



Neighborhood Baseline Report: Bridgeport, Connecticut

By:

Philip Shaw, Research Specialist  
Marina-Selini Katsaiti, Research Specialist  
Colin Brennan, Research Assistant  
Robert Slattery, Research Assistant  
John Doyle, Research Assistant  
Jesse Kalinowski, Research Assistant  
Adnan Nur, Research Assistant

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CONNECTICUT CENTER FOR ECONOMIC ANALYSIS<sup>®</sup>

Fred V. Carstensen, Director

University of Connecticut

341 Mansfield Road

Unit 1240

Storrs, CT 06269

Voice: 860-486-0485 Fax: 860-486-0204

<http://cea.uconn.edu>

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## ***Executive Summary***

This analysis seeks to establish a comprehensive portrait of the current state of each of Bridgeport's neighborhoods. The study characterizes each neighborhood descriptively and analytically.

Confronted with a relative absence of recent data that would help in this process, the CCEA developed a unique approach that helps reveal recent developments in crime rates, school performance, income and housing characteristics, as well as residential and commercial investment decisions made at the neighborhood level. This led to creation of the Neighborhood Development Index (NDI), a measure of neighborhood performance in terms of income, school quality, and crime relative to other Bridgeport neighborhoods. Three separate indexes that measure the relative crime incidence (crime index), relative school performance (school index), and relative standard of living (income index) for each neighborhood form the basis of the NDI. The following discussion provides detailed description and analysis of each neighborhood, as well as each of the data components.

The major findings laid out in detail below are:

### ***Income and Housing:***

- All neighborhoods, except the East End and the East Side, experienced a decline in average real income over the period of 2000-2006.
- On an annual basis, Bridgeport households experienced positive growth in real income in only two of the seven years 2000-2006.
- The median house price for Bridgeport steadily rose from 2000 up until 2006, where it matched that of the United States. However, the median house price for Bridgeport remains well below that of Connecticut as a whole.

### ***Education:***

- In all of Bridgeport's high schools the cumulative dropout rate declined from 2004 to 2006.
- The North End neighborhood of Bridgeport is the only neighborhood to meet the state goal on the Connecticut Mastery Test in any year over the period.
- There is a strong statistical relationship between the crime index as constructed in this paper and a wide variety of school performance measures across both neighborhoods and time; this relationship persists even after controlling for income and school resources.
- Our efficiency analysis shows that evaluating the performance of schools on the basis of test scores is misleading once the analysis controls for the resources available to individual schools.

### ***Crime:***

- After 2002, the rate reported for rapes for Bridgeport surpassed Detroit, MI, and Compton, CA, two cities that recently ranked as the most dangerous cities in their population classifications.
- Between 2000 and 2005 the burglary rate for Bridgeport was vastly higher than Compton, CA.
- In 2005, the robbery rate for Bridgeport closely matched that of Compton, CA.
- Between 2000 and 2003 the motor vehicle theft rate for Bridgeport also surpassed that of Compton, CA.
- The two safest neighborhoods, as measured by our crime index (CI), were North End and Black Rock.

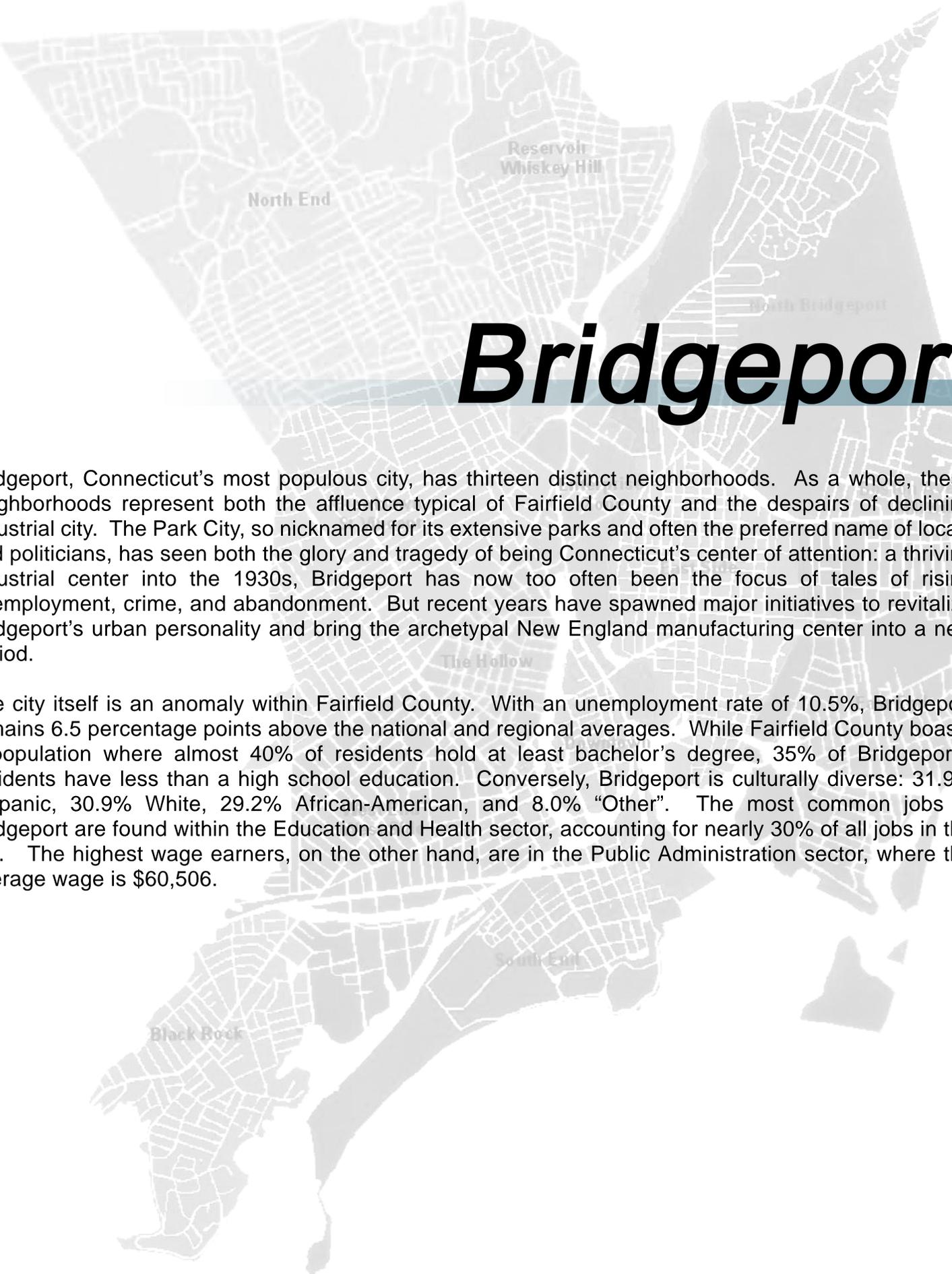
- The Downtown and Enterprise neighborhoods were ranked as the two most dangerous neighborhoods in terms of crimes per 100 people.

***Building Permits as a Proxy for Neighborhood Investment:***

- After controlling for income and square feet of developed land, the analysis reveals that crime is a major determinant of residential and commercial investment, as measured by building permits. Higher crime translates into lower rates of investment.
- The Neighborhood Development Index (NDI) captures the relationship between neighborhood investment patterns and the other variables.

***The Neighborhood Development Index (NDI):***

- The North End was a clear stand out, ranking 1<sup>st</sup> in terms of the overall quality of life for every year measured.
- Due to the high income index for the Reservoir neighborhood, it ranked 2<sup>nd</sup> on the 2006 NDI rankings.
- Black Rock ranked 5<sup>th</sup> out of 10 according to the 2006 NDI as a result of declining performance for the neighborhood's schools.
- The West End's high crime rate helped to place it last on the NDI rankings for three of the six years covered.
- Despite its strides in educational performance, the East Side ranked last in quality of life as measured by the NDI in 2006 as a result of its higher than average crime rate among residential neighborhoods.



# Bridgeport

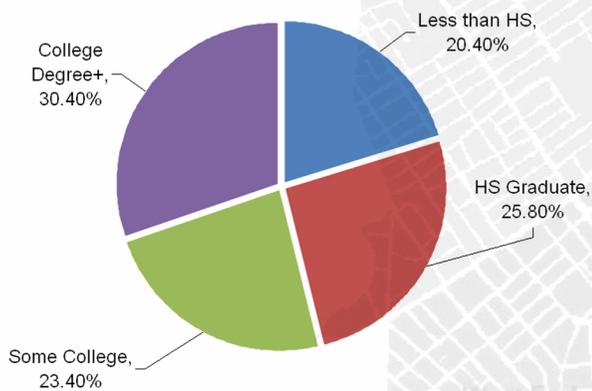
Bridgeport, Connecticut's most populous city, has thirteen distinct neighborhoods. As a whole, these neighborhoods represent both the affluence typical of Fairfield County and the despairs of declining industrial city. The Park City, so nicknamed for its extensive parks and often the preferred name of locals and politicians, has seen both the glory and tragedy of being Connecticut's center of attention: a thriving industrial center into the 1930s, Bridgeport has now too often been the focus of tales of rising unemployment, crime, and abandonment. But recent years have spawned major initiatives to revitalize Bridgeport's urban personality and bring the archetypal New England manufacturing center into a new period.

The city itself is an anomaly within Fairfield County. With an unemployment rate of 10.5%, Bridgeport remains 6.5 percentage points above the national and regional averages. While Fairfield County boasts a population where almost 40% of residents hold at least bachelor's degree, 35% of Bridgeport's residents have less than a high school education. Conversely, Bridgeport is culturally diverse: 31.9% Hispanic, 30.9% White, 29.2% African-American, and 8.0% "Other". The most common jobs in Bridgeport are found within the Education and Health sector, accounting for nearly 30% of all jobs in the city. The highest wage earners, on the other hand, are in the Public Administration sector, where the average wage is \$60,506.

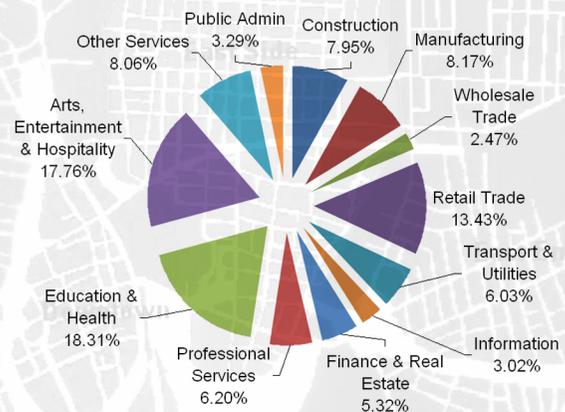
# Black Rock

The Black Rock neighborhood, located on the southwestern end of the city, has, among all neighborhoods, the highest percentage of residents (30.4%) with a college education. Black Rock also has the second highest household income, averaging \$67,514 annually. Whites comprise the majority (56.6%) of Black Rock's population; Hispanics make up 19.6%; Blacks 18.0%. The highest wage earners in Black Rock are in the Public Administration sector, where their average wage is over \$100,000. Much like the city itself, residents of Black Rock's find the most jobs in the Education and Health sector. However, employees in that sector make, on average, \$6,124 less than the city average in Black Rock.

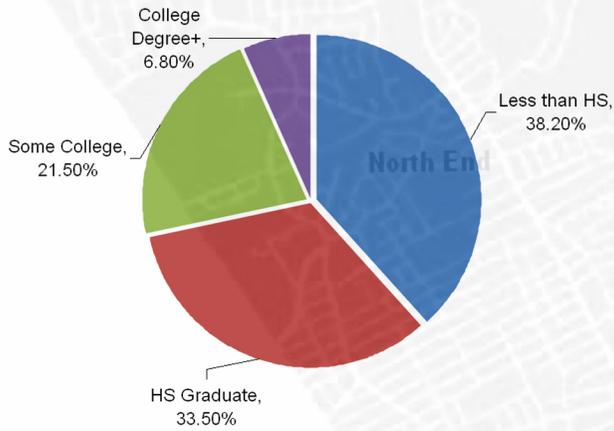
## Educational Composition



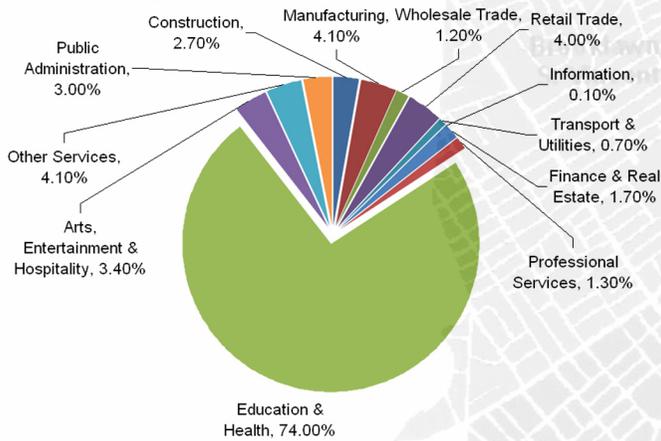
## Employment by Sector



## Educational Composition



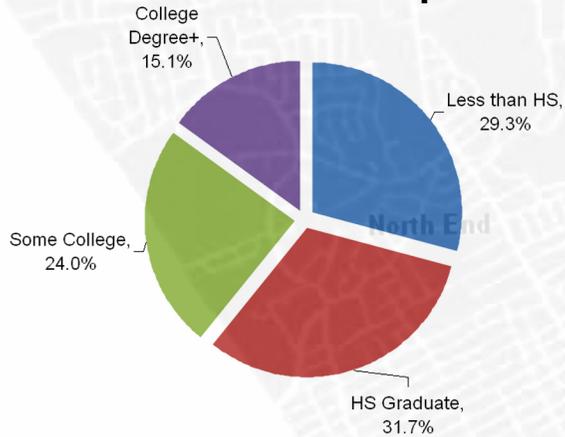
## Employment by Sector



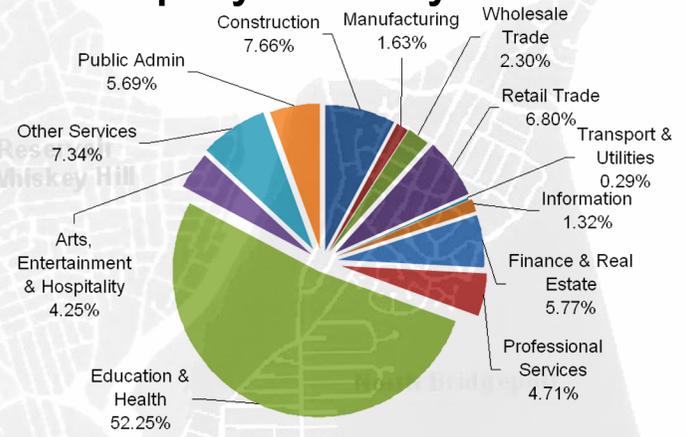
# Boston Avenue

The Boston Avenue/Mill Hill neighborhood is home to the highest percentage of the Education and Health sector employees. Nearly a fifth (19.4%) of the entire sector lives in the neighborhood. Along with producing the largest number of jobs in the sector, residents earn salaries (\$53,114) nearly ten thousand dollars above the city average (\$44,875). Residents working in the Information sector and the Transportation and Utilities sector, however, earn the highest wages in the city, \$77,931 and \$74,424 respectively. The Boston Avenue/Mill Hill population is 35.0% African-American, 33.7% Hispanic, and 26.4% White. Critically, 16.5% of residents of this neighborhood have incomes below the poverty level, while 12.1% are unemployed.

## Educational Composition



## Employment by Sector



# Brooklawn

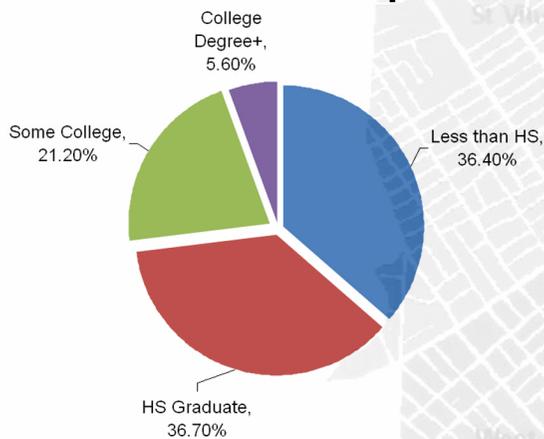
The Brooklawn/St. Vincent neighborhood, located adjacent to the city of the Fairfield, is Bridgeport's most populous, with 22,600 residents. The Brooklawn/St. Vincent population is 42.1% White, 24.9% Hispanic, and 20.3% African-American. While 29.3% of residents have less than a high school diploma, only 6.7% of current residents are unemployed, 3.8 percentage points less than the city average. The most common jobs are in the Education and Healthcare sector, accounting for 18.6% of the city's jobs in the sector. The highest wage earners are in the Public Administration sector (\$56,619), while the Information sector trails closely behind at an average of \$50,519.



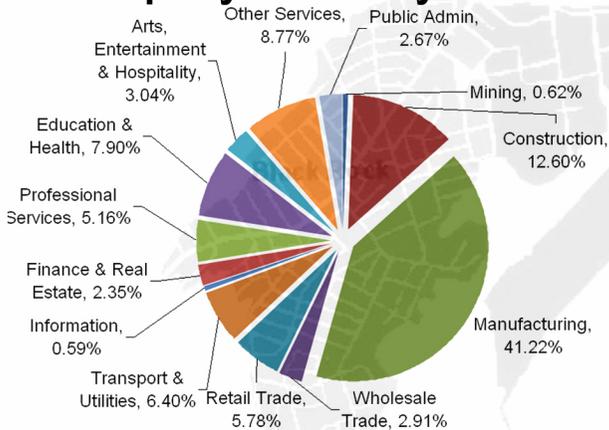
# East End

The East End neighborhood, located adjacent to the town of Stratford, has the highest percentage of African-American residents (65.1%). East End's population is also 5.2% White and 26.0% Hispanic. East End residents have an average household income of \$46,914, slightly higher than the average earnings of employees located in the East End (\$44,669). Almost half of the jobs in the East End are in the Manufacturing sector, where employees, on average, earn \$46,983 annually. Only 5.6% of residents in the East End have a college degree, while the neighborhood's unemployment rate is the fourth highest in the city at 13.7%.

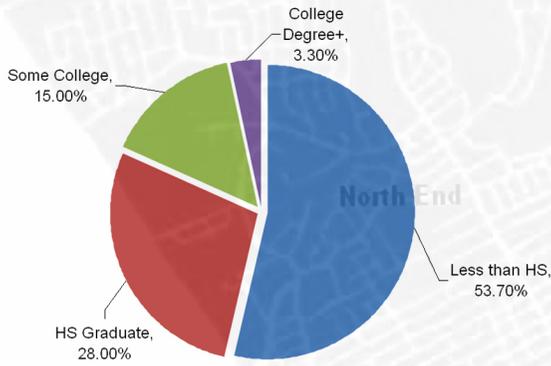
## Educational Composition



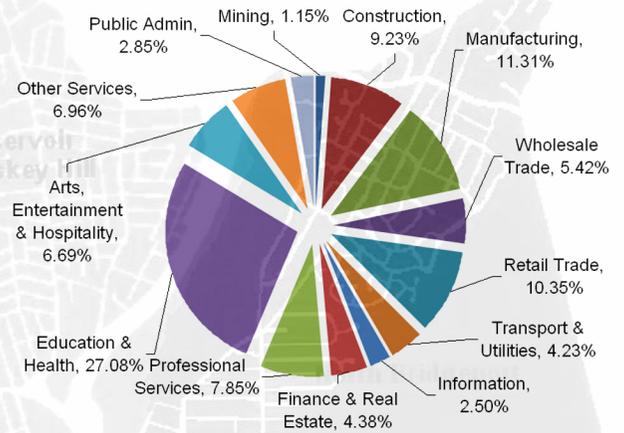
## Employment by Sector



## Educational Composition



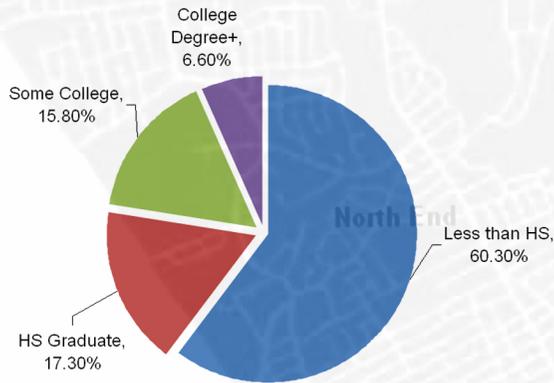
## Employment by Sector



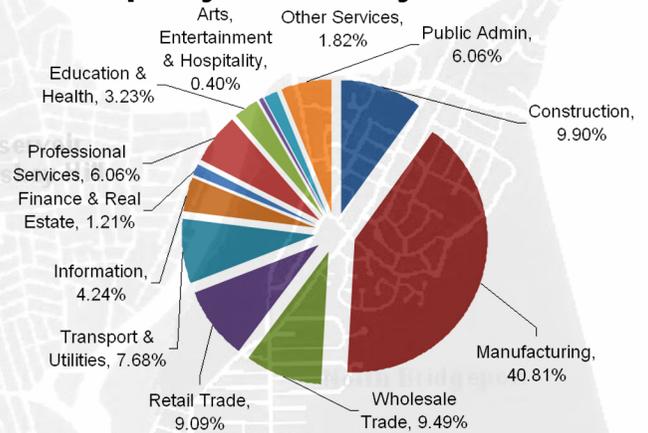
# East Side

The East Side neighborhood, located between the East End and the commercial districts (Downtown neighborhood and the Enterprise Zone), is heavily Hispanic (66.5%). The rest of the neighborhood, demographically, is split between African-Americans (23.9%), Whites (6.1%) and “Others” (3.5%). The neighborhood itself is the most neighborhood in the city, at 17.0%. The East Side also has the second highest unemployment level of all residential neighborhoods, where 34.1% of its residents have incomes below the poverty line. Over half of the residents in the East Side do not have a high school diploma, while only 3.3% of residents have earned a college degree, the lowest of all neighborhoods. The most common jobs are within the Education and Health sector; average wages for these jobs among neighborhood residents are nearly \$8,000 below the city average. Employment of residents in the Mining sector accounts for 33.3% of the sector jobs for the city; however, wages, on average, are but \$19,223 annually. The highest wages earned in the East Side neighborhood are those in the Construction sector, where, on average, an annual income comes to \$56,513.

## Educational Composition



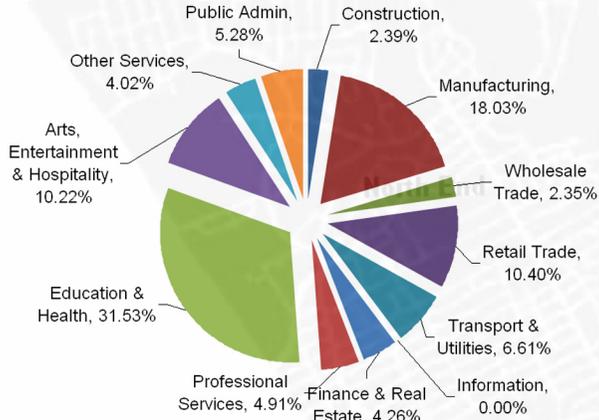
## Employment by Sector



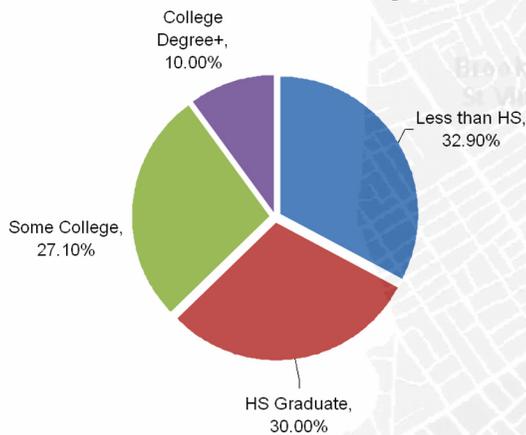
# Enterprise Zone

While the Downtown neighborhood consists primarily of professional and business services, the Enterprise Zone, the second commercial neighborhood in Bridgeport, primarily focuses on manufacturing. Almost half of employment of firms in the neighborhood belongs to the Manufacturing sector, where average earnings amount to \$48,453. Unique to the Enterprise Zone, the average earnings of those in the Wholesale Trade sector are about \$10,000 greater than the city average. The Enterprise Zone, with the smallest population in the city (872 residents), has 34.2% of its residents with incomes below the poverty level. The racial composition of the Enterprise Zone is almost half Hispanic (47.4%), while White (21.4%), African-American (19.3%), and "Other" (11.9%) divide the remaining demographic. Only 6.6% of residents have earned a college degree, while 60.3% of residents have not graduated high school, the highest percentage in the city. Although there is 11.4% overcrowding in the neighborhood, no new housing projects have been initiated in the last 20 years.

## Employment by Sector



## Educational Composition



# North Bridgeport

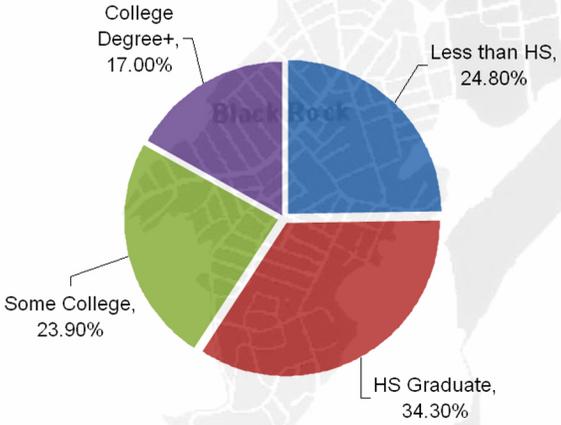
North Bridgeport, located in the northeast corner of Bridgeport and bordering the towns of Trumbull and Fairfield, is home to the highest percentage of residents over the age of 65 in the city. While only 10% of residents in the neighborhood have a college degree—roughly 2.5 percentage points lower than the city average—the unemployment rate is 8.0%, 2 percentage points less than the city average. North Bridgeport has the second lowest percentage (8.5%) of residents with incomes below the poverty level. The neighborhood is relatively evenly racially divided, with 39.7% White, 28.4% Hispanic, and 27.0% African-American. Although the household average income in the neighborhood is \$55,971, employees of firms in the neighborhood earn on average \$40,366. The most common jobs are within the Education and Health and Manufacturing sectors, where average wages are \$41,714 and \$43,435 respectively. Both of these, however, are below the city average. The highest incomes in the neighborhood go to those in the Public Administration sector, where employees, on average, earn \$66,709.



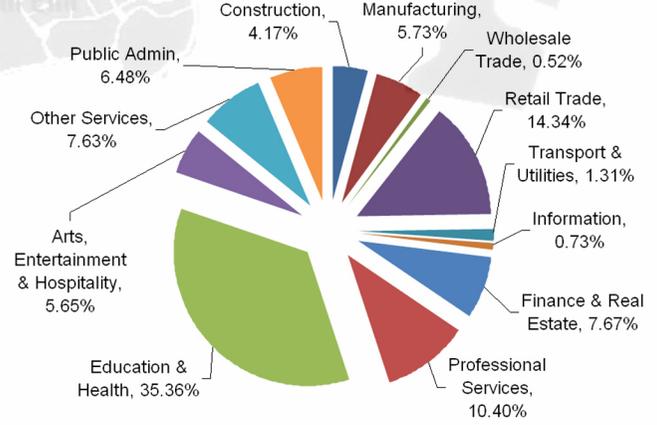
# North End

The North End, Bridgeport's second most populated neighborhood, borders Trumbull to its north and Fairfield to its west. The neighborhood also has the second highest percentage of residents over the age of 65 in the city. The North End has the highest percentage of households owning more than one car (91.0%), while overcrowding is the lowest in all neighborhoods (3.6%). The neighborhood has the second highest average household income (\$68,258), while only 8.0% of its residents have incomes below the poverty level (the lowest in the city). In contrast, earnings for employees working in firms in the North End average \$39,776, nearly \$6,000 below the city average. The most common jobs of neighborhood residents are in the Education and Health sector, where North End residents account for 12.6% of the sector jobs. Wages for residents working in the Education and Health sector are, on average, \$3,000 higher than the city average in the sector.

## Educational Composition



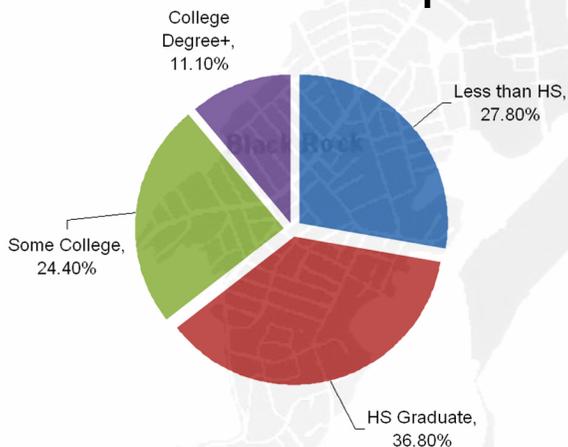
## Employment by Sector



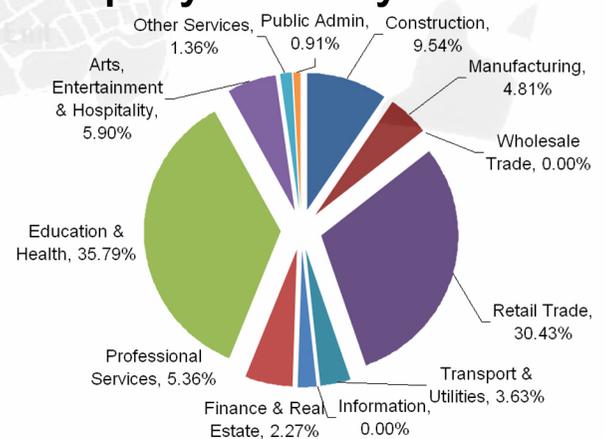


The Reservoir/Whiskey Hill neighborhood, bordering Trumbull to the north, has the highest average household income of all city neighborhoods, \$70,563. In direct contrast, employees in firms in the neighborhood earn, on average, \$40,283, roughly \$5,000 lower than the city average. The Reservoir/Whiskey Hill neighborhood also boasts the lowest unemployment rate, 5.9%. The neighborhood is primarily African American (56.1%), while Hispanics (21.2%), Whites (18.0%), and "Other" (4.7%) fill the rest of the demographic. The most common jobs for residents are found within the Education and Health sector, as well as the Retail Trade sector. In the Education and Health sector, employees average \$39,527, about \$6,000 below the city average. Jobs in the Reservoir/Whiskey Hill Retail Trade sector comprise almost 10% of the entire sector for the city, where the average employee earns \$35,043 annually. The highest average earnings in firms in the neighborhood are within the Manufacturing sector, where employees earn \$60,286, on average, annually.

## Educational Composition



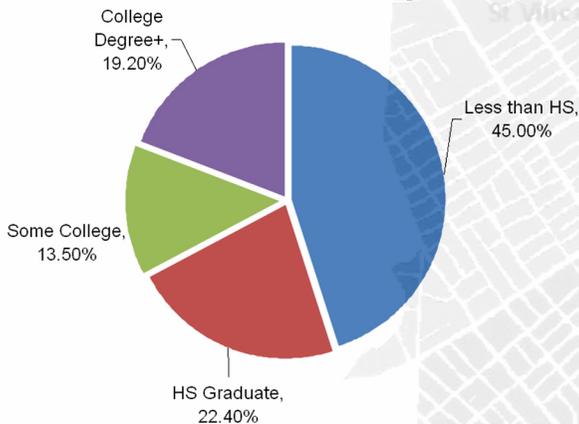
## Employment by Sector



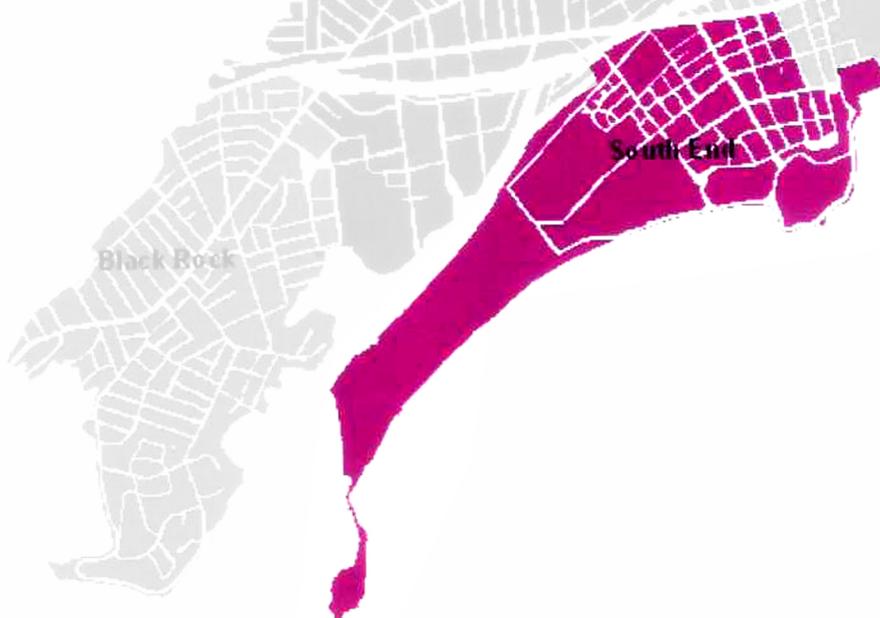
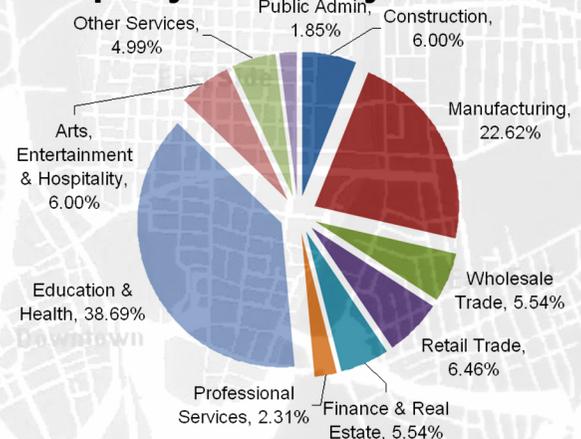
# South End

The South End neighborhood, located along Long Island Sound, has the highest percentage of residents with incomes below the poverty level, 37.4%. While the average household income is \$39,386, employees of firms in the neighborhood average \$49,370. The most common jobs of residents are found in the Manufacturing and the Education and Health sectors, where the average employee earnings are \$39,274 and \$63,604 respectively. The neighborhood is demographically divided between Hispanics (38.7%), African-Americans (24.3%), Whites (19.2%), and "Other" (17.8%). The South End also has the highest unemployment rate among all residential neighborhoods at 29.6%. Almost half of residents in the South End do not have a high school diploma. However, 19.2% of residents have a college degree, seven percent above the city average. Only 6.0% of housing units have been built within the last twenty years, while the South End is 10.3% overcrowded.

## Educational Composition



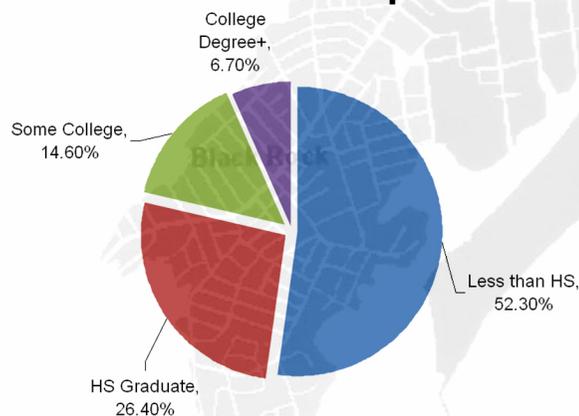
## Employment by Sector



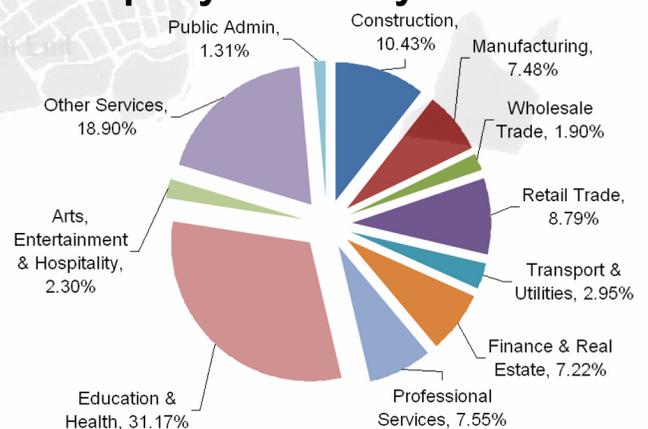
# The Hollow

The Hollow neighborhood, located just west of the commercial neighborhoods, has the highest percentage of residents born outside the United States. Almost half of the neighborhood is Hispanic (43.8%), while African-American (27.7%), Whites (16.3%), and "Other" (12.2%) comprise the rest. Over half (52.3%) of residents in the neighborhood do not have a high school diploma; only 6.7% of residents have a college degree. The Hollow, despite being 14.4% overcrowded, has only built 5.5% of its housing units in the last twenty years. Although the average household income of the neighborhood is \$48,486, employees in firms in the neighborhood, on average, earn \$34,966, over \$10,000 below the city average. The most common jobs for residents in the neighborhood are in the Education and Health sector. These employees on average make \$15,000 less than the city sector average of \$30,208.

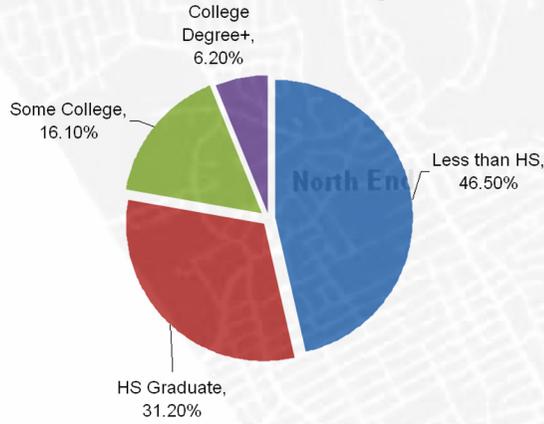
## Educational Composition



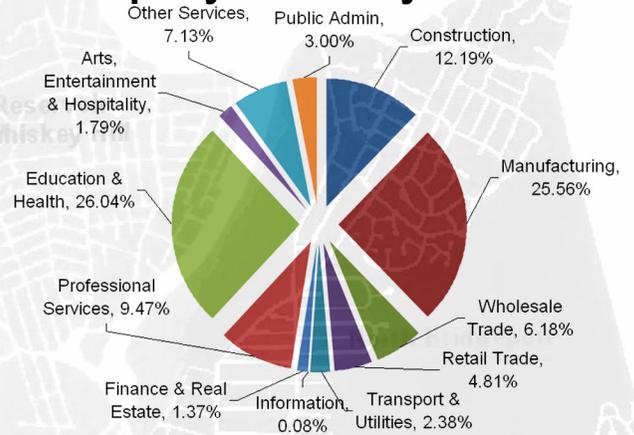
## Employment by Sector



## Educational Composition



## Employment by Sector



The West End/West Side neighborhood, bordering the city of Fairfield, is the third most populous neighborhood in the city. Predominately Hispanic (41.4%), the rest of the demographic divides between African-American (33.7%), Whites (14.6), and “Other” (10.4%). Over a quarter of the residents (27.4%) earn incomes below the poverty level. West End/West Sides’ unemployment rate is 13.9%, and nearly half of the residents do not have a high school diploma. The most common jobs in the neighborhood are in the Manufacturing sector, which constitutes 21.3% of Bridgeport’s total Manufacturing sector. Employees in this sector, on average, earn \$48,738 annually (\$2,000 more than the city sector average, and \$3,000 above the average city earnings).



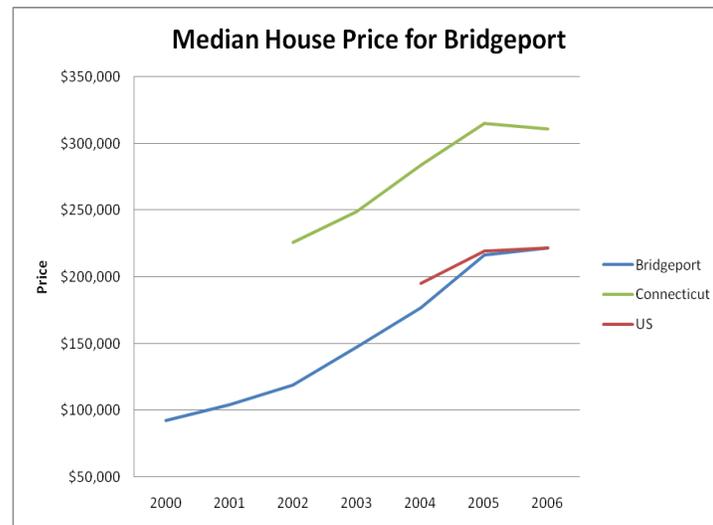
# West End

## ***Section A: Income and Housing Characteristics***

When characterizing the neighborhoods across Bridgeport, both income and housing prices are instrumental in measuring the standard of living for neighborhoods. Unfortunately, these measures are generally not available at the neighborhood level; moreover, if they are, they are typically out-dated. To overcome this problem, this study relies on a simple but effective methodology for obtaining a measure of income across neighborhoods. The method amounts to allowing income to fluctuate with both housing prices as well as the average income growth of the city as a whole.<sup>1</sup> Using this method, the study describes the neighborhoods by their income characteristics and their relative standards of living.

### **Bridgeport**

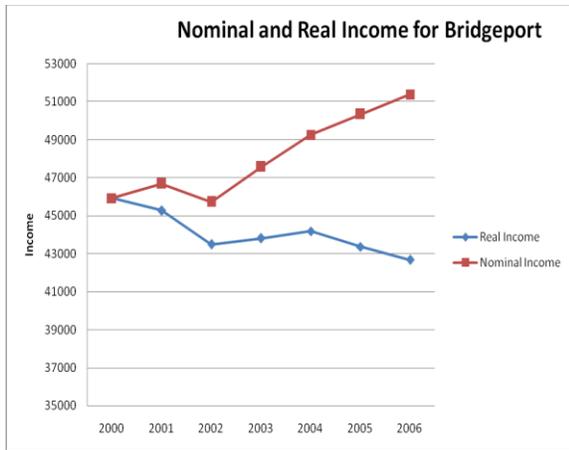
#### ***Housing Prices***



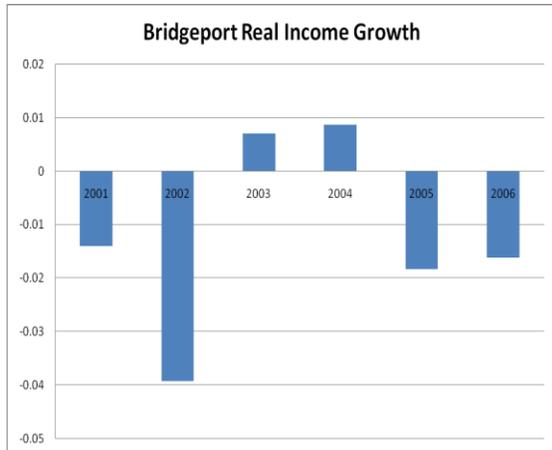
**Figure A1.1**

As of 2000, Bridgeport has experienced a substantial increase in the median value of housing. Although the gap between city and state housing prices may be narrowing, there is still a \$100,000 differential. In 2005 and 2006, Bridgeport approached the U.S. median house price.

<sup>1</sup> A brief derivation of this method is included at the end of the report (Income Estimation Methodology).

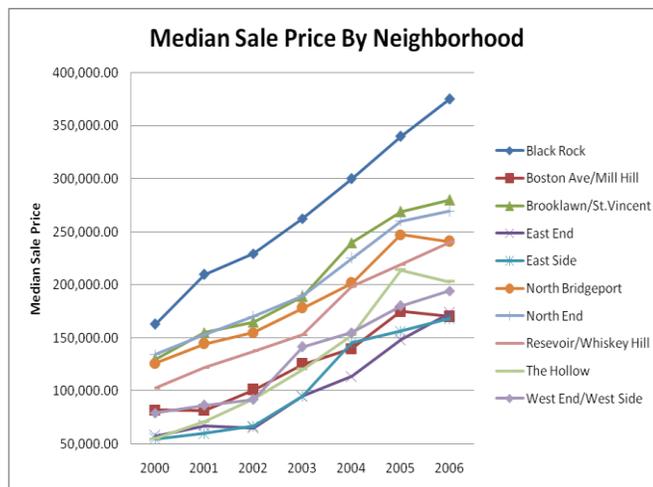


**Figure A1.2**



**Figure A1.3**

As depicted in the Figure A1.2 and Figure A1.3, during the period, nominal income in Bridgeport rose 13%. However real income (income adjusted for inflation) declined. The recession of the U.S. economy during 2001 and 2002 resulted in the drop in real income during these two years, with 2002 being the worst year, where real income declined by almost 0.04%. Income rose slightly in 2003-2004, then declined again in 2005-2006, witnessing a total net decrease of 7% between 2001 and 2006.



**Figure A1.4**

Table A1.1: Median Annual Price Change										
Year	Black Rock	Boston Ave	Brooklawn	East End	East Side	North Bridgeport	North End	Whiskey Hill	The Hollow	West End
2001	28.8%	-0.5%	19.2%	16.9%	9.1%	14.6%	14.0%	18.8%	29.1%	9.2%
2002	9.3%	23.9%	6.5%	-3.3%	11.4%	7.3%	11.1%	12.7%	30.2%	6.4%
2003	14.4%	23.8%	14.5%	46.2%	42.3%	14.8%	11.7%	11.3%	30.1%	53.8%
2004	14.3%	11.9%	26.9%	19.7%	53.1%	13.2%	18.5%	29.7%	26.8%	9.5%
2005	13.3%	25.1%	12.1%	30.1%	7.6%	22.8%	15.6%	10.3%	40.2%	16.1%
2006	10.3%	-2.9%	4.1%	17.0%	7.4%	-2.7%	3.7%	9.6%	-5.0%	8.0%

### *The Neighborhoods*

#### *Black Rock*

Starting at \$163,000 in 2000, Black Rock saw a 28.8% increase in median sale price to \$209,900 in 2001. Following a 9.3% increase in 2002 to \$229,450, median sale price increased at fairly consistent rates of 14.4% in 2003, 14.3% in 2004, and 13.3% in 2005. Black Rock ended the period with a median sale price of \$375,000; a 10.3% increase from 2006, and a 56.6% increase from 2000. Overall, Black Rock saw a significant rise in the value of homes, increasing by 131% over this six-year period.

#### *Boston Ave.*

With growth almost equal to that in Black Rock, Boston Ave. saw a 107% increase in housing prices. Prices increased dramatically for five years, then fell slightly. Beginning in 2000 with a median price of \$81,900, Boston Ave.'s housing prices increased 23.2% in 2002, to \$101,000. In 2003, there was another major increase, 23.7%, bringing the median price to \$125,000. With an additional 40% increase in the following two years, Boston Ave. peaked at \$175,000, and then fell slightly in 2006 to \$170,000.

#### *Brooklawn*

Brooklawn is one of the six neighborhoods that saw an increase in the median housing price every year from 2000 to 2006. With total growth of 115%, Brooklawn appears to have a promising future. In 2000, the median house price was \$130,000, growing to \$280,000 in 2006. The biggest percentage increase was seen in 2004, 26.9%, up \$50,900.

### *East End*

After suffering a decline in housing values in 2002, East End's median house price has exploded. In 2003, the median price increased 46.1% to \$95,000. Likewise, 2004, 2005, and 2006 all experience similar growth: 19.7%, 30%, and 17%, respectively. The East End reported a total growth of 203%, more than doubling prices, to \$173,200. Despite the dramatic increase in housing values, the East End still ranks 3rd from last in its housing prices, besting Boston Ave. by \$3,200 and East Side by \$5,200.

### *East Side*

In terms of nominal median house price, East Side ranked last: a 2006 value of \$168,000. This was not the result of poor growth; the growth in the neighborhood followed nearly the exact progression of the East End, nearly doubling its 2000 figure. In 2003 and 2004, prices increased by 42.3% and 52.1%, shocking the real estate market and providing one of the best growth figures that any Bridgeport neighborhood reported.

### *North Bridgeport*

With the 4<sup>th</sup> highest median housing price value in 2000, North Bridgeport has not performed as well as most of the other neighborhoods. Its overall growth was 91.2% over the course of 2000 to 2004. In part, this was due to high initial median housing price. Growth tells a different story: In 2003, growth was 14.8%, in 2004, growth was 13.2%; in 2005, growth peaked at 22.8%. North Bridgeport is not underperforming, rather it is steadily increasing, but at a slower rate than some neighborhoods that had low initial values.

### *North End*

The North End also experienced weak growth. Much like North Bridgeport where high initial median house price reduced the overall percent growth, the North End begins with a \$269,500 median house price, well above the national average. Annual growth from 2001 to 2005 was, on average, 14.16%, more than 10% above annual inflation. North End's schooling and crime rates offer a valid explanation as to why housing prices are so high: relative to other Bridgeport

neighborhoods, North End had the second lowest crime rate from 2002 as well as the highest rated educational performance since 2001.

### *Reservoir/Whiskey Hill*

Reservoir/Whiskey Hill started with the second highest values in Bridgeport, and enjoyed strong growth as housing prices increased 133% from 2000 to 2006. The annual pattern was consistently strong, ranging from 9.6% in relatively low-growth year 2006, to 29.7% in 2004, second only to the explosive growth in East side. Crime was relatively low in Reservoir/Whiskey Hill; it follows that housing prices should be valued at a higher figure than a high crime neighborhood, such as The Hollow. The 2006 median housing price of \$240,000 exceeded United States' median price of \$221,900.

### *The Hollow*

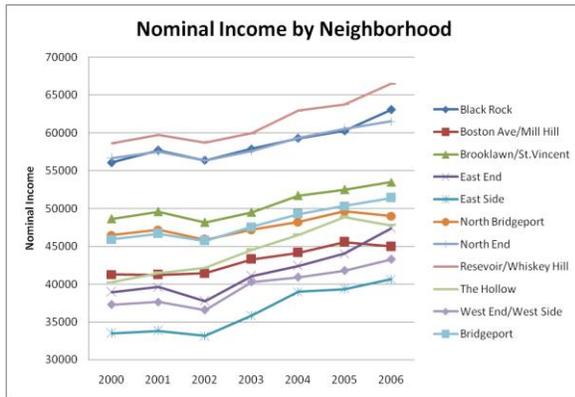
The Hollow's median housing price has increased 269% from 2000 to 2006, the largest increase in Bridgeport. Starting at a meager \$55,000, a result in part having one of the highest crime rates and weakest schools, The Hollow has been improving steadily. From 2001 to 2005, the average growth rate for housing prices were 29%, 30%, 30.2%, 26.8%, and 40.1%, suffering only a modest drop in 2006 of 5%. The Hollow has improved from having values dramatically below the national median housing price to trailing it by just \$18,900. Considering its average annual growth, and if growth continues at that historic rate, the Hollow may soon equal the national level.

### *West End/West Side*

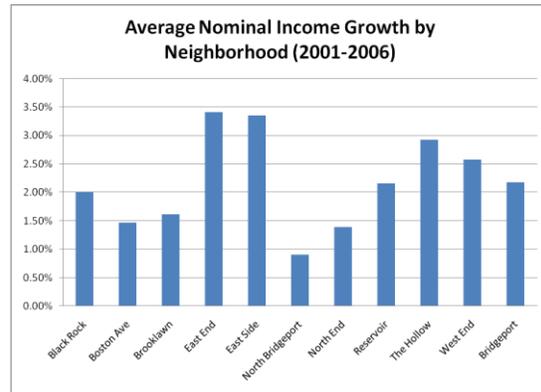
The West End/West Side experienced a 145% increase in the value of homes from 2000 to 2006. A prime deterrent to a faster growth in values is that crime is so prevalent in this neighborhood. As a result, neighborhood household income is falling; this feeds back into housing prices. If the city can address effectively the crime problem, West End/West Side should see additional increase from the current median housing price of \$194,350 in 2006.

## *Nominal Income*

Despite the healthy growth in residential real estate values, Bridgeport is struggling on other fronts. This section looks at nominal income (income unadjusted for inflation). The following section looks at real income (income corrected for the impact of inflation). Nominal income has grown, but insufficiently to match the rise in prices (which include the cost of housing). Thus, Bridgeport seems to be confronting declining income among its residents, a pattern which, if not reversed, spells increasing problems for the city and its residents.



**Figure A1.5**



**Figure A1.6**

Table A1.2: Average Nominal Income By Neighborhood										
Year	Black Rock	Boston Ave	Brooklawn	East End	East Side	North Bridgeport	North End	Reservoir/Whiskey Hill	The Hollow	West End
2000	56,069	41,265	48,648	38,961	33,505	46,483	56,687	58,601	40,266	37,312
2001	57,708	41,245	49,598	39,629	33,815	47,174	57,491	59,720	41,457	37,661
2002	56,365	41,427	48,175	37,761	33,164	45,896	56,349	58,713	42,133	36,574
2003	57,899	43,289	49,501	41,059	35,819	47,185	57,597	59,966	44,530	40,297
2004	59,274	44,146	51,715	42,406	38,979	48,220	59,365	62,927	46,513	40,936
2005	60,276	45,550	52,510	44,023	39,353	49,615	60,535	63,751	48,880	41,772
2006	63,065	44,965	53,475	47,392	40,657	49,006	61,529	66,499	47,775	43,269

**Table A1.3: Average Nominal Income Growth By Neighborhood**

Year	Black Rock	Boston Ave	Brooklawn	East End	East Side	North Bridgeport	North End	Reservoir/Whiskey Hill	The Hollow	West End
2001	2.92%	-0.05%	1.95%	1.71%	0.93%	1.49%	1.42%	1.91%	2.96%	0.94%
2002	-2.33%	0.44%	-2.87%	-4.71%	-1.93%	-2.71%	-1.99%	-1.69%	1.63%	-2.89%
2003	2.72%	4.50%	2.75%	8.73%	8.01%	2.81%	2.21%	2.13%	5.69%	10.18%
2004	2.38%	1.98%	4.47%	3.28%	8.82%	2.19%	3.07%	4.94%	4.45%	1.58%
2005	1.69%	3.18%	1.54%	3.81%	0.96%	2.89%	1.97%	1.31%	5.09%	2.04%
2006	4.63%	-1.28%	1.84%	7.65%	3.31%	-1.23%	1.64%	4.31%	-2.26%	3.58%

### *The Neighborhoods*

#### *Black Rock*

In 2001, average nominal household income was \$57,708 in Black Rock, a 2.92% increase compared to 2000. Nominal income fell the following year in 2002, continuing the pattern of the national economic cycle. From 2003, nominal income grew modestly through 2006, reaching \$63,065.

#### *Boston Ave.*

The average nominal household income in Boston Ave was \$41,265 in 2000, preceding a 0.05% fall in 2001, to \$39,996. Nominal income continued to grow until 2005, only to witness a nominal income again decline in 2006. Nominal growth in income for the Boston Avenue neighborhood over seven years was 8.48%, an average annual increase of 1.41%.

#### *Brooklawn*

In 2000, Brooklawn's average household income was \$48,648, growing by 1.95% in 2001. Nominal income fell slightly in 2002 to \$48,175, but then followed an upward, moderate trend through 2006. Brooklawn saw an aggregate 7.8% increase in nominal income over the span of 2000 to 2006,

#### *East End*

Average nominal household income in East End was \$38,691 in 2000. After a slight increase in 2001, 2002 saw a decline of 4.71%, followed by modest, steady increases for the rest of the period,

reaching \$47,392 in 2006. Compared to the other Bridgeport neighborhoods, the East End had the highest increase in income over a seven year period, 21.6%.

### *East Side*

In 2000, the average nominal household income in the East Side was \$33,505. Consistent with the general pattern, 2002 experienced a decline in nominal income of 1.93%. Thereafter, nominal income grew through 2006, while household income reached \$40,657 in 2006. East Side residents have the lowest income among Bridgeport neighborhoods.

### *North Bridgeport*

North Bridgeport neighborhood started with household income of \$46,483 in 2000. It experienced a slight increase over the entire seven year period. In 2002, nominal income declined 2.71%, followed by consecutive increases until 2006, when nominal income again fell 1.23%. Considering the 5.4% overall increase in income, North Bridgeport suffered near stagnant nominal income growth, yet, North Bridgeport remains 4<sup>th</sup> among the 10 neighborhoods when ranked by nominal household income.

### *North End*

In the North End, average household income was \$56,687 in 2000. After a small increase in 2001, 2002 saw a decline of 1.99%. Thereafter, nominal income grew quite modestly. Overall, nominal income grew 8.5%, with highest annual growth coming in 2003 and 2004, when nominal income increased approximately 1.42%.

### *Reservoir/Whiskey Hill*

The average household income in 2000 was \$58,601 in Reservoir/Whiskey Hill, growing 1.91% in 2001. In 2002, nominal income declined 1.69%, followed by an upward trend thereafter. Overall, nominal growth in Reservoir came to an impressive 13.47%. Reservoir/Whiskey Hill has the highest level of income relative to the rest of Bridgeport.

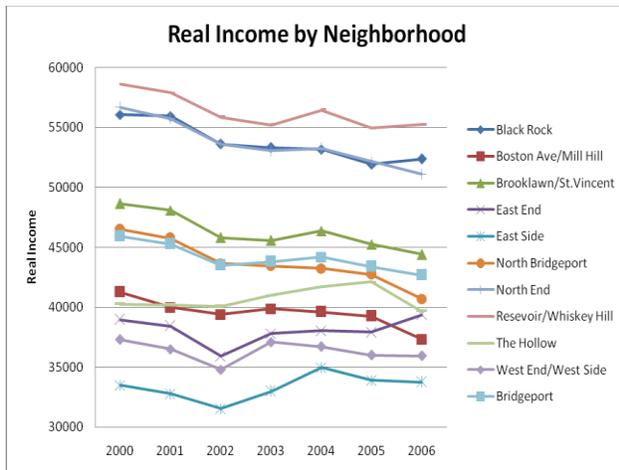
### *The Hollow*

In 2000, average household income in The Hollow was \$40,266, which rose by 2.96% in 2001. Between 2002 and 2005, nominal income rose annually, reaching \$48,880; in 2006, nominal income fell 2.26%, to \$47,775. Despite that decline, The Hollow outperformed almost every other neighborhood in overall nominal income growth with an increase of 18.65%. Ranked 4<sup>th</sup> according based on nominal wage, The Hollow’s growth is comparable to that in East Side and East End.

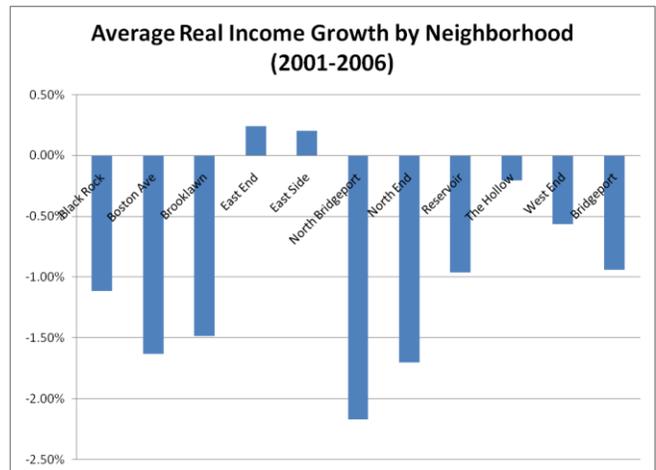
### *West End/West Side*

West End/West Side, in 2000, saw an average nominal household income of \$37,312. After a slight increase in 2001, 2002 saw a decline of 2.89%. Thereafter, nominal income rose through 2006. West End/West Side enjoyed an aggregate increase of 15.96% from 2000 to 2006. Even though it still ranks 9<sup>th</sup> among neighbors based on income, its strong relative performance is encouraging.

### *Real Income*



**Figure A1.7**



**Figure A1.8**

Year	Black Rock	Boston Ave	Brooklawn	East End	East Side	North Bridgeport	North End	Reservoir/Whiskey Hill	The Hollow	West End
2000	56,069	41,265	48,648	38,961	33,505	46,483	56,687	58,601	40,266	37,312
2001	55,960	39,996	48,096	38,428	32,791	45,745	55,750	57,911	40,201	36,520
2002	53,614	39,405	45,824	35,918	31,545	43,656	53,598	55,848	40,076	34,789
2003	53,319	39,865	45,585	37,812	32,986	43,453	53,041	55,223	41,008	37,110
2004	53,166	39,597	46,386	38,036	34,962	43,251	53,247	56,443	41,720	36,717
2005	51,934	39,246	45,243	37,930	33,906	42,748	52,157	54,928	42,116	35,991
2006	52,374	37,342	44,410	39,358	33,765	40,699	51,098	55,226	39,676	35,934

Year	Black Rock	Boston Ave	Brooklawn	East End	East Side	North Bridgeport	North End	Reservoir/Whiskey Hill	The Hollow	West End
2001	-0.19%	-3.08%	-1.13%	-1.37%	-2.13%	-1.59%	-1.65%	-1.18%	-0.16%	-2.12%
2002	-4.19%	-1.48%	-4.72%	-6.53%	-3.80%	-4.57%	-3.86%	-3.56%	-0.31%	-4.74%
2003	-0.55%	1.17%	-0.52%	5.27%	4.57%	-0.47%	-1.04%	-1.12%	2.32%	6.67%
2004	-0.29%	-0.67%	1.76%	0.59%	5.99%	-0.47%	0.39%	2.21%	1.74%	-1.06%
2005	-2.32%	-0.89%	-2.46%	-0.28%	-3.02%	-1.16%	-2.05%	-2.68%	0.95%	-1.98%
2006	0.85%	-4.85%	-1.84%	3.76%	-0.42%	-4.79%	-2.03%	0.54%	-5.79%	-0.16%

## *The Neighborhoods*

### *Black Rock*

In 2000, Black Rock was one of the wealthiest neighborhoods in Bridgeport, with real income of \$56,969. It then suffered a steady, moderate decline throughout the years, with the recession year of 2002 producing the largest fall, 4.19%. Although real income kept falling, the neighborhood remained 2nd highest when ranked by real income among Bridgeport neighborhoods.

### *Boston Ave.*

The average real household income in Boston Ave. was \$41,265 in 2000, but suffered a sharp decline in 2001, falling 3.08%. Real income continued to fall in subsequent years (with the exception of 2003), suffering its largest decline in 2006 (4.85%), finishing the period with real income of \$37,342, slightly below the U.S. average.

### *Brooklawn*

Brooklawn, with \$48,648 in average real household income in 2000, was representative of the average for Bridgeport for the year. Brooklawn suffered a drop of nearly \$3,000 in real income during the 2001-2002 recession. Real income continued falling during subsequent years, with the exception of 2004, which generated a slight increase of 1.76%. After 2004 income resumed their fall, reaching a low \$44,410 in 2006. Ranked 4<sup>th</sup> when compared to the other neighborhoods, Brooklawn has relatively high real income. However, real income has suffered significantly, dropping 8.7% over the course of the last seven years.

### *East End*

In 2000, East End, with average real household income of \$38,961, was the 3<sup>rd</sup> poorest neighborhood in Bridgeport. East End's real income has been among the most volatile. It took a major hit during the 2001-2002 downturns, but experienced a quick resurgence in subsequent years, which brought average real wages back above their 2000 level. East End is one of the two neighborhoods that had higher real income in 2006 compared to the 2000 numbers. Netting the effects of all changes, East End has managed a small increase from 2000 of 1.01%.

### *East Side*

The East Side saw the lowest real income in Bridgeport. Although it is the only neighborhood that achieved 4.57% and 5.99% increases in real income in 2003 and 2004 respectively, this did little to ameliorate its ranking in the city, ranking last. However, it is only the second neighborhood that showed higher real income at the end of the seven year period, 2000-2006. Overall, East Side real income grew 0.77% from 2000 to 2006. If the neighborhood continues on this path, it will soon surpass West End and challenge Boston Ave.

### *North Bridgeport*

North Bridgeport faced the biggest drop in real income during the period of interest compared to the other neighborhoods in Bridgeport. Average income fell \$5,784 in the seven years; growth rates throughout the period had only negative signs. As graphs above show, the decline relative to other

neighborhoods has been quite substantial. Despite the 14.2% fall from 2000 to 2006, North Bridgeport's real income remained above the national average.

### *North End*

North End was the second wealthiest neighborhood in 2000 with an average income of \$56,687. Succeeding years saw real income decline, with the exception of 2004, when real wages increased 0.39% to \$53,247. Although real income fell nearly 10% over the period, North End remains much higher than in other neighborhoods and above the national average by approximately \$13,000.

### *Reservoir/Whiskey Hill*

In 2001, average real household income in Reservoir/Whiskey Hill was \$58,601, highest in Bridgeport. Although 2002 and 2003 witnessed declines, 2004 saw a modest recovery as real income increased by 2.21%. In 2005, real income resumed its decline, a pattern than continued in 2006. Even with a steady decline in real income, Reservoir/Whiskey Hill has the highest income in Bridgeport.

### *The Hollow*

Average real household income in The Hollow was \$40,266 in 2000, but fell 0.16% in 2001. In 2002, real income declined again, by 0.31%. From 2003 through 2005, The Hollow had modest, consistent improvement, only to suffer a sharp decline in 2006. The Hollow was doing moderately well compared to many neighborhoods, until 2006, when the decline wiped out the gains made in prior years. The overall result for the seven years was that real income decreased moderately, making The Hollow one of the better performing neighborhoods when ranked by real income growth.

### *West End/West Side*

In 2000, West End/West Side saw the second lowest income; the 2001-2002 recession hit particularly hard: Cutting nearly \$2500 from an already low \$37,312. West End/West Side experienced a quick recovery in 2003, almost returning to its 2000 level, increasing 6.67%, the

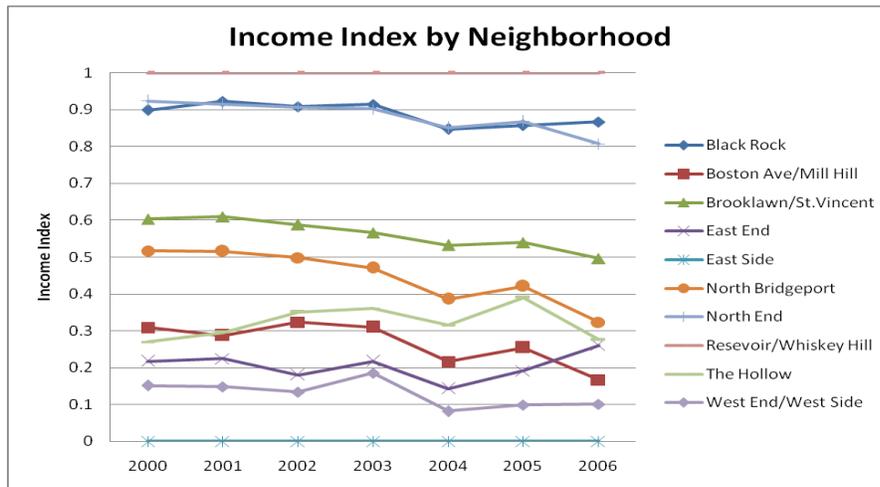
largest of all neighborhoods. Following 2003, the pattern of declining real income re-asserted itself, as West End/West Side suffered an overall decrease of 3.7% from 2000 to 2006.

### *Income Index*

To measure the relative standard of living across the neighborhoods in Bridgeport, the CCEA devised an income index (II). The annual II comes from comparing the income level of a single neighborhood to the minimum and maximum level across all of Bridgeport’s neighborhoods.<sup>2</sup> The formula is:

$$II_{i,t} = \frac{income_{i,t} - \min(income_t)}{\max(income_t) - \min(income_t)}$$

The II measures the relative standard of living, as measured by income, for each neighborhood across time. The interpretation of the index is simple: a higher value corresponds to a higher relative income.



**Figure A2.1**

Figure A2.1 shows that for many neighborhoods, including Black Rock, North End, Brooklawn, North Bridgeport, Boston Ave., and West End, the II suggests an overall downward trend between 2000 and 2006. The downward trend in the 2005-2006 period is especially clear, particularly for North End, Brooklawn, North Bridgeport, The Hollow, and Boston Ave..

<sup>2</sup> The II excludes Downtown, South End, and Enterprise due to the lack of available data.

The Hollow saw an increase between 2000 and 2005, but experienced a fairly sharp decline, trending with many of the other neighborhoods between 2005 and 2006. The East End, however, did not trend with the city, but rather increased its II from 2004 to 2006.

On the extremes, Reservoir consistently received the highest rating on the income index, scoring a perfect 1.00 relative to the other neighborhoods. Alternately, East Side consistently received the lowest rating, scoring 0.00 on the index annually.

### Income Index Rankings

Table A2.1		
2000 Rankings by II	2001 Rankings by II	2002 Rankings by II
1) Reservoir/Whiskey Hill (1)	1) Reservoir/Whiskey Hill (1)	1) Reservoir/Whiskey Hill (1)
2) North End (0.92)	2) Black Rock (0.92)	▲
3) Black Rock (0.9)	3) North End (0.91)	▼
4) Brooklawn/St.Vincent (0.6)	4) Brooklawn/St.Vincent (0.61)	
5) North Bridgeport (0.52)	5) North Bridgeport (0.52)	
6) Boston Ave. /Mill Hill (0.31)	6) The Hollow (0.29)	▲
7) The Hollow (0.27)	7) Boston Ave. /Mill Hill (0.29)	▼
8) East End (0.22)	8) East End (0.22)	
9) West End/West Side (0.15)	9) West End/West Side (0.15)	
10) East Side (0)	10) East Side (0)	

Table A2.2	
2003 Rankings by II	2004 Rankings by II
1) Reservoir/Whiskey Hill (1)	1) Reservoir/Whiskey Hill (1)
2) North End (0.85)	2) North End (0.87)
3) Black Rock (0.85)	3) Black Rock (0.86)
4) Brooklawn/St.Vincent (0.53)	4) Brooklawn/St.Vincent (0.54)
5) North Bridgeport (0.39)	5) North Bridgeport (0.42)
6) The Hollow (0.31)	6) The Hollow (0.39)
7) Boston Ave. /Mill Hill (0.22)	7) Boston Ave. /Mill Hill (0.25)
8) East End (0.24)	8) East End (0.19)
9) West End/West Side (0.08)	9) West End/West Side (0.1)
10) East Side (0)	10) East Side (0)

<b>Table A2.3</b>	
<b>2005 Rankings by II</b>	<b>2006 Rankings by II</b>
1) Reservoir/Whiskey Hill (1)	1) Reservoir/Whiskey Hill (1)
2) North End (0.87)	2) Black Rock (0.87)
3) Black Rock (0.86)	3) North End (0.81)
4) Brooklawn/St.Vincent (0.54)	4) Brooklawn/St.Vincent (0.5)
5) North Bridgeport (0.52)	5) North Bridgeport (0.32)
6) The Hollow (0.39)	6) The Hollow (0.28)
7) Boston Ave. /Mill Hill (0.25)	7) East End (0.26)
8) East End (0.19)	8) Boston Ave. /Mill Hill (0.17)
9) West End/West Side (0.1)	9) West End/West Side (0.1)
10) East Side (0)	10) East Side (0)

## ***Section B: Education***

Connecticut Department of Education data for Bridgeport’s elementary and high schools over the past six school years reveal clear differences in and across neighborhoods. Table B1.1 lists each elementary school in their respective neighborhood and grades taught; Table B1.2 lists the neighborhoods that each of the three major high schools serves.<sup>3</sup> For each elementary school, CCEA separated data into four categories: school need, student diversity, resources, and standardized test performance. For each high school, CCEA divided the data into six categories: school need, student diversity, resources, standardized test performance, dropout rate, and activities of graduates. The Department of Education reports the data at the end of school year: thus the 2000-2001 school year will be reported as 2001, 2001-2002 as 2002, etc.

The school analysis does not include magnet or private schools because these import students from surrounding towns and other neighborhoods, so they are not spatially specific and are not linked to a given neighborhood. Focusing on only those schools that serve specific neighborhoods helps characterize that neighborhood and its pattern of change. It should be noted, however, that many high performing students from affluent families, most notably in the Black Rock neighborhood, often attend private schools rather than their local public schools, and that the magnet school may pull strong students away from their neighborhood public school; both factors may distort the portrait of individual, neighborhood-based schools.<sup>4</sup>

### ***Educational Reference Group***

The Department of Education divides all school districts into Educational Reference Groups (ERG) based on the characteristics of families of students attending public schools. Districts in an Educational Reference Group have “similar median family incomes, percentages of families below the poverty level, percentages of students living in single-parent families or non-family households, percentage of families with a non-English home languages, percentages of families in which one or both parents have a bachelors degree, and percentages of families in white collar or managerial

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<sup>3</sup> Unlike many other municipalities, Bridgeport does not have middle schools (grades 5-8); it has only schools that go to grade 8, and then the conventional high schools covering grades 9 through 12.]

<sup>4</sup> As high school data are not differentiated between its encompassed neighborhoods, elementary schools will be used for neighborhood comparisons. High school data is only used when comparing the three individual high schools to ERG I and the state.

occupations. The districts' student enrollment was also considered.”<sup>5</sup> On the basis of these considerations, the Department of Education puts the Bridgeport School District in Educational Reference Group I (ERG I), with a group that also includes Hartford, New Britain, New Haven, New London, Waterbury, and Windham.

<b>Table B1.1: Elementary Schools by Neighborhood</b>		
<b>Neighborhood</b>	<b>School</b>	<b>Grades Served</b>
Black Rock	Black Rock School	K-2
	Longfellow School	PK-8
South End	Roosevelt School	PK-8
	the Hollow	Columbus School
West End West Side	Webster School	K-3
	Bryant School	PK-6
	Curiale School	K-8
	Howe School (now Batalla)	PK-6
Brooklawn/St. Vincent	Blackham School	K-8
	Madison School	PK-6
	Read School	K-8
	Maplewood School	PK-6
North End	Winthrop School	K-8
	Reservoir/Whiskey Hill	Cross School
Boston Avenue/Mill Hill	Hallen School	K-6
	Edison School	K-6
	Hall School	K-6
East End	Dunbar School	K-8
	McKinley School	PK-6
	Newfield School (no longer exists)	PK-3
East Side	Barnum School	K-6
	Garfield School	PK-6
	Waltersville School	PK-4
	Luis Munoz Marin School	PK-8
North Bridgeport	Beardsley School	PK-6
	Hooker School	K-8

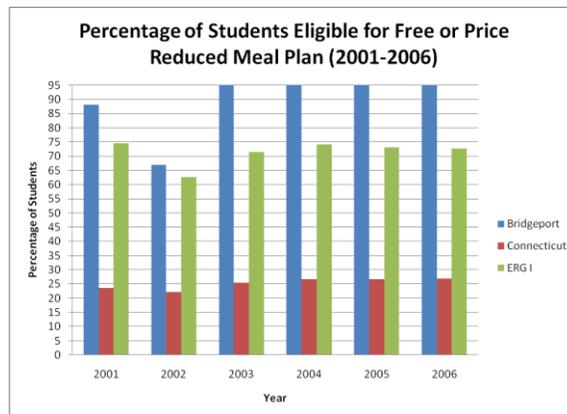
<b>Table B1.2: Neighborhoods by High School</b>		
<b>Bassick High School</b>	<b>Central High School</b>	<b>Harding High School</b>
Black Rock	Brooklawn/St. Vincents	Boston Avenue/Mill Hill
South End	North End	East End
the Hollow	Reservoir/Whiskey Hill	East Side
West End West Side		North Bridgeport

<sup>5</sup> [http://www.csde.state.ct.us/public/cedar/profiles/ssp\\_help/Terms93-06.doc](http://www.csde.state.ct.us/public/cedar/profiles/ssp_help/Terms93-06.doc)

## *School Need*

### *Free or Reduced Price Meal Plan*

The percentage of students eligible for free or reduced priced meal plans is one measure of the economic status of a student's family. Following 2002, the Connecticut Department of Education reported that all Bridgeport schools had greater than 95% eligibility for free or reduced priced meal plans. From 2003, the Bridgeport School District began to participate in the National School Lunch Program, a federally assisted subsidy that grants cash reimbursements to underprivileged schools.<sup>6</sup> As a result, the exact figures between 95% and 100% for the years beginning in 2003 are indistinguishable. However, the district continued to report student eligibility at 95%. Figure B1.1 shows the percentage of students eligible for a free or reduced priced meal plan in the Bridgeport District, ERG I, and across Connecticut. In 2006, the Bridgeport School District reported greater than 95% of students receiving a meal plan, meanwhile Connecticut schools and ERG I reported 26.6% and 72.7% respectively.

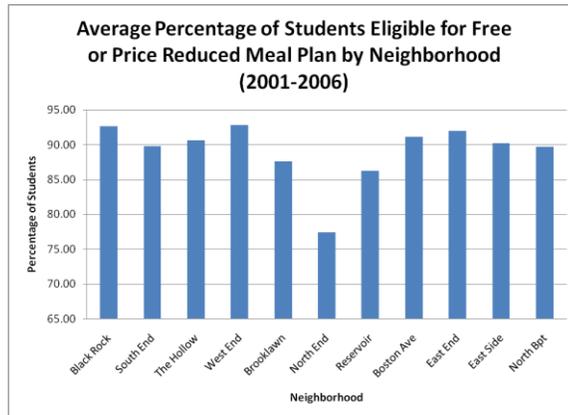


**Figure B1.1**

Figure B1.2 shows the average percentage of students eligible for a reduced meal plan by Bridgeport neighborhood from 2001 to 2006. The chart arranges elementary schools according to their corresponding high school. The first four neighborhoods (Black Rock, South End, The Hollow, West End/West Side) feed into Bassick High School, the next three (Brooklawn/St. Vincent, North End, Reservoir/Whiskey Hill) into Central High School, and the final four (Boston Avenue/Mill Hill, East End, East Side, North Bridgeport) into Harding High School. The neighborhoods feeding into Central High School have considerably less students eligible for free or reduced priced meal plans,

<sup>6</sup> <http://www.fns.usda.gov/cnd/lunch/AboutLunch/NSLPFactSheet.pdf>

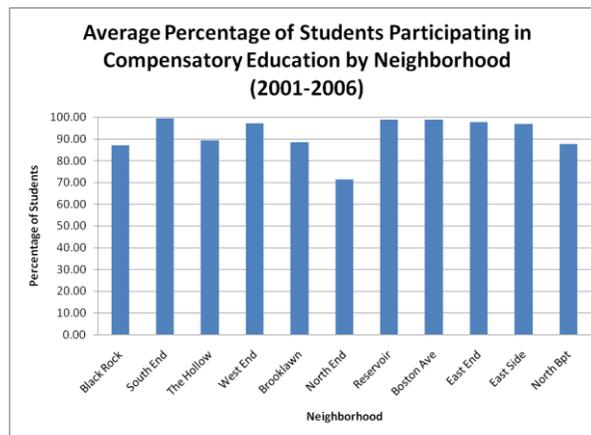
reflecting more affluent neighborhoods. Bassick High School has a slightly higher percentage of eligible students than Harding High School.



**Figure B1.2**

### *Compensatory Education*

Compensatory education measures the percentage of students who participated in remedial programs or services that Federal Title I or comparable funds supported. A school-wide compensatory education approach allows all students to receive the benefits of the program, regardless of academic need.<sup>7</sup> Other schools use a targeted assistance approach, where schools provide programs and services to children identified as needing special assistance in reaching Connecticut’s academic performance standards.<sup>8</sup> Figure B1.3 displays the average percentage of students participating in a compensatory education program by neighborhood for 2001-2006. All neighborhoods, with the exception of the North End, have an over 80% participation rate in a compensatory education program.



**Figure B 1.3**

<sup>7</sup> In these cases, 100% of student enrollment is computed as receiving Compensatory Education in the data.

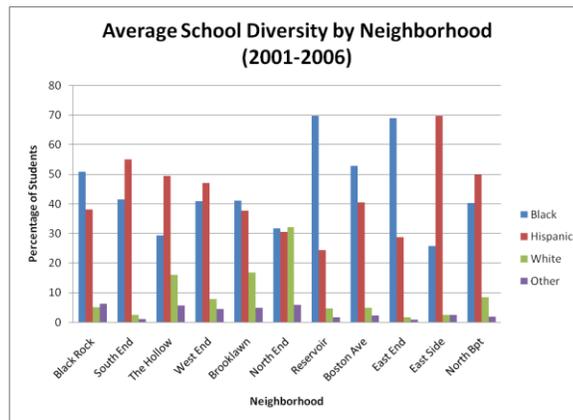
<sup>8</sup> [http://www.csde.state.ct.us/public/cedar/profiles/ssp\\_help/Terms93-06.doc](http://www.csde.state.ct.us/public/cedar/profiles/ssp_help/Terms93-06.doc)

## *School Diversity*

School diversity measures ethnic composition within in a given school. Table B1.3 ranks the average percentage of students of Black, Hispanic, or White ethnicity by neighborhood elementary schools between 2001 and 2006. Figure B1.4 gives a visual representation of Table 3. Elementary schools in the North End neighborhood are the most diverse: 31.68% Black, 30.47% Hispanic, and 31.98% White. Schools in Reservoir/Whiskey Hill, the East End, and Boston Avenue/Mill Hill neighborhoods have the highest percentage of Black students. Conversely, the East Side, the South End, and North Bridgeport have the highest percentage of Hispanic students, while the North End, Brooklawn/St. Vincent, and The Hollow have the highest percentage of White students. Black Rock, the North End, and the Hollow have the highest percentage of students included in “Other” ethnicities, reporting averages of 6.18%, 5.87%, and 5.63% respectively.

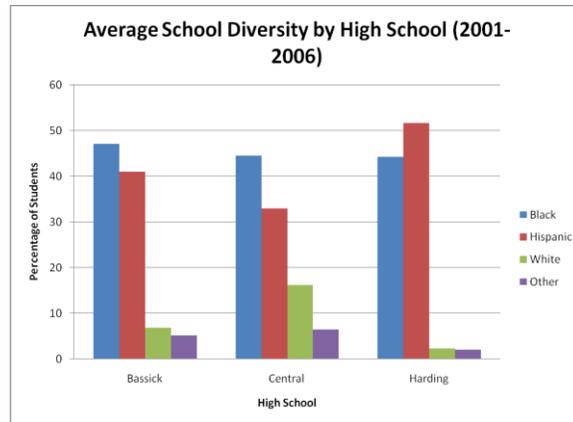
**Table B1.3: School Diversity**

% Students Black		% Students Hispanic		% Students White	
1. Reservoir	69.74	1. East Side	69.56	1. North End	31.98
2. East End	68.83	2. South End	55.02	2. Brooklawn	16.67
3. Boston Ave	52.67	3. North Bpt	49.71	3. the Hollow	15.90
4. Black Rock	50.73	4. the Hollow	49.32	4. North Bpt	8.31
5. South End	41.45	5. West End	47.02	5. West End	7.82
6. Brooklawn	41.02	6. Boston Ave	40.37	6. Black Rock	5.04
7. West End	40.73	7. Black Rock	38.06	7. Boston Ave	4.74
8. North Bpt	40.13	8. Brooklawn	37.55	8. Reservoir	4.48
9. North End	31.68	9. North End	30.47	9. South End	2.45
10. the Hollow	29.16	10. East End	28.59	10. East Side	2.35
11. East Side	25.62	11. Reservoir	24.18	11. East End	1.69



**Figure B1.4**

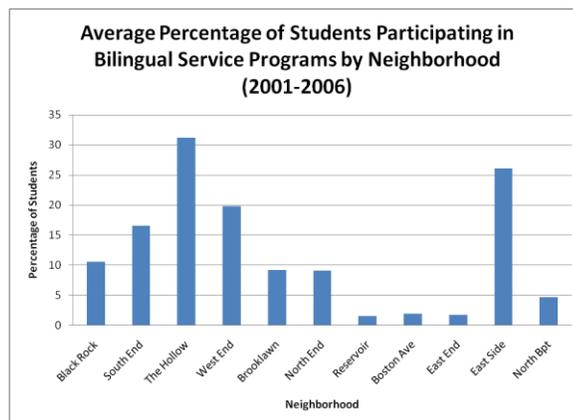
Figure B1.5 reveals the average percentage of students by ethnicity by high school for 2001-2006. Interestingly, each high school has the highest percentage of different ethnicity: Bassick, Black; Central, White; Harding, Hispanic.



**Figure B1.5**

### *Bilingual Education*

State law requires school districts provide a bilingual education program if a school contains 20 or more limited English-proficient students with the same dominant language.<sup>9</sup> Figure B1.6 indicates the percentage of students who participated in a bilingual education program by neighborhood. The Hollow and East Side have substantially more students participating in bilingual education programs, averaging 31.19% and 26.07% respectively. Reservoir/Whiskey Hill and East End had the lowest percentage of students participating in bilingual programs, probably the result of low Hispanic populations; Spanish is the most common bilingual program in Bridgeport.



**Figure B1.6**

<sup>9</sup> [http://www.csde.state.ct.us/public/cedar/profiles/ssp\\_help/Terms93-06.doc](http://www.csde.state.ct.us/public/cedar/profiles/ssp_help/Terms93-06.doc)

## Resources

### Students per Computer

The number of students per computer is an indicator of resources available to a particular school. Figure B1.7 shows the change in students per computer over time for Bridgeport, ERG I, and Connecticut schools from 2001 to 2006.<sup>10</sup> Although Bridgeport and ERG I lagged between 2001 and 2002, from 2003 onward, Bridgeport was on track with the rest of the state (an average of 3.5 students per computer in 2006).

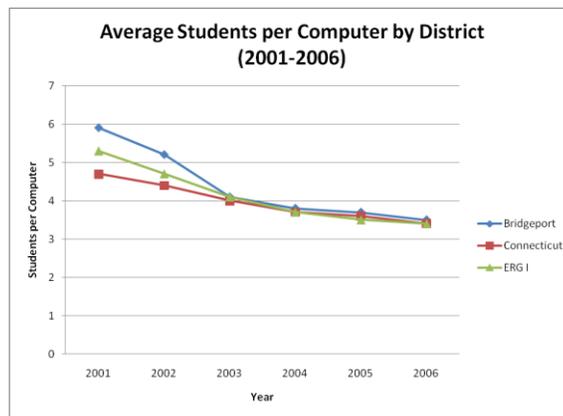


Figure B1.7

Figure B1.8 compares students per computer in 2001 versus 2006 by neighborhood. The South End neighborhood was the only neighborhood to see an *increase* in students per computer ratio over the period, from 3.0 in 2001 to 4.0 in 2006. North Bridgeport saw the largest reduction (by 6.7) in the ratio over the period, from 10.0 in 2001 to 3.26 in 2006.

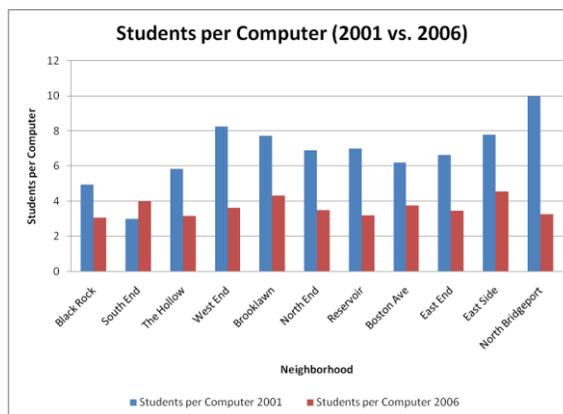
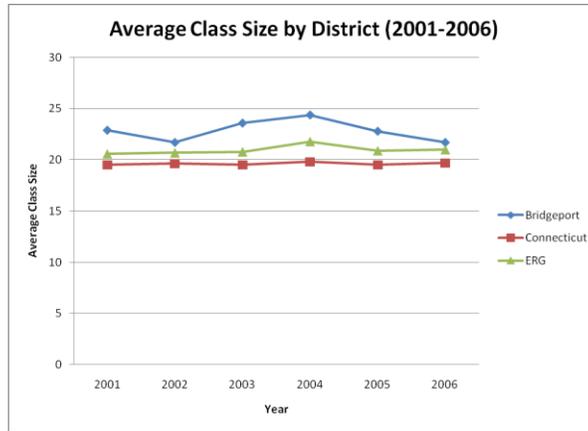


Figure B1.8

<sup>10</sup> Because these graphs measure the amount of students enrolled divided by the amount of computers available, a lower ratio is more desirable.

### *Average Class Size and Students per Teacher<sup>11</sup>*

Average class size and students per teacher suggest the amount of individual attention each student receives. Figure B1.9 describes average class size in the Bridgeport school district against ERG I and the state figure. The state, on the whole, has remained steady over the period at an approximate 19.6 average class size. In the past two years, Bridgeport has narrowed the gap between itself, ERG I, and the state average, reporting an average class size of 21.7, while ERG I and the state averaged 21.0 and 19.7 respectively. The largest gap between the Bridgeport District and the state average was in 2004; Bridgeport reported an average class size of 24.4, while the state reported an average of 19.8 students.

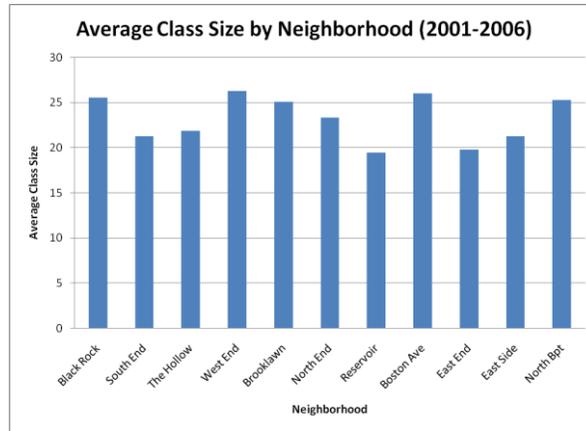


**Figure B1.9**

Figure B1.10 shows the average class size by neighborhood since 2001. Schools in Black Rock, West End, Brooklawn/St. Vincent, Boston Avenue/Mill Hill, and North Bridgeport all averaged over 25 students per classroom. Reservoir/Whiskey Hill and East End were the only schools to average a class size under 20 students.

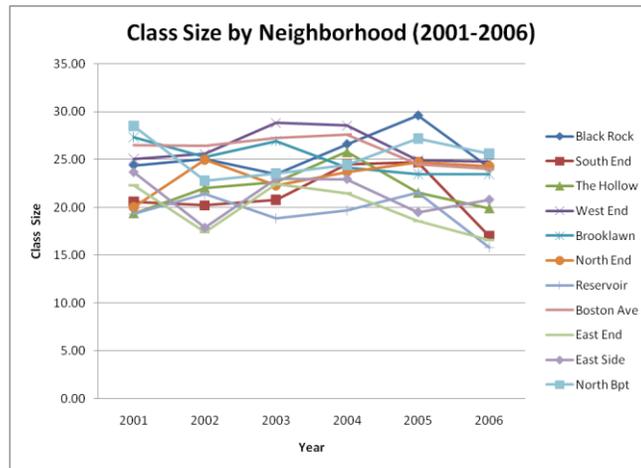
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<sup>11</sup> Average class sizes are based on Grade 2 statistics, as all district schools serve Grade 2 students.



**Figure B1.10**

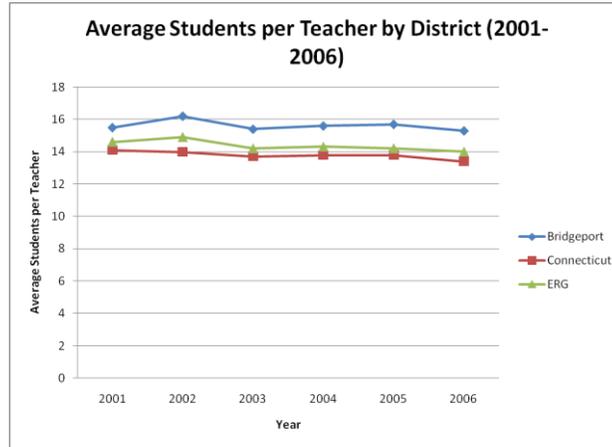
Figure B1.11 shows the average classroom size by neighborhood annually from 2001 to 2006. Considerable improvement, on average, has been made; Bridgeport schools have reduced the average class size by 1.88 since 2001. The biggest reduction was in the East End, which dropped its average classroom size from 22.29 students in 2001 to 16.60 in 2006. Conversely, the North End and the Hollow have actually seen an increase in the average class size, adding 4.30 and 0.53 students respectively. The Reservoir/Whiskey Hill neighborhood boasted the lowest class size in 2006, 15.83 students, while the West End had the highest, 24.76. The largest average class size for any given year was Black Rock in 2005, with 29.60 students.



**Figure B1.11**

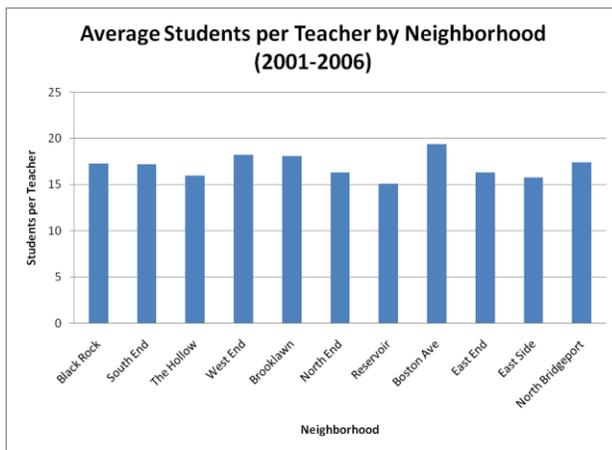
Figure B1.12 shows the average students per teacher ratio for the Bridgeport School District, ERG I, and Connecticut. Bridgeport has consistently averaged around 2 more students per teacher than the state of Connecticut, and one more student per teacher than ERG I. In 2006, Bridgeport

reported 15.3 students per teacher, while ERG I and the state reported 14.0 and 13.4 students per teacher respectively.

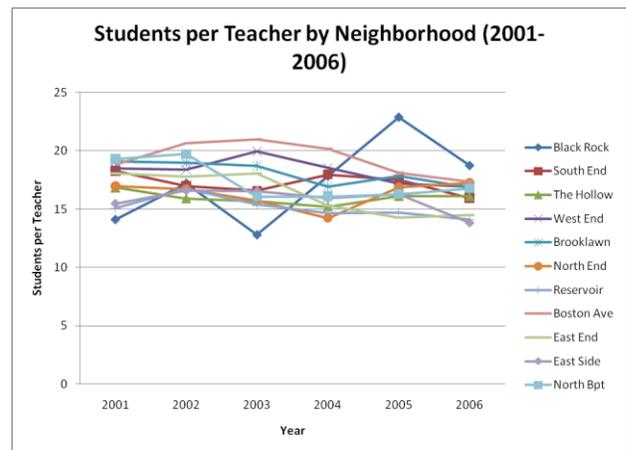


**Figure B1.12**

Figure B1.13 depicts the average students per teacher by neighborhood over the past six years. Reservoir/Whiskey Hill and The Hollow had the lowest average of students per teacher, while Boston Avenue/Mill Hill, West End, and Brooklawn/St. Vincent had the highest. Figure B1.14 shows the average students per teacher by neighborhood annually. The Black Rock neighborhood had both the highest and lowest average students per teacher ratios: 12.80 in 2003 and 22.87 in 2005. Across the district, the number of students per teacher fell, on average, by 1.10 students per teacher between 2001 and 2006. North Bridgeport had the highest overall reduction, from 19.30 in 2001 to 16.76 in 2006. Black Rock and the North End were the only two neighborhoods to have increased its student per teacher ratio over the period.



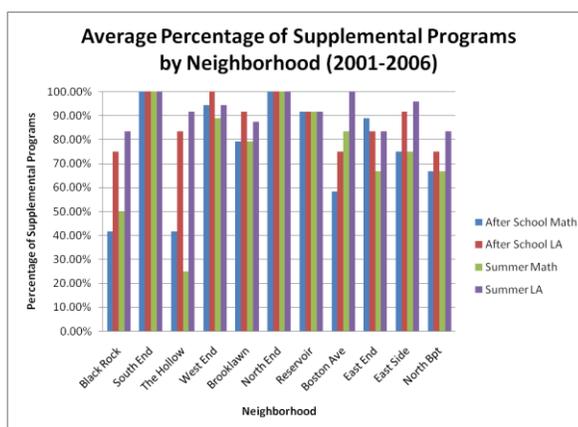
**Figure B1.13**



**Figure B1.14**

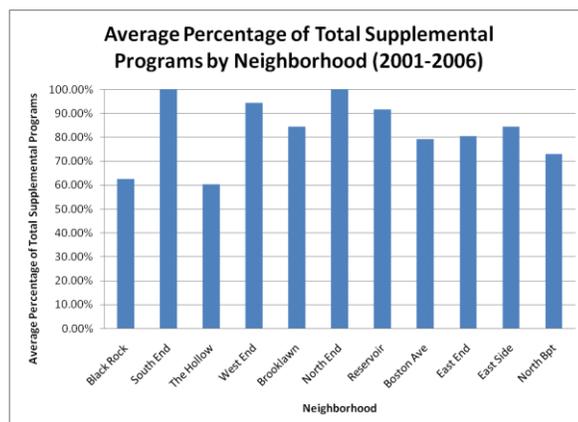
## *Supplemental Programs*

Summer and after school programs in mathematics and language arts allow for the reinforcement and extended exploration of classroom topics. Figure B1.15 measures the average percentage of summer and after school programs by neighborhood. Both South End and North End consistently offered summer and after school programs in both subjects between 2001 and 2006. The Hollow not only offered the lowest percentage of summer school math programs (25%), but also, along with Black Rock, offered the lowest percentage of after-school math programs (41.67%). Black Rock, Boston Avenue/Mill Hill, and North Bridgeport equally offered the lowest percentage of after-school language arts programs (75%). Schools in all neighborhoods offered summer language arts more than 80% of the time over the period.



**Figure B1.15**

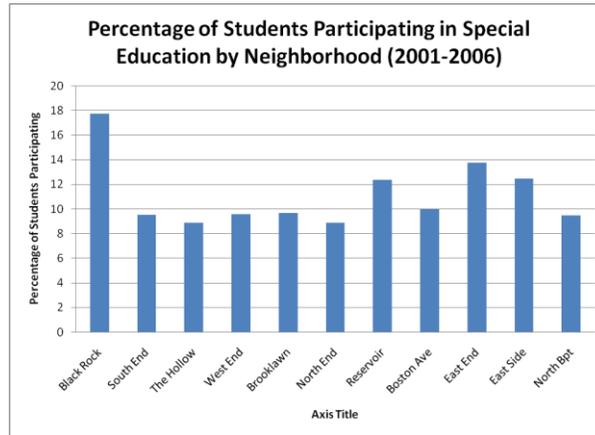
Figure B1.16 shows an average aggregate of all programs by neighborhood. North End, South End, and West End offered the highest percentage of supplemental programs; The Hollow and Black Rock offered the lowest. Four of the eleven neighborhoods offered supplemental programs 90% of the time, while nine of the eleven offered programs 70% of the time.



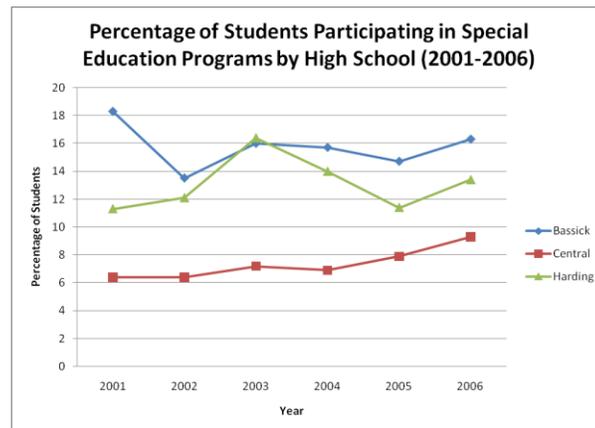
**Figure B1.16**

### ***Special Education***

Students participating in special education programs receive unique attention due to special needs such as “mental retardation, autism, emotional disturbance, physical or health impairments, or specific learning disabilities.”<sup>12</sup> Figure B1.17 and Figure B1.18 show the percentage of students who participated in special education programs by neighborhood in elementary and high schools respectively.<sup>13</sup> Black Rock had the highest percentage of students participating in special education programs, 17.07%. Conversely, North End had the lowest percentage of special education students, only 8.83%. Central High School had a significantly lower participation rate, averaging 7.35% over the period. Harding High School had an average of 13.10% of students participating, while Bassick High School was slightly higher at 15.75%.



**Figure B1.17**



**Figure B1.18**

<sup>12</sup> [http://www.csde.state.ct.us/public/cedar/profiles/ssp\\_help/Terms93-06.doc](http://www.csde.state.ct.us/public/cedar/profiles/ssp_help/Terms93-06.doc)

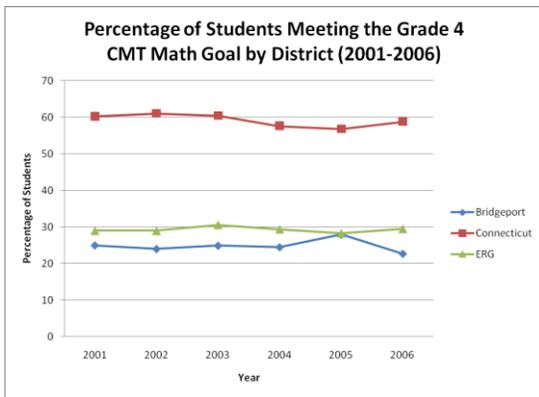
<sup>13</sup> Students in gifted and talented programs or pregnant students were not included in the results.

## *Standardized Test Scores*

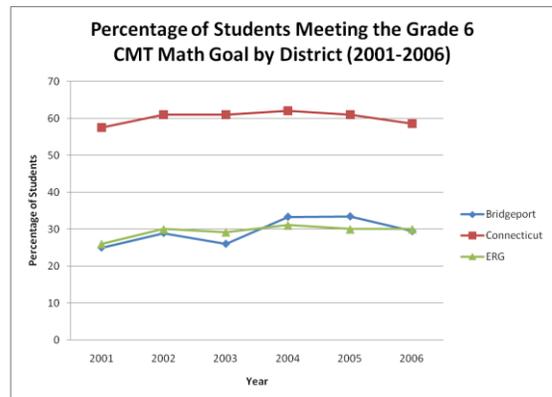
### *CMT% Meeting State Goals: Mathematics*

The Connecticut Master Test evaluates student learning in mathematics by assessing a student’s ability to complete objectives in five general areas: concepts, computation and estimation, problem solving/applications, measurement/geometry, and algebra.

Figure B1.19 indicates the percentage of Grade 4 students meeting the state mathematics goal, while Figure B1.20 indicates the percentage of Grade 6 students. Both ERG I and Bridgeport were well below the state average for both grades, with the share passing fluctuating around 60%.

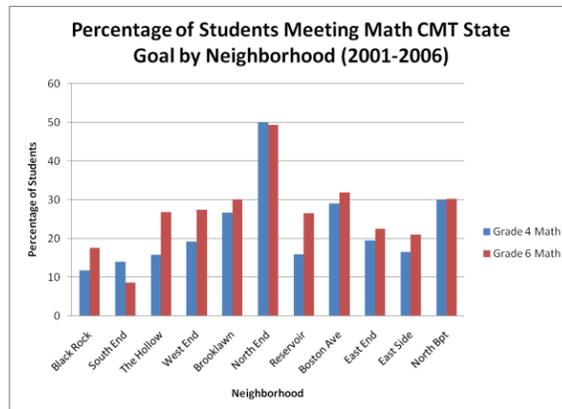


**Figure B 1.19**



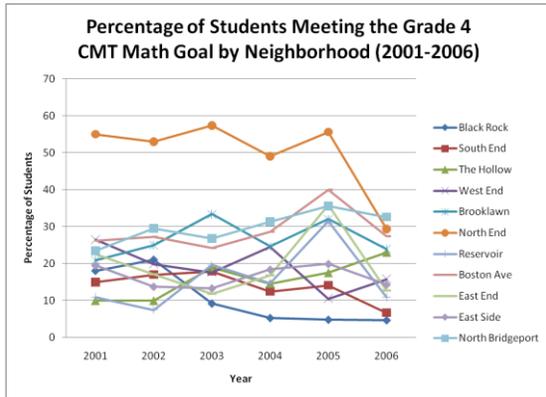
**Figure B1.20**

Figure B1.21 indicates the average percentage of Grade 4 students meeting the state math goal by neighborhood between 2001 and 2006. North End performed well above the rest of the District from 2001 to 2005. Performance fell sharply the following year, from 55.6% passing to its trough of 29.3% passing in 2006. The Hollow, on the other hand, saw the greatest increase over the period, gaining 13.0 percentage points in the share meeting the standard.

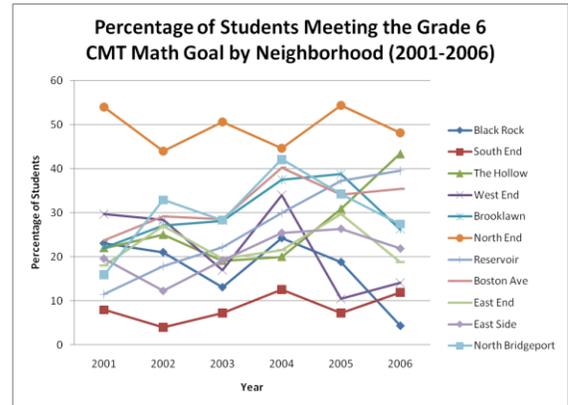


**Figure B1.21**

Figure B1.22 indicates the average percentage of Grade 6 students meeting the state mathematics goal by neighborhood. Once again, North End performed best of all neighborhoods. Reservoir/Whiskey Hill witnessed the largest change, a 28 percentage point increase, while Black Rock witnessed the largest fall, a 19.0 percentage point decline.



**Figure B1.22**

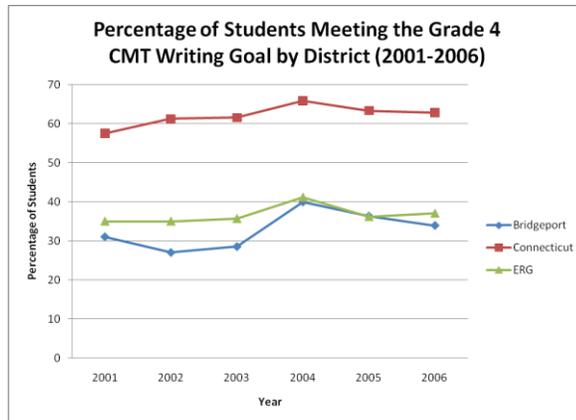


**Figure B1.23**

### *CMT% Meeting State Goals: Writing*

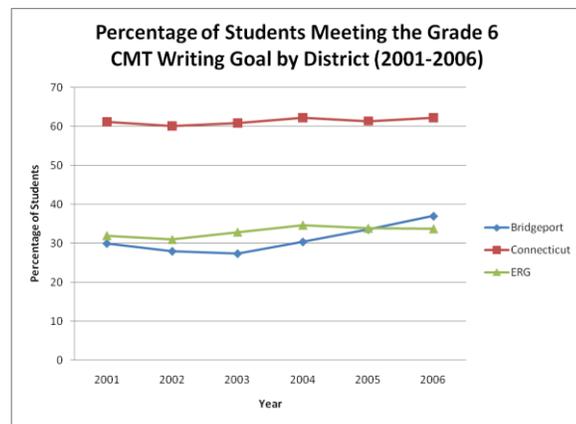
The Connecticut Master Test generates a writing score by assessing a passage students write on a given topic. The CMT asked Grade 4 students to write a story-telling narrative passage; the CMT asked Grade 6 students to write an expository passage in an organized fashion.

The percentage of Grade 4 students in the Bridgeport District meeting the state writing goal has increased slightly between 2001 and 2006 (from 31.0% to 33.9%). From 2001 to 2003, there was a gain of 9.9 percentage points. Since 2004, the percentage of students meeting the state writing goal has steadily fallen, from 39.9% to 33.9%. The Bridgeport District has loosely mirrored ERG I over the period, as both of them peaked in 2004; 39.9% in the Bridgeport District and 41.2% in ERG I.



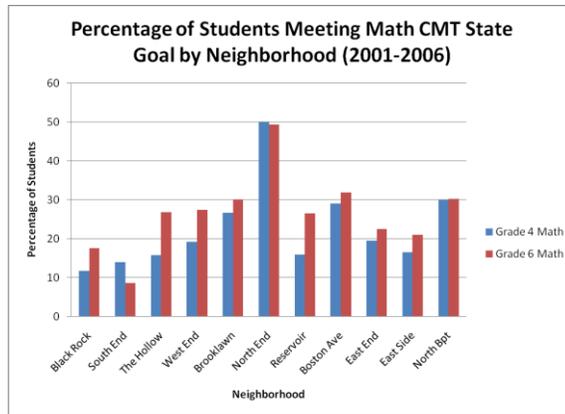
**Figure B1.24**

In contrast to the Grad 4 experience, the percentage of Grade 6 students meeting the state writing goal in the Bridgeport District has steadily increased from 27.4% in 2003 to 37.0% in 2006. Since its trough in 2003, Bridgeport’s schools have made significant headway in surpassing the ERG I average.



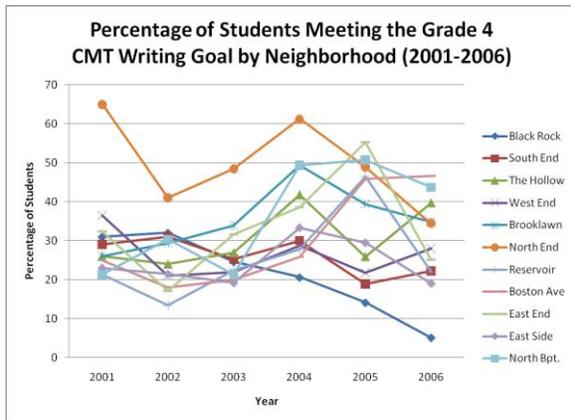
**Figure B1.25**

North End consistently had the highest percentage of Grade 6 students meeting the state writing goal. Black Rock performed worst in Grade 4 writing, while South End performed worst for Grade 6. Although North End averaged the highest percentage in Grade 4 writing, the neighborhood average itself has fallen from 65.0% in 2001 to 34.4% in 2006.

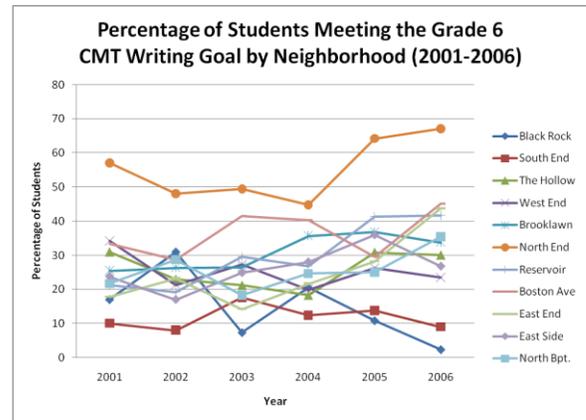


**Figure B1.26**

North End witnessed significant improvements in the Grade 6 percentage, increasing from its lowest average of 44.7% in 2004 to 67.1% in 2006. Black Rock saw the largest declines since 2002 peaks in both Grade 4 and Grade 6. In 2002, 32% of the neighborhood’s Grade 4 students met the state writing goal, but fell dramatically to 5.1% in 2006. Grade 6 students in the neighborhood met a similar fate: their scores declined from 31% in 2002 to 2.3% in 2006. North Bridgeport saw the single largest increase in Grade 4 percentages since 2001, rising 22.4 percentage points to 43.7% in 2006. East End saw the largest increase in Grade 6 scores, improving 25.99 percentage points to 43.8% in 2006. North End surpassed the state average in percentage of Grade 4 students meeting the state writing goal in 2001 and Grade 6 students in 2005 and 2006.<sup>14</sup>



**Figure B1.27**

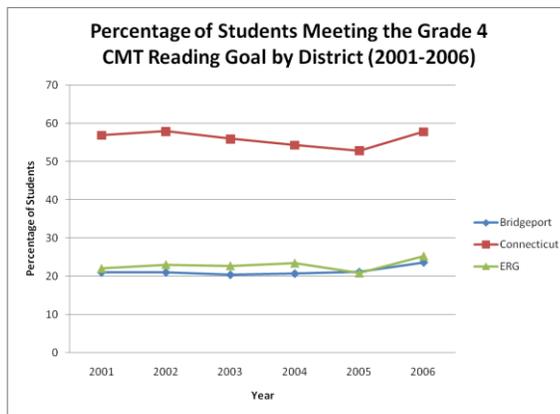


**Figure B1.28**

<sup>14</sup> The North End neighborhood was the only neighborhood to surpass the state average on any test in any year over the period.

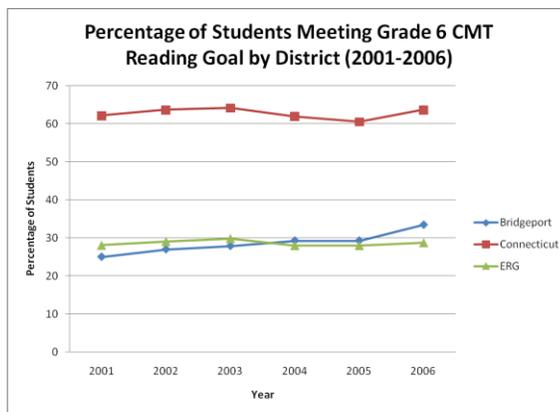
### *CMT% Meeting State Goals: Reading*

The Connecticut Master Test judges reading ability standards based on a test Degrees of Reading Power® developed. This test measures a student’s reading ability through their comprehension of non-fiction English prose, presented on a graduated scale of difficulty. Between 2001 and 2004, the percentage of Grade 4 students in the Bridgeport District meeting the state reading goal was slightly below the ERG I’s average. In 2005, Bridgeport performed better than ERG I, with continued improvement in 2006. Over the period as a whole, the Bridgeport District achieved a 2.6 percentage point increase in the passing percentage, while the state increased marginally and ERG I as a group declined.



**Figure B 1.29**

For Grade 6 students, the Bridgeport District trailed through 2003, then performed better than its peers in ERG I from 2004. While the state average saw a 1.5 percentage point increase, the Bridgeport District increased 8.5 percentage points over the period. ERG I’s average declined marginally, by a tenth of a percentage point over the period.



**Figure B 1.30**

North End neighborhood averaged the highest percentage of students meeting the state reading goal for both Grade 4 and Grade 6 (45.97% and 50.72% respectively). Black Rock, South End, Hollow and East Side all averaged below 15% of students in Grade 4 meeting the standard. Only South End fell below 15% of students in Grade 6 passing, while all other schools saw an increase between Grade 4 and Grade 6 percentages.

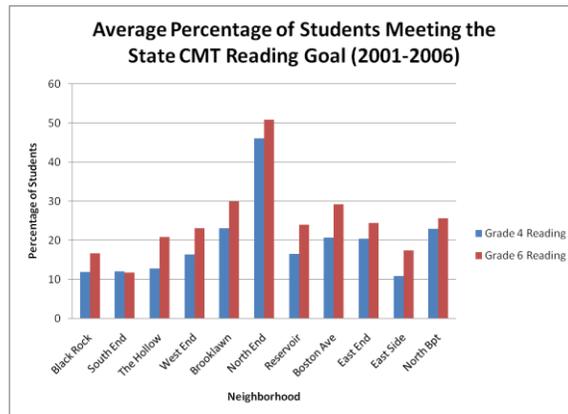


Figure B1.31

Figure B1.32 indicates the percentage of students meeting the state reading goal annually. The Hollow and Brooklawn/St. Vincent saw the largest increases, 9.5 percentage points and 9.8 percentage points respectively. Conversely, the North End witnessed a dramatic 20.3 percentage point drop. Nonetheless, North End outperformed every other neighborhood in the district each year. The Hollow saw the largest increase for Grade 6 students, gaining 22.0 percentage points. East End and North Bridgeport also saw large increases, 19.1 percentage points and 15.2 percentage points respectively. Black Rock was the only neighborhood to witness a decrease in percentage of students meeting the state reading goal, declining 6.3 percentage points over the period.

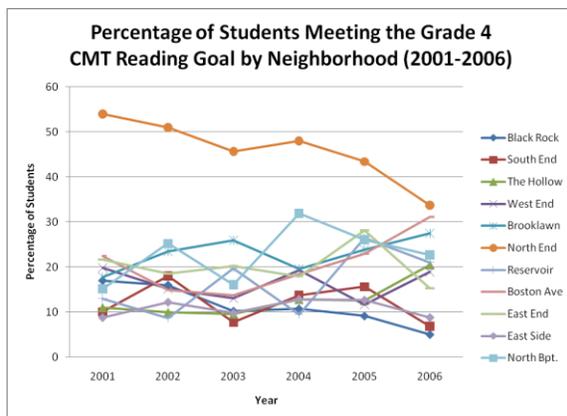


Figure B1.32

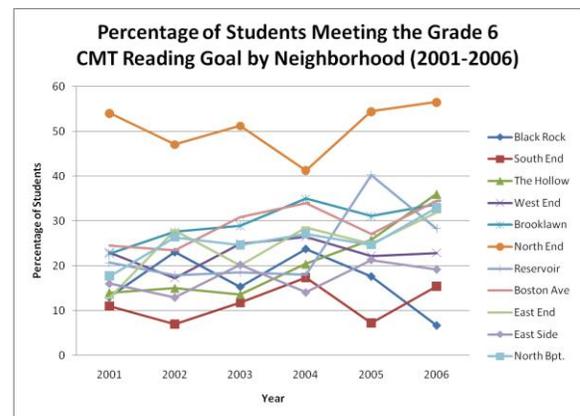


Figure B1.33

## CAPT Scores

Administered to 10<sup>th</sup> grade students across the state since 1994, the Connecticut Academic Performance Test assesses performance in areas of mathematics, reading, writing, and science. The mathematics section assesses students' abilities to solve problems, communicate their understanding, compute, and estimate in several content areas. The Reading Across Disciplines section requires students to read and respond to both a short story and nonfiction articles. Writing Across Disciplines includes sections on writing and "editing and revising". The writing section examines a student's ability to take and support a position on an issue using sources that the test provides. The editing and revising section requires students to correct common writing errors. The science section assesses a student's understanding of important concepts in the area of physical, life, and earth/space science. <sup>15</sup>

Figure B1.34 shows the performance of Bridgeport's public high schools in comparison with ERG I and state averages. While all three high schools performed considerably below the state average level, Central High School performed better than the ERG I's average in all four tested areas. Harding High School reported slightly higher scores than Bassick High School; however, both performed below the ERG I's average.

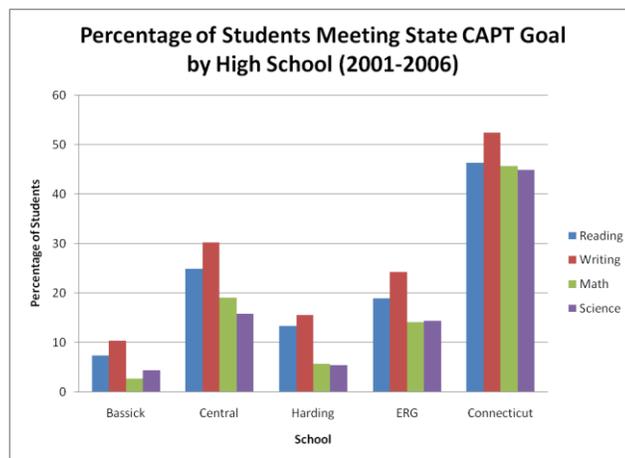


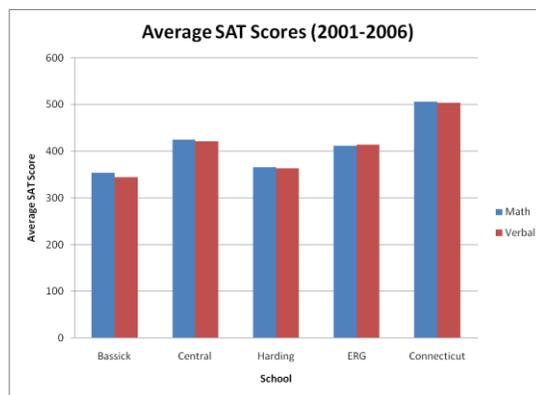
Figure B1.34

<sup>15</sup> [http://www.csde.state.ct.us/public/cedar/profiles/ssp\\_help/Terms93-06.doc](http://www.csde.state.ct.us/public/cedar/profiles/ssp_help/Terms93-06.doc)

## SAT Scores<sup>16</sup>

The Scholastic Assessment Test (SAT) examines student's verbal reasoning and quantitative mathematical abilities. The Critical Reading section asks students to complete sentences, respond to passages that they read, and display a strong sense of vocabulary. The Mathematics section tests student's quantitative skills with questions focusing on basic algebra, geometry, and analysis.

Figure B1.35 plots the average SAT scores of each Bridgeport high school against ERG I and state averages. Although all schools reported scores lower than the state average, Central High School outperformed the ERG I average with a score of 847.33. Harding slightly outperformed Bassick, with an average score of 730.17; Bassick reported an average score of 698.17.



**Figure B1.35**

Figure B1.36 plots SAT Mathematics scores annually for each high school against ERG I and state averages. Over the reported period, schools tended to see little change in their standing amongst other schools. The average score for Connecticut has risen slightly, while Central High School witnessed a large increase of 22 points since 2001. Harding High School saw a slight 4 point increase over the period, while Bassick High School fell a significant 16 points.

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<sup>16</sup> ERG I data for 2006 was not available from the Connecticut Department of Education and thus was projected based on previous trends of ERG I and schools across the state.

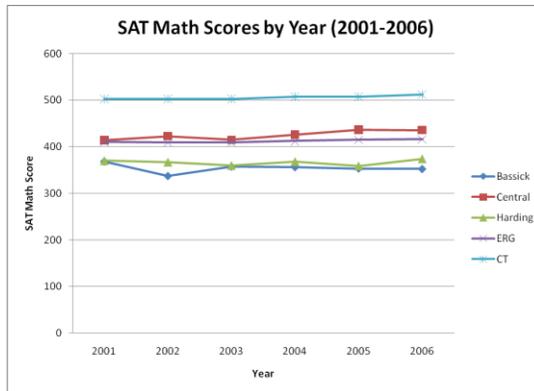


Figure B1.36

Figure B1.37 plots SAT Verbal scores over time for each Bridgeport high school against ERG I and state averages. Once again, none of the schools had improved or declined in standing, nor were there significant changes over the period. In 2004, Harding High School reported an SAT Verbal average score of 385, the closest the school came close to the ERG I's average in any year. Harding High School witnessed a 12 point increase over the period, while Central High School increased 11 points. Bassick High School, on the other hand, fell 3 points over the period.

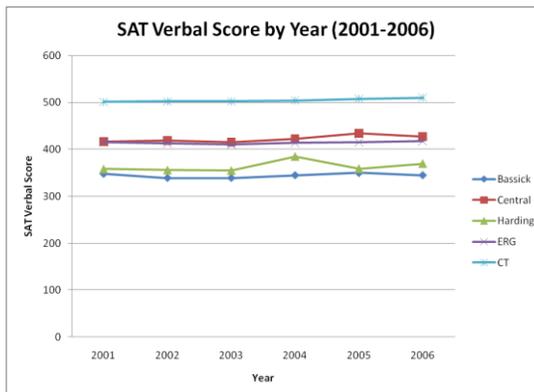


Figure B1.37

### Graduation Rates

Graduation rates reveal something of the quality of a school and the amount of education embedded in the workforce of a given neighborhood. Figure B1.38 plots the cumulative dropout rates for each graduating class between 2001 and 2006. Both ERG I and the state of Connecticut witnessed a steady, slightly greater than 5% decrease over the period. The data for Bridgeport High Schools show significant variation from year to year. Bassick High School saw the largest cumulative dropout rate in 2004 (44.8%), but had witnessed a 31.2% dropout rate only one year prior. Central High School witnessed a dramatic increase between 2002 and 2004, rising from a

23.2% to a 35.2% cumulative dropout rate. Between 2004 and 2006, the school saw an equally drastic change: a fall from 35.2% to 11.6% by 2006. This placed Central High School’s dropout rate slightly above the state average, and more than 10% lower than the rate at either Bassick or Harding. Harding High School saw a small increase over the years (22.4% to 23.7%), while Bassick High School finished in the same place they had started, around 26.0%.

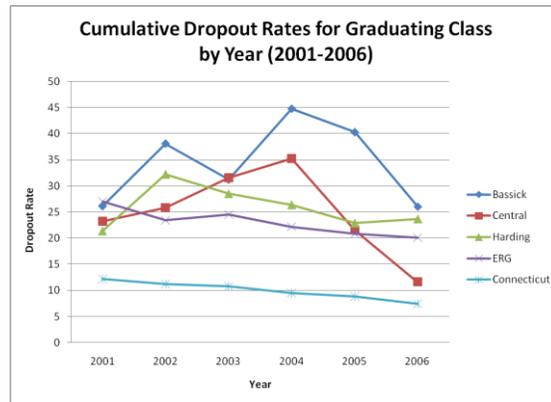
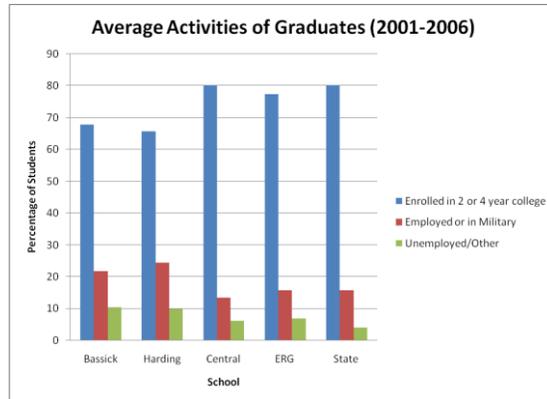


Figure B1.38

### Activities of Graduates

Post-graduation activities give an indication of both how students use their education and the environment that graduating students encounter following their high school career. The differences between Bridgeport High Schools, ERG I, and the state are smaller than the differences in cumulative dropout rates, as the activities of graduates are only calculated of *graduated* seniors. Central High School, for example, actually had a slightly higher average percentage of graduates enrolled in a 2 or 4 year college than the state. Central High School also averaged a lower “unemployment or other” percentage than ERG I. Bassick and Harding High Schools, while reporting a lower percentage of students enrolled in a 2 or 4 year college (67.77% and 65.67% respectively), reported a higher percentage of graduates employed or in the military than Central High School, ERG I, and the state.



**Figure B1.39**

### *Analysis*

A student’s standardized test score typically reflects multiple factors beyond the classroom. While many of these factors are often immeasurable, typically “quality” measurements such as innate ability, other quantitative factors (such as family income or crime rates) offer insights into the neighborhood’s socio-economic environment. These, often overlooked, variables explain a moderate amount of the variation in standardized test performance and give a relative measure of a schools productivity based on its available resources. The sections below look at some of these characteristics, but also evaluate the relationship between the resources that a school has available to it and the measured educational outcomes.<sup>17</sup>

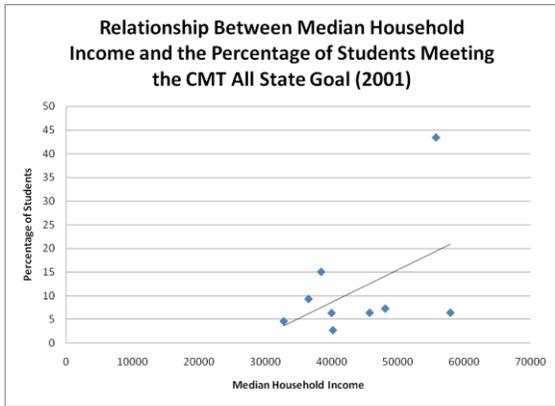
### *Standardized Test Performance and Income*

Over the period, the data suggests a positive relationship between median income and the percentage of students meeting the state goals for CMT testing within the public school system. This trend occurs across all subjects of CMT testing: reading, writing, and math scores suggest a positive correlation between income and scores. Figures B2.1, 2.2, and 2.3 show the positive correlation between median income and percentage of students meeting the state goal on all three tests.<sup>18</sup> Interestingly, the amount of variation explained by income grew considerably over the

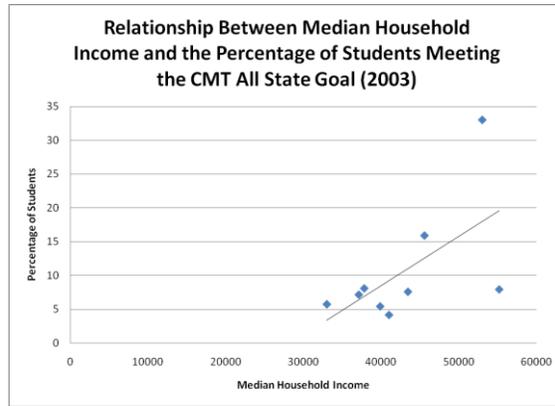
<sup>17</sup> The Black Rock neighborhood was excluded in the following analysis because a large portion of affluent families that reside in the neighborhood send their children to typically higher performing private schools, rather than their local public school. If included, the results would give an inaccurate portrayal of the neighborhood. Black Rock, however, is included in the school efficiency ratings and the Neighborhood Education Index.

<sup>18</sup> The percentage of students meeting the state goal on all three tests was chosen because it gives one composite score to use in analysis against another variable. The percentage of students meeting the state goal on all three tests was calculated by dividing the number of students who met the state goal on all three tests by the number of students with a valid score in at least one area. Statistics were not calculated for 2006 because the percentage of students meeting the state goal on all tests was not reported by the Connecticut Department of Education.

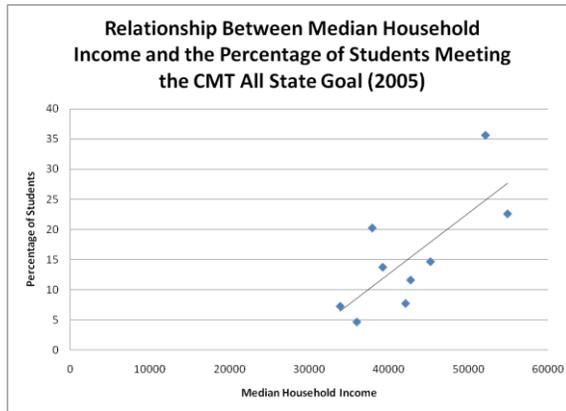
period: from 22% in 2001, to 35% in 2003, to 56% in 2005. Income inequality thus seems to be an increasingly powerful driver of educational outcomes in Bridgeport.



**Figure B2.1**



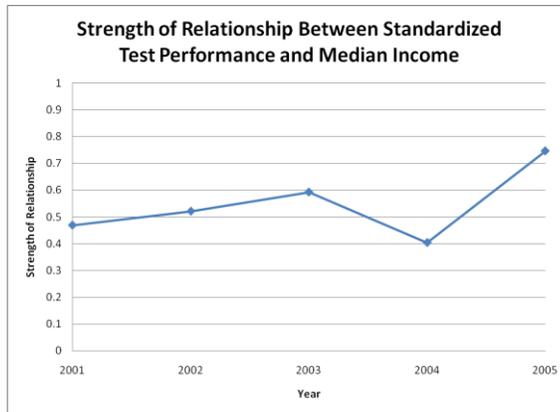
**Figure B2.2**



**Figure B2.3**

Figure B2.4 shows the strength of the relationship between median income and the percentage of students meeting the CMT goal over the period. The strength of the relationship increased from 2001 to 2003, followed by a drop in 2004, with a recovery in 2005 that looks to continue the original upward movement.<sup>19</sup>

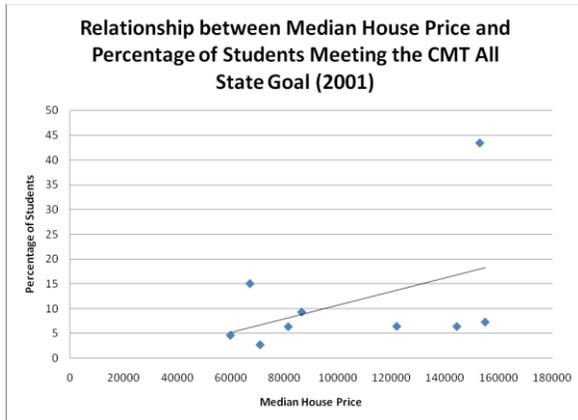
<sup>19</sup> In 2004, there was an overall increase in the percentage of students meeting the state goal for all three tests, while there was an overall decrease in median income. This is emphasized by typically low performing neighborhoods increasing its percentage of students meeting the state goal, while marginally decreasing its median income, narrowing the gap.



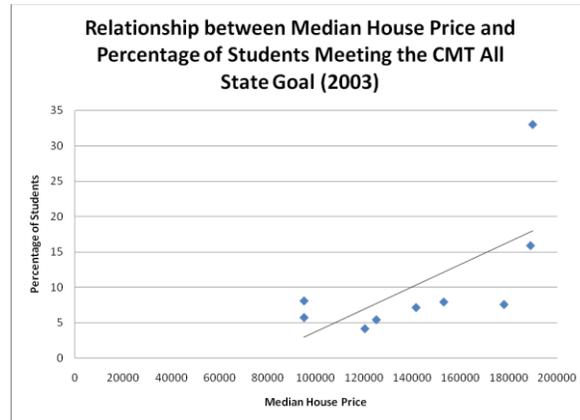
**Figure B2.4**

### *Standardized Test Performance and Median House Prices<sup>20</sup>*

The positive relationship between the percentage of students meeting the CMT goal for all tests and median house prices mirrors the relationship between the latter and median income between 2001 and 2005. Figures B2.5, B2.6, and B2.7 show this relationship for 2001, 2003, and 2005.

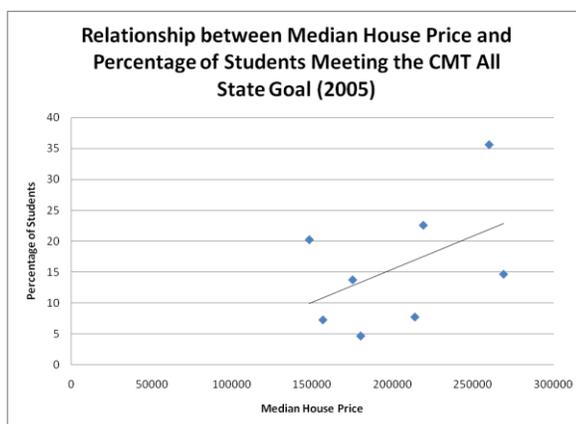


**Figure B2.5**



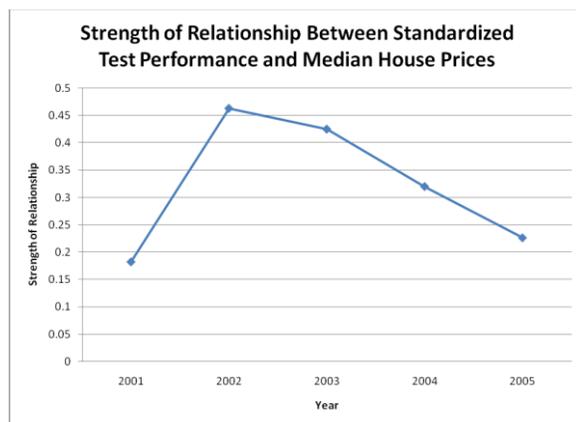
**Figure B2.6**

<sup>20</sup> Shape preserving spline interpolation was used to predict unavailable statistics for the Black Rock neighborhood in 2005. Grade 6 scores for 2005 and 2006 were forecasted by a standard linear regression.



**Figure B2.7**

Figure B2.8 shows the strength of the relationship between the percentage of students meeting the state goal and median house prices. This graph reveals less ability in median house prices to explain the percentage of students meeting the goal. After an increase from 2001 to 2002, the strength of relationship declines annually. The amount of variation on the percentage of students meeting the state goal as explained by income decreases to 23% in 2005, from its peak of 46% in 2002. This suggests that median house price, although having a positive relationship with percentage of students meeting the goal (higher price yields higher percentage of students meeting the standard), cannot explain the variation in the percentage of students passing as well as income.

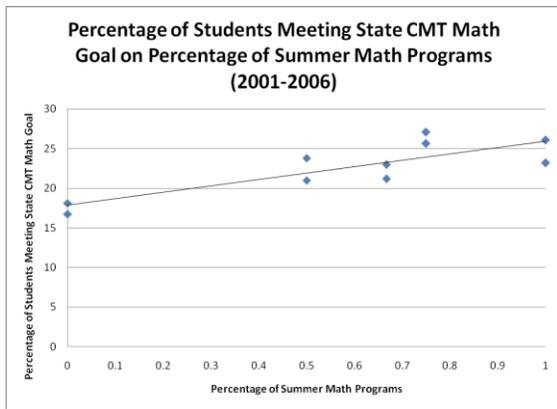


**Figure B2.8**

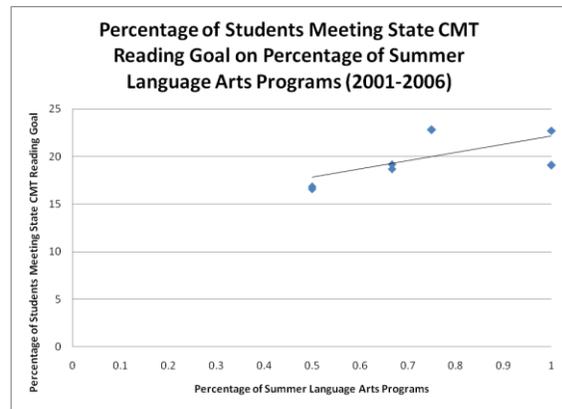
### ***Summer School: Impact on CMT Scores***

Figures B2.9, B2.10, B2.11, and B2.12 reveal a positive relationship between neighborhoods offering summer school programs and the percentage of students meeting the state goal the following year in a given subject. One interpretation of this relationship would be that these

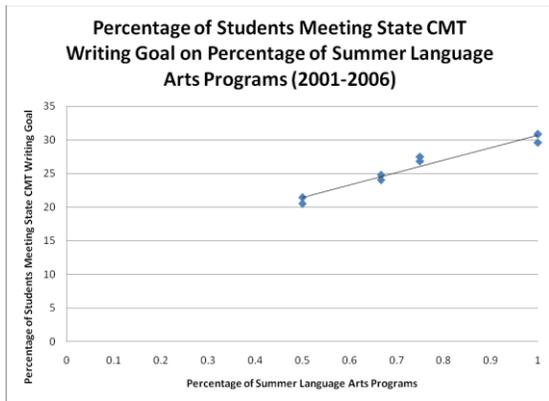
programs directly result in a better understanding of the material, and thus a higher percentage of students meeting the state reading goal. However, this may not be the case as many higher-performing, affluent neighborhoods often have more access to resources than poorer neighborhoods, and thus may offer more programs. Participation in summer programs may also be self-selecting, engaging students whose parents have higher expectations for their children. Nonetheless, the results suggest that offering summer and afterschool programs, on average, leads to an increase in the percentage of students meeting the state goal. Although schools that do not provide such programs often give students the opportunity to attend them at a different school, they are often further away, thus less accessible.



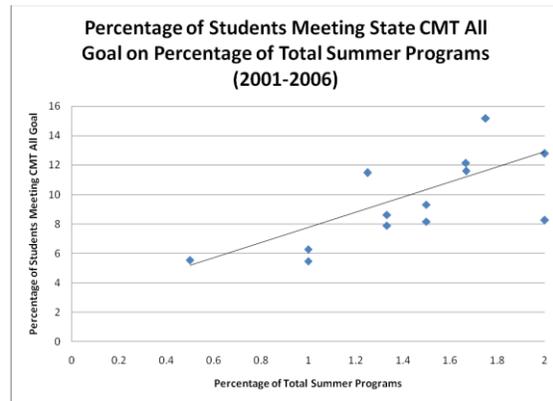
**Figure B2.9**



**Figure B2.10**



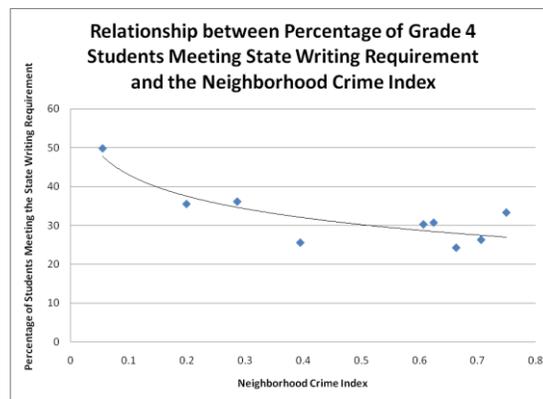
**Figure B2.11**



**Figure B2.12**

## *Crime and Education*<sup>21</sup>

The impact of crime rates on educational performance remains an interesting topic of study. Figure B2.13 reveals the relationship between writing performance on the Connecticut Mastery Test and the Neighborhood Crime Index, a measure of a neighborhood's quality of life.<sup>22</sup> There is a clear, visible relationship between the percentage of students meeting the state writing requirement and the Neighborhood Crime Index rating.<sup>23</sup> The more dangerous the neighborhood, the poorer the testing performance. What is more interesting, however, is the actual shape of the trend itself. The trend line falls at a decreasing rate, slowly flattening out; increasing crime has progressively less impact on educational outcomes. Further, for the cluster of neighborhoods with indexes between 0.6 and 0.8—that is, when the neighborhood is, indeed, dangerous—the average percentage of students passing is variable. This model shows that, statistically, the crime index explains 76% of the variation in writing performance



**Figure B2.13**

This relationship holds true as well in Figure B2.14, which compares the relationship between the percentage of Grade 6 students meeting the state math requirement and the neighborhood crime index.<sup>24</sup> Initially, the increase in the crime index, on average, brings a significant decrease in Grade 6 math performance. However, a continued increase in the crime index does not significantly decrease test scores after a certain point. Both figures imply that the increase in crime is detrimental to standardized test performance, however, once a neighborhood

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<sup>21</sup> The Black Rock neighborhood was left out of this analysis, as its public schools are not reflective of the neighborhood.

<sup>22</sup> The Neighborhood Crime Index ranks neighborhoods by a weighted model of Part 1 crimes in a given year. For more information on the Neighborhood Crime Index, please see section C.

<sup>23</sup> This relationship is statistically significant.

<sup>24</sup> The relationship between the neighborhood crime index and school performance is statistically significant after controlling for neighborhood income and a large set of school resource control variables.

reaches a certain crime threshold, it begins to lose its impact. Thus, scores in “bad” neighborhoods are typically lower than those in “good” neighborhoods, however, they are not remarkably distinguishable from each other.

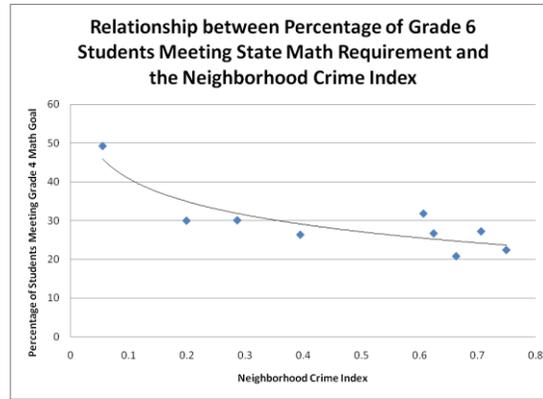


Figure B2.14

Each of these relationships underlines the criticality of high quality police work and the importance of implementing effective strategies to reduce crime rates. Next to raising incomes, reducing crime is the most meaningful route to improved educational outcomes.

### *School Efficiency by Neighborhood*

Examining a school’s performance based upon raw scores is often be misleading. Because schools in different neighborhoods vary across many characteristics such as students per computer, teachers per student, enrollment, or quality of teachers, some schools are destined to perform worse than other schools solely because of the difference in level and quality of resources. Other important factors that help to determine the performance of a student are socioeconomic factors, for instance, including whether the student lives in a single parent home, the students’ parents education level (particularly the mother’s), or general stability of the home. If the objective of a school is to produce students who meet state reading or math goals, then we can think of schools as producers, each with a set of inputs required to meet goals the state establishes. One way to examine the efficiency of schools across neighborhoods is to define a function that relates school performance with resources and see where the school is versus where the school could be, given its resources. This is the core idea behind analyzing the efficiency of the neighborhood schools in Bridgeport.<sup>25</sup>

<sup>25</sup> For technical details please contact Philip Shaw at philip.shaw@uconn.edu.

When defining a set of resources available, this study controls for students per teacher, students per computer, a measure of neighborhood income, racial composition of the school, enrollment, special education enrollment, and the presence of after school programs. Given these controls, the results explain over 50% of the variation in percent of students meeting state goals. Before proceeding, a word of caution: even though the model explains over half of the variation, there is still much left unexplained. Other variables that may help to explain the performance of the school are generally not observable, such as the family life of the students or average education of the parents for example. Thus these rankings serve as a rough measure of how well the schools in the neighborhoods are doing given their set of *measurable* resources.

Table B2.1: All Rank (Grade 4)		
Rank	Ranking by Score	Rankings by Efficiency
1)	North End	North End
2)	Brooklawn	East End
3)	East End	East Side
4)	North Bridgeport	Black Rock
5)	Reservoir	North Bridgeport
6)	Boston Ave	Boston Ave
7)	West End	Brooklawn
8)	Black Rock	Reservoir
9)	East Side	West End
10)	The Hollow	South End
11)	South End	The Hollow

Table B2.2: Reading Rank (Grade 4)		
Rank	Ranking by Score	Rankings by Efficiency
1)	North End	North End
2)	Brooklawn	East End
3)	North Bridgeport	North Bridgeport
4)	Boston Ave	Black Rock
5)	East End	East Side
6)	Reservoir	Brooklawn
7)	West End	Boston Ave
8)	The Hollow	West End
9)	South End	Reservoir
10)	Black Rock	South End
11)	East Side	The Hollow

This exercise produces some striking results. For example, Table B2.1 reports the results across all categories showing that East Side ranks 9<sup>th</sup> in terms of the aggregate percent of students meeting the state goal for reading, writing, and math, when ranked by its raw score. Once controlling for resources, this analysis finds East Side actually outperforms its predicted value, once the analysis takes resources of the schools into consideration; its rank rises to 3<sup>rd</sup>. Given the level of resources that the schools in East Side have, they perform better than they should. An opposite case is for that of The Hollow: it performs worse than it should given the level of resources. When ranked based on raw score, The Hollow ranks 10<sup>th</sup>; it ranks 11<sup>th</sup> when the analysis looks at the resources available.

Another interesting result is that the North End ranks 1<sup>st</sup> in terms of raw score and efficiency across *all* grade 4 categories. Other schools that rank better in terms of efficiency for grade 4

reading are: East End, East Side, and Black Rock, while Brooklawn, Boston Ave., West End, The Hollow, South End, and Reservoir rank worse.

Table B2.3 ranks neighborhoods by Grade 4 writing scores; this shows East End, East Side, West End, and Black Rock all perform better based on an efficiency ranking than they do by raw score. The neighborhoods that tend to rank lower by efficiency than by raw score are The Hollow, Reservoir, North Bridgeport, Brooklawn, Boston Ave., and South End. For Grade 4 math, the story is similar to that of Grade 4 writing: East End, East Side, and Black Rock all place higher based on efficiency rankings than they do by raw score. The Hollow ranks last in terms of efficiency, while South End, Reservoir, North Bridgeport, and North End maintain their rankings in both methods of measurement. The Hollow ranks just in front of Boston Ave., Brooklawn, and West End, who all fall in the rankings after controlling for the resources available.

Table B2.3: Writing Rank (Grade 4)		
Rank	Ranking by Score	Rankings by Efficiency
1)	North End	North End
2)	North Bridgeport	East End
3)	Brooklawn	North Bridgeport
4)	East End	Brooklawn
5)	The Hollow	East Side
6)	Boston Ave	West End
7)	West End	Boston Ave
8)	South End	Black Rock
9)	Reservoir	South End
10)	East Side	Reservoir
11)	Black Rock	The Hollow

Table B2.4: Math Rank (Grade 4)		
Rank	Ranking by score	Rankings by Efficiency
1)	North End	North End
2)	North Bridgeport	North Bridgeport
3)	Boston Ave	East End
4)	Brooklawn	East Side
5)	East End	Boston Ave
6)	West End	Brooklawn
7)	East Side	Black Rock
8)	Reservoir	Reservoir
9)	The Hollow	West End
10)	South End	South End
11)	Black Rock	The Hollow

Tables B2.5-B2.8 report the results for Grade 6 reading, writing, math, and the total across all categories. The first thing to notice is that the North End is ranked 1<sup>st</sup> in both raw performance and in efficiency in three of the four categories, only losing its rank in efficiency to Boston Ave. when considering writing performance. Those who gained rank in the overall category are East Side, East End, and Black Rock. Here, East End jumps seven places: from 9<sup>th</sup> measured by raw score, to 2<sup>nd</sup> measured by efficiency. When ranking Brooklawn/St. Vincent in terms of efficiency, it falls three places, ranking 5<sup>th</sup> for the overall performance measure (Table B2.5). For all measures of school performance, The Hollow and Brooklawn/St. Vincent both fall in the rankings, once controlling for the resources available to each school.

Table B2.5: All Rank (Grade 6)		
Rank	Ranking by score	Rankings by Efficiency
1)	North End	North End
2)	Brooklawn	East Side
3)	Boston Ave	East End
4)	West End	Boston Ave
5)	North Bridgeport	Brooklawn
6)	Reservoir	Reservoir
7)	East End	North Bridgeport
8)	The Hollow	West End
9)	East Side	Black Rock
10)	Black Rock	The Hollow
11)	South End	South End

Table B2.6: Reading Rank (Grade 6)		
Rank	Ranking by score	Rankings by Efficiency
1)	North End	North End
2)	Brooklawn	Boston Ave
3)	Boston Ave	East Side
4)	North Bridgeport	East End
5)	East End	North Bridgeport
6)	Reservoir	Brooklawn
7)	West End	Reservoir
8)	The Hollow	West End
9)	East Side	Black Rock
10)	Black Rock	The Hollow
11)	South End	South End

Table B2.7: Writing Rank (Grade 6)		
Rank	Ranking by score	Rankings by Efficiency
1)	North End	Boston Ave
2)	Boston Ave	North End
3)	Brooklawn	East Side
4)	Reservoir	Reservoir
5)	East Side	Brooklawn
6)	The Hollow	East End
7)	West End	North Bridgeport
8)	North Bridgeport	West End
9)	East End	Black Rock
10)	Black Rock	The Hollow
11)	South End	South End

Table B2.8: Math Rank (Grade 6)		
Rank	Ranking by score	Rankings by Efficiency
1)	North End	North End
2)	Boston Ave	Boston Ave
3)	North Bridgeport	East Side
4)	Brooklawn	North Bridgeport
5)	West End	West End
6)	The Hollow	East End
7)	Reservoir	Reservoir
8)	East End	Brooklawn
9)	East Side	Black Rock
10)	Black Rock	The Hollow
11)	South End	South End

### *Neighborhood Education Index*

The Neighborhood Education Index ranks the quality of education in each neighborhood based on a model that takes into account factors such as standardized test scores (for both elementary and high schools) and activities of graduates.<sup>26</sup> The Neighborhood Education Index measures the production of each neighborhood’s school system.<sup>27</sup>

Table 12 shows the changes between 2001 and 2006 in terms of rank in the education index. Black Rock and North End were the only two neighborhoods to see their Neighborhood Education Index fall over the period. The Hollow, North Bridgeport, and Boston Avenue/Mill Hill

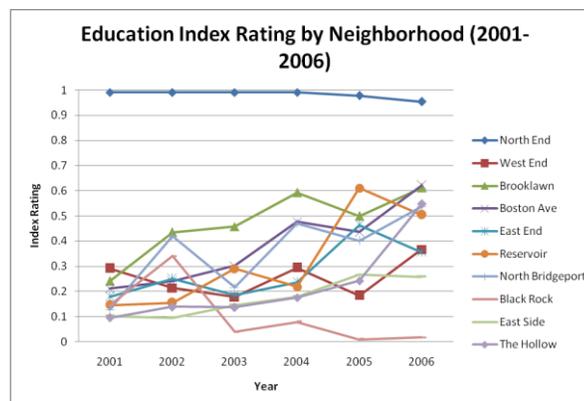
<sup>26</sup>  $NEI = 1/3 * (CMTscores + GradAct + SATCAPTscores)$

<sup>27</sup> The Neighborhood Education Index does not take into account relativistic factors of a certain neighborhood as the efficiency scale did. Rather, the Neighborhood Education Index is highly dependent upon objective school performance, regardless of external factors that may be responsible for score inflation or deflation.

all saw increases of more than 0.40 points; Reservoir/Whiskey Hill and Brooklawn/St. Vincent also saw 0.36 and 0.37 increases.

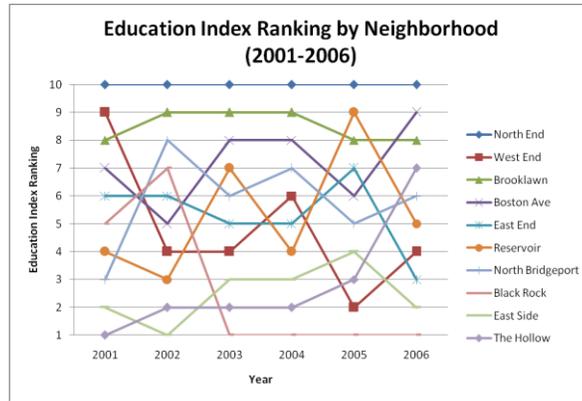
<b>Table B2.9</b>			
	<b>2001</b>	<b>2006</b>	<b>Change</b>
Black Rock	0.15	0.02	-0.13
Boston Ave/Mill Hill	0.21	0.62	0.41
Brooklawn/St. Vincent	0.24	0.61	0.37
East End	0.18	0.36	0.18
East Side	0.10	0.26	0.16
North Bridgeport	0.13	0.54	0.41
North End	0.99	0.95	-0.04
Reservoir	0.14	0.50	0.36
The Hollow	0.09	0.55	0.45
West End	0.29	0.37	0.08

Figure B3.1 shows the Neighborhood Education Index scores for each neighborhood over time. North End had a consistently and visibly higher ranking than the rest of the neighborhoods, despite a small decline in 2005 and 2006. Boston Avenue/Mill Hill had the most consistent increase, only decreasing in 2005. The biggest one year change can be seen in the score for Reservoir/Whiskey Hill between 2004 and 2005, an increase from 0.22 to 0.61. Black Rock suffered the largest fall, decreasing from 0.34 to 0.04 between 2002 and 2003, and never recovered. Black Rock fell consistently further below the Bridgeport average. The Hollow saw an increase in recent years, first rising steadily, and then experiencing a large jump from 0.24 to 0.55 between 2005 and 2006. Excluding Black Rock and North End, all neighborhoods trended upward over the period, which can be attributed to a rising average standardized test scores in recent years, offsetting the expected influence of declining real incomes



**Figure B3.1**

Figure B3.2 shows the rankings from year to year in the Neighborhood Education Index. This figure reveals trends in educational performance too difficult to distinguish in Figure B3.1, as it is a measure of a neighborhood's *standing*, rather than score. The North End received the highest rating for all six years, followed by Brooklawn/St. Vincent for three of the six years. Black Rock witnessed a drastic decrease in ranking, specifically between 2002 and 2003, while scoring lowest for the following for years. Brooklawn/St. Vincent, receiving the second highest rating in 2001 and 2006 was the only neighborhood to finish at the same ranking as it began.



**Figure B3.2**

## ***Section C: Crime***

The level of criminal activity and its composition are two of the most important factors that determine the quality of and influence the development of a neighborhood. A safe environment helps to foster community development through various channels, including residential investment, commercial investment, and development of human capital and skill acquisition. High crime neighborhoods offer a poor environment for self-advancement and often stifle attempts at redevelopment. Furthermore, crime-ridden areas help to direct increased public funds into expenditures such as on law enforcement or public legal aid, reducing what might be spent on investment projects or activities that directly improve worker skills, areas with much higher rates of return. Crime also increases the persistence of poverty in subsets of a population by reducing the opportunity set available to the entire neighborhood. Therefore, the incidence of crime and its composition is worthy of separate assessment when developing a baseline portrait of a neighborhood.

### ***Crime Classifications and Bridgeport's Neighborhoods***

To offer a comparative analysis for various classifications of crime for Bridgeport the CCEA looks to three cities for comparison: Compton, CA, Detroit, MI, and Hartford, CT. For completeness the analysis also compares crime rates for Bridgeport with those of Connecticut. In 2006, Compton, CA ranked as the most dangerous city in the United States among cities with a population between 75,000 and 99,000. Among cities with populations exceeding 500,000, Detroit, MI was the most dangerous city in the United States as of 2006.<sup>28</sup> In the year 2000, Bridgeport ranked 33<sup>rd</sup> on the list of most dangerous cities, just ahead of Hartford, CT (44<sup>th</sup>).<sup>29</sup> The discussion below describes major classifications of crime and identifies current trends for Bridgeport and its neighborhoods.<sup>30</sup>

### ***Assault Rate***

Figure C1.2 shows the number of assaults per 100 people in each residential neighborhood for 2000 to 2006. North End, North Bridgeport, Brooklawn, and Black Rock all saw assault rates

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<sup>28</sup> <http://www.morganquitno.com/cit07pop.htm>

<sup>29</sup> <http://www.morganquitno.com/cit00dang.htm>

<sup>30</sup> All Bridgeport specific data in this section was provided by the Bridgeport Police Department.

under 0.3 for the period. North End remained under 0.1 assaults over the period. With only marginal change from year-to-year, variation among these four neighborhoods was consistently small.

Boston Ave., East End, South End, The Hollow, West End, East Side, and Reservoir all saw rates between 0.3 and 0.8 assaults for the period. The variation, however, was slightly larger; Boston Ave. varied 0.4 assaults, while the East Side varied by more than 0.3 per 100 people.

The Enterprise and Downtown neighborhoods showed their peak assault rates around 1.8 and 1.5 respectively (Figure C1.1), and had significantly more variation than other neighborhoods. As expected, its small populations—which do not include the workforce presence during the workweek in these areas—resulted in a higher relative crime rate, effectively overstating the rate.<sup>31</sup> For Bridgeport as a whole, the assault rate was 0.3 in 2000. The city peaked in 2002 with 0.4, finishing in 2006 with 0.33. Thus, the city saw a slight increase in the assault rate over the period.

Compared to the assault rate for the state itself, Bridgeport consistently saw a higher rate of 0.1 than the state average. The rate was slightly lower than Hartford, as well as considerably lower than Compton or Detroit.

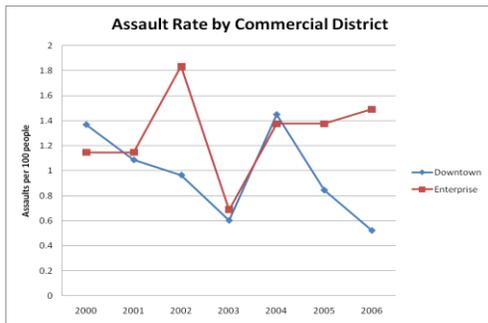


Figure C1.1

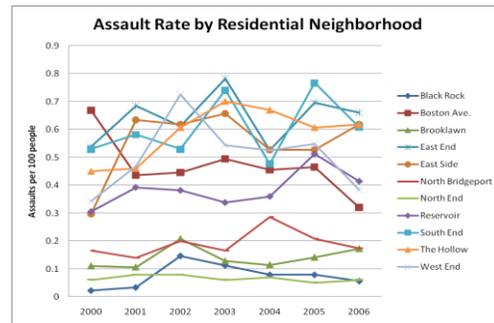


Figure C1.2

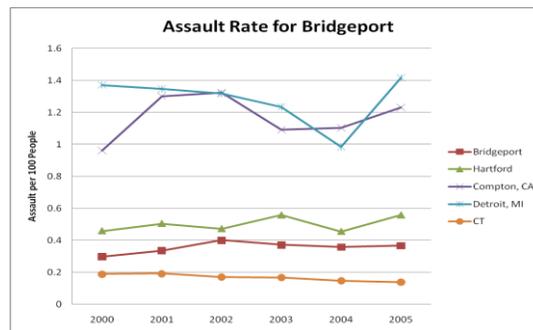


Figure C1.3

<sup>31</sup> For this reason, Enterprise and Downtown have been graphed separately and entitled “Commercial District.” This format will be consistent throughout the rest of the crime section.

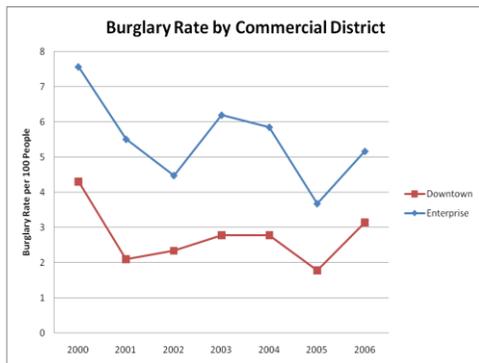
## *Burglary Rate*

Figure C1.5 shows the number of thefts per 100 people in each neighborhood for 2000 to 2006. Black Rock, Brooklawn, and North End witnessed the lowest burglary rates, less than 1 for the entire period. Variation was, again, low within these neighborhoods; North End in particular showed little annual fluctuation.

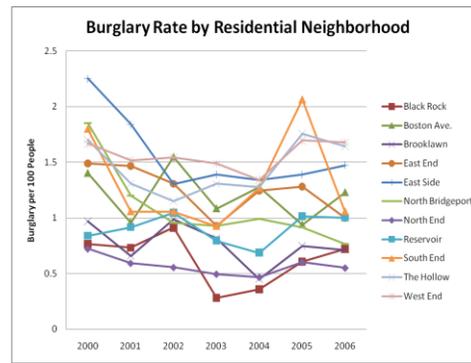
East End, North Bridgeport, Boston Ave., Reservoir, The Hollow, and West End consistently remained below a burglary rate of 2.0. North Bridgeport saw slightly higher fluctuation, falling by approximately 0.24 burglaries over the period. East Side and South End witnessed rates above 2.0 once, in 2000 and 2005 respectively.

Downtown and Enterprise again saw the most variation over the period. The Enterprise Zone neighborhood fell by more than 3 points in 2000-2005, from around 7.5 to less than 4. The Downtown neighborhood, although seeing lower rates, revealed a pattern similar to that of Enterprise.

The city, as a whole, experienced a decline in its burglary, beginning with 1.43 in 2000, falling to 1.11 in 2006. Bridgeport achieved its lowest rate in 2004 with 0.97. Over the period, Bridgeport experienced burglary rates nearly twice that of the state, as well as consistently higher rates than Compton.



**Figure C1.4**



**Figure C1.5**

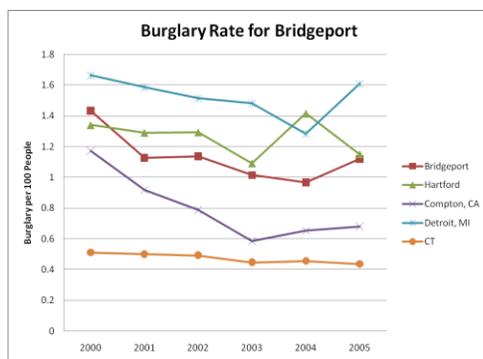


Figure C1.6

### *Murder Rate*

Figure C1.7 shows the murders per 100 people in each neighborhood for 2000-2006. Black Rock, Brooklawn, and North End all remained under 0.02 for the period. These three neighborhoods showed little change over time: Both Black Rock and North End experienced no murders during most years. Brooklawn, however, has a faintly higher murder rate, but exhibits much fluctuation.

Boston Ave., Reservoir, and East Side all saw increased murder rates over the period. Boston Ave. and Reservoir/Whiskey Hill show relatively large increases: Approximately 0.01 to 0.04 and 0.0 to 0.03 respectively, from 2004 to 2006. The Hollow fluctuated between no murders and 0.02 over the period.

South End produced relatively steady rates from 2000 to 2004, seeing murders in the neighborhood solely in 2001. However, in 2005, the neighborhood spiked to 0.105, followed by a large fall to 0.026 in 2006. Enterprise saw similar patterns: The neighborhood saw murders in 2001 and 2006, a murder rate of 0.114 in both years.

The Park City saw an overall increase in the murder rate, beginning with 0.012 in 2000, rising to 0.021 by 2006. The city saw its lowest rates in 2001, 0.009. Although the murder rate for the city was higher than the state average, it saw lower rates than Compton, Hartford, and Detroit.

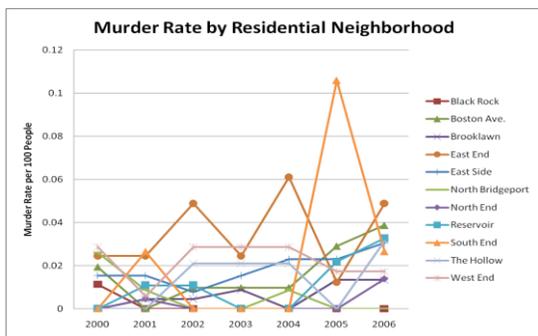


Figure C1.7

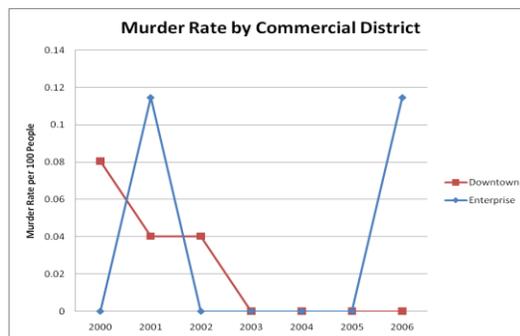


Figure C1.8

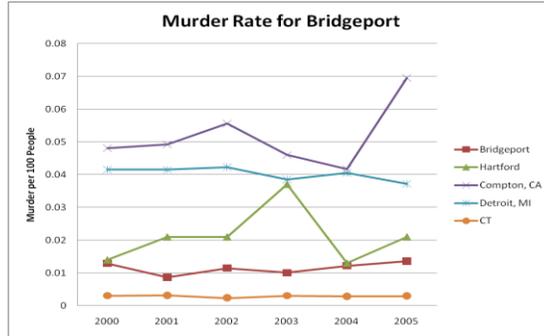


Figure C1.9

### *Rape Rate*

Figure C1.10 shows the rapes per 100 people in each neighborhood for 2000 to 2006. Black Rock and North End have the lowest rates, each staying under 0.05 for the period. While North End finishes 2006 with approximately the same rate, Black Rock starts at 0 in 2000 and ends with 0.045 in 2006.

Brooklawn and North Bridgeport offer slightly higher variation and rates in the period. Starting near zero, North Bridgeport increases to .06 by 2006. Brooklawn increases steadily from 0.025 in 2000 to 0.09 in 2005, and then falls slightly to 0.05 in 2006. The Hollow, East End, West End, Boston Ave, Reservoir/Whiskey Hill, East Side, and North Bridgeport all produce similar findings for 2001 to 2003. Though patterns vary by neighborhood, each neighborhood saw an increase in 2002, followed by a decrease in 2003.

Downtown shows a similar result, starting at 0.4 in 2001, then increasing to 2.33 in 2002. This figure then drops to 0.76 in 2003. Conversely, Enterprise Zone increases steadily from 0 in 2001 to 0.69 in 2004, then dips back below .025 in 2005, only to jump to 0.57 in 2006.

The city as a whole has had a steady, overall increase in the rape rate per 100 people. The 2000 to 2006 period began with 0.033 rapes per 100 people and ends with a figure of 0.082. The city saw its worst rate in 2002 when it hit 0.141.

Bridgeport has the more rapes per 100 people than Hartford, Compton, Detroit, or the state of Connecticut. Between 2001 and 2003, Bridgeport experienced a large increase, nearly tripling the rate from the 2001 level. Despite then falling by about 1/3, the number of rapes in Bridgeport then grew at a slow rate, remaining well above rates in Hartford, Compton, Detroit, and the state of Connecticut.

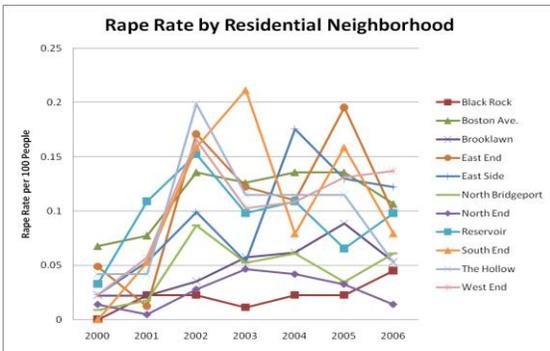


Figure C1.10

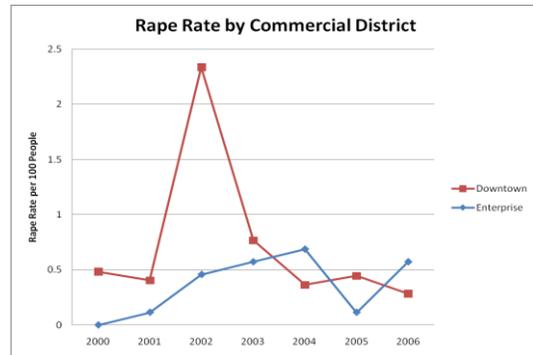


Figure C1.11

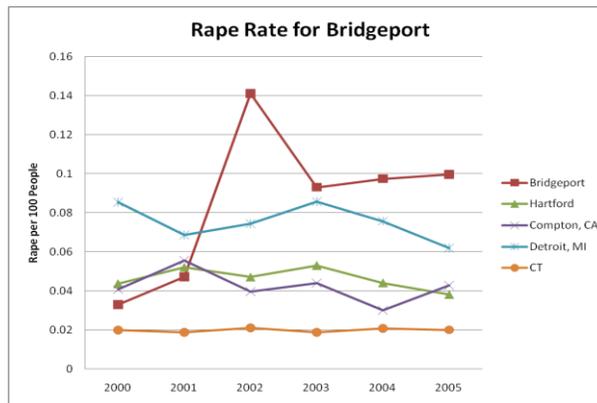


Figure C1.12

### ***Robbery Rate***

Figure C1.13 shows the robberies per 100 people in each neighborhood for 2000 to 2006. North Bridgeport, Reservoir, Black Rock, Brooklawn, and North End all saw rates under 0.4 for the period. North End and Black Rock decreased slightly, while North Bridgeport and Reservoir saw slight increases. Brooklawn witnessed relative stability over the period, both starting and ending close to 0.26.

Boston Ave, East End, East Side, West End, and South End saw robbery rates ranging from 0.3 to 1.00. Boston Ave. and East End were at the low end of the spectrum; West End, East Side, and South End made up the higher end. Boston Ave., East End, East side, and The Hollow experienced similar increases in 2002. Conversely, South End, The Hollow and West End showed similar patterns of decline until 2003, increase until 2005, finishing with a slight decrease in 2006.

The robbery rate in Downtown started at 2.13 in 2001, falling continuously to 1.41 by 2004; after a slight increase in 2005, the rate spiked to 2.50 in 2006. Enterprise Zone, on the other hand,

after increasing in 2001 to more than 2.5, with the exception of small variation, decreased to 1.38 by 2006.

The city, while witnessing a fluctuating pattern, experienced an overall increase in the robbery rate over the period, beginning with 0.46 in 2000 and finishing at 0.52 in 2006. The city saw its lowest rate in 2003, 0.35. Despite a lower robbery rate when compared to Hartford, Compton, and Detroit, Bridgeport experienced a rate nearly five times that of the state over the period.

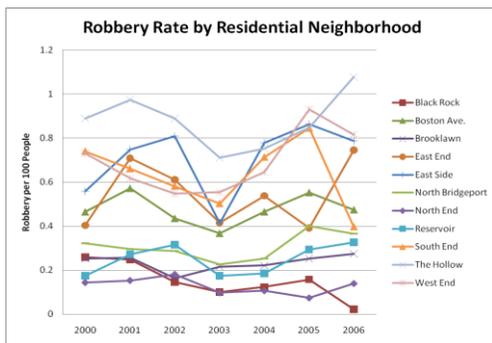


Figure C1.13

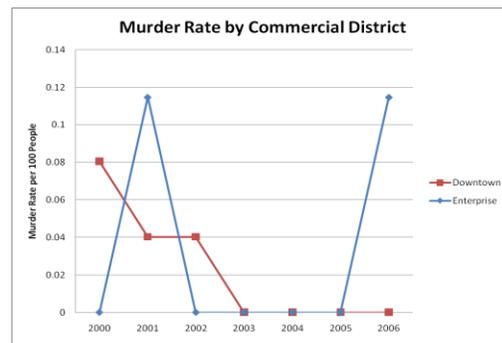


Figure C1.14

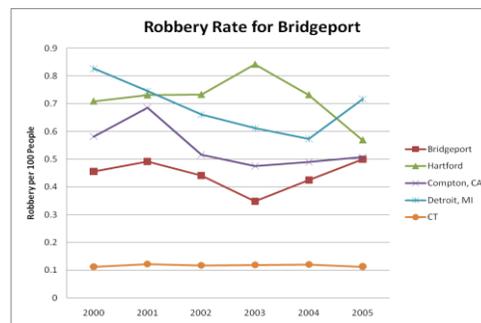


Figure C1.15

### ***Motor Vehicle Theft Rate***

Figure C1.16 shows the theft of vehicles per 100 people by neighborhood in Bridgeport between 2000 and 2006. Most of the neighborhoods had a rate of theft of vehicles below 2.0. Some neighborhoods had notably low rates, such as North End, peaking at 0.89 in 2000, while Black Rock had a relative low of 0.38 in 2004. Boston Ave., the neighborhood with the highest rate, saw 1.7 thefts per 100 people. Overall, the city saw a relative fall in thefts of vehicles between 2000 and 2006. Both commercial-based neighborhoods exhibited the highest rates of vehicle theft: Enterprise suffered in 2000 with a 6.31 motor vehicle theft rate, while Downtown saw 4.95 that year. Both neighborhoods finished with lower rates in 2006, 4.7 in Enterprise, 1.81 in Downtown.

Bridgeport saw falling rates of motor vehicle theft over the period, peaking in 2000 with 1.43, and finishing with 0.89 in 2006. The city witnessed higher motor vehicle theft rates than the state average, as well as a higher rate than Compton until 2003. Bridgeport saw a lower motor vehicle theft rate than both Hartford and Detroit.

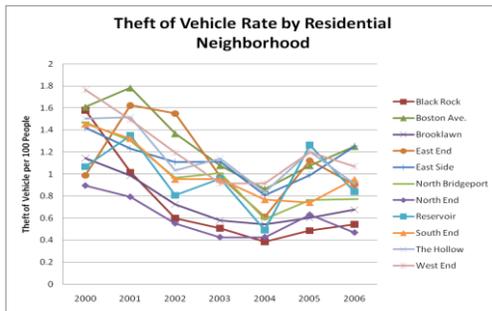


Figure C1.16

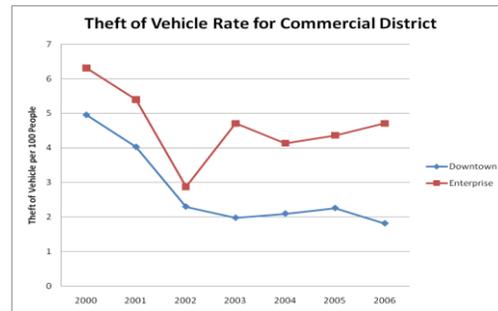


Figure C1.17

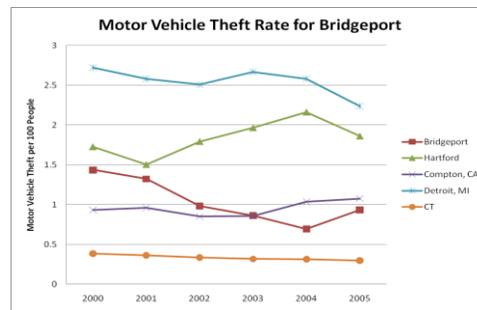


Figure C1.18

### Crime Index

This section develops the crime index for each neighborhood in Bridgeport. The CCEA constructs the crime index (CI) in the same manner as the education and income indexes discussed in the previous sections. The formula for the CI is:

$$CI = \alpha MI + \beta RI + \delta AI + \lambda ATI + \phi BI$$

This simply means that the CI is the weighted averages of each of the indexes of the individual crime categories: murder index (MI), rape index (RI), assault index (AI), auto theft index (ATI), and burglary index (BI). Their respective weights are  $\alpha$ ,  $\beta$ ,  $\delta$ ,  $\lambda$ , and  $\phi$ , such that the sum of the weights equals one.<sup>32</sup> As a first pass, the analysis set the weights at  $\alpha=1/3$ ,  $\beta=1/6$  and  $\delta=\lambda=\phi=1/8$ . This

<sup>32</sup> The index for the murder rate is construct as:  $MI = \frac{Murderrate_i - \min(Murderrate)}{\max(Murderrate) - \min(Murderrate)}$  where i denotes the neighborhood murder rate and  $\max(Murderrate)$  is the maximum murder rate across all neighborhoods for a given year.

weighting scheme assumes that murder and rape contribute more heavily to the CI. This is a reasonable assumption considering that the nature of the crimes impact society differently. Along the same lines, the analysis assumes that assault, auto theft, and burglary have a smaller impact on society and neighborhood quality of life, and thus should have a smaller weighting in the overall crime measure for a given neighborhood. Figure C1.19 shows the annual CI index for each neighborhood. Downtown and Enterprise Zone, largely because of their small populations, have the highest indexes.<sup>33</sup> North End and Black Rock dominate the bottom two positions (lowest relative crime rate) over the entire period.

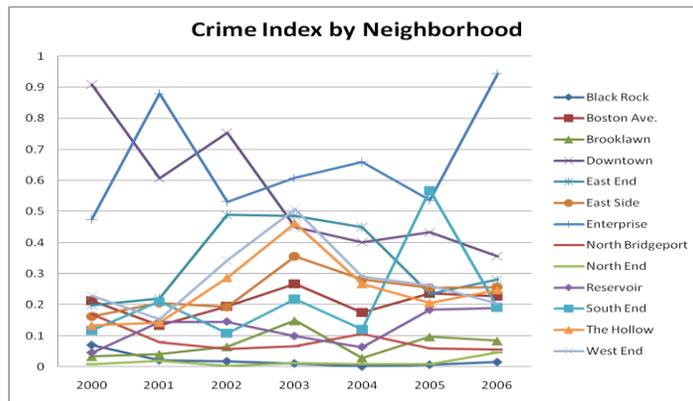


Figure C1.19

Table C1.1: Rankings for 2000-2002			
2000 Rankings by CI	2001 Rankings by CI		2002 Rankings by CI
1) Downtown (0.91)	1) Enterprise (0.88)	▲	1) Downtown (0.75) ▲
2) Enterprise (0.48)	2) Downtown (0.61)	▼	2) Enterprise (0.53) ▼
3) West End (0.23)	3) East End (0.22)	▲	3) East End (0.49)
4) Boston Ave. (0.21)	4) South End (0.21)	▲	4) West End (0.34) ▲
5) East End (0.2)	5) East Side (0.21)	▲	5) The Hollow (0.29) ▲
6) North Bridgeport (0.17)	6) West End (0.15)	▼	6) Boston Ave. (0.19) ▲
7) East Side (0.16)	7) Reservoir (0.14)	▲	7) East Side (0.19) ▼
8) The Hollow (0.13)	8) The Hollow (0.14)		8) Reservoir (0.15) ▼
9) South End (0.12)	9) Boston Ave. (0.13)	▼	9) South End (0.11) ▼
10) Black Rock (0.07)	10) North Bridgeport (0.08)	▼	10) Brooklawn (0.06) ▲
11) Reservoir (0.05)	11) Brooklawn (0.04)	▲	11) North Bridgeport (0.06) ▼
12) Brooklawn (0.03)	12) Black Rock (0.02)	▼	12) Black Rock (0.02)
13) North End (0.01)	13) North End (0.02)		13) North End (0.02)

<sup>33</sup> A high value for the CI corresponds to a high relative overall crime incidence.

The crime index exhibits volatility over the entire period, producing high degree of mobility in the relative neighborhood rankings. From 2000 to 2001, the Enterprise Zone moved from 2<sup>nd</sup> to 1<sup>st</sup> with a 2001 CI of 0.88. Downtown moved from 1<sup>st</sup> to 2<sup>nd</sup>, with a drop of 0.30 down to 0.61. Both Reservoir/Whiskey Hill and the South End gained by 0.09, moving from 11<sup>th</sup> to 7<sup>th</sup>, and 9<sup>th</sup> to 4<sup>th</sup> respectively.

Then 2001 to 2002 saw more shifts in the ranks. Downtown moved to 1<sup>st</sup> place, after a jump of 0.14 to 0.75. Enterprise Zone moved to 2<sup>nd</sup> with a fall from 0.88 to 0.53. East End stayed in 3<sup>rd</sup> place, but its index increased 0.27. South End moved back to its 2000 rank of 9<sup>th</sup>, with a drop of 0.1. West End moved to 4<sup>th</sup> after an increase of 0.19. The Hollow moved from 8<sup>th</sup> to 5<sup>th</sup> after a 0.15 increase.

Between the years 2002 and 2003, Downtown moved from 1<sup>st</sup> place on the crime index to 5<sup>th</sup> place, after a drop of 0.3. The Hollow moved from 5<sup>th</sup> to 4<sup>th</sup> place after its index jumped 0.17. East Side's index also jumped 0.19, moving it up one rank.

Table C1.2: Rankings for 2003-2004		
2003 Rankings by CI		2004 Rankings by CI
1) Enterprise (0.61)	▲	1) Enterprise (0.66)
2) West End (0.51)	▲	2) East End (0.45) ▲
3) East End (0.49)		3) Downtown (0.4) ▲
4) The Hollow (0.46)	▲	4) West End (0.29) ▼
5) Downtown (0.45)	▼	5) East Side (0.28) ▲
6) East Side (0.36)	▲	6) The Hollow (0.27) ▼
7) Boston Ave. (0.27)	▼	7) Boston Ave. (0.17)
8) South End (0.22)	▲	8) South End (0.12)
9) Brooklawn (0.15)	▲	9) North Bridgeport (0.11) ▲
10) Reservoir (0.1)	▼	10) Reservoir (0.06)
11) North Bridgeport (0.07)		11) Brooklawn (0.03) ▼
12) North End (0.01)	▲	12) North End (0.01)
13) Black Rock (0.01)	▼	13) Black Rock (0)

West End, in 2003-2004 moved from 2<sup>nd</sup> to 4<sup>th</sup>, after its index dropped 0.22. The Hollow moved from 4<sup>th</sup> to 6<sup>th</sup> when its index dropped 0.19, to 0.27 on the crime index. Brooklawn moved down 2 places to 11<sup>th</sup>, after its dropped 0.12. South End stayed in 8<sup>th</sup> place, even though its index rose by 0.1.

Table C1.3: Rankings for 2005-2006			
2005 Rankings by CI		2006 Rankings by CI	
1) South End (0.57)	▲	1) Enterprise (0.94)	▲
2) Enterprise (0.54)	▼	2) Downtown (0.36)	▲
3) Downtown (0.43)		3) East End (0.28)	▲
4) West End (0.26)		4) East Side (0.26)	▲
5) East Side (0.25)		5) The Hollow (0.25)	▲
6) Boston Ave. (0.24)	▲	6) Boston Ave. (0.23)	
7) East End (0.24)	▼	7) West End (0.2)	▼
8) The Hollow (0.21)	▼	8) South End (0.19)	▼
9) Reservoir (0.18)	▲	9) Reservoir (0.19)	
10) Brooklawn (0.1)	▲	10) Brooklawn (0.08)	
11) North Bridgeport (0.06)	▼	11) North Bridgeport (0.06)	
12) North End (0.01)		12) North End (0.05)	
13) Black Rock (0.01)		13) Black Rock (0.02)	

Between years 2004 and 2005, South End saw its index grow 0.45, moving it from 8<sup>th</sup> place in 2002 to 1<sup>st</sup> place in 2005, briefly surpassing both Enterprise Zone and Downtown. Enterprise Zone then moved from 1<sup>st</sup> to 2<sup>nd</sup>, after a drop of 0.12. East End moved from 2<sup>nd</sup> to 7<sup>th</sup> place, after its index dropped 0.21, while Boston Ave. saw its index increase 0.07, pushing it up to 6<sup>th</sup> place.

South End, between the years 2005 and 2006, improved in relative terms dramatically, seeing its index fall 1<sup>st</sup> to 8<sup>th</sup> place, after a drop of 0.38, reaching 0.19. Enterprise Zone's index moved back into 1<sup>st</sup> place, after a jump of 0.4, to a CI of .94. The North End saw its highest CI in 2006: 0.05.

Many neighborhoods such as Boston Ave., Brooklawn, East Side, South End, The Hollow, and West End all saw their CI rise between 2002 and 2003. Then these same neighborhoods experienced a decreased crime rate between 2003 and 2004. Both Boston Ave. and Reservoir/Whiskey Hill had increased crime in between 2004 and 2005, and then experienced a plateau between 2005 and 2006. Downtown had an overall decrease in crime rate, starting with 0.91 and ending with 0.35. Conversely, Enterprise Zone had an overall increase, starting with 0.48 and ending with 0.94.

# Section D: A Proxy for Neighborhood Development

Building permits serve as a reasonable proxy for development at the micro level because they often capture investment decisions for both residential and commercial entities. Residents will invest in their home for multitude reasons, including mandatory repairs associated with weather or fire damage. They may also make the decision to invest in exterior renovations, such as a new garage or deck, which enhances the utility of the home, but also typically increases property value. One useful feature of this behavior is that it may reflect the quality of a neighborhood indirectly. The underlying assumption is that residents will invest to improve the quality of their house only if there is a payoff to the investment. Residents are less likely to invest in their home if they believe that the negative characteristics of the neighborhood will trump the increase in value created from the improvement to their home. The same will tend to be true of commercial development. Healthy, growing neighborhoods will attract more commercial activity and encourage investment. In this sense, the quantity and composition of building permits issued in the different neighborhoods signals the quality of the neighborhood. One potential problem with this argument is that some neighborhoods may experience more investment in homes relative to other neighborhoods, solely because of larger numbers of owner-occupied homes. Figure D1.1 reveals a relationship between the percentage of homes that are owner-occupied and the number of building permits by neighborhood for 2000.<sup>34</sup>

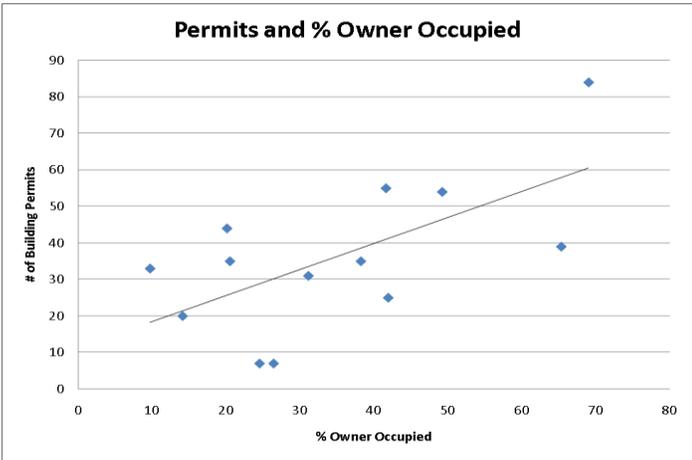
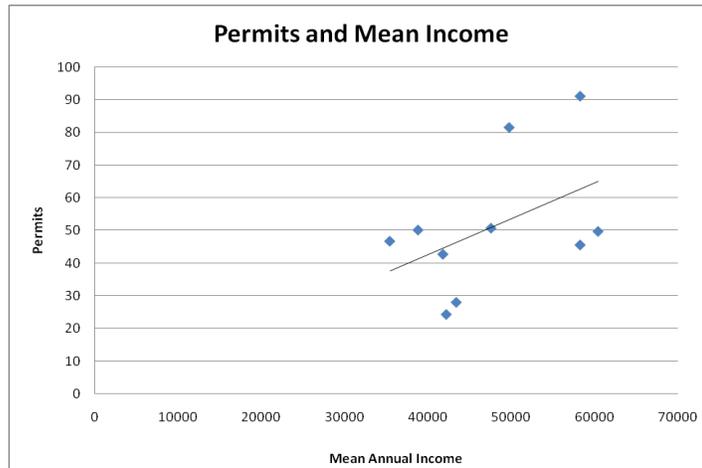


Figure D1.1

In 2000, the percentage of owner-occupied housing accounted for 25% of the variation in the number of permits issued for each neighborhood.

<sup>34</sup> This relationship is statistically significant.



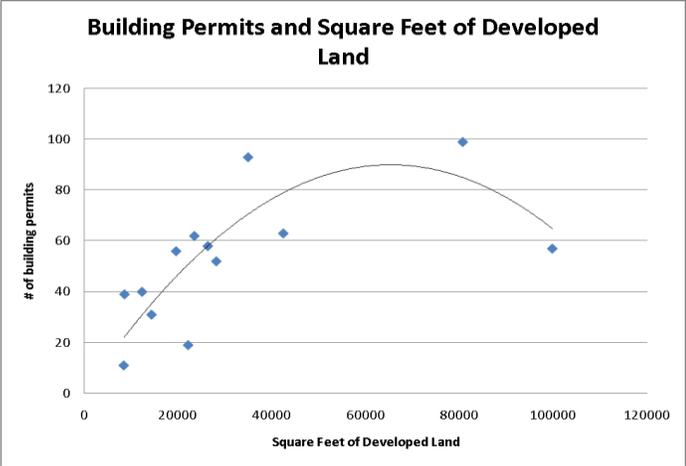
**Figure D1.2**

Figure D1.2 looks at the relationship between mean annual income and permits; this characteristic accounts for approximately 12% of the variation in permits over the period of 2000 to 2006, though it is a statistically weak relationship.<sup>35</sup> As expected, neighborhoods with a higher mean annual income experienced more development, measured by the number of building permits.

Another factor that may influence the total number of permits issued in a given year may be the square feet of developed land in each neighborhood. Figure D1.3 below depicts the relationship between square feet and number of permits issued. The results suggest a positive, but diminishing relationship between the number of permits and square feet of developed land. In fact, the combination of square feet of developed land and its square are statistically linked to over 57% of the variation in the number of permits for 2005.<sup>36</sup>

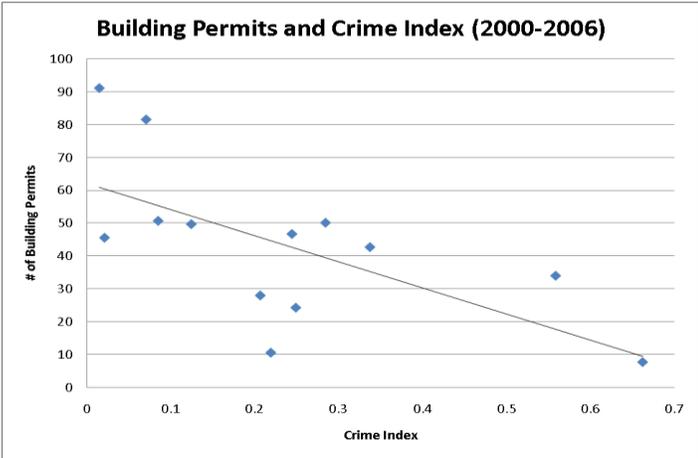
<sup>35</sup> This relationship is not statistically significant.

<sup>36</sup> This relationship is statistically significant.



**Figure D1.3**

Another potential influence on neighborhood investment is the crime level in the neighborhood. Figure D1.4 below shows there is the expected negative relationship between crime and the number of building permits issued.<sup>37</sup> The higher the crime rate via the crime index, the lower the incentive to invest in both residential or commercial development.



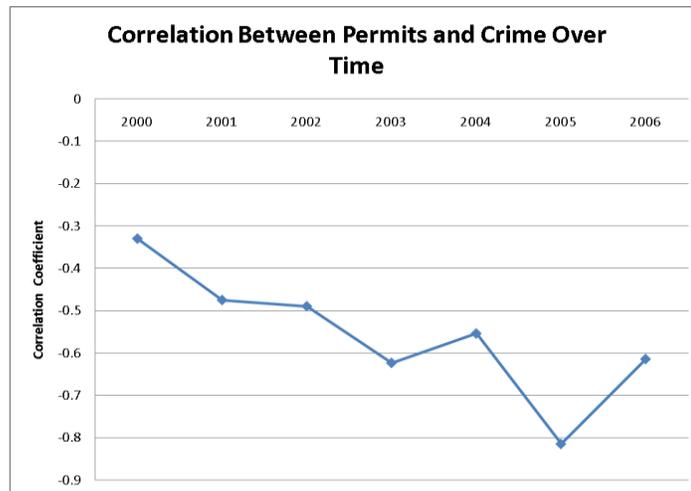
**Figure D1.4**

After controlling for square feet of developed land and crime, this approach accounts for 77% of the total variation in permits among neighborhoods.<sup>38</sup> Thus, two main determinants of building permits and neighborhood development are the existing development and the level of crime within a given neighborhood. The main difference between the two determinants is that square feet of developed land affects permit demand directly, while crime affects demand for permits through the distortion of incentives.

<sup>37</sup> This relationship is statistically significant after controlling for square feet of developed land and income.

<sup>38</sup> This figure has been adjusted for sample size.

To assess the strength of the relationship between crime and permits, Figure D1.5 plots the correlation over time; this shows how the relationship holds up over different time periods. Over time, the magnitude of the linear relationship increases. For all years the correlation is negative, which strongly suggests that there is a consistent negative relationship between crime and the number of building permits for each period.



**Figure D1.5**

Moreover, as the economy moves into recovery after 2002, the impact of crime in deterring investment grows. As with the analysis of educational outcomes, it is clear that crime levels play a powerful role in shaping neighborhood development.

Figure D1.6 below explores another relationship, that between the average number of permits issued and the neighborhood development index. The figure shows the relationship between the average number of permit issued from 2001 to 2006 and the average value of the neighborhood development index, as a function of income, crime, and the quality of schools. Recall that the higher the value of the index, the lower the crime rate. In turn, average income is higher and there is a better relative performance in neighborhood schools. The relationship is positive and statistically persistent; that is, a rise in the development index links with an increase in the number of permits issued. This simple modeling approach suggests a strong causal relationship between the neighborhood development index and the average number of permits issued across neighborhoods.<sup>39</sup>

<sup>39</sup> The relationship between permits and the neighborhood index was estimated nonparametrically. The results suggest a highly linear and significant relationship between the two variables. Furthermore, given the result of this approach to estimation, a causal relationship between the neighborhood index and building permits is likely. For a more technical discussion of this result please contact Philip Shaw at: philip.shaw@uconn.edu.

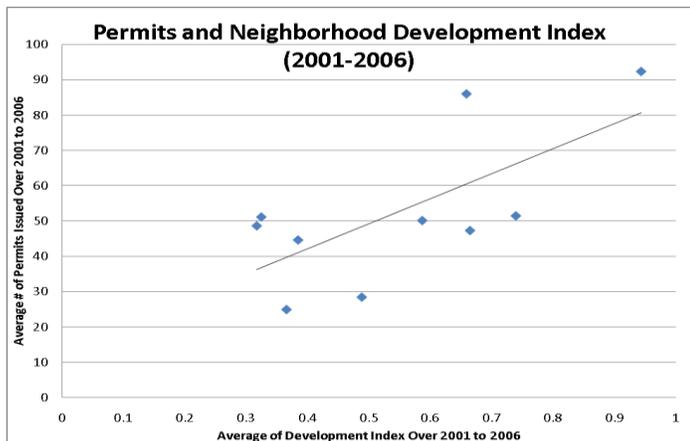
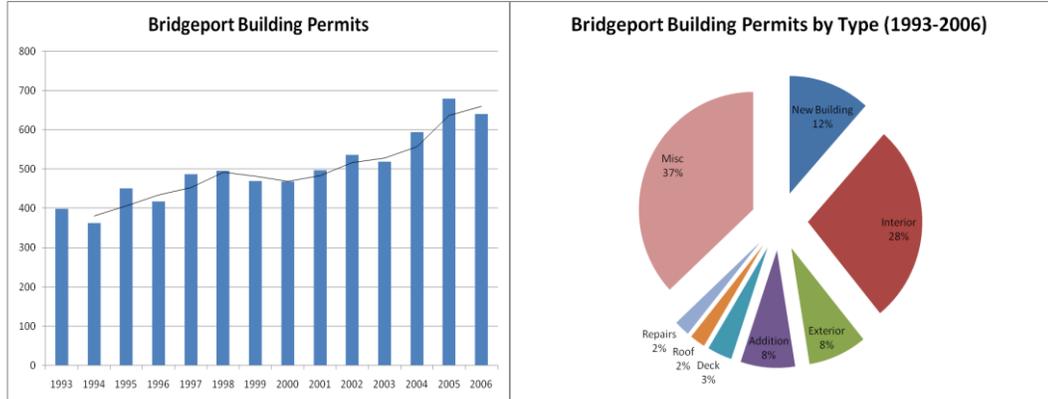


Figure D1.6

**Recent Trends in Permit Demand for Bridgeport and Its Neighborhoods**

For Bridgeport, the growth in building permits has been substantial over the past 13 years. The average annual growth rate in permits was approximately 4% each year for the period 1994-2006, with the largest increase in 1995, with 24%. It is important to note that a high number of building permits does not necessarily coincide with the construction of new buildings.

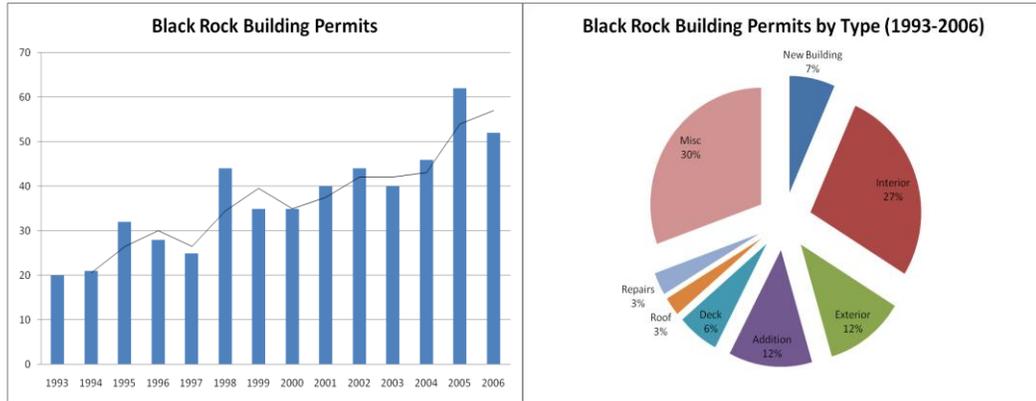


The above pie chart indicates that one of the main reasons for obtaining building permits is for interior renovation. From 1993 to 2006, 28% of all building permits issued were solely for interior renovation; 12% of permits were for the construction of new buildings, 2% percent for new roofs, 8% for the construction of additions. Exterior renovations constituted 8% of total permits issued, another 3% were for the construction of decks, 2% for general repair, and 37% for miscellaneous improvements.

## *The Neighborhoods*

### *Black Rock*

Black Rock saw an impressive rise in the number of building permits from 1993 to 2006, increasing by 210%. The following graph shows an upward trend throughout the entire period.

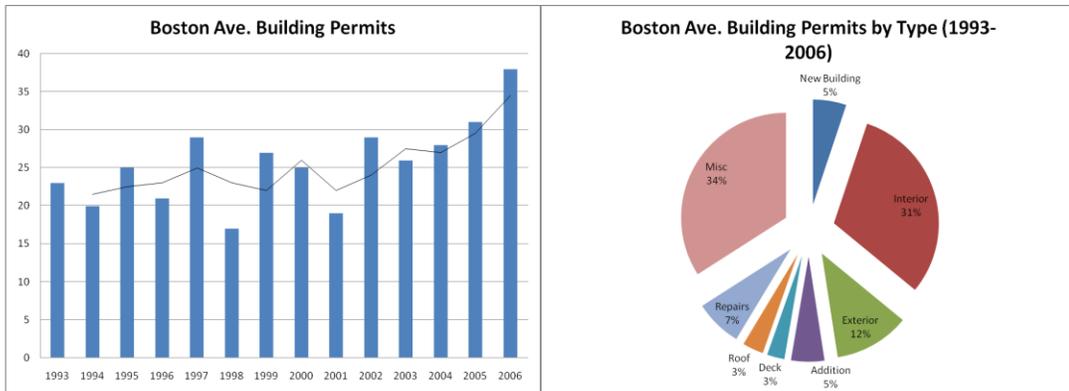


The largest annual percentage increase came in 1995, when it reached 50%. From 1994 to 2006, the average annual growth rate in building permits was 11%. Black Rock ranks 5<sup>th</sup> in terms of variability development, with a standard deviation in permits of 11.92.<sup>40</sup> Only 7% of all permits were for new buildings, 5% less than the city average. Twenty seven percent of all permits were issued for interior renovations, while 12% were issued for exterior renovations. Repairs and roofs each shared 3% of the total number of permits issued, while 6% of permits were for deck constructions and 12% for additions.

### *Boston Avenue*

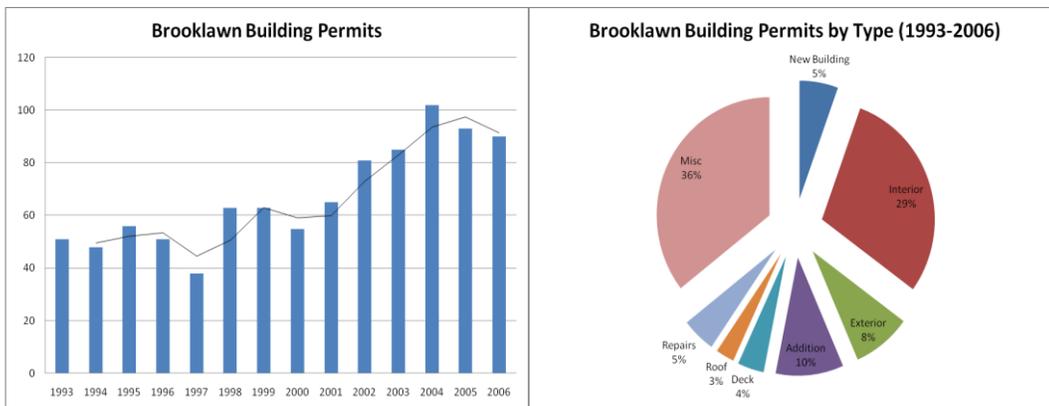
Building permits in the Boston Ave. neighborhood grew steadily beginning in 2003, reaching its peak in 2006 at 38. During the 1990s and into early 2000, the number of building permits issued in Boston Ave. oscillated around an average of 24. From 1994 to 2006, the average annual growth rate for building permits was 8%. New building permits accounted for 5% of total permits issued, 7% went for general repairs, 5% for additions, and 6% for roofs and decks. At par with the city, interior renovations made up 31% of total permits, 12% for exterior renovations, and 34% for miscellaneous repairs. Boston Avenue had a standard deviation for permits of 5.49, ranking it 11th in terms of variability.

<sup>40</sup> For the complete table of rankings see Table D1.1



### *Brooklawn*

With 980 permits issued from 1993 to 2006, Brooklawn exhibited the second highest demand for permits. The highest level of annual activity came in 2004 when the number of permits issued exceed 100.

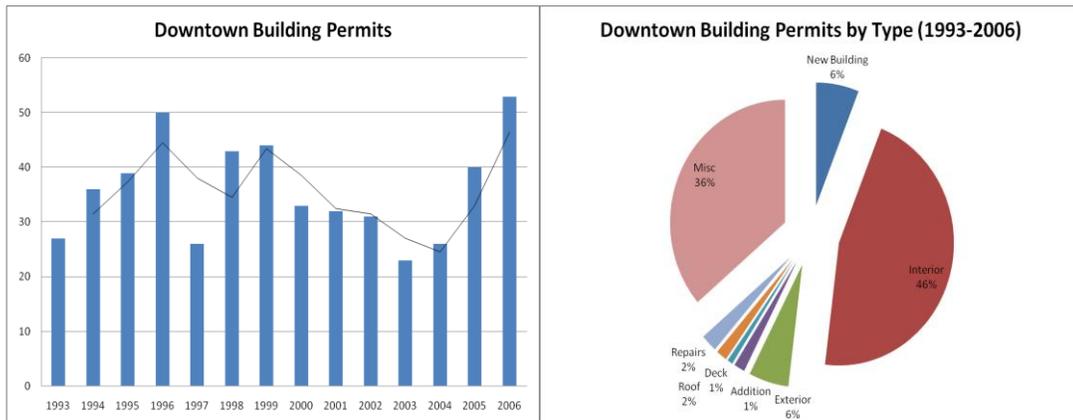


For the 13-year period, the average annual growth rate for permits in Brooklawn was 7%. From 1993 to 2004, the demand for permits nearly tripled. On average, Brooklawn demanded 82 permits per year. Having a standard deviation of 19.54, Brooklawn ranked 1<sup>st</sup> in term of variability. In terms of composition, 29% of all permits demanded over the period were for interior renovations and 5% for the construction of new buildings (7% below the city average). New additions accounted for 10% of permits issued, while exterior renovations, repairs, new roofs accounted for 8%, and 12% for the construction of decks.

### *Downtown*

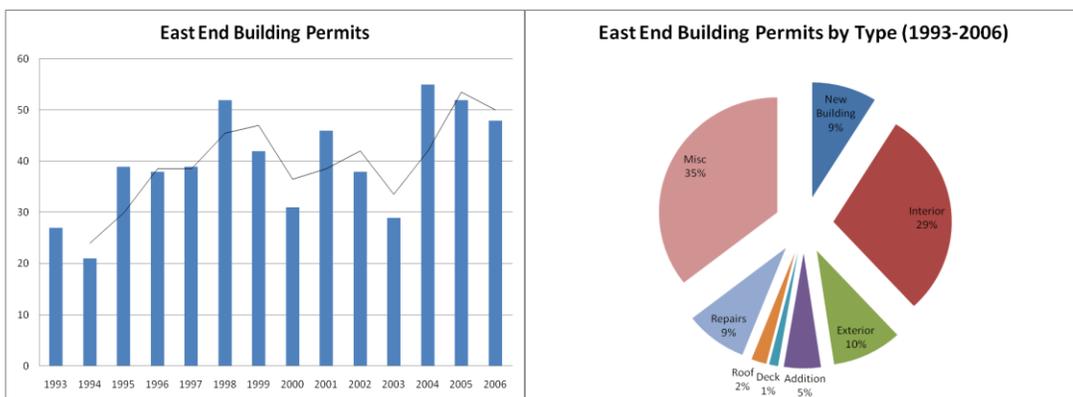
In the early 1990s, Downtown saw a firm increase in the number of permits, reaching a high in 1996 with a total of 50. From 2000, there was a persistent decline, undoubtedly related to the general

economic malaise of that period. Downtown hit a low of 23 permits in 2003. Building permits then began climbing through 2006, peaking at 53, 100% higher than 2003's figure. Ranking 8<sup>th</sup> in terms of variability, the standard deviation was 9.29. Forty-six percent of permits issued in Downtown were for interior renovations. Only 6% of all permits were for new buildings, while 6% were for exterior renovations.



### *East End*

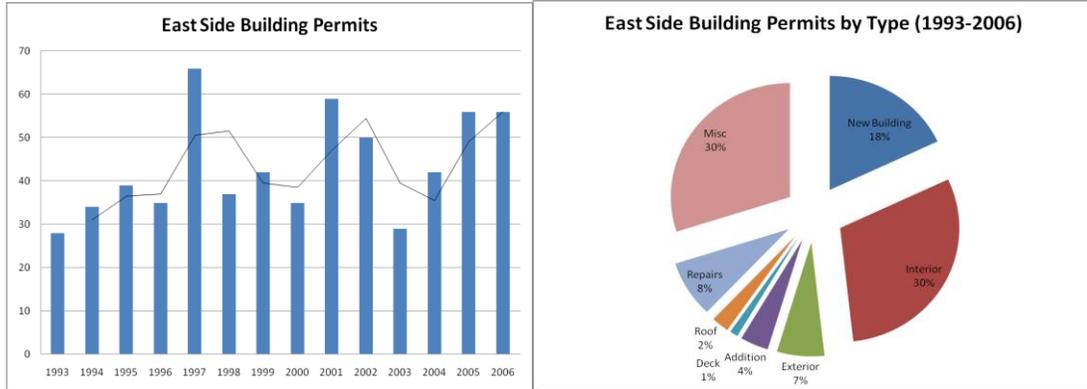
With an average annual number of permits of 39.79, East End ranked 7<sup>th</sup> over the period in terms of total number of permits issued and ranked 6<sup>th</sup> in terms of variability, with a standard deviation of 10.22. The trend in permits issued for the East End has been relatively unstable from 1993 to 2006, with a major uptrend from 1994 to 1998. New buildings made up approximately 9% of total permits issued, 3% below the city average.



Ten percent of total permits were issued for exterior renovations, 5% for new additions, and 29% for interior renovations. East End ranked 6<sup>th</sup> in permit growth, with a rate of 10%.

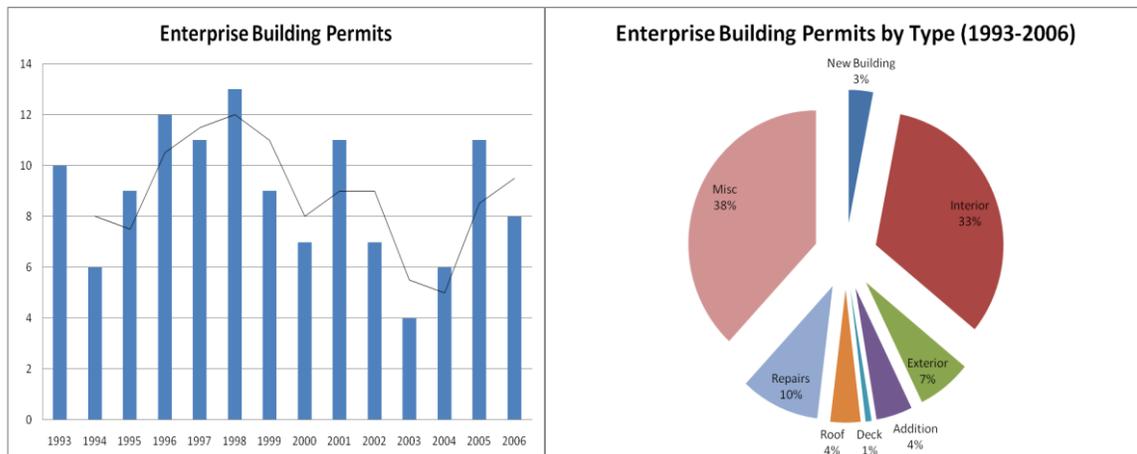
### *East Side*

East Side saw inconsistent growth in permits, resulting in an average growth rate of 12%, ranking it 2<sup>nd</sup> in growth. In terms of variability, East Side ranked 6<sup>th</sup>, while ranking 4<sup>th</sup> in total permits issued. 30% of permits were for interior renovation, whereas 7% were for exterior renovations, 8% for general repairs, and 37% for new roofs, decks, additions, and miscellaneous repairs.



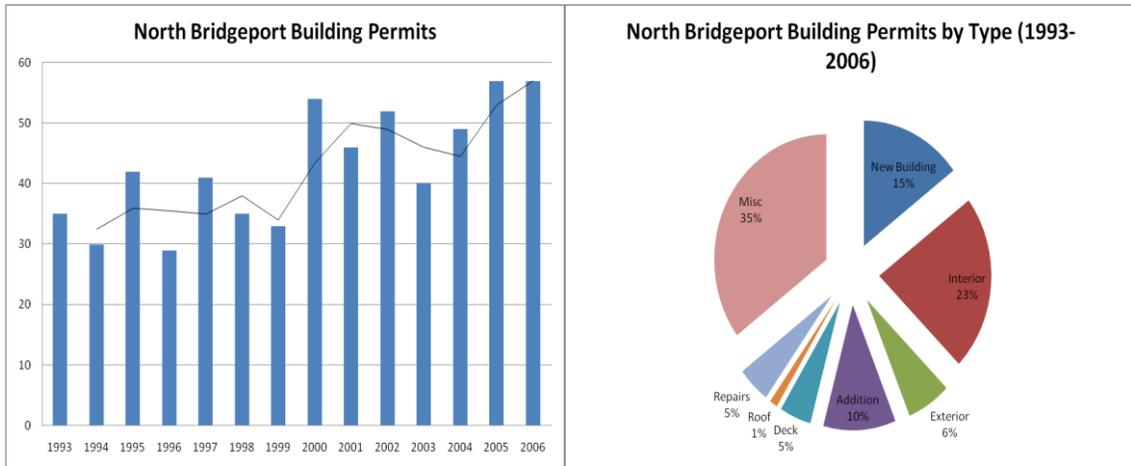
### *Enterprise*

Enterprise saw a steady downtrend in permits issued from 1998 to 2003, but began to recover in 2004. Enterprise ranked 11<sup>th</sup> in terms of average annual growth in permits out of a possible 13 places. It also ranked last in both total number of permits and variability, with a total of 124 permits and a standard deviation of 2.63. Only 3% of permits were issued for new buildings, while 33% were issued for interior renovations. Additions consisted of 4% and the construction of exterior renovations for 7%. Additionally, 4% of permits issued were for roofs, 1% for decks, 10% for repairs, and 38% for miscellaneous improvements.



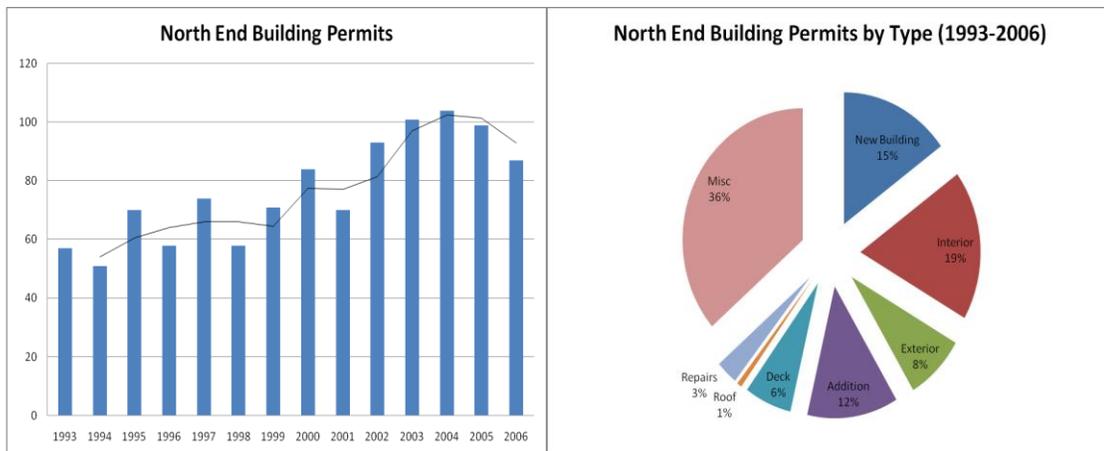
## *North Bridgeport*

North Bridgeport ranked 5<sup>th</sup> in total permits issued with 600 while ranking 9<sup>th</sup> in average annual growth rate with a rate of 7.2%. New building permits made up 15% of total permits issued, 3% above the city average. Interior renovations made up 23% of total permits, lower than the city average. Six percent were for exterior renovations, 5% were for repairs, 1% for roof constructions, 10% for new additions, and 35% for miscellaneous improvements. The trend for North Bridgeport has been predominately positive over the entire period, reaching a high in 2006 with a total of 57 permits.



## *North End*

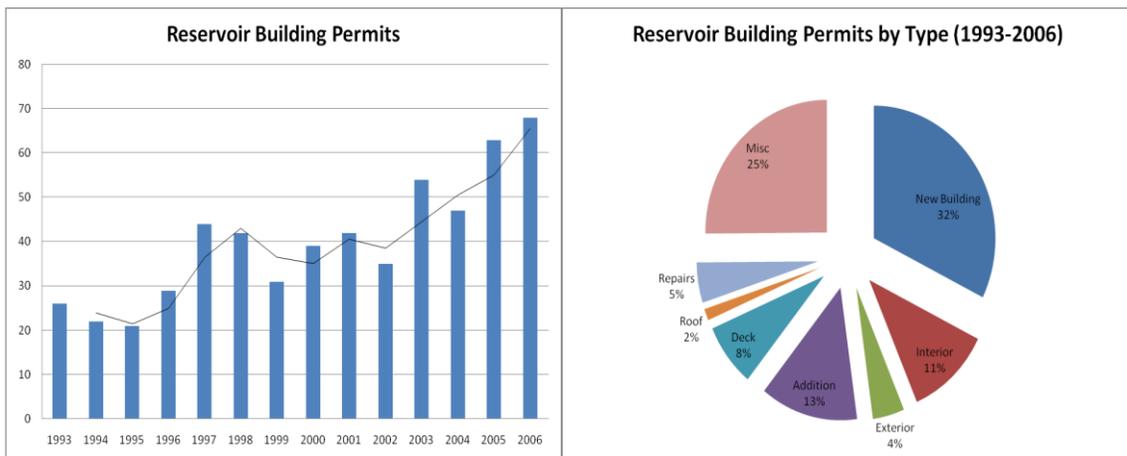
The North End saw a steady rise in the number of permits issued from 1993 to 2004 but then fell off in 2005 and 2006. The average annual growth rate was 5.2%,



ranking 12<sup>th</sup> among all neighborhoods. Matching North Bridgeport, 15% of all the permits issued in North End were for new buildings. North End ranked 1<sup>st</sup> in total number of permits with 1,077. The variability of permits issued was quite high, ranking it 2<sup>nd</sup>. Interior renovations made up 19% of total permits, 12% for new additions, and 8% for exterior renovations. The largest number of permits issued was in 2004, totaling 104, more than a 100% increase relative to its level a decade earlier.

### *Reservoir/Whiskey Hill*

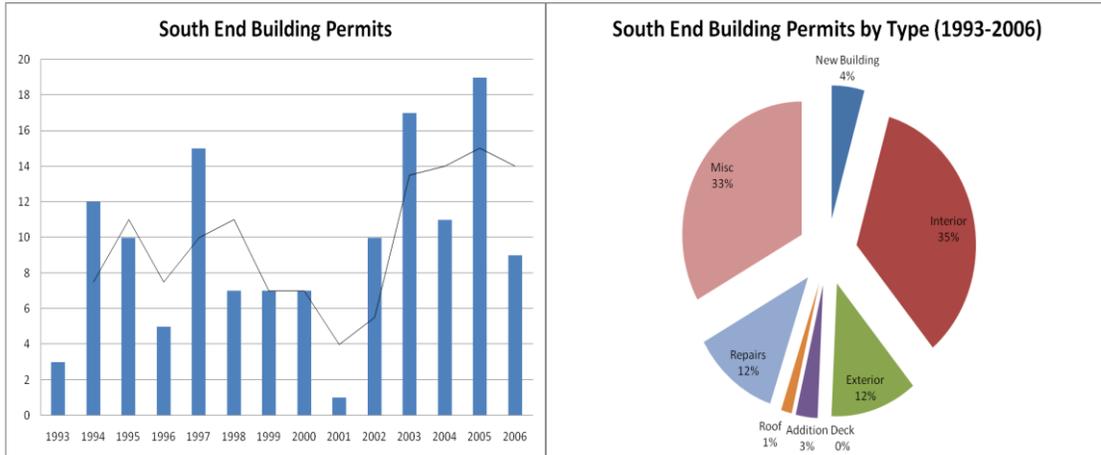
With an impressive growth rate of 10.7% annually, Reservoir/Whiskey Hill ranked 3<sup>rd</sup> overall in terms of annual growth. Reservoir saw a predominately upward trend in the number of permits, reaching a total of 563. 32% of permits were issued for new buildings, 2 ½ times greater than the city average. New additions made up 13% of permits issued, interior renovations made up 11%, while new decks and repairs made up 13%.



### *South End*

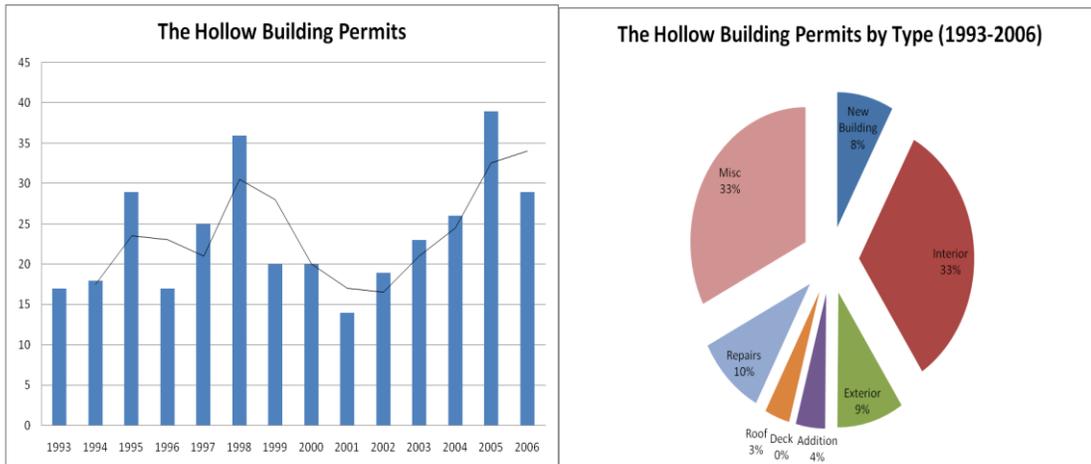
South End ranked 1<sup>st</sup> in average annual growth rate, while ranking 2<sup>nd</sup> to last for the total number of permits issued from 1993 to 2006. Post 2002, an upward trend continued until 2005. The main source of permit demands was for interior renovations, with 35% of all permits. 4% of total permits issued in South End were for new buildings, while 24% were for repairs and exterior

renovations. New additions only comprised 3% of total permits issued, leaving 33% for miscellaneous improvements.



### The Hollow

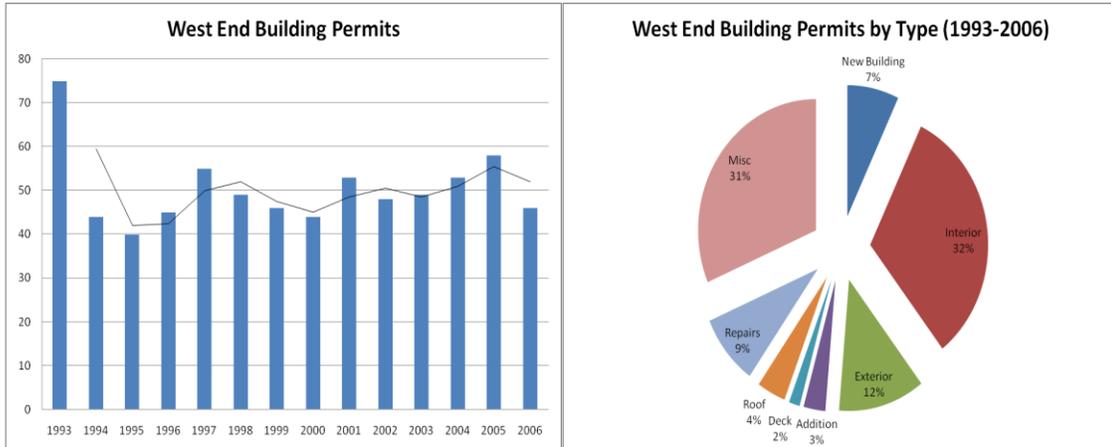
With an average annual growth rate of 10.5%, The Hollow ranked 5<sup>th</sup> among all neighborhoods. The Hollow saw a solid, upward trend beginning in 2002 that continued into 2005. Close to that of the city, one of the main reasons for obtaining a permit was for interior renovations. New buildings only made up 8% of the total, while 4% were for new additions, and 3% were for new roofs.



### West End

With an annual growth rate of -2%, the West End ranked last in terms of growth. However, it ranked 3<sup>rd</sup> in total number of permits with 705. Given the stagnant trend from 1993 to 2006, it

ranked 11<sup>th</sup> in total variability. Seven percent of total permits were for new buildings, 32% for interior renovations, and 12% for exterior renovations. The remaining permits were used for the construction of decks, new roofs, and additions.



<b>Table D1.1: Neighborhood Rankings by Variability, Average Growth, and Number of Permits</b>		
<b>Rank by Variability</b>	<b>Rank by Average Growth</b>	<b>Rank by Number of Permits</b>
1) Brooklawn	1) South End	1) North End
2) North End	2) East Side	2) Brooklawn
3) Reservoir	3) Reservoir	3) West End
4) East Side	4) Black Rock	4) East Side
5) Black Rock	5) The Hollow	5) North Bridgeport
6) East End	6) East End	6) Reservoir
7) North Bridgeport	7) Downtown	7) East End
8) Downtown	8) Boston Ave	8) Black Rock
9) West End	9) North Bridgeport	9) Downtown
10) The Hollow	10) Brooklawn	10) Boston Ave
11) Boston Ave	11) Enterprise	11) The Hollow
12) South End	12) North End	12) South End
13) Enterprise	13) West End	13) Enterprise

## ***Section E: The Neighborhood Development Index (NDI)***

This section discusses the motivation and methodology for construction of the *Neighborhood Development Index (NDI)*. One problem facing analysts when trying to measure the *current* status of neighborhoods is the lack of recent, relevant data. Generally, data available to researchers and policy-makers is outdated, such as Census 2000 data, which includes neighborhood data such as income, poverty rates, detailed population statistics, and other socioeconomic measures. Even when recent data is available, such as the American Community Survey (ACS), it is often too aggregated to be useful for analyzing performance of a small, target area. To overcome these problems, this study constructs an index that captures recent, relevant information about the current trends and conditions in Bridgeport's neighborhoods. The NDI, by construction, is a relative measure of performance among the neighborhoods in Bridgeport that spans sufficient years to capture both trends and recent developments. Simply put, the index is a weighted average of the crime index, income index, and schooling index as constructed in the previous sections.<sup>41</sup> For clarity, the formula for the NDI is:

$$NDI = \alpha(1 - CI) + \beta SI + \delta II$$

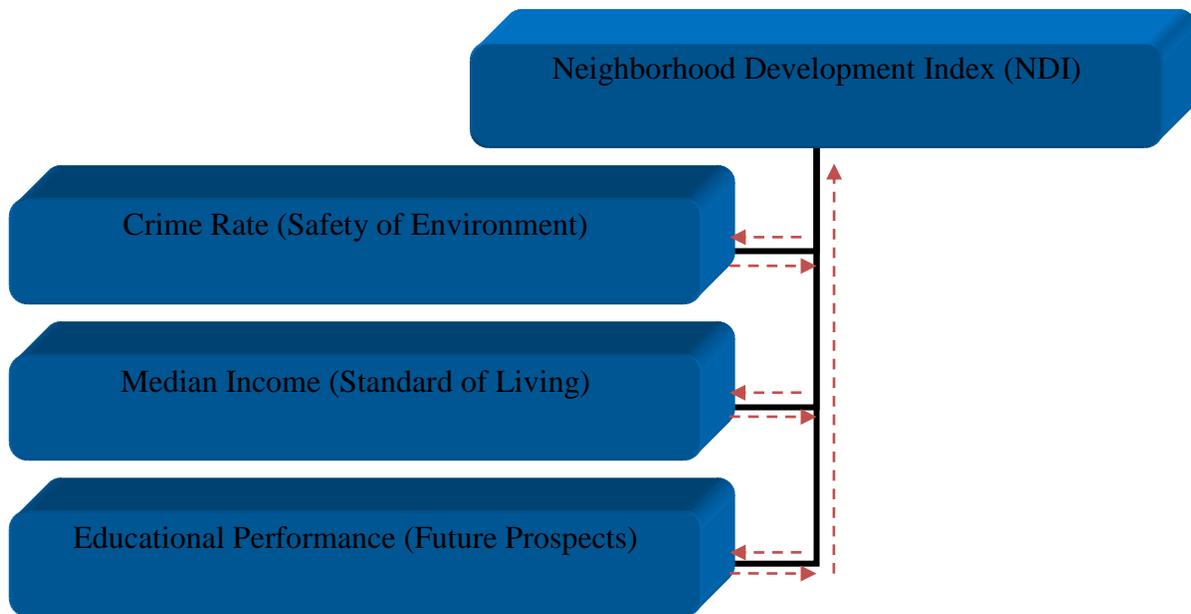
CI is the crime index, SI the school index, and II the income index. The symbols  $\alpha$ ,  $\beta$ , and  $\delta$  are the weights of each index such that their sum equals one. This analysis sets  $\alpha=\beta=\delta=0.33$ , weighing each index equally in construction of the NDI. Therefore, the NDI is the simple average of the crime, education, and income indexes.<sup>42</sup> The NDI therefore takes values between zero and one by construction. The higher levels of the crime index correspond to higher crime rates, thus, this procedure reverses the value, subtracting the crime index from one. Given its composition, the NDI captures changes in the quality of a neighborhood through these three major determinants of the quality of life. Even though a neighborhood may have a low income index, it may gain value from an increase in the performance of its schools or by seeing a gain in its relative average income. Previous elements of this study showed how Bridgeport is different from Connecticut as a whole; thus comparing neighborhoods to state averages would provide no value-added. Rather than taking

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<sup>41</sup> Permits were not included in the NDI, as an appropriate scale variable was not found.

<sup>42</sup> There is no clear basis for an alternative weighing of the three indices. A useful future research initiative would seek to development a clear basis for alternative weights.

this approach to comparison, the NDI offers a way of measuring a neighborhood's development relative to its peers.<sup>43</sup>



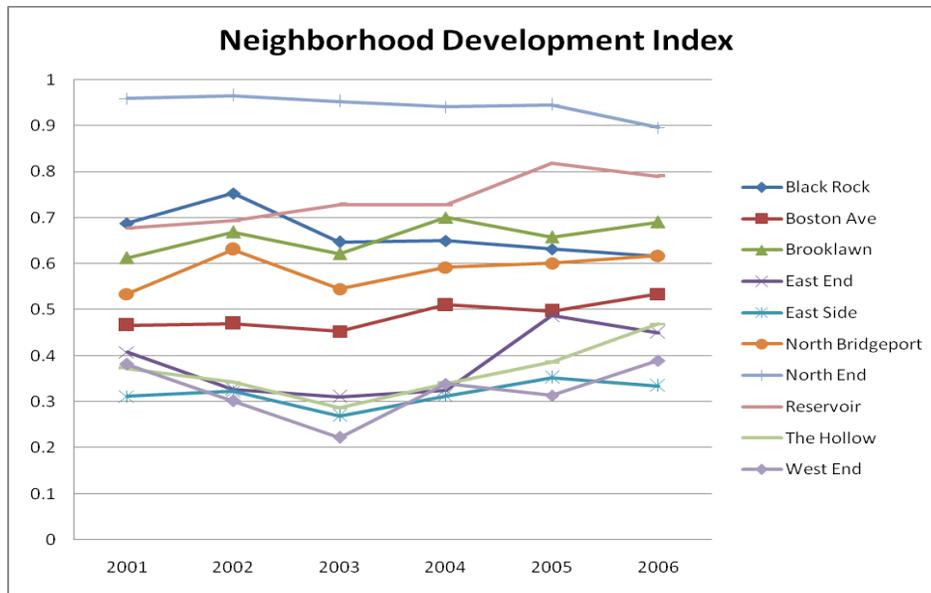
**Figure E1.2**

Figure E1.2 offers an intuitive way to view the NDI. Better educational performance for neighborhood schools will, on average, lead to greater future opportunities; thus, increasing the quality of life for the neighborhood residents. Furthermore, a higher income for a neighborhood will lead to an improved standard of living, increasing the quality of the neighborhood. Neighborhoods with lower crime rates have safer environments which help spur both residential and commercial investment. In this sense, the NDI gives a comprehensive relative measure of the quality of the neighborhoods throughout Bridgeport. It should also be noted that there is also feedback between each measure, but ultimately this will lead to a change in the aggregate index.

### ***NDI Analysis: The Neighborhoods***

The chart below summarizes the annual performance of each neighborhood over the period 2001-2006. At the end of this section, Tables E1.1 and E1.2 provide the annual values for the NDI for each neighborhood.

<sup>43</sup> Our approach is similar to that taken by the United Nations Development Programme in construction of the human development index (HDI). For a detailed description of the HDI see [http://hdr.undp.org/docs/statistics/indices/technote\\_1.pdf](http://hdr.undp.org/docs/statistics/indices/technote_1.pdf)



### *Black Rock*

The NDI for Black Rock was relatively stable over the period (beginning at 0.69 in 2001 and ending at 0.62 in 2006), despite a fall in rank from 2<sup>nd</sup> to 5<sup>th</sup> over the period.<sup>44</sup> Black Rock saw its peak in 2002 at 0.75, followed by consecutive decreases until 2006. On the income index, Black Rock fared consistently well, positioned between 2<sup>nd</sup> and 3<sup>rd</sup> (ratings in the 0.85 to 0.90 range). The neighborhood witnessed low and stable crime rates over the period, ranking lowest from 2003 to 2006, including a perfect crime index score in 2004. Therefore, the peak in 2002 and consecutive decreases over the period are mainly the result of educational performance. The increase of Black Rock's NDI from 2001 to 2002 stems from a large performance increase on the Connecticut Mastery Test, specifically on the Grade 4 and Grade 6 writing section. The fall after the peak results from falling Grade 4 and Grade 6 math performance as well as fewer students meeting the state goal requirement on *all* three sections. Black Rock is one of only two neighborhoods to have its 2006 ranking more than one rank away from their original ranking in 2001.

### *Boston Avenue/Mill Hill*

Boston Avenue/Mill Hill consistently ranked 6<sup>th</sup>, while increasing its index rating 6 points over the period. The Boston Avenue/Mill Hill neighborhood saw little variation over the period: slightly decreasing from 2002 to 2003, followed by its largest gain in 2004, then increasing slightly

<sup>44</sup> For the actual rankings across neighborhoods, see Tables E1.1 and E1.2.

by 2006. An increase in crime as well as a decrease on most Grade 4 and Grade 6 test scores led to its decrease in 2003. Its subsequent largest gain in 2004 was mainly a result of an increase in tests scores and a decrease in the murder rate. These improvements offset a minor income index rating fall for the period as well as an increase in other criminal offenses. A marginal increase by 2006, to its peak of 0.53, can be explained by a large relative increase in educational performance (particularly Grade 4 students), despite decreases in income and higher crime rates than in 2004.

### *Brooklawn/St. Vincent*

Brooklawn/St. Vincent witnessed an overall 8 point increase, while rising from 4<sup>th</sup> to 3<sup>rd</sup> over the period. The neighborhood saw alternating years of rises and falls in its rating, with a trough at 0.62 in 2003 and a peak at 0.70 in 2004. Declines in educational performance and increased crime rates explain the falls in 2003 and 2005, as income steadily declined nearly every year. In 2003, along with decreases in student test performance, the neighborhood almost doubled its murder, rape, and robbery rates. These rates subsided in 2004, while Brooklawn/St. Vincent saw strong improvement in test scores. Again, in 2005, increases in murders, rapes, and robberies combined with a decrease in Grade 6 test performance lowered the neighborhood's rating. By 2006, the neighborhood rebounded from its 2005 fall to an index rating of 0.69, the 3<sup>rd</sup> highest in the city.

### *East End*

Faced with some of the highest crime rates in the city, East End consistently ranked between 7<sup>th</sup> and 9<sup>th</sup> on the NDI. The neighborhood witnessed an 8 point fall in 2002 and a dramatic 16 point increase in 2005, however, only slightly increasing by 4 points to 0.45 over the total period. The initial fall in 2002 resulted from increased crime rates, specifically a spike in rape, as the neighborhood had one of the lowest rape rates in the city a year earlier. From 2002 to 2004, the neighborhood saw little change; but it nevertheless fell one place in the rankings, from 8<sup>th</sup> to 9<sup>th</sup> between those years. In 2005, the East End witnessed a 16-point increase to its peak index value of 0.49. A decrease in crime, specifically in robberies and murder rates, coupled with increases in income and educational performance led to this improvement. The following year, while income and education indexes rose, crime once again increased, leading to a small decrease in the overall rating. Overall, East End fell one ranking position, from 7<sup>th</sup> in 2001 to 8<sup>th</sup> in 2006.

### *East Side*

East Side was burdened with some of the highest crime rates in the city, resulting in a consistent rank between 9<sup>th</sup> and 10<sup>th</sup> on the NDI. The neighborhood saw little variation over the period, with a low index value of 0.27 in 2003 and a peak value of 0.35 in 2005. Despite marginal increases, the neighborhood placed last three of the six years. The East Side ranked lowest on the income index every year, and among the lowest three neighborhoods on the education index annually. In 2006, the neighborhood had the highest crime rates, while having the second highest crime rates in 2005. Over the period, East End consistently saw increases in educational performance on the education index, 16 points overall. Despite low ratings on the NDI, East Side improved over the period, raising its index from 0.31 in 2001 to 0.34 in 2006.

### *North Bridgeport*

North Bridgeport moved up the rankings, from 5<sup>th</sup> to 4<sup>th</sup>, over the period. The neighborhood peaked in 2002 at 0.63, a year after its trough at 0.53. The neighborhood's income index declined over the period; North Bridgeport nonetheless preserved its 5<sup>th</sup> place ranking among neighborhoods. The peak in 2002 resulted from a decrease in crime rates, as well as a substantial increase in the standardized test performance by its students. The following year, a combination of falling test scores and increased crime led to a fall back to the neighborhood's 2001 rating. From 2004 to 2006, the neighborhood saw decreasing crime rates and increased educational performance, marginally raising its NDI ranking annually. The neighborhood finished with a rating of 0.62 in 2006, moving to 4<sup>th</sup> position.

### *North End*

North End held the highest rating on the NDI every year of the period. This flowed from high ratings on all indexes: low crime rates, high income, and consistently high educational performance. North End had the lowest crime rating in 2001 and 2002, and had the second lowest crime rate the following four years. North End initially ranked 2<sup>nd</sup> on the income index, however, after a small annual decline, fell behind Black Rock and ended ranked 3<sup>rd</sup> in 2006. The largest disparity, however, was on the education index, where North End consistently outperformed every other neighborhood in nearly every category. The lowest rating on the NDI for the neighborhood was in 2006, where the North End had a rating of 0.90, still 11 points higher than the next ranked

neighborhood that year, Reservoir/Whiskey Hill. The peak index value came in 2002, when the North End earned a, nearly perfect 0.97 rating, the result of low crime rates and a slight increase on the income index. The slight annual decline since 2002 resulted from a decrease in its income index and a marginally higher crime rate. Although educational performance has not noticeably declined, an increase in performance in other neighborhoods has led to a decline in North End's education index.

### *Reservoir/Whiskey Hill*

Reservoir/Whiskey Hill ranked 3<sup>rd</sup> in 2001, and then experienced small annual gains of 11 points by 2006, rising to 2<sup>nd</sup> in the rankings. The neighborhood's rating peaked in 2005 at 0.82, an increase of 9 points from 2004. The educational improvements of the neighborhood, with a striking peak in 2005 writing scores, buffered the neighborhood's increased crime rating (where some of the highest rape rates in the city were reported). Reservoir/Whiskey Hill has also ranked highest every year on the income index over the period, stabilizing the neighborhood as one of the top ranked in the city. Reservoir/Whiskey Hill came closest to matching North End's rating, coming within 11 points in 2006.

### *The Hollow*

Although The Hollow consistently ranked among the bottom four neighborhoods, it saw a significant 10 point increase over the period. This improvement resulted primarily improved performance by its students on standardized tests, as crime and income, despite variations from year to year, ended close to their original ratings. The neighborhood, initially ranked last on the education index in 2001, rose to 4<sup>th</sup> overall by 2006. The neighborhood also started and ended 6<sup>th</sup> on the income index, while ranking high on the crime index from 2002 onward, a result of increasing murder and robbery rates. The Hollow witnessed steady growth over the period, increasing its rating every year from 2003.

### *West End/West Side*

West End/West Side ranked, much like the East Side, last three out of the six years. The neighborhood's highest NDI ratings came in 2001 and 2006, at 0.38 and 0.39 respectively. Between those years, however, the neighborhood witnessed a dramatic decline between 2001 and 2003,

followed by an equally dramatic rise between 2004 and 2006. In 2003, the West End received an 0.22 NDI rating, the lowest of all neighborhoods in any year. Despite an increase on the income index (the neighborhood ranked second to last every year), West End/West Side had some of the highest vehicle, robbery, rape, murder, and burglary rates in the city. In fact, in 2003, the neighborhood had the third highest crime rating of any neighborhood of any year. Following 2003, the neighborhoods witnessed a decrease in its crime rates as well as an increase in educational performance. Although ranked 9<sup>th</sup> in 2006, the neighborhood has increased its NDI rating 17 points since 2003, an encouraging sign.

Table E1.1		
2001 Rankings by NDI	2002 Rankings by NDI	2003 Rankings by NDI
1) North End (0.96)	1) North End (0.97)	1) North End (0.95)
2) Black Rock (0.69)	2) Black Rock (0.75)	2) Reservoir (0.73) ▲
3) Reservoir (0.68)	3) Reservoir (0.69)	3) Black Rock (0.65) ▼
4) Brooklawn (0.61)	4) Brooklawn (0.67)	4) Brooklawn (0.62)
5) North Bridgeport (0.53)	5) North Bridgeport (0.63)	5) North Bridgeport (0.55)
6) Boston Ave (0.47)	6) Boston Ave (0.47)	6) Boston Ave (0.45)
7) East End (0.41)	7) The Hollow (0.34) ▲	7) East End (0.31) ▲
8) West End (0.38)	8) East End (0.33) ▼	8) The Hollow (0.29) ▼
9) The Hollow (0.37)	9) East Side (0.32) ▲	9) East Side (0.27)
10) East Side (0.31)	10) West End (0.3) ▼	10) West End (0.22)

Table E1.2		
2004 Rankings by NDI	2005 Rankings by NDI	2006 Rankings by NDI
1) North End (0.94)	1) North End (0.95)	1) North End (0.9)
2) Reservoir (0.73)	2) Reservoir (0.82)	2) Reservoir (0.79)
3) Brooklawn (0.7) ▲	3) Brooklawn (0.66)	3) Brooklawn (0.69)
4) Black Rock (0.65) ▼	4) Black Rock (0.63)	4) North Bridgeport (0.62)
5) North Bridgeport (0.59)	5) North Bridgeport (0.6)	5) Black Rock (0.62)
6) Boston Ave (0.51)	6) Boston Ave (0.5)	6) Boston Ave (0.53)
7) The Hollow (0.34) ▲	7) East End (0.49) ▲	7) The Hollow (0.47) ▲
8) West End (0.34) ▲	8) The Hollow (0.39) ▼	8) East End (0.45) ▼
9) East End (0.33) ▼	9) East Side (0.35) ▲	9) West End (0.39) ▲
10) East Side (0.31) ▼	10) West End (0.31) ▼	10) East Side (0.34) ▼

# Income Estimation Methodology

Our technique for estimating neighborhood incomes during periods when data is not available is based on the assumption that changes in home prices will be proportional to changes in income. We fully appreciate that many other factors will influence the sale price of homes and that these influences will cause our estimates to be flawed. This problem is partly ameliorated by the fact that our method is primarily impacted by relative differences in home price growth across neighborhoods while many of the influences we do not control for (e.g. interest rates, lending practices, prices of other goods and services) will be largely constant across the city of Bridgeport and thus have little impact on our estimates. Of course this will not eliminate all unexplained variation but a brief examination of the relationship between home prices and income in Bridgeport reveals that they are indeed closely intertwined.

Figure A.1: Home Prices vs Wages in Bridgeport ('00-'06)

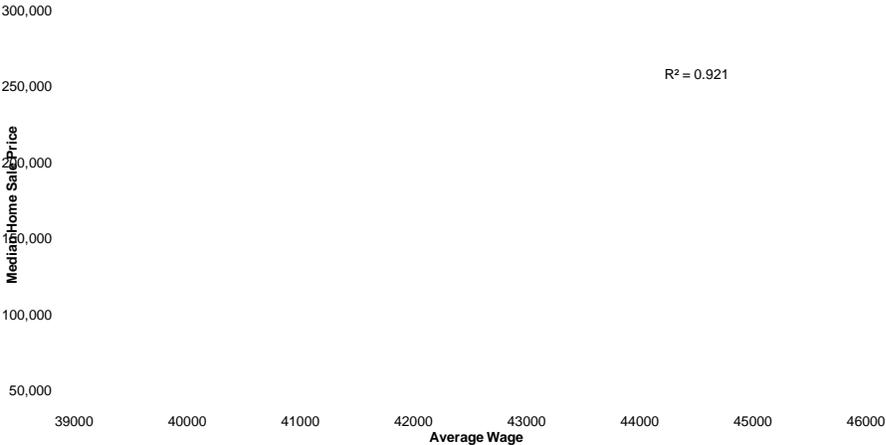


Figure A.2: Income vs Home Prices Across Neighborhood in Bridgeport (2000)

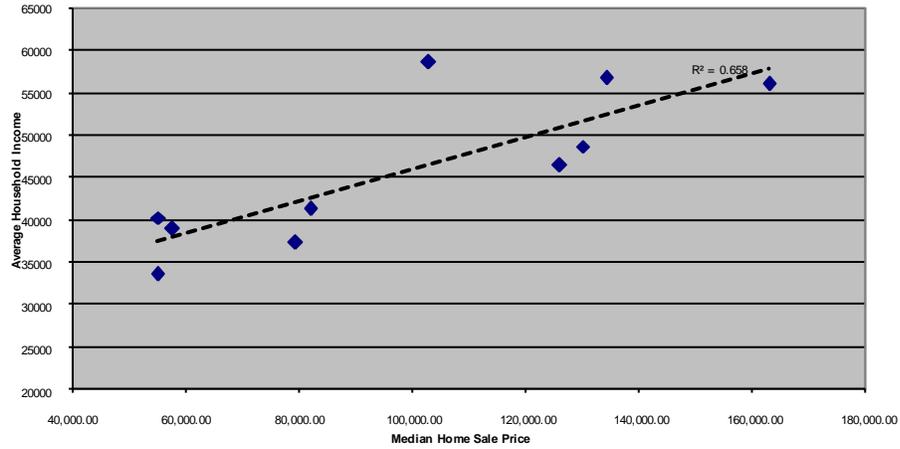


Figure A.1 show that median home price in Bridgeport has tracked average income in the city very closely over the past six years, while figure A.2 demonstrates that incomes were a strong predictor of median home price across a cross section of the city’s neighborhoods in 2000. So it is safe to assume that, although our estimates may not be precisely correct, they do indicate real changes in relative conditions in Bridgeport’s neighborhoods.

The actual process of estimation unfolds as follows:

We assume that changes in income are proportional to changes in home prices. That is:

$$\text{eq.1 } \alpha \Delta w = \Delta p$$

Where, w = wages and p = median home price. In order to determine  $\alpha$  we use the knowledge that the sum of changes in neighborhood income is equal to city wide income growth:

$$\text{eq.2}$$

$$\frac{\sum_{i=1}^n \Delta w_i \times \tau_i}{\sum_{i=1}^n \tau_i}$$

Where  $\bar{\Phi}$  is the city-wide average income growth,  $k$  is the number of workers, and  $I$  is average household income, in neighborhoods 1 to  $n$ . We can substitute eq.1 into eq2 to get:

eq.3

$$\frac{\sum_{i=1}^n \Delta p_i \times}{\alpha \nabla^n - \tau}$$

Once we have  $\alpha$  we can calculate neighborhood income growth rates for the year. Given the growth rates we can project incomes for the following year and feed them back into the above equation to calculate the next round of  $\alpha$ s. Ultimately we generate a path of motion for the variable over the entire period.