7. *Setbacks.* Freestanding ground-mounted signs shall have a minimum setback of 10 feet from the street property line and 10 feet from the side property line and shall be located in a manner that does not interfere with required minimum sight distance at driveways or intersections.

Section 110: Design Standards

*Commentary: These standards were adapted from pedestrian-oriented standards included in the zoning regulations for downtown zones in Tacoma, Washington. For more information on the Tacoma regulations, please refer to Chapter 9. For additional design regulations applicable to a village setting, please refer to Chapter 6.*

Development in the Transit Village Zones shall comply with the following design standards:

- A. All outdoor mechanical equipment shall be fully screened from view. Rooftop mechanical equipment shall be screened by means of a parapet wall or a sloped or stepped roof form that is part of the architecture of the building. Ground-mounted or wall-mounted mechanical equipment shall be screened by evergreen plantings and/or opaque fencing.
- B. The main entrance of any building shall face the street. In the case of a corner lot, the main entrance shall face the street along which the lot has the longer frontage.
- C. In the TV-1 zone, the main entrance shall not be setback more than 5 feet from the street property line. In the TV-2 and TV-3 zones, the main entrance shall not be setback more than 20 feet from the street property line.
- D. In the TV-1 zone, a minimum of 75 percent of the sidewalk level building facades shall abut the street property lines. In the TV-2 and TV-2 zones, a minimum of 75 percent of the ground-floor building façade shall abut the minimum front setback line. The setback(s) can only be used for entrance areas or public plazas or mini-parks.
- E. In the TV-1 zone, at least 25 percent of the linear, sidewalk-level frontage of any structure fronting shall consist of retail/hospitality uses or public/institutional uses.
- F. In the TV-1 zone, at least 25 percent of sidewalk-level wall area shall be in the form of transparent windows or doors.
- G. Any garage entrance shall be set back a minimum of 20 feet from the front façade of the main structure.

Section 111: Severability

If any provision of this ordinance is held invalid by a court of competent jurisdiction, the remainder of the ordinance shall not be invalidated.