2013

Retail Market Study for Upper Washington Avenue

Prepared for the Town of North Haven
Economic Development Commission

CERC *start here*
Connecticut Economic Resource Center, Inc.

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Executive Summary
Introduction

With several new developments in the upper Washington Avenue area, the town of North Haven has the opportunity for new retail development. The establishment of the Quinnipiac University campus which includes law, medical and nursing schools, at the former Anthem facility, will impact the demographic composition of the population. Further the creation of the Upper Washington Ave. Multi Use (UWAMU) Development Zone, to allow for construction of an additional 300 units of housing, has the potential to significantly impact the demand for retail and other services in the immediate upper Washington Ave. area.

For data purposes, the smallest unit at which data is available is the census tract. The census tract containing the study area is tract 1672.02. The boundaries include the North Haven town line in the north and northeast; then following the rail line from Clintonville Road/Pond Hill Road diagonally to Route 22 in the southeast; Route 22 and Clintonville Lane in the south; down Washington Ave. and Broadway in the southwest; and the Quinnipiac River in the west.

For the demographic data, we compared the study area and the Town of North Haven to the State of Connecticut; and for the consumer expenditure data, we analyzed the census tract, the Town of North Haven, and areas within a 30 minute drive time. Thirty minutes was chosen because the average commute time in the U.S. is 25 minutes and slightly longer for higher income areas. The gravity model analysis, however, used data from the census tract level originating from a ten mile radius of the centroid of tract 1672.02 to coincide with average consumer shopping patterns.

The North Haven Economic Development Commission (EDC) requested a study to determine the potential impact on consumer demand generated by these population shifts that will inform their business recruitment and marketing efforts and stimulate economic growth in this area. The Connecticut Economic Resource Center, Inc. (CERC) study team, in conjunction with the EDC, decided on a three-pronged approach to analyzing the potential consumer base in the upper Washington Ave. area:

> *Phase 1:* Examine the current demographics and industrial composition for areas of potential opportunity that already exist in the market. In addition, the traffic patterns and expenditure patterns were analyzed to assess current retail demand. Additional insight was gained through a retail gap analysis that allowed for an assessment of purchases by residents surrounding the upper Washington Ave. census tract.

> *Phase 2:* Determine the increased level of demand (through stakeholder interviews) that will be generated with the addition of the Quinnipiac University student, faculty, and visitor populations; 300 housing units; and potential development at the former Pratt and Whitney site; and identify areas of potential opportunities.

Phase 3: Construct a gravity model to determine whether new retail may be able to attract consumers from other competing shopping centers. The findings from the two previous phases provide the foundation for the gravity model analysis. Unlike the analysis conducted in Phase 1, the gravity model estimates the impact of the influx of residents from the Quinnipiac University expansion and projects potential sales opportunities.

Demographic, Industry, Expenditure, Traffic, and Retail Gap Analysis

Phase 1 of the study involves demographic data, and a retail sales gap analysis, which are used to understand the current industry and retail needs of the population in the area. A retail sales gap analysis compares the actual consumer expenditure in a geographic area for different categories of retail to the level one would expect given the population and characteristics of that area. The result is a determination of "sales surplus," where sales are higher than expected, indicating a particular retail strength or that the retailers are drawing consumers from outside of the local area; or "sales leakage," which indicates that actual sales are lower than expected, and local consumers are spending their money elsewhere. A qualitative assessment of the increased demand generated by the additions at Quinnipiac University , new housing units, development at the former Pratt and Whitney site, and other potential development economic opportunities, have been gleaned through a series of interviews with area developers, Quinnipiac University , and town officials.

Findings from the Demographic Analysis:

North Haven residents tend to be older, more affluent, more well-educated, and have higher rates of homeownership than the state or county.

The upper Washington Ave. area has a significantly higher proportion of seniors than the rest of the town, as well as lower incomes and educational levels than the average for North Haven.

- There are four senior housing complexes in this census tract (two state and two federal), which contribute to the demographic patterns.

The census tract only has a population of 4,500, and under 1,800 households; so when Quinnipiac University is at full capacity the daytime influx of approximately 2,400 students, faculty, and staff will have a significant impact on the demographic composition of the area.

Findings from the Industry Analysis:

The highest rates of employment growth can be seen in sectors where the state as a whole has seen an influx of overall growth such as education, healthcare, and finance.

The precision metal manufacturing industry sectors remain a key source of regional competitiveness and provide a substantial proportion of employment.

Many industries, including medical devices and precision manufacturing, will likely continue to remain important in the regional economy.

Findings from the Consumer Expenditure Analysis:

Key discretionary spending sectors include food and beverages, entertainment, apparel, and automobiles.

Existing retail strengths in the upper Washington Ave. area include automobile dealers and supplies; restaurants, specialty food and grocery; and office supplies.

Consumers in the upper Washington Ave. census tract spent significantly less in real terms than consumers living in North Haven and the state but only slightly below those living in New Haven County. These findings are consistent with the area having a high concentration of senior housing complexes and individuals from the lower tail of the income distribution which means they have less disposable income.

Findings from the Traffic Pattern Analysis:

Approximately 60 percent of the traffic entering and exiting the area surrounding Quinnipiac University travels via the north entrance road – Bradley Road.

The average daily traffic (ADT) count from exit 12 off I-91 is 21,300; the counts drop to 18,500 at Wadsworth Ave. meaning 4,000 cars and trucks do not travel to points farther north, however, these are still high traffic counts to support retail in the area.

Findings from the Retail Gap Analysis:

The major industries where there is a retail surplus for the upper Washington Ave. area census tract include: Motor Vehicles & Parts Dealers, Food & Beverage Stores, Gasoline Stations, Electronic & Appliance Stores, Health & Personal Care, Food Services & Drinking Places, Nonstore Retailers, and Miscellaneous Store Retailers.

The major industries where there are sales leakages include (sorted by largest dollar amount of sales leakage): General Merchandise Stores, Furniture & Home Furnishings Stores, Building Materials, Garden Equipment & Supply Stores, and Sporting Goods, Hobby, Book & Music stores.

Potential retail opportunities based on the current population counts and the anticipated population changes in the area:

- Food Stores – Baked Goods, Fish and Seafood Markets, and Fruit and Vegetable Markets

- Restaurants (full and limited service)

- Traveler Accommodations

- Snack and Other Nonalcoholic Beverage Bars

- Office Supplies and Stationery Stores

- Dry Cleaning and Laundry Services (except coin operated)

- Other Personal Care Retail Establishments – Barber Shops, Beauty Salons, and Nail Salons

Housing Demand Analysis

Phase 2 of the study involves estimating the anticipated impact of the increase in faculty and student population on the expansion of graduate programs at Quinnipiac University as well as the current housing development in the area. Based on data provided by Quinnipiac University and Census data from the American Community Survey, CERC derived an approximate number of residential units that the upper Washington Avenue area could support based on the expansion of the University.

Findings from the Housing Demand Analysis:

Based on data provided by Quinnipiac University and Census data from the American Community Survey, CERC derived an approximate number of residential units that the upper Washington Ave. area could support based on the expansion of the University.

CERC assumed that approximately 1,000 students may consider living near campus along with 30 faculty and staff. The number of students, faculty, and staff that may consider moving into the area are based on a number of factors including the following:
- The percent of students and faculty that currently live locally.

- The average age of each of the population groups.

- The impact that living in close proximity to campus would have on quality of life in addition to other factors.

When looking at the rental market in the area, there currently are not many units for rent in the upper Washington Ave. census tract area. However, popular places

for students to rent are the Town Walk units in Hamden. CERC compared the census tract data where the Town Walk apartments are located to the upper Washington Ave. census tract area.

– More than 50 percent of housing units are for rent in the Hamden census tract.

– Only 16 percent are rental units in the upper Washington Ave. census tract.

– The rental properties that are available in the upper Washington Area are mostly senior living communities and not available to students, faculty, and staff of Quinnipiac University.

– 69 percent of the rental units within the upper Washington Ave. area are rented to households that are 65 years and over whereas that share is only 15 percent in Hamden.

– Given that the student population and the population over the age of 65 would be seeking different amenities there is an opportunity for development that could cater to the student population of Quinnipiac University.

CERC estimates the area could support a total of 300-600 housing units once Quinnipiac University is at full capacity with its student enrollment on the North Haven campus. Since there is already zoning for 300 units just north of Bradley Street that means that up to an additional 200-300 units could be supported.

There is a large difference in the current price of rental units in the upper Washington Ave. area as compared to Hamden primarily due to the older demographic population.

– The rental apartments of the Town Walk range in price from $1,200 to $1,900 depending on the number of bedrooms and square footage of the unit.

– When looking at census data, the median gross rent in Hamden is $1,512 while in the upper Washington Ave. area the median rent is $534.

– New units in the upper Washington Ave. area could command similar rates to those in Hamden depending on whether the new units offer similar amenities in the apartment complex and surrounding area.

Gravity Model Analysis

Phase 3 of the study involves using a gravity model that can be used to either determine the projected sales of differing types of retail establishments in one location or to select the best location for a single type of retail establishment. In the context of this report, the gravity model was applied to evaluate which types of retail would be the most productive use of the upper Washington Ave. commercial area. The model yielded a forecast of annual sales for each type of retail establishment under a variety of scenarios that vary by demographics and establishment size. The model was calculated using a variation of David L. Huff's classic estimation procedure now widely implemented in the field of economic development.

Findings from the Gravity Model Analysis:

The industries found to have the highest potential to generate higher than average sales in the upper Washington Avenue commercial area include: Automobile Dealers, Home Furnishings Stores, Electronics Stores, Grocery Stores, Specialty Food Stores, Liquor Stores, Personal Care Stores, Gasoline Stations, Luxury Goods Stores, Used Merchandise Stores, Traveler Accommodation, Banks, and Restaurants.

NAICS 4411 Automobile Dealers: A new establishment is estimated to generate aggregate sales of $34,529,609 per establishment from 2013-18.

- Consumers in the North Haven retail area were estimated to spend 8.6 percent or $5,995 of their total expenditure in this industry.

NAICS 4422 Home Furnishings Stores: A new establishment is estimated to generate aggregate sales of $1,377,201 per establishment from 2013-18.

- Consumers in the North Haven retail area were estimated to spend 0.6 percent or $418 of their total expenditure in this industry.

NAICS 4431 Electronics and Appliance Stores: A new establishment is estimated to generate aggregate sales of $3,619,364 per establishment from 2013-18.

- Consumers in the North Haven retail area were estimated to spend 2.4 percent or $1,673 of their total expenditure in this industry.

NAICS 4451 Grocery Stores: A new establishment is estimated to generate aggregate sales of $2,765,980 per establishment from 2013-18.

- Consumers in the North Haven retail area were estimated to spend 10 percent or $6,971 of their total expenditure in this industry.

NAICS 4452 Specialty Food Stores: A new establishment is estimated to generate aggregate sales of $1,644,274 per establishment from 2013-18.

- Consumers in the North Haven retail area were estimated to spend 0.9 percent or $627 of their total expenditure in this industry.

NAICS 4453 Beer, Wine, and Liquor Stores: A new establishment is estimated to generate aggregate sales of $26,069,570 per establishment from 2013-18.

- Consumers in the North Haven retail area were estimated to spend 1 percent or $697 of their total expenditure in this industry.

NAICS 4461 Health and Personal Care Stores: A new establishment is estimated to generate aggregate sales of $2,798,038 per establishment from 2013-18.

- Consumers in the North Haven retail area were estimated to spend 5.6 percent or $3,904 of their total expenditure in this industry.

NAICS 4471 Gasoline Stations: A new establishment is estimated to generate aggregate sales of $3,748,621 per establishment from 2013-18.

- Consumers in the North Haven retail area were estimated to spend 1.8 percent or $1,255 of their total expenditure in this industry.

NAICS 4483 Jewelry, Luggage, and Leather Goods Stores: A new establishment is estimated to generate aggregate sales of $1,220,644 per establishment from 2013-18.

- Consumers in the North Haven retail area were estimated to spend 0.6 percent or $418 of their total expenditure in this industry.

NAICS 4533 Used Merchandise Stores: A new establishment is estimated to generate aggregate sales of $888,446 per establishment from 2013-18.

- Consumers in the North Haven retail area were estimated to spend 0.6 percent or $418 of their total expenditure in this industry.

NAICS 7211 Traveler Accommodation: A new establishment is estimated to generate aggregate sales of $2,702,265 per establishment from 2013-18.

- Consumers in the North Haven retail area were estimated to spend 3.4 percent or $2,370 of their total expenditure in this industry.

Banks and Restaurants: The banking and restaurant industries were not included in the gravity model as data restrictions would not allow for their inclusion. These industries, however, are important to consider when crafting a development strategy for the upper Washington Avenue commercial area that considers the growing Quinnipiac University student population.

Summary of Findings and Recommendations

The CERC study team, in conjunction with the Commission, decided on a three-pronged approach to analyzing the potential consumer base in the upper Washington Ave. area. *Phase 1* assessed current retail spending patterns based on demographic patterns, industrial composition, expenditures, traffic patterns, and a retail gap analysis. *Phase 2* determined the increase in the level of demand (through stakeholder interviews) for housing that will be generated with the addition of the Quinnipiac University student, faculty, and visitor populations. *Phase 3* applied a gravity model to evaluate which types of retail would be the most productive use of the upper Washington Ave. commercial area considering both anticipated population changes and neighboring retail areas. The table below displays the industries that showed the most promise after all three phases of the analysis were complete. The first two columns in the table display industries that were identified in the first phase of the analysis. The third column of the table displays industries that were identified in the third phase of the analysis but the anticipated population shifts were derived from the second phase of the analysis. The fourth column represents a synthesis of the three phases and lists those industries that present potential opportunities for strategic economic development.

Industry	Potential Retail based on population changes	Gravity Model	Opportunities
Auto Parts & Accessories Stores			
Automobile Dealers		X	X
Beer, Wine, and Liquor Stores		X	
Book, Periodical, and Music Stores	X		X
Dry Cleaning and Laundry Services	X		X
Electronics and Appliance Stores		X	
Full-Service Restaurants	X		X
Gasoline Stations		X	
Grocery Stores		X	
Health and Personal Care Stores	X	X	X
Home Furnishings Stores		X	
Jewelry, Luggage, and Leather Goods Stores		X	
Lawn, Garden Equipment, and Supply			
Limited-Service Restaurants	X		X
Office Supplies and Stationary Stores	X		X
Other Motor Vehicles			
Snack and Nonalcoholic Beverage Bars	X		
Specialty Food Stores	X	X	X
Taverns/Pubs or Wine Bars	X		X
Traveler Accommodation	X	X	X
Used Merchandise Stores		X	
Banking Institutions		X	X

In summary, the industries best suited for development in the upper Washington Ave. retail area include: Automobile Dealers; Taverns/Pubs; Book, Periodical , and Music Stores; Dry Cleaning and Laundry Services; Full-Service Restaurants; Health and Personal Care Stores; Limited-Service Restaurants; Office Supplies and Stationary Stores; Specialty Food Stores; Traveler Accommodation; and Banking Institutions**.** These industries will help to attract a population to the area that is comparable to that seen in the rest of North Haven. The increased retail sales will serve to increase the quality of life in North Haven and generate elevated levels of prosperity for the town as a whole.

Project Background

With several new developments in the upper Washington Avenue (Ave.) area, the town of North Haven has the opportunity for new retail development. The establishment of the Quinnipiac University campus which includes law, medical and nursing schools, at the former Anthem facility, will impact the demographic composition of the population. Further the creation of the Upper Washington Ave. Multi Use (UWAMU) Development Zone, to allow for construction of an additional 300 units of housing, has the potential to significantly impact the demand for retail and other services in the immediate upper Washington Ave. area.

The North Haven Economic Development Commission (EDC) has requested a study to determine the potential impact on consumer demand generated by these population shifts that will inform their business recruitment and marketing efforts and stimulate economic growth in this area.

Phased Study Approach

The Connecticut Economic Resource Center, Inc. (CERC) study team, in conjunction with the Commission, decided on a three-pronged approach to analyzing the potential consumer base in the upper Washington Ave. area:

> *Phase 1:* Examine the current demographics and industrial composition for areas of potential opportunity that already exist in the market. In addition, the traffic patterns and expenditure patterns were analyzed to assess current retail demand. Additional insight was gained through a retail gap analysis that allowed for an assessment of purchases by residents surrounding the upper Washington Ave. census tract.

> *Phase 2:* Determine the increased level of demand (through stakeholder interviews) that will be generated with the addition of the Quinnipiac University student, faculty, and visitor populations; 300 housing units; and potential development at the former Pratt and Whitney site; and identify areas of potential opportunities.

> *Phase 3:* Construct a gravity model to determine whether new retail may be able to attract consumers from other competing shopping centers. The findings from the two previous phases provide the foundation for the gravity model analysis. Unlike the analysis conducted in Phase 1, the gravity model estimates the impact of the influx of residents from the Quinnipiac University expansion and projects potential sales opportunities.
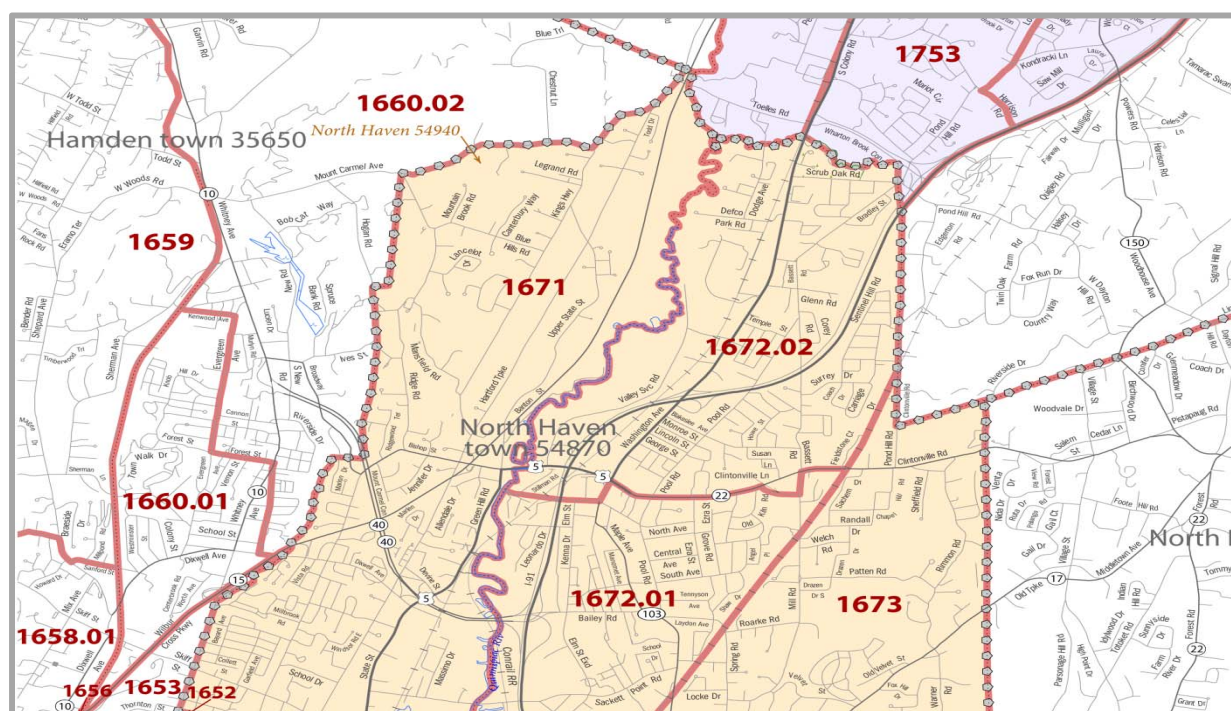
Study Area

The study area defined by the North Haven EDC is the northernmost section of Washington Ave., from the intersection with I-91 exit 12 to the town line.

For data purposes, the smallest unit at which data is available is the census tract. The census tract containing the study area is tract 1672.02, as shown in middle of Map A. The boundaries include the North Haven town line in the north and northeast; then following the rail line from Clintonville Road/Pond Hill Road diagonally to Route 22 in the southeast; Route 22 and Clintonville Lane in the south; down Washington Ave. and Broadway in the southwest; and the Quinnipiac River in the west.

Map A: Upper Washington Ave. and Surrounding Areas
Source: United States Census Bureau. 2010

For the demographic data, we compared the study area and the Town of North Haven to the State of Connecticut; and for the consumer expenditure data, we analyzed the census tract, the Town of North Haven, and areas within a 30 minute drive time. Thirty minutes was chosen because the average commute time in the U.S. is 25 minutes and slightly longer for higher income areas.[1] Consumers do the majority of their convenience shopping in areas surrounding where they live.

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[1] http://www.census.gov/hhes/commuting/files/2009/travel_time.pdf

Phase 1: Demographic Analysis and Retail Gap Analysis

Key Findings

Demographics

- North Haven residents tend to be older, more affluent, more well-educated, and have higher rates of homeownership than the state or county.
- The upper Washington Ave. area has a significantly higher proportion of seniors than the rest of the town, as well as lower incomes and educational levels than the average for North Haven.
    - There are four senior housing complexes in this census tract (two state and two federal), which contribute to the demographic patterns.
- The census tract only has a population of 4,500, and under 1,800 households; so when Quinnipiac University is at full capacity the daytime influx of approximately 2,400 students, faculty, and staff will have a significant impact on the demographic composition of the area.

Industry Strengths

- The highest rates of employment growth can be seen in sectors where the state as a whole has seen an influx of overall growth such as education, healthcare, and finance.
- The precision metal manufacturing industry sectors remain a key source of regional competitiveness and provide a substantial proportion of employment.
- Many industries, including medical devices and precision manufacturing, will likely continue to remain important in the regional economy.

Consumer Spending

- Key discretionary spending sectors include food and beverages, entertainment, apparel, and automobiles.
- Existing retail strengths in the upper Washington Ave. area include automobile dealers and supplies; restaurants, specialty food and grocery; and office supplies.
- Consumers in the upper Washington Ave. census tract spent significantly less in real terms than consumers living in North Haven and the state but only slightly below those living in New Haven County. These findings are consistent with the area having a high concentration of senior housing complexes and individuals from the lower tail of the income distribution which means they have less disposable income.

Traffic Counts

- Approximately 60 percent of the traffic entering and exiting the area surrounding Quinnipiac University travels via the north entrance road – Bradley Road.

- The average daily traffic (ADT) count from exit 12 off I-91 is 21,300; the counts drop to 18,500 at Wadsworth Avenue meaning 4,000 cars and trucks do not travel to points farther north, however, these are still high traffic counts to support retail in the area.

Retail Gap Analysis

- The major industries where there is a retail surplus for the upper Washington Ave. area census tract include: Motor Vehicles & Parts Dealers, Food & Beverage Stores, Gasoline Stations, Electronic & Appliance Stores, Health & Personal Care, Food Services & Drinking Places, Nonstore Retailers, and Miscellaneous Store Retailers.
- The major industries where there are sales leakages include (sorted by largest dollar amount of sales leakage): General Merchandise Stores, Furniture & Home Furnishings Stores, Building Materials, Garden Equipment & Supply Stores, and Sporting Goods, Hobby, Book & Music stores.
- Potential retail opportunities based on the current population counts and the anticipated population changes in the area:
  - Food Stores – Baked Goods, Fish and Seafood Markets, and Fruit and Vegetable Markets
  - Restaurants (full and limited service)
  - Traveler Accommodations
  - Snack and Other Nonalcoholic Beverage Bars
  - Office Supplies and Stationery Stores
  - Dry Cleaning and Laundry Services (except coin operated)
  - Other Personal Care Retail Establishments – Barber Shops, Beauty Salons, and Nail Salons

Demographic, Industry, and Consumer Expenditure Data Analysis
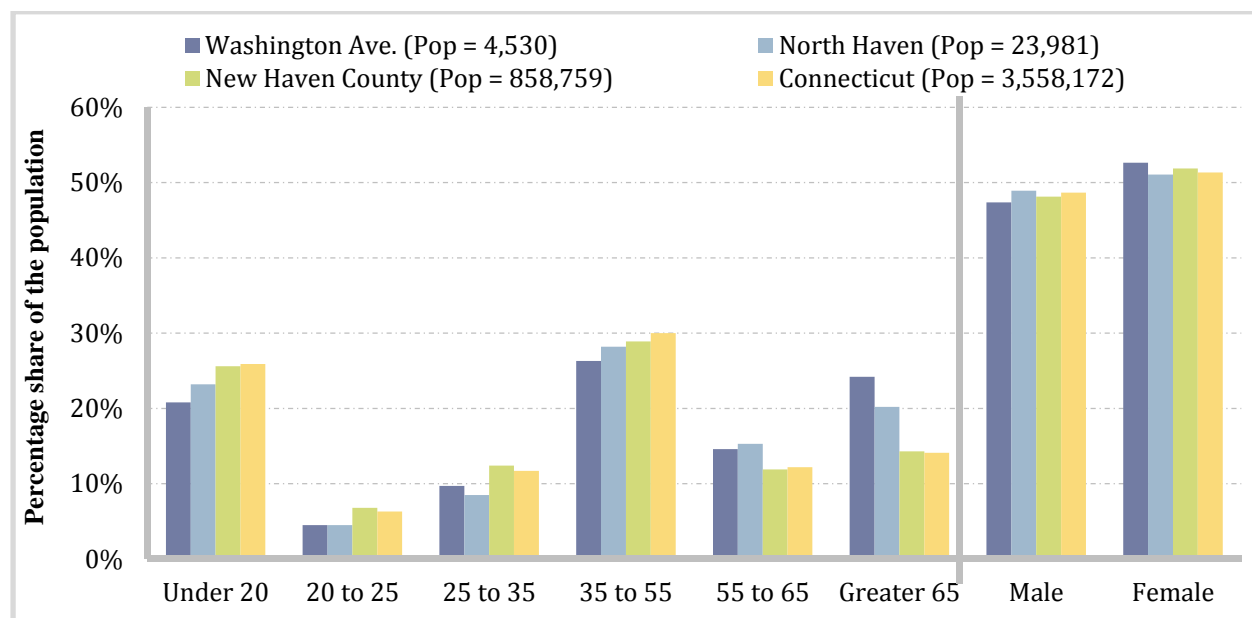
Population

The upper Washington Ave. census tract area (167202) had a population of 4,530 people representing fewer than 20 percent of North Haven's total resident population of 23,981. When looking at the population stratified by age, the upper Washington Ave. census tract has a distinctly higher proportion of the population that is older than 65. For example, 24 percent of the population in the upper Washington Ave. census tract is older than 65 compared to 20 percent in North Haven and 14 percent in Connecticut. This can likely be attributed to the high concentration of elderly housing communities in the area such as Woods Edge, Temple Pines, and Oakview.

However, as shown in Figure 1, the upper Washington Ave. census tract and the town of North Haven have slightly lower proportions of every age group less than 55 years of age compared to New Haven County and Connecticut as a whole.

Figure 1: Population by Age
Source: 5-year Estimates. American Community Survey. Census Bureau. 2007-11


Educational Attainment

As shown in Figure 2, the majority of the population over the age of 25 who live in the upper Washington Ave. census tract hold a high school diploma or have attended some college. This is also true for the town of North Haven however, in North Haven 56 percent of the population have less than an associate's degree whereas in the upper Washington

Ave. census tract it is 63 percent. The upper Washington Ave. census tract also has a smaller proportion of the population than North Haven that holds an associate's degree or higher – 37 percent versus 44 percent in North Haven. Further, 11 percent of the population in the upper Washington Ave. census tract has less than a high school degree compared to 8 percent in the entire town.

Figure 2: Population by Educational Attainment
Source: 5-year Estimates. American Community Survey. Census Bureau. 2007-11
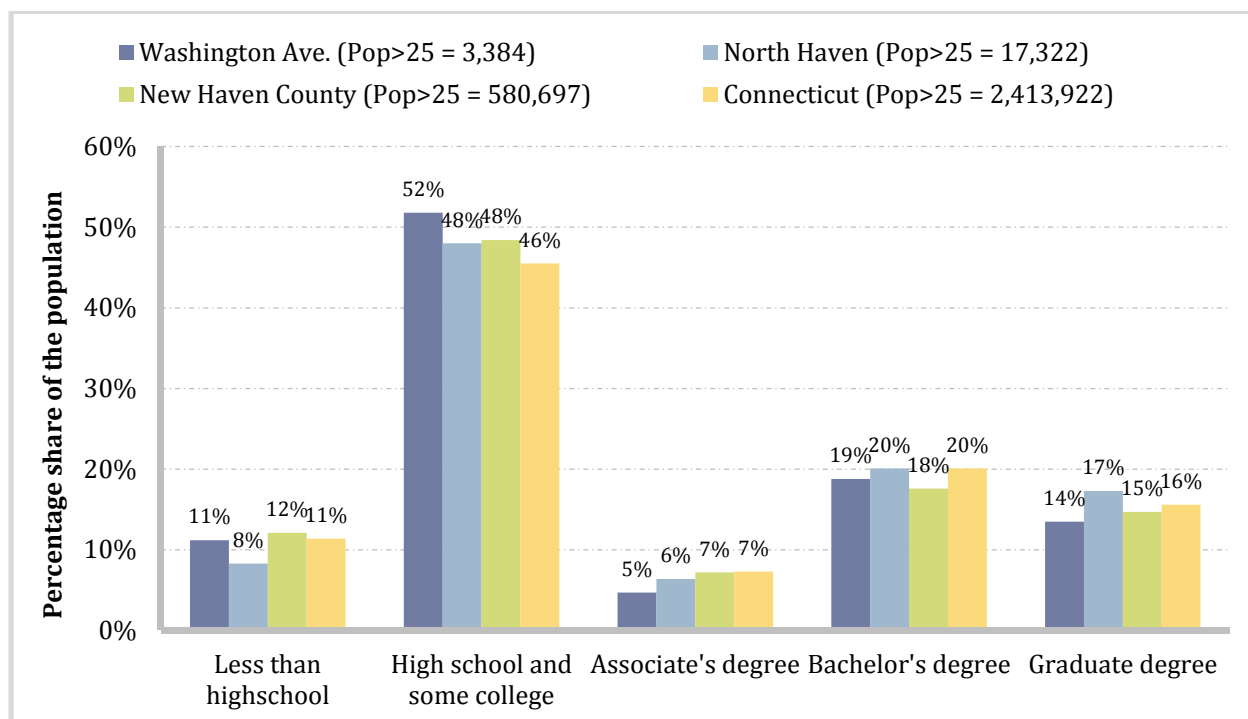
Households by Income

The town of North Haven is more affluent as compared to the state and the rest of New Haven County. However, incomes in the upper Washington Ave. census tract are lower than the town of North Haven. For example, the proportions of households living in the upper Washington Ave. census tract that earned under $35,000, $35,000 to $50,000, and $50,000 to $75,000 were significantly higher than North Haven, as shown in Figure 3.

A comparison of the dispersion of income across these areas indicates that the upper Washington Ave. census tract has a higher number of households from the lower tail of the income distribution compared to the town as a whole. In fact, 40 percent of North Haven households (approximately 3,582 households) earn more than $100,000 compared to 28 percent (approximately 500) in the upper Washington Avenue census tract.

**Figure 3: Proportion of Households by Income – Washington Avenue vs. North Haven**
Source: 5-year Estimates. American Community Survey. Census Bureau. 2007-11

Income and benefits (2011 inflation-adjusted dollars)	Washington Ave.	North Haven
Total Households	1,794	8,954
Under $35,000	28%	20%
$35,000-50,000	13%	8%
$50,000-$75,000	21%	17%
$75,000 - $100,000	10%	16%
Above $100,000	28%	40%

Figure 4 also shows that North Haven is a wealthier town when compared to the state and county with a higher proportion of households earning incomes of $75,000 and more. The upper Washington Ave. census tract has a higher proportion of households on the lower income distribution than the town of North Haven. The location of senior housing with the upper Washington Ave. census tract could be a contributing factor to lower income levels.

Figure 4: Households by Income
Source: 5-year Estimates. American Community Survey. Census Bureau. 2007-11
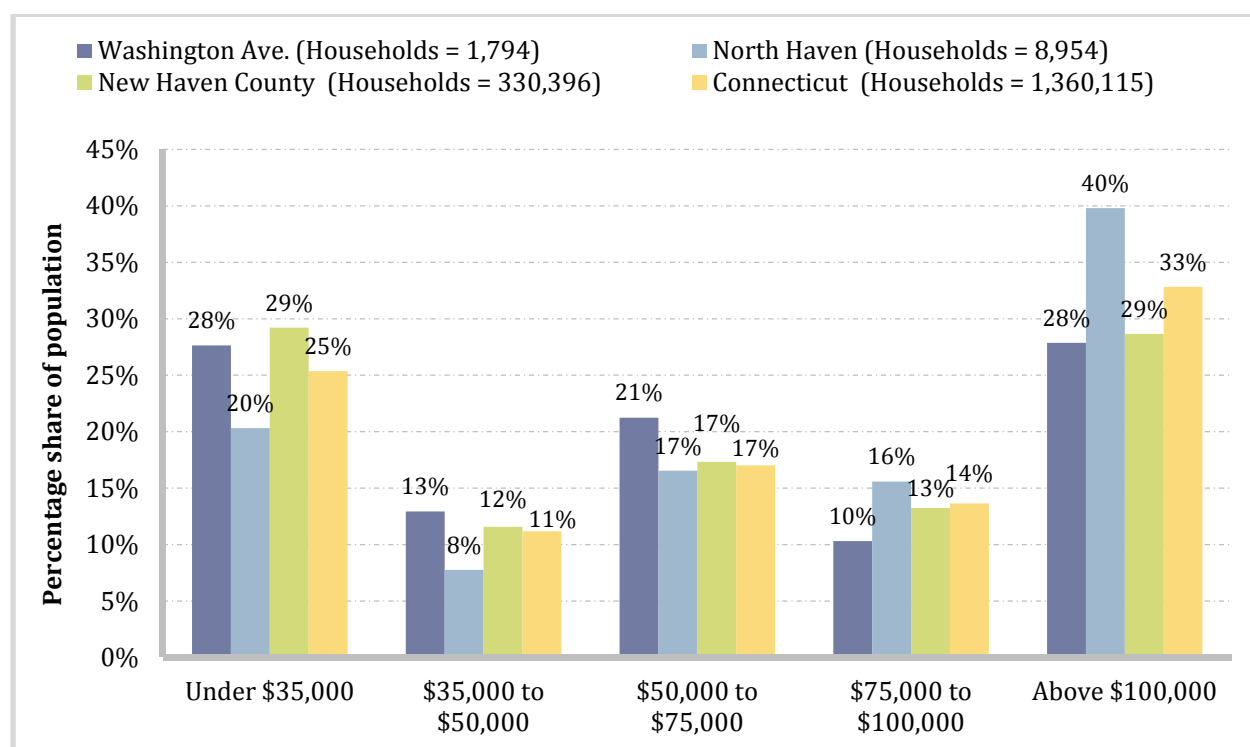

Ethnicity and Racial Demographics

Figure 5 compares the ethnic and racial distribution of the upper Washington Ave. census tract, North Haven, New Haven County, and Connecticut in 2011. The proportion of individuals of a Hispanic or Latino ethnicity is lower in the upper Washington Ave. census

tract and North Haven than in New Haven County or the state in 2012. The upper Washington Ave. census tract and North Haven had a much lower proportion of every racial group other than white which was significantly higher than New Haven County and the state in 2011.

Figure 5: Ethnicity and Racial Demographics 2011
Source: Data Finder. Connecticut Economic Resource Center. 2011
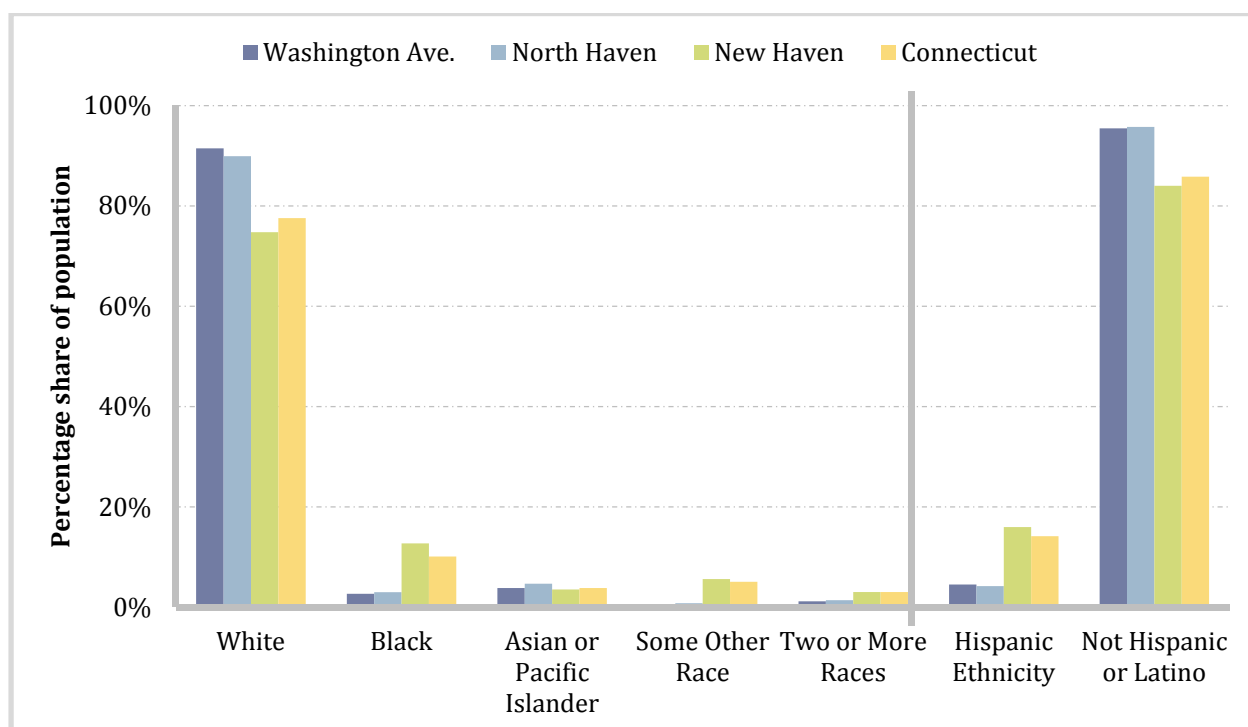
Industry Trends

The highest concentration of industry employment in New Haven County relative to the U.S. in 2012 could be found in cutlery manufacturing, crown and closure manufacturing, and rolling mill machinery manufacturing. Cutlery manufacturing, in particular, had a share of total employment in New Haven County that was 38 times larger than the share contained in the U.S. as a whole. Similarly, crown and closure manufacturing as well as copper rolling and drawing had an employment share that were respectively 18 and 14 times larger in new Haven County than in the overall U.S. economy. The elevated concentration of regional employment in these industries represents a clear competitive advantage in a variety of precision metal manufacturing industries (Figure 6).

Figure 6: Industries with a High Concentration of Employment in New Haven County Relative to the U.S. in 2012
Source: Complete Employment Estimates. Economic Modeling Specialists International. 2012
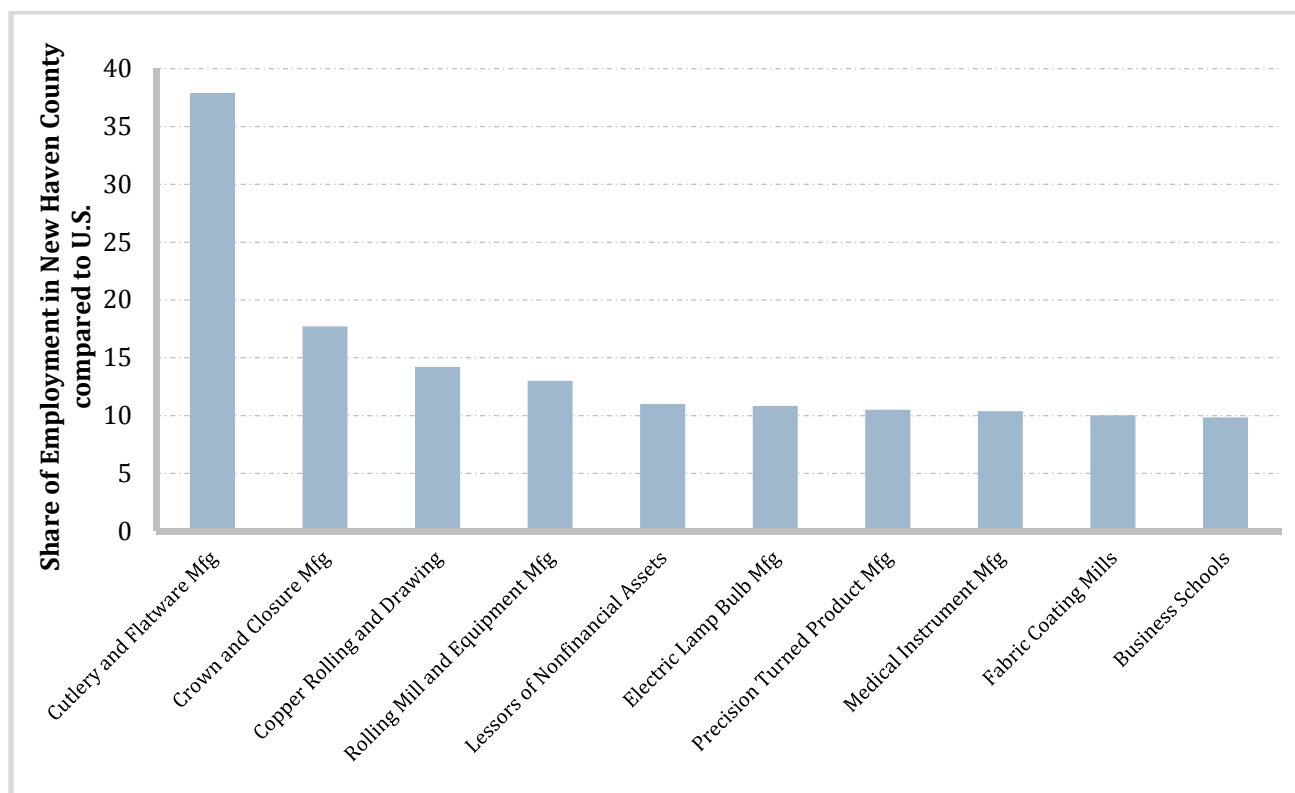
As shown in Figure 7, the highest net growth of industry employment from 2008-12 in New Haven County could be found in university and professional schools, medical and surgical hospitals, and corporate and regional offices. University and professional schools grew by 1,638, or 9.4 percent, from 17,396 in 2008 to 19,034 in 2012. Similarly, medical and surgical hospitals grew by 1,363, or 8.0 percent, from 17,040 in 2008 to 18,403 in 2012. Corporate and regional offices grew by 1,348, or 46.4 percent, from 2,906 in 2008 to 4,254 in 2012. The increased level of growth seen in the New Haven region for these industries represents an emerging competitive advantage that could help catapult the region economically.

Figure 7: Industries with High Net Growth in New Haven County from 2008-12
Source: Complete Employment Estimates. Economic Modeling Specialists International. 2008-12
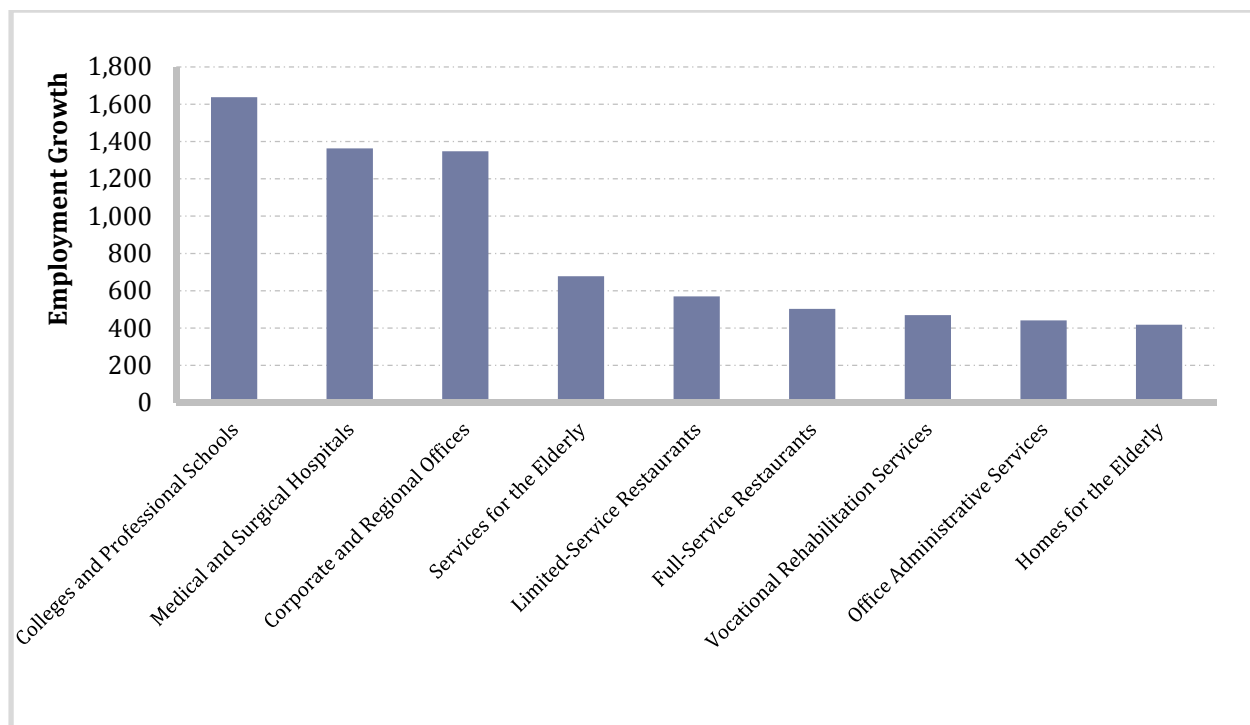
Traffic Counts

The following analysis details the average daily traffic (ADT) counts as measured by the Connecticut Department of Transportation (DOT) at specific points in the area. The DOT publishes this information every three years. The most recent data available is from 2009 to 2011.

The southern part of the area is bordered by exit 12 off of I-91. The ADT count off of that exit is 21,300. In comparison, off of exit 11 near the North Haven Plaza ADT counts range from 24,100 to 26,600. When looking at the traffic counts for vehicles heading south when getting off exit 12 of I-91, the counts remain around the same as near the exit showing there is a stronger draw to points south. Since traffic counts immediately off exit I-91 are relatively high and comparable to other shopping destinations it provides good traffic to support retail.

Heading north on Washington Ave. from exit 12, the counts drop to 18,500 as one approaches Wadsworth Ave. Therefore, approximately 2,800 cars do not travel beyond Wadsworth Ave. Along the northernmost border of the upper Washington Ave. area the ADT counts drop even further to 14,400.

Bradley Street, which provides north access to Quinnipiac University, currently experiences ADT counts of 6,500 whereas south of the university by Corey Street the ADT counts are 4,600. Creating destinations of interest to the Quinnipiac University population could help draw some of the traffic south of the University and help support new retail development.
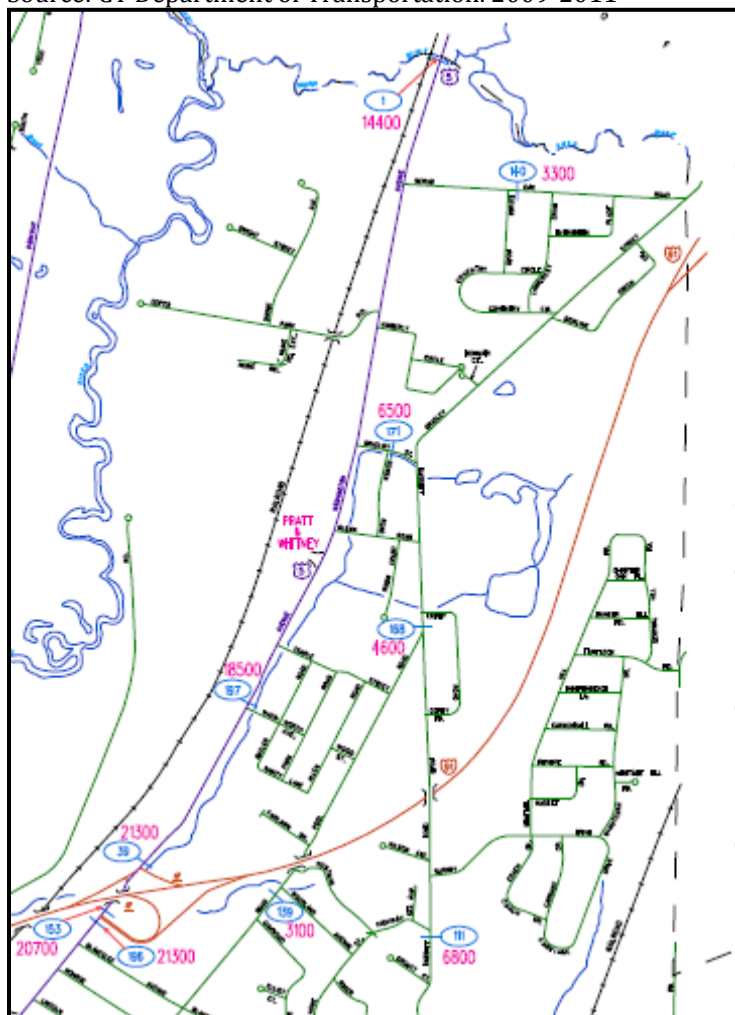
Map B: Traffic Counts for Upper Washington Ave. and Surrounding Areas
Source: CT Department of Transportation. 2009-2011
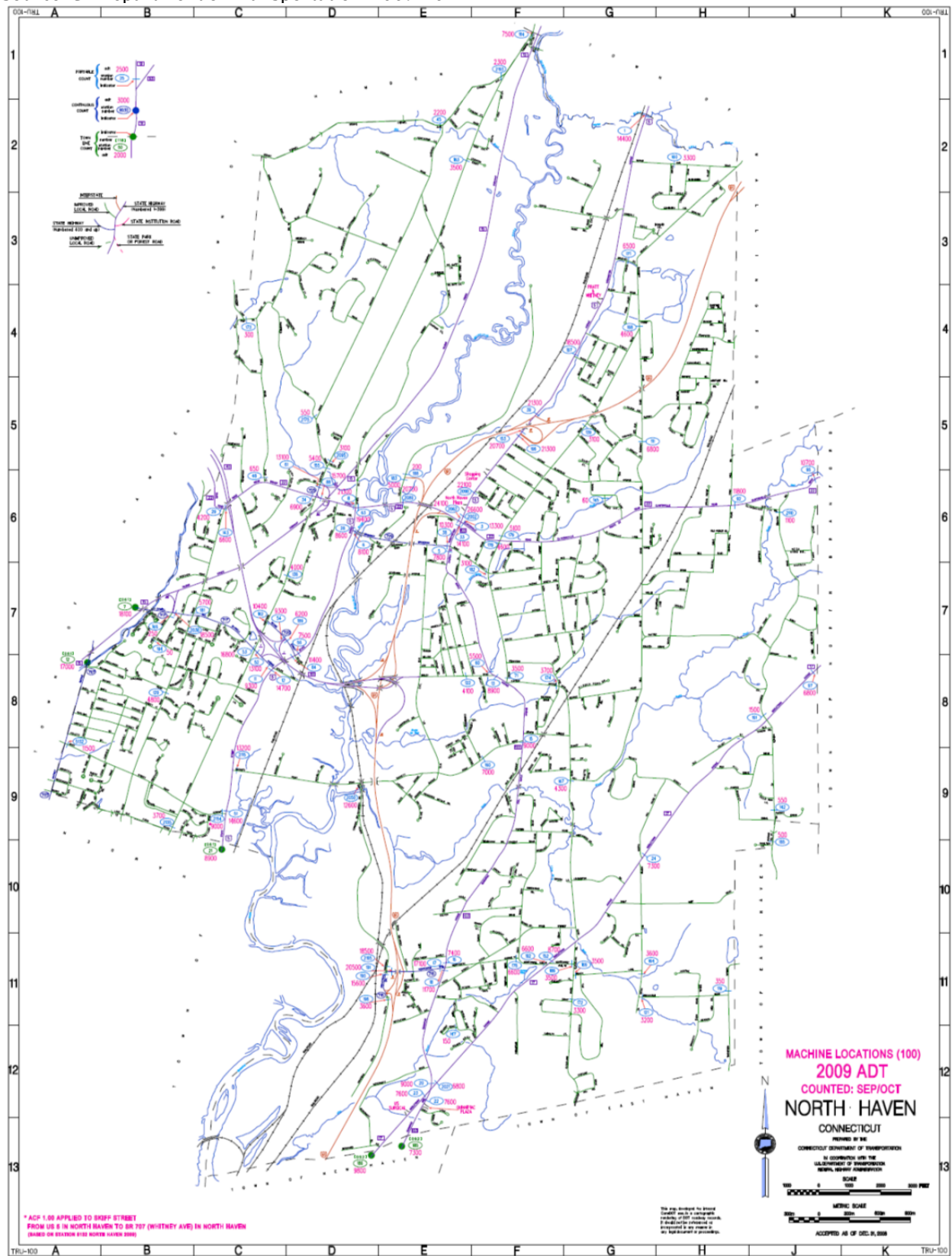
Map C: Traffic Counts for Upper Washington Ave. Area
Source: CT Department of Transportation. 2009-2011

Existing Use of Space

The upper Washington Ave. area has great highway access and also good visibility from exit 12 off I-91. While the Quinnipiac River and the highway create physical barriers that limit connectivity to surrounding areas, these barriers also present an opportunity to take advantage of concentrated traffic on select thoroughfares.

The study area has a diverse mix of uses, including many vibrant existing business establishments. Existing establishments include high-end auto dealers, gas stations, restaurants, grocery stores, hair stylists, martial arts studios, and more. The west side of Washington Ave. houses a number of industrial users including Ulbrich, Parker-Hannifin Corporation, and Summit Handling Systems. Residential, which is primarily on the east side of Washington Ave. includes both single-family homes, as well as complexes such as Woods Edge and Temple Pines. Educational institutions within the area include Quinnipiac University and the Village School. The periphery of the study area also contains a significant amount of space dedicated to public and quasi-public uses, including Quinnipiac River State Park, the North Haven Fairgrounds, and Wharton Brook Park. Further the area contains hospitality space with the Holiday Inn and office space at 556 Washington Ave. There is also a significant amount of development opportunity, most notably the 170-acre former Pratt and Whitney site, and also a number of parcels right on Washington Avenue.

Map D shows the location of businesses by industry. The size of the circle depicts the relative size of the business using the measurement 'sales per employee' for the business. The primary industries for the majority of businesses in the area are Construction, Real Estate, Administrative and Waste Management; and Wholesale and Retail Trade; which are depicted by the green and purple circles in the map. The businesses that are in the former industry group tend to be smaller businesses or more labor-intensive businesses with sales of less than $99,999 per employee. The Wholesale and Retail Trade businesses, on the other hand, on average have sales greater than $150,000 per employee.

In terms of challenges, the northern section of town lacks commercial and retail anchors. The auto dealers serve as specialty/destination retail, but do not draw as much repeat traffic as other types of stores that consumers frequent on a more regular basis. The large Pratt and Whitney parcel, which is currently vacant, represents another significant opportunity to increase commuter traffic at the northern side of Washington Avenue from the current levels.

Map D: Upper Washington Ave. Business Profile
Source: Dun & Bradstreet. 2013
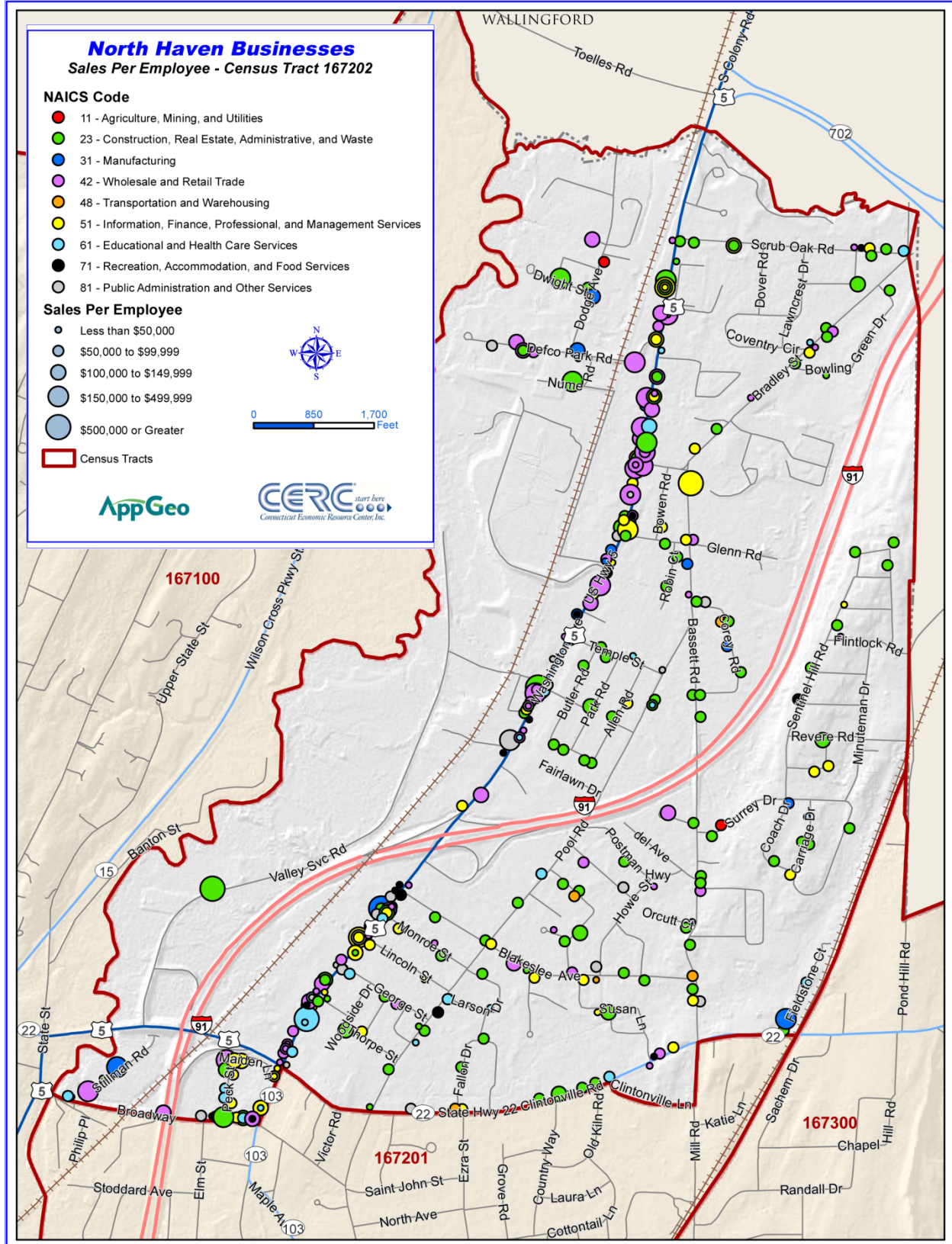
Anticipated Population Shifts

Currently the north campus of Quinnipiac University, located within North Haven, has 1,000 students and approximately 700 faculty and staff members. The campus continues to grow with the addition of new facilities and programs for students. The most notable change to the area is the recent addition of the medical school that will be opening to the first class of students during the 2013-2014 academic year. The new medical school occupies a 145,000 square-foot building and will start this year's medical school class with 60 students. The school plans on increasing the student body each year. By the 2017-2018 academic year the school will be at full capacity which means there will be 1,400 students and 1,000 faculty and staff.[2]

With an influx of students and supporting faculty and staff the area has an opportunity to cater to a well-educated population. The university estimates that students spend approximately $10,000 on housing, $3,000 on food, and $5,000 on personal expenditures and discretionary spending in a year.[3] In general, students currently live either in Hamden or North Haven in apartments with only about one percent living at home.[4] Not factored into these figures due to data limitations are the number of potential visitors to the campus and the discretionary spending that is likely to occur. Such visitors would likely include: parents, visiting faculty, attendees for meetings and conferences, etc.

Another change in the population of the area will come as the new housing on Washington Ave. is completed just north of Bradley Street. Currently 125 units have been approved for construction, with zoning in place to allow a total of 300 units. When all 125 units are occupied the resident population will increase by approximately 156 to 200.[5] Housing creates a more stable population base, with residents more likely to be present in the area 24 hours a day and year-round, than a commuter student population which is more likely subject to shifts in their population from day to evening as well as seasonally. These will also be newer units that are expected to cost between $1,500 and $2,000 a month. These rates are higher than apartments in the Briarwood Hills Apartment complex which is south of the upper Washington Ave. area where rent for studios and one bedrooms range from $865 to less than a $1,000 per month. Higher rental rates for the new developments means it will likely attract more affluent students, young professionals, or faculty. This stable population base would help support additional neighborhood retail.

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[2] Data from Quinnipiac University
[3] Data from Quinnipiac University
[4] Data from Quinnipiac University
[5] Approximately 75 percent of the units will be studios and one bedroom apartments and 25 percent will have two bedrooms. The minimum calculation assumes one person living in the studios and one bedroom and two people in the two bedrooms. The higher calculation assumes some of the one bedroom could have two residents and the two bedrooms could have three residents.

The potential redevelopment of 409-415 Washington Ave. creates another tremendous opportunity for increasing the traffic and flow of people to upper Washington Ave. The space is being marketed as industrial/warehouse build-to-suit space with 50,000 to 1.5 million square feet with access to rail, heavy power, ample water and gas; making it one of only 4 to5 parcels available in the state that could accommodate development of that size. Also of note is that the space has parking for 1,000 cars which will bring more people to the area that will need housing, services, and entertainment. A specific user of the space has not been identified but the decision will be market-driven.

Further, when construction on the Valley Service Road connection is complete, it will help connect the area and create a pass-through to Route 15 that will draw more vehicle traffic to the area. The construction project involves extending the north end of Valley Service Road to State Street just south of Glenn Road. This connection will also alleviate traffic on Route 5 and open up several parcels of land along Valley Service Road for redevelopment.

Retail Gap Analysis

A retail gap analysis can be utilized to first identify retail sectors where there are surpluses and leakages in a particular area, utilizing consumer expenditure data. A retail surplus exists when there is a surplus of goods - strong competition that attracts customers from out of town with the potential to create destination retail where similar stores benefit from being close together (i.e. auto parts and mechanics located near auto dealers). A retail gap analysis also examines areas where there is a retail gap or leakage – whereby area retail stores do not meet the current demand for goods. This may indicate the need for additional retail stores in the area to capture the consumer expenditures that are being spent elsewhere.

Once retail opportunities are identified, an area can target retailers to determine if their site selection criteria match the demographics of the community; and finally identify where those retailers could locate if there is a match. This part of the analysis contains five components: data on current consumer expenditures and projected consumer expenditures; a retail market profile for census tract 167202; data on retail surplus; data on retail gaps or leakages; and retail opportunities given the anticipated population changes to the area.

Consumer Expenditures
Consumer spending in the upper Washington Ave. census tract area was compared to the town of North Haven, New Haven County, and Connecticut. As shown in Figure 8, consumers in the upper Washington Ave. census tract spent significantly less in real terms than consumers living in North Haven and the state but only slightly below those living in New Haven County. These findings are consistent with the area having a high concentration of senior housing complexes and individuals from the lower tail of the income distribution which means they have less disposable income.

It is important to put these figures in perspective though. Although the upper Washington Ave. census tract has lower consumer expenditures comparatively, households are still spending $58,000 a year. Further, North Haven as a whole has significantly higher consumer expenditures than New Haven County and the state.

**Figure 8: Largest Consumer Expenditures 2011**
Source: Data Finder. Connecticut Economic Resource Center. 2011
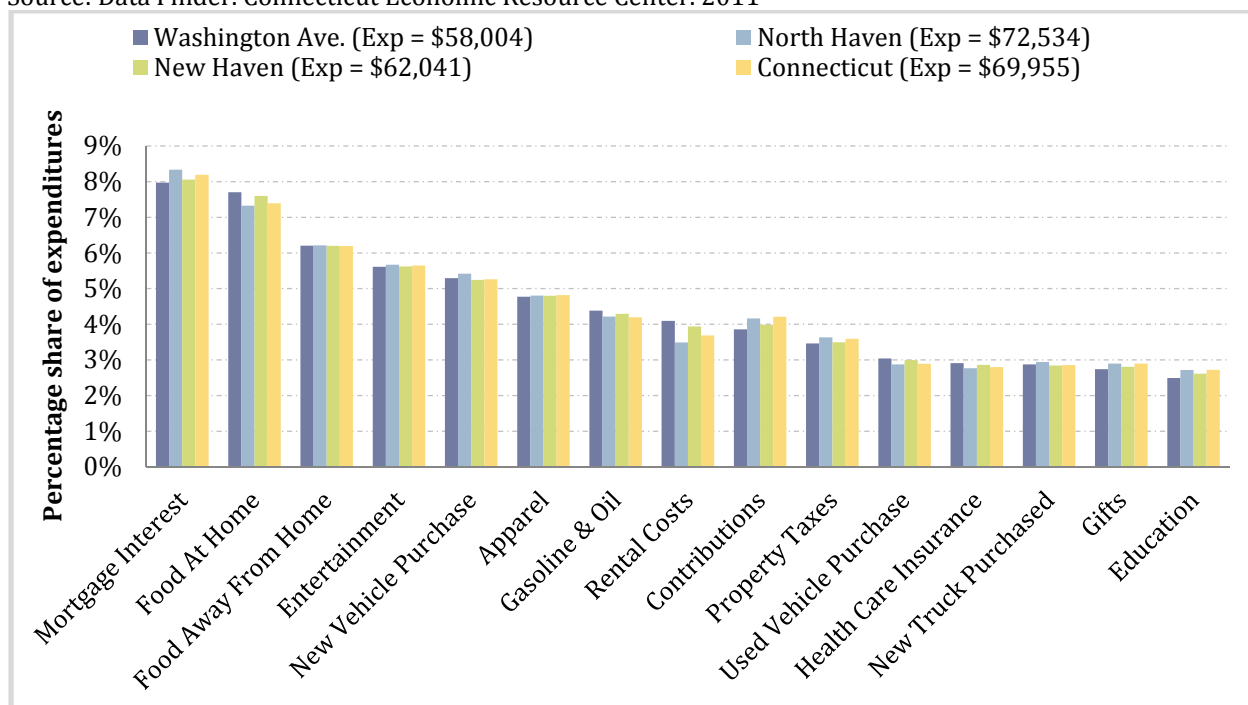
In terms of projected growth in consumer spending from 2011 to 2016, the largest projected growth for those living in the upper Washington Ave. census tract is expected in lodging, floor coverings, books and supplies, education, tuition, and charity contributions as shown in Figure 9. These are many of the same expenditure categories that were seen to currently be depressed in the area. This growth represents a possible increase in the income distribution of the area and the possibility of the rise in the standard of living.

Figure 9: Largest Growth in Consumer Expenditures 2011-2016
Source: Data Finder. Connecticut Economic Resource Center. 2011-16
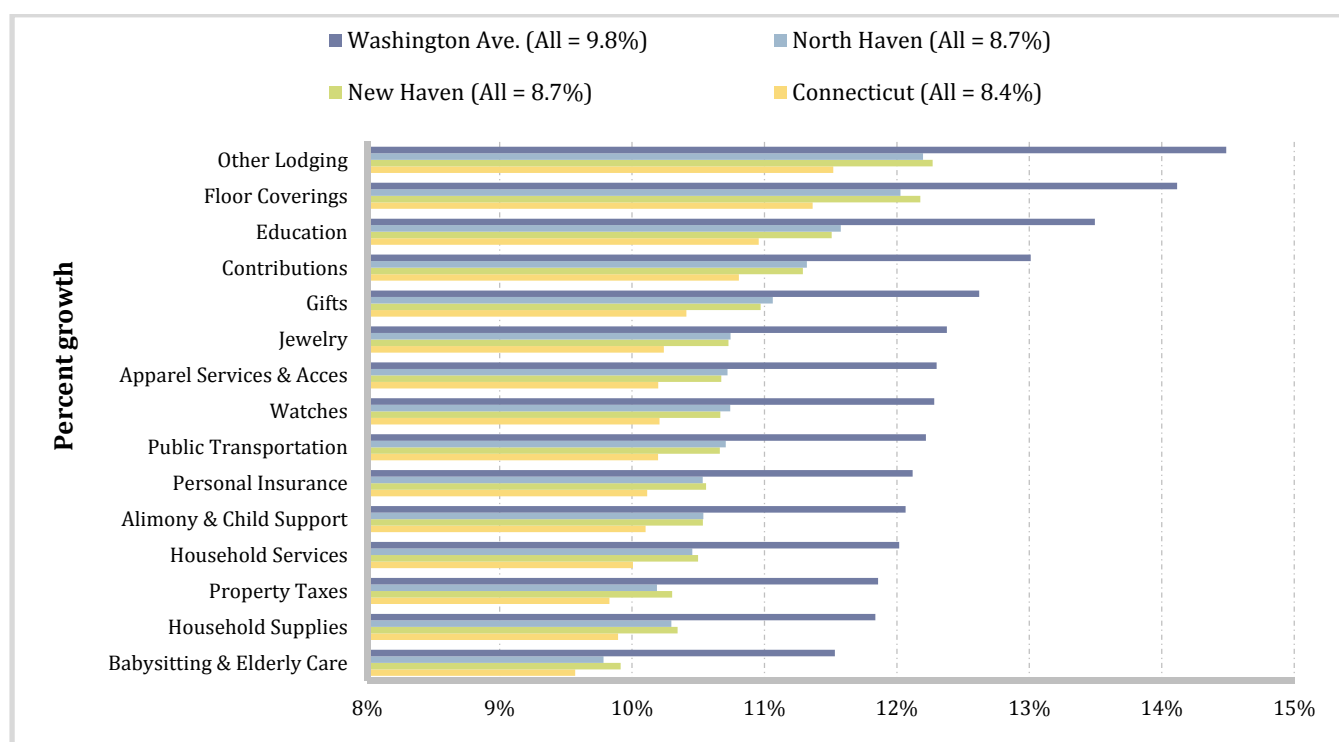
Retail Market Profile: Census Tract 167202

The following data provides a retail market profile for census tract 167202 which contains the upper Washington Ave. area. The "Industry" column identifies the major retail industries in bold with sub-industries indented underneath. The 'Demand' column shows the potential demand for those goods in the census tract versus the 'Supply' by area retailers based on sales in the area. The 'Retail Gap' calculates the difference between supply and demand and the 'Leakage/Surplus Index' provides a relative strength to the retail gap. The last column shows the number of businesses within the census tract that are in that particular industry.

Retail sales surpluses, where retail sales are higher than what would be anticipated given the local population, indicate that the area is attracting a consumer base beyond local residents. A surplus essentially represents a draw of individuals living outside the respective geography to the location because of an existing retail advantage. Developing complementary industries to those with a consumer surplus can be a good economic development strategy for a town.

On the other hand, sales leakage means demand for goods and services that is not being met locally because residents are shopping for such goods and services elsewhere. There can be a number of reasons for sales leakage; for example it could mean that there is a very strong competitor in a nearby area. However, areas of sales leakage often represent retail industries where there is opportunity to capture consumer expenditure that is leaving the area and to capitalize on a mismatch of demand and supply.

As can be seen in Table 1, the major industries where there is a retail surplus include: Motor Vehicles & Parts Dealers, Food & Beverage Stores, Gasoline Stations, Electronic & Appliance Stores, Health & Personal Care, Food Services & Drinking Places, Nonstore Retailers, and Miscellaneous Store Retailers. However, within these major industry groupings there are sub industries where there could either be surplus or leakage. For example, within Motor Vehicle & Parts Dealers the area lacks sufficient 'other motor vehicle dealers' to support the local demand and thus experiences a small sales leakage.

The major industries where there is a sales leakage include (sorted by largest dollar amount of sales leakage): General Merchandise Stores, Furniture & Home Furnishings Stores, Building Materials, Garden Equipment & Supply Stores, and Sporting Goods, Hobby, Book & Music stores. The industry with the largest sales leakage, approximately $5.7 million in sales, is General Merchandise Stores which includes the sub industry category of department stores.

Table 1: Upper Washington Avenue Retail Profile
Source: Economic and Social Research Institute. 2013

Industry	Demand	Supply	Retail Gap (Leak. Surp.)	Retail Gap Index (Leak. Surp.)	Number of Businesses
Motor Vehicle & Parts Dealers	$10,867,999	$171,568,438	$160,700,439	-88.1	12
Automobile Dealers	$9,574,204	$168,292,084	$158,717,880	-89.2	6
Other Motor Vehicle Dealers	$341,822	$0	$341,822	100.0	0
Auto Parts, Accessories & Tire Stores	$951,973	$3,276,354	-$2,324,381	-55.0	6
Furniture & Home Furnishings Stores	$1,824,628	$688,500	$1,136,128	45.2	2
Furniture Stores	$1,149,283	$688,500	$460,783	25.1	2
Home Furnishings	$675,345	$0	$675,345	100.0	0
Electronics & Appliance Stores	$1,552,641	$3,486,000	-$1,933,359	-38.4	7
Building Materials, Garden Equip. & Supply Stores	$2,069,528	$1,449,442	$620,086	17.6	7
Building Material & Supplies Dealers	$1,969,854	$1,394,548	$575,306	17.1	5
Lawn & Garden & Supply Stores	$99,674	$54,894	$44,780	29.0	2
Food & Beverage Stores	$9,560,636	$85,803,003	-$76,242,367	-79.9	8
Grocery Stores	$8,608,761	$80,974,203	-$72,365,442	-80.8	2
Specialty Food	$174,101	$2,715,874	-$2,541,773	-88.0	2
Beer, Wine & Liquor	$777,774	$2,112,926	-$1,335,152	-46.2	4
Health & Personal Care Stores	$2,160,836	$5,279,699	-$3,118,863	-41.9	6
Gasoline Stations	$6,632,272	$19,677,464	-$13,045,192	-49.6	9
Clothing & Clothing Accessories Stores	$2,425,342	$3,250,710	-$825,368	-14.5	9
Clothing Stores	$1,913,499	$2,452,384	-$538,885	-12.3	8
Shoe Stores	$182,203	$0	$182,203	100.0	0
Jewelry, Luggage & Leather Stores	$329,640	$798,326	-$468,686	-41.6	1
Sporting Goods, Hobby, Book & Music	$679,098	$430,332	$248,766	22.4	4
Sporting, Hobby, & Musical Instrument	$372,381	$244,923	$127,458	20.6	3
Book, Periodical & Music Stores	$306,717	$185,409	$121,308	24.6	1
General Merchandise Stores	$5,814,884	$81,961	$5,732,923	97.2	1
Department Stores Excluding Leased Depts.	$2,306,358	$81,961	$2,224,397	93.1	1
Other General Merchandise Stores	$3,508,526	$0	$3,508,526	100.0	0
Miscellaneous Store Retailers	$946,762	$2,217,811	-$1,271,049	-40.2	13
Florists	$112,933	$0	$112,933	100.0	0
Office Supplies, Stationery & Gift Stores	$354,009	$1,657,146	-$1,303,137	-64.8	6
Used Merchandise Stores	$18,349	$24,999	-$6,650	-15.3	1
Other Miscellaneous Store Retailers	$461,471	$535,666	-$74,195	-7.4	6
Nonstore Retailers	$1,566,271	$3,615,773	-$2,049,502	-39.6	1
Electronic Shopping & Mail-Order Houses	$636,278	$0	$636,278	100.0	0
Vending Machine Operators	$214,771	$0	$214,771	100.0	0
Direct Selling Establishments	$715,222	$3,615,773	-$2,900,551	-67.0	1
Food Services & Drinking Places	$8,150,580	$49,685,538	-$41,534,958	-71.8	45
Full-Service Restaurants	$3,194,981	$10,476,349	-$7,281,368	-53.3	23
Limited-Service Eating Places	$4,102,314	$26,460,869	-$22,358,555	-73.2	16
Special Food Services	$735,599	$12,748,320	-$12,012,721	-89.1	6
Drinking Places - Alcoholic Beverages	$117,686	$0	$117,686	100.0	0

Figure 10 depicts retail surplus and leakage by industry group. Bars to the right of zero (positive values) depict industries with retail surplus. Within the upper Washington Ave. area census tract the top five retail industries with a consumer surplus in 2012 were: automobile dealers, specialty food and food services, grocery stores, and limited service eating places. The majority of these industries also appear to be at a surplus in North Haven as a whole.

Figure 10: Retail Surplus Index
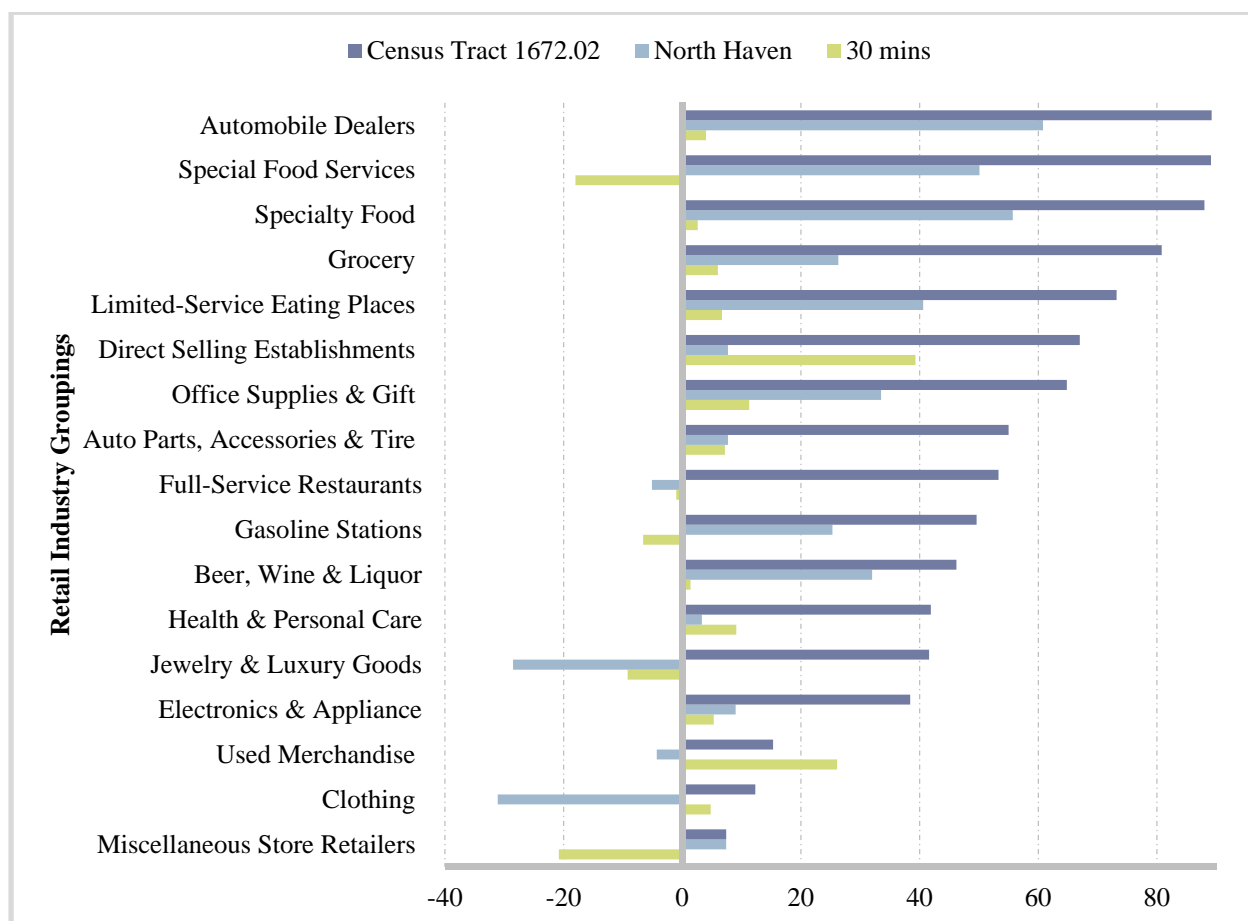Source: Economic and Social Research Institute. Retail Market Place. 2012

Figure 11 depicts retail sales leakage with bars to the left of zero. The industries with the greatest sales leakage within the upper Washington Ave. census tract area include other motor vehicle dealers, home furnishings, shoe stores, electronic shopping, florists, other general merchandise, and drinking places. Retail leakage in North Haven is similar to the upper Washington Ave. area in terms of the retail categories with the highest leakages; however, the top category for retail leakage for North Haven is in Book, Periodical and Music stores.

Figure 11: Retail Leakage Index
Source: Economic and Social Research Institute. Retail Market Place. 2012
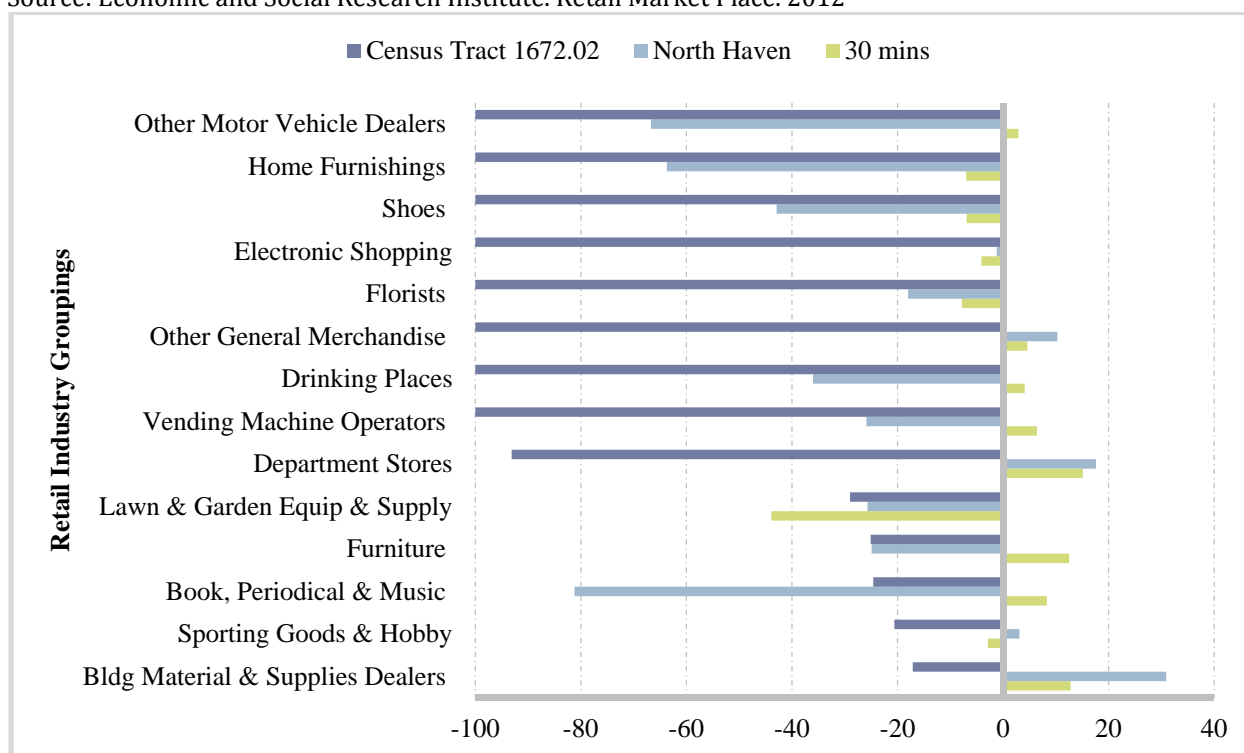
Summary of Retail Surpluses and Gaps

A retail surplus means the people are attracted from outside the area; presenting an opportunity to attract complementary retail businesses. For economic development purposes, the area should seek retail opportunities that could complement the current retail that is attracting people to the area and provide them with additional retail destination opportunities.

- *Surplus 1 – Motor Vehicle & Parts Dealerships:* One of the segments with the largest surplus in the upper Washington Avenue area is Motor Vehicle & Parts Dealerships. However within this industry, the sub-industry of 'Automobile Dealers,' comprises the largest surplus.

A number of businesses, including Mercedes-Benz of North Haven and BMW of North Haven, are located in the area. Given that there are several dealerships in the area, it is not surprising that consumers are traveling from out of the immediate area to patronize these businesses. A 2010 Consumer Reports survey indicated buyers are willing to drive a median 55 miles to find a vehicle, and 26 percent of consumers are willing to travel over 100 miles.[6] There is also a surplus of auto dealerships in the town of North Haven indicating that the town is a retail destination for car dealerships whereas 30 minutes away there is only a marginal surplus.

'Other Motor Vehicles' and 'Auto Parts & Accessories Stores' are the other two sub-industries that comprise the 'Motor Vehicles & Parts Dealers' industry. Other Motor Vehicles includes recreational vehicle dealers such as motorcycle and boat dealers. The census tract area does not have 'Other Motor Vehicles' stores yet there is small demand given the population of the area. On the other hand, there is a surplus of Auto Parts & Accessories Stores in the area.

- *Surplus 2 –Food & Beverage Stores:* Within Food & Beverage Stores there are three sub-industry groupings -- Grocery Stores, Specialty Food stores, and Beer, Wine, and Liquor stores – and all three have sales surpluses making it a retail destination for residents outside of the census tract area.

   The retail sales for grocery stores were approximately $81 million with local demand by consumers of only $8.6 million. This sub-industry had the largest retail surplus of approximately $72 million; however, it also has larger sales volume in general than the other two sub-industries. Specialty Food Stores had sales of $2.7 million with local demand of only $0.2 million and Beer, Wine, and Liquor Stores has sales of $2.1 million and local demand of only $0.8 million. The area could see the surpluses within all three sub-industries shrink with local demand increasing due to the additional population expected in the area from the expansion of Quinnipiac University and the additional housing approved in the area.

- *Surplus 3: Food Services & Drinking Places:* This industry grouping includes full-service restaurants, limited-service eating places, special food services, and bars. The census tract area has 23 full-service restaurants and 16 limited-service eating places. The sales surplus for both restaurant types combined is approximately $30 million; consumer demand within the area is only $7 million.

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[6] http://news.consumerreports.org/cars/2010/07/survey-how-far-would-you-drive-for-the-best-deal.html

A retail gap defines an industry where residents shop elsewhere for goods but there may be a potential opportunity for development by bringing this type of industry into the area.

- *Retail Gap 1: Book, Periodical, and Music Stores:* There is currently a gap in terms of the supply and demand of Book, Periodical, and Music Stores within a 5 and 10 minute drive of the area. However, within a 30 minute drive there is a retail surplus of $11 million. Even though there is a surplus within 30 minutes, consumers may desire these types of stores within a closer drive time than is currently available in the area. Also, not factored into the demand figures is the growing university population that could increase the retail gap. This presents an opportunity for the area to seek a retailer who could fill this gap.

- *Retail Gap 2: Lawn, Garden Equipment, and Supply:* There is a retail gap when looking at 5, 10, and 30 minute drive times surrounding the upper Washington Ave. area. Local demand within a 30 minute radius for these stores was $31 million whereas retail sales in the area were $19 million, representing a $12 million gap. Consumers are willing to drive farther to buy goods and it is not a convenience store yet even within 30 minutes there is still a retail gap. This is an area where residents shop elsewhere for goods but may be a potential opportunity for development.

Retail Gap Analysis Accounting for Additional Quinnipiac University Population

Another way to examine what additional retail could be supported in the area with the increased population is to look at the population that supports the current retail establishments and estimate what new retail could be supported by the increased population. CERC derived estimates of the average population per retail establishment in the state and county from the U.S. Census County Business Patterns dataset and EMSI. CERC looked at the population between the ages of 25 and 55 since they tend to have higher consumption patterns than other age groups. The following table displays the potential retail opportunities identified followed by an explanation of the analysis.

Table 2: Retail Establishments per Population Ages 25-55
Source: CERC analysis using U.S. Census County Business Patterns data

NAICS	Description	Number of Establishments		Population per establishment (ages 25-55)	
		CT	New Haven County	CT	New Haven County
722213	Snack & Other Nonalcoholic Beverage Bars	917	201	1,598	1,745
812320	Dry Cleaning and Laundry Services (except coin operated)	375	70	3,907	5,011
81211	Barber shops	72	11	20,351	31,886
722110	Full-service restaurants	3,416	771	433	460
722211	Limited-Service restaurants	3,019	780	490	455
445291	Baked Goods Stores	23	3	63,707	116,914
445220	Fish and Seafood Markets	44	7	33,301	50,106
445230	Fruit and Vegetable Market	52	12	28,178	29,229
7211	Traveler Accommodation	402	81	3,683	4,377
453210	Office Supplies and Stationary Stores	95	19	15,424	18,460

	Population age 25-55
New Haven County	350,742
State	1,465,265

Retail Establishments Served by Local Population

These retail establishments are those that would most likely serve the local population only; meaning people in general are only willing to drive 5 to 10 minutes for these goods and services. The following retail establishments were identified as opportunities for the area with the growing university population.

Snack and Other Nonalcoholic Beverage Bars: Another area for retail potential in the area is for a snack and beverage bar. In the state there are approximately 1,600 people per

establishment but in the county there are 1,750 per establishment. Given the additional population being added by the University there is the potential that demand will increase and the additional population will help support more establishments of this type in the area.

Dry Cleaning and Laundry Services (except coin operated): Another potential retailer would be a drycleaner. There are approximately 5,000 people in the county for every establishment whereas in the state there are approximately 4,000 people. Therefore, adding a retail establishment that creates convenient living will help attract people to live in the new housing being built. It also provides a convenience for those working in the area.

Other Personal Care Retail Establishments – Barber Shops, Beauty Salons, and Nail Salons: These three retail establishments could potentially prosper in the upper Washington avenue area. The county has fewer people per establishment than the state particularly in barber shops. Having these types of conveniences for residents will help draw more people to the area.

Semi-Regional Destinations

Semi-regional retail establishments are distinguished as retail establishments where people are willing to drive a little farther for the goods and services.

Restaurants (full and limited service): In New Haven County, there are approximately 450 people per establishment supporting both types of restaurant establishments. Although not shown in the table, data at the zip code level (06473) was available and shows that there are approximately 250 to 285 people between the ages of 25 and 55 per establishment supporting full and limited service restaurants. This demonstrates there is a surplus in the area but also shows that people are coming from outside the area to support these establishments. This data also shows that a population of less than 500 people can support a single establishment.

Although there are fewer people supporting restaurants in the zip code than the average for the state, given the large increase in population – approximately 400 more students, 300 faculty, and an estimated 200 new residents -- that will take place over the next couple years between the additional housing and Quinnipiac University, there is the potential increase in demand to support more establishments in the area.

Food Stores – Baked Goods, Fish and Seafood, and Fruit and Vegetable Markets: Three areas within food stores where there is potential for retail growth in the area are for Baked Goods stores, Fish and Seafood Markets, and Fruit and Vegetable Markets. The county

currently has approximately 117,000 people per Baked Goods store whereas there are 64,000 per store in the state. Similarly, there are approximately 17,000 fewer people per Fish and Seafood Market in the county than the state. For Fruit and Vegetable Markets, there are approximately 28,000 for every establishment in the state versus 29,000 in the county. Although the population per establishment is not as dramatic a difference as the other two types of markets, there is a growing trend to have market-fresh food and therefore this might present an opportunity for the area. As mentioned in the last section, the upper Washington Ave. area has a surplus of grocery stores and these specialty food stores represent complimentary retail businesses and a good opportunity for the town since people are already coming to the area for food shopping.

Traveler Accommodation: Another retail opportunity for the area is in the category of traveler accommodation such as hotels and motels. There are approximately 4,400 people for the one establishment in the county compared to 3,700 in the state. Although current residents are not necessarily the best measure for the demand for traveler accommodations, given the increase in students in the area there will be a greater need for hotel and motel accommodations for visiting family[7] and visiting faculty and staff to the University, although this demand can vary depending on the time of year.

Office Supplies and Stationary Stores: New Haven County has more people per establishment than both the state and the U.S. In fact there are approximately 18,500 people per store compared to 15,500 for the state and 12,400 for the country. With an increase of people to the University this type of store could be appropriate and have the potential to succeed in the area.

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[7] 78 percent of the student body at Quinnipiac University is not from Connecticut – Connecticut Magazine January 2013

Phase 2: Housing Demand Analysis

Based on data provided by Quinnipiac University and Census data from the American Community Survey, CERC derived an approximate number of residential units that the upper Washington Avenue area could support based on the expansion of the University.

CERC assumes that approximately 1,000 students may consider living near campus along with 30 faculty and staff. The number of students, faculty, and staff that may consider moving into the area are based on a number of factors including the following: the percent that currently live locally; the average age of each of the population groups; and then also taking into consideration the fact that not all people would want to live close to campus and would place other quality of life measures higher than proximity to campus.

When looking at the rental market in the area, there currently are not many units for rent in the upper Washington Avenue census tract area. However, popular places for students to rent are the Town Walk units in Hamden. CERC compared the census tract data where the Town Walk apartments are located to the upper Washington Avenue census tract area. In the Hamden census tract, more than 50 percent of housing units are for rent whereas in the upper Washington Avenue census tract only 16 percent are rental units. Further the rental properties that are available in the upper Washington Area are mostly senior living communities and not available to students, faculty, and staff of Quinnipiac University. Therefore, new units in the upper Washington Avenue area would add to the housing mix options of the area and could also draw renters who currently live in Hamden and other communities.

Further, 69 percent of the rental units within the upper Washington Avenue area are rented to households that are 65 years and over whereas that share is only 15 percent in Hamden. Given that the student population and the population over the age of 65 would be seeking different amenities there is an opportunity for development that could cater to the student population of Quinnipiac University.

Given the population, CERC estimates the area could support a total of 300-600 housing units once Quinnipiac University is at full capacity with its student enrollment on the North Haven campus. Since there is already zoning for 300 units just north of Bradley Street that means that up to an additional 200-300 units could be supported. This is assuming the majority of students would live in a two-person apartment, with the remainder in either one-person or three-person apartments.

The rental apartments of the Town Walk range in price from $1,200 to $1,900 depending on the number of bedrooms and square footage of the unit. When looking at census data,

the median gross rent in Hamden is $1,512 while in the upper Washington Avenue area the median rent is $534. This approximate $1,000 difference is due to the population which is occupying the units as stated before –currently in the upper Washington Avenue area it is predominantly seniors whereas in Hamden the rental age is much younger. New units in the upper Washington Avenue area could command similar rates to those in Hamden, however it will depend also on whether the new units offer similar amenities both in the apartment complex and also in the surrounding area such as convenient retail shopping.

The appendix provides the data provided by Quinnipiac University, the statistics gathered from the U.S. Census, and the assumptions made to estimate the potential additional housing demand in the upper Washington Avenue area.

Phase 3: Gravity Model Analysis

The first two analyses conducted for the North Haven Economic Development Commission (EDC) include a demographic trend and consumer demand evaluation, along with a housing assessment. The results highlight trends and changes in population and spending patterns associated with Quinnipiac University, and inform the third analysis conducted for the EDC, which is a gravity model.

Key Findings
The industries found to have the highest potential to generate higher than average sales in the upper Washington Avenue commercial area include:

- *NAICS 4411 Automobile Dealers*
- *NAICS 4422 Home Furnishings Stores*
- *NAICS 4431 Electronics and Appliance Stores*
- *NAICS 4451 Grocery Stores*
- *NAICS 4452 Specialty Food Stores*
- *NAICS 4453 Beer, Wine, and Liquor Stores*
- *NAICS 4461 Health and Personal Care Stores*
- *NAICS 4471 Gasoline Stations*
- *NAICS 4483 Jewelry, Luggage, and Leather Goods Stores*
- *NAICS 4533 Used Merchandise Stores*
- *NAICS 7211 Traveler Accommodation*
- *NAICS 521 and NAICS 722 Banks and Restaurants*

Introduction and Model Specifications

A gravity model is an empirical tool that can either be used to determine the projected sales of differing types of retail establishments for a particular location, or it can be used to select the best location for a single type of retail establishment. In the context of this report, the gravity model was applied to evaluate the retail sectors with the greatest potential for the upper Washington Avenue commercial area. For the purposes of this analysis, the upper Washington Avenue commercial area was defined as census tract 1672.02 while the North Haven retail area was defined as a 10 mile radius from the center of the census tract.

The model yielded a forecast of annual sales for each type of retail establishment under three scenarios based on how many new Quinnipiac University students select housing in the upper Washington Avenue commercial area. The model was calculated using a variation of David L. Huff's classic estimation procedure now widely implemented in the fields of economic development and location analysis.

A complete business listing for all retail establishments within the North Haven retail area was purchased from a proprietary data provider, D&B Sales and Marketing Solutions. All the individual retail establishments were aggregated by industry sector and by each census tract within the North Haven retail area. Demographic data was used to estimate the aggregate income of the consumers by census tract.[8] The total disposable income for each census tract was estimated from national consumer expenditure data.[9] The share of disposable income in a given census tract spent on a specific retail sector among total retail sales across New Haven County was then estimated.[10]

The aforementioned data allowed the model to generate an estimate of the disposable income spent by individuals living in each census tract at each of the other census tracts based on the distribution of physical retail space in the North Haven retail area. The model was then used to estimate the annual sales that a new establishment of average size (the average size varied according to industry) could generate for each distinct retail sector if developed in the upper Washington Avenue commercial area (census tract 1672.02). The aggregate change in sales across all census tracts caused by the addition of the new establishment provided an estimate of the potential impact the new retail location could have on the North Haven retail area.

Gravity Model EQ 1: $E\left(R_{i,j,c}\right) = \left\{ \dfrac{\dfrac{SF_{c,i}^{\beta}}{D_{i,j}^{\lambda}}}{\sum_{i=1}^{I} \dfrac{SF_{c,i}^{\beta}}{D_{i,j}^{\lambda}}} \right\} * \sum_{d=1}^{D} \left\{ C_{i,d} * B_c \right\}$

SF_c = Square footage of all establishments in retail sector c for a retail location in census tract i

$D_{j,i}$ = Distance from retail base census tract j to census tract i

$C_{i,d}$ = Number of consumers for census tract i

$B_{i,c}$ = Average annual budget allocated to consumption in retail sector c for census tract i

β = Square footage decay parameter set at 1 in analysis

λ = Distance decay parameter set at 1 in analysis

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[8] Demographic data was obtained from the United States Census Bureau. American Community Survey. 2011.
[9] Consumer expenditure data was obtained from the United States Census Bureau. American Community Survey. 2011.
[10] Retail sales data was obtained from the Economic Modeling Specialists International. Regional Sales. 2013.

E(R$_{i,j,c}$) = Estimated revenue for retail location in census tract i from retail base census tract j of retail sector c

$\sum_{j=1}^{J} E(R_{c,i,j,m})$ = Total aggregate estimated sales across all census tracts i for a location in retail base census tract j of sector c

The model was used to estimate industry sales from 2013-18 caused by the addition of a new retail location using three distinct demographic scenarios in order to develop a range (low, average, high) of estimates. The first scenario assumed no expenditures in the upper Washington Avenue commercial area from the influx of students and faculty from Quinnipiac University, the second assumed that the increase in expenditures would be proportional to the projected increase in population from the housing market analysis (estimated as 5/12 of expenditure), and the final scenario assumed the students and faculty would spend the majority of their expenditures in the upper Washington Avenue commercial area.

The change in total sales spent in upper Washington Avenue commercial area caused by an addition of a new retail location relative to the average sales of an establishment in that industry (in the absence of the new establishment) was used to evaluate the suitability of a given industry. Those industries with projected sales of an equal or greater proportion to the average sales in their respective industries were identified to have the greatest sales opportunity. The ratio of projected sales to average sales was then indexed with the industry having the greatest value normalized to 100 and each subsequent value was apportioned accordingly. The resulting report provides an empirically sound method of evaluating proposed retail usage in the upper Washington Avenue commercial area in an effort to strategically target economic development and zoning initiatives.
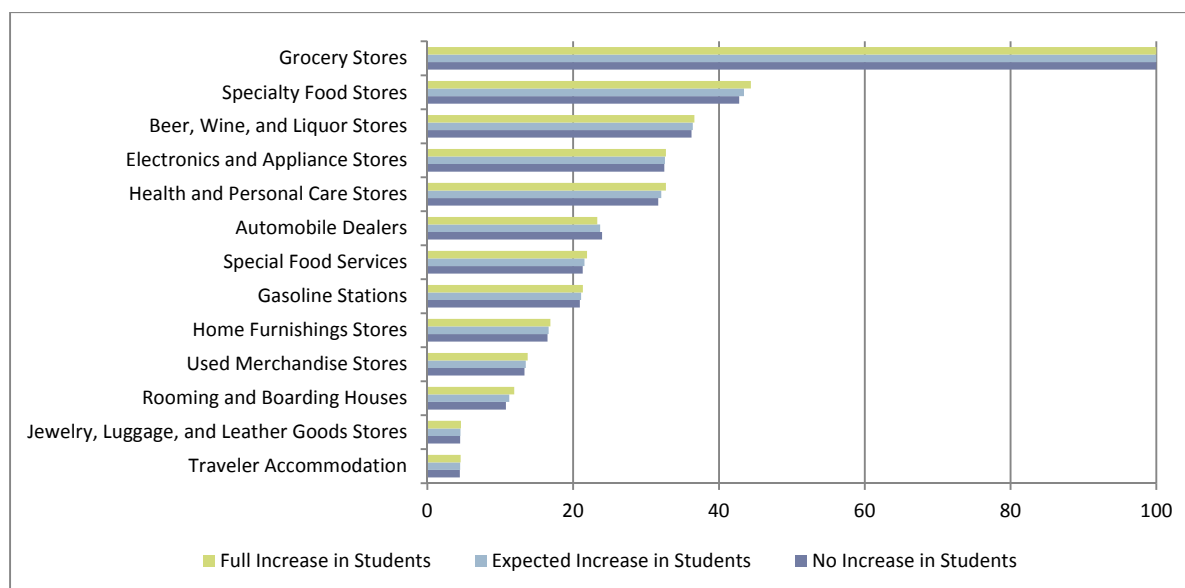
Model Results and Scenario Analysis

The gravity model estimated the change in aggregate sales from 2013-18 across all census tracts in the North Haven retail area relative to the average sales of an establishment in each retail sector. The model was used to forecast industry sales from 2013-18 attributed to the addition of a new retail location using three demographic scenarios:

- Scenario 1: Assumed the influx of students and faculty from Quinnipiac University would do no spending in the upper Washington Avenue commercial area;

- Scenario 2: Assumed that the influx of students and faculty would have a similar spending pattern (5/12 of their total expenditures) of that projected in the housing market analysis; and

- Scenario 3: Assumed all the students and faculty would spend all of their expenditure in the upper Washington Avenue commercial area.

In order to determine the additional spending attributed to the expansion of Quinnipiac University, CERC used the data provided by Quinnipiac University that estimated students spending approximately $10,000 on housing, $3,000 on food, and $5,000 on discretionary items in conjunction with national expenditure patterns. Therefore, it was estimated that each additional Quinnipiac student would spend approximately $9,880 on retail purchases. Quinnipiac reports that the 2013-14 academic year would welcome 60 additional students, 2014-15 would see an additional 140, 2015-16 would see an additional 100, and the final influx would occur in 2016-17 with the addition of 100 students. The total influx of students from 2013-17 would be 400 additional graduate students.

Sales Opportunity Index for Retail Industries in Upper Washington Avenue 2013-18
Source: CERC Gravity Model calibrated using Dun & Bradstreet and U.S. Census Data.

The above chart shows the indexed values of the sales opportunity for retail industries in the upper Washington Avenue commercial area from 2013 to 2018. The chart contains only those industries with a projected sales of an equal or greater proportion to the average sales in that respective industry. The ratio of projected sales to average sales was then indexed with the industry having the greatest value normalized to 100 and each subsequent values apportioned accordingly.

The gravity model estimated the change in aggregate sales for the period across all census tracts in the North Haven retail area relative to the average sales of an establishment in each retail sector. These results were then indexed for ease of presentation and to display the relative magnitude of the values. According to the model, a grocery store could generate the largest sales relative to those of an average store in the retail area with an indexed value of 100. The next largest retail sector was specialty food stores followed by beer, wine, and liquor stores and electronics appliance stores. All of the industries presented in the chart, however, had projected sales that were larger than an average retail location in that industry.

The addition of the Quinnipiac University students did not have a significant effect on the variety of the industries predicted to generate the most additional sales in the upper Washington Avenue commercial area. However, the influx of the students magnified the existing results by increasing the aggregate expenditure potential of the upper Washington Avenue commercial area. The overall pattern of spending across the retail area is not expected to change regardless of the student housing scenario, however the magnitude of

the results increases as the number of students spending in the upper Washington Avenue commercial area increases.

It is important to acknowledge, however, that although the model considers relative population density and the dynamic effects of an additional retail location, it cannot fully encapsulate the potential positive externalities that could be generated with an increase in the Quinnipiac University graduate population. Creating a retail destination centered around the growing Quinnipiac University population could attract niche retail locations that make the location a more attractive and culturally rich residential location for students which then could generate additional feedback into the retail location. The overall development of this area will enhance the community of North Haven and create a community of graduate students that enhances the cultural capital of the upper Washington Avenue commercial area.

Average Sales per Establishment by Industry in 2013
Source: Economic Modeling Specialists International. 2013.
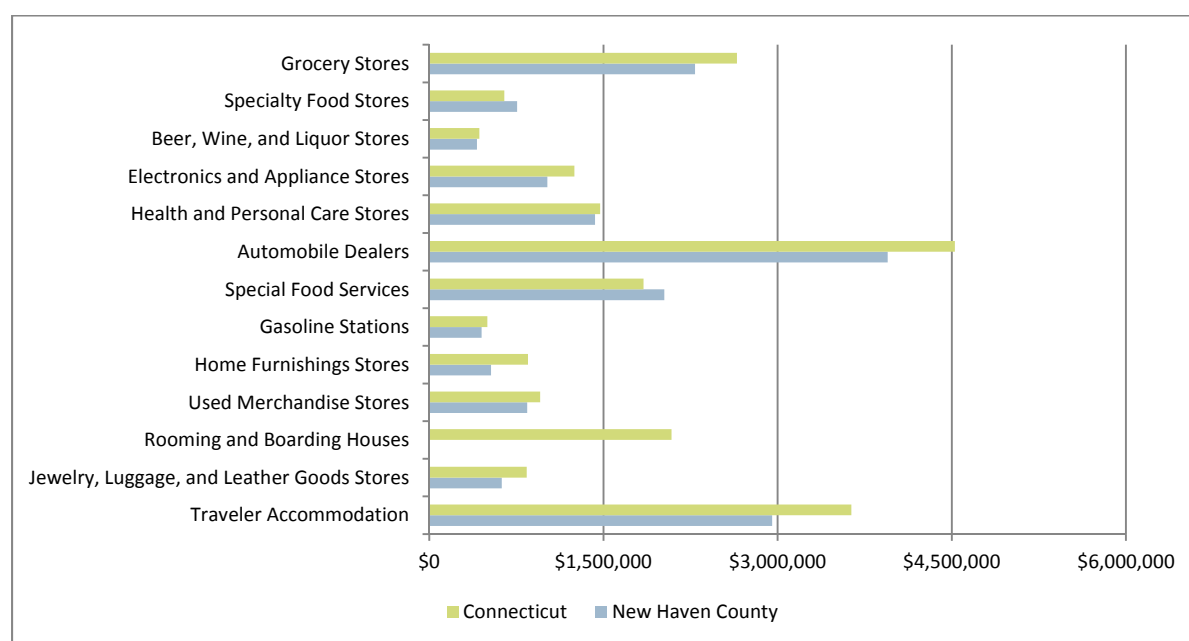
The above chart shows average projected sales per establishment from 2013-18 across Connecticut and New Haven County for those industries identified as having an elevated sales opportunity from the gravity model analysis. Although the gravity model estimated the change in aggregate sales relative to the average sales of an establishment in each retail sector, it is important to consider the absolute volume of sales generated by an average retail location in these industries. Grocery stores were seen to have an extremely high sales volume as well as the largest projected sales relative to average sales per establishment. Automobile dealers which are already prevalent in the upper Washington Avenue

commercial area did not have the largest projected sales relative to average sales per establishment but did, however, have an extremely high sales volume. Similarly, traveler accommodations were expected to perform just as well as an average establishment in this industry but also on average had an extremely high sales volume.

Profiles of Retail Industries with the Highest Potential Sales

The following section presents the specific retail sectors that were identified in the gravity model as showing the greatest potential to thrive in the upper Washington Avenue commercial area. The metric used to identify industries with the largest prospective retail opportunity was the ratio of projected sales from a location opening in the upper Washington Avenue commercial area from 2013-18 to those of an average establishment in the North Haven retail area during the same period.

Although the gravity model and industry profiles are an excellent way to determine what industries could best capture potential retail opportunities in the upper Washington Avenue commercial area, it is important to consider other types of establishments that could generate increased patronage to the area. With that in mind, the banking and restaurant industries were assessed through discussions with the North Haven EDC and the retail gap analysis. These industries are important to foster because they could serve as cornerstone establishments that would draw Quinnipiac students to the area and generate increased consumption.

NAICS 4411 Automobile Dealers:

Consumers in the North Haven retail area were estimated to spend 8.6 percent or $5,995 of their annual retail expenditure at Automobile Dealers in 2013. The North Haven retail area is estimated to generate aggregate sales of $34,529,609 per establishment from 2013-18 as compared to $23,687,140 in New Haven County and $27,160,661 across Connecticut. There were a total of 101 establishments located in the North Haven retail area, 143 in New Haven County, and 546 in Connecticut in 2013. There was a total of 997,838 square feet of retail space devoted to this industry in the North Haven retail area with an average of 9,880 square feet per establishment. The average establishment in this industry is expected to generate sales of $3,495 per square foot from 2013-18 across the North Haven retail area. An example of a large retailer from this industry located in New Haven County is BMW of North Haven.

NAICS 4422 Home Furnishings Stores:

Consumers in the North Haven retail area were estimated to spend 0.6 percent or $418 of their annual retail expenditure at Home Furnishing Stores in 2013. The North Haven retail area is estimated to generate aggregate sales of $1,377,201 per establishment from 2013-

18 as compared to $3,188,639 in New Haven County and $5,097,720 across Connecticut. There were a total of 87 establishments located in the North Haven retail area, 78 in New Haven County, and 419 in Connecticut in 2013. There was a total of 217,342 square feet of retail space devoted to this industry in the North Haven retail area with an average of 2,498 square feet per establishment. The average establishment in this industry is expected to generate sales of $551 per square foot from 2013-18 across the North Haven retail area. An example of a large retailer from this industry located in New Haven County is Bed Bath & Beyond of Hamden.

NAICS 4431 Electronics and Appliance Stores:

Consumers in the North Haven retail area were estimated to spend 2.4 percent or $1,673 of their annual retail expenditure at Electronics and Appliance Stores in 2013. The North Haven retail area is estimated to generate aggregate sales of $3,619,364 per establishment from 2013-18 as compared to $6,103,640 in New Haven County and $7,501,017 across Connecticut. There were a total of 140 establishments located in the North Haven retail area, 156 in New Haven County, and 689 in Connecticut in 2013. There was a total of 391,224 square feet of retail space devoted to this industry in the North Haven retail area with an average of 2,794 square feet per establishment. The average establishment in this industry is expected to generate sales of $1,295 per square foot from 2013-18 across the North Haven retail area. An example of a large retailer from this industry located in New Haven County is Best Buy of North Haven.

NAICS 4451 Grocery Stores:

Consumers in the North Haven retail area were estimated to spend 10 percent or $6,971 of their annual retail expenditure at Grocery Stores in 2013. The North Haven retail area is estimated to generate aggregate sales of $2,765,980 per establishment from 2013-18 as compared to $13,736,997 in New Haven County and $15,900,004 across Connecticut. There were a total of 330 establishments located in the North Haven retail area, 286 in New Haven County, and 1,180 in Connecticut in 2013. There was a total of 1,482,404 square feet of retail space devoted to this industry in the North Haven retail area with an average of 4,492 square feet per establishment. The average establishment in this industry is expected to generate sales of $616 per square foot from 2013-18 across the North Haven retail area. An example of a large retailer from this industry located in New Haven County is Big Y World Class Market of North Haven.

NAICS 4452 Specialty Food Stores:

Consumers in the North Haven retail area were estimated to spend 0.9 percent or $627 of their annual retail expenditure at Specialty Food Stores in 2013. The North Haven retail area is estimated to generate aggregate sales of $1,644,274 per establishment from 2013-18 as compared to $4,539,573 in New Haven County and $3,876,641 across Connecticut.

There were a total of 151 establishments located in the North Haven retail area, 80 in New Haven County, and 352 in Connecticut in 2013. There was a total of 425,403 square feet of retail space devoted to this industry in the North Haven retail area with an average of 2,817 square feet per establishment. The average establishment in this industry is expected to generate sales of $584 per square foot from 2013-18 across the North Haven retail area. An example of a large retailer from this industry located in New Haven County is Connecticut Natural Food Mart of North Haven.

NAICS 4453 Beer, Wine, and Liquor Stores:

Consumers in the North Haven retail area were estimated to spend 1 percent or $697 of their annual retail expenditure at Beer, Wine, and Liquor Stores in 2013. The North Haven retail area is estimated to generate aggregate sales of $26,069,570 per establishment from 2013-18 as compared to $2,466,136 in New Haven County and $2,588,061 across Connecticut. There were a total of 139 establishments located in the North Haven retail area, 165 in New Haven County, and 739 in Connecticut in 2013. There was a total of 365,905 square feet of retail space devoted to this industry in the North Haven retail area with an average of 2,632 square feet per establishment. The average establishment in this industry is expected to generate sales of $9,903 per square foot from 2013-18 across the North Haven retail area. An example of a large retailer from this industry located in New Haven County is Brescome Barton of North Haven.

NAICS 4461 Health and Personal Care Stores:

Consumers in the North Haven retail area were estimated to spend 5.6 percent or $3,904 of their annual retail expenditure at Health and Personal Care Stores in 2013. The North Haven retail area is estimated to generate aggregate sales of $2,798,038 per establishment from 2013-18 as compared to $8,564,211 in New Haven County and $8,829,303 across Connecticut. There were a total of 188 establishments located in the North Haven retail area, 258 in New Haven County, and 1,104 in Connecticut in 2013. There was a total of 824,345 square feet of retail space devoted to this industry in the North Haven retail area with an average of 4,385 square feet per establishment. The average establishment in this industry is expected to generate sales of $638 per square foot from 2013-18 across the North Haven retail area. An example of a large retailer from this industry located in New Haven County is Omnicare Inc. of Cheshire.

NAICS 4471 Gasoline Stations:

Consumers in the North Haven retail area were estimated to spend 1.8 percent or $1,255 of their annual retail expenditure at Gasoline Stations in 2013. The North Haven retail area is estimated to generate aggregate sales of $3,748,621 per establishment from 2013-18 as compared to $2,706,173 in New Haven County and $2,001,082 across Connecticut. There were a total of 122 establishments located in the North Haven retail area, 265 in New

Haven County, and 1,032 in Connecticut in 2013. There was a total of 376,556 square feet of retail space devoted to this industry in the North Haven retail area with an average of 3,087 square feet per establishment. The average establishment in this industry is expected to generate sales of $1,215 per square foot from 2013-18 across the North Haven retail area. An example of a large retailer from this industry located in New Haven County is Lucky Valero of North Haven.

NAICS 4483 Jewelry, Luggage, and Leather Goods Stores:

Consumers in the North Haven retail area were estimated to spend 0.6 percent or $418 of their annual retail expenditure at Jewelry, Luggage, and Leather Goods Stores in 2013. The North Haven retail area is estimated to generate aggregate sales of $1,220,644 per establishment from 2013-18 as compared to $3,746,351 in New Haven County and $5,037,958 across Connecticut. There were a total of 53 establishments located in the North Haven retail area, 62 in New Haven County, and 321 in Connecticut in 2013. There was a total of 99,134 square feet of retail space devoted to this industry in the North Haven retail area with an average of 1,870 square feet per establishment. The average establishment in this industry is expected to generate sales of $653 per square foot from 2013-18 across the North Haven retail area. An example of a large retailer from this industry located in New Haven County is Arnold's Jewelers of North Haven.

NAICS 4533 Used Merchandise Stores:

Consumers in the North Haven retail area were estimated to spend 0.6 percent or $418 of their annual retail expenditure at Used Merchandise Stores in 2013. The North Haven retail area is estimated to generate aggregate sales of $888,446 per establishment from 2013-18 as compared to $5,056,733 in New Haven County and $5,728,904 across Connecticut. There were a total of 89 establishments located in the North Haven retail area, 49 in New Haven County, and 207 in Connecticut in 2013. There was a total of 222,585 square feet of retail space devoted to this industry in the North Haven retail area with an average of 2,501 square feet per establishment. The average establishment in this industry is expected to generate sales of $355 per square foot from 2013-18 across the North Haven retail area. An example of a large retailer from this industry located in New Haven County is Act II Thrift Shop of Madison.

NAICS 7211 Traveler Accommodation:

Consumers in the North Haven retail area were estimated to spend 3.4 percent or $2,370 of their annual retail expenditure at Traveler Accommodation in 2013. The North Haven retail area is estimated to generate aggregate sales of $2,702,265 per establishment from 2013-18 as compared to $17,720,943 in New Haven County and $21,814,157 across Connecticut. There were a total of 2 establishments located in the North Haven retail area, 76 in New Haven County, and 402 in Connecticut in 2013. There was a total of 561,344 square feet of

retail space devoted to this industry in the North Haven retail area with an average of 9,514 square feet per establishment. The average establishment in this industry is expected to generate sales of $284 per square foot from 2013-18 across the North Haven retail area. An example of a large retailer from this industry located in New Haven County is Heritage Resort & Conference of Southbury.

NAICS 521 and NAICS 722 Banks and Restaurants:

The banking and restaurant industries were not included in the gravity model as data restrictions would not allow for their inclusion. These industries, however, are important to consider when crafting a development strategy for the upper Washington Avenue commercial area that considers the growing Quinnipiac University student population. Although these industries were not directly included in the model, they could serve as cornerstone industries that could attract Quinnipiac University students to the retail district.

There will be a significant increase in the demand for a restaurant or drinking establishments as a result of the incoming student population and its presence could facilitate increased patronage to the neighboring retail locations. A full service restaurant in New Haven County required approximately 456 individuals between the age of 25 and 55 in 2012 to support an establishment in this industry. Limited service restaurants, on the other hand, required only 448 individuals to support an establishment in this industry. A full service restaurant in Connecticut, however, required 434 individuals to support an establishment in this industry. The limited service restaurant industry in Connecticut required a population of 475 to support an establishment. The upper Washington Avenue commercial area has an adequate population and spending demographics to support an establishment in this industry.

A banking institution would also be an excellent inclusion to the upper Washington Avenue commercial area as students will likely demand a convenient location to conduct financial transactions and a banking institution will facilitate spending at the neighboring retail locations. A savings institution in New Haven County required approximately 2,542 individuals between the age of 25 and 55 in 2012 to support an establishment in this industry. Credit unions, on the other hand, required 7,652 individuals to support an establishment in this industry. A savings institution in Connecticut, however, required 1,977 individuals to support an establishment in this industry. The credit unions industry in Connecticut required a population of 7,079 to support an establishment. The upper Washington Avenue commercial area has an adequate population and spending demographics to support an establishment in this industry.

Appendix: Data, Statistics and Assumptions Used for Housing Demand Analysis

Quinnipiac University Population (data from QU)
- Faculty
    - Currently 200 faculty and when at full capacity in2018 there will be 300
    - 90 percent hired from outside Connecticut
    - The majority are over the age of 35 years
- Staff
    - Currently 500 staff and when at full capacity in 2018 there will be 700
    - 90 percent hired locally
- Students
    - 1,400 students by 2018
    - Average age is 23 years and 98 percent are not married
    - 20 percent of students from in-state; 80 percent out-of-state
    - 1 percent of students live at home
    - Spend on average $10,000 a year on housing or $833/month
    - Town Walk apartments in Hamden are popular with students (rental rates average $1200 to $1900 depending on number of bedrooms and square feet; meaning average monthly rent of $633, $700 or $1200)

CERC Estimations
- Faculty:
    - Although 90% of faculty living outside of Connecticut and would need to find housing we are assuming they would be looking for single family housing since majority are over the age of 35 years and thus most likely have families. However, there is a possibility a small proportion might be interested in renting temporarily. Most likely the 200 current faculty members are not looking for housing so the additional 100 that will be hired over the next four years might be looking for housing. So of this 100, 90 will be hired from outside Connecticut, and slightly more than 20 percent of those from outside Connecticut or 20 faculty might be interested in housing.
- Staff:
    - Since 90 percent of staff is hired locally we assume they already have housing. Therefore, of the additional 200 staff that will be hired, most likely only about 5 percent or 10 staff members would be interested in housing.
- Students:
    - Assume 90 percent of students need housing (80% of students out of state and all of those would need housing of the 20% in state only about half would need housing).

- o Of those looking for housing would assume some would want to live near campus and others might seek out other amenities (city living, proximity to internships, etc).
- o Therefore, approximately 1,000 students would consider living nearby and have a variety of options to choose from, although not currently in the upper Washington Avenue area.

Census Tract Information (data from U.S. Census)

Hamden where Town Walk apartments located (census tract 1660)

- 53.5 percent of housing are rental units (1,698 housing units – margin of error +/-190)
- Rental household size: 2
- Renters that moved in 2005 or later: 92.5%
  - o 96% of rental households between the ages of 15 and 34, moved 2005 or later
  - o 86% of rental households between the ages of 35 and 64, moved 2005 or later
  - o 75% of households ages 65 years and over, moved 2005 or later
- Average rent:
  - o $500 to $749: 4.2%
  - o $750 to $999: 4.5%
  - o $1,000 to $1,499: 39.4%
  - o $1,500 or more: 51.1%
- Age of rental households:
  - o 15 to 34: 47%
  - o 35 to 64: 38%
  - o 65 and over: 15%

North Haven (census tract 1672.02)

- 16.6 percent of housing are rental units (298 housing units – margin of error +/-73)
- Rental household size: 1.7
- Renters that moved in 2005 or later: 68%
  - o 100% of rental households between the ages of 15 and 34, moved in 2005 or later
  - o 34% of rental households between the ages of 35 and 64, moved in 2005 or later
  - o 62% of rental households ages 65 years and over, moved in 2005 or later
- Average rent:
  - o Less than $200: 0%

- o $200 to $299: 7.1%
- o $300 to $499: 40.3%
- o $500 to $749: 11%
- o $750 to $999: 0%
- o $1,000 to $1,499: 26.1%
- o $1,500 or more: 15.5%
- Age of rental households:
  - o 15 to 34: 15%
  - o 35 to 64: 16%
  - o 65 and over: 69%

North Haven (census tract 1672.01)
- 19.2 percent of housing are rental units (312 housing units – margin of error +/- 79)
- Rental household size: 2
- Renters that moved in 2005 or later: 68%
  - o 100% of rental households between the ages of 15 and 34, moved in 2005 or later
  - o 79% of rental households between the ages of 35 and 64, moved in 2005 or later
  - o 62% of rental households ages 65 years and over, moved in 2005 or later
- Average rent:
  - o Less than $200: 16.3%
  - o $300 to $499: 10%
  - o $500 to $749: 0%
  - o $750 to $999: 16.6%
  - o $1,000 to $1,499: 21.1%
  - o $1,500 or more: 36.0%
- Age of rental households
  - o 15 to 34: 18%
  - o 35 to 64: 54%
  - o 65 and over: 29%

Rental Prices, Town Walk Apartments, Hamden
-One bedroom: starting at $1200 per month
-Two bedroom: starting at $1400per month
-Three bedroom: starting at $1900 per month