Brockton/West Bridgewater Route 28 Existing Conditions Study

This study aims to understand the existing conditions within the defined study area in an effort to improve the economic conditions along a 0.75 mile stretch of Route 28 that spans the two communities.



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Notices

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Old Colony Planning Council worked collaboratively with officials from the City of Brockton and the Town of West Bridgewater to complete this analysis.

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1.0 Introduction

The Brockton/West Bridgewater Route 28 Existing Conditions Study was funded via the Massachusetts Executive Office of Housing and Economic Development's (EOHED) District Local Technical Assistance (DLTA) Program. The DLTA Program appropriates funds to each of the thirteen regional planning agencies across the state on an annual basis to fund projects that encourage and support one of the following initiatives; affordable and market-rate housing; economic development opportunities; the delivery of services on a regional level.

The Old Colony Planning Council (OCPC) conducted this study at the request of both the City of Brockton and the Town of West Bridgewater to understand the existing conditions along a 0.75 mile stretch of the Route 28 that spans the two communities in an effort to improve the areas economic conditions. Over the past fifteen years, economic activity within the area has continually deteriorated to the point where the area has a number of vacant storefronts and more than 135,000 square feet of advertised commercial property is available for lease/sale.

The existing conditions analyzed in this study include 1) the neighborhood context, 2) photograph documentation, 3) demographic information, 4) zoning, 5) land use, 6) natural environment, 7) transportation conditions, and 8) local manufacturing analysis.

2.0 Neighborhood Context

The study area is located in the southern end of the City of Brockton and in the northern end of the Town of West Bridgewater along Route 28. It is bound by the intersection of Route 28 (Main Street) and Sargent's Way in Brockton to the north, by the Salisbury Plain River to the east, by the intersection of Route 28 (Main Street) and Friendship Drive in West Bridgewater to the south, and by the Skyview Village housing development to the west. An outline of the study area is shown on two maps on the following pages. Figure 1 is a parcel-based map that includes building footprints, whereas Figure 2 is an aerial/orthographic image of the study area.

The area is dominated by commercial (mostly retail) establishments and is anchored by the Kmart shopping plaza, which has served as the anchor for this area since its inception in the mid-1960s. This once thriving area served as one of Brockton's many commercial hubs until approximately 2000, when businesses began to slowly leave the area. The first major businesses to leave the area were Silko Honda and Paul Clark Volkswagen. In the years since, a number of other businesses have also left the area, including Shaw's Supermarket, McDonald's, Honey Dew Donuts, Jiffy Lube, H&R Block, Nelson Fence Company, among others. While some of these businesses and properties have been replaced/reused, most have not. While there appears to be no one specific reason that businesses have left the area, it may be assumed that some have left and relocated to areas with either higher visibility and/or direct highway access, as was the case with Silko Honda and Paul Clark Volkswagen. This migration of businesses from the study area may also be attributed to the domino effect, which may leave some business owners feeling that the lack of critical retail mass in the area is insufficient.

Figure 1: Study Area

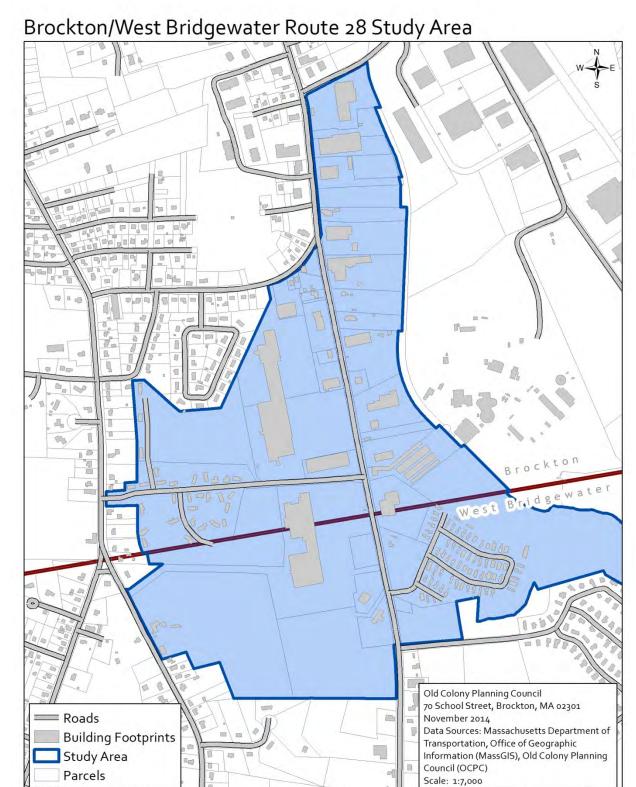
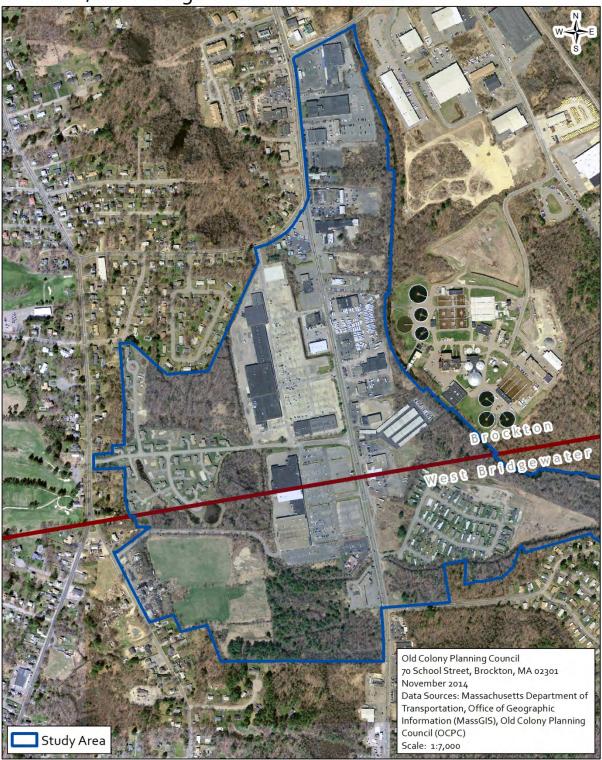


Figure 2: Study Area Aerial Photo

Brockton/West Bridgewater Route 28 Aerial Photo



3.0 Photographs of the Area

The photographs below help to give a sense of the current nature of the study area.



Kmart 2001 Main Street, Brockton



Big Lots, Planet Fitness & Family Dollar 828-860 North Main Street, West Bridgewater



CVS/Pharmacy 1933 Main Street, Brockton



Wendy's 1900 Main Street, Brockton



Champion Lincoln Mazda 1724 Main Street, Brockton



Veracka Motors/Motorcycles 508 2074 Main Street, Brockton



Site of Former Town & Country Furniture 1824 Main Street, Brockton



Site of Former Shaw's Supermarket 2077 Main Street, Brockton



Verizon 1690 Main Street, Brockton



Public Storage 2030 Main Street, Brockton



Single-Family Home 1845 Main Street, Brockton



Skyview Village Skyview Drive, Brockton

4.0 Demographic Information

An assortment of basic demographic information was collected for both the City of Brockton and the Town of West Bridgewater. Information was also collected for both Plymouth County and the Commonwealth of Massachusetts for the purposes of comparison. As can be seen in Table 1 below, the City of Brockton as compared to the Town of West Bridgewater as well as both the County and the State has lower levels of income and education, a higher poverty rate and a higher level of unemployment. Brockton is also the only entity of the four to lose population during the last Census. These figures highlight the need to increase economic activity in Brockton, which may help in reducing some of these negative demographic numbers.

Table 1: Demographic Information

Demographic Category City of Town of West Plymouth Commonwealth						
Demographic Category	Brockton	Bridgewater	County	of Massachusetts		
Population						
Total Population	93,810	6,916	494,919	6,547,629		
	34.3 Years	•	•	39.1 Years		
Median Age		43.9 Years	41.1 Years			
Under 5 Years	6,845/7.3%	319/4.6%	28,510/5.8%	367,087/5.6%		
5-19 Years	19,940/21.3%	1,318/19.1%	103,512/20.9%	1,254,056/19.2%		
20-34 Years	19,052/20.3%	963/13.9%	76,238/15.4%	1,320,809/20.2%		
35-44 Years	12,754/13.6%	1,004/14.5%	69,645/14.1%	887,149/13.6%		
45-54 Years	13,633/14.5%	1,121/16.2%	82,138/16.6%	1,012,435/15.5%		
55-64 Years	10,388/11.1%	934/13.5%	66,030/13.4%	803,369/12.3%		
65-79 Years	8,017/8.5%	835/12.1%	49,941/10.0%	619,052/9.4%		
80 Years and Over	3,181/3.4%	422/6.1%	18,905/3.8%	283,672/4.3%		
Households	Households					
Number of Households	33,303	2,571	181,126	2,547,075		
Average Household Size	2.76	2.63	2.67	2.48		
Housing						
Housing Units	35,552	2,669	200,161	2,808,254		
Occupied	33,303/93.7%	2,571/96.3%	181,126/90.5%	2,547,075/90.7%		
Vacant	2,249/6.3%	98/3.7%	19,035/9.5%	261,179/9.3%		
Owner-occupied	18,588/55.8%	2,199/85.5%	137,831/76.1%	1,587,158/62.3%		
Renter-occupied	14,715/44.2%	372/14.5%	43,295/23.9%	959,917/37.7%		
Income*	, , , , , , , , , , , , , , , , , , , ,					
Median Household Income	\$49,025	\$80,347	\$75,092	\$66,866		
Per Capita Income	\$21,942	\$32,725	\$35,220	\$35,763		
Individuals below Poverty Level	17.9%	3.9%	7.6%	11.4%		
Educational Attainment*						
High School Graduate or Higher	80.5%	92.8%	92.1%	89.4%		
Bachelor's Degree or Higher	18.0%	28.5%	33.5%	39.4%		
Unemployment Rate (2013)**	9.1%	6.7%	7.2%	7.1%		

Source: 2010 U.S. Census

^{*2013} U.S. Census American Community Survey

^{**} Massachusetts Executive Office of Labor and Workforce Development

5.0 Zoning

There are seven existing zoning districts within the study area, four of which are in Brockton and three of which are in West Bridgewater. There is one overlay district present in the study area-the Water Resource Protection Overlay District in West Bridgewater. Table 2 lists each of the zoning districts by community and identifies the approximate size of each zoning district within the study area.

Table 2: Zoning Districts by Community

Zoning Classification	Zone Area (acres)	% of Total Project Area		
Brockton				
General Commercial	107.3	52.96%		
Heavy Industrial	0.42	0.21%		
Multi-Family Residential	0.32	0.16%		
Single-Family Residential	2.85	1.41%		
Subtotal	110.89	54.74%		
West Bridgewater				
Business	40.9	20.19%		
General Residential	25.4	12.54%		
Mobile Home Park District	25.4	12.54%		
Subtotal	91.7	45.27%		
Totals	202.59	100.1%		

(Please note that the Zoning acreage differs from the Parcel acreage due to minor discrepancies between parcel data and GIS data)

Analysis of zoning within the study shows that commercial/business zoning, as shown in Table 3 is the majority zoning type, with Brockton's General Commercial zoning district and West Bridgewater's Business zoning district covering almost three-quarters (73.15%) of the study area. Brockton's General Commercial zoning district covers more than half of the entire study area alone and accounts for virtually all of the study area that lies within Brockton, except for small pockets of Single-Family Residential, Multi-Family Residential and Heavy Industrial districts on the fringes of the study area. In West Bridgewater, the majority of the study area lies within the Business zoning district along Route 28. The area to the immediate west of the Business zoning district is the Couite property which is Chapter 61A property that is zoned residential, whereas the area to the immediate east of the Business zoning district is the Westbridge Landing Mobile Home Park, which is within the Mobile Park District.

Table 3: Types of Zoning in the Study Area

Zoning Classification	Zone Area (acres)	% of Total Project Area
General Commercial & Business	148.2	73.15%
Residential & Mobile Home Park	53.97	26.65%
District		
Heavy Industrial	0.42	0.21%
Totals	202.59	100.1%

Figure 3: Zoning

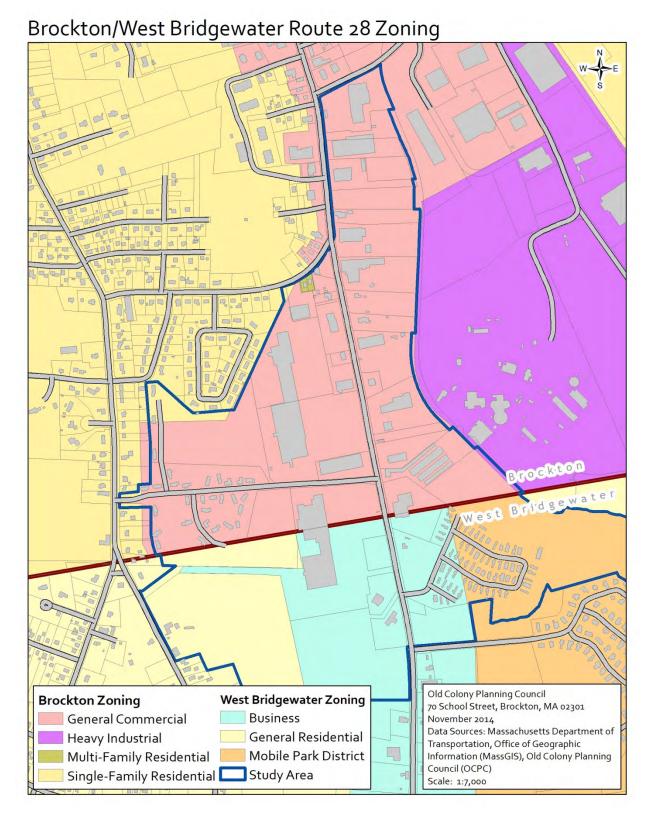
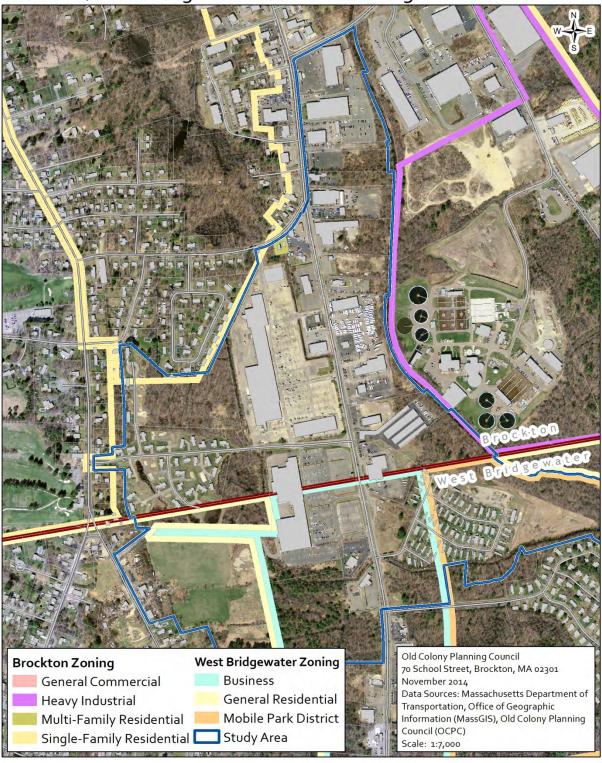


Figure 4: Zoning Aerial Photo

Brockton/West Bridgewater Route 28 Zoning



6.0 Land Use

Land uses within the study area have changed over the years. From the 1920s until the mid-1960s the majority of the study area was the site of the Brockton Airport. When the airport ceased operations in the mid-1960s, the Sky-View Drive-In movie theater was built upon part of the shuttered airport. Shortly thereafter, the current Kmart shopping plaza was also built upon the former airport, leaving no traces of the former airport on the site.

Table 4 below shows the breakdown of current land uses by community and identifies the approximate size of each land use within the study area based upon on a recent visual inventory. The area which has seen its role as a vital commercial node fade in recent years, still serves some of the day-to-day needs of the surrounding population with the presence of restaurants, a department store, food market, gas station, bank, gym, and auto repair facilities.

Table 4: Land Use by Community

Land Use Classification	Area (acres)	% of Total Project Area			
Brockton		•			
Commercial	70.10	35.37%			
Residential	25.69	12.96%			
Industrial	3.72	1.88%			
Vacant Land	8.35	4.21%			
Agricultural	0	0%			
Subtotal	107.86	54.42%			
West Bridgewater	West Bridgewater				
Commercial	18.16	9.16%			
Residential	29.23	14.75%			
Vacant Land	22.89	11.55%			
Agricultural	20.03	10.11%			
Industrial	0	0%			
Subtotal	90.31	45.57%			
Totals	198.19	99.99%			

(Please note that the Zoning acreage differs from the Parcel acreage due to minor discrepancies between parcel and GIS data)

As can be seen from Table 5 and Figure 4, the primary land use in the study area is the approximately 88 acres of commercial land, with the largest single use being retail uses. The second largest land use in the study area is the approximately 54 acres of residential land, due to the presence of the Skyview Drive development and the Westbridge Landing Mobile Home Park.

Table 5: Study Area Land Uses

Land Use Classification	Area (acres)	% of Total Project Area
Commercial	88.26	44.53%
Residential	54.92	27.71%
Vacant Land	31.25	15.76%
Agricultural	20.03	10.11%
Industrial	3.72	1.88%
Total	198.19	99.99%

Figure 5: Land Use

Brockton/West Bridgewater Route 28 Land Use

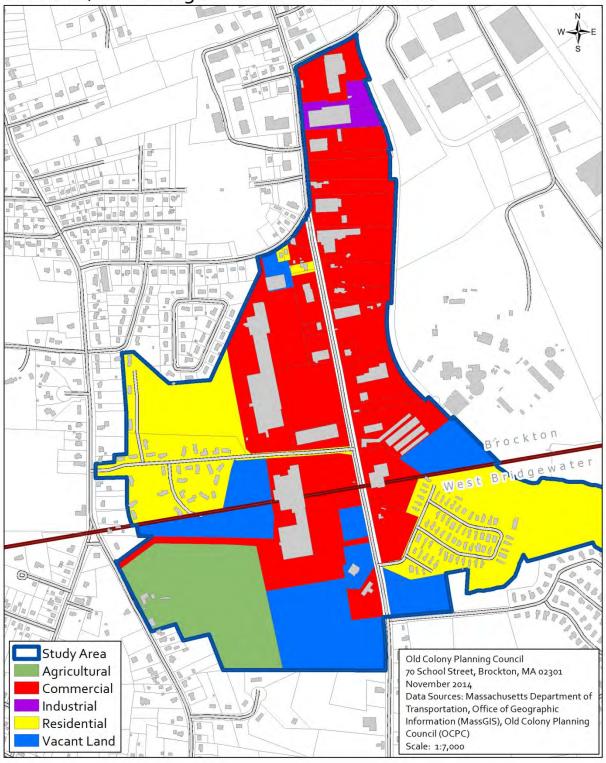
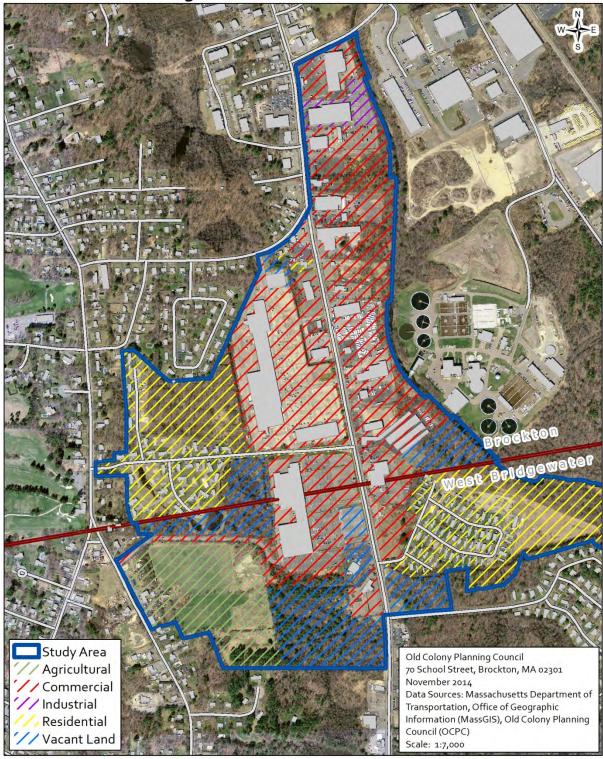


Figure 6: Land Use Aerial Photo

Brockton/West Bridgewater Route 28 Land Use



6.1 Parcel Analysis

A parcel analysis provides a base from which current and long-range planning decisions can be made. By conducting a parcel analysis, one is able to analyze current conditions and identify changes and trends in land use over time. Included in this parcel analysis is a parcel inventory, an analysis of parcel ownership, and an inventory of available real estate in the study area.

6.2 Parcel Inventory

The inventory was conducted by accessing the Brockton and West Bridgewater Board of Assessors property assessment data found at the Brockton Assessor's Office, the Brockton CLT Appraisal Services website and the West Bridgewater Patriot Properties WebPro website as well as through site visits to the study area. The parcel inventory is located in Tables 6 and 7 and is separated by community.

In total there are 49 parcels within the study area totaling approximately 198.47 acres, of which 107.19 acres (or 54%) are in Brockton and 91.28 acres (or 46%) are in West Bridgewater. 37 parcels are in Brockton and 12 parcels are in West Bridgewater. The parcels range in size from just .034 acres to 29.9 acres. The parcel inventory includes the following information for each parcel:

- Assessor's Parcel Number
- Street Number
- Property Address
- Lot Size (Acres)
- Property Owner
- Current Use
- Zoning District
- Total Assessed Value (2014)

The valuation of the study has seen a dramatic drop in value from 2009 to 2014. The valuation of the study area was \$42,475,314 in 2014, a decrease of \$12,518,940 from the 2009 valuation of \$54,994,254. The valuation of Brockton's portion of the study area was valued at \$32,268,810 in 2014, a decrease of \$12,473,640 from the 2009 valuation of \$44,742,450 and the valuation of West Bridgewater's portion of the study area was valued at \$10,206,504 in 2014, a decrease of \$45,300 from the 2009 valuation of \$10,251,804.

Table 6: Study Area Parcel Inventory (Brockton)

Table 6: Study Area Parcel Inventory (Brockton)							
Assessor's Parcel Number	Street Number	Property Address	Lot Size (Acres)	Property Owner	Current Use	Zoning District	Total Assessed Value (2014)
080-001A	2013	Main Street	27.23	Skyview Village LLC	Skyview Village	General Commercial /Single- Family Residential	\$2,041,800
080-001D	2001	Main Street	10.50	Brockton Plaza Realty Corp.	Kmart	General Commercial	\$1,520,200
080-004	1983	Main Street	8.41	Brockton Plaza Realty Corp.	Multiple Commercial Tenants; Partially Vacant	General Commercial	\$964,300
080-001	2071	Main Street	4.97	Cedar-West Bridgewater LLC	Multiple Commercial Tenants; Partially Vacant	General Commercial	\$4,135,800
118-168	1640	Main Street	4.40	AL Prime Energy Consultant Inc.	Multiple Commercial Tenants; Partially Vacant	General Commercial	\$2,105,600
119-006	2000	Main Street	4.22	LFGA Realty Trust	Boston Truck Center/ Vigor Diesel Injection	General Commercial	\$1,544,700
119-002	1782	Main Street	3.92	Peter Kouracles & Elias Assi	Millennium Motors; All Weather Glass	General Commercial	\$1,082,600
119-011	0	Main Street	3.91	Paul-Mi Realty Trust	Vacant	General Commercial	\$223,970
119-005	1906	Main Street	3.75	Pinkham Street Realty Trust	Bradford Trailer Sales	General Commercial	\$1,061,500
119-003	1824	Main Street	3.67	Beyond Gardens LLC	Vacant	General Commercial	\$776,400
119-009	2030	Main Street	3.17	Storage Equities Ps Partners V Brockton	Public Storage	General Commercial	\$2,358,100
118-172	1744	Main Street	2.56	Robert D. Horgan	Champion Lincoln Mazda	General Commercial	\$483,850
119-004	1854	Main Street	2.39	Beyond Gardens LLC	Beyond Healthcare Agency	General Commercial	\$350,400
118-171	1724	Main Street	2.21	Robert D. Horgan	Champion Lincoln Mazda	General Commercial	\$1,076,500
119-010	2074	Main Street	2.15	Paul-Mi Realty Trust	Veracka Motors, Cycles 508; Brockton Cycle Center	General Commercial	\$1,080,800
118-170	1690	Main Street	2.06	New England Tel & Tel Co.	Verizon Division Headquarters	General Commercial	\$2,631,600
119-008	2020	Main Street	1.94	Nathan Realty Trust	Shoe City Auto Sales	General Commercial	\$809,700
080-007	1875	Main Street	1.72	William Wong & Madeline Wong	Maui Restaurant	General Commercial	\$801,200
080-001C	2039	Main Street	1.72	Brockton Plaza Realty Corp.	Multiple Commercial Tenants; Partially Vacant	General Commercial	\$871,300
118-169	0	Main Street	1.69	New England Tel & Tel Co.	Vacant	General Commercial	\$245,750
119-001	1776	Main Street	1.68	LLB Realty Co. Inc.	Cushman Insurance	General Commercial	\$549,200

Assessor's Parcel Number	Street Number	Property Address	Lot Size (Acres)	Property Owner	Current Use	Zoning District	Total Assessed Value (2014)
119-022	1900	Main Street	1.55	Wendy's Old Fashioned Hamburger	Wendy's Restaurant	General Commercial	\$929,100
118-170R	0	Main Street	1.45	New England Tel & Tel Co.	Vacant	General Commercial	\$239,420
080-003	0	Hayward Avenue	1.29	Brockton Plaza Realty Corp.	Vacant	Single- Family Residential	\$175,700
080-005	1933	Main Street	1.02	Brockton Pharmacy Property Development LLC	CVS Pharmacy	General Commercial	\$1,695,400
119-024	0	Main Street	0.86	LFGA Realty Trust	Vacant	General Commercial	\$206,220
119-030	1940	Main Street	0.59	Bri Inc.	Vacant	General Commercial	\$501,600
080-010	1829	Main Street	0.54	B. Capp LLC	Vacant	General Commercial	\$243,190
080-011	1813	Main Street	0.46	VHS Realty Inc.	Cumberland Farms	General Commercial	\$560,100
080-006	1915	Main Street	0.34	Brockton Plaza Realty Corp.	Vacant	General Commercial	\$332,200
119-009R	0	Main Street	0.23	City of Brockton	Vacant	General Commercial	\$8,060
080-009	1845	Main Street	0.21	Margaret A Lee Life Estate	Single-Family Home	General Commercial	179,600
080-012	22	Hayward Avenue	0.13	Joseph & Pamela Guilford	Single-Family Home	Multi- Family Residential	\$136,500
080-012A	26	Hayward Avenue	0.11	Carolyn Culbreath	Single-Family Home	Multi- Family Residential	\$155,300
080-008	0	Main Street	0.08	Margaret A Lee Life Estate	Vacant	General Commercial	\$1,200
119-007	0	Main Street	0.03	Ackerly Communications Massachusetts Inc.	Billboards	General Commercial	\$184,090
118-171R	0	Main Street	0.03	Robert D. Horgan	Vacant	General Commercial	\$5,860

Table 7: Study Area Parcel Inventory (West Bridgewater)

Table 7. Study Alea		r areer inventory	west bridgewater,				
Assessor's Parcel Number	Street Number	Property Address	Lot Size (Acres)	Property Owner	Current Use	Zoning District	Total Assessed Value (2014)
12-005	855	North Main Street	29.90	Beacon Park Realty Trust	Westbridge Landing Mobile Home Park	Business & Mobile Home Park District	\$2,387,100
11-022	39	Copeland Street	20.10	William A. & Ruth E. Couite	Farm	General Residential & Farming	\$340,104
18-122	0	North Main Street	12.47	Cedar-West Bridgewater LLC	Vacant	Business	\$618,900
11-024	860	North Main Street	12.37	Cedar-West Bridgewater LLC	Multiple Commercial Tenants; Partially Vacant	Business	\$4,376,700
11-023	0	North Main Street	4.85	Skyview Village LLC	Vacant	General Residential & Farming	\$48,500
12-004	775	North Main Street	2.99	Richard Civitarese	Vacant	Business	\$220,500
12-002	789	North Main Street	2.83	Hebshie Brothers Trust	Vacant	Business	\$267,700
11-026	790	North Main Street	1.67	Jaminac Corp.	Nice N' Clean Car Wash	Business	\$683,800
12-001	863	North Main Street	1.58	Paul-Mi Realty Trust	Veracka Motors, Cycles 508; Brockton Cycle Center	Business	\$348,600
11-025	800	North Main Street	1.40	McDonald's Corp.; McBee Enterprises	Vacant	Business	\$714,000
12-012	0	North Main Street	0.92	Cedar-West Bridgewater LLC	Vacant	Business	\$191,300
12-003	783	North Main Street	0.29	Donald L. & Elaine A. Sweetman	Vacant	Business	\$9,300

6.3 Parcel Ownership Analysis

As a result of the parcel inventory, it was found that the 49 parcels in the study area are owned by 32 landowners. The five largest landowners in the study area own 134.98 acres or 68.02% of the land, as is shown in Table 8. Tables 9 and 10 on the following page separately analyze the ownership of parcels in each community. In Brockton the largest landowners in the study area are Skyview Village LLC and Brockton Realty Trust, each owning more than 20 acres of land. The remaining 23 landowners each own six acres of land or less. In West Bridgewater, the ownership of land in the study area is concentrated among three landowners-Beacon Park Realty Trust, Cedar-West Bridgewater LLC, and William A. & Ruth E. Couite.

Table 8: Study Area Parcel Ownership Analysis

Owner	Acres	% of Total
		Study Area
Skyview Village LLC	32.08	16.16%
Cedar-West Bridgewater LLC	30.64	15.44%
Beacon Park Realty Trust	29.90	15.07%
Brockton Plaza Realty Corp.	22.26	11.22%
William A. & Ruth E. Couite	20.10	10.13%
Paul-Mi Realty Trust	7.64	3.85%
Beyond Gardens LLC	6.06	3.05%
New England Tel & Tel Co.	5.20	2.62%
LFGA Realty Trust	5.08	2.56%
Robert D. Horgan	4.80	2.42%
AL Prime Energy Consultant Inc.	4.40	2.22%
Peter Kouracles & Elias Assi	3.92	1.98%
Pinkham Street Realty Trust	3.75	1.89%
Storage Equities Ps Partners V Brockton	3.17	1.60%
Richard Civitarese	2.99	1.51%
Hebshie Brothers Trust	2.83	1.43%
Nathan Realty Trust	1.94	0.98%
William Wong & Madeline Wong	1.72	0.87%
LLB Realty Co. Inc.	1.68	0.85%
Jaminac Corp.	1.67	0.84%
Wendy's Old Fashioned Hamburger	1.55	0.78%
McDonalds Corporation; McBee Enterprises	1.40	0.71%
Brockton Pharmacy Property Development LLC	1.02	0.51%
Bri Inc.	0.59	0.30%
B Capp LLC	0.54	0.27%
VSH Realty Inc.	0.46	0.23%
Donald L. & Elaine A. Sweetman	0.29	0.14%
Margaret A Lee Life Estate	0.29	0.14%
City of Brockton	0.23	0.11%
Joseph & Pamela Guilford	0.13	0.06%
Carolyn Culbreath	0.11	0.05%
Ackerly Communications Massachusetts Inc.	0.03	0.01%
Totals	198.47	100%

Table 9: Brockton Parcel Ownership Analysis

Owner	Acres	% of Brockton
		Study Area
Skyview Village LLC	27.23	25.40%
Brockton Plaza Realty Corp.	22.26	20.77%
Paul-Mi Realty Trust	6.06	5.65%
Beyond Gardens LLC	6.06	5.65%
New England Tel & Tel Co.	5.20	4.85%
LFGA Realty Trust	5.08	4.74%
Cedar-West Bridgewater LLC	4.97	4.64%
Robert D. Horgan	4.80	4.48%
AL Prime Energy Consultant Inc.	4.40	4.10%
Peter Kouracles & Elias Assi	3.92	3.66%
Pinkham Street Realty Trust	3.75	3.50%
Storage Equities Ps Partners V Brockton	3.17	2.96%
Nathan Realty Trust	1.94	1.81%
William Wong & Madeline Wong	1.72	1.60%
LLB Realty Co. Inc.	1.68	1.57%
Wendy's Old Fashioned Hamburger	1.55	1.45%
Brockton Pharmacy Property Development LLC	1.02	0.95%
Bri Inc.	0.59	0.55%
B Capp LLC	0.54	0.50%
VSH Realty Inc.	0.46	0.43%
Margaret A Lee Life Estate	0.29	0.27%
City of Brockton	0.23	0.21%
Joseph & Pamela Guilford	0.13	0.12%
Carolyn Culbreath	0.11	0.10%
Ackerly Communications Massachusetts Inc.	0.03	0.03%
Totals	107.19	100%

Table 10: West Bridgewater Parcel Ownership Analysis

Owner	Acres	% of West Bridgewater
		Study Area
Beacon Park Realty Trust	29.90	32.76%
Cedar-West Bridgewater LLC	25.67	28.12%
William A. & Ruth E. Couite	20.10	22.02%
Skyview Village LLC	4.85	5.31%
Richard Civitarese	2.99	3.28%
Hebshie Brothers Trust	2.83	3.10%
Jaminac Corp.	1.67	1.83%
Paul-Mi Realty Trust	1.58	1.73%
McDonalds Corporation; McBee Enterprises	1.40	1.53%
Donald L. & Elaine A. Sweetman	0.29	0.32%
Totals	91.28	100%

6.4 Inventory of Advertised Real Estate

To get a sense of how much vacant space is available within the study area, an inventory of advertised real estate was conducted in November and December 2014 and is shown in Table 11. It was found that there is a 135,229 feet of vacancy in the study area, all of which is for commercial use.

Table 11: Snapshot of Real Estate Available in the Study Area (as November 2014)

Address	Space Available	Use	Zoning	Offered For
1670 Main Street-Brockton	2,200 S.F.	Retail	C2	Lease
1915 Main Street-Brockton	2,500 S.F.	Retail	C2	Lease
1940 Main Street-Brockton	1,757 S.F.	Retail	C2	Lease
1979 Main Street-Brockton	1,969 S.F.	Retail	C2	Lease
1981 Main Street-Brockton	21,900 S.F.	Retail	C2	Lease
1993 Main Street-Brockton	9,900 S.F.	Retail	C2	Lease
1995 Main Street-Brockton	2,000 S.F.	Retail	C2	Lease
2017 Main Street-Brockton	1,400 S.F.	Retail	C2	Lease
2023 Main Street-Brockton	2,500 S.F.	Retail	C2	Lease
2025 Main Street-Brockton	2,500 S.F.	Retail	C2	Lease
2027 Main Street-Brockton	1,500 S.F.	Retail	C2	Lease
2037 Main Street-Brockton	2,500 S.F.	Retail	C2	Lease
2039 Main Street-Brockton	7,900 S.F.	Retail	C2	Lease
2077 Main Street-Brockton	57,315 S.F.	Retail	C2	Lease
789 North Main Street-West Bridgewater	1,004 S.F.	Retail	C2	Lease
North Main Street-West Bridgewater	12,284 S.F.	Retail	Business	Lease
North Main Street-West Bridgewater	4,100 S.F.	Retail	Business	Lease

Source: Brockton Plaza Realty Corp., Corporate Realty Associates, Eastern Retail Properties, Cedar Realty Trust Inc.

7.0 Natural Environment

Segments of land within each community of the study area are constrained by the presence of wetlands, flood zones, and water resources. To help illustrate environmental issues within the study area, a series of three maps were created:

- Wetlands and Flood Zones Map, which highlights the presence of wetlands and floodplains and in the study area.
- Regulated Environmental Areas Map, which highlights the presence public water supply resource areas.
- Topographic Map, which highlights elevation changes in the study area.
- U.S. Geological Survey Map, the official topographic map of the federal government also highlights elevation changes in the study area.

7.1 Wetlands

Wetlands as defined by the Massachusetts Department of Environmental Protection (MassDEP) can be described as areas where water is at or just below the surface of the ground. Although wetlands can appear dry during some seasons, they contain enough water to support certain plants and soils. Inland wetlands include marshes, wet meadows, bogs, and swamps. According to data from MassDEP, there are 37.32 acres of wetlands in the study area and they are concentrated in four areas as shown in Figure 8: Wetland and Flood Zones Map; the area behind the Kmart shopping plaza; the area behind the vacant Shaw's plaza; the area immediately west of the Nice N' Clean Car Wash; and the area north and south of Friendship Drive. There are also two Natural Heritage and Endangered Species Program (NHESP) Certified Vernal Pools within the study area, both of which are located behind the Shaw's Plaza on the Brockton/West Bridgewater town line.

Wetlands are a valuable natural resource providing a variety of benefits including assisting in flood control, protecting drinking water supplies, and serving as a wildlife habitat. As such, wetlands in Massachusetts are protected by the Massachusetts Wetlands Protection Act. The Act regulates development that can occur in and around wetlands and wetland buffer areas and is administered at the local level by the community's Conservation Commission. The Conservation Commission ensures that proposed activities will not alter resource areas and the public interests they provide by reviewing projects on a case-by-case basis according to regulations. In addition to the Massachusetts Wetlands Protection Act, some communities have adopted local wetlands protection bylaws in addition to the state and federal laws; West Bridgewater is one community that has done so.

7.2 Flood Zones

In addition to the presence of wetlands in the study area, there is a modest amount of land within the study area that is within Federal Emergency Management Agency's (FEMA) Flood Zones. All flood zones within the study area are located along the Salisbury Plain River on the eastern edge of the study area, as is shown in Figure 8. The presence of the river coupled with the low-lying nature of the area makes this area especially susceptible to flooding. Flood zones can be categorized into two types; 100-Year Flood Zones and 500-Year Flood Zones. 100-Year Flood Zones can be defined as an area that has a 1-percent chance of being inundated by a flood in any given year, whereas a 500-Year Flood Zone can be defined as an area that has a 0.2-percent chance of being inundated by a flood in any given year. Within the study area, the 100-Year Flood Zone is the dominant flood zone, covering 49.58 acres, whereas the 500-Year Flood Zone covers 3.75 acres.

Today, flooding within the study area is most prevalent not within the FEMA designated 100-year flood zones, but rather in the parking lot in front of the Kmart shopping plaza. As was mentioned in the

Introduction, the vast majority of the study area was undeveloped and used primarily as a small municipal airport until the mid-1960's, at which time the area first began to be developed, first by a drive-in movie theater, then by the Kmart shopping plaza. A letter from the engineering and surveying firm of Hayward-Boynton & Williams Inc. to Brockton Plaza Realty Corp. (owner of the Kmart shopping plaza) dated March 18, 1994 summarizes the flooding problems of the Kmart shopping plaza. The letter details how development in the area (which was constructed prior to the creation of environmental protection regulations) included the "filling in of wetlands and the rerouting of a brook through new culverts and open ditches to the culvert at Main Street. The brook continued on the other side of Main Street flowing to the Salisbury Plain River." The river which can rise 3 to 6 feet in elevation following extreme rain events is basically at the same elevation as shopping plaza, "so any rise in the river level has a direct effect on the drainage system in the plaza. The rise in the river level restricts the outflow from the plaza and forces water to back up in the plaza's drains. Once the drains are full, water then overflows into the adjacent parking areas." This however is not the only reason the shopping plaza's parking lot floods during extreme rain events. The letter also analyzed the "approximately 120 acres of watershed that lies upstream of the Main Street culvert. The watershed consists of single family homes on ¼ acres lots, the plaza, adjacent commercial properties, and a small area of vacant woodlands, with about a 50 foot drop in elevation from the top of the hill near Copeland Street to Main Street. The Soils Conservation Service's soil maps of the area show that the types of soil in the watershed generally consist of dense clayey soils, commonly referred to as hardpan. These types of tight soils do not allow water to be easily absorbed into the ground, but rather causes a large portion of the runoff to flow over the surface of the ground to the lower elevations. All of these factors suggest that if the outflow from the plaza becomes blocked due to debris or a rise in the river level, there is more than sufficient amounts of water flowing off the upstream watershed to cause flooding of the plaza very quickly."



Figure 7: Flooding in the Kmart Plaza Parking Lot (2014)

Photograph Courtesy of Steve Dropkin

7.3 Public Water Supply Sources

Public water supply resources have a considerable presence in the study area, with each community having a public well located just outside of the study area. Within the Brockton portion of the study area there is an Interim Wellhead Protection Area (IWPA) covering most of the study area, due to the presence of the Hubbard Avenue Well located just north of the study area. In the absence of an approved Zone II, the Massachusetts Department of Environmental Protection (MassDEP) has adopted the Interim Wellhead Protection Area (IWPA) as the primary, protected recharge area for public water supply groundwater sources. The entirety of the West Bridgewater portion of the study area is covered by the town's Water Resource Protection Overlay District due to the presence of five municipal public water supply wells located just south of the study area, to the north of Cyr Street and Norman Avenue. The purpose of the district is "to protect the public health of the residents of the Town from contamination of existing and potential public groundwater supplies and to protect, preserve, and maintain the aquifers and recharge areas of existing and potential groundwater supplies within the Town as sources of public water."

Figure 8: Wetlands and Flood Zones Map

Brockton/West Bridgewater Wetlands and Flood Zones

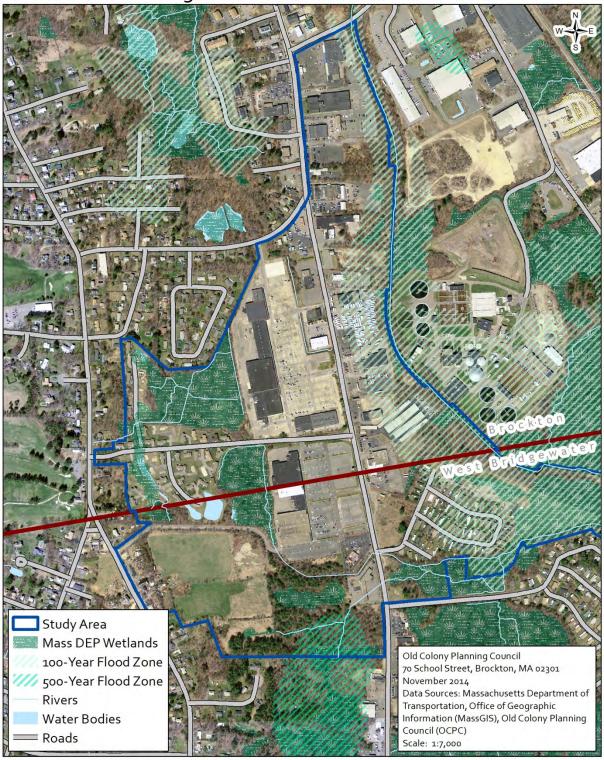


Figure 9: Regulated Environmental Areas Map

Brockton/West Bridgewater Regulated Environmental Areas

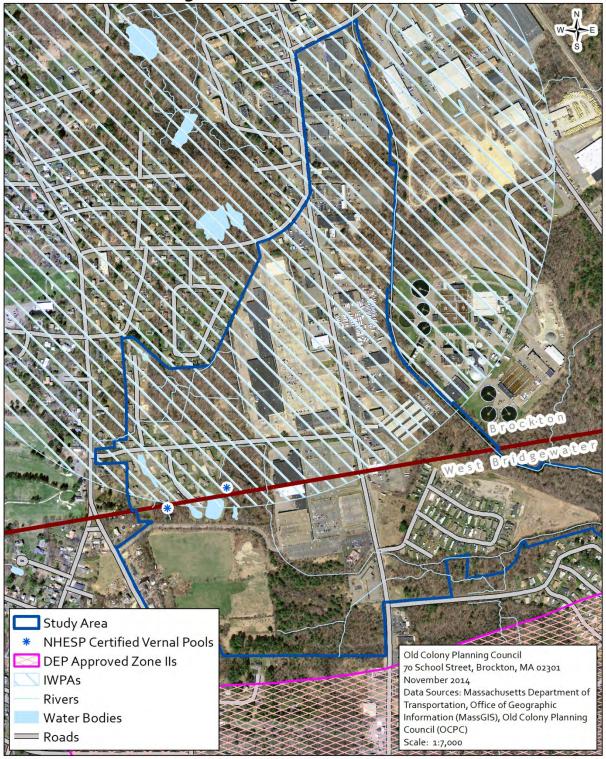


Figure 10: Topographic Map

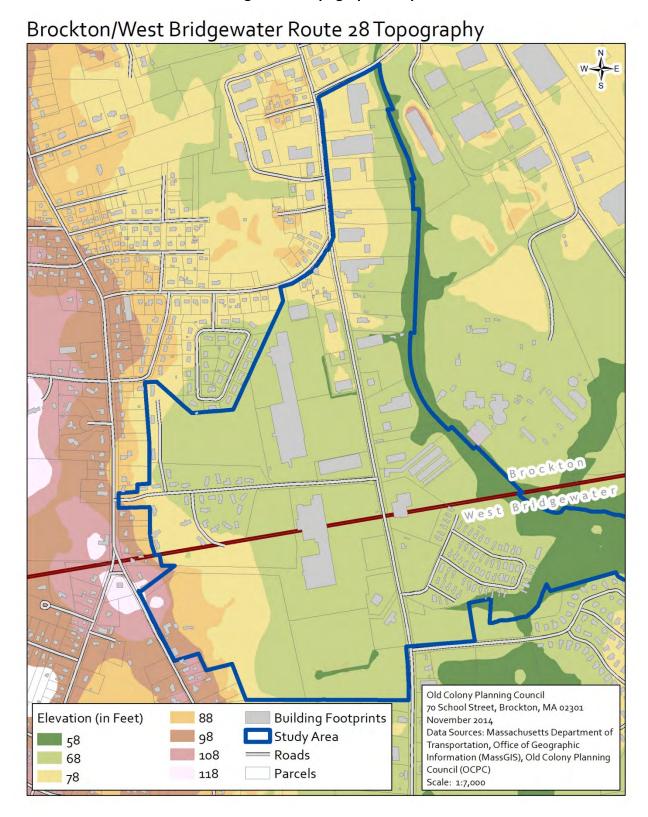


Figure 11: USGS Map

Brockton/West Bridgewater Route 28 USGS Map 0 HOVIARD Sewage Disposal heater Trailer Old Colony Planning Council 70 School Street, Brockton, MA 02301 November 2014
Data Sources: Massachusetts Department of Transportation, United States Geological Survey, Old Colony Planning Council (OCPC) Roads Study Area Scale: 1:7,000

8.0 Transportation

The success of an area is dependent on a number of factors but it can generally be agreed upon that one of the most important factors is the accessibility of an area. Thus it is important that the transportation network in and around the study area be examined. As is described below the study area is accessible via automobile, bicycle, public transit as well as by walking.

8.1 Route 24 Accessibility

The accessibility of the study area from Route 24 is an important factor to consider when determining future uses within the study area. The study area can be accessed from Route 24 from both the north and the south. From the north the study area can be accessed from one of two exits; Exit 17A via Route 123 in Brockton and Exit 18A via Route 27 in Brockton. From the south the study area is accessible from Exit 16A via Route 106 in West Bridgewater. Google Maps was utilized to determine both the distance and the traffic-free travel time from each exit to the study area. Access to the study area via Exit 16A in West Bridgewater is the closest both in terms of distance and travel time. The distance from Exit 16A to the study via Route 106 and Route 28 is approximately 3.5 miles with a traffic-free travel time of approximately 7 minutes. The second closest of the three exits is Exit 17A in Brockton. The distance to the study area travelling via West Chestnut Street is 3.9 miles with a traffic-free travel time of approximately 8 minutes. The furthest of the three exits is Exit 18A in Brockton. The distance to the study area travelling via Pleasant Street and Main Street is 4.3 miles with a traffic-free travel time of approximately 12 minutes.

8.2 Traffic Volumes

Old Colony Planning Council (OCPC) utilized Automatic Traffic Recorders (ATR) to determine the Average Daily Traffic (ADT) for a 24-hour period at specific locations on Route 28 (Main Street) and Hayward Avenue in Brockton. Automatic traffic recorders are typically installed on the road for a minimum 48-hour period and record traffic volumes, vehicle speeds, and vehicle classifications in both directions in one-hour intervals. Table 12 summarizes the Average Daily Traffic (ADT) for the study area roadways. Traffic count data was collected October 29-30, 2014.

Table 12: Study Area Average Daily Traffic (ADT)

Location	Average Daily Traffic
Route 28 (Main Street), north of Hayward Avenue	18,712
Route 28 (Main Street), south of Hayward Avenue	14,139
Hayward Avenue, west of Route 28 (Main Street)	7,345

Historical Traffic Volumes

To discern if there has been a change in traffic patterns in and around the study area over time, a review of historical traffic volume data was reviewed and analyzed. While the historical traffic data shown in Table 13 does not come directly from the study area, it does come from the peripheries of the study area and shows that the traffic volumes around the study area have declined in all three locations.

Table 13: Historical Traffic Volumes

Location	Year	Average Daily
		Traffic
Route 28 (Main Street), south of Sargent's Way (Brockton)	2008	19,150
	2004	21,604
	1998	22,971

Location	Year	Average Daily
		Traffic
North Main Street (Route 28), north of Matfield Street (West Bridgewater)	2012	15,535
	2008	17,162
	2004	17,515
	1991	19,542
North Main Street (Route 28), south of Matfield Street (West Bridgewater)	2012	14,863
	2008	16,281
	2004	16,342
	2002	16,976
	1998	18,400

8.3 Intersection Operations

Intersection operations have a direct effect on the flow of traffic through a particular area. As such, a Level-of-Service (LOS) analysis was conducted for the intersection of Route 28 (Main Street) and Hayward Avenue to demonstrate peak hour operations. LOS is a qualitative and quantitative measure that summarizes the operation of a turning movement lane, an intersection, or transportation facility based upon the operational conditions of a facility including lane use, traffic control, and lane width, and takes into account such factors as operating speeds, traffic interruptions, and freedom to maneuver. Level-of-service represents a range of operating conditions and is summarized with letter grades from "A" to "F", with "A" being the most desirable. Table 14 shows the delay criteria for each level-of-service for both un-signalized and signalized intersections.

Table 14: Level-of-Service Criteria Average Delay in Seconds

Level of Service	Stop Sign	Traffic Signal
Α	0 to 10	0 to 10
В	10 to 15	10 to 20
С	15 to 25	20 to 35
D	25 to 35	35 to 55
E	35 to 50	55 to 80
F	>50	>80

The level-of-service analysis was conducted for the typical morning peak period (7-9 AM) and the typical afternoon peak period (4-6 PM). Table 15 shows the levels-of-service for the intersection.

Table 15: Study Area Intersection Level-of-Service Summary

Intersection	Weekday Morning LOS	Weekday Afternoon LOS
Route 28 (Main Street) & Hayward Avenue	F	F

The intersection had a failing level of service due primarily due to the high volumes of traffic on both roadways. The analysis showed that the intersection <u>does satisfy four of eight warrants for a traffic control signal according to the Manual on Uniform Traffic Control Devices (MUTCD).</u>

8.4 Intersection Safety

Crash data for the intersection at Route 28 (Main Street) and Hayward Avenue was obtained from the Massachusetts Department of Transportation (MassDOT) for the latest available three-year period (2010, 2011, and 2012). This data, which is made available to MassDOT by the Massachusetts Registry of Motor Vehicles (RMV), was compiled and analyzed in accordance with the standard practices published by the Institute of Transportation Engineers (ITE) *Manual of Traffic Engineering Studies*. Intersection crash rates were calculated based on the procedures in the *Manual of Traffic Engineering Studies* and compared with the average crash rates for the State and for MassDOT District 5.

Crash rates are used, according to the *Manual of Traffic Engineering Studies*, to characterize the crash exposure of a facility. Crash rates for intersections are calculated based on the average number of crashes in a three year period per million entering vehicles (MEV).

Table 16 shows the number of crashes and crash rates for the intersection based on the latest 3 years crash data (2010-2012). The Route 28 (Main Street) & Hayward Avenue intersection had a crash rate well below the Statewide Average and District 5 Average for unsignalized intersections.

Table 16: Study Area Intersection Crash Summary (2010-2012)

Intersection	Traffic Control	Number of Crashes	Average Per Year	Crash Rate
Route 28 (Main Street) & Hayward Avenue	Unsignalized	6	2.0	0.32

MassDOT Statewide Average Crash Rate for Unsignalized Intersections: 0.60 MassDOT District 5 Average Crash Rate for Unsignalized Intersections: 0.58

8.5 Pavement Conditions

OCPC uses *Road Manager* software to maintain a region-wide Pavement Management System (PMS) for roads eligible for federal aid in the OCPC Region. The only roadway in the study area eligible for both state and federal funding was Route 28 (Main Street). Therefore, pavement conditions were only inventoried and analyzed for Route 28 (Main Street).

Road Manager software calculates Pavement Condition Index (PCI) scores for the surveyed road segments. This is an index derived from an evaluation of pavement distress factors, average daily traffic, and roadway classification. The PCI is based on a scale of 1 to 100, with 100 indicating a flawless road surface. PCI scores of 95 or higher indicate that the road surface is in excellent condition. PCI scores between 85 and 94 normally indicate that the road has some distresses but is in good condition. Roads with scores between 65 and 84 are in fair condition and are in need of maintenance or mill and overlay repairs. Roads with scores below 65 are in poor condition and need base rehabilitation or reconstruction and overlay.

According to the most recent pavement management survey conducted in December 2014, the pavement in the study area is in overall good condition with only minor maintenance needed. The pavement from Sargents Way to 1900 Main Street (Wendy's Restaurant) has a PCI of 85; the pavement from 1900 Main Street (Wendy's Restaurant) to the West Bridgewater town line has a PCI of 90; and the pavement from the West Bridgewater town line to Friendship Drive has a PCI of 87.

8.6 Bicycle and Pedestrian Conditions

Communities, neighborhoods, and downtowns with high levels of bicycle and pedestrian activity are often seen as places that are livable, prosperous, and inviting. Old Colony Planning Council (OCPC)

completed the *Bicycle and Pedestrian Connectivity and Livability Study* in 2012, which consisted of a multi-phase approach of inventorying existing and proposed on and off road bicycle and pedestrian facilities within the region and then recommending ways to implement and connect those facilities. As part of the *Bicycle and Pedestrian Connectivity and Livability Study*, the Old Colony Planning Council developed a complete inventory of Bicycle Levels of Service (BLOS), Pedestrian Levels of Service (PLOS), and Pedestrian Infrastructure Index (PII) on the state numbered route network and other roadways identified as priority routes by community representatives and/or the Regional Bicycle and Pedestrian Task Force members.

The *Highway Capacity Manual (HCM)* defines LOS as a quantitative stratification of a performance measure or measures that represent quality of service. The measures used to determine LOS for transportation system elements are called service measures. Ideally, service measures should exhibit the following characteristics:

- Service measures should reflect travelers' perception (i.e., measures should reflect things travelers can perceive during their journey);
- Service measures should be useful to operating agencies (e.g., agency actions should be able to influence future LOS);
- Service measures should be directly measurable in the field (e.g., an analyst wishing to determine LOS for a two-lane highway used for recreational access can go into the field and directly measure average travel speed of cars); and
- Service measures should be estimable given a set of known or forecast conditions (e.g., a method to estimate the average travel speed for a two-lane highway, given inputs for roadway and traffic conditions).

There are six levels of service grading, ranging from A to F, for each service measure, or for the output from a mathematical model based on multiple performance measures. LOS A represents the best operating conditions from the traveler's perspective and LOS F the worst. For cost, environmental impact, and other reasons, roadways are not typically designed to provide LOS A conditions during peak periods, but rather some lower LOS that reflects a balance between individual travelers' desires and society's desires and financial resources.

The following sections include the information from the 2012 Old Colony Bicycle and Pedestrian Connectivity and Livability Study as well as from field observations conducted for this study.

Bicycle Accommodations

In the study area, the Old Colony Planning Council staff collected the following information: Total number of travel lanes, width of outside through-lane, bicycle lane and/or outside shoulder, proportion of on-street occupied parking, travel speed, percent of heavy vehicle traffic, average daily and peak hour traffic, presence of sidewalk, total walkway width, landscape buffer between roadway and sidewalk, spacing average of objects in buffer (e.g., trees, telephone or electric posts), and pavement conditions.

The study area has no infrastructure dedicated to bicycling, as there are no bike paths, bike lanes or sharrows for shared lane usages. Overall, the Bicycle Level of Service (BLOS) for Route 28 ranged from LOS D to LOS F. These levels reflect a range of conditions such as shoulder width, pavement condition, travel speeds, percentages of heavy vehicles, and traffic volumes.

Pedestrian Accommodations

Formal sidewalks are only present on the western side of Route 28 (both in Brockton and West Bridgewater). The eastern side of Route 28 primarily consists of a series of informal pathways along the side of the road, with only two small areas in Brockton dedicated as a formal sidewalk.

The Pedestrian Level of Service (PLOS) for Route 28 ranged from LOS E to LOS F. These levels reflect a range of conditions such as sidewalk width, pavement condition, handicapped accessibility, protected street crossings at intersections, and signalization.

8.7 Public Transportation

The Brockton Area Transit (BAT) Authority #2 bus connects the study area to downtown Brockton and the region at-large. The route runs seven days-a-week, with buses leaving the BAT Centre in Downtown Brockton every twenty to forty minutes during the week. The study area has a total of eight designated bus stops, with passengers also having the ability to hail a bus anywhere along the route.

Additionally, there are two MBTA Commuter Rail stations located near the study area. The Campello Station is a short five minute walk from the #2 bus stop at Main Street and Clinton Avenue and the Brockton Station is located directly across the street from the BAT Centre in Downtown Brockton.

9.0 Local Manufacturing Analysis

Per the request of the City of Brockton, a local manufacturing analysis was included in this study in an effort to identify potential manufacturing clusters in the surrounding area. To accomplish this task, the InfoUSA Database was utilized to search for manufacturing businesses by North American Industry Classification System (NAICS) code. The NAICS is a 2- through 6-digit hierarchical classification system, offering five levels of detail. Each digit in the code is part of a series of progressively narrower categories, and the more digits in the code signify greater classification detail. The first two digits designate the economic sector, the third digit designates the subsector, the fourth digit designates the industry group, the fifth digit designates the NAICS industry, and the sixth digit designates the national industry. The 5-digit NAICS code is the level at which there is comparability in code and definitions for most of the NAICS sectors across the three countries participating in NAICS (the United States, Canada, and Mexico). The 6-digit level allows for the United States, Canada, and Mexico each to have country-specific detail. A complete and valid NAICS code contains six digits.

For the purposes of this study, the 5-digit NAICS code (designating the NAICS industry) was utilized. Table 17 shows the top ten NAICS industries within a 10 mile radius of the study area.

Table 17: Top 10 NAICS Industries within a 10 Mile Radius

NAICS Code	Industry	# of Businesses
32311	Printing	102
33911	Medical Equipment and Supplies Manufacturing	46
33271	Machine Shops	42
33995	Sign Manufacturing	39
33711	Wood Kitchen Cabinet and Countertop Manufacturing	28
33231	Plate Work and Fabricated Structural Product Manufacturing	26
33232	Ornamental and Architectural Metal Products Manufacturing	25
33331	Commercial and Service Industry Machinery Manufacturing	17
33441	Semiconductor and Other Electronic Component Manufacturing	15
33281	Coating, Engraving, Heat Training, and Allied Activities	13

As can be seen from the table above, there are indeed clusters of industries within ten miles of the study area, but many of these industries (such as printing, medical equipment and supplies manufacturing, machine shops, sign manufacturing and wood cabinet and countertop manufacturing) are some of the most common types of manufacturing industries in the United States and are not specific/special to the region. The closest planned industrial park to the study area is the Easton Industrial Park in Easton, which is located approximately 4.8 miles or a 10 minute drive from the study area.

10.0 Conclusion

The exodus of business from the study area over the past 15 years is alarming and it appears that changes need to be made in order to reinvigorate this once thriving commercial area. While it is not the goal of this study to suggest what types of changes should be made, OCPC believes it would be prudent for officials in both Brockton and West Bridgewater to explore all redevelopment opportunities and not limit themselves to just the commercial redevelopment of the area. While exploring redevelopment opportunities in the area, officials should keep in mind the existing conditions identified in this study that may have contributed to the areas decline and that may inhibit the future redevelopment of the area, including the periodic flooding of the Kmart Plaza and the lack of adequate drainage in the study area; the presence of wetlands around the periphery of the study area which may inhibit the creation of detention/retention ponds to aid in the areas drainage; the presence of water resource protection districts (i.e. Interim Wellhead Protection Areas and MassDEP Zone II Districts); its distance from major highways and the area's lack of visibility, i.e. Route 24; and the ever decreasing presence of a critical retail mass in the area.

Whatever course of action is taken it is recommended that additional studies of this area be conducted jointly between the communities of Brockton and West Bridgewater, as both would greatly benefit from the redevelopment of this area.