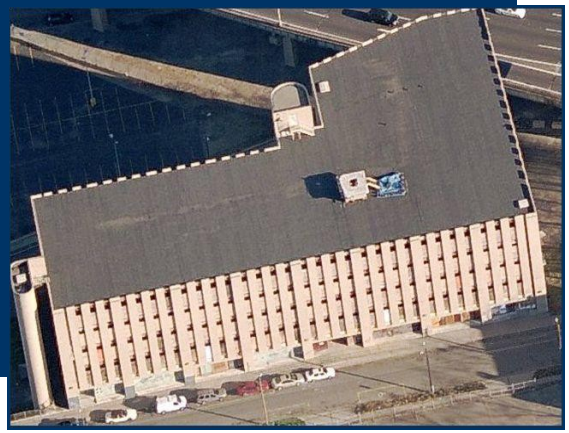
One City, One Plan

Development Patterns

Chapter 6

KEY TOPICS

- Land Use Inventory
- Residential Density
- Implications for the Future



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Introduction

The built environment, including the type, location and intensity of existing land uses, defines the character of a community. Understanding how much land is presently devoted to commercial, industrial, residential, parks and vacant land is a key component to developing a vision and plan for the future. The land use patterns that were described in the 1996 POCD remain evident in the fabric of the City today.

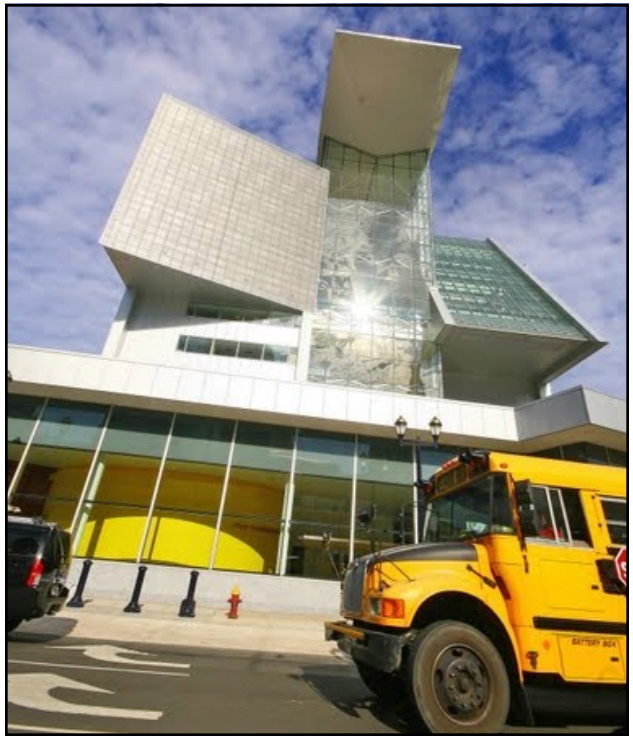
The major land use changes that have occurred over the last decade include:

- Substantial new residential development (both condominiums and apartments) in Downtown;
- Conversion of the Charter Oak public housing complex into a significant retail center;
- Redevelopment and reconfiguration of other high-density public housing complexes into lower density residential units including Rice Heights, Stowe Village and Dutch Point;
- Designation of an Industrial Re-Use Overlay District (IROD) in the Parkville neighborhood leading to the conversion of former industrial buildings into the mixed use Design Center;
- Condominium developments in the West End neighborhood;
- New retail development in various neighborhoods, including the Main and Pavilion (Metro Center) retail development in Clay-Arsenal and the Gateway Plaza on Albany Avenue;
- Revitalization of Park Street retail;
- Creation of the Learning Corridor in Frog Hollow;
- Relocation of the Capitol Community College to the former G. Fox building;
- Development in the Adriaen's Landing project area, including the Connecticut Convention Center and the Connecticut Center for Science and Exploration;
- Erection of the Morgan Street Garage; and
- Redevelopment of the Colt Firearms factory and vicinity.

These changes are transforming older land uses into new uses that are more compatible with existing uses as well as Hartford's vision for the future. While the overall development patterns of the City have remained relatively unchanged over the last decade, new emphasis has been placed on redevelopment in the City. The City's zoning and land use regulations are its tools not only for controlling its land uses, but also for influencing future development patterns.

Understanding the existing land use patterns of the City is an important component to the Plan of Conservation and Development. Knowledge of where specific types of uses are located can help local officials identify areas that may have potential for, for example, economic develop-

Trumbull Street Residential Development



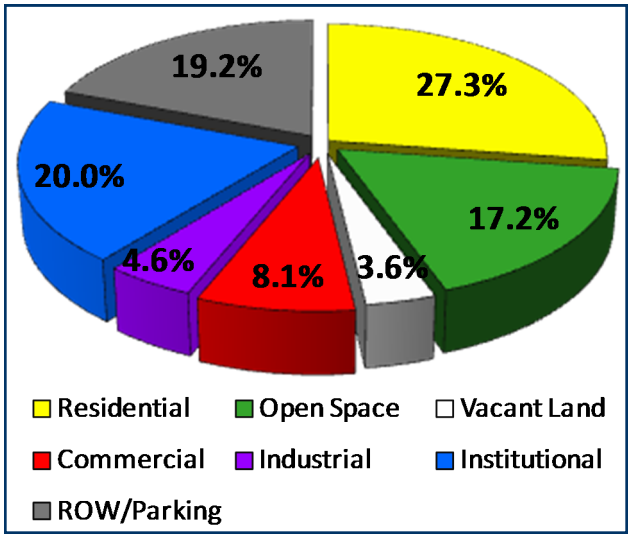
The Connecticut Science Center

Land Use Category	Area (Acres)	Percent of City's Land Area	Percent Change 1994-2009[1]
Residential	3,199	28.9%	-6.3%
Commercial	950	8.6%	-21.5%
Industrial	541	4.9%	8.2%
Institutional / Infrastructure	2,341	21.2%	42.2%
Parks & Open Space	1,365	12.3%	-10.9%
ROW's & Parking	2,246	20.3%	-3.0%
Raw Vacant Land	422	3.8%	-48.6%

Source: Tax Assessor Database 2009

(1) Based on 1996 Plan of Conservation & Development

2009 Land Use Distribution Summary



Existing Land Use 2009

ment or open space protection. This section describes in detail the existing land use composition of Hartford.

Land Use Patterns

The City of Hartford has a total land area of approximately 11,064 acres or roughly 17 square miles. Hartford contains a variety of land uses including industrial, commercial, residential, institutional, and open space. Hartford's land records are incorporated into its parcel base map so that information such as land use, zoning and property assessment value (land and building) can be displayed and analyzed on a city wide, parcel-by-parcel basis. While utilizing detailed information of this type for quantifying land use patterns and trends, it is important to recognize that the purpose of this analysis is to provide a generalized assessment of land use patterns as a guide for planning purposes.

Land Use Inventory

In order to accurately assess the composition and distribution of the City's land use categories, a current digital land use map (2009) of Hartford was utilized. The existing digital base map and corresponding property records from the assessor's database resulted in a detailed *Existing Land Use Map* and inventory for all parcels within the City.

The accompanying table provides a summary of the major land use categories and a calculation of percent change since the 1994 inventory. Five major categories of use are utilized to record land use in the City. These general categories are further broken down into 25 subcategories as shown in the *Existing Land Use Map,* which has been divided into fourquadrants (NW,NE, SW and SE) for readability in this document.

Although it is recognized that some differences in inventory methodology and categorization of land uses between the 1996 POCD and this document exist, it is still helpful to compare land use characteristics between decades in order to identify general trends in land development and uses. Because of the differences in source data and methodology, we hesitate to quote specific growth statistics based on the 1996 and 2009 studies, which may or may not be directly comparable.

The City of Hartford's overall land use fabric has remained stable over the last two decades. The top land use categories reported in 1984 and 1994 remain the same for 2009. The top land uses by percent of land area for 2009 are residential, institutional and infrastructure, & ROWs categories. In total, approximately 84% of the land within the City is in a developed category while 16% is categorized as open land.

Within the open land category, the parks and open space component represents land protected from future development. At 11.2% of the City's area it exceeds the States' goal of

11% for municipalities. Commercial land accounts for 8.1% of Hartford's land area with office and financial institutions as the largest subcategory at 29% of all commercial land. This percentage is likely to increase in the future as redevelopment continues in the City. Mixed use development, which consists of parcels that contain a blend of both residential and commercial uses, accounts for 2% of Hartford's total land, but represents 14% of all commercial land. Industrial land uses account for 4.9% of Hartford's land, of which much of this land is located in the North Meadows, South Meadows, and in the eastern side of the North East Neighborhood. Institutional uses account for over 21.2% while ROWs and parking account for an additional 20.3%.

Residential

The City has 3,199 acres (28.9%) of its land categorized as residential with single and two family residences comprising over 59.4% of all residential uses. The remaining 31.6% is comprised of multi-family and apartment housing. The majority of Hartford's residential uses are low to moderate density in nature comprised of single- to four-family housing. The majority of these residential uses are concentrated in the Blue Hills, West End, Northeast, South End, Southwest, Behind the Rocks and Barry Square neighborhoods. In fact, nearly 80% of all residential land in the City is located in these seven neighborhoods. Medium-density housing is primarily located in the Blue Hills, North East, Asylum Hill, Clay Arsenal and Barry Square neighborhoods. High-density, high rise apartment residential housing is concentrated in the Downtown, West End, Asylum Hill, and Frog Hollow neighborhoods.

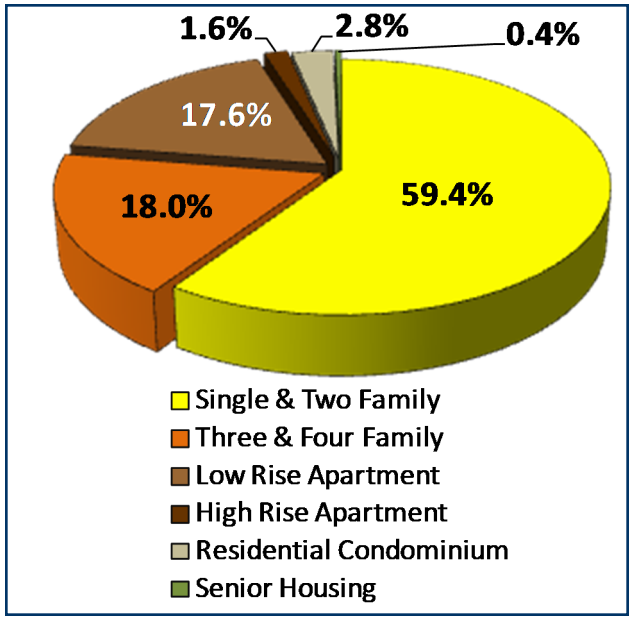
Commercial / Industrial

From 1994 to 2009 commercial land use experienced a significant decrease of 21% (from 1,211 to 950 acres). Meanwhile, industrial land use increased by 8.2 % during this period. Commercial and Industrial land use combined to cover 13.6% of Hartford's land. In comparison to Hartford's 13.6%, the percent of land used for commercial or industrial purposes in some other large urban communities are: New Haven- 11%; and Bridgeport - 18.6%.

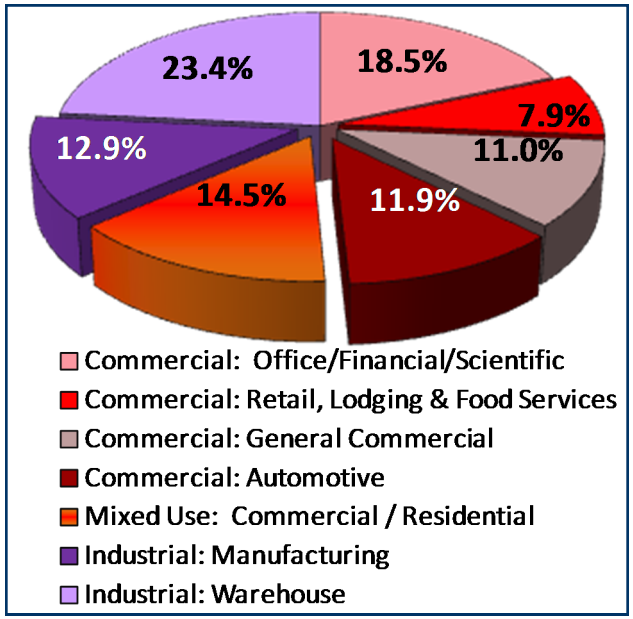
Commercial uses classified in the office and financial subcategories are densely clustered in Hartford's Downtown. Retail uses are predominately clustered along the major transportation corridors radiating from the downtown and connecting to commercial strips in neighboring communities. Industrial lands are predominately located in the North and South Meadows neighborhoods and along the rail corridor that bisects the City. Commercial and industrial uses were broken down into six and two subcategories respectively (see quadrant maps)

Institutional/ Infrastructure

Hartford has 4,587 acres or 41.5% of its land



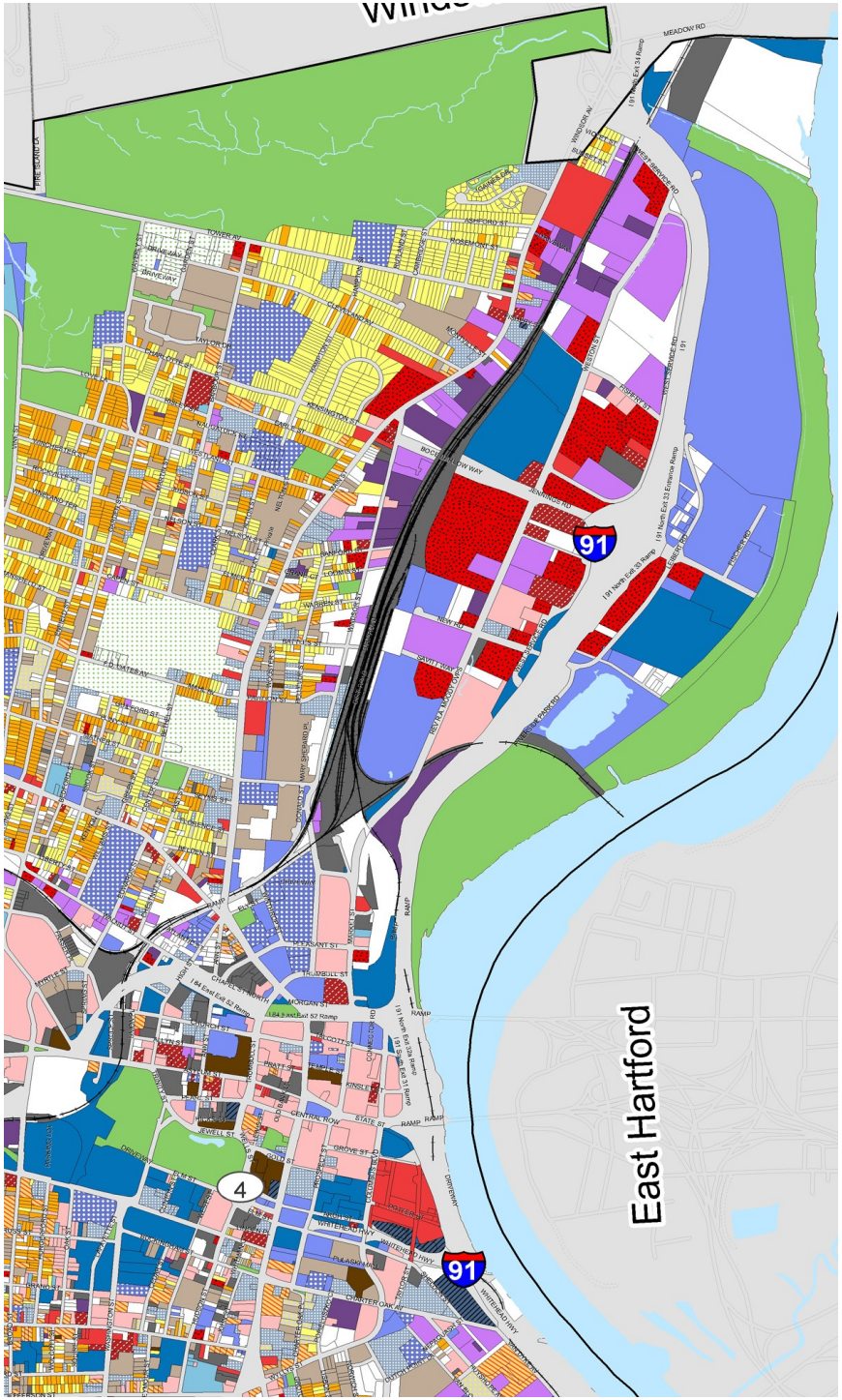
Residential Land Uses 2009



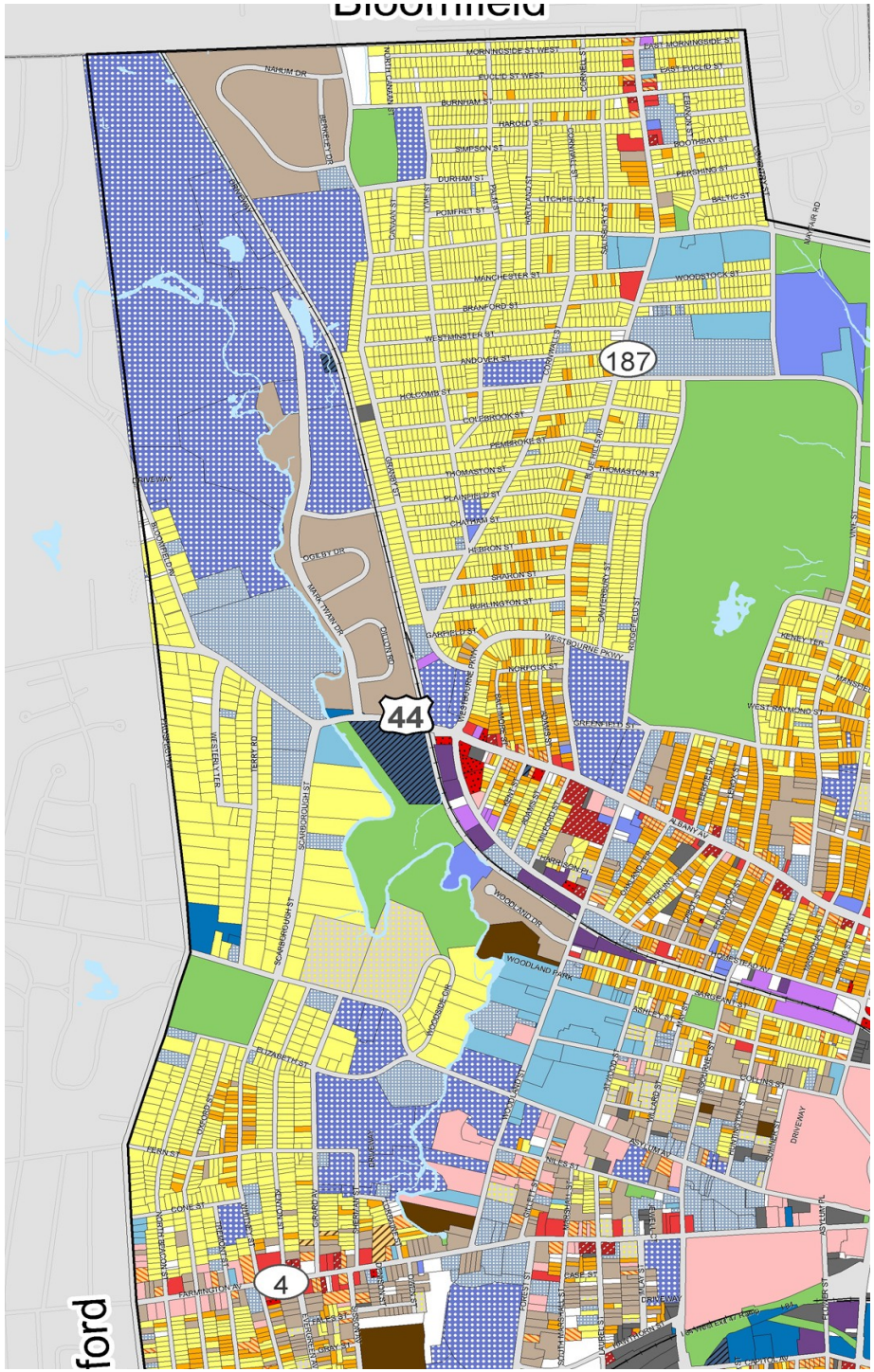
Commercial Land Use 2009

Existing Land Use

- Single & Two Family
- Three & Four Family
- Low Rise Apartment
- High Rise Apartment
- Residential Condominium
- Senior Housing
- Commercial: Office/Financial/Scientific
- Commercial: Automotive
- Commercial: General Commercial
- Commercial: Retail, Lodging & Food Services
- Industrial: Manufacturing
- Industrial: Warehouse
- Mixed Use: Commercial / Residential
- Municipal Property (Various)
- State (Various)
- Federal (various)
- Educational
- Medical / Health Care Facility
- Private Institutional
- Public Utility
- Parking/Transportation
- ROW
- Cemetery
- Parks / Open Space
- Vacant Land



NE Quadrant Map



NW Quadrant Map

Existing Land Use

- Single & Two Family
- Three & Four Family
- Low Rise Apartment
- High Rise Apartment
- Residential Condominium
- Senior Housing
- Commercial: Office/Financial/Scientific
- Commercial: Automotive
- Commercial: General Commercial
- Commercial: Retail, Lodging & Food Services
- Industrial: Manufacturing
- Industrial: Warehouse
- Mixed Use: Commercial / Residential
- Municipal Property (Various)
- State (Various)
- Federal (various)
- Educational
- Medical / Health Care Facility
- Private Institutional
- Public Utility
- Parking/Transportation
- ROW
- Cemetery
- Parks / Open Space
- Vacant Land

Existing Land Use

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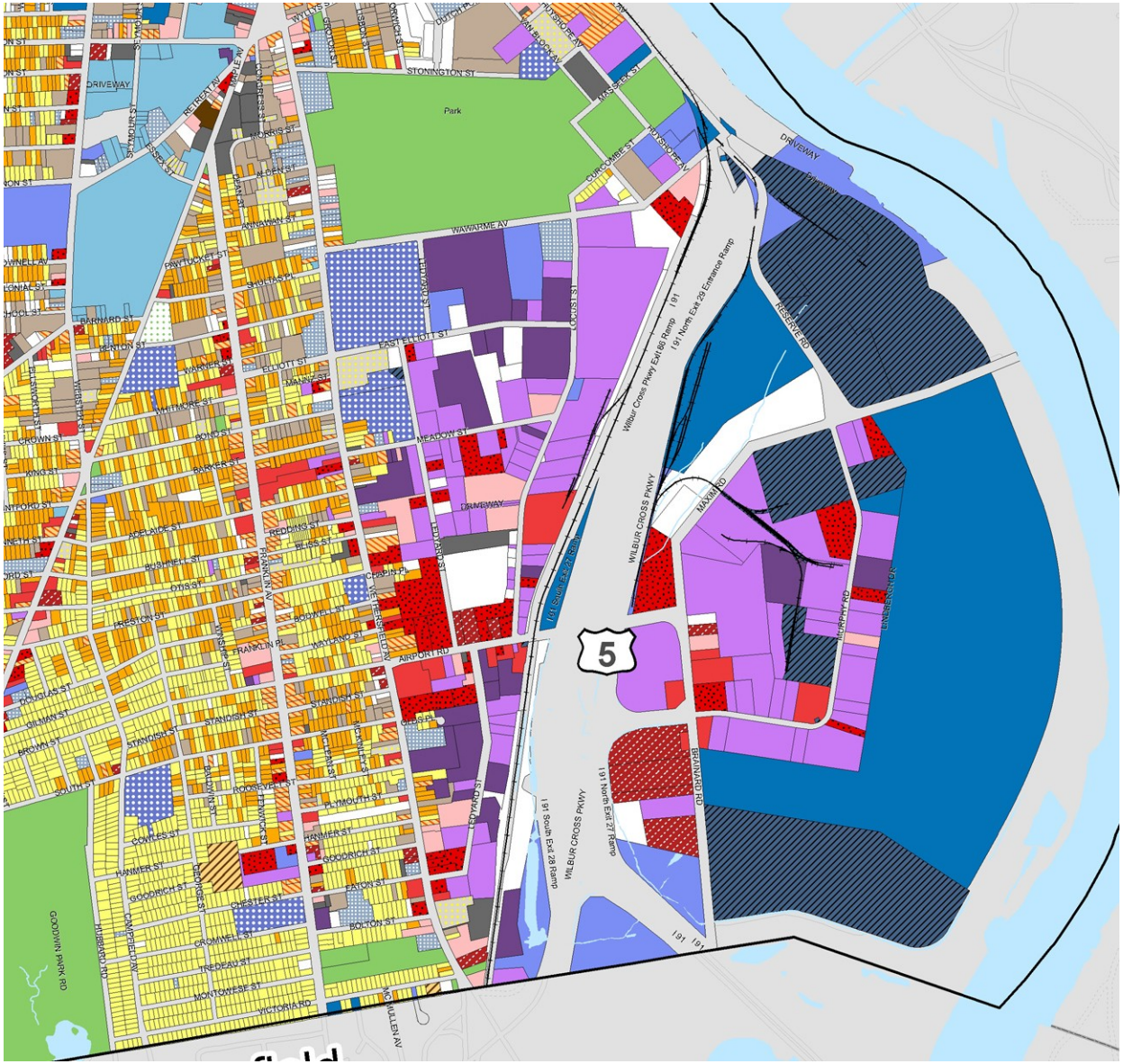
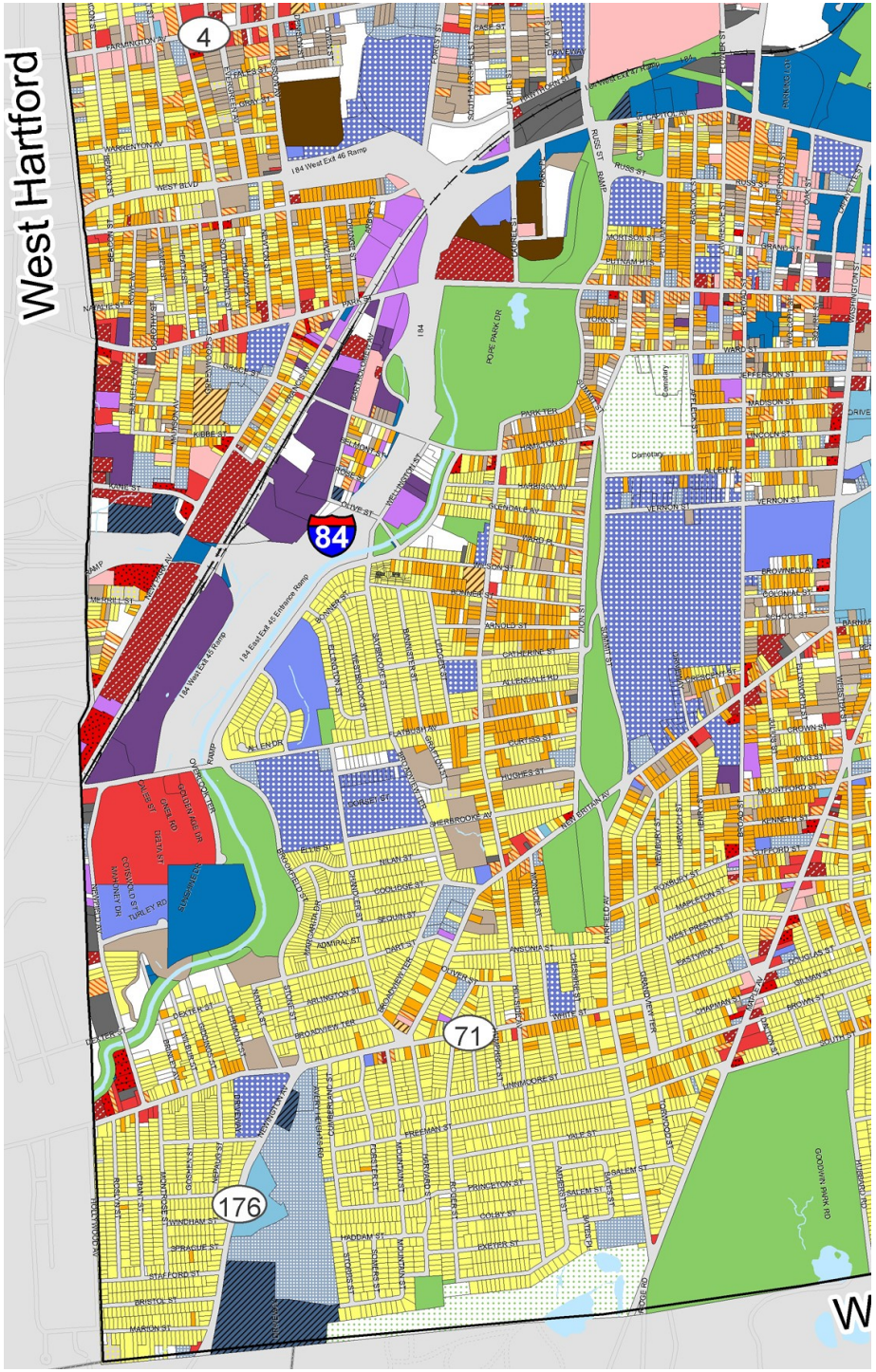
- Private Institutional
- Public Utility
- Parking/Transportation
- ROW
- Cemetery
- Parks / Open Space
- Vacant Land



SE Quadrant Map



SW Quadrant Map

Existing Land Use

- Single & Two Family
- Three & Four Family
- Low Rise Apartment
- High Rise Apartment
- Residential Condominium
- Senior Housing
- Commercial: Office/Financial/Scientific
- Commercial: Automotive
- Commercial: General Commercial
- Commercial: Retail, Lodging & Food Services
- Industrial: Manufacturing
- Industrial: Warehouse
- Mixed Use: Commercial / Residential
- Municipal Property (Various)
- State (Various)
- Federal (various)
- Educational
- Medical / Health Care Facility
- Private Institutional
- Public Utility
- Parking/Transportation
- ROW
- Cemetery
- Parks / Open Space
- Vacant Land

Riverside Park is part of Hartford's open space network.

Goodwin Park is located in the South End neighborhood

categorized as institutional or infrastructure. Of the 4,587 acres in this category, 2,052 acres or 18.5% of all land in Hartford is classified as right-of-ways (ROWs). A majority of the land classified as ROWs in Hartford is a result of Interstate 91 and Interstate 84 bisecting the City. The remaining 2,535 acres contain municipal, educational, medical, religious, fraternal, and other non-profit service institutions in the City. Hartford has a significant amount of land dedicated to educational uses. Trinity College, Rensselaer College, University of Hartford, and Hartford Public Schools are examples of the major educational facilities that in part account for 6.4% of the land in City.

Open Land

The City has 1,236.8 acres designated as open space, comprised of parks and open space. The open space category represents land used for active and passive recreation and represents areas generally protected from future development. At 11.2% of the City's area it exceeds the State's open space goal of 11% for municipalities. Hartford also owns significant open space acreage outside of its borders. Batterson Park (585 acres) is located entirely in Farmington, while parts of Goodwin, Keney, and Elizabeth Park extend into adjacent communities. An additional 1.2% of Hartford's land is classified as cemeteries.

The 1996 POCD reported that in 1984, the City contained 929 acres (8.2%) of raw vacant land and by 1996 the total decreased to 823 acres (7.2%). In 2009, the City has only 3.2% of its land in this category. With only 422 acres of vacant land, a limited amount of future development can be anticipated to occur on raw vacant lots.

The C-1 and I-2 zones have the largest inventory of vacant land with 50 and 164 acres respectively and shown on the map titled *Vacant Land by Zoning District*. These two zones contain over half the raw vacant land in the City. It should also be noted that this vacant land calculation fails to take into account the physical development constraints such as wetlands, floodplains, and steep slopes that will further reduce the amount of developable land. Due to the limited amount of raw vacant land, it is clear that reuse and redevelopment will play an increasingly critical role in the City's future development.

The declining amount of vacant land in the City indicates that future growth especially in core areas of the City will likely involve "infill" development projects. In addition, it is likely that many of the new commercial developments that will occur in Hartford over the decade or so are likely to involve redevelopment projects, or conversion of abandoned and obsolete land uses and brownfields into new redefined development projects. Evidence of this trend can already be seen in developments such as Adriaen's Landing, Charter Oak Marketplace, Main and Pavilion (Metro Center), the Coltsville Gateway Preserva-

tion Project, and Homestead Avenue.

Residential Density

"Density" is the term used to measure the concentration of people, dwelling units, or even jobs within a specific area, although it is usually used to refer to residential development. Many urban area residents are wary of density, as they believe it increases traffic congestion, public expenditures on infrastructure and services and crime, while causing property values to decrease. Some even suggest that density equates with poverty, although no empirical data supports this relationship.

In fact, the overwhelming evidence is that urban density results in personal and public cost savings, environmental benefits, reduced dependence on personal automobiles and an improved local and regional economy (the urban ills often associated with density are more clearly related to the failure to mix uses and provide transportation options within an urban setting, as well as poor design that discourages pedestrian activity).

Additionally, some of the most expensive neighborhoods in many U.S. metropolitan areas have densities in excess of 50 units per acre, while research on the relationship between proximity to transit stations and property values consistently shows that residential and commercial properties in close proximity to transit enjoy a property value premium. What's more, higher density development near transit can benefit residents by providing real gains in expendable income: increased transit options allow residents to own fewer cars, leaving more money in their budgets for other expenses and purchases.

Effective Housing Density

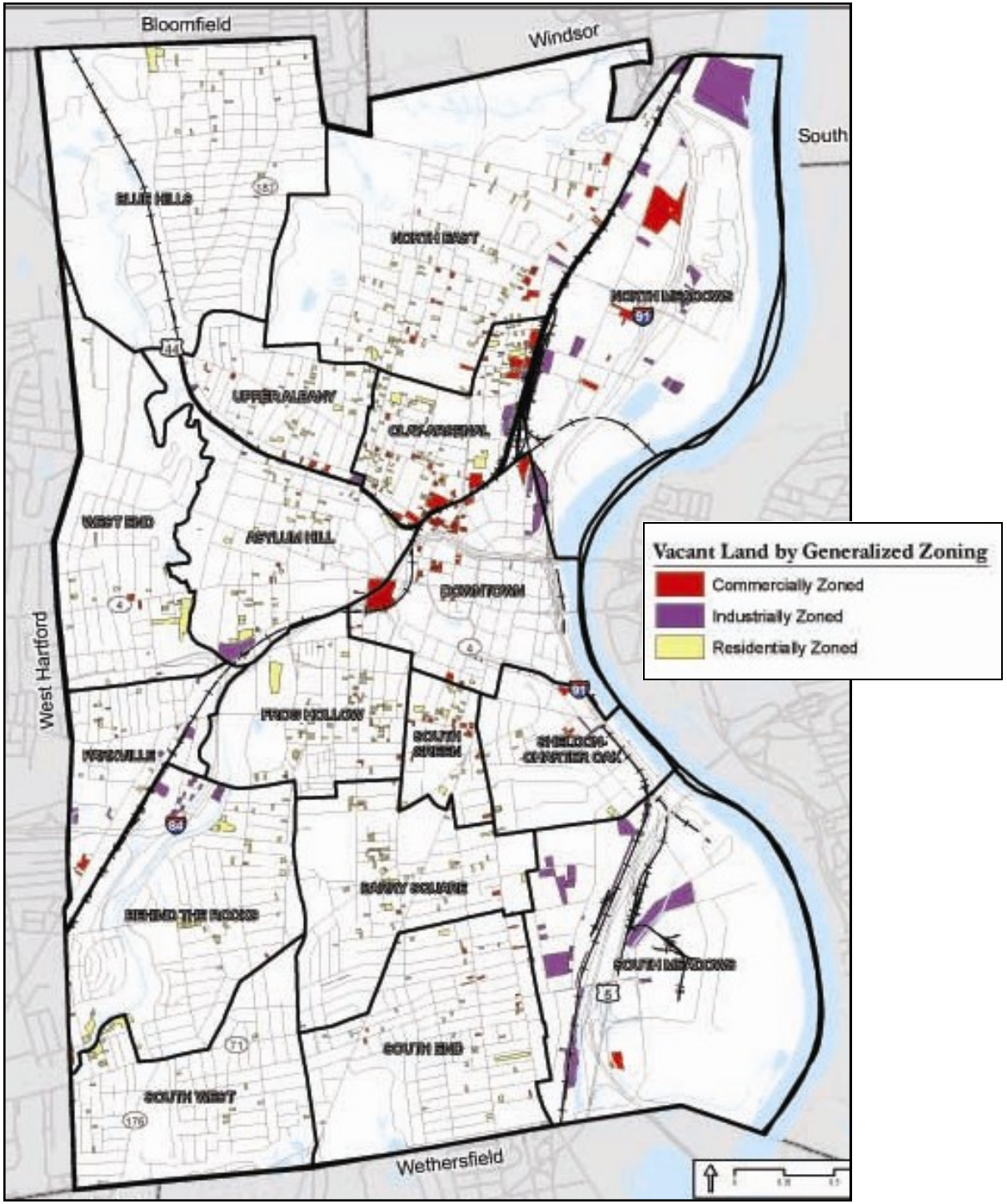
An analysis of the housing density in each of the City's neighborhoods showed that the six neighborhoods with the highest density are the City's Downtown (134 units/acre), Asylum Hill (44 units/acre), South Green (39 units/acre), Frog Hollow (34 units/acre), Sheldon-Charter Oak (26 units/acre), and Clay-Arsenal (22 units/acre).

The City has experienced a resurgence of housing in the Downtown over the last decade. It is estimated that the number of units has tripled to nearly 2,700 over this time period. Frog Hollow, South Green, Charter Oak, and Clay Arsenal are mature neighborhoods that grew around the factories and manufacturing centers during the early to late 20th century. Typical of many cities, the less mature neighborhoods on the fringe of the city have the lowest effective housing density as shown on the map titled "Effective Housing Density by Neighborhood". Hartford's pattern of housing density is typical of many New England cities of similar size and age.

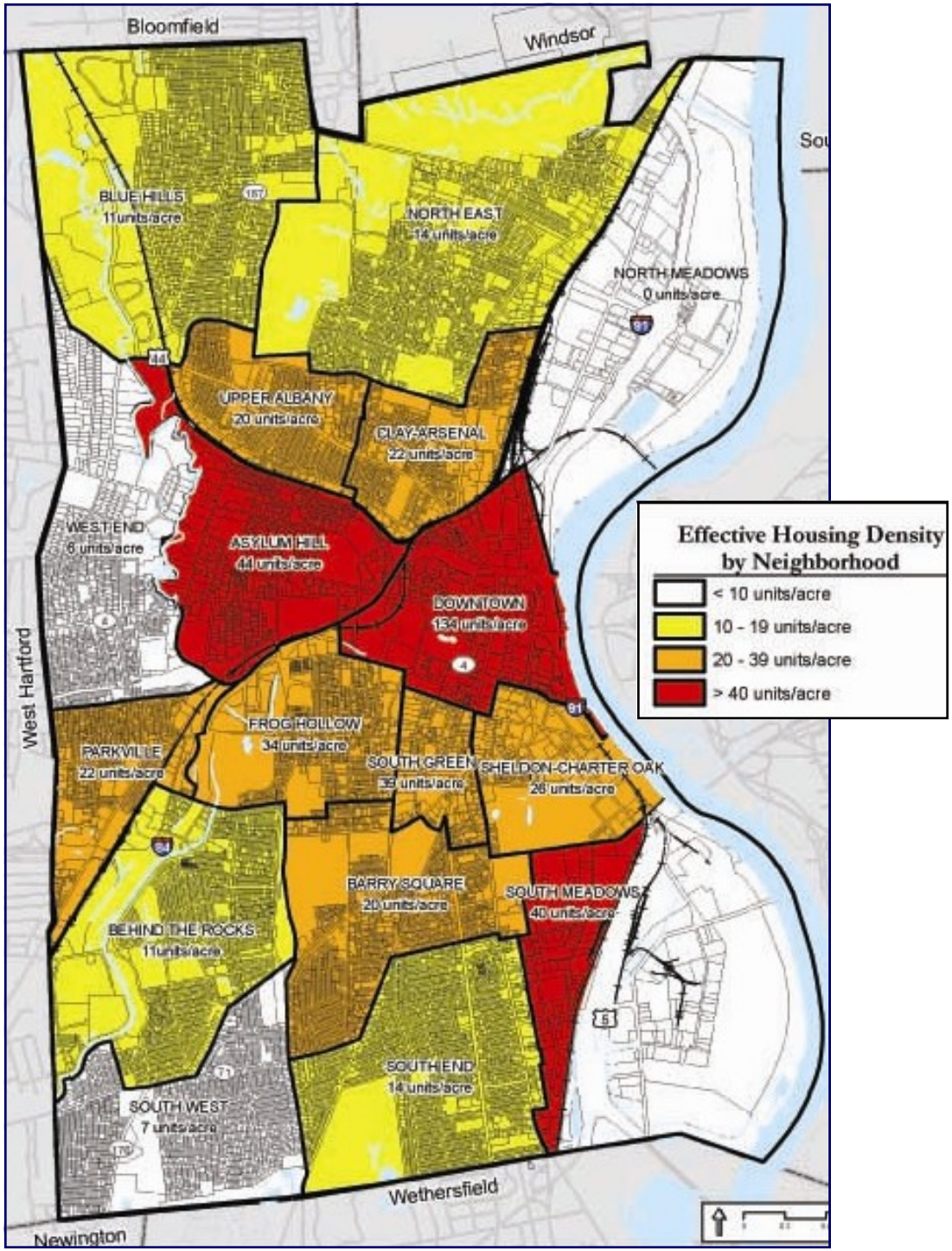
Under the current zoning regulations, density is measured as "person per acre" (PPA) and

The Clay Arsenal neighborhood has an effective residential density of 22 units per acre

The South Green neighborhood has an effective residential density of 39 units per acre



Vacant Land by Generalized Zoning



Housing Density by Neighborhood

Residential Zones	Effective Density			Existing	
R-1 (High Density)	**Units**	**Acres**	**U/A**	**PPA**	**U/A**
Low-Rise Apartment	2,150	42.7	50		
Mixed-Use: Residential / Commercial	100	4.9	20		
Residential Condominium	94	5.9	16		
Single & Two Family	98	9.6	10		
Three & Four Family	239	12.7	19		
Total:	**2,681**	**75.8**	**35**	**150**	**60**
R-2 (Medium Density)	**Units**	**Acres**	**U/A**	**PPA**	**U/A**
High Rise Apartment	581	18.7	31		
Low Rise Apartment	3,478	91.9	38		
Mixed Use: Commercial / Residential	181	5.7	32		
Residential Condominium	361	10.1	36		
Senior Housing	24	0.3	80		
Single & Two Family	397	36.1	11		
Three & Four Family	662	32.0	21		
Total:	**5,684**	**195**	**29**	**100**	**40**
R-3 (Medium Density)	**Units**	**Acres**	**U/A**	**PPA**	**U/A**
Low Rise Apartment	3,019	99.2	30		
Mixed Use: Commercial / Residential	284	12.4	23		
Residential Condominium	378	15.6	24		
Single & Two Family	950	101.8	9		
Three & Four Family	2,449	127.4	19		
Total:	**7,080**	**356.4**	**20**	**75**	**30**

Effective Housing Density– Residential Zones

Residential Zones	Effective Density			Existing	
R-4 (Three-Family)	**Units**	**Acres**	**U/A**	**PPA**	**U/A**
Low Rise Apartment	4,099	93.1	44		
Mixed Use: Commercial / Residential	208	9.0	23		
Residential Condominium	164	4.5	36		
Senior Housing	294	5.6	53		
Single & Two Family	2,601	293.1	9		
Three & Four Family	5,190	280.2	19		
Total:	**12,556**	**685.5**	**18**	**18.9**	
R-5 (One- & Two-Family)	**Units**	**Acres**	**U/A**	**PPA**	**U/A**
Low Rise Apartment	323	8.2	39		
Mixed Use: Commercial / Residential	26	2.5	10		
Residential Condominium	90	2.3	39		
Senior Housing	161	5.1	32		
Single & Two Family	3,660	407.7	9		
Three & Four Family	1,255	75.3	17		
Total:	**5,515**	**501.1**	**11**	**11.6**	
R-6 (One-Family)	**Units**	**Acres**	**U/A**	**PPA**	**U/A**
Low Rise Apartment	2,652	107.4	25		
Mixed Use: Commercial / Residential	1	0.1	10		
Single & Two Family	1,843	255.0	7		
Three & Four Family	40	2.0	20		
Total:	**4,536**	**364.5**	**12**	**7.3**	
R-7 (One-Family)	**Units**	**Acres**	**U/A**	**PPA**	**U/A**
Low Rise Apartment	257	8.0	32		
Mixed Use: Commercial / Residential	2	0.7	3		
Residential Condominium	26	1.5	17		
Senior Housing	15	0.3	50		
Single & Two Family	3,267	595.6	5		
Three & Four Family	141	10.6	13		
Total:	**3,708**	**616.7**	**6**	**5.8**	

"families per acre" (FPA). The average household size for the City according to the 2000 Census is 2.5 persons per household. For this analysis, PPA and FPA were converted to dwelling units per acre. As shown in the accompanying table the City's R-4, R-5, R-6, R-7 and R-8 zones have effective densities that are very similar to the maximum allowed by zoning. The R-1, R-2, and R-3 zones have overall effective densities that are 28% - 33% lower than the maximum density allowed. For the City's residential office districts, the RO-1, RO-2 and RO-3 districts have effective densities 52%, 72%, and 27% lower than zoning allows, respectively. Within these zones, the density for apartment and condominium use subcategories are very similar to the maximum allowed by zoning.

This plan recommends revising zoning regulations to change the measurement of residential density from "persons per acre" and "families per acre" to "dwelling units per acre", in order to more accurately align the density allowed under zoning regulations with the actual housing densities.

Transit Oriented Development

Transit Oriented Development (TOD) refers to residential and commercial centers designed to maximize access by transit and nonmotorized transportation, and, with other features, to encourage transit ridership. A typical TOD has a rail or bus station at its center, surrounded by relatively high-density development. It differs from "transit adjacent development" by including the following design features:

- The neighborhood is designed for bicycling and walking with adequate facilities and attractive street conditions;
- Streets have good connectivity and traffic calming features to control vehicle traffic speeds;
- Mixed-use development that includes shops, schools and other public services, and a variety of housing types and prices, within each neighborhood;
- There is a parking management plan to reduce the amount of land devoted to parking compared with conventional development and to take advantage of the parking cost savings associated with reduced automobile use; and
- There are convenient, comfortable and secure transit stops and station, with

Residential Zones	Effective Density			Existing	
R-8 (One-Family)	**Units**	**Acres**	**U/A**	**PPA**	**U/A**
Residential Condominium	88	29.2	3		
Single & Two Family	254	173.0	1		
Total:	**342**	**202**	**2**	**3.6**	
RO-1 (Residence Office)	**Units**	**Acres**	**U/A**	**PPA**	**U/A**
High Rise Apartment	1,414	13.7	103		
Low Rise Apartment	1,707	31.7	54		
Mixed Use: Commercial / Residential	402	9.4	43		
Residential Condominium	409	8.6	48		
Single & Two Family	24	2.4	10		
Three & Four Family	89	3.7	24		
Total:	**4,045**	**69.5**	**58**	**300**	**120**
RO-2 (Residence Office)	**Units**	**Acres**	**U/A**	**PPA**	**U/A**
High Rise Apartment	113	1.1	103		
Low Rise Apartment	2,192	33.2	66		
Mixed Use: Commercial / Residential	406	88.4	5		
Residential Condominium	454	6.8	67		
Senior Housing	234	1.9	123		
Single & Two Family	52	6.8	8		
Three & Four Family	39	2.0	20		
Total:	**3,490**	**140**	**25**	**225**	**90**
RO-3 (Residence Office)	**Units**	**Acres**	**U/A**	**PPA**	**U/A**
Low Rise Apartment	6	0.2	30		
Mixed Use: Commercial / Residential	5	0.4	13		
Single & Two Family	12	0.5	24		
Three & Four Family	66	2.4	28		
Total:	**89**	**4**	**22**	**75**	**30**

Commercial Zones	Effective			Existing	
B-1 Downtown Development Dist.	**Units**	**Acres**	**U/A**	**FAR**	**U/A**
High Rise Apartment	1,758	8.4	209		
Mixed Use: Commercial / Residential	178	2.2	81		
Total:	**1,936**	**11**	**176**	**10**	**762**
B-2 Downtown Development Perimeter	**Units**	**Acres**	**U/A**	**FAR**	**U/A**
High Rise Apartment	270	1.1	245		
Low Rise Apartment	244	3.4	72		
Mixed Use: Commercial / Residential	363	5.0	73		
Residential Condominium	21	0.7	30		
Three & Four Family	3	0.1	30		
Total:	**24**	**1**	**24**	**7**	**533**
B-3 Business District (General - Linear)	**Units**	**Acres**	**U/A**	**FAR**	**U/A**
Low Rise Apartment	352	5.6	63		
Mixed Use: Commercial / Residential	224	10.5	21		
Residential Condominium	85	2.2	39		
Single & Two Family	58	5.6	10		
Three & Four Family	73	4.6	16		
Total:	**792**	**29**	**27**	**2 (1.2)**	**91**

Commercial Zones	Effective			Existing	
B-4 Neighborhood	**Units**	**Acres**	**U/A**	**FAR**	**U/A**
High Rise Apartment	136	4.0	34		
Low Rise Apartment	1,013	22.1	46		
Mixed Use: Commercial / Residential	1,355	53.2	25		
Residential Condominium	234	3.4	69		
Single & Two Family	70	6.3	11		
Three & Four Family	230	12.6	18		
Total:	**3,038**	**102**	**30**	**2 (1.2)**	**91**
C-1 Commercial District	**Units**	**Acres**	**U/A**	**Only allowed with IROD**	
Low Rise Apartment	165	1.5	110		
Mixed Use: Commercial / Residential	64	3.7	17		
Residential Condominium	41	0.4	103		
Single & Two Family	44	2.5	18		
Three & Four Family	352	3.4	104		
Total:	**666**	**12**	**56**		
I-2 Industrial District	**Units**	**Acres**	**U/A**	**Only allowed with IROD**	
Low Rise Apartment	101	2.3	44		
Mixed Use: Commercial / Residential	153	8.4	18		
Single & Two Family	31	3.9	8		
Three & Four Family	63	3.0	21		
Total:	**348**	**18**	**19**		

Effective Housing Density– Commercial Zones

features such as comfortable waiting areas, venders selling refreshments and periodicals, washrooms, wayfinding and multi-modal navigation tools.

TODs need to have high enough residential densities to create adequate transit ridership to justify frequent service, and to help create active street life and commercial activities. Employment density, demographic mix, transit pricing, parking pricing, the quality of transit service, the effectiveness of transit marketing, walkability, and street design are other important factors that determine the success of a TOD.

There are many benefits to creating successful TODs, including shifting car trips to transit, biking and walking, increasing accessibility and transportation options, and the creation of more livable communities. TODs also reduce household car ownership, vehicle miles traveled (TODs generate about half of the automobile trips that conventional, automobile-oriented development generate), parking demand, and total transportation costs. TODs also tend to increase property values by between 5 and 15 percent, which can make them profitable investments.

Hartford has the opportunity to create several new TODs in tandem with the construction of the New Britain-Hartford Bus Rapid Transit line.

Implications for the Future

The existing land use patterns of Hartford are generally consistent with those of other older Northeastern industrial cities. As the City has continued to evolve over the past 10 to 15 years, its land use has changed to reflect the vagaries of the local economy, the housing market and the individual development programs, projects and initiatives of both the public and private sectors. Over the next decade, Hartford's land use patterns will continue to change under the influence of these same factors. The inventory and analysis of Hartford's land use and develop-

Transit Oriented Development	Transit Adjacent Development
• Grid street pattern	• Suburban street pattern
• Higher densities	• Lower densities
• Limited surface parking and efficient parking management	• Dominance of surface parking
• Pedestrian- and bicycle-oriented design	• Limited pedestrian and cycling access
• Mixed housing types, including multi-family	• Mainly single-family homes
• Horizontal (side-by-side) and vertical (within the same building) mixed use	• Segregated land uses
• Office and retail, particularly on main streets	• Gas stations, car dealerships, drive-through stores and other automobile-focused land uses.

Transit Oriented Development compared to Transit Adjacent Development

ment patterns contained in this chapter will form the foundation for recommended future land use changes in the “Generalized Land Use” chapter.