

APPENDIX A: COMMUNITY ENGAGEMENT

COMMUNITY ENGAGEMENT

Process

A flexible community engagement process allowed a series of iterative public workshops to respond to the questions and concerns that arose from dialogue at the previous workshop. The first public workshop introduced the project and gathered some general feedback on which assets and areas of concerns were considered priorities, as well as gathered input that provided the foundation for the project vision statement. The following workshop elaborated on the priority areas of concern through a community mapping exercise which helped the planning team further narrow down focus areas. These focus areas became the topic of more in-depth discussions at the third workshop with the help of a role-play activity that played out different development scenarios.

The public workshops were supplemented by two online surveys which helped to dramatically increase the reach of engagement and include a wide range of voices in the discussion.

The process was overseen by a Master Plan Advisory Committee (MPAC) which met in between public workshops to discuss results and next steps. The layers of community feedback, stakeholder input, and expert analyses allowed for a planning approach that was both qualitative and quantitative - going beyond formulas and statistics to take into account the human experience of life in Scituate.

Surveys

An impressive 619 people (about 4% of Scituate's total population) responded to the first online survey, 40 people responded to the second, and 51 people responded to the third.

The first survey, which received the majority of the responses, asked similar questions to what was asked at the first and second public workshops. These questions tested the prioritization of various goals and initiatives identified by past planning efforts and the responses reinforced what was said at the in-person workshops.

The top three most important town initiatives were identified as:

- Expansion of the Sanitary Sewer System.
- Protect all current and potential sources of water supplies.
- Support existing and new business to strengthen Scituate's tax base.

The three greatest challenges were seen as:

- Water Supply
- Sea Level Rise
- Sewer Capacity

Overall the survey revealed favorable opinions on housing in general, but a slight preference toward small-lot, single-family housing and a strong preference for developing commercial opportunities near North Scituate Station.

Meetings Held	Date	Number of Attendees ¹
● Master Plan Advisory Committee Meeting : Project Kick-off	1/28/2019	
● Master Plan Advisory Committee Meeting: Progress and Next Steps	3/4/2019	
● Master Plan Advisory Committee Meeting: Progress and Next Steps	7/2/2019	
★ Public Workshop #1: Introduction to the Project	8/13/2019	37
● Master Plan Advisory Committee Meeting: Progress and Next Steps	9/25/2019	
★ Public Workshop #2: Resiliency	10/22/2019	61
★ Public Workshop #3: A Changing Community	12/10/2019	33
● Master Plan Advisory Committee Meeting: Progress and Next Steps	1/28/2020	
● Master Plan Advisory Committee Meeting: Progress and Next Steps	3/4/2020	
● Master Plan Advisory Committee Meeting: Progress and Next Steps	8/31/2020	
● Master Plan Advisory Committee Meeting: Progress and Next Steps	9/29/2020	
★ Public Workshop #4 (online): Managing Change	10/13/2020	~51
● Master Plan Advisory Committee Meeting: Progress and Next Steps	11/23/2020	

¹ Numbers reflect those attendees who signed in, actual attendance numbers may have been slightly higher. For Public workshop #4, the number of attendees varied during the online presentation.

The most desirable retail opportunities are:

- Retail Stores
- Restaurants / Dining
- Outdoor Entertainment

The second online survey aided in affirming the vision statement and goals for the project. It was

launched in March 2020, after the town canceled the March 25 workshop due to recently released state restrictions on in-person meetings. 38 people responded to the survey, which sought input on the priorities from the November survey and the draft vision statement. Two of the respondents were summer residents, 89% had not attended

the previous workshops and 68% did not take the previous survey.

18% strongly agreed with the draft vision statement; 54% agreed; and 21% were neutral. The statement has been modified since this survey in response to additional feedback.

The top three priorities were as follows:

- Protect all current and potential sources of water supplies (86.96% rated as Very Important)
- Expansion of the Sanitary Sewer System (69.57% rated as Very Important)
- Support existing and new businesses to strengthen Scituate's tax base (69.57% rated as Very Important)

The three highest challenges were identified as:

- Water Supply (89.96% rated as Strongly Agree)
- Sea Level Rise (62.50% rated as Strongly Agree)
- Sewer Capacity (52.17% rated as Strongly Agree)

Respondents also identified their preference for areas for future development; these questions were a follow-up to the December workshop. The results are shown in Figure 27.

The third survey was a component of the October 13, 2020 workshop and tested the same scenarios presented at that workshop. 71% of the respondents had not attended one of the previous workshops and 68% had not responded to the earlier surveys. 80% had not attended the online presentation on October 13. Two of the respondents were summer residents.

The online presentation described three scenarios: Reinvent, Defend, and Scale Down. Each scenario was applied to the following topics: Housing,

Economic Development, Open Space and Natural Resources, Cultural and Historic Resources, Infrastructure, and Sea Level Rise. The same scenarios were presented for the Town as a whole.

Each scenario described a series of conditions. **Reinvent** assumed the highest level of interventions by the Town, **Defend** was a moderate level of interventions, and **Scale Down** assumed the lowest level of interventions. Interventions varied by scenario, but generally included varying levels of investment by the Town, particularly in infrastructure, and levels of growth in housing and economic development. The description of each scenario focused on conceptual outcomes rather than hard numbers.

The results, shown in Figure 28, indicate potential future conflicts: the preference to scale down housing is not consistent with the need to build the tax base to address infrastructure costs. Written comments note that infrastructure must be addressed before housing. Other written comments confirm that sewer and water must be addressed first (as one respondent noted, "address the have-to-haves"). Other respondents reported concerns about costs of some of the options.

Figure 1: Results of Survey 2

Percentages are for “Strongly Agree” response from the survey.

Where should Scituate Develop	Harbor	Humarock	North Scituate	Greenbush
Housing?	13.64%	4.76%	21.74%	31.82%
Commercial and Retail Opportunities?	73.91%	0%	73.91%	39.13%

Figure 2: Results of Survey 3

Highest scores in bold.

Category	Reinvent	Defend	Scale Down
Housing	21.62%	35.14%	43.24%
Economic Development	57.28%	16.67%	30.56%
Open Space and Natural Resources	26.67%	53.33%	20.00%
Cultural and Historic Resources	37.50%	37.50%	25.00%
Infrastructure	46.88%	34.38%	18.75%
Sea Level Rise	46.88%	25.00%	38.13%
Best Path Forward for Scituate	34.38%	40.63%	25.00%

Public Workshop #1: Project

Introduction

August 13, 2019

The first public workshop, held in August 2019, introduced the community to the project and solicited critical feedback that guided the early stages of this project. The workshop kicked off with introductions and a brief presentation from the planning team that covered the scope and process of the Master Plan Update.

Following this introduction, the audience participated in live polling with the use of audience response system technology which revealed the answers in real time. Participants voted on a series of questions using either a smart phone or a provided remote voting device. After a round of demographic questions, the bulk of this activity focused on prioritizing areas of concern in Scituate and testing the relevance of selected objectives from the 2004 Master Plan.

After the polling, attendees broke out into small focus groups where they collaborated to identify opportunities and challenges for Scituate looking ahead at the next 20 years. The second activity was a group fill-in-the-blank exercise, similar to a MadLib® game. The responses groups gave to the prompts informed the vision statement for this Plan.

Opportunities

- Improved commercial tax base
- Improved commuter rail service and multi-modal transportation options (bike rentals/bike shares connected to transportation)
- The Harbor, coastline, and beaches offer aesthetic, recreational, and economic value
- Improved trail systems, harbor walk, and open spaces for conservation and recreation (connectivity)
- Mixed-use development in North Scituate and Greenbush
- Tourism; provide more hotels/inns
- Strong recreational culture (fishing and boating)
- Pier 44 is underused
- Accessory Dwelling Units (ADUs) to meet housing needs
- Government reform and charter review; improved transparency
- Community programs including indoor programs like theater for winter

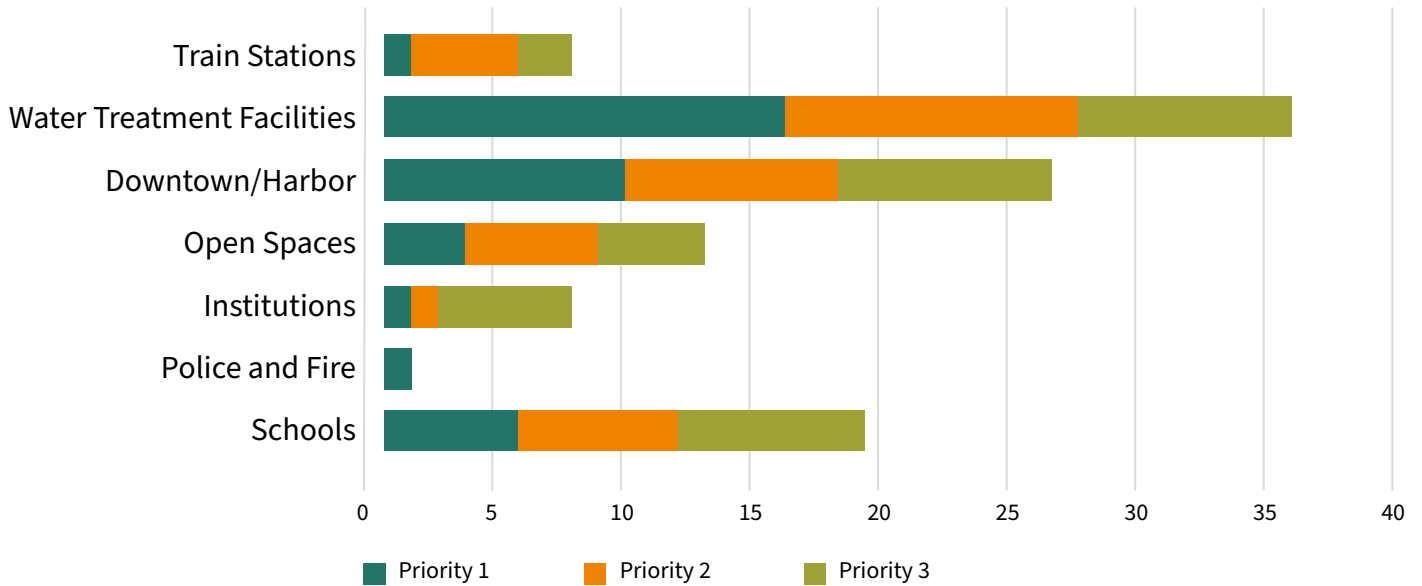
Challenges

- Storm resiliency; the impacts of climate change including sea level rise and flooding (especially for Humarock)
- Threats to water resources
- Limited sewer capacity; limited telecom/Wi-Fi (infrastructure/utilities)
- Maintenance of public facilities and infrastructure
- Traffic; road conditions; limited parking
- Affordable housing
- Sustainable Fishing
- Sustainable foreshore protection; restricted state agency funding
- Under-performing business districts; Limited opportunities for business growth
- Hotels and lodgings attract tourists
- Protection of ecology on Driftway
- Lack of off-season recreational uses

Figure 3: Prioritization of Areas of Concern

Workshop participants prioritized the areas of concern identified in the map, as illustrated by the graph below. The top areas for

protection are the Water Treatment Facilities, the Downtown/Harbor area, and the Town Schools.



2004 Master Plan Objectives

Top Priority

- Master Plan Objective 5: To improve Town efforts to protect all current and potential sources of water supplies, both public and private, locally and regionally
- Master Plan Objective 6: To continue with the planned expansion of the Sanitary Sewer System
- Master Plan Objective 10: To support existing businesses and encourage new business, in order to strengthen Scituate's tax base
- Master Plan Objective 7: To continue with planned Foreshore Protection improvements

High Priority

- Master Plan Objective 1: Open Space and Recreation Plan (conserve water bodies; accessible open space; enhance natural beauty of town landscape; protect scenic and historic areas)
- Master Plan Objective 2: Safe public ways, sidewalks, pedestrian paths and bicycle trails while protecting Scituate's small-town character
- Master Plan Objective 4: To support local property and business owners in maintaining vibrant, attractive, functional retail centers
- Master Plan Objective 3: Provide housing that meets the needs of residents of all ages and income levels while preserving the town's historic homes

Somewhat of a Priority

- Master Plan Objective 8: To maintain smooth traffic flows, pedestrian safety and customer conveniences within business areas and ensure adequate parking to support local businesses
- Master Plan Objective 9: To provide recreational facilities that meet the demands created by new growth

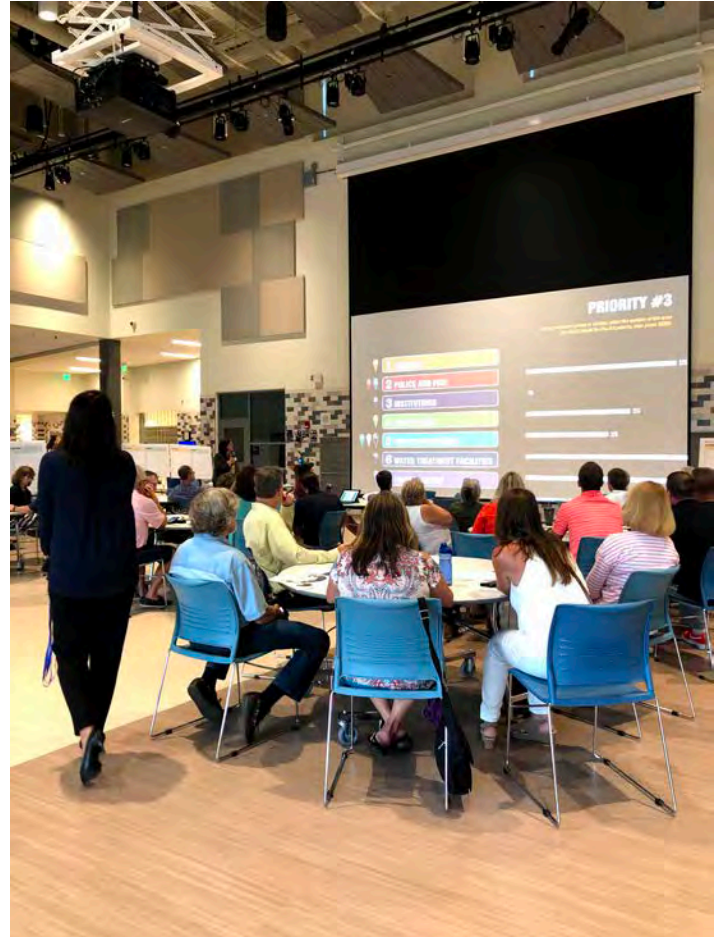


Image 1: Participants at the first public workshop view poll results in live time with audience response system technology.

Public Workshop #2: Resiliency

October 22, 2019

The second public workshop, held in October 2019, focused on the topic of resiliency and its relationship to all aspects of life in Scituate. Harriman began the workshop with a presentation which provided a brief introduction and update on the process to date, and then highlighted the various threats facing the community. The presentation focused on the impacts of climate change and sea level rise, but also discussed the limits of municipal resources, and the projected shift in demographics. HSH aided the presentation with a discussion of the existing conditions of town infrastructure in relation to assets and circulation. The presentation concluded with a summary of initial recommendations for drinking water, the built environment, transportation, natural resources, wastewater and sewer, people, energy, and the economy.

Following this in-depth presentation, workshop attendees participated in a large community mapping exercise. A map of Scituate was scaled up and divided among nine 30" x 40" boards. The map depicted the 1', 3', 5', and 10' of sea level rise (according to NOAA projections) as well as sewer areas and some landmark locations. These maps were laid out on rows of tables where participants were asked to identify assets and vulnerable areas that they felt should be protected or enhanced.

For the second phase of the mapping, each participant was provided a sheet of stickers numbered one through ten to identify their top ten priority locations for protection/enhancement. The stickers were colored in a gradient with number one

(the top priority) in orange and number ten (the tenth priority) in teal.

At the end of this exercise, the pieces of the map were assembled on the floor to reveal a heatmap of locations for protection and enhancement. Clusters of orange revealed those areas that the participants felt were most critical to address. In general, these areas aligned with the study areas of past planning efforts: North Scituate, Greenbush, and the Harbor.



Image 2: A cluster of orange dots prioritizing the downtown/ Harbor area.

The layout of the cafeteria at the Gates Middle School where the workshop was held allowed participants to gather around the large map and discuss its implications.

Figure 4: Community Map of Priority Areas for Protection and Enhancement.

Attendees at the second public meeting in October 2019 created this 7'-6" x 13'-4" map identifying and prioritizing areas for protection and enhancement. The circled areas highlight the clusters of top priority stickers. The call-outs identify some of the assets and vulnerable areas that were identified in the first phase of the activity.

North Scituate

- Train Station
- Access to Cohasset
- Low lying areas vulnerable to sea level rise

The Harbor

- Deteriorating Sea Wall
- Pump Station
- Flooding Issues
- Historic Bates House
- Ecologically important barrier beach

Greenbush / North of Greenbush

- Train Station
- Reservoir
- Range of important habitats (forest cover; tributaries)
- Senior Community/Farm Land

Wastewater Treatment Facility

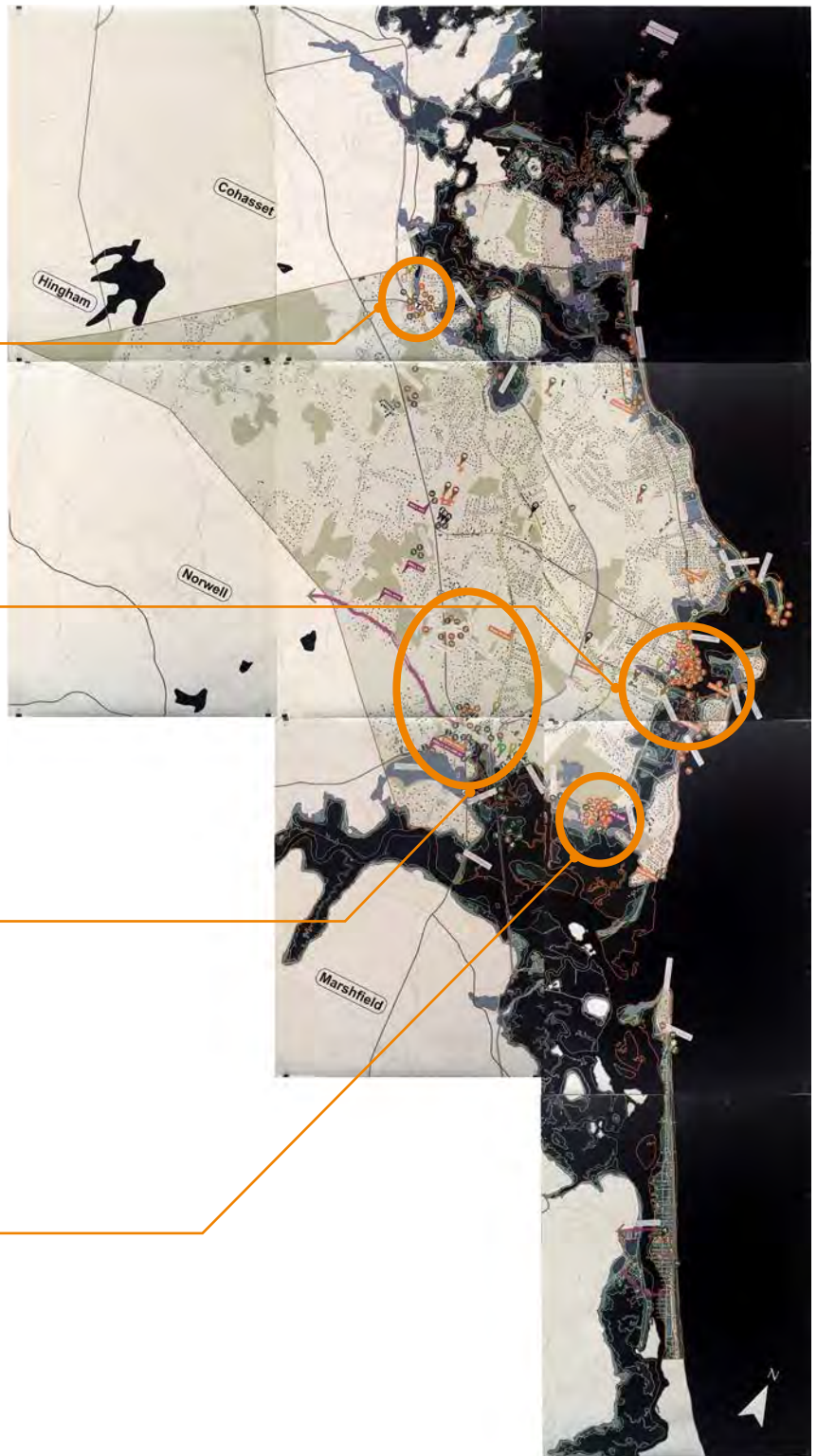




Image 3: Participants gather around the map they collectively created to discuss the implications and connections.

Public Workshop #3: A Changing Community

December 10, 2019

The third workshop built off of the previous two workshops and centered on the theme of changes to and within the Scituate community. The workshop began with a presentation by Harriman providing an introduction and process update. Harriman then presented the results of the community mapping exercise from the previous forum. FXM provided background information on current demographic, economic, market, housing, and commercial development trends in Scituate and the surrounding area, and discussed projected future changes.

Attendees divided into focus groups consisting of eight participants each to carry out a role-playing exercise. Each person at the table took on the persona and perspective of one of eight characters representing various stakeholder and community groups: a local developer, a commercial fisherman, a retired resident, an emerging professional, a business executive, a high school student, an ecologist, and a small business owner.

The groups were provided with maps of 6 of the areas that had been identified as priorities at the previous workshop: Greenbush Station, North Scituate Station, Scituate Harbor, the coastal area north of the Harbor, an area along Route 3A, and the central part of Humarock.

For each area, groups developed an “action plan” by discussing where development or preservation should and should not happen and what that might

look like from the perspectives of their characters. Keeping in character, group members discussed the economic, social, and environmental impacts of the ideas proposed as well as the desired outcomes and short and long-term actions needed to achieve those outcomes. They then voted as members of the Scituate community, rather than as the characters, on whether they agreed or disagreed with the components of the group’s action plan by placing red and green dots next to the notes that were drawn on the maps. This activity sparked interesting conversations and allowed participants to view the opportunities and challenges facing Scituate from multiple angles to think about what is best for the whole community.

Attendees then returned to the larger group to wrap up the workshop with a live polling exercise using audience response system technology, similar to the first workshop. Audience members responded to some demographic questions and then to some statements and questions related to development in Scituate.

The majority of voters “strongly agreed” that the Town needs to attract a younger working population (25-55 years) to contribute to the Town’s tax base and economic vibrancy.

The North Scituate Station Area received the most votes for prioritizing commercial and retail opportunities, with the area around Greenbush Station coming in a close second. The results were nearly identical when asked about housing.

In analyzing the results of this workshop, the planning team was able to further narrow down the areas of focus to North Scituate, Greenbush, and the Harbor, with the other areas requiring more minimal interventions or preservation efforts.



Image 4: Participants at the third public workshop actively engage in a role playing exercise to think through various development scenarios.



The Local Developer



The Business Executive



The Commercial Fisherman



The High School Student



The Retired Resident



The Ecologist

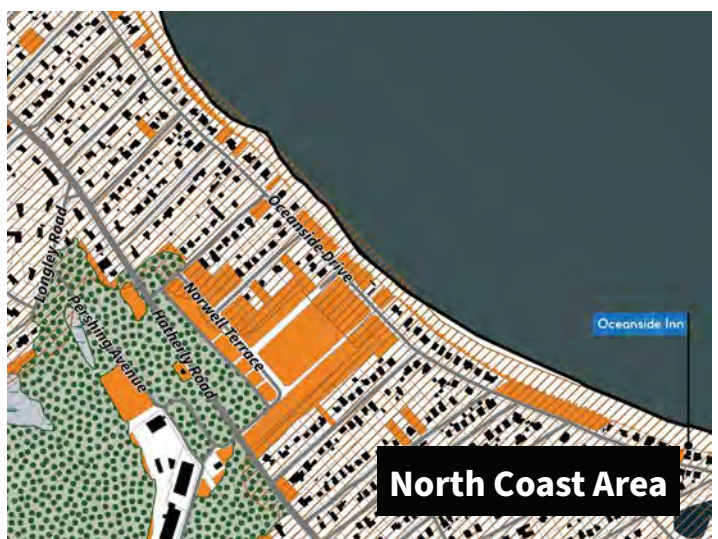
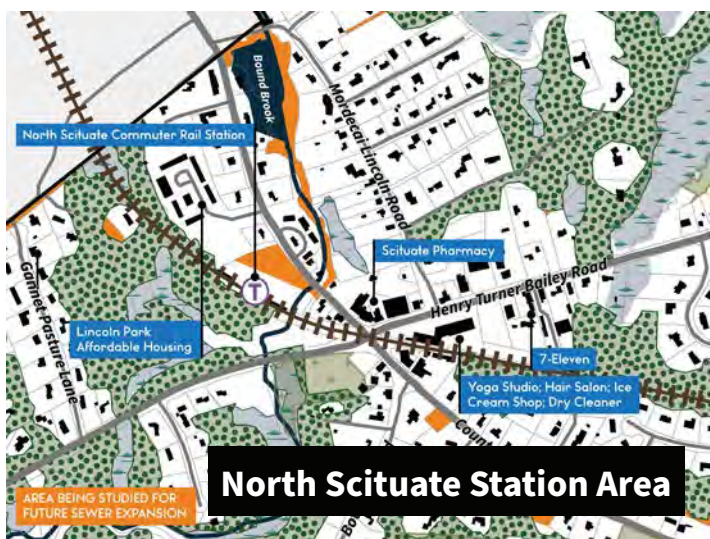
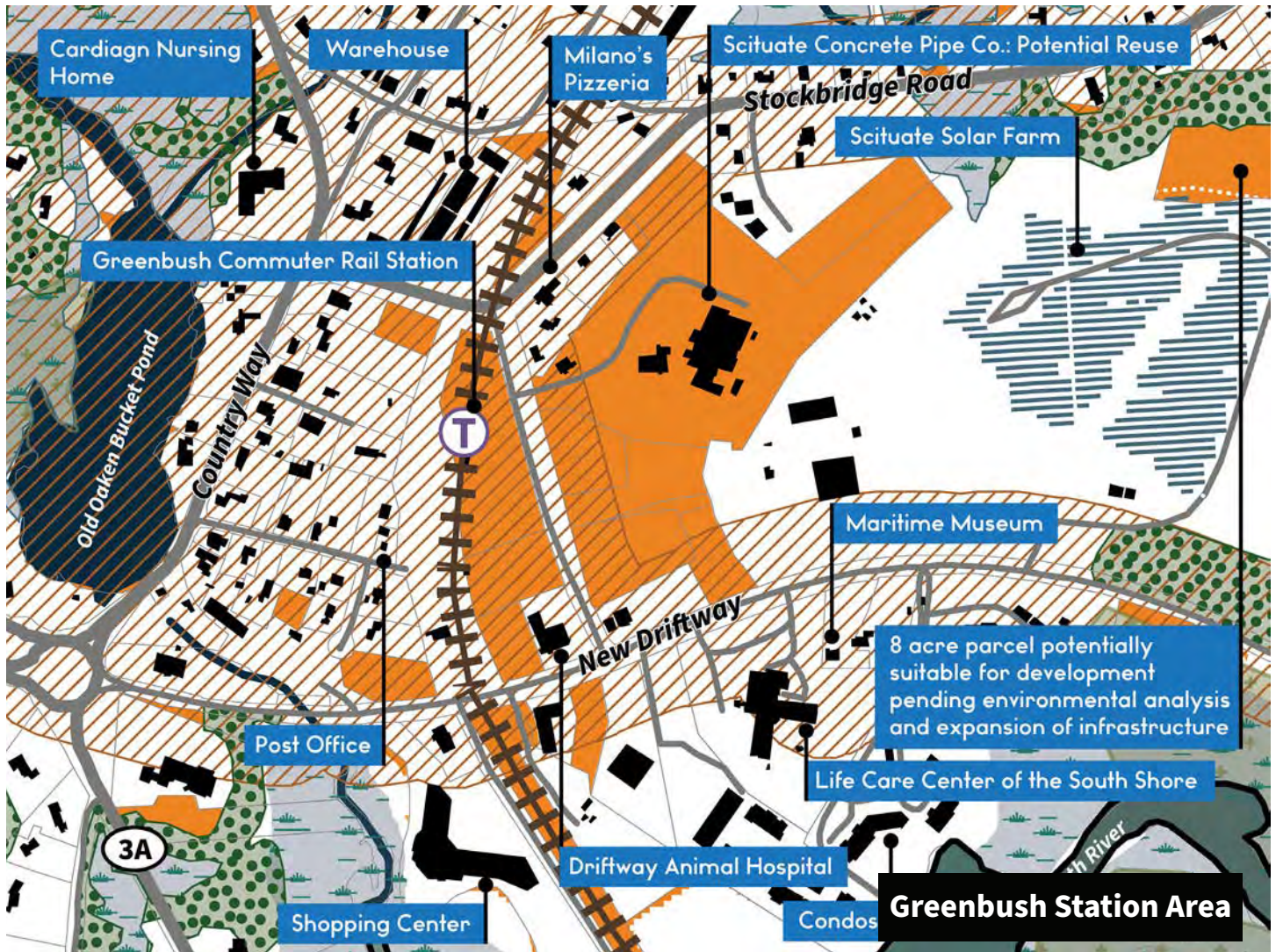


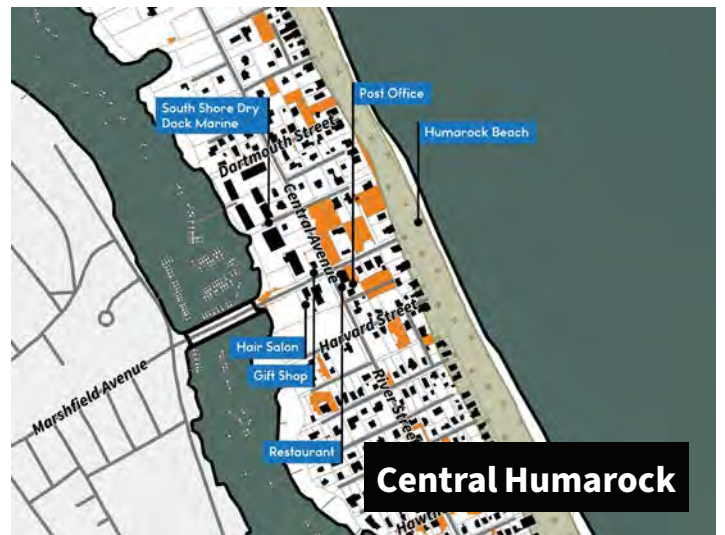
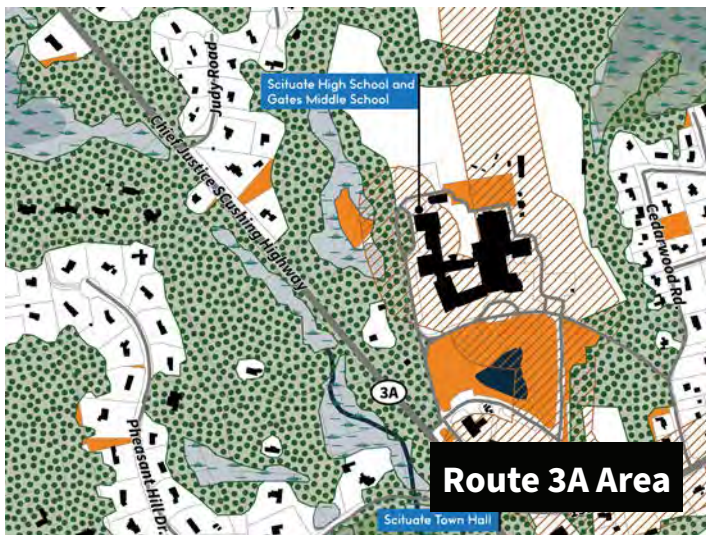
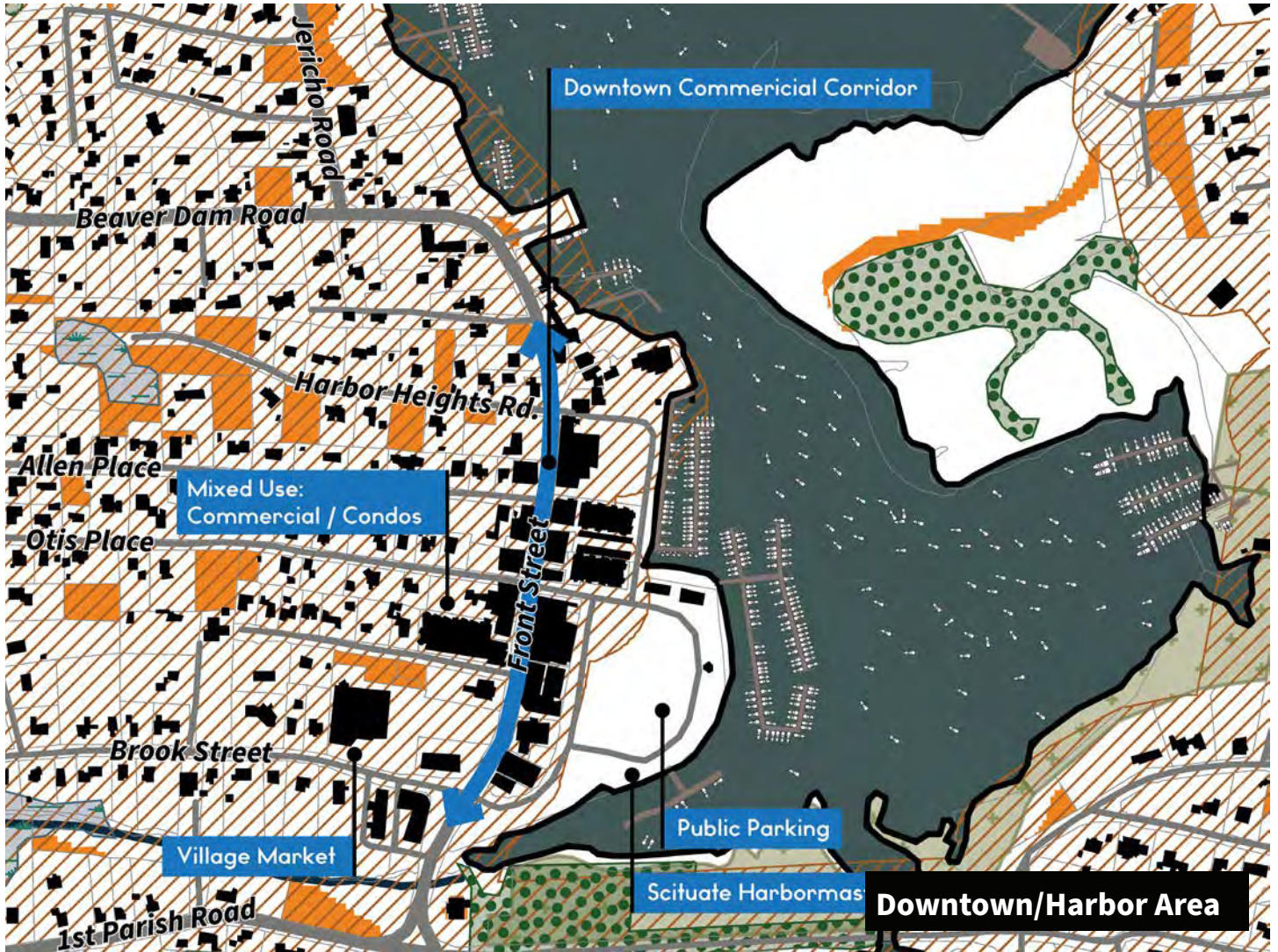
The Emerging Professional



The Small Business Owner

Figure 5: Areas discussed as part of the Role Playing Exercise at the third public workshop.





Public Workshop #4: Managing Change

October 13, 2020

This fourth workshop was held online and accompanied by an online survey (described earlier). As shown in Image 22, participants interacted with the planning team by providing answers to structured polling questions and by asking questions or providing comments during the Q&A period. The planning team recorded the presentation and provided it to the Town for distribution on Scituate Community TV.

The scenarios are provided in full starting on the next page.

The focus of the presentation was scenario testing: how the Town could use the tools at its disposal to manage change over time.

The participants were asked about the draft goals and the majority agreed with the goals. For the scenarios, **Reinvent** received the highest votes for Economic Development, Open Space and Recreation, Infrastructure, and Sea Level Rise. **Defend** received the highest votes for Housing and Cultural and Historic Resources. **Scale Down** was not the top choice for any topic. Overall, participants felt that Scituate’s future should be based on the Reinvent scenario (68% of attendees responding).

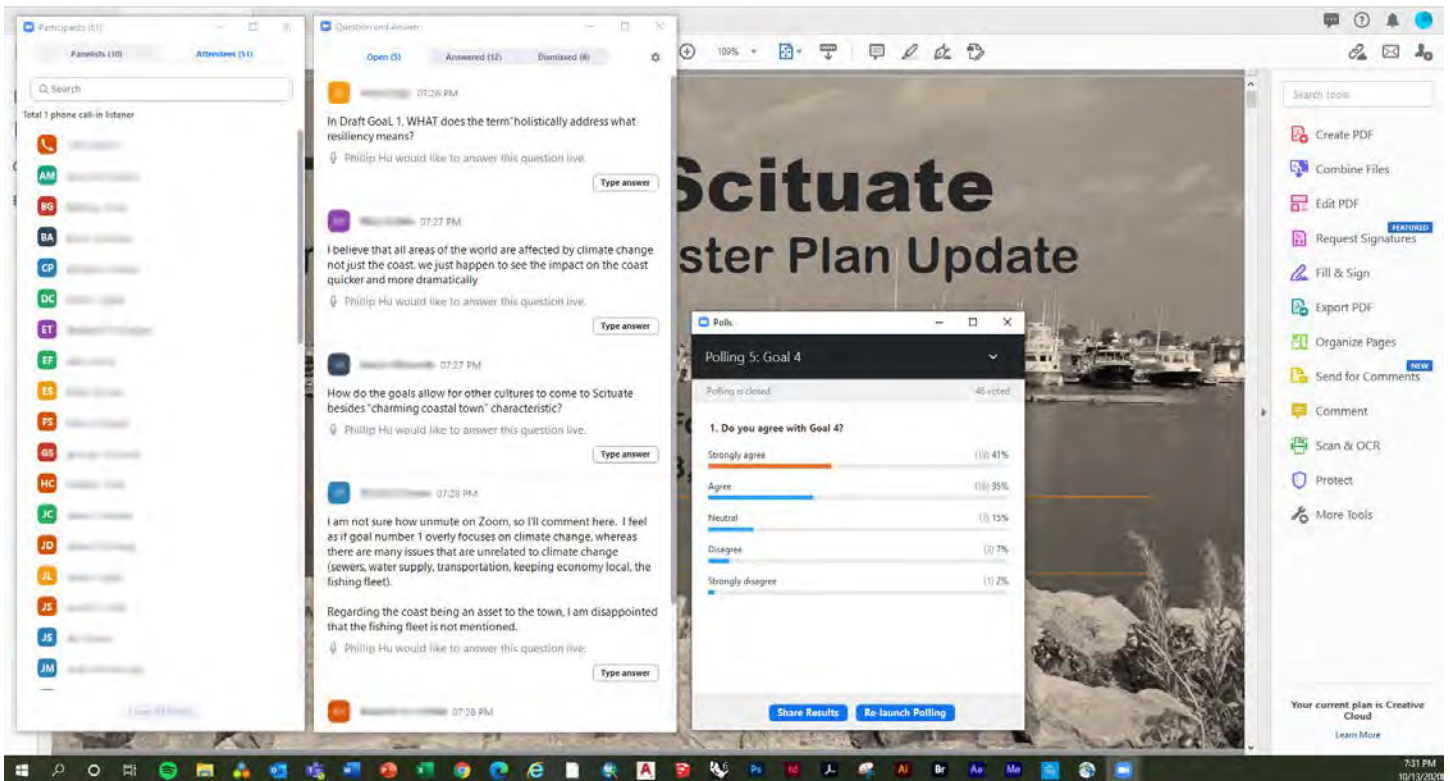


Image 5: Participants in the fourth public workshop were able to ask questions via chat and provide input to specific questions via Zoom’s poll function.



Managing Change: Choose a future for Housing

Reinvent



- » Encourage new housing types in neighborhoods.
- » Encourage rental housing and mixed-use development in village centers.

Defend



- » Allow new housing types in neighborhoods but with restrictions.
- » Encourage rental housing and mixed-use in village centers.

Scale Down



- » Maintain existing housing stock.
- Note: this option may not address need for affordable housing.



Managing Change: Choose a future for Economic Development

Reinvent



- » Attract diverse and more innovative businesses, such as light manufacturing or other job-producing businesses.
- » Promote remote working, working from home, and coworking.

Defend



- » Grow existing business sectors like healthcare.
- » Promote remote working, working from home, and coworking.

Scale Down



- » Focus on supporting existing business sectors such as restaurants, local services, and healthcare.
- » Promote remote working, working from home, and coworking.

? Managing Change: Choose a future for Environment and Open Space

Reinvent



- » Implement aggressive land management practice and protective restrictions for critical ecosystems.

Defend



- » Implement moderate land management practices.
- » Offer buy-outs for some flood-prone coastal properties and inland properties to allow for wetland migration to create a "living shoreline land bank."

Scale Down



- » Low-maintenance management strategy allows natural process to occur and the shoreline to recede.
- » Improve accessibility of parks for seniors and those with limited mobility.

? Managing Change: Choose a future for Cultural and Historic Resources

Reinvent



- » Move building.

Defend



- » Elevate building.

Scale Down



- » Temporary flood protection barriers, deployed as needed.



Managing Change: Choose a future for Infrastructure

Reinvent



- » Expand sewer coverage and pursue regionalization plan.
- » Expand water infrastructure capacity and replace water treatment plant.
- » Partner with neighboring communities to create a regional transit system.
- » Continue Complete Streets program.

Defend



- » Expand sewer, with emphasis on environmental protection.
- » Replace critical water and wastewater facilities. Protect critical assets with barriers and flood-proofing.
- » Invest in a smaller-scale regional transit system.
- » Continue a reduced Complete Streets program.

Scale Down



- » Reduce use of traditional septic tanks by replacing older systems with new technologies.
- » Reduce water and sewer demand with mitigation strategies.
- » Replace and repair critical water and wastewater facilities.
- » Maintain GATRA SLOOP.
- » Encourages shared road use.



Managing Change: Choose a future for Sea Level Rise Response

Reinvent



- » Enhance and expand both hard and soft engineering protective measures town-wide.

Defend



- » Phase in a "living shoreline."
- » Repair and maintain existing seawall and other protective infrastructure.

Scale Down



- » Develop coastal landscape design and management guidelines for residential and commercial property owners to better weather storms.

Future: Reinvent



Housing

- Encourage new housing types in neighborhoods.
- Encourage rental housing and mixed-use development in village centers.



Economic Development

- Attract diverse and more innovative businesses, such as light manufacturing or other job-producing businesses.
- Promote remote working, working from home, and coworking.



Infrastructure

- Expand sewer coverage and pursue regionalization plan.
- Expand water infrastructure capacity and replace water treatment plant.
- Partner with neighboring communities to create a regional transit system.
- Continue Complete Streets program.



Sea Level Rise Response

- Enhance and expand both hard and soft engineering protective measures town-wide.



Environment

- Implement aggressive land management practice and protective restrictions for critical ecosystems.

Impacts

- Economic:** More jobs and larger tax base to pay for improvements. Diversified economy. More infrastructure demand.
- Social:** Population grows and Town attracts more, diverse newcomers.
- Environmental:** More aggressive level of intervention and mitigation measures required to combat the toll of increased population and development.

Future: Defend



Housing

- Allow new housing types in neighborhoods but with restrictions.
- Encourage rental housing and mixed-use in village centers.



Economic Development

- Grow existing business sectors like healthcare.
- Promote remote working, working from home, and coworking.



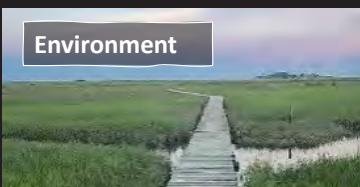
Infrastructure

- Expand sewer, with emphasis on environmental protection.
- Replace critical water and wastewater facilities. Protect critical assets with barriers and flood-proofing.
- Invest in a smaller-scale regional transit system. Continue a reduced Complete Streets program.



Sea Level Rise Response

- Phase in a "living shoreline."
- Repair and maintain existing seawall and other protective infrastructure.



Environment

- Implement moderate land management practices.
- Offer buy-outs for some flood-prone coastal properties and inland properties to allow for wetland migration to create a "living shoreline land bank."

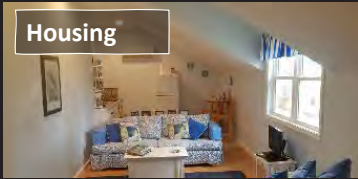
Impacts

- Economic:** Some new jobs and businesses but might just replace jobs lost due to climate change.
- Social:** As population ages, new families move to newer homes in less climate-vulnerable areas.
- Environmental:** Some pressure on natural resources and open space.



Future: Scale Down

Housing



- Maintain existing housing stock.

Note: this option may not address need for affordable housing.

Economic Development



- Focus on supporting existing business sectors such as restaurants, local services, and healthcare.
- Promote remote working, working from home, and coworking.

Infrastructure



- Reduce use of traditional septic tanks by replacing older systems with new technologies.
- Reduce water and sewer demand with mitigation strategies.
- Replace and repair critical water and wastewater facilities.
- Maintain GATRA SLOOP.
- Encourage shared road use.

Sea Level Rise Response



- Develop coastal landscape design and management guidelines for residential and commercial property owners.

Environment



- Low-maintenance management strategy allows natural process to occur and the shoreline to recede.
- Improve accessibility to parks for seniors and people with limited mobility.

Impacts



Economic: Reduced demand on public services reduces costs to Town. Protect current businesses until climate change forces them to leave due to flooding.



Social: Population ages and population decreases. Houses lost due to sea level rise are not replaced.



Environmental: Allow some areas to flood again, increasing amount of open space and ecological habitats.





APPENDIX B: MARKET CONDITIONS

Town of Scituate, Comprehensive Master Plan: Economic Development Assessment

December 2019

INTRODUCTION

This memorandum presents the results of FXM Associates' data collection and analyses contributing to the economic development element of a Comprehensive Master Plan for Scituate.

The memorandum contains:

- Demographic and economic profiles of Scituate
- Comparison of selected characteristics to surrounding communities and the regional market
- Analysis of historical trends in employment in selected industries for Scituate and the regional market
- Estimates of future demand for commercial space
- Retail gap analyses for Scituate and key Village Business Districts
- Estimated demand for rental housing in the Scituate market area
- Selected fiscal comparisons between Scituate and surrounding towns

SUMMARY OBSERVATIONS AND FINDINGS

- Between 2000 and 2019, population and households grew in Scituate though at rates slightly less than in Plymouth County and Massachusetts overall. Over the next 5 years (2019-2024) population and households are projected to grow by 3% and 4% respectively, similar to the forecast growth rates for Plymouth County and Massachusetts overall. Long range population forecasts done for MassDOT by the UMass Donahue Institute suggests a 6% drop in Scituate's population by 2040.
- Compared to the surrounding towns of Cohasset, Hingham, Norwell, and Marshfield, historical and projected population and household growth rates are less in Scituate.
- Scituate's population is slightly older than the Plymouth County and Massachusetts overall averages. The over 65 population in Scituate currently represents 21% of all persons and is projected to increase to 28% by 2040.
- Median annual household income (\$134,000) in Scituate is currently more than \$40,000 higher than in Plymouth County and \$50,000 higher than in

Massachusetts overall, though less than each of the surrounding towns except Marshfield.

- Scituate’s working age population is well educated, with 58% holding Bachelor’s degrees or higher compared to 36% in Plymouth County and 42% in Massachusetts overall. Not surprisingly, Scituate’s proportion of white collar workers (78%) is substantially higher than Plymouth County (63%) and Massachusetts overall (67%).
- Owner-occupied housing (84%) predominates in Scituate compared to 76% in Plymouth County and 62% statewide. The median value of owner occupied housing in Scituate, estimated at \$634,000 in 2019, is substantially higher than in Plymouth County or Massachusetts overall but less than in the surrounding towns except Marshfield. At roughly 4.7 times median household income the median-valued home in Scituate is technically “unaffordable” by conventional standards of 2.5-3 times income defined as affordable – a condition prevalent in each of the surrounding towns.
- In 2019 there were an estimated 700+ business establishments, 4,600 jobs, and \$1 billion in business sales located in Scituate. Between 2007 and 2017 there was an estimated 11% increase in net new jobs. The largest employment sectors are Accommodation & Food Services (mostly restaurants), Health Care, and Professional & Technical Services. Each of these sectors gained jobs over the past 10+ years.
- Wages for jobs located in Scituate are lower, on average, than for jobs in Plymouth County and Massachusetts overall (the average for all industries is pulled down by the relatively high proportion of restaurant jobs).
- The occupations of Scituate’s resident workers, by contrast, are skewed to relatively high paying management occupations. About 23% of employed residents work in town, while 21% commute to Boston, the second largest destination of Scituate’s resident workforce.
- Based on historical trends, overall employment is projected to grow in Scituate over the next 3-5 years, specifically in Accommodation & Food Services; Healthcare; Arts, Entertainment & Recreation; and Professional & Technical Services. If these projections hold – and they may or may not depending on state and national economic variables such as another significant downturn similar to 2008-9 – an roughly 100,000 additional square feet of commercial space could be absorbed in Scituate over the next 3-5 years.
- Consistent with employment-driven demand forecasts, analysis of real estate absorption trends forecasts demand for about 7,500 square feet of office space in Scituate annually over the next 3-5 years. That number could be substantially higher if Scituate were to capture more than its historical share of the 5-community Subregion, where average annual growth in demand for office space is forecast at 86,000 square feet per year. The forecast demand exceeds the current supply of marketable, vacant office space.

- A retail opportunity gap analysis indicates significant sales leakage within the North Scituate and Greenbush MBTA target development areas. The analyses suggest opportunities for existing business establishments and recruited new ones to support at least 66,000 square feet of additional retail and restaurant space in North Scituate, and 71,000 square feet at Greenbush.
- There is substantial latent demand for rental housing throughout the local market area. Development of such housing, in combination with mixed-use retail/restaurant/entertainment and office uses, is likely feasible within the target North Scituate and Greenbush MBTA station areas. Based on projected 5-year average annual demand, Scituate could absorb at least 80 rental units per year over the next 5-years priced at or above current market average rents.
- Compared to surrounding towns, Scituate's residential and commercial property tax rates are slightly above average. The town derives the lowest proportion of its municipal revenues (4%) from commercial uses compared to the other towns, where average commercial assessed value and revenue are 9%.

DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

Population and Households

The Town of Scituate's current population is estimated at 18,601, an increase of 4% over 2010. There are an estimated 7,500 households. Table 1 compares Scituate population and households and their growth rates to those of Plymouth County and the State of Massachusetts:

Although Scituate's population grew at the same rate as Plymouth County's and the state's, 3%, between 2000 and 2010, its growth between 2010 and 2019 is estimated at slightly less than that of the other two areas and is projected to lag the county's between 2019 and 2024 but will equal the state's projected growth. A similar pattern pertains to household growth, and household sizes are comparable. Population and household growth is important to the town's economic health, which depends to a large extent on a growing population's demand for goods and services as well as a potential source of new businesses and of labor for town businesses.

The population of Scituate is slightly older, at 43 years, than the county's at 41.6 and the state's at 40.6 years. An ageing population is becoming more and more of an issue for cities and towns in Massachusetts and other New England states.

Table 1. Population and Households Compared

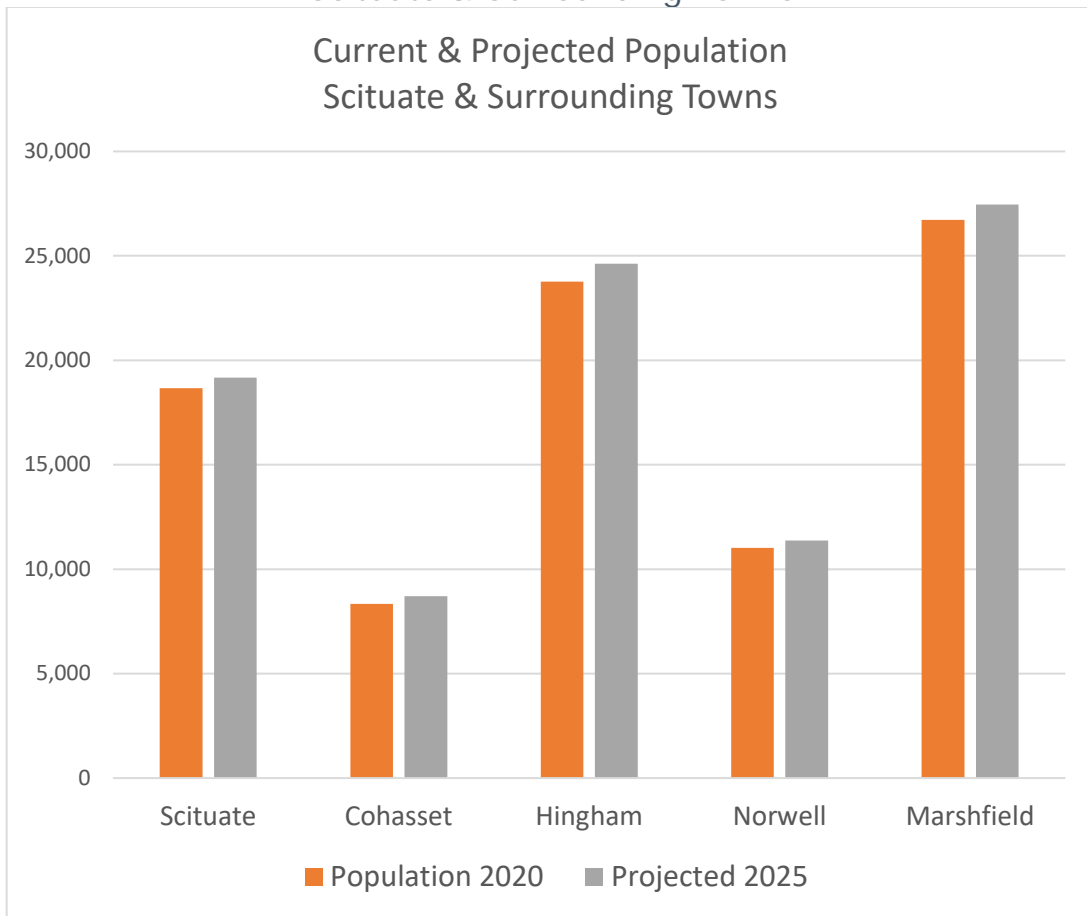
Population & Households Compared				
	Town of Scituate	Plymouth County	State of MA	
Population				
2024 Projection	19,134	535,770	7,131,739	
2019 Estimate	18,601	519,639	6,916,527	
2010 Census	17,842	494,919	6,547,629	
2000 Census	17,250	472,497	6,349,100	
<i>Projected Growth 2019 - 2024</i>		3%	3%	3%
<i>Estimated Growth 2010 - 2019</i>		4%	5%	6%
<i>Growth 2000 - 2010</i>		3%	5%	3%
2019 Estimated Average Age	43.0	41.6	40.6	
Households				
2024 Projection	7,358	200,709	2,804,920	
2019 Estimate	7,105	193,463	2,710,577	
2010 Census	6,688	181,126	2,547,075	
2000 Census	6,405	168,231	2,443,572	
<i>Projected Growth 2019 - 2024</i>		4%	4%	3%
<i>Estimated Growth 2010 - 2019</i>		6%	7%	6%
<i>Growth 2000 - 2010</i>		4%	8%	4%
2019 Average Household Size	2.6	2.7	2.6	

Source: EnvironicsAnalytics Spotlight Reports, 2019, and FXM Associates

Another source of population projections is provided by MASSDOT, working with MAPC and the University of Massachusetts Donohue Institute (UMDI). This source makes longer-range projections, which, in the case of Scituate, are less optimistic than the above projection to 2024. UMDI projects the 2020 population at 17,381, declining to 16,347 by 2040.

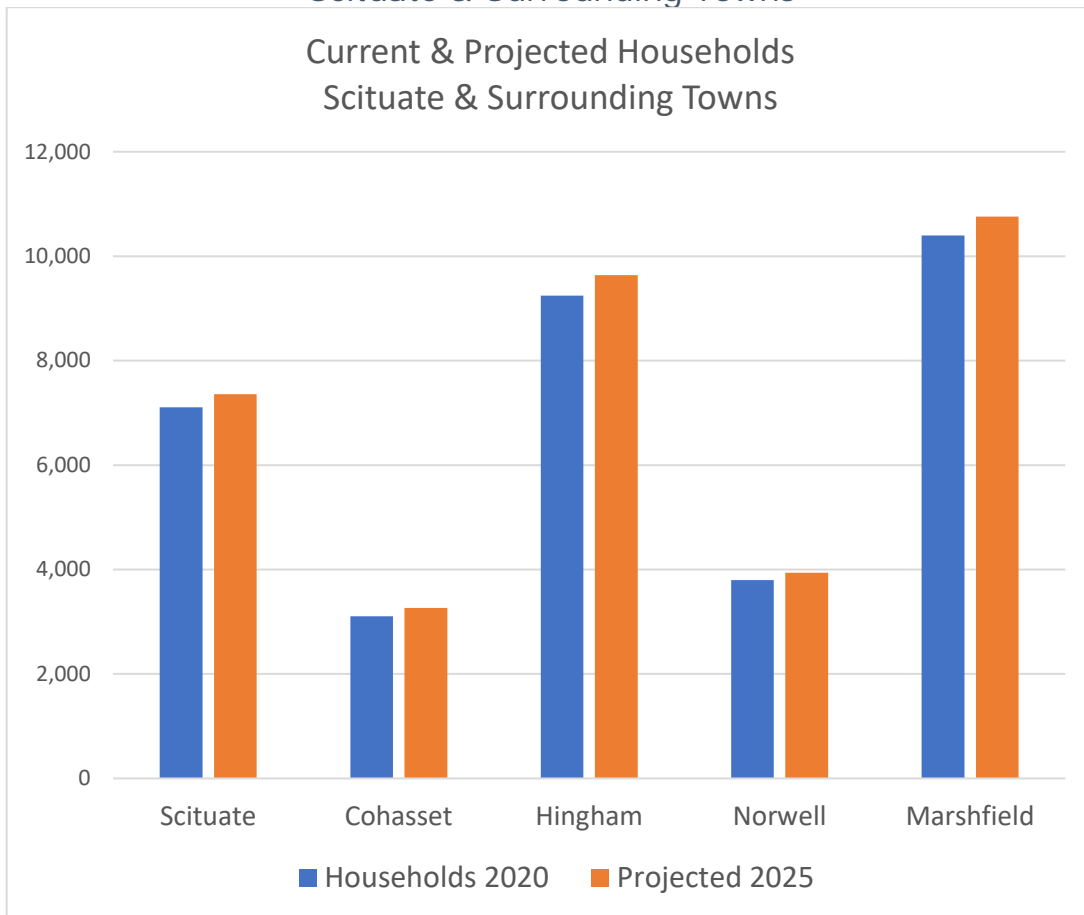
Figures 1 and 2 compare population and households to those of surrounding towns: Cohasset, Hingham, Norwell, and Marshfield. Hingham and Marshfield have more current and projected numbers of households, Cohasset and Norwell fewer.

Figure 1. Current & Projected Population
Scituate & Surrounding Towns



Source: EnvironicsAnalytics, *Spotlight Reports*, 2019, and FXM Associates

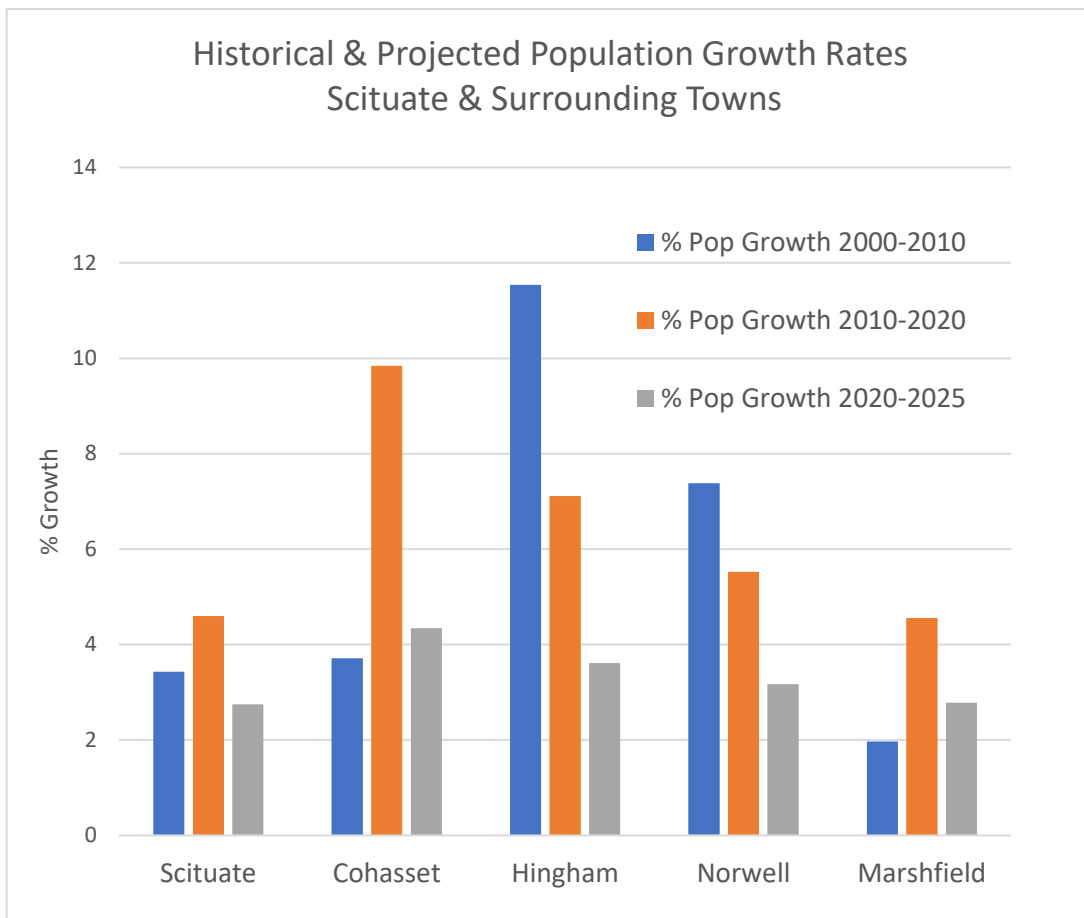
Figure 2. Current & Projected Households
Scituate & Surrounding Towns



Source: EnvironicsAnalytics, *Spotlight* Reports, 2019, and FXM Associates

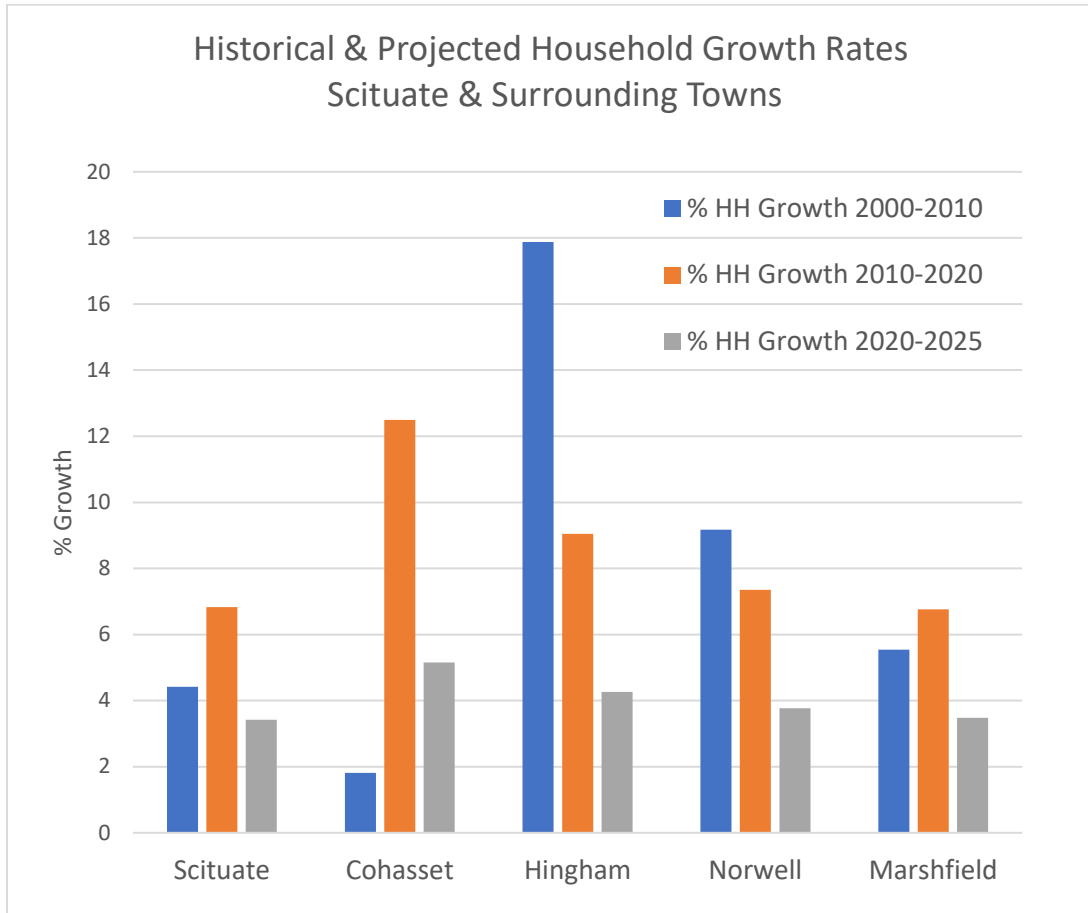
Figures 3 and 4 below compare Scituate’s population and household *growth rates* with those of surrounding towns. Scituate ranks last of the surrounding towns in its population and household rate of growth between 2010 and 2020 as well as projected through 2025, according to the proprietary data service EnvironicsAnalytics (formerly Claritas), one of the most widely used sources for recent historical comparisons and intermediate-term (5-year) projections.

Figure 3. Historical & Projected Population Growth Rates
Scituate & Surrounding Towns



Source: EnvironicsAnalytics, *Spotlight Reports*, 2019, and FXM Associates

Figure 4. Historical & Projected Household Growth Rates
Scituate & Surrounding Towns



Source: EnvirionicsAnalytics, *Spotlight* Reports, 2019, and FXM Associates

Table 2 below presents Scituate’s and Plymouth County’s age distributions. Scituate’s population is older than both the county’s and the state’s overall.

Table 2. Age Profile: Scituate, Plymouth County, and State of Massachusetts

	Town of Scituate		Plymouth County		State of Massachusetts	
Total Population	18,601		519,639		6,916,527	
Age 0 - 4	987	5%	27,534	5%	360,234	5%
Age 5 - 9	1,024	6%	28,842	6%	372,653	5%
Age 10 - 14	1,211	7%	32,170	6%	393,375	6%
Age 15 - 17	848	5%	21,220	4%	251,997	4%
Age 18 - 20	753	4%	20,908	4%	325,890	5%
Age 21 - 24	972	5%	26,700	5%	391,517	6%
Age 25 - 34	1,640	9%	56,084	11%	912,665	13%
Age 35 - 44	1,369	7%	58,124	11%	857,725	12%
Age 45 - 54	2,724	15%	73,974	14%	925,481	13%
Age 55 - 64	3,142	17%	77,905	15%	952,824	14%
Age 65 - 74	2,297	12%	58,911	11%	686,869	10%
Age 75 - 84	1,136	6%	25,976	5%	324,777	5%
Age 85 and over	498	3%	11,291	2%	160,520	2%
Age 16 and over	15,101	81%	424,139	82%	5,707,852	83%
Age 18 and over	14,531	78%	409,873	79%	5,538,268	80%
Age 21 and over	13,778	74%	388,965	75%	5,212,378	75%
Age 65 and over	3,931	21%	96,178	19%	1,172,166	17%
Median Age	47		43		40.26	
Average Age	43		41.6		40.60	

Source: EnvironicsAnalytics, *Spotlight Reports*, 2019, and FXM Associates

The previously-noted MASSDOT/UMDI long-range population projections are also available by age group. These projections forecast a steadily increasing population of persons over the age of 65: from 17% in 2010 to 30% in 2035. Meanwhile, the working-age population, roughly those age 20 to 64 would decline from 56% in 2010 to 49% in 2035. Both these trends drop off slightly in 2040, when an estimated 28% of residents will be over 65 and 50% will be age 20 to 64. Long-range forecasts, of course, become less reliable the longer the range, but these trends are not unique to Scituate.

Table 3 below compares Scituate’s racial make-up with Plymouth County’s and the state’s. Scituate’s population is quite homogeneous, even more so than Plymouth County’s and much more so than the state’s.

Table 3. Racial Profile: Scituate, Plymouth County, and
State of Massachusetts
Racial Profile, Scituate, Plymouth County, and State of Massachusetts

	Town of Scituate		Plymouth County		State of Mass.	
Total Population	18,601		519,639		6,916,527	
White Alone	17,669	95%	428,975	83%	5,261,769	76%
Black/African American Alone	131	1%	46,550	9%	527,940	8%
American Indian/Alaskan Native Alone	15	0.1%	1,200	0%	22,265	0%
Asian Alone	194	1%	7,605	1%	479,532	7%
Native Hawaiian/Pacific Islander Alone	6	0.03%	136	0%	2,811	0%
Some Other Race Alone	239	1%	18,140	3%	393,017	6%
Two or More Races	347	2%	17,033	3%	229,193	3%

Source: EnvironicsAnalytics, *Spotlight* Reports, 2019, and FXM Associates

Table 4 compares the three areas with regard to key characteristics of income and poverty levels.

Table 4. Key Characteristics of Income & Poverty Levels
Scituate, Plymouth County and State of Massachusetts

	Town of Scituate		Plymouth County		State of MA	
2019 Estimated Household Income	7,105		193,463		2,710,577	
Income Less than \$15,000	333	5%	12,834	7%	249,280	9%
Income \$15,000 - \$24,999	354	5%	11,843	6%	197,422	7%
Income \$25,000 - \$34,999	273	4%	11,449	6%	177,436	7%
Income \$35,000 - \$49,999	461	6%	19,069	10%	263,460	10%
Income \$50,000 - \$74,999	640	9%	28,485	15%	376,903	14%
Income \$75,000 - \$99,999	643	9%	23,037	12%	320,387	12%
Income \$100,000 - \$124,999	656	9%	21,097	11%	271,919	10%
Income \$125,000 - \$149,000	634	9%	17,873	9%	216,612	8%
Income \$150,000 - \$199,999	991	14%	20,712	11%	262,249	10%
Income \$200,000 - \$249,999	578	8%	10,461	5%	137,018	5%
Income \$250,000 - \$499,999	924	13%	11,053	6%	151,232	6%
Income \$500,000 and over	618	9%	5,550	3%	86,659	3%
Household Income Less than \$25,000	687	10%	24,677	13%	446,702	16%
Household income more than \$150,000	3,111	44%	47,776	25%	637,158	24%
2019 Families by Poverty Status						
2019 Families Below Poverty	145	2%	7,810	4%	130,371	8%
2019 Families Below Poverty with Children	107	2%	6,213	3%	95,735	6%
2019 Estimated Average Household Income	\$ 177,872		\$ 118,953		\$ 115,037	
2019 Estimated Median Household Income	\$ 132,395		\$ 88,697		\$ 81,674	

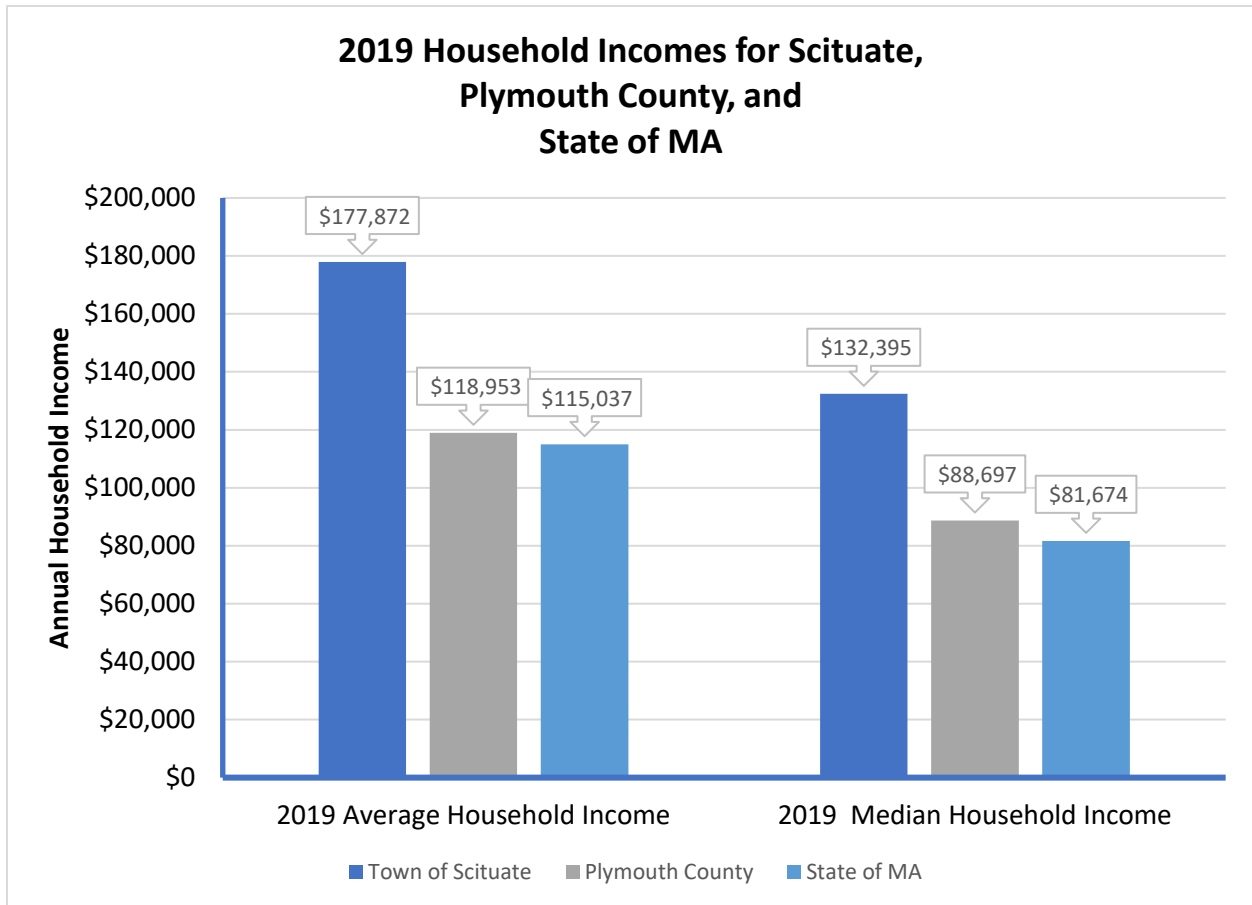
Source: EnvironicsAnalytics, 2019 and FXM Associates

Scituate has the highest household incomes of all three areas, exceeding both county and state averages and the more meaningful medians, as shown in Table 4 above. The median annual income in Scituate is over \$40,000 more than in Plymouth County and \$50,000 more than in the state as a whole.

Poverty rates are low in Scituate, 2%, compared to 4% and 8% in the county and state, respectively. Only 10% of Scituate households have incomes less than \$25,000, while 13% and 16% do at the county and state levels. At the other end of the income spectrum, 44% of Scituate household incomes exceed \$150,000, compared to 25% in Plymouth County and 24% statewide.

Figure 5 illustrates the differences among relative annual household incomes in Scituate, Plymouth county and the State of Massachusetts.

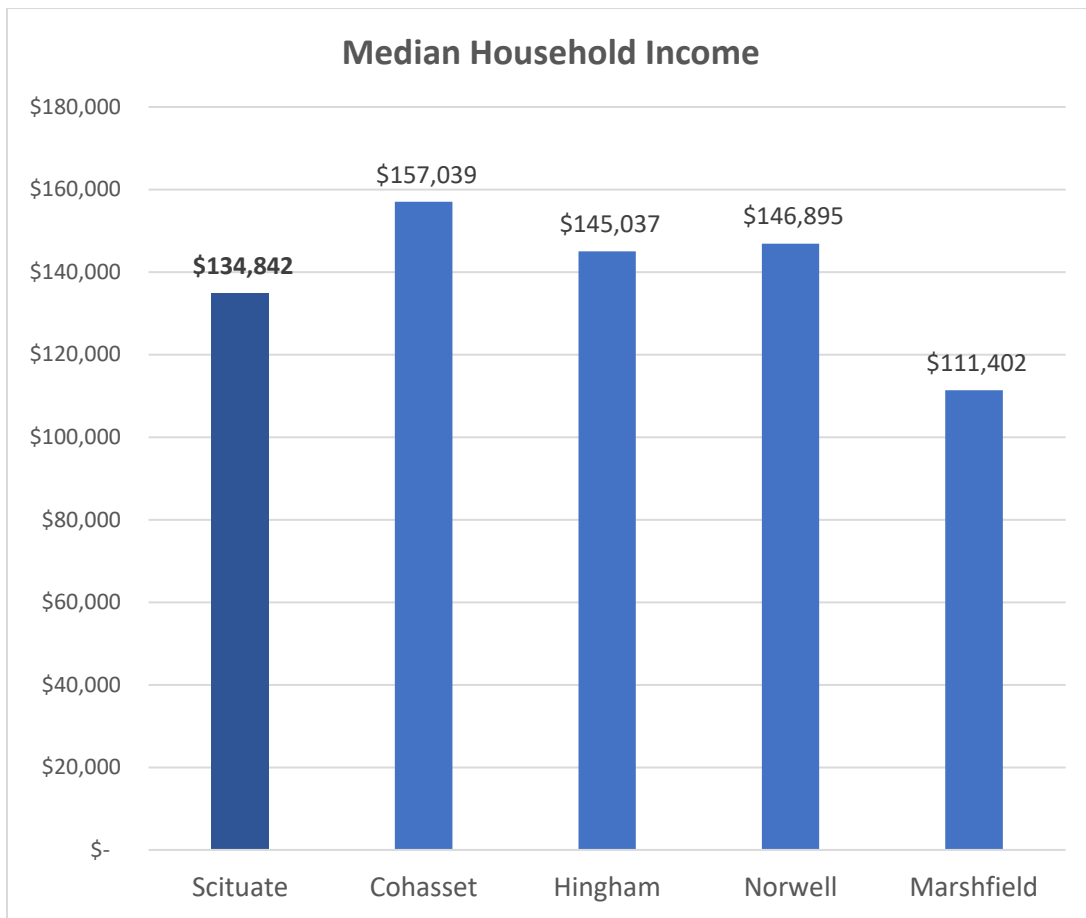
Figure 5. 2019 Household Incomes for Scituate, Plymouth County and State of Massachusetts



Source: EnvironicsAnalytics, *Spotlight* Reports, 2019 and FXM Associates

Figure 6 compares median incomes in Scituate and surrounding towns. In this comparison, Scituate ranks fourth of the five towns.

Figure 6. Median Incomes
Scituate & Surrounding Towns



Source: EnvironicsAnalytics, Spotlight Reports, 2020, and FXM Associates

Workforce Characteristics

The data in Table 5 show that well over half, 58%, of Scituate residents aged 25+ have a bachelor's degree or higher, compared to 36% for Plymouth County and 42% for the Commonwealth.

The Town of Scituate has a lower percentage of service, farm and blue-collar workers when compared to both the County and the Commonwealth. Seventy-eight per cent are white collar. The majority of workers at all three levels is employed in

the for-profit private sector, but Scituate also has the largest proportion of self-employed residents, at 12%.

The proportion of households in Scituate that do not own a vehicle (3%) is much less than that of the county (6%) and the state (13%), and households in Scituate are also more likely to have two vehicles (51%) than in the county (42%) or state (36%). Travel times to work for those in Scituate are quite long: 42 minutes, compared to 36 and 33 minutes at the county and state levels respectively.

Table 5. Workforce Characteristics for Scituate, Plymouth County and State of Massachusetts

Workforce Characteristics for Scituate, Plymouth County, and State of MA						
	Town of Scituate		Plymouth County		State of MA	
Education (Pop. Age 25+)	12,806		362,265		4,820,861	
Less than 9th grade	75	1%	10,237	3%	220,451	5%
Some High School, no diploma	229	2%	17,035	5%	248,368	5%
High School Graduate (or GED)	2,070	16%	106,062	29%	1,188,929	25%
Some College, no degree	1,801	14%	65,930	18%	753,381	16%
Associate Degree	1,253	10%	33,500	9%	372,047	8%
Bachelor's Degree	4,702	37%	83,006	23%	1,135,958	24%
Master's Degree	1,971	15%	35,225	10%	633,236	13%
Professional School Degree	502	4%	7,583	2%	141,317	3%
Doctorate Degree	203	2%	3,687	1%	127,174	3%
Less than high school diploma	304	2%	27,272	8%	468,819	10%
Bachelor's Degree or higher	7,378	58%	129,501	36%	2,037,685	42%
Occupation Classification (Pop. Age 16+)	9,376		268,280		3,584,409	
White Collar	7,329	78%	167,912	63%	2,398,182	67%
Blue Collar	845	9%	47,090	18%	544,368	15%
Service and Farm	1,202	13%	53,278	20%	641,859	18%
Type of Worker (Civ. Employed Pop. 16+)	9,376		268,280		3,584,409	
For-Profit Private Workers	6,050	65%	182,870	68%	2,382,663	66%
Non-Profit Private Workers	962	10%	27,601	10%	451,630	13%
Local Government Workers	767	8%	19,897	7%	245,505	7%
State Government Workers	251	3%	10,085	4%	128,385	4%
Federal Government Workers	171	2%	3,872	1%	57,543	2%
Self-Emp Workers	1,145	12%	23,537	9%	314,176	9%
Unpaid Family Workers	30	0%	418	0%	4,507	0%
2019 Est. Households by Number of Vehicles	7,105		190,870		2,710,577	
No Vehicles	201	3%	11,854	6%	339,251	13%
1 Vehicle	1,745	25%	59,531	31%	964,924	36%
2 Vehicles	3,629	51%	80,519	42%	982,077	36%
3 Vehicles	1,165	16%	27,964	15%	305,986	11%
4 Vehicles	274	4%	8,657	5%	88,841	3%
5 or more Vehicles	91	1%	2,345	1%	29,498	1%
Average Travel Time to Work (minutes)	42		36		33	

Source: EnvironicsAnalytics, 2019 and FXM Associates

Housing Characteristics

Table 6 summarizes the characteristics of Scituate’s housing, with comparisons to Plymouth County and the state.

Table 6. Housing Characteristics

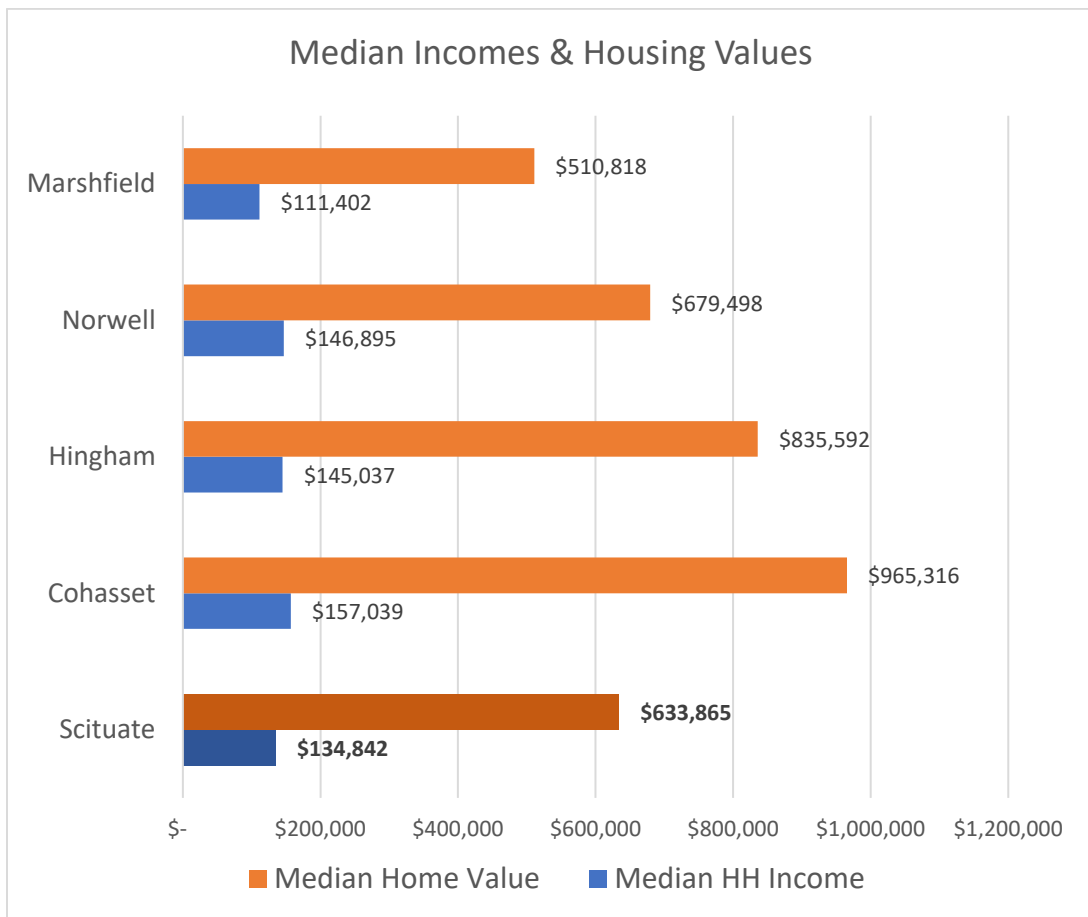
Housing Characteristics						
	Town of Scituate		Plymouth County		State of MA	
Tenure (Occupied Housing Units)	7,105		193,463		2,710,577	
Owner Occupied	5,955	84%	147,560	76%	1,683,516	62%
Renter Occupied	1,150	16%	45,903	24%	1,027,061	38%
Avg. Length of Residence (yrs)						
Owner Occupied	19		18		18.5	
Renter Occupied	6		8		7.5	
Owner-Occupied Housing Values	5,955		147,560		1,683,516	
Value Less than \$20,000	23	0.4%	1,159	0.8%	15,971	0.9%
Value \$20,000 - \$39,999	10	0.2%	1,167	0.8%	9,994	0.6%
Value \$40,000 - \$59,999	15	0.3%	831	0.6%	7,424	0.4%
Value \$60,000 - \$79,999	1	0.0%	735	0.5%	6,639	0.4%
Value \$80,000 - \$99,999	9	0.2%	1,462	1.0%	10,775	0.6%
Value \$100,000 - \$149,999	2	0%	3,148	2%	53,288	3.2%
Value \$150,000 - \$199,999	10	0%	5,783	4%	106,284	6.3%
Value \$200,000 - \$299,999	119	2%	26,495	18%	287,827	17.1%
Value \$300,000 - \$399,999	632	11%	33,883	23%	316,724	18.8%
Value \$400,000 - \$499,999	1,091	18%	26,888	18%	269,421	16.0%
Value \$500,000 - \$749,999	2,010	34%	27,164	18%	319,144	19.0%
Value \$750,000 - \$999,999	1,315	22%	11,264	8%	151,219	9.0%
Value \$1,000,000 - \$1,499,999	510	9%	4,871	3%	76,108	4.5%
Value \$1,500,000 - \$1,999,999	144	2%	1,560	1%	26,374	1.6%
Value \$2,000,000 or more	64	1%	1,150	1%	26,324	1.6%
Median Value	\$619,341		\$397,257		\$409,078	
2019 Est. Housing Units by Year Structure Built	7,903		212,869		2,981,030	
Built 2014 or Later	361	5%	11,888	6%	162,368	5%
Built 2010 to 2013	99	1%	3,281	2%	33,636	1%
Built 2000 to 2009	578	7%	20,494	10%	218,917	7%
Built 1990 to 1999	463	6%	18,520	9%	219,328	7%
Built 1980 to 1989	644	8%	24,136	11%	312,007	10%
Built 1970 to 1979	792	10%	31,111	15%	333,056	11%
Built 1960 to 1969	1,092	14%	23,669	11%	289,154	10%
Built 1950 to 1959	1,520	19%	22,493	11%	319,161	11%
Built 1940 to 1949	420	5%	10,328	5%	163,458	5%
Built 1939 or Earlier	1,934	24%	46,949	22%	929,945	31%
2019 Est. Median Year Structure Built	1960		1971		1962	

Source: EnvironicsAnalytics, 2019 and FXM Associates

Homeownership is by far the predominant form of occupancy in Scituate, the county, and the state, with Scituate leading at 84%. Lengths of residence are similar across geographies for both owners and renters. Values of owner-occupied dwellings in Scituate are higher than in the county or state.

Figure 6 compares home values and median incomes with surrounding towns. As with incomes, Scituate’s median value of owner-occupied homes ranks fourth – ahead of Marshfield but less than the other communities.

Figure 6. Median Incomes & Housing Values



Source: EnvirionicsAnalytics, *Spotlight* Reports, 2020, and FXM Associates

Business and Employment

Table 7 shows the business profile for the Town of Scituate, including number of establishments, employment, and sales, estimated as of 2019. The Health Care and Social Assistance sector is the largest employer, followed by Educational Services, Accommodation and Food Services and Arts, Entertainment, and Recreation. The Wholesale and Retail Trade sectors, however, generate the largest sales.

Table 7. Town of Scituate 2019 Employment & Sales

Town of Scituate 2019 Employment and Sales

Employment Sector	Establishments	Employment for this location	Sales from this location (in \$000)
11 - Agriculture, Forestry, Fishing and Hunting	3	10	\$673
23 - Construction	84	304	\$65,166
31-33 - Manufacturing	12	61	\$15,707
22 - Utilities			
42 - Wholesale Trade	17	136	\$514,729
44-45 - Retail Trade	78	413	\$108,153
48-49 - Transportation and Warehousing	8	66	\$6,498
51 - Information	14	80	\$10,624
52 - Finance and Insurance	35	93	\$22,538
53 - Real Estate and Rental and Leasing	31	209	\$18,662
54 - Professional and Technical Services	65	269	\$33,027
55 - Management of Companies	1	3	\$1,599
56 - Administrative and Waste Services	26	120	\$14,277
61 - Educational Services	18	541	\$7,530
62 - Health Care and Social Assistance	79	617	\$56,416
71 - Arts, Entertainment, and Recreation	20	516	\$67,865
72 - Accommodation and Food Services	36	528	\$24,614
81 - Other Services, Except Public Administration	88	438	\$38,731
92 - Public Administration	30	214	\$9,667
99 - Unassigned	72	17	\$2,383
Total, All Industries	717	4,635	\$1,018,859

Sources: EnvironicsAnalytics, *Spotlight* Reports, 2019, and FXM Associates

Table 8 shows these sectors over a ten-year period. Here, Accommodation and Food Services is the town's largest employer in 2017, followed by Health Care and Social Assistance and Professional and Technical Services. The Accommodation and Food Services and Health Care and Social Assistance sectors also saw the largest gains in jobs between 2007 and 2017. Administrative and Waste Services and Retail Trade together lost 154 jobs over the period (which includes the Great Recession of 2008-9).¹

Table 8. Employment Sectors for the Town of Scituate

Employment Sectors for the Town of Scituate				
Sectors	2007 Employment	2017 Employment	Absolute Change in Total Jobs	% Change in Total Jobs
23 - Construction	343	351	8	2%
31-33 - Manufacturing	75	67	(8)	-11%
42 - Wholesale Trade	72	60	(12)	-17%
44-45 - Retail Trade	421	354	(67)	-16%
48-49 - Transportation and Warehousing	97	178	81	84%
51 - Information	39	71	32	82%
52 - Finance and Insurance	175	136	(39)	-22%
53 - Real Estate and Rental and Leasing	106	106	0	0%
54 - Professional and Technical Services	374	436	62	17%
56 - Administrative and Waste Services	254	167	(87)	-34%
62 - Health Care and Social Assistance	470	608	138	29%
71 - Arts, Entertainment, and Recreation	269	355	86	32%
72 - Accommodation and Food Services	550	734	184	33%
81 - Other Services, Except Public Administration	321	341	20	6%
TOTAL All Industries	3,566	3,964	398	11%
Total New Jobs			611	

Source: Mass Department of Labor, ES202 Data Series, Adjusted Values, 2007 and 2017; Regional Economic Information System, 2017; and FXM Associates

¹ The numbers in Table 8 are different from those in Table 7 above, even allowing for the two-year time difference. The reason for using the two sources, the *Spotlight* Reports from EnvironicsAnalytics, and the ES 202/REIS reports, is that the ES 202/REIS provide employment and wage data over time, while the *Spotlight* data are available for current years only and do not provide wage data. The *Spotlight* data, however, include sales data and also information for the Education sector, which is missing from the ES 202 series because ES 202 excludes most public-sector jobs. ES-202 also excludes self-employed persons but FXM adjusts for these using the US Bureau of Economic Analysis, Regional Economic Information System, more comprehensive data at the county level for private sector employment.

Figure 7 displays the same information in graphic format in rank order by highest number of jobs in 2017.

Figure 7. 2007 & 2017 Scituate Employment Sectors Compared

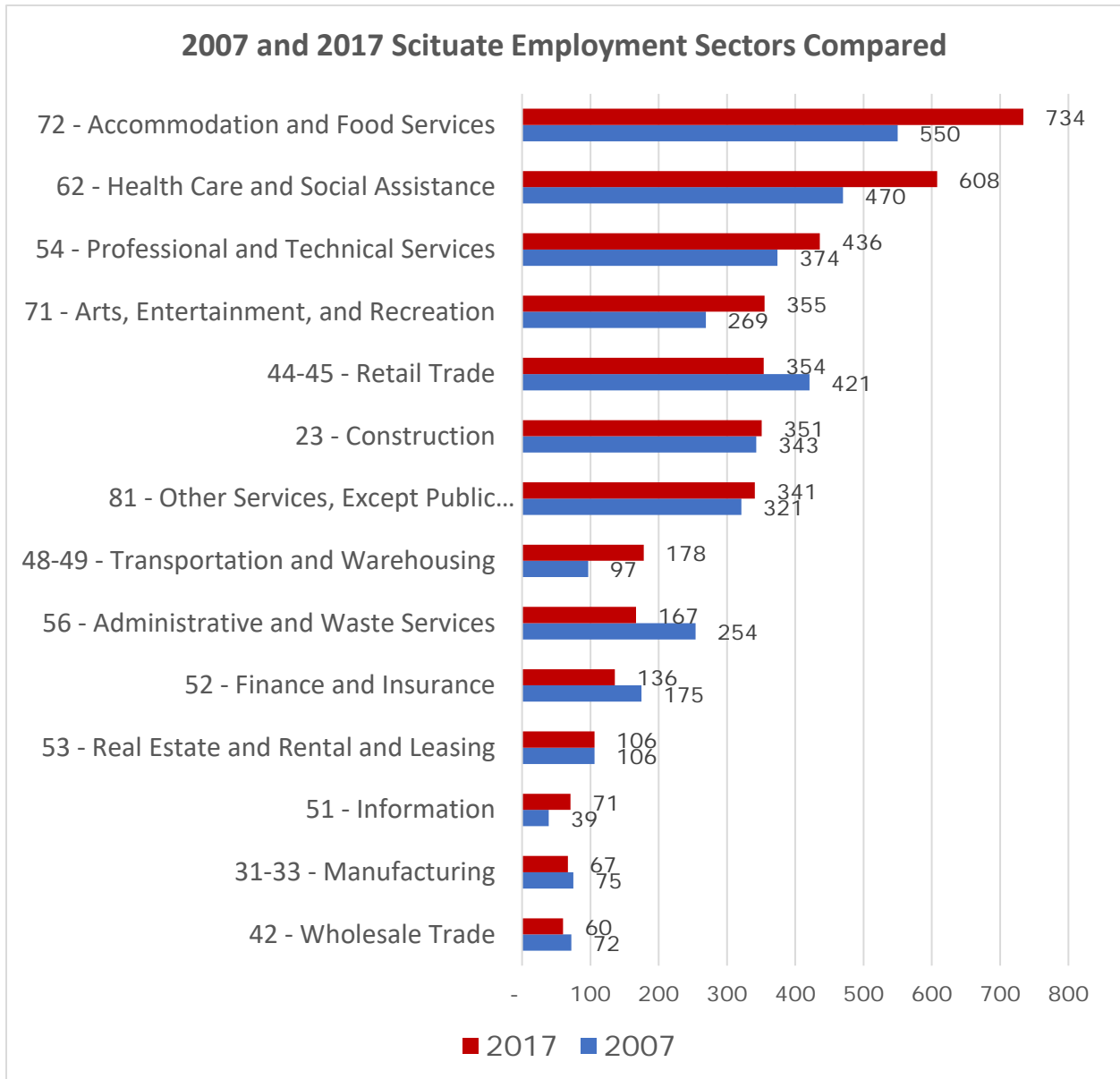


Table 9 and Figure 8 show average annual wages by sector in Scituate compared to wages in Plymouth County and in Massachusetts. The wage data are for jobs located in Scituate and do not necessarily reflect wages of Scituate resident labor force, most of whom work out of town.

Table 9. Wages by Sector 2018

Wages by Sector, 2018, Scituate, Plymouth County, and State of Massachusetts					
Sectors	Scituate	Town as % of County	Town as % of State	Plymouth County	State of Massachusetts
23 - Construction	\$61,672	84%	82%	\$73,060	\$75,140
31-33 - Manufacturing	\$43,212	72%	53%	\$60,424	\$82,264
22 - Utilities				\$110,032	\$108,680
42 - Wholesale Trade	\$207,064	241%	219%	\$85,748	\$94,484
44-45 - Retail Trade	\$25,376	77%	73%	\$33,020	\$34,788
48-49 - Transportation and Warehousing	\$60,164	128%	111%	\$47,164	\$54,080
51 - Information	\$28,600	37%	26%	\$78,052	\$110,136
52 - Finance and Insurance	\$70,824	82%	59%	\$86,268	\$121,004
53 - Real Estate and Rental and Leasing	\$57,252	102%	77%	\$56,056	\$74,776
54 - Professional and Technical Services	\$77,064	98%	62%	\$78,468	\$124,904
55 - Management of Companies				\$102,700	\$122,876
56 - Administrative and Waste Services	\$44,044	89%	90%	\$49,400	\$48,672
62 - Health Care and Social Assistance	\$40,040	85%	72%	\$47,112	\$55,484
71 - Arts, Entertainment, and Recreation	\$22,152	99%	59%	\$22,360	\$37,284
72 - Accommodation and Food Services	\$21,528	102%	84%	\$21,112	\$25,532
81 - Other Services, Except Public Administration	\$33,020	106%	86%	\$31,200	\$38,376
92 - Public Administration				\$72,904	\$74,672
Average, All Industries	\$56,572	91%	75%	\$62,064	\$75,480
Median, All Industries	\$43,628	72%	58%	\$60,424	\$74,776

Source: MA Executive office of Labor and Workforce Development (EOLWD), ES202 Data, 2018, 3rd Quarter; and FXM Associates

Overall, wages in Scituate are lower than those in the county and state, but in several sectors, they are higher than in the county: Wholesale Trade; Transportation and Warehousing; Real Estate and Rental and Leasing; Professional and Technical Services; Arts, Entertainment, and Recreation; and Other Services. In only two sectors are wages higher than in the state: Wholesale Trade and Transportation and Warehousing. Figure 8 shows the wage comparisons graphically, rank ordered by highest average annual wages paid by companies located in Scituate.

Figure 8. Scituate, Plymouth County and State of Massachusetts Wages Compared 2018

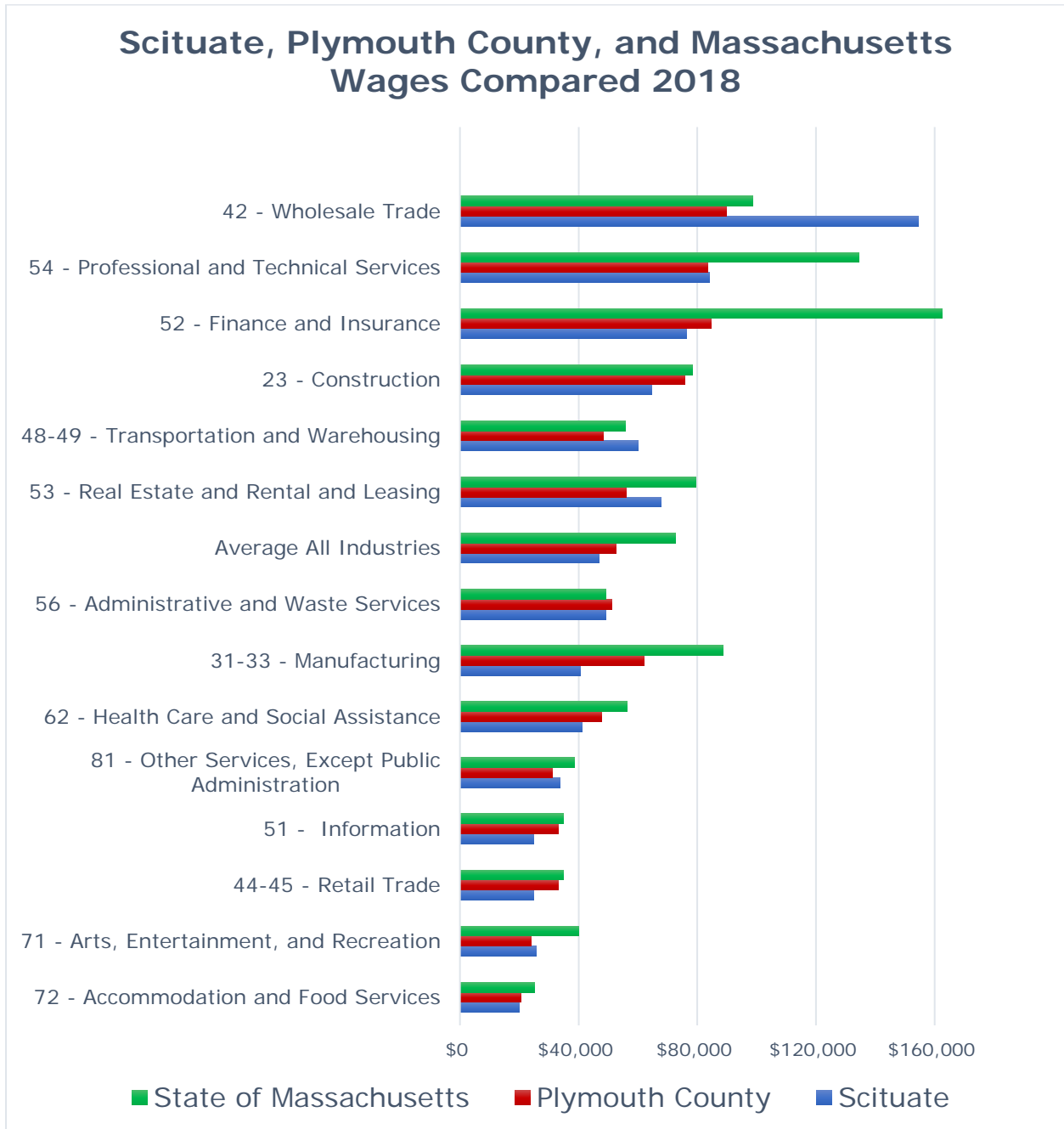
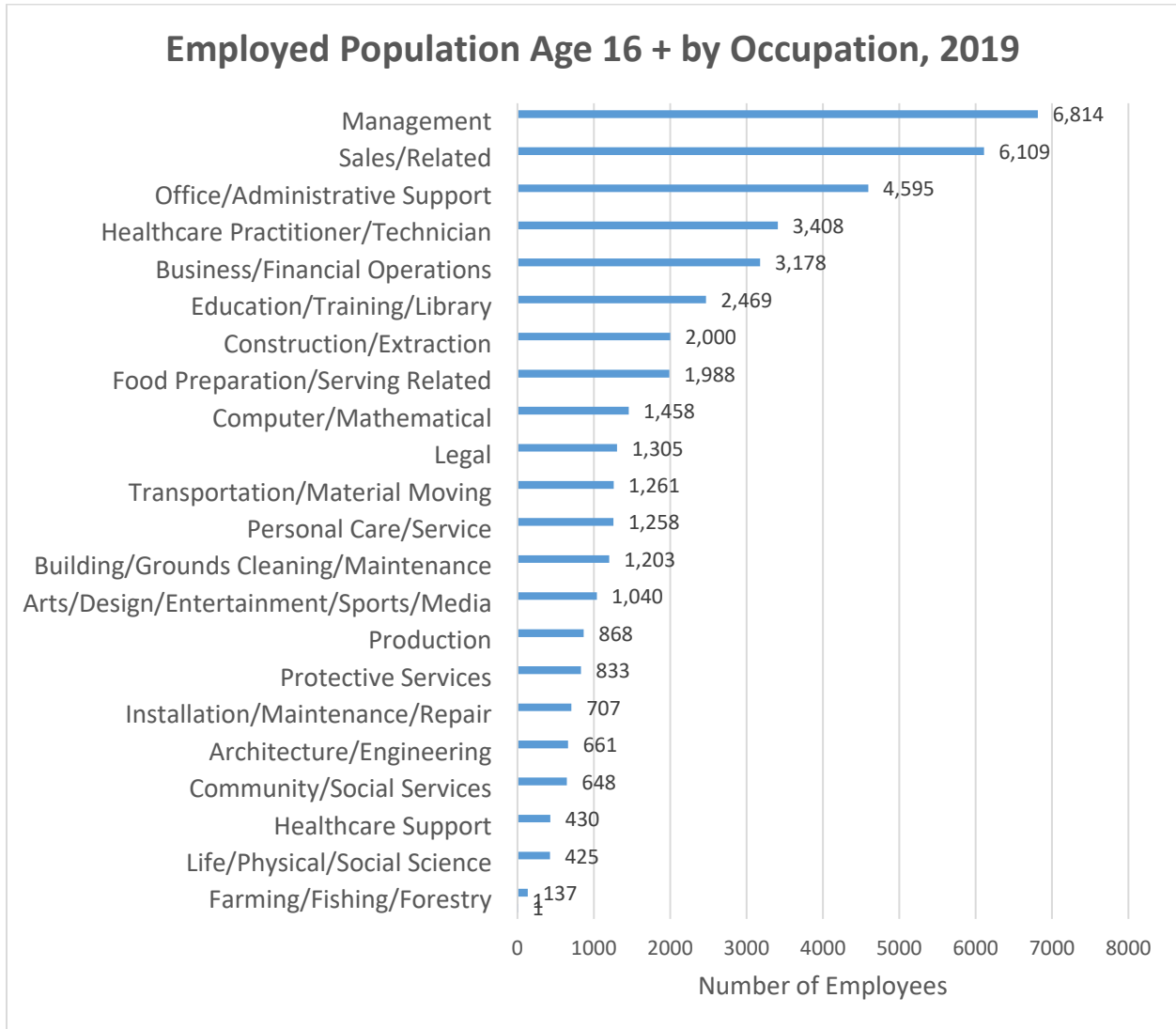


Figure 9 shows the distribution of occupations of civilian employed persons living in Scituate age 16 and over. Note that these categories differ from those identifying business types located in Scituate in Tables 7, 8, and 9 above.

Figure 9. Employed Population Age 16+ by Occupation, 2019



Figures 10 and 11 show commutations to jobs in Scituate and from Scituate residents to other communities. Slightly less than half of the jobs in Scituate (47%) are held by Scituate residents. Scituate is the destination of about 23% of resident workers commuting from Scituate, followed by 21% commuting to Boston.

Figure 10. Commuters to Scituate

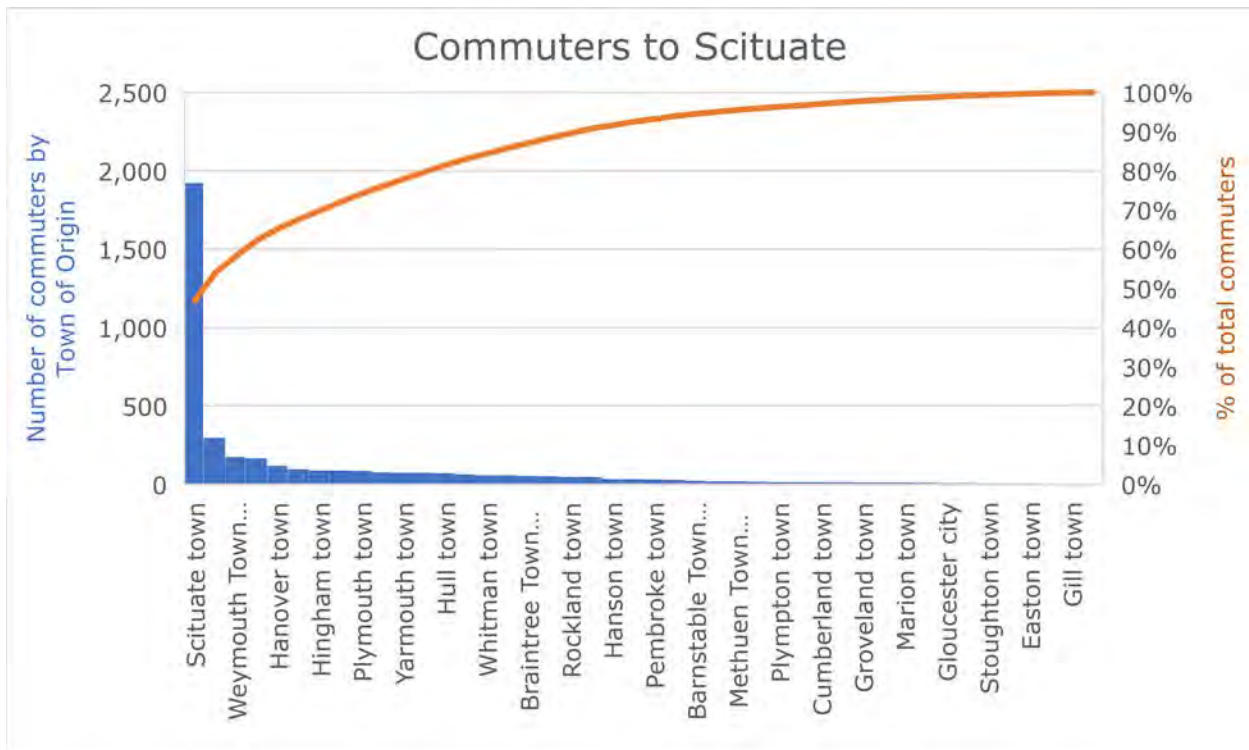
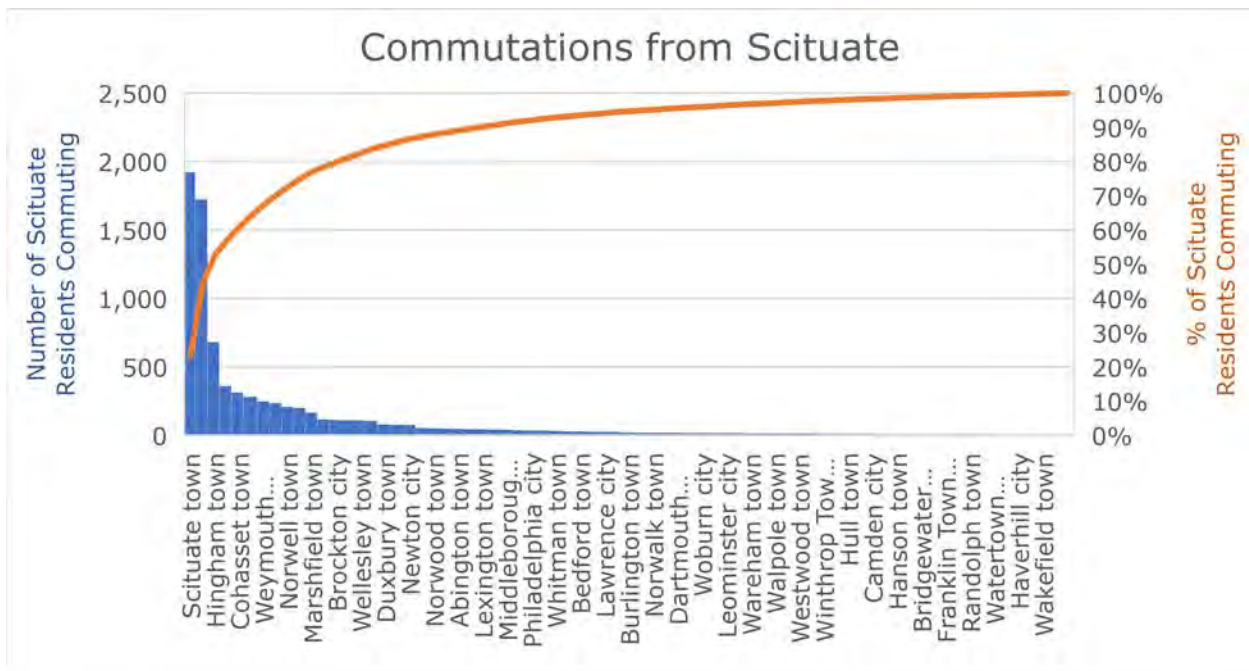


Figure 11. Commutations from Scituate



Market Conditions and Trends

This section of the report focuses on potential for growth in those parts of the economy which are likely targets for Scituate's development.

Historical Trends in Employment

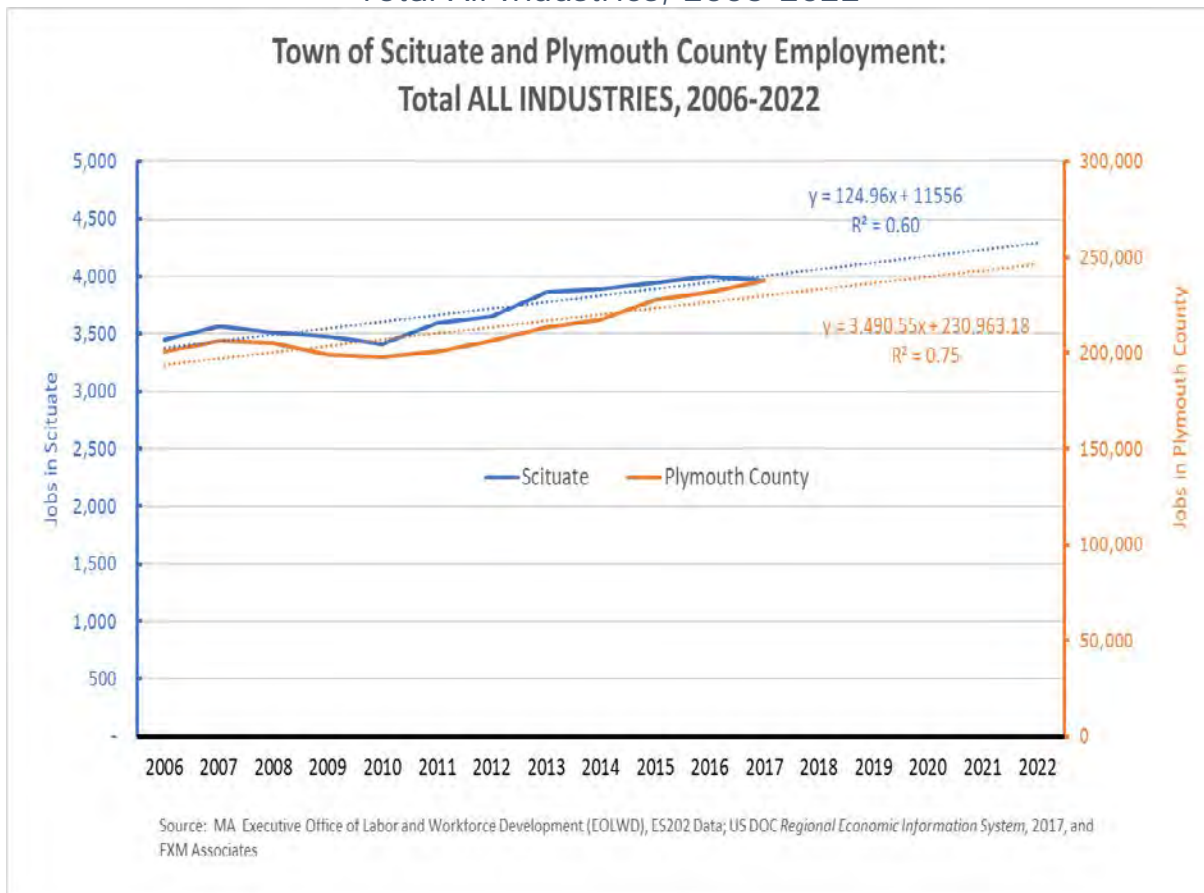
The measure most used for commercial market trends analyses is employment because jobs are a good indicator of the current status and future direction of a given industry. Increasing employment indicates industries that are growing, whether through expansion of existing businesses or opening of new ones. Also, reasonably reliable historic data are readily available and can be used to project employment trends. The two sources used here for the employment trends graphs are the ES202 reports from the Massachusetts Department of Labor and Workforce Development, modified by the more inclusive (because it includes self-employment data) reports from the Regional Economic Information System (REIS) of the U.S. Department of Commerce, Bureau of Economic Analysis. This is the same source used in Table 8 above. (See also footnote 1 above regarding sources of employment data.)

When using historical data to produce future projections, such as the least squares linear regression techniques used here, it is important to consider the reliability of a given dataset. A statistic commonly used to signify the reliability of a given projection is called the R^2 calculation and is presented alongside each projection given below. The closer the R^2 value is to 1, the better the predictive value of past performance. A limiting factor on 2019 projections is the influence of the 2008-9 recession, which is still being felt in some sectors and which may also affect the R^2 values. For example, a sector might be showing strong growth since 2011 but the volatility introduced by the recession could pull down the projected future growth and also lower the R^2 value of the projection. *Also note that, because of the relatively small number of jobs in Scituate, the predictive value of past history is weak across all sectors. Trends in Plymouth County, in contrast, are stronger indicators of future growth, and the Town of Scituate may find those data useful in identifying potential sectors for economic growth.*

The following graphs display trends and projections for the Town of Scituate and Plymouth County. Note that because of the size differences, the graphs should be read on two axes, the county on the right and Scituate on the left.

Figure 12 shows the trends for all industries combined. Both lines are trending in a positive direction, with reasonable measures of reliability, although Scituate’s overall employment took a slight dip in 2017. At this level, the effects of the recession have been supplanted by growth since 2010.

Figure 12. Town of Scituate and Plymouth County Employment: Total All Industries, 2006-2022

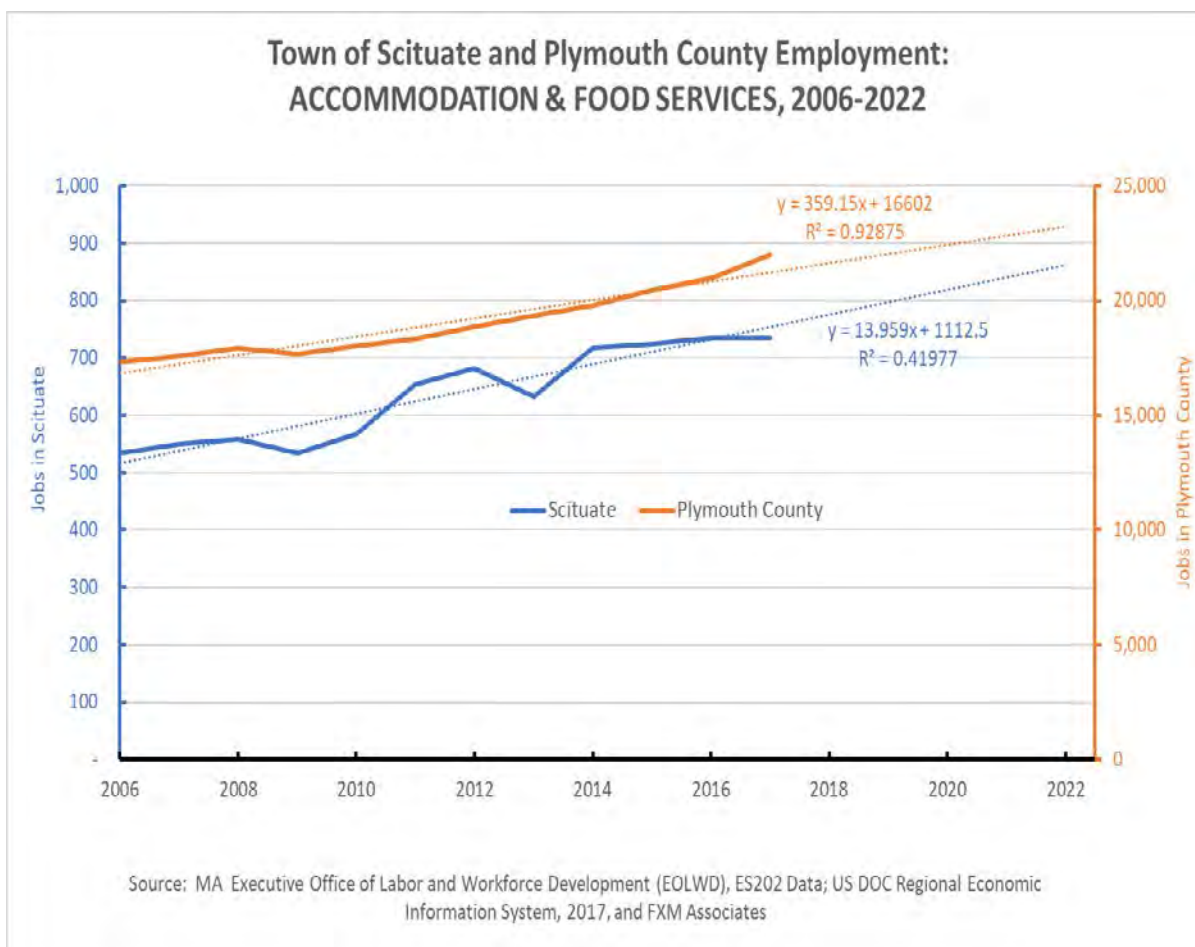


In addition to the above projection of total employment, the UMass Donohue Institute (UMDI) for the State of Massachusetts provides projections of employment for each city and town. This source projects total employment for Scituate in 2030 at 4,118, compared to 4,288 in the above figure for 2022. For 2040, UMDI projects 4,122 jobs. These projections imply stable overall employment over the longer term.

The following figures break down employment trends by sector from 2006 to 2022. According to this data source, the largest employers in Scituate are in the Accommodation and Food Services; Health Care and Social Assistance; Professional and Technical Services; Arts, Entertainment, and Recreation; and Retail Trade sectors. While it is not unusual in Massachusetts to see the Health Care sector as a major employer, having Accommodation and Food Services (mostly restaurants) and Arts, Entertainment, and Recreation employing relatively large numbers of people suggests Scituate may have some unique opportunities for growth in areas that enhance quality of life for the town and attract visitors, as well as providing local employment, though at relatively low wages. Wages are highest in professional and technical services.

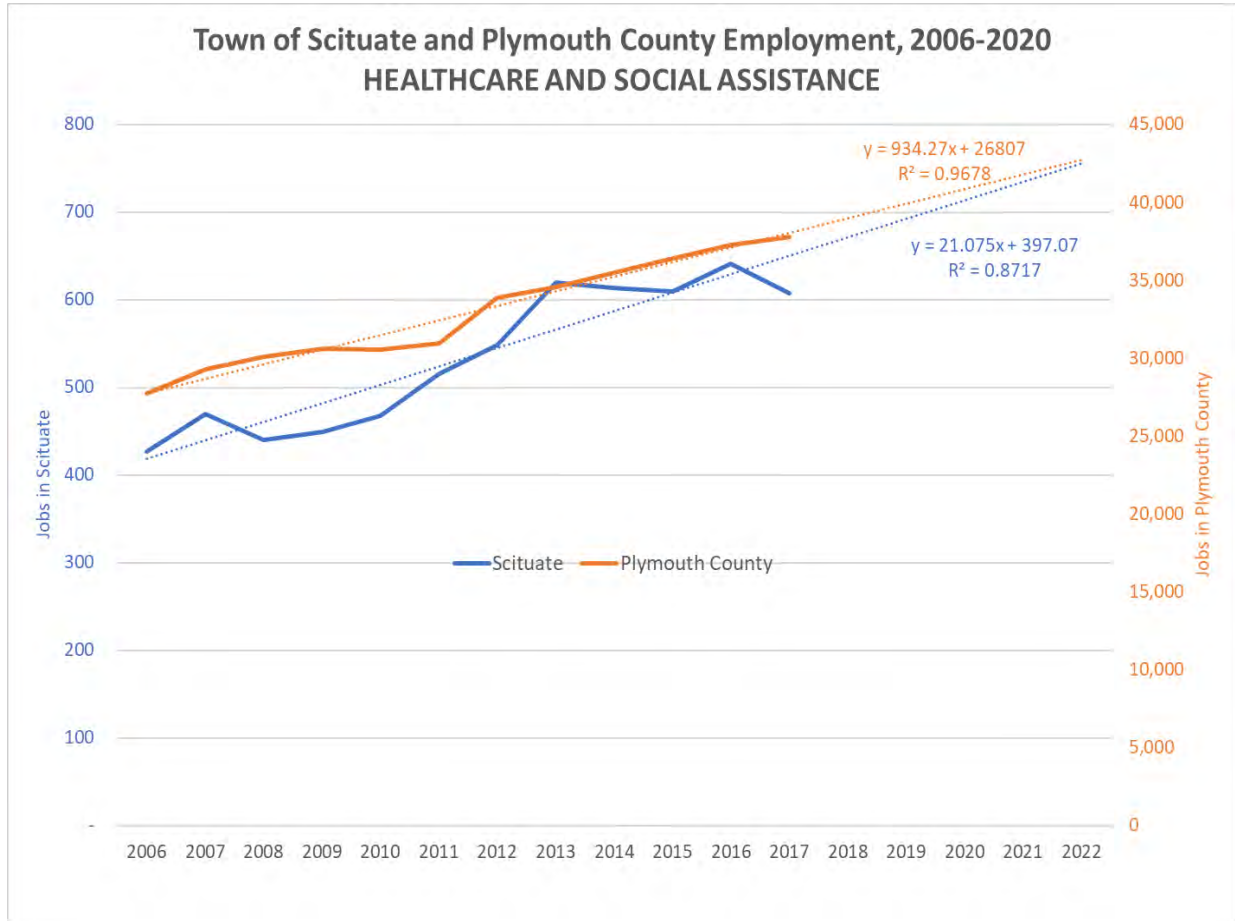
The Accommodation and Food Sector has been trending upwards and is projected to do so through 2022. The R^2 is lower in Scituate than in the county, reflecting the volatility shown in the graph, but the recent historical trends are clearly positive.

Figure 13. Town of Scituate and Plymouth County Employment: Accommodation & Food Services, 2006-2022



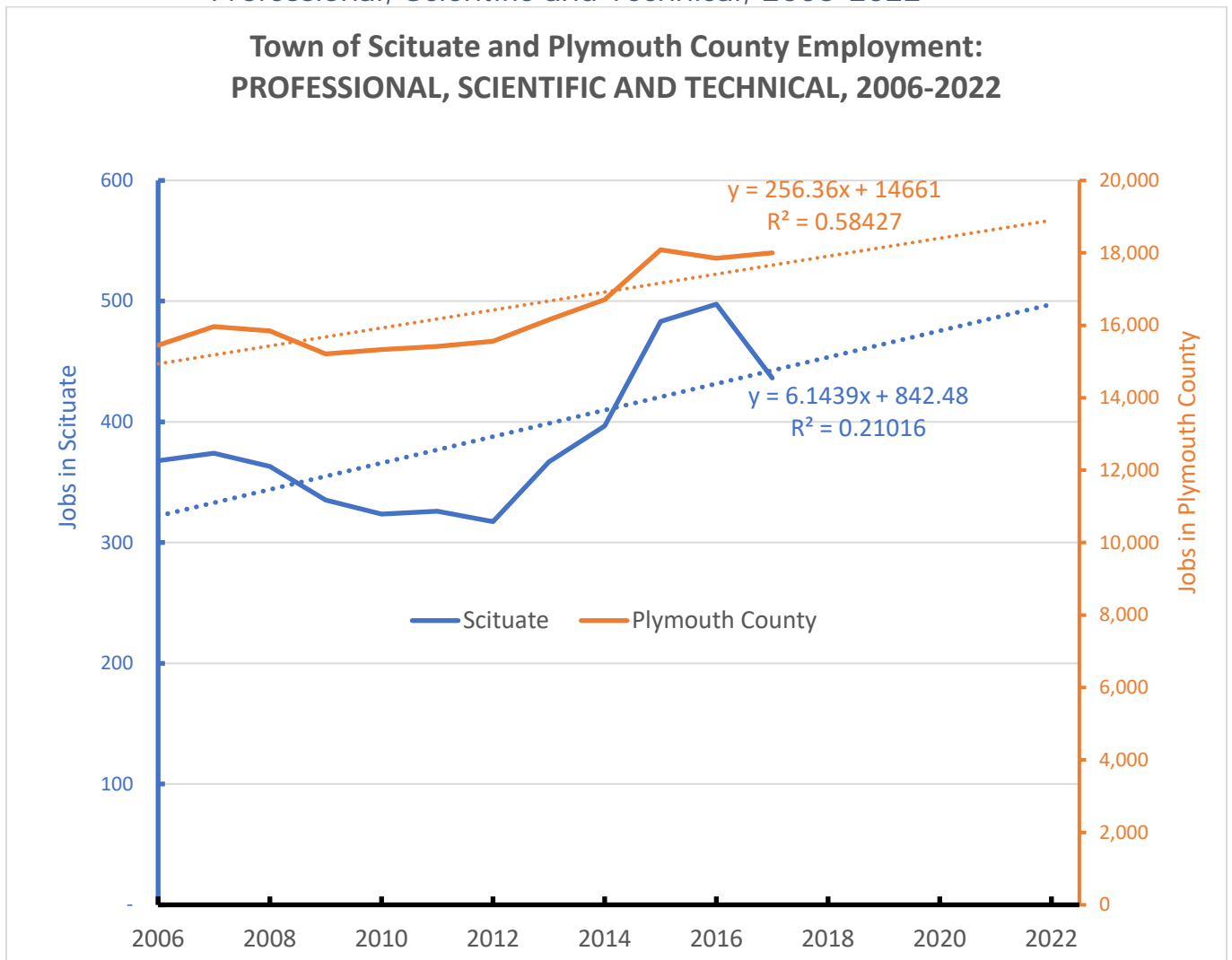
Health Care and Social Assistance displays steady historical growth, which is projected to continue, with high reliability for the projections, both in Scituate and Plymouth County, as shown in Figure 14. With the baby boom generation just beginning to enter old age and likely to need additional care, growth potential in this sector may be understated.

Figure 14. Town of Scituate and Plymouth County Employment, 2006-2020
Healthcare and Social Assistance



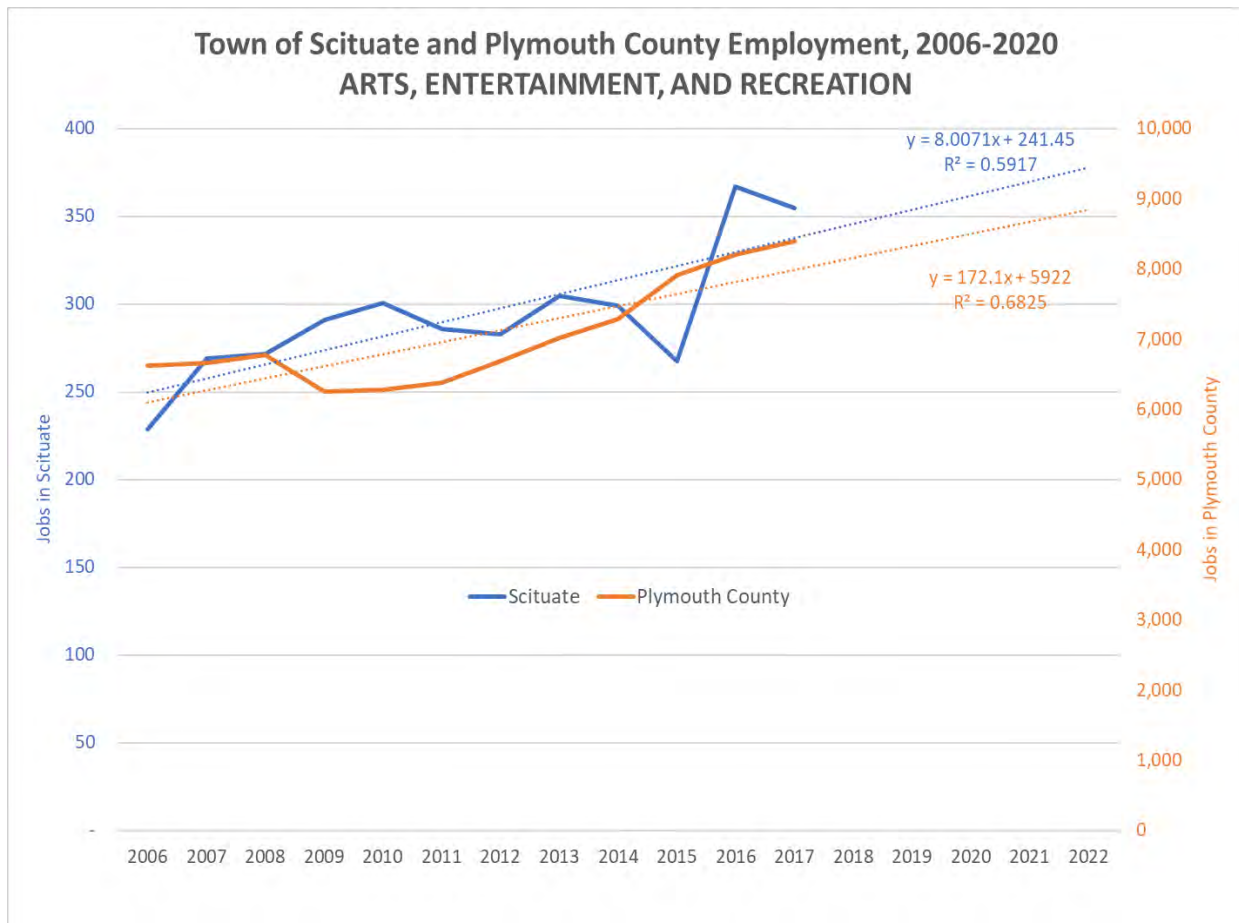
Professional, Scientific, and Technical Services are included in the Office-Using Industries Figure 15 below but are shown separately here because their relatively large proportion of employment in Scituate. The sector is projected to grow in both Scituate and the county. The recent drop in employment for these jobs in Scituate is relatively minor in number and may reflect changes in a small number of firms. Much will depend on what happens in subsequent years. At the county level, the prospects look better. In this industry, as in others that might be accommodated by increased office space in Scituate, a greater share of projected county-wide growth is capturable.

Figure 15. Town of Scituate and Plymouth County Employment: Professional, Scientific and Technical, 2006-2022



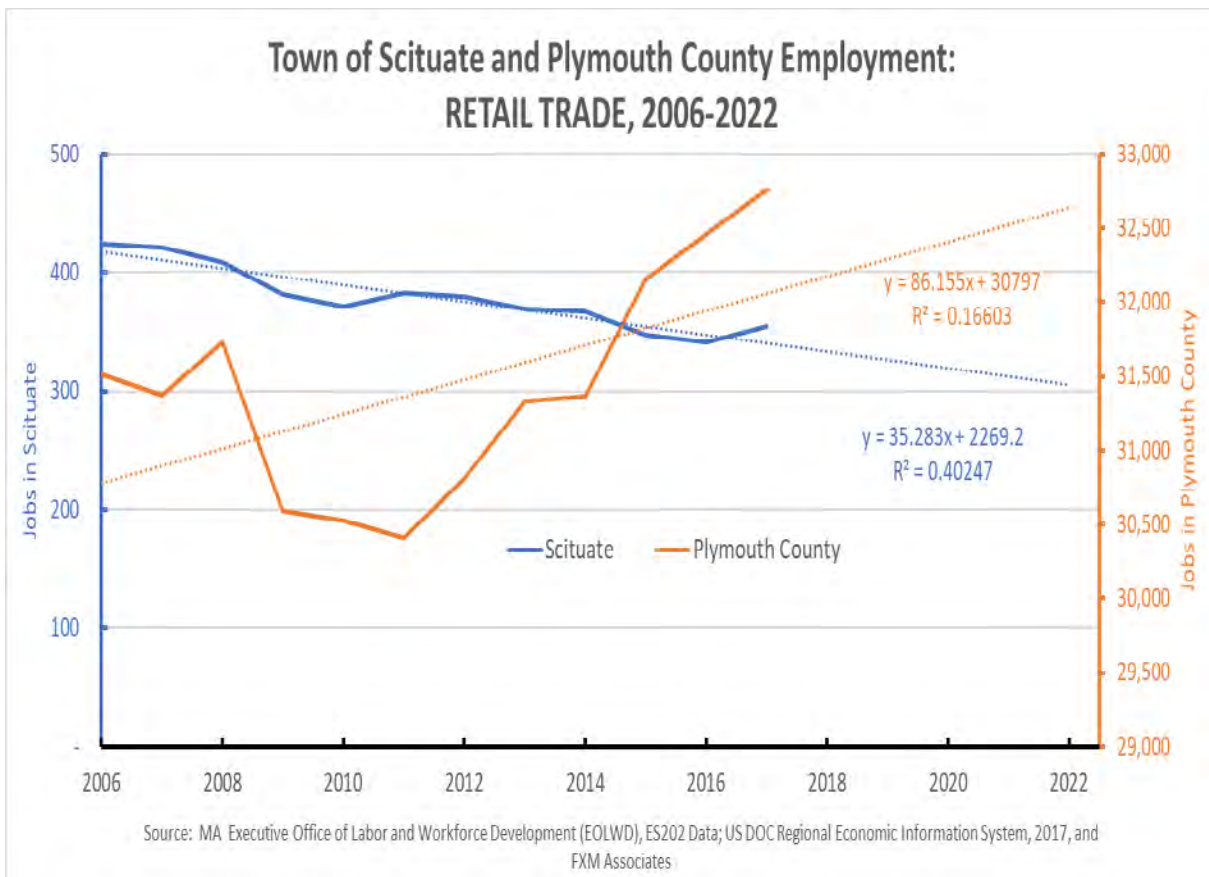
Both town and county are projected to increase employment in the Arts, Entertainment, and Recreation sector, as shown below. The R² for both is reasonably strong. Much of the employment in this sector is marinas and related recreational services.

Figure 16. Town of Scituate and Plymouth County Employment, 2002-2020
Arts, Entertainment and Recreation



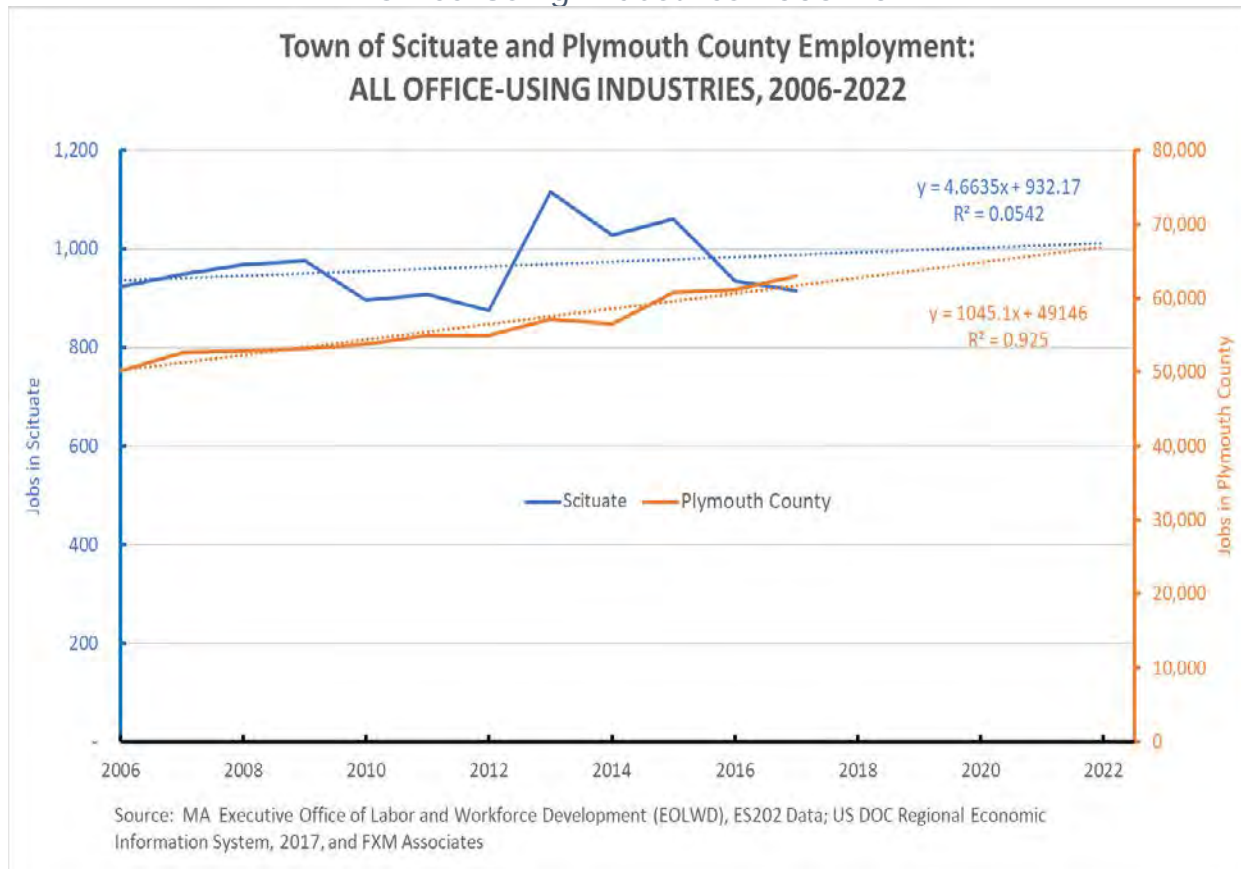
Retail Trade is a key sector for development in specified areas such as downtown/village centers, but here projections are mixed. In Scituate, the sector has been in a fairly steady decline, which is projected to continue based on historical performance. At the county level, the sector’s performance has been erratic, with the effects of the recession clearly impacting retail employment until 2011. There is evidence of recovery at the county-level, however, so although the R² is quite weak, the general direction of the trend is modestly promising, and is consistent with moderate projected growth in population and households at the town, county and state levels. While opportunities for small, entrepreneurial retail businesses with niche products are more promising, the overall decline in bricks & mortar retailing portends careful consideration and targeting of business opportunities (see subsequent retail opportunity gap analysis).

Figure 17. Town of Scituate and Plymouth County Employment: Retail Trade 2006-2022



Office-using sectors are also of interest because of their potential for high-quality space demand. Figure 18 shows past and projected upward trend lines, but the line is not very steep in Scituate, where the historical employment pattern has been up and down, and the projection is very weak. At the county level, it is steeper and the R² is very robust, at .925, suggesting that there may be opportunities for Scituate to capture some office uses if it can offer high quality space.

Figure 18. Town of Scituate and Plymouth County Employment: All Office-Using Industries 2006-2022



Demand for Commercial Space

The above employment projections, with their relevant caveats regarding reliability, can be translated into estimates of future demand for commercial space using industry norms for square foot per employee. Table 10 compiles these projections, with projected job losses shown in red.

Table 10. Scituate Projected Space Demand Through 2022
Based on Historical Employment Trends

Scituate Projected Space Demand Through 2022 Based on Historical Employment Trends

Sector	Scituate		Plymouth County	
	Projected New Jobs	Projected Space Demand (SF)	Projected New Jobs	Projected Space Demand (SF)
42 - Wholesale Trade	4	2,109	(109)	(54,436)
44-45-Retail trade	(49)	(24,415)	(122)	(237,500)
Office-using				
51- Information	17	4,327	(210)	(52,428)
52-Finance & Insurance	56	14,012	1,571	392,789
53- Real Estate and Rental Leasing	17	4,226	1,238	309,583
54 - Professional, Scientific, & Technical	61	15,256	895	223,686
56-Administrative & Support;Waste Mgt&Remed.	(56)	(13,963)	449	112,195
Subtotal Office-using	95	23,858	3,943	985,825
62-Health care and Social Assistance	148	59,065	4,885	1,953,916
71-Arts, Entertainment, and Recreation	23	9,084	446	178,307
72 - Accommodation & Food Services	128	22,467	1,232	216,819
81- Other Services (Except Pub Admin)	2	377	600	119,992
TOTALS	351	92,544	10,875	3,162,924

Source: REIS, Massachusetts Department of Labor and Workforce Development, ES202 reports (adjusted by REIS); FXM Associates

In the table, office-using industries are grouped together since they require similar kinds of space. Note that net job growth for Scituate in office-using industries is expected to be positive and is anticipated to add 95 jobs and demand 23,900 square feet of office-space over the next few years. These sectors are also expected to grow in Plymouth County, where almost 1 million square feet of office space could be needed. Significant demand for additional space for health care services is also forecast (medical office space is not included in the office space projections).

Commercial Real Estate Market Overview

This section assesses historical conditions and trends in the inventory, vacancies, occupancies, and pricing of office, industrial, retail and flex space in Scituate and surrounding communities. The quantitative analysis is based on data collected by CoStar, a subscription commercial real estate information service, widely used by real estate professionals, developers, and financial institutions in evaluating market potential and values.

Office Space Market Trends

FXM analyzed trends in the supply, vacancies, occupancies, and pricing of office space within Scituate and a Submarket defined to include Scituate and surrounding communities previously identified – Marshfield, Hingham, Norwell, and Cohasset – which are seen by CoStar and other real estate professionals as the broader area of competitive supply.

In the 4th Quarter of 2019, there were about 3.6 million square feet of office space in the overall submarket, of which 146,000 square feet is in Scituate.

Figure 19 shows trends in the inventory of office space occupancy in Scituate and the Submarket overall between 1998 and the 4th quarter of 2019. Over this period the inventory (gross leasable area) of office space increased by 793,180 square feet in the Submarket overall and by 61,632 square feet in Scituate, although the supply has remained fairly flat since 2008 throughout the submarket with no increases in Scituate.

Figure 19. Office Space Inventory Scituate & Subregion: 1998-2019

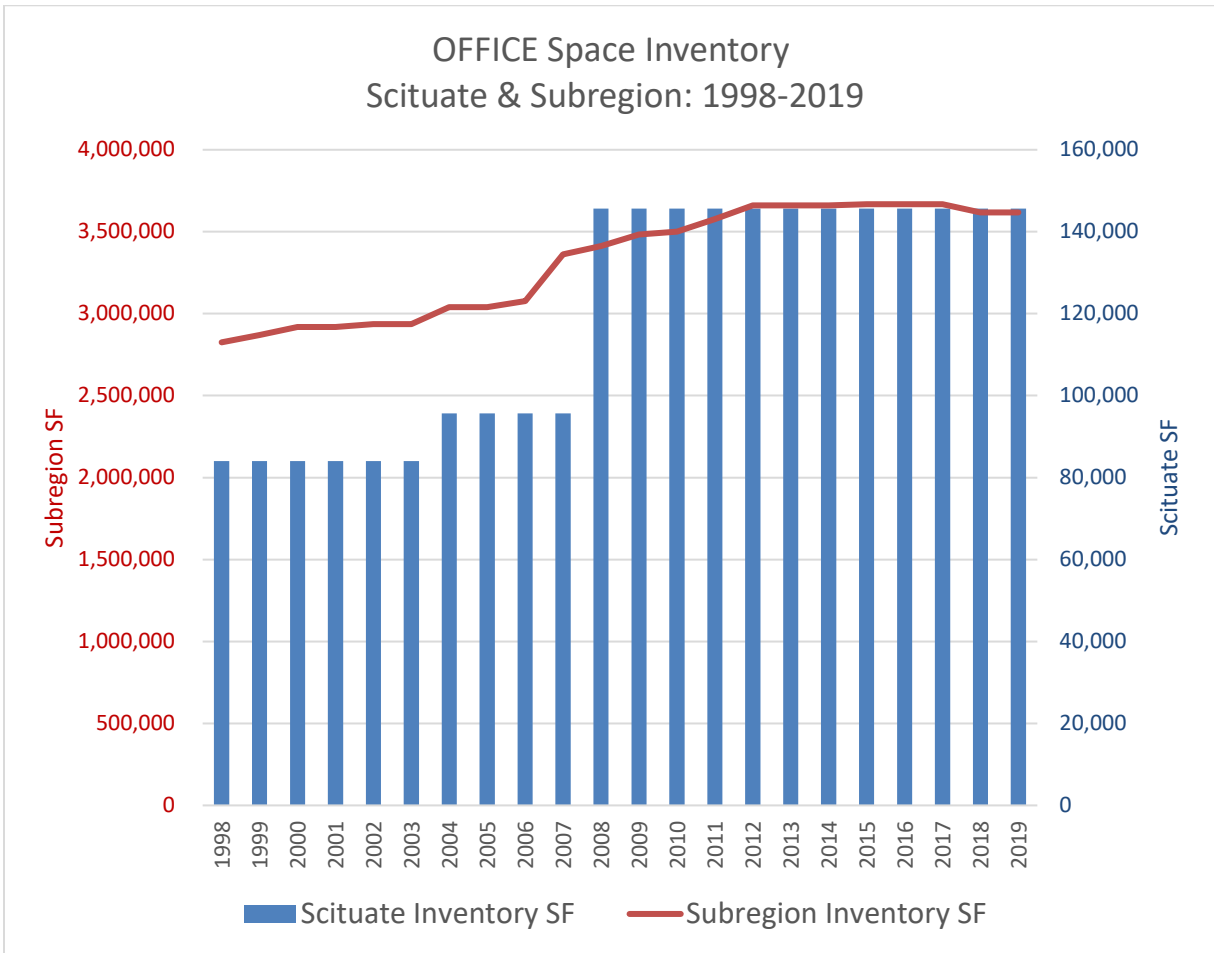


Figure 20 shows vacancy rates in office space in Scituate (4%) and the Submarket overall (7.8%), which declined between 2012 and 2016 but have increased and then decreased in the past two years. The overall picture, however, is one of decreasing vacancy rates in office space in both Scituate and the Submarket. These vacancy rates are quite low by regional market standards.

Figure 20. Office Space Vacancy Rate
Scituate & Subregion: 1998-2019

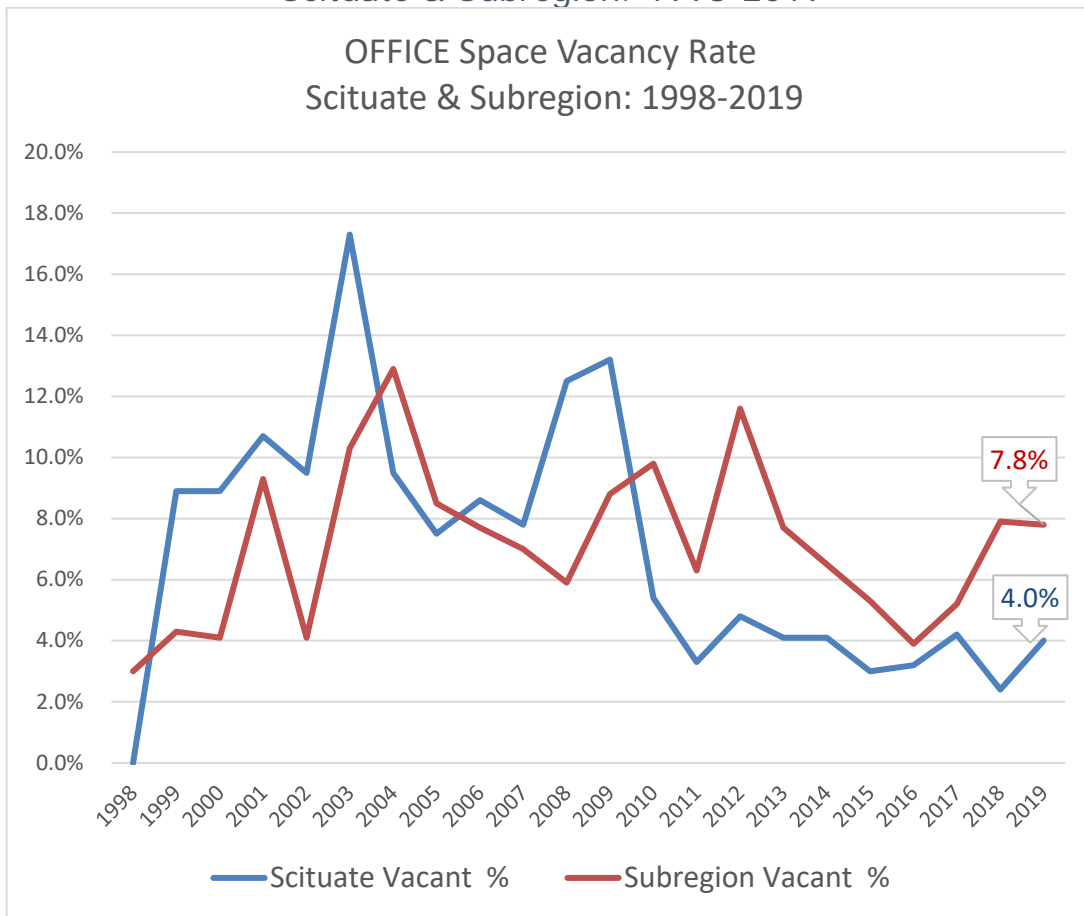
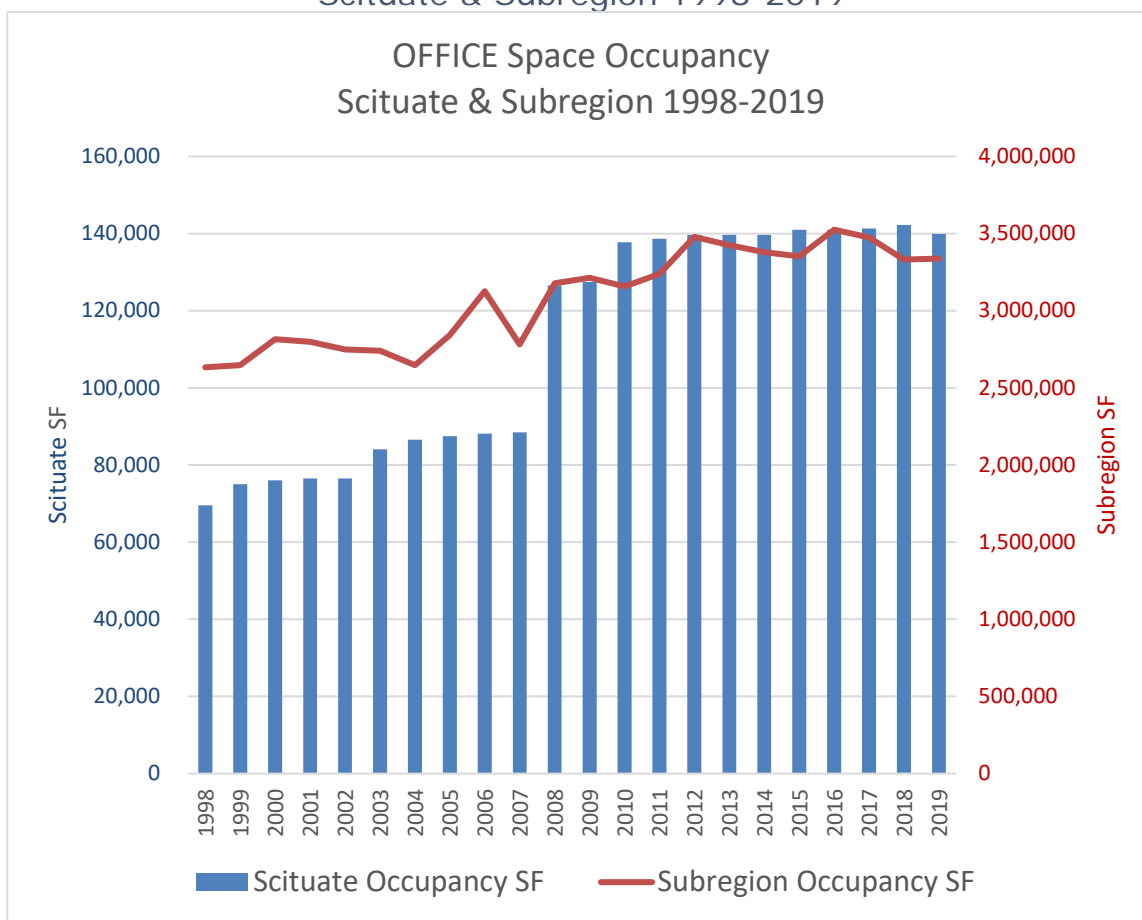


Figure 19 shows trends in square feet of office space occupied. Scituate’s 142,000 occupied square feet in the 4th quarter of 2019 is about 16,000 square feet, or 12%, greater than in 2009. Office space occupancy within the Submarket overall is about 3,300,000 square feet, a gain of 155,000 square feet or 5% over the same period. Office space occupancy in Scituate, based on the historical supply trends shown in Figure 21, is projected to increase by about 8,000 square feet per year over the next several years, consistent with the projected increase in space demand based on historical employment growth shown in prior Table 10. With about 5,800 square feet of marketable office space currently vacant in Scituate, clearly this projected demand would outstrip the available supply. Although average rents (see subsequent Figure 20) are not high enough to support new construction or substantial rehabilitation (about \$30-35 per sf), there are clear opportunities for well-designed and located high quality office space to be developed and absorbed in Scituate.

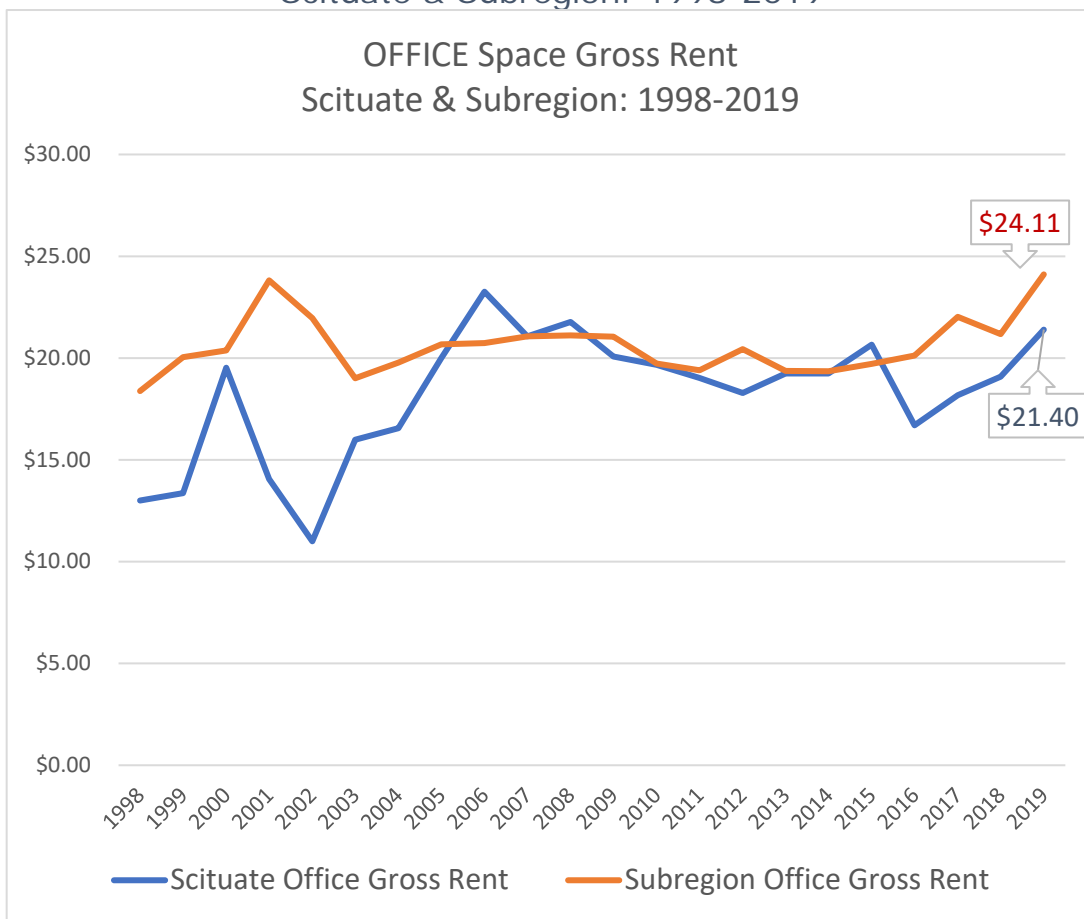
Figure 21. Office Space Occupancy
Scituate & Subregion 1998-2019



Within the Submarket overall, occupancy based on historical supply trends as well as employment driven demand is also projected to increase – by 86,000 square feet per year over the next several years -- and would also absorb currently vacant and marketable space within surrounding towns.

As shown in Figure 22, office space rents began climbing in both Scituate and the Submarket in 2016, reflecting the extremely limited supply of vacant marketable office space. As noted, these average rents would not be sufficient to support newly constructed space but do not rule out potential for high quality and well-located product to be developed.

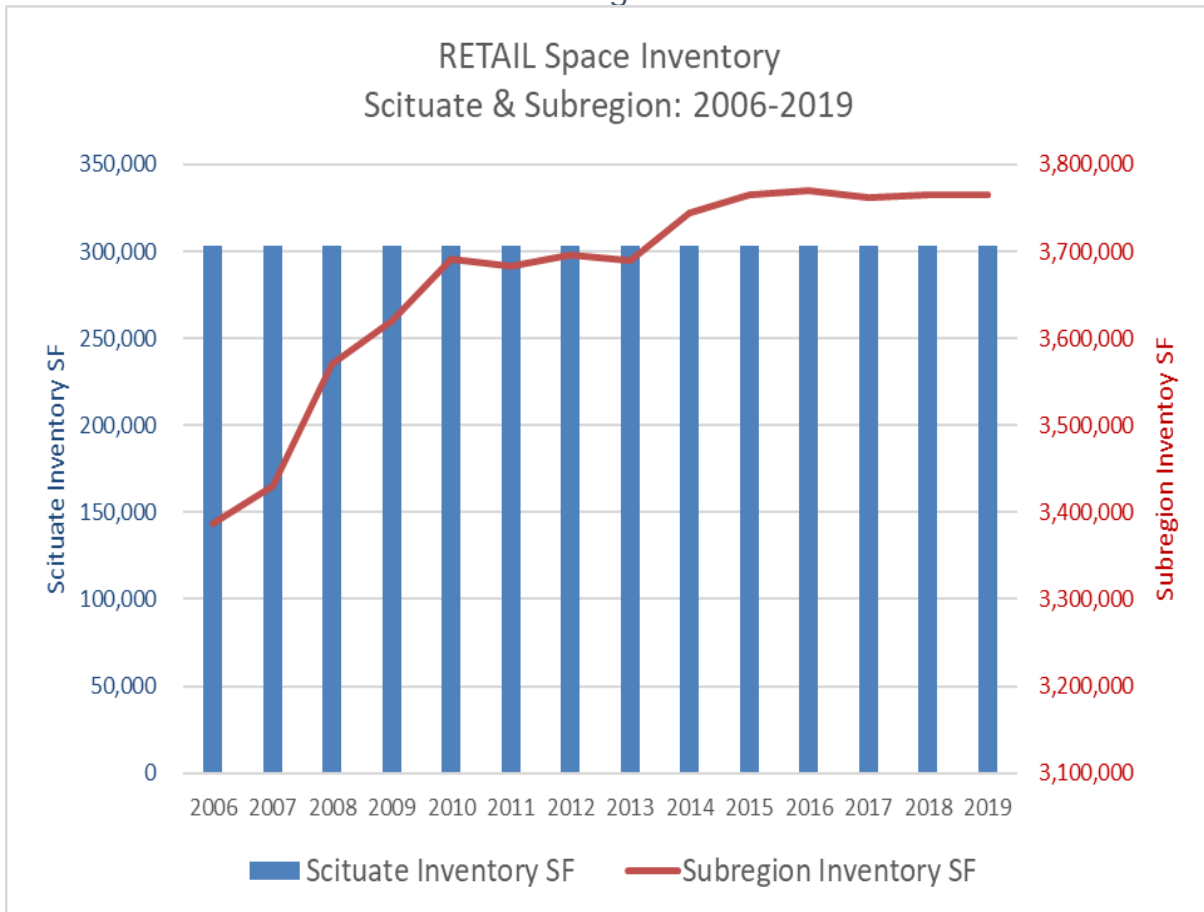
Figure 22. Office Space Gross Rent
Scituate & Subregion: 1998-2019



Retail Space Market Trends

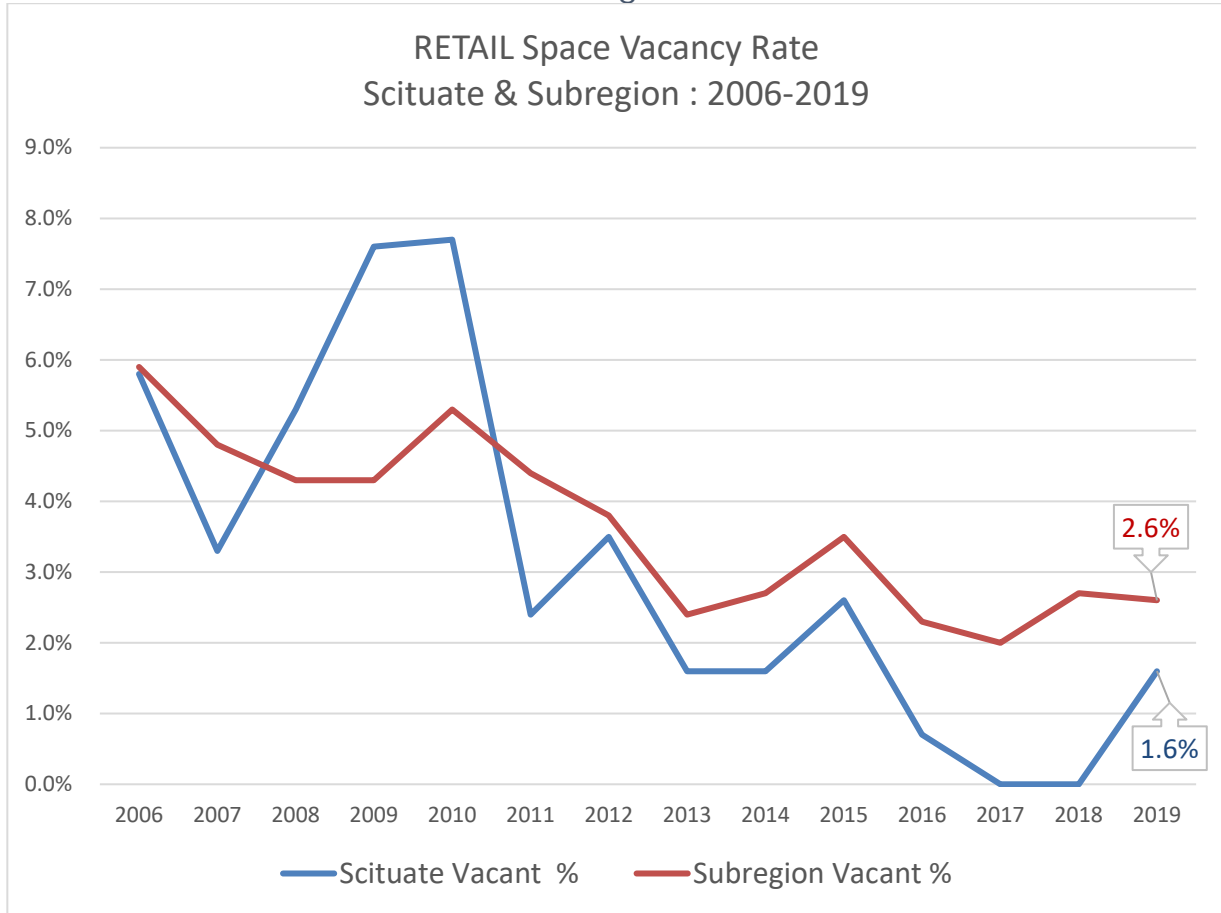
There has been no change in the retail space inventory in Scituate since 2006, over which period the Submarket added 380,000 square feet.

Figure 23. Retail Space Inventory
Scituate & Subregion: 2006-2019



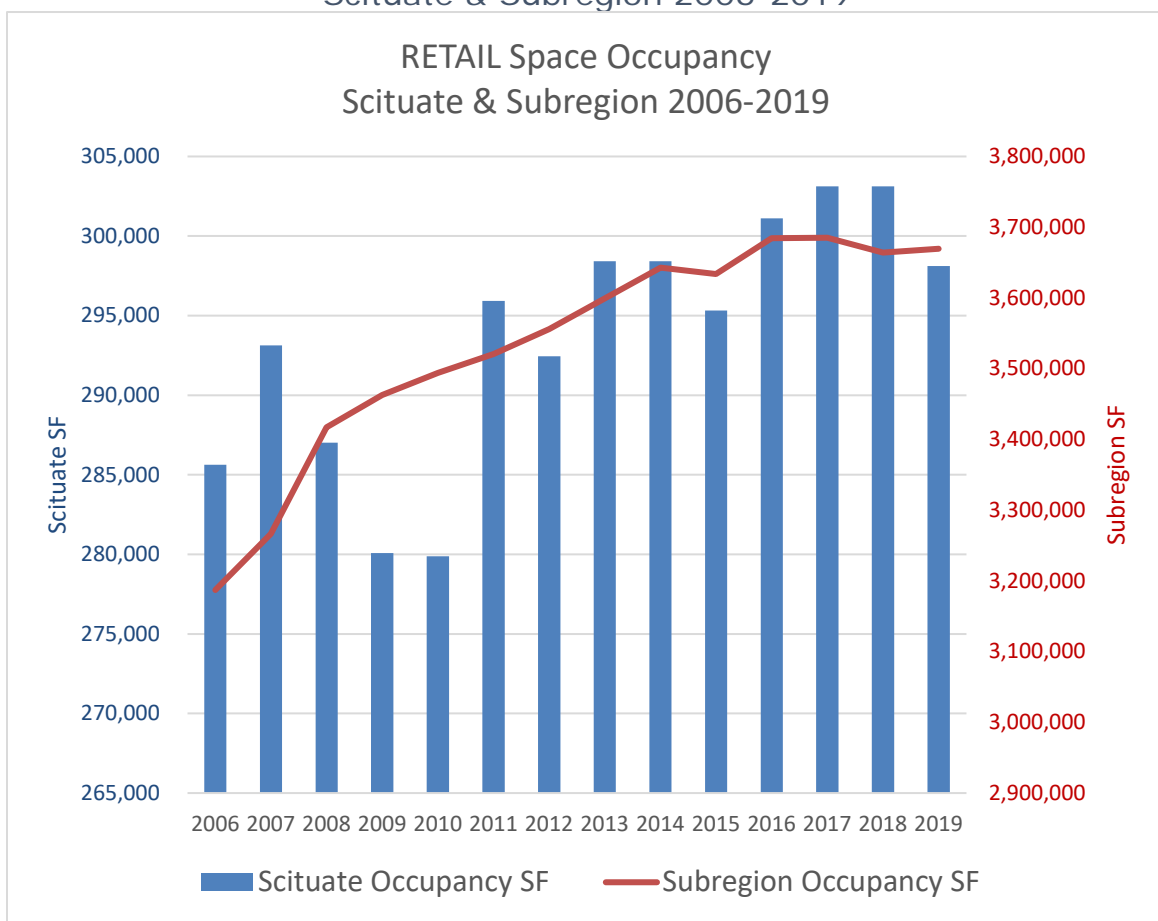
Vacancy rates for retail space are now very low in Scituate and not much higher in the Submarket. They have been declining since 2010 as shown in the figure below.

Figure 24. Retail Space Vacancy Rate
Scituate & Subregion: 2006-2019



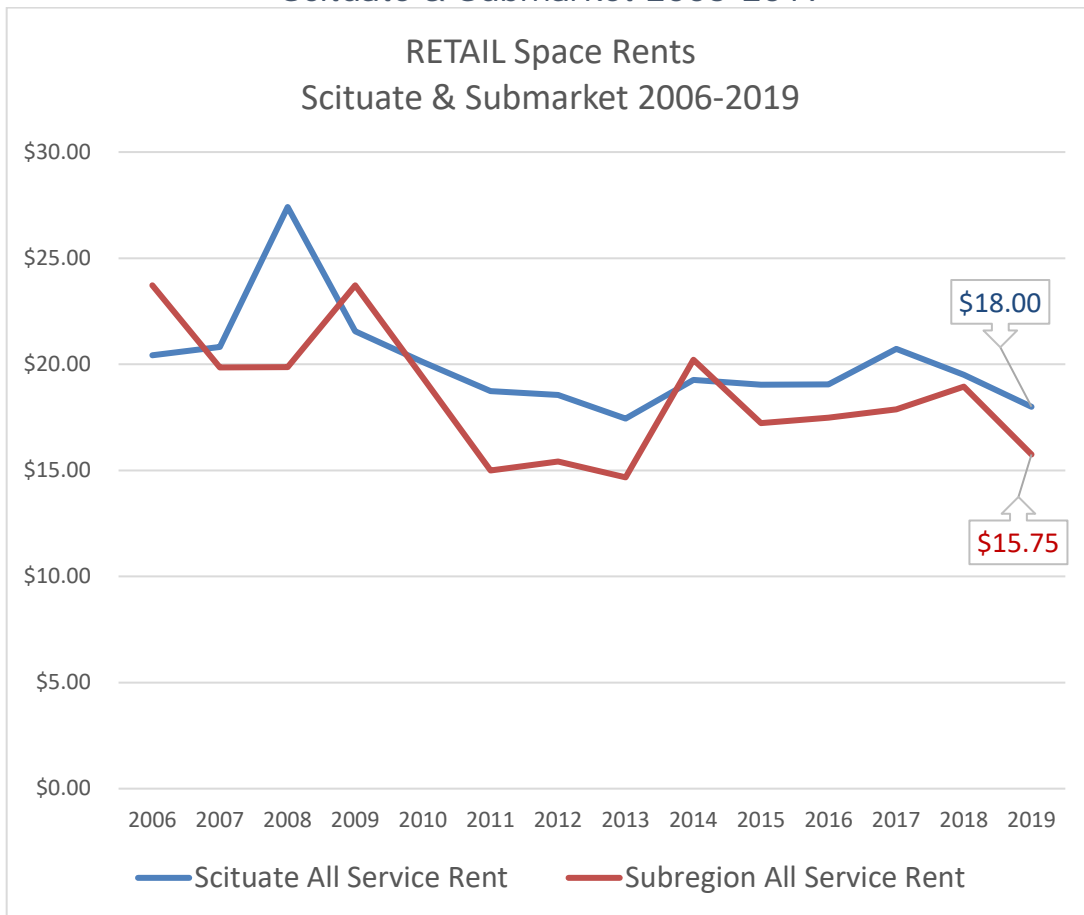
With little change in inventory and declining vacancy rates, retail space occupancies have been mostly increasing as shown in Figure 25. An extrapolation of the historical trends shown, as well average annual changes in net absorption over the past five years (the method used by CoStar to forecast net absorption), net new demand for occupancy of retail space in Scituate is projected at 2,400 square feet per year and 52,000 square feet per year in the Submarket overall over the next 3-5 years. Even this limited growth would exceed the total supply of currently vacant and available retail space in Scituate and the Subregion overall within two (2) years.

Figure 25. Retail Space Occupancy Scituate & Subregion 2006-2019



Notwithstanding the limited and declining supply of marketable retail space, average retail rents are low and declining in both Scituate and the Subregion overall. As with the current supply of office space, the average market rents are not sufficient to support new construction. Projected demand, however, suggests opportunities for higher quality and well-located retail development. Such demand, in the context of relatively low market rents, might be better accommodated as part of mixed residential and commercial development projects.

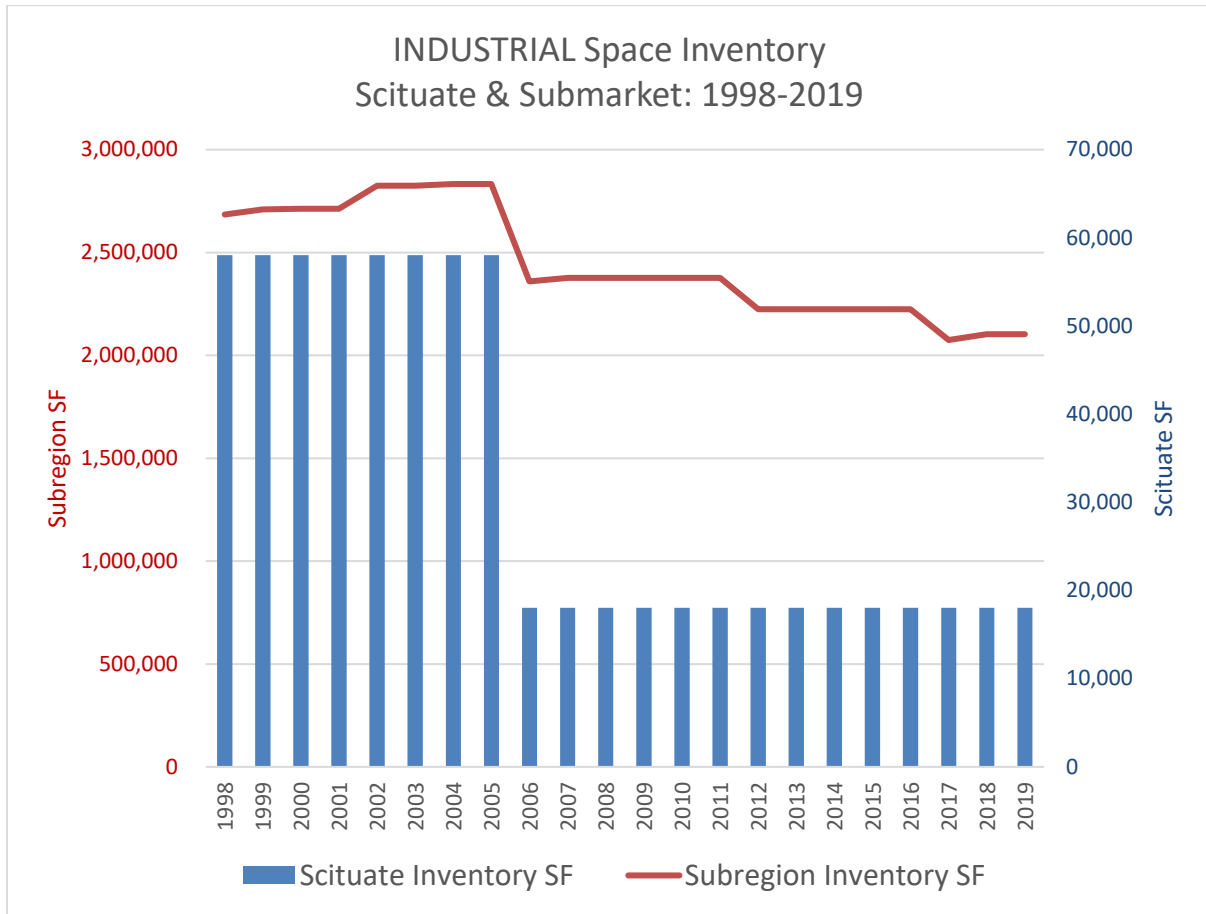
Figure 26. Retail Space Rents
Scituate & Submarket 2006-2019



Industrial Space Market

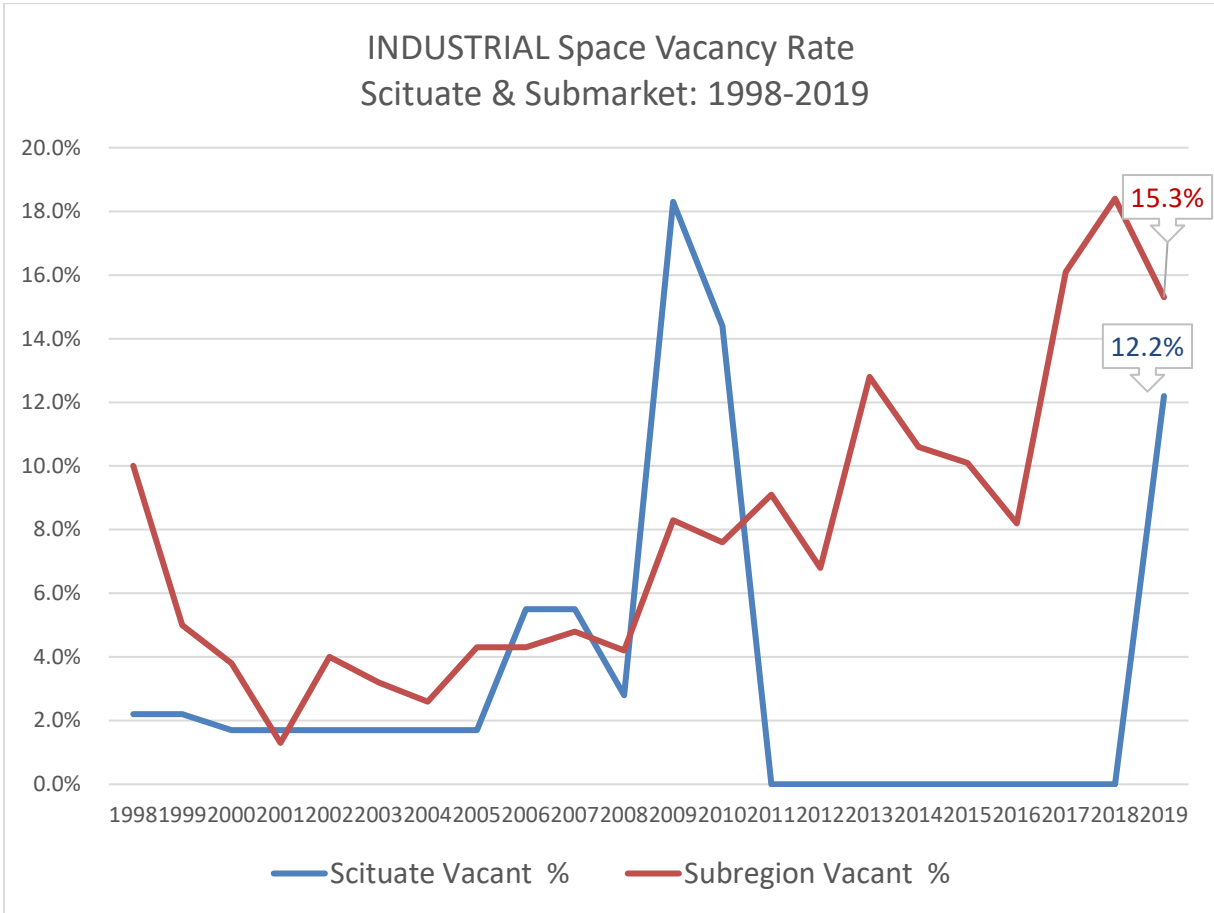
Figure 27 shows that the inventory of industrial space in Scituate has not changed since 2006 and has been declining in the Submarket since 2005.

Figure 27. Industrial Space Inventory
Scituate & Submarket: 1998-2019



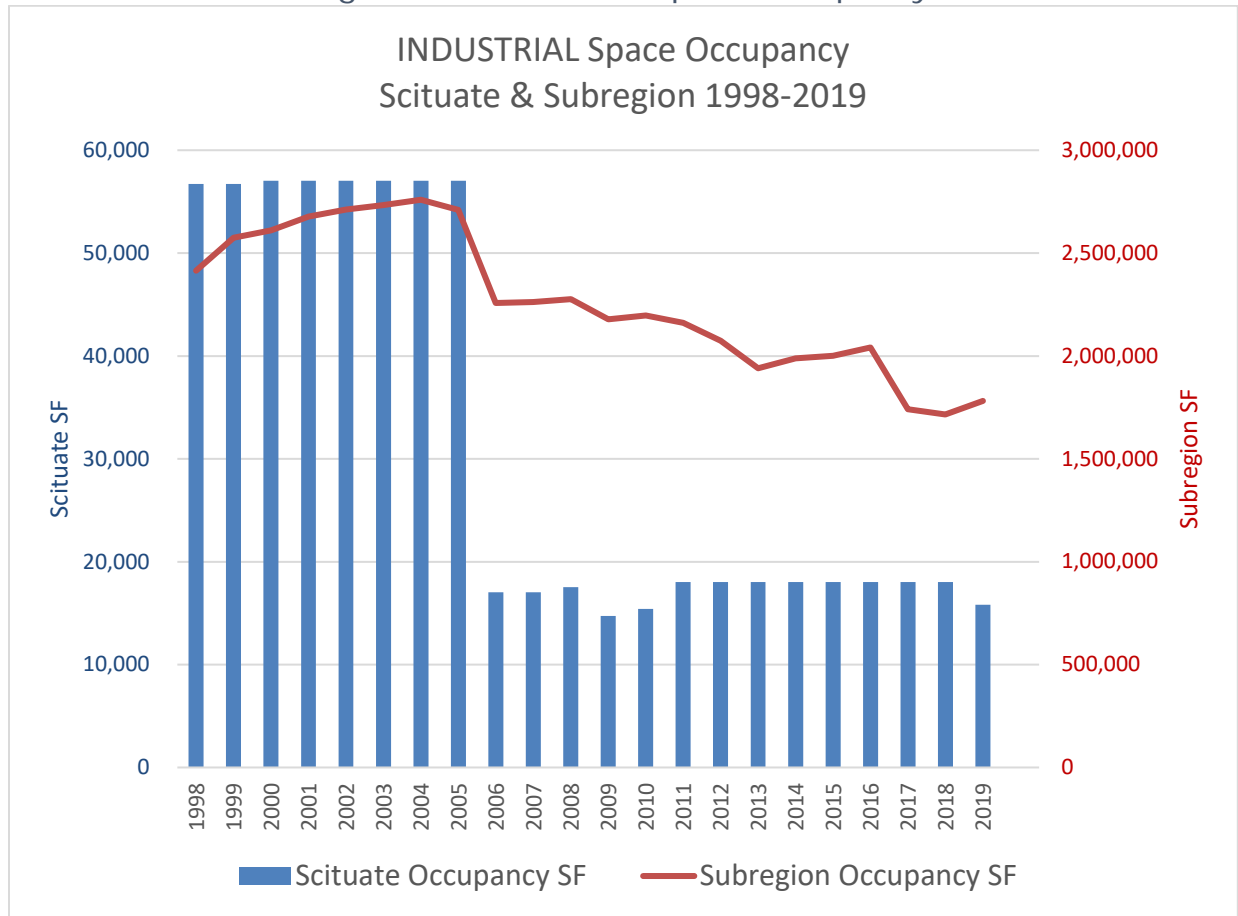
Vacancy rates for industrial space are erratic, in part reflecting the limited inventory of space but also limited demand for the space that is currently available.

Figure 28. Industrial Space Vacancy Rate
Scituate & Submarket: 1998-2019



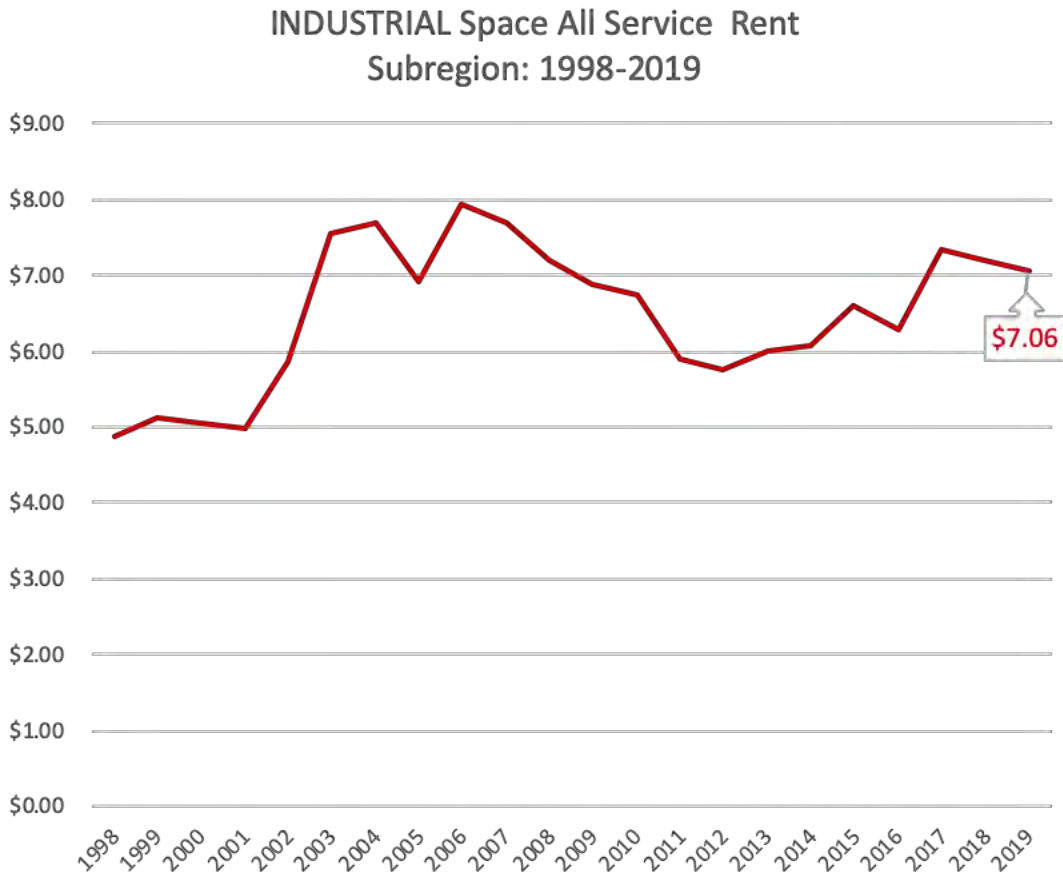
Occupancy has been virtually flat in Scituate since 2006, and declining in the Submarket.

Figure 29. Industrial Space Occupancy



Average rents, however, are increasing slightly, in spite of increased vacancies, but are insufficient to support new construction. The industrial space market can be characterized as one in which the current supply is at best of variable quality in location and/or buildings, and barely satisfies even the limited apparent demand. Employment trends for Plymouth County overall mirror the stagnant wholesale and manufacturing sectors reflected in industrial space supply trends.

Figure 30. Industrial Space All Service Rent
Subregion: 1998-2019



Retail Opportunity Gap/Surplus Analysis

The retail opportunity gap analysis is a tool used by major retailers and chain restaurants to gauge market demand and competition within a specified geographic area. It presents a snapshot of the current consumer spending on various retail categories within a specified geographic area alongside actual retail store sales in those same categories within the same geographic area. Where expenditures by households in the market area exceed sales in that market area, a gap or opportunity exists for new or existing stores within the market area to “capture” more of those household expenditures. (This loss of potential sales is also called “leakage”.) Conversely, where market area household expenditures are less than actual sales for a category, it indicates that stores in that category already attract consumer dollars from outside the market area and the opportunity to draw more retail activity may be more limited or may require greater effort.

The analysis is predicated on the idea that that people will typically purchase goods and services within the shortest available walking or drive time from where they live. The principle applies to comparable and competitive goods, services, and pricing: there is no guarantee of success based strictly on location advantage, which simply presents the opportunity.

Retailers typically define market areas in terms of drive times, with a 15-minute drive time considered the maximum time consumers would be willing to drive for all but the largest stores and store types. Market support within a 5-minute drive time is considered the maximum time consumers would be willing to drive to smaller, convenience type retailers, and market demand within a 10-minute drive time is considered essential for most medium sized stores and restaurants. In the case of the Scituate Village Business Districts, 10- and 15-minute drive times from the districts’ centers were selected as the most likely area from which to draw additional retail activity.

This “gap” analysis has been carried out for two target Village Business Districts in Scituate: North Scituate and Greenbush.

North Scituate Retail Gap

To provide a context for the potential for retail expansion within the North Scituate area, Table 11 below shows the total population, retail expenditures (demand), retail sales (supply), and the total gap within the 5-, 10-, and 15-minute drive times defining the market areas. Substantial gaps exist at all three distances from the center.

Table 11. Overview of North Scituate Retail Market Areas

	Overview of North Scituate Retail Market Areas		
	5-Minute Drive Time	10-Minute Drive time	15-Minute Drive Time
Population	3,545	18,565	40,122
Median Income	\$ 140,548	\$ 133,326	\$ 128,370
Total Retail Expenditures	\$ 107,162,209	\$ 526,122,002	\$ 1,105,645,332
Total Retail Sales	\$ 89,867,827	\$ 233,825,249	\$ 607,425,748
Total Opportunity Gap	\$ 17,294,382	\$ 292,296,753	\$ 498,219,584

Source: EnvironicsAnalytics and FXM Associates, 2019

Data in Table 12 summarize FXM's analysis of those sectors in which current consumer expenditures (demand) exceed actual store sales (supply) within the local retail market areas in 2019. The analysis shows where the gaps between supply and demand are sufficiently large to indicate an opportunity to capture sales leakages, either through better sales performance in existing stores, location of new stores or expansion of existing businesses. The market areas for these sectors are most likely to be within a 10- or 15-minute drive time of North Scituate. The final column in the 2019 table shows estimated growth rates for the retail categories over the next five years.

If about a third of the expenditure potential or "opportunity gap" were captured by expansion of existing business or attraction of new retail stores to support new square footage, approximately 57,100 square feet of additional business activity could potentially be borne by 2019 resident spending within the selected drive times. The number of stores would be up to 16. It is important to emphasize that these estimates are based on broad industry averages of sales, store sizes, and estimates of spending and are only indicative of potential. Actual business success depends on many other factors besides demand. The numbers suggest sectors in which North Scituate businesses might find opportunities to do better and advocates for new additions to the business district might search for interest.

Table 12. Retail Opportunities in the North Scituate MBTA Market Area: 2019

Retail Opportunities in the North Scituate MBTA Retail Market Area: 2019

Retail Stores	Market Area Gap	Supportable SF	Potentially Captured SF	Potentially Supportable Stores	Projected Annual Demand Growth
Furniture stores (NAICS 4421)	\$ 6,237,835	17,621	5,000	1	3.21%
Floor covering stores (NAICS 44221)	\$ 6,140,442	16,074	4,100	1	3.04%
Electronics and appliance stores (NAICS 443)	\$ 8,991,033	18,520	5,500	1	2.32%
Nursery, garden center, and farm supply stores (NAICS 44422)	\$ 5,290,179	20,649	3,200	2	3.00%
Pharmacies and drug stores (NAICS 44611)	\$ 17,744,268	32,558	12,150	1	3.08%
Other health and personal care stores (NAICS 44619)	\$ 4,262,897	13,280	4,100	1	3.00%
Family clothing stores (NAICS 44814)	\$ 20,172,645	53,759	12,000	2	1.35%
Full-service restaurants (NAICS 722511)	\$ 15,897,589	28,541	10,200	2	2.71%
Limited-service restaurants (NAICS 722513)	\$ 18,254,324	55,653	10,000	5	2.72%
Totals	\$ 102,991,212	256,657	66,250	16	

Sources: EnvironicsAnalytics Spotlight Reports, 2019; The Chesapeake Group, 2013; industry sources; and FXM Associates

Table 13 shows the overview picture of Greenbush.

Table 13. Overview of Greenbush Retail Market Areas

Overview of Greenbush Retail Market Areas

	5-Minute Drive Time	10-Minute Drive time	15-Minute Drive Time
Population	4,358	18,845	39,936
Median Income	\$ 143,095	\$ 135,900	\$ 133,016
Total Retail Expenditures	\$ 127,769,862	\$ 553,166,292	\$ 1,190,733,993
Total Retail Sales	\$ 124,655,500	\$ 325,242,519	\$ 724,024,458
Total Opportunity Gap	\$ 3,114,362	\$ 227,923,773	\$ 466,709,535

Source: EnvironicsAnalytics and FXM Associates, 2019

The population and median incomes at Greenbush are quite similar to those in North Scituate, as are the gap sizes at 10- and 15-minute drive times. The following table shows the results of the sector gap analysis, conducted as described above and with the same caveats.

Table 14. Retail Opportunities in the Greenbush MBTA Retail Market Area: 2019

Retail Opportunities in the Greenbush MBTA Retail Market Area: 2019

Retail Stores	Market Area Gap	Supportable SF	Potentially Captured SF	Potentially Supportable Stores	Projected Annual Demand Growth
Electronics and appliance stores (NAICS 443)	14,580,947	30,034	5,500	1	2.90%
Lawn and garden equipment and supplies stores (NAICS 4442)	8,938,890	24,094	10,000	1	2.88%
Pharmacies and drug stores (NAICS 44611)	7,113,170	13,052	12,150	1	2.97%
Other health and personal care stores (NAICS 44619)	2,135,432	6,652	4,100	1	2.98%
Family clothing stores (NAICS 44814)	9,426,246	25,121	6,000	1	1.33%
Jewelry stores (NAICS 44831)	5,747,097	7,425	4,200	1	0.50%
Sporting goods stores (NAICS 45111)	3,680,152	11,254	6,000	1	0.67%
Full-service restaurants (NAICS 722511)	18,164,992	32,612	15,300	3	2.67%
Limited-service restaurants (NAICS 722513)	19,757,084	60,235	8,000	4	2.60%
Totals \$	89,544,010	210,480	71,250	14	

Sources: EnvironicsAnalytics Spotlight Reports, 2019; The Chesapeake Group, 2013; industry sources; and FXM Associates

If roughly a third of the expenditure potential or “opportunity gap” were captured by existing businesses or attraction of new retail stores to support new square footage, approximately 71,000 square feet of additional business activity could potentially be borne by 2019 resident spending within the selected drive times. The number of stores would be up to 14.

Understand that the gap analyses do NOT mean there is no opportunity for growth or improvement outside of these sectors, simply that these offer an evidence based understanding of what is missing from the area from a consumer perspective.

Also understand that the presence of a “gap” is no guarantee; the analysis provides a picture of current business opportunity - for existing retailers to do better by capture a greater share of customer purchases in existing stores and for new retailers to locate or expand facilities to take advantage of unmet customer demand.

Rental Housing Demand and Supply Trends

Rental housing is increasingly considered an important asset to economic development, particularly as it enables a community to attract and/or retain its younger labor force and others not interested in, or able to, afford homeownership in traditional single-family neighborhoods. To the extent that rental housing development can complement mixed uses in older downtown and neighborhood commercial centers, it also represents an opportunity to upgrade underutilized properties. Younger households and empty nesters are also able and willing, and often prefer, to live in areas that enable them to walk to restaurants, retail shops, recreational opportunities and even jobs that might not be suitable for traditional family housing. Employers are increasingly looking to communities that will enable their current and prospective employees to live and work close to the business location.

The residential component of a mixed-use project can make or break its financial feasibility², especially when trying to upgrade older downtown/village centers where retail/commercial rents are not adequate to support new construction or rehabilitation of existing commercial properties. In the case of Scituate, higher density rental housing can add to the attractiveness, local spending, and livability of village centers, such as North Scituate and Greenbush, as well as contribute net tax revenues for the Town.

FXM's *Housing Demand Model* projects over the next five years the average annual demand for rental housing by age group, income and affordable rental rates. FXM's model is distinctive in that it captures mobility within the market area as well as net new growth. Over 90% of expected demand for rental housing in most market areas in New England is generated by households already residing in the area, who are looking to change from owners to renters, upsize or downsize from the current unit, or change location for family or work reasons. FXM's model explicitly accounts for propensity to own or rent and frequency of moving by householder age and income.

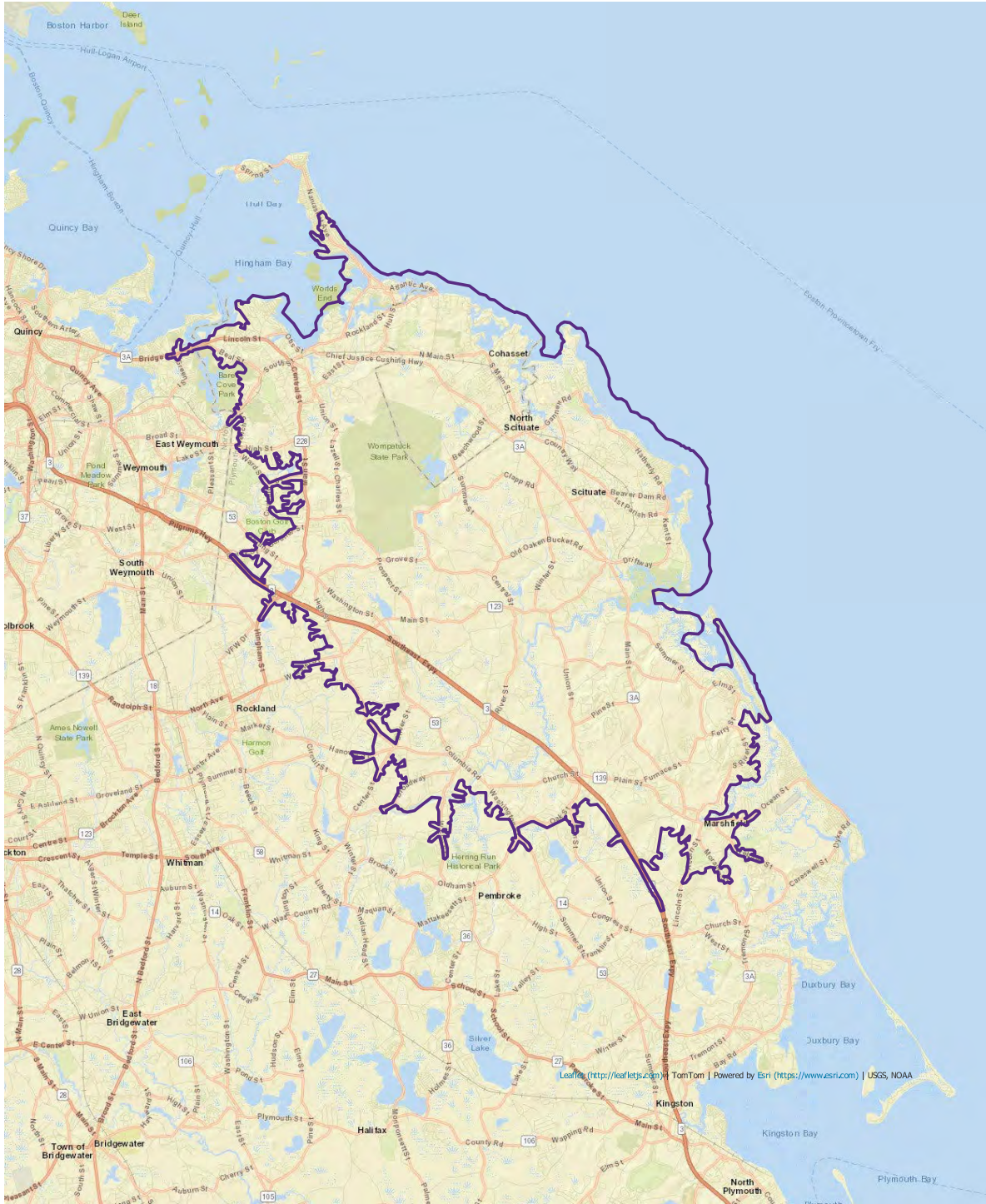
In addition to assessing average annual demand based on householder characteristics and tendencies, this section also analyzes recently available rental units within the market area by unit size, number of bedrooms, and rental rates; and analyzes historical trends in the inventory and monthly rents for rental units. The objective of the analytic exercise is to assist planners and developers understanding residential development potential, and to target types of rental units, in terms of cost and size and amenities, to various age groups of potential renters.

² Virtually all the major real estate developments recently completed, currently underway or proposed, in greater Boston's superheated real estate market involve residential, retail/restaurant, and office components rather than stand-alone single uses.

For the purposes of this analysis the market area is defined as the area within a 20-minute drive time of the Scituate Town Hall. The 20-minute drive time area is consistent with the generally accepted view of the primary geographic area within which communities offer similar economic development attributes and constitute the competitive region for attracting jobs and households. This market area is shown graphically in Figure 31.

Figure 31. 20-minute Housing Market Area

Pop-Facts® DemographicSnapshot | Map



For this geographic area, FXM obtained proprietary data from EnvironicsAnalytics *Spotlight* Reports, estimating the number of households by age of householder and income ranges in 2019 and projected to 2024. Data in Table 15 provide an overview of population, households, and renters within this market area.

Table 15. Housing Demand Context
20-Minute Market Area

Housing Demand Context 20-Minute Market Area		
Population		84,718
Households		32,239
Renter Households		5,939
	% Renters	18%
Renters Moving in Average Year		1,074
% of All Households		3%
Median Household Income	\$	123,624

Source: EnvironicsAnalytics, Spotlight. 2019 estimates, and FXM Associates

The following demand assessment is segmented by age and affordable rents. Rent levels needed to support rehabilitation or new construction will vary depending upon the development costs of a specific project, which may include tax credits, favorable financing terms, land write-downs and other mechanisms to assure feasibility.

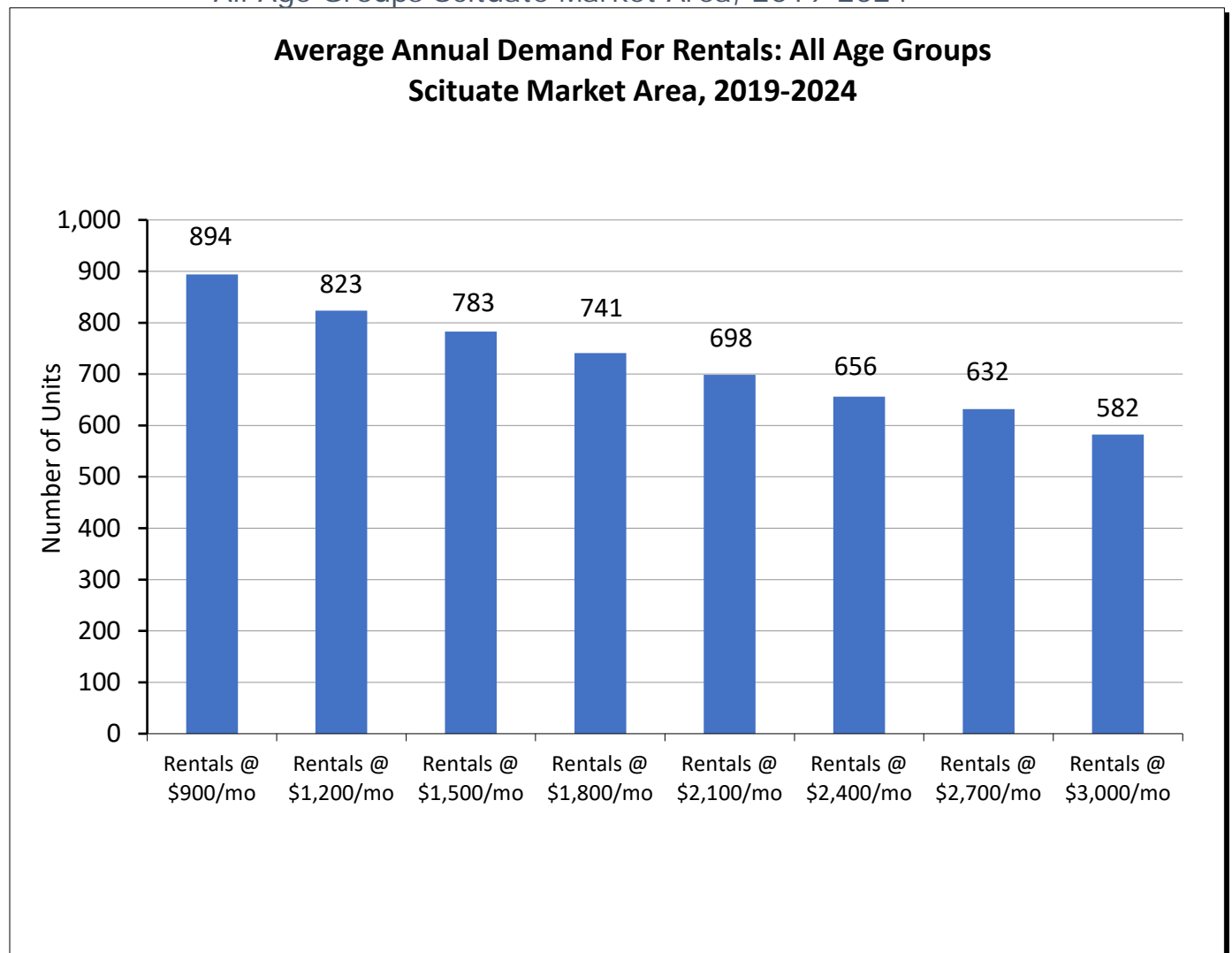
Households within the under 35 and 55 to 74 age groups are the ones frequently targeted by developers for urban and specialty rental housing, such as re-use of formerly commercial and institutional structures, because they are less likely to have school age children and therefore more open to units with fewer bedrooms in locations that are not necessarily ideal environments for children. They are also likely to be attracted to denser urban environments that allow walking distances to restaurants and retail shops. Households in other age groups, however, also generate demand for housing within the market area, and this analysis assesses potential demand for all age groups.

As previously noted, FXM's proprietary *Housing Demand Model* incorporates data on mobility rates by age of householder, propensities to own or rent by age of householder, current and projected number of households by age and income, and the qualifying income standards of commercial rental management companies.

Model results for potential rental demand are compared to trends in the actual supply of rental units, including numbers and average monthly rents for 1, 2, and 3 BR units.

Figure 32 shows the average annual demand for all rentals by all age groups in the Scituate Market Area, taking into consideration affordability, propensity to move in any given year, and propensity to rent.

Figure 32. Average Annual Demand for Rentals:
All Age Groups Scituate Market Area, 2019-2024



For example, of the total number of households, 894, expected to move to rental housing each year within the 20-minute market area and able to afford at least \$900 per month rent, approximately 741 would be able to afford monthly rents of

up to \$1,800; 698 would be able to afford \$2,100; 656 would be able to afford \$2,700, and so forth.

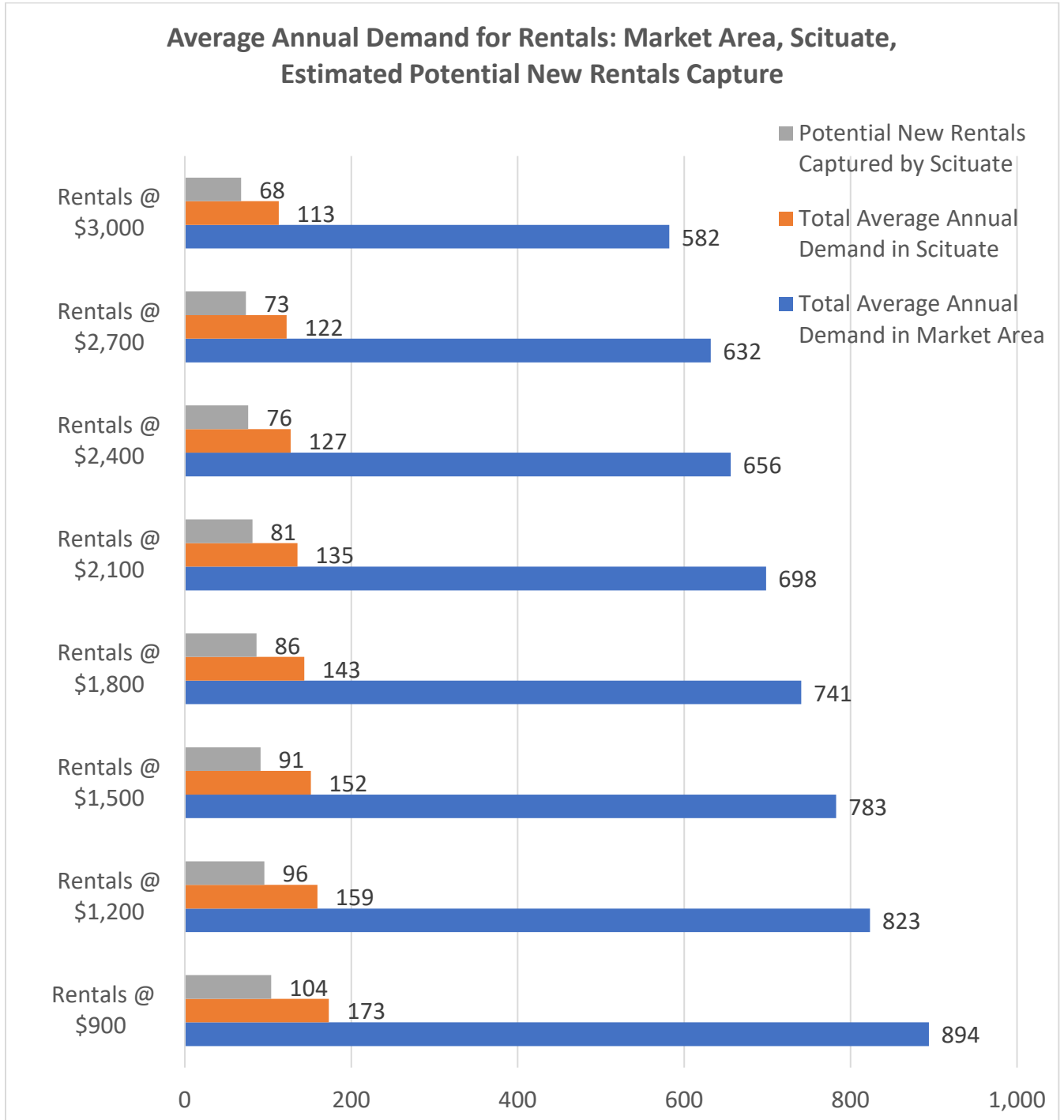
As shown in Table 16 below, based on Scituate’s current share of rental housing in the market area and recent absorption rates in comparable projects, an estimated 76 households able to afford up to \$2,400 a month rent might be absorbed by additional rental development in a competitive rental property in Scituate each year. Table 16 presents these estimates for each of the rental points shown in Figure 30. (Note that the figures in the demand columns are **not** additive. They are cumulative, with the “Rentals @ \$900” figure representing total estimated average annual demand in both Figure 32 and Table 15.) The same data are shown graphically in Figure 33.

Table 16. Estimated Average Annual Demand for Rental Housing

	Total Average Annual Demand in Market Area	Total Average Annual Demand in Scituate	Potential New Rentals Captured by Scituate
Rentals @ \$900	894	173	104
Rentals @ \$1,200	823	159	96
Rentals @ \$1,500	783	152	91
Rentals @ \$1,800	741	143	86
Rentals @ \$2,100	698	135	81
Rentals @ \$2,400	656	127	76
Rentals @ \$2,700	632	122	73
Rentals @ \$3,000	582	113	68

Source: FXM Associates *Housing Demand Model*, 2019

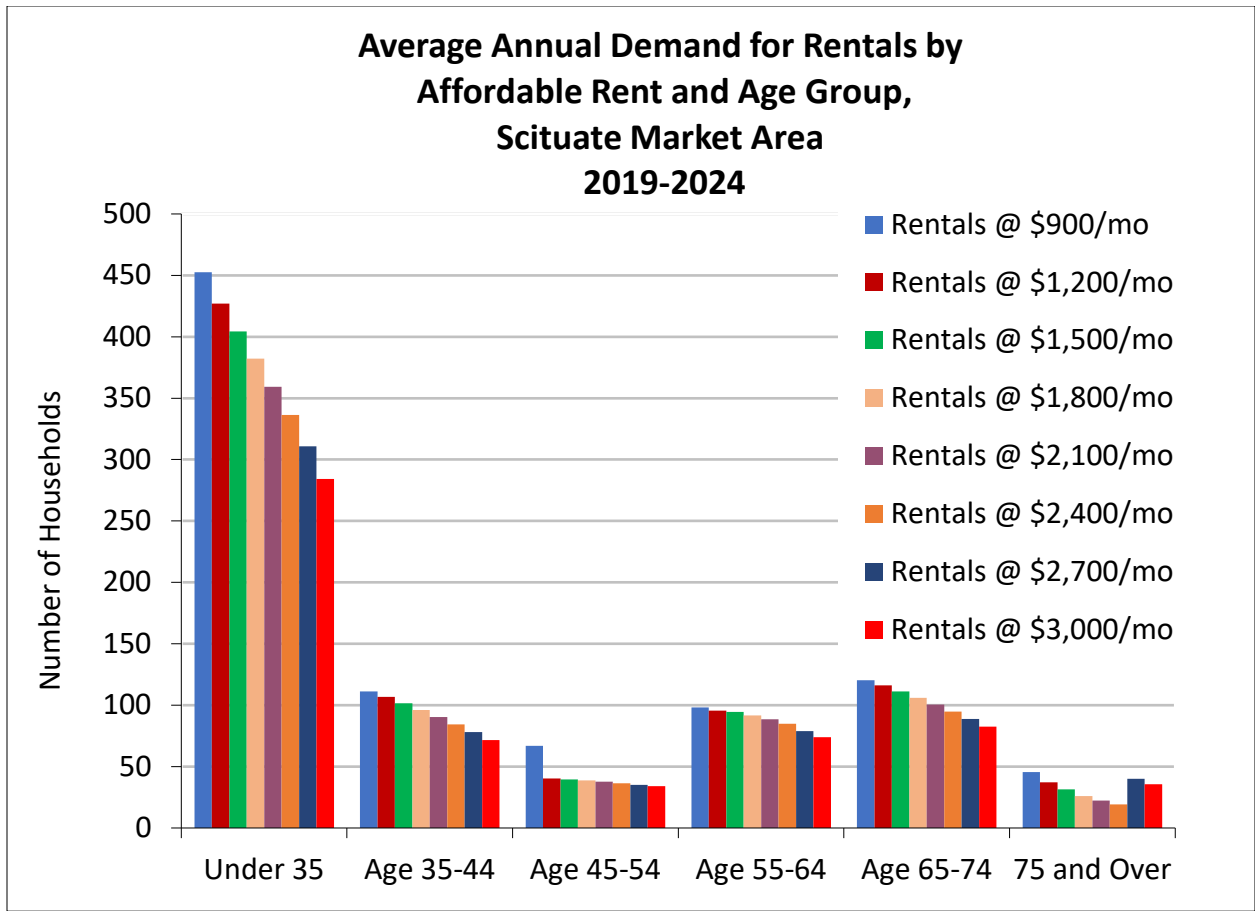
Figure 33. Average Annual Demand for Rentals: Market Area, Scituate, Estimated Potential New Rentals Capture



The actual number of units that might be captured at these rental prices in a development or redevelopment project in Scituate would depend on the quality and size of the units, site and building amenities, pricing, marketing and other factors.

The information in Figure 30 and Table 16 can be further broken down into age groups, which may be useful to marketing efforts based on the relative numbers of households by age group. Figure 34 presents these data by age group.

Figure 34. Average Annual Demand for Rentals by Affordable Rent and Age Group, Scituate Market Area 2019-2024



The graph reflects the greater propensity of younger households to rent and the frequency of their moving compared to older households, as well as the sensitivity of levels of demand to varying rental prices.

Figure 35 offers the same kind of analysis, but with the data for rents in the upper ranges only.

Figure 35. Average Annual Demand for Selected Monthly Rents by Age Group Scituate Market Area 2019-2024

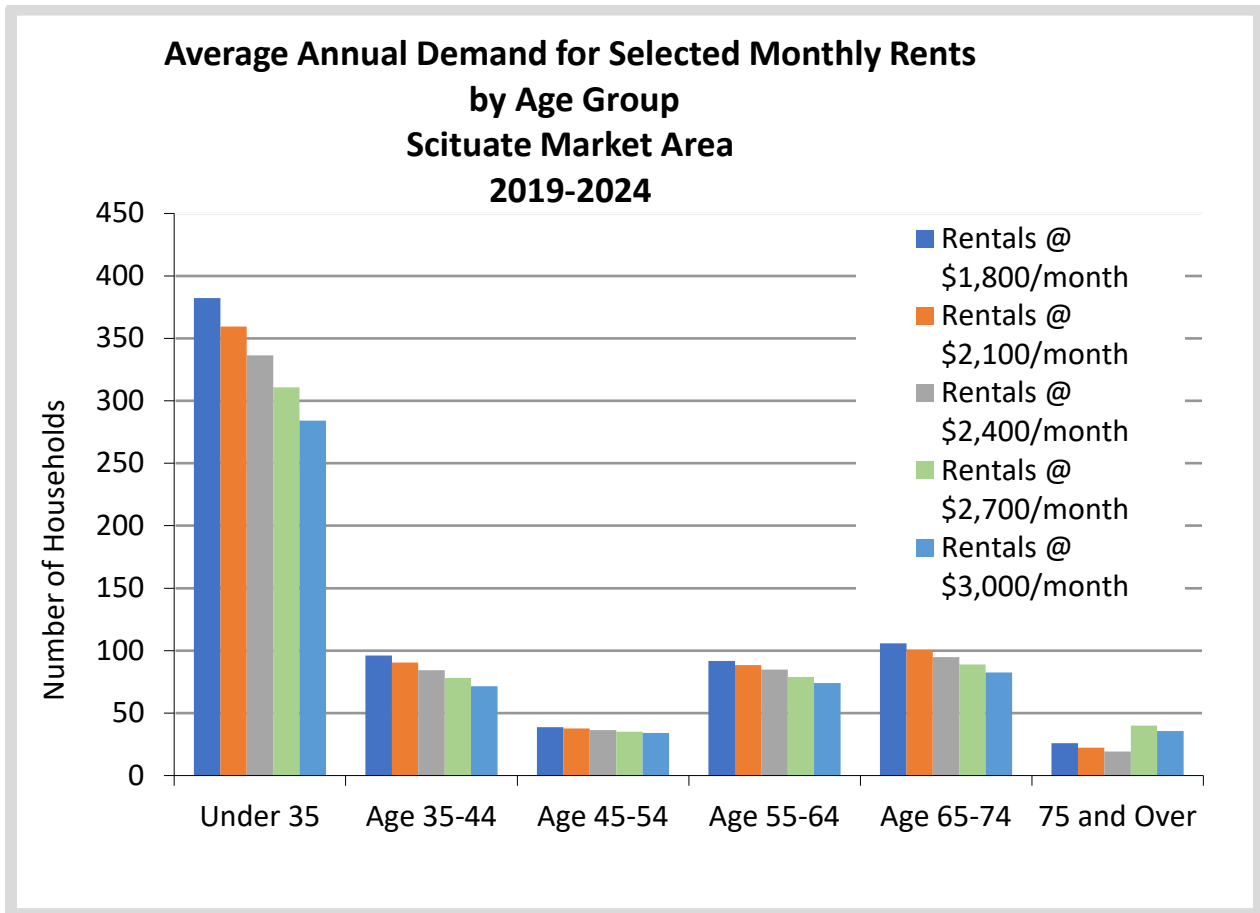
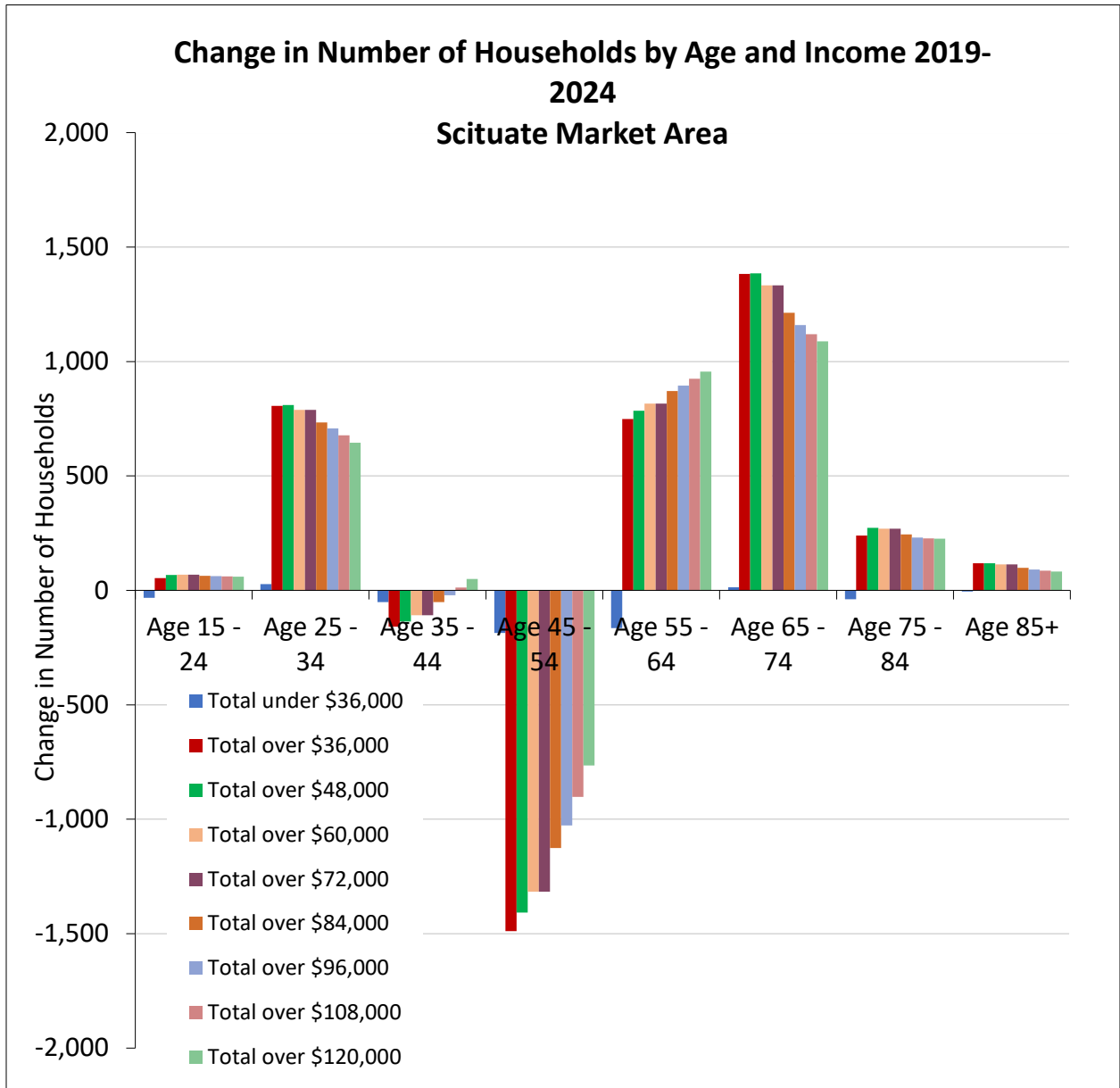


Figure 36 shows another dimension to the estimation of future rental demand: the changes projected over the next five years in numbers of households by age and income. The incomes chosen are in the upper ranges, since these households could afford the rents necessary to support rehabilitated or newly constructed housing.

Figure 36. Change in Number of Households by Age and Income 2019-2024
Scituate Market Area



Particularly striking is the projection of changes in age cohorts in the market area over the next five years: the greatest gains across all four income categories are estimated to be in the age 55 to 74 cohorts, while the age category 45 to 54, typically a population segment at peak earning capacity, would lose households in all categories of income selected above. The age cohort 25 to 34 is projected to also have strong increases in the upper income categories.

Households with incomes of over \$72,000 can afford \$1,800 a month rents; those with incomes over \$84,000 can afford \$2,100 a month rents. These households are projected to lose population in the age 45 to 54 cohort over the next five years.

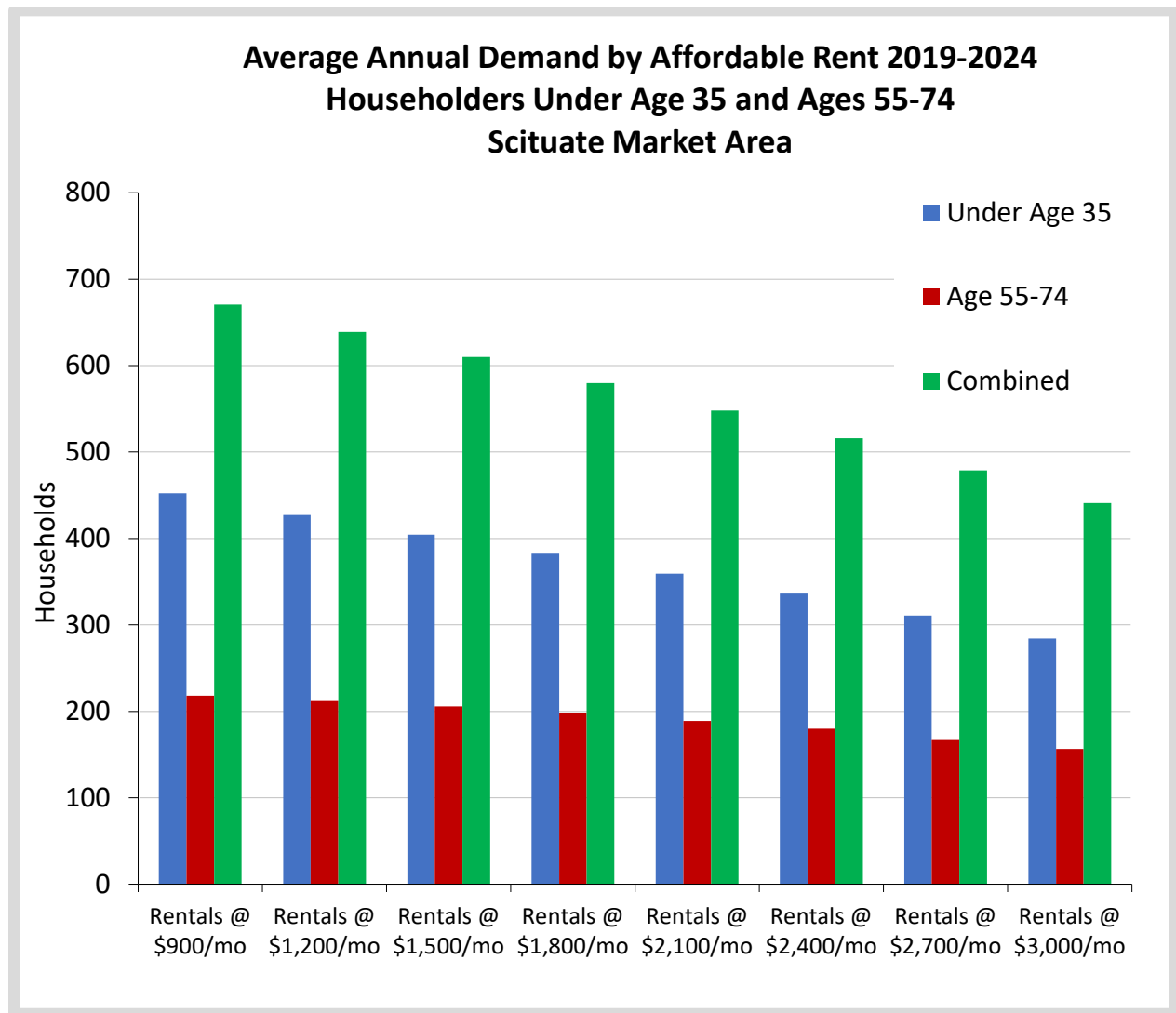
These projections, if they prove to be accurate, provide an indication of robust ability to afford reasonable rents, except for the 45 to 54 age group. Households in the income category over \$108,000 – who could afford rents up to \$2,700 per month – gain population and households in all age categories, indicating a future demand for high quality rental housing for a variety of lifestyles.

Some developers in recent years have targeted rental units, especially within urbanized areas, to households under age 35 and age 55 to 74, who often mix well within the same developments. Both groups show a higher propensity to live within walking distance of retail stores, restaurants, and transit if possible. The households under age 35 are more mobile on average and more likely to rent, so they comprise a relatively large share of potential demand. The number of younger households, moreover, is projected to experience modest growth over the next five years.

Conversely, as shown by the data in Figure 34 above, the baby boom generation households are growing in number within the 55 and older age categories, and these households have shown an increasing propensity to rent in recent years as they become empty nesters and sell their single-family homes for smaller, more manageable units. Others want to cash in the equity of their former dwellings because they need liquid income in the absence of the pensions enjoyed by prior generations of retirees. Many also continue to work part time.

Data in Figure 37 show the average annual demand by selected rental rates for the under 35 and 55- to 74-year old householders, and their combined demand.

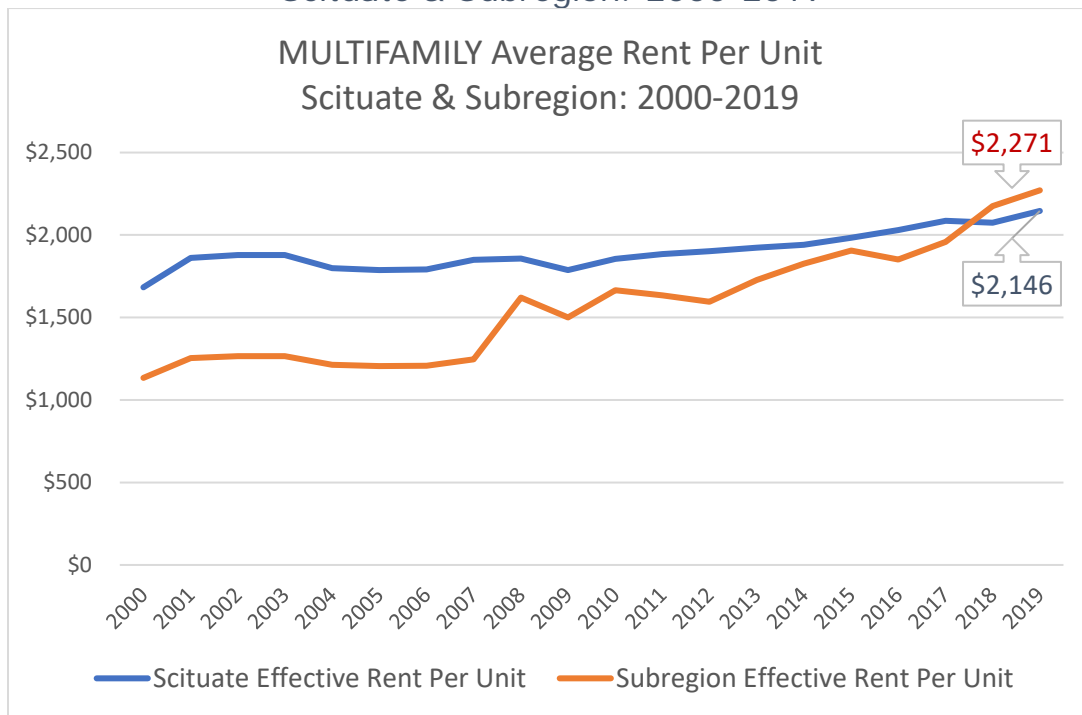
Figure 37. Average Annual Demand by Affordable Rent 2019-2024
Householders Under Age 35 and Ages 55-74
Scituate Market Area



Rental Housing Price and Supply Trends

Figure 38 shows trends in average monthly rent for all multi-family rental units in Scituate and the market area. Rents increased in the overall market area by an average of 5.3% per year between 2010 and 2019. Over the same period, rents in Scituate increased by an average of 1.4% per year.

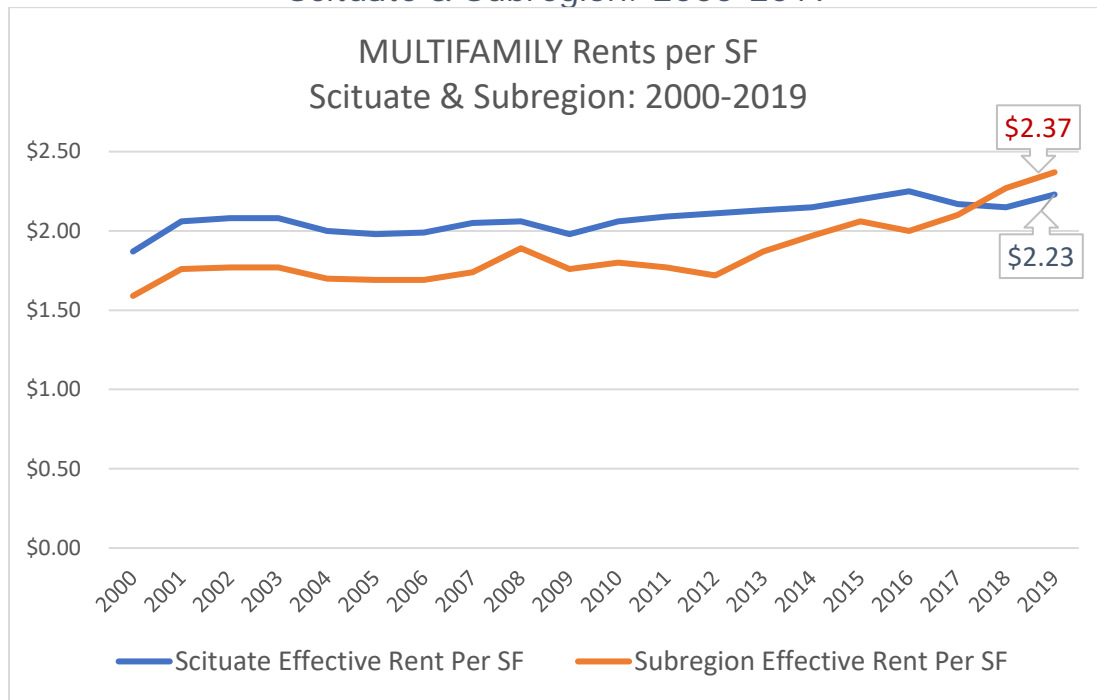
Figure 38. Multifamily Average Rent Per Unit
Scituate & Subregion: 2000-2019



Source: Co Star Property Information System and FXM Associates

Figure 39 shows the trends in rent per square foot, a useful metric for prospective developers. As is apparent from the trendlines, these have risen only slightly since 2000, by an average of 1% per year in Scituate and 2.6% per year in the Subregion.

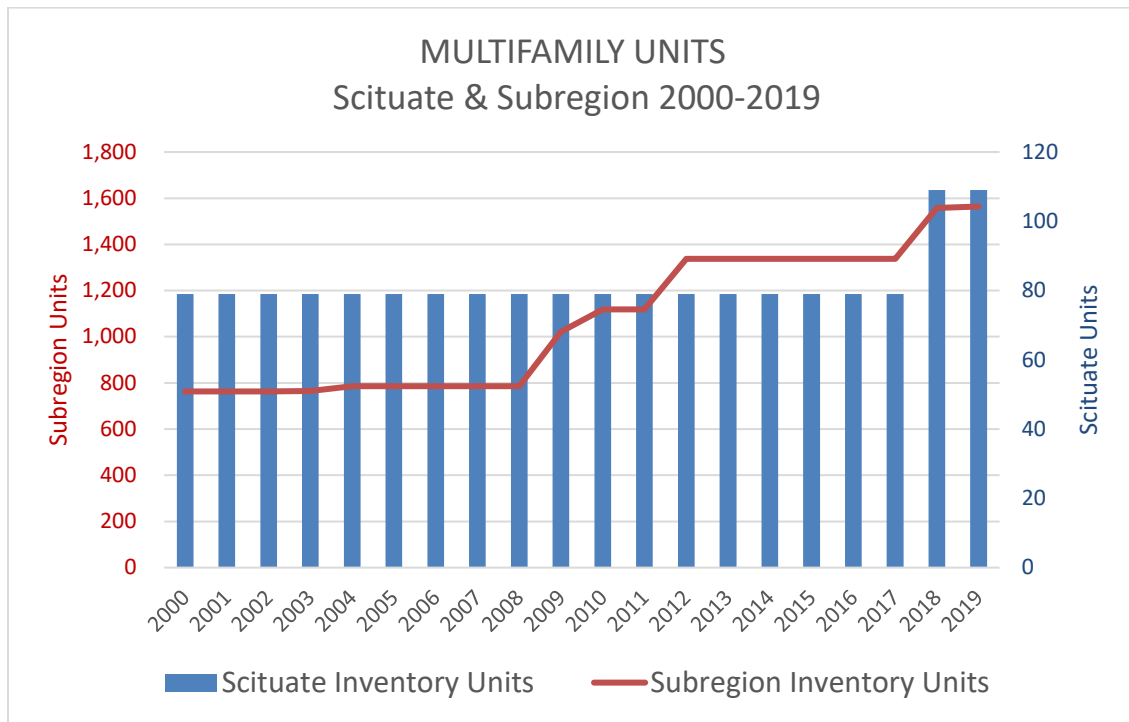
Figure 39. Multifamily Rents per SF
Scituate & Subregion: 2000-2019



Source: Co Star Property Information System and FXM Associates

As shown in Figure 40, there has been little change in the inventory of multifamily units in Scituate, based on data reported by CoStar. Between 2000 and 2017 there were 79 multifamily rental units town-wide with 30 units added in 2018. Over the same period 800 multifamily rental units were added in the Subregion, an average increase of 5.5% per year.

Figure 40. Multifamily Units
Scituate & Subregion 2000-2019



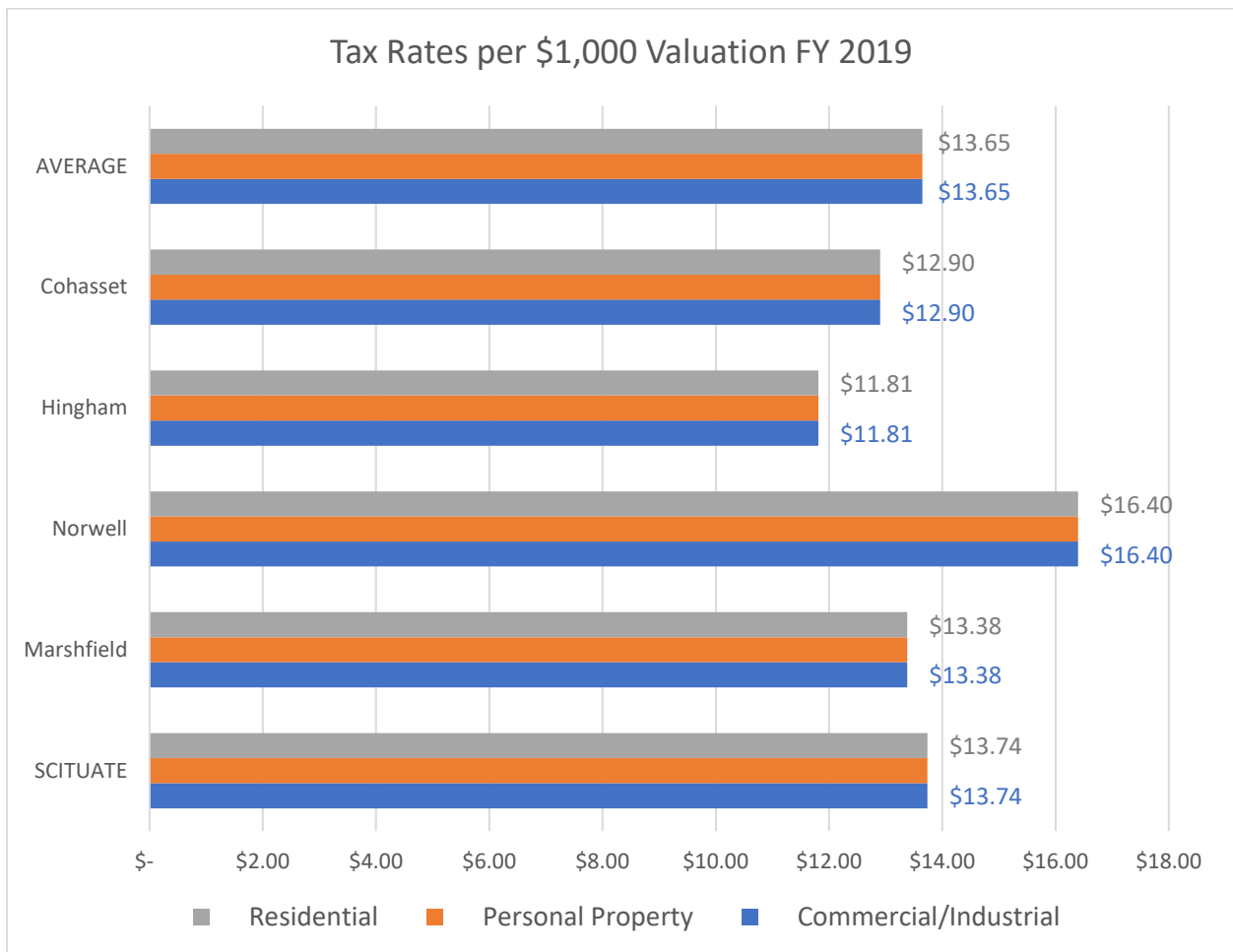
Fiscal Comparison: Scituate and Surrounding Towns

This section presents an analysis of where Scituate stands in terms of its existing tax policy compared to that of surrounding communities: Cohasset, Hingham, Norwell, and Marshfield. Tax rates and tax policies are competitive factors for both business and resident location decisions.

Tax Rates

As shown in Figure 41, Scituate and surrounding towns all have one tax rate for residential, personal, and commercial/industrial property. Scituate's rates are slightly above the average; second highest behind Norwell's.

Figure 41. Tax Rates per \$1,000 Valuation FY 2019

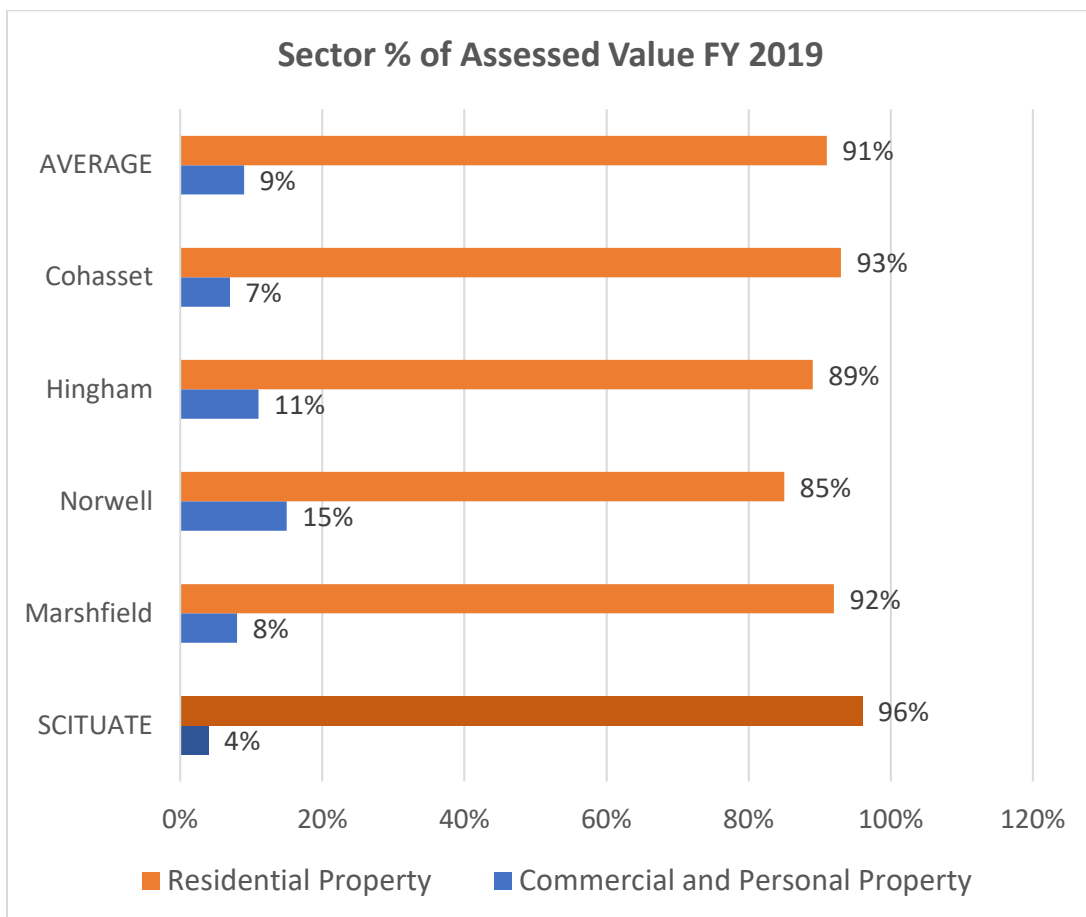


Source: Mass Department of Revenue, Division of Local Services, Municipal Data Bank, 2019, and FXM Associates

Residential and Commercial Property as Percent of Total Assessed Valuation

Figure 42 shows the proportion of assessed value that comes from residential and commercial properties. The proportions of tax revenues derived from residential and commercial properties are the same, reflecting no difference in tax rates for residential and commercial properties in each town. Scituate has the highest dependency, 96%, on residential properties, with Marshfield and Cohasset also above 90%. Norwell has the lowest, at 85%.

Figure 42. Sectors as % of Total Assessed Value, 2019

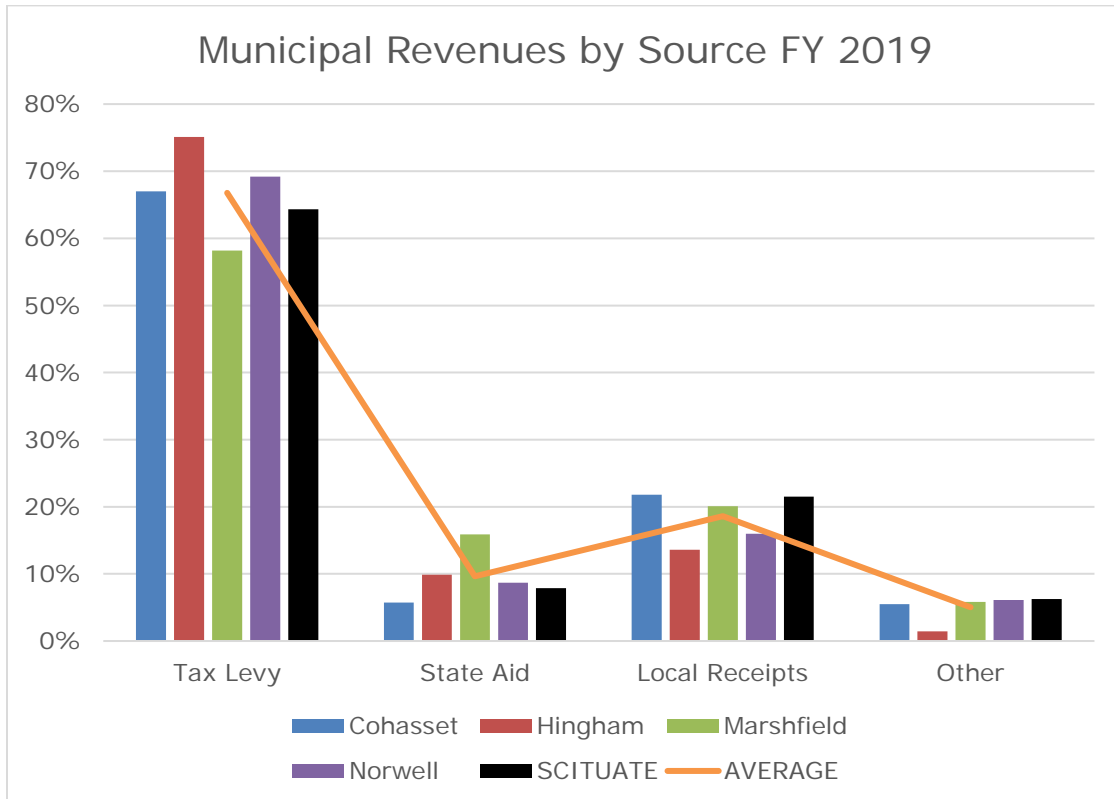


Source: Mass Department of Revenue, Division of Local Services, Municipal Data Bank, 2019, and FXM Associates

Revenue by Source

The towns also differ somewhat in the sources of revenue, as shown in Figure 43, but by far the predominant source is the tax levy, followed by local receipts. Marshfield derives the largest proportion from state aid, Scituate the second lowest.

Figure 43. Revenue by Source FY 2019



Source: Mass Department of Revenue, Division of Local Services, Municipal Data Bank, 2019, and FXM Associates



APPENDIX C: INFRASTRUCTURE



TO:	Harriman Company	DATE:	January 2020
FROM:	Howard Stein Hudson	HSH PROJECT NO.:	2018165.00
SUBJECT:	Public Infrastructure and Services		

Water and Sewer Infrastructure

Water Infrastructure

The Town of Scituate has two sources of drinking water: wells and surface water. The water for the Town is obtained from various sources: six groundwater wells, the Old Oaken Bucket Pond, Tack Factory Pond Reservoir System, and the Town of Marshfield. The water is treated at the Scituate Water Treatment Plant, which is maintained by the Water Division of the Scituate Department of Public Works (DPW). The Water Division is in charge of the operation and maintenance of the water treatment plant, six water wells, two booster stations, two water storage tanks, four corrosion control stations, three surface water supplies, 300 acres of watershed, 124 miles of water distribution system, 754 water hydrants, and 7,690 water meters.¹

ACTIVE WELLS

The Town's six wells pump from three main aquifers and are located at the following locations:

- Off Cornet Station Road, #10 and #11 – These wells were placed online in December 1931 and are the oldest wells currently in use. The original design yields of Wells 10 and 11 were 0.23 million gallons per day (mgd) and 0.28 mgd, respectively. When Layne-New England Company redeveloped both wells in 1981, new pumps were installed for both wells with a design flow of 0.23 mgd and 0.15 mgd, respectively.²
- Off Tack Factory Pond Road, #17A – Well #17 was installed in 1944 to a total depth of 119 feet. This well was redeveloped in 1982 and replaced by Well #17A in 1988 due to a recoverable loss in production. Currently, groundwater from Well 17A is pumped to Old Oaken Bucket Pond to mix with surface water before treatment at the Old Oaken Bucket Water Treatment Plant. This well received permitting for a green sand filter and construction will take about a year and a half to complete.³

¹ *Built Environment*, Page 52. Natural Hazard Mitigation Plan (2016).

² *Active Wells*, Page 2-2. Town of Scituate Drinking Water Supply & Demand Analysis (2003)

³ <https://scituate.wickedlocal.com/news/20190814/scituate-continues-to-move-forward-on-brown-water-issues>



- Off the Driftway, #18B – This well was installed in 1995 adjacent to and replacing Well 18A. Currently, Well 18B is pumped to a corrosion control facility located at the Driftway Landfill, treated, and then pumped into the distribution system. The water is treated with sodium fluoride and potassium hydroxide in order to control corrosion issues within the distribution system.
- Off Chief Justice Cushing Highway and near the Town Hall, #19 – This well was constructed in 1955 and was developed in 1981 and 1999. Since its inception, Well 19 has been the largest contributor to the water supply system. Well 19 was originally designed to yield 0.45 mgd and has produced an average of 0.36 mgd since 1988. Water from Well 19 is blended with water from Well 22 and sent to a corrosion control facility. The water is treated with sodium fluoride and potassium hydroxide in order to control corrosion issues within the distribution system.
- Off Old Forge Road, #22⁴ – This well has been a consistent contributor to the water system since its installation in 1963 in Barnes Meadow off Old Forge Road. Recently, a new pump was installed at Well 22 in March 1995. Water from Well 22 is currently blended with water from Well 19 and sent to a corrosion control facility. Water is treated with fluoride and potassium hydroxide. The originally design capacity was 0.50 mgd and is one of the highest yielding wells in Scituate (as of 2003).

Wells 17A, 19, and 22 lie within the First Herring Brook watershed and are influenced, through infiltration, by its surface water system. Water drawn from Well 17A has been diverted into Old Oaken Bucket Pond to be treated with the surface supply. Well 2A, the Kent Street well, is used for irrigation at the golf course. It does not provide drinking water due to low capacity and poor quality. Well 20, located off Jenkins Place, was developed in 1958 with a capacity of 0.2 mgd. It was discontinued due to high iron content, reactivated during water shortages in the 1960s and 1970s, and then discontinued again. The well casing and screen are still located within the pump house at Well 20; however, the pump was removed, and the well was capped. Well 21, located in Wagners Meadow, was developed with a capacity of 0.325 mgd. This well produced quality water until 1963, at which time color issues arose. After many attempts to revitalize the well, it was abandoned in 1969 and the Reservoir was constructed over it.

SURFACE WATER SUPPLY

The Scituate Reservoir System consists of Tack Factory Pond, The Reservoir, and Old Oaken Bucket Pond. The only withdrawal point from these sources is in Old Oaken Bucket Pond. Water travels

⁴ *Critical Infrastructure Vulnerability*, Page 39. Natural Hazard Mitigation Plan (2016).



from Tack Factory Pond to The Reservoir by a culvert under Route 3A. From The Reservoir, water flows over the dam to First Herring Brook, which feeds Old Oaken Bucket Pond. During lower water conditions, water flows from The Reservoir to Old Oaken Bucket Pond through a 16" diameter pipe that extends through the dam to First Herring Brook, which then flows to Old Oaken Bucket Pond. When necessary, the valve in this pipe can be opened to refill Old Oaken Bucket Pond.

Water withdrawn from Old Oaken Bucket Pond is pumped to the water treatment plant which has a capacity of three million gallons per day, but currently only pumps about one mgd, which is well below the plant's capacity. The treatment plant currently treats water from Old Oaken Bucket Pond and Well 17A and has adequate capacity to handle an increase in safe yield up to two mgd before expansion would be necessary.⁵ As of 2003, the quality of water at Old Oaken Bucket Pond meets all federal and state standards. However, color is relatively high and there is a significant amount of plant growth that indicates high nutrient loadings. Additionally, flocks of geese and swans make their home at Old Oaken Bucket Pond, leading to the possibility of bacteriologic contamination.

SUMMARY

Old Oaken Bucket Pond, Tack Factory Pond, The Reservoir, and their watersheds and tributaries, along with the groundwater underlying Scituate, are the primary sources of the Town's existing and future drinking water supply. Together, these resources provide approximately 20% of the Town's municipal water.⁶ Approximately 80% of the Town's drinking water is supplied by the six public drinking water wells. These wells tap the groundwater, or underground water supply, located within the stratified drift aquifer underlying the Town. The groundwater in this aquifer is classified as *Class A* by the Massachusetts Department of Environmental Protection (MassDEP) and this designation means it is of high quality and suitable for use for public drinking water.⁷ Another potential water source might be created by the expansion of The Reservoir and associated ponds, which could be accomplished through dredging. Sites for new wells are limited due to the Town's small acreage of suitable undeveloped land. The Humarock section of Scituate purchases water from the Town of Marshfield.

WATER TREATMENT PLANT

The original Water Treatment Plant was constructed in 1969 and upgraded in 1989. It was constructed to treat water from the Old Oaken Bucket Pond and Reservoir. At this time, the wells

⁵ *Surface Water Supply*, Page 2-7. Town of Scituate Drinking Water Supply & Demand Analysis (2003)

⁶ *Surface Water Resources*, Page 45. Town of Scituate OSRP (2018).

⁷ *Ibid.*



were the primary source of drinking water and the Water Treatment Plant was used as a second supply to meet peak summer water demands.

After receiving approval from MassDEP, the Water Treatment Plant is undergoing repairs and has been offline for several months for more than one million dollars (\$1M) in emergency repairs to be made. The \$1M price tag includes a new sand filtration system, a new vacuum system, two new 4,000 gallon chemical tanks, pipe relocation, new chemical pumps, concrete repairs under the sediment basins, and rental of a massive green sand filter system that will clean well water to supplement the town's supply under the plant's closure.⁸ The Plant was shut down late January 2019 for repairs.

REGULATIONS

FLOODPLAIN AND WATERSHED PROTECTION DISTRICT

This district has been in place since 1972. The Zoning Bylaw includes a separate Flood Insurance District, adopted to implement the Federal Emergency Management Agency (FEMA) requirements for zoning.⁹ Within this District, no new residential or commercial structures may be built and existing structures may only be modified by special permit requiring compliance with the National Flood Insurance Program and the Massachusetts State Building Code.

MASSDEP WATER WITHDRAWAL PERMIT

This permit limits withdrawals of the Town of Scituate to 1.73 million gallons per day. As of October 2019, withdrawals for 2003 average 1.71 million gallons per day. The Town needs to determine the safe physical yield of its water supply and needs to continue to strengthen efforts to conserve water, while planning for expansion for the supply in order to have water to meet the needs of businesses and residential developments.¹⁰

The Town's ability to expand the water supply is constrained by physical and environmental realities. In order to obtain a permit to expand the water supply, the Town needs to prove to state regulatory agencies that the additional withdrawals will not deplete groundwater or surface water and will not damage the natural ecosystem.

⁸ *Scituate to start major water treatment plant repairs*. The Patriot Ledger (2019).

⁹ *Existing Conditions*, Page 13. Town of Scituate Master Plan (2004).

¹⁰ *Existing Conditions*, Page 12. Town of Scituate Master Plan (2004).



WATER RESOURCE PROTECTION DISTRICT

This District protects the Town's water supply by restricting some uses associated with potential contaminants. This District was proposed in a zoning bylaw for the purpose of minimizing the risks of pollution and was passed by the 1979 Town Meeting.

SURFACE WATER PROTECTION AREAS

These areas include 679-acre Zone A including First Herring Brook and Tributaries, Tack Factory Pond Reservoir, and a 372-acre Old Oaken Bucket Reservoir.

Outstanding Resource Waters (ORW) Protection under the Massachusetts Surface Water Quality Standards

This protection includes two major areas that include certain wetlands and their tributaries. These are protected under this Standard because of their high-quality water supply and contribution to the municipality and the region. These two areas are:

- The 3,294-acre Old Oaken Bucket Pond ORW Public Water Supply Contributor; and
- A portion of the 3,542-acre Aaron River Reservoir ORW.

WATER DEMAND

The Town currently has a water withdrawal permit, which limits the total water withdrawal volume from groundwater and surface water supply sources within the town to 1.85 mgd. As of 2003, the average water demand between 1999-2002 was 1.68 mgd, which is near the permitted level. In 1999 and 2002, average water demands were 1.73 and 1.72 mgd respectively, which is nearly at the allowable withdrawal volumes¹¹. In 2016, MassDEP authorized water withdrawal volumes of 1.85 mgd without Humarock connected to the supply system. Should Humarock, who presently purchases water from the Town of Marshfield, be connected to Scituate's supply system, a withdrawal volume of 1.97 mgd is permitted¹².

Sewer Infrastructure

The Town's sewer system is maintained by the Wastewater Treatment Division of the Scituate DPW. Sewage is treated at the Scituate Wastewater Treatment Plant at 161 Driftway. The Town's sanitary sewer system is separated into 12 drainage sub-areas.

¹¹ *Water Demand*, Page 3-1. Town of Scituate Drinking Water Supply & Demand Analysis (2003)

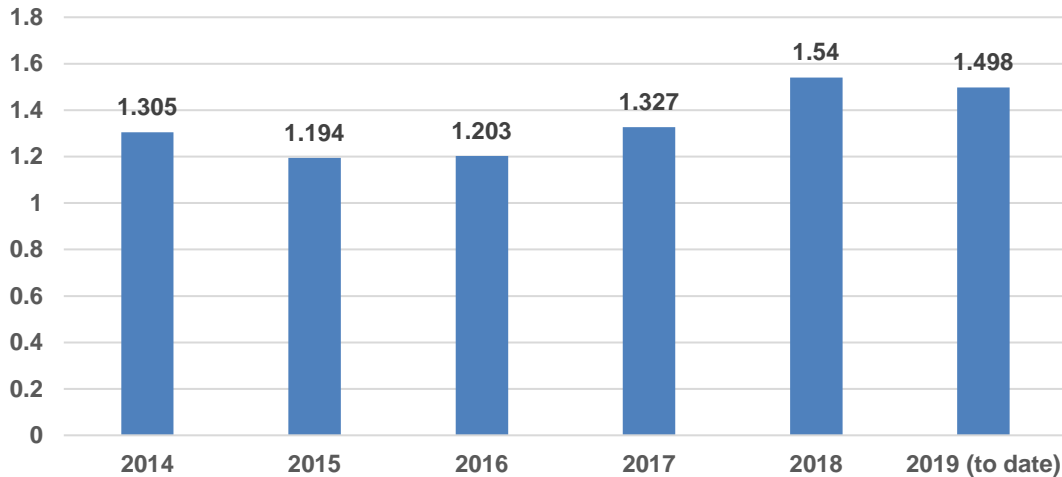
¹² <https://www.mass.gov/doc/scituate-water-management-act-permit-renewal-9162016/download>



SEWER CAPACITY

The current rolling average is 1.498 mgd (93.6%) and the permitted limit is 1.60 mgd. The highest rolling average for flows occurred at the end of January 2019 at 1.558 mgd (97.4%). **Table 1** shows the current average yearly flow rate.

Table 1. Current Average Yearly Flow Rate (mgd)



The Scituate DPW is currently working on plans for improving and extending the sanitary sewer system. Town funds have been appropriated and DPW is in preliminary design for the next phases of expansion as well as improving capacity of the wastewater treatment plan and collection system. The availability of sanitary sewer is critical to economic development in Scituate.

A plan for sewerage environmentally sensitive areas and other locations in need of sewer was approved by MassDEP that includes six phases. The Town has completed Phase 3 of six planned phases to extend sewers to priority areas based on environmental conditions as of 2014. The Harbor Village and Greenbush areas have sewer currently; however, extension to North Scituate is planned for Phase 4, after the Front Street area. Each year when flows exceed 80% of the permitted capacity a report must be filed with regulators.¹³

¹³ Town of Scituate, Department of Public Works, Sewer Summary Report, April 2019



There are three phases remaining in the sewer expansion plan, anticipated to start in 2023¹⁴, totaling 0.42 mgd:

- Phase IV: 0.14 mgd (properties between Hatherly Road and Tilden Road, and other areas near Scituate Harbor).
- Phase V: 0.15 mgd (North Scituate, Captain Pierce Road, west of Country Way, and Bulrush Farm Road).
- Phase VI: 0.13 mgd (coastal areas of Minot Beach and the Glades).

WASTEWATER TREATMENT PLANT (WWTP)

The location of the WWTP is within a 1% Annual Chance Flood Zone and the flood risk increases greatly with sea level rise estimated by 2038 and 2088. Discussions with representatives at the WWTP indicate on average the plant treats between 400,000 and 600,000 gallons per days (gpd); however, during storm events, it has treated upwards of two million gpd.¹⁵ The WWTP is a 1.6 million gallon per day advanced treatment facility that provides treatment to primarily domestic and commercial wastewater. The current annual average effluent flow is 1.31 mgd and the maximum daily flow is 3.90 million gallons per day.¹⁶ The plant is permitted for 1.6 mgd (million gallons per day) and is designed for a peak hourly flow of 4.34 mgd and a peak daily flow of 3.33 mgd.

In 2000, the Town completed an upgrade of the WWTP, resulting in an increase of 0.6-million-gallon capacity. The total capacity of the plant is now 1.6 million gallons.

REGULATIONS

STORMWATER BYLAW

The purpose of the Stormwater Bylaw (Scituate General Bylaws Section 32050) is in part to mitigate flooding through site design and structural improvements that promote the infiltration of stormwater on site or otherwise retain stormwater in areas of new development where there is a significant increase in impervious surfaces and/or change in drainage patterns.¹⁷

COASTAL FLOODING

The seawalls along Oceanside Drive have been repaired and raised. During winter months, the Town experiences heavy flooding in the Sand Hills area. These flood issues have a direct effect of the sewer

¹⁴ Town of Scituate, Massachusetts, Fiscal Years 2020-2025, Capital Improvement Plan (2019), page 289

¹⁵ *Civil Assessment, Page C-10*. Town of Scituate Public Safety Assessment (2016).

¹⁶ *Authorization to Discharge Under the National Pollutant Discharge Elimination System*. Massachusetts Department of Environmental Protection (DEP).

¹⁷ *Mitigation Strategy*, Scituate Natural Hazard Mitigation Plan (2016).



system, in which the Town has seen significant spikes in the flows at the WWTP during these events. There are still many areas of Town subject to coastal flooding, areas that flood where there is gravity sewer service lead to a direct impact on plant flows during these events. Continued efforts need to be made to proof areas of the sewer system by raising seawall heights; repairing, replacing, or installing new drainage systems; replacing gravity sewer systems with low pressure force systems; and replacing manhole frames with watertight frames and covers. The Sewer Division is currently conducting a resilience feasibility study which is focused on the impacts and risks associated with rising sea levels and increased severity and frequency of coastal flooding events.¹⁸

Limited Municipal Infrastructure

A review of the current water and sewer system will impact decisions for future development in Scituate.

SEWER INFRASTRUCTURE

Scituate Harbor and Greenbush are connected to sewer, North Scituate is not, thus significantly constraining development. For development to open within North Scituate and the northern portions of Route 3A, extending sewer services needs to happen. The most important part of the North Scituate sewer expansion will be to sewer the Business District. Sewer services in the Greenbush area extends north from the rotary along Route 3A for a limited distance; however, there currently isn't a plan to extend service along Route 3A to the south of the rotary.

Extending sewers to North Scituate is currently included in Phase V of the Town's sewer improvement program, Phase V is expected to begin in 2023, but efforts to move up the extension of service to North Scituate needs to occur and until sewer is added, redevelopment potential within the area cannot be met. According to the DPW Sewer Division, the plant's capacity is adequate for expansion of the system for Phase I through VI. To move North Scituate up in the sequence would require approval by MassDEP.

There is limited potential for commercial development along Route 3A, given substantial protected open space, environmental constraints, and the lack of sewer infrastructure. There are plans in the future to extend sewer service to the northern end of Route 3A as part of Phase 5 of the sewer extension plan. While the intersection with First Parish Road has been discussed as a potential development site if the Town Hall were to be relocated moved, the proximity of the high school might

¹⁸ *Coastal Flooding. Sewer Capacity Summary (2019).*



limit the types of businesses that could occupy this location. Increasing residential development along the Route 3A corridor may also tend to increase resistance to commercial development.

WATER INFRASTRUCTURE

In 2016, the Town was granted a permit that allows for a total water withdrawal volume from the groundwater and surface water supply sources within the Town to 1.85 mgd. The permit, which expires August 31, 2030, has a condition that allows the water withdrawal volume to increase to 1.97 mgd if Humarock is connected to the system. Application to get a higher permitted limit requires concurrence from MassDEP and the department of Environmental Management (DEM) through the Water Resources Commission that demands municipalities to justify a higher limit.

Coastal Foreshore Protection

Infrastructure and utilities are another concern for businesses in the Harbor. Due to its waterfront location, the district is particularly vulnerable to flooding and frequent electrical outages due to wind and storms. The pending changes to the FEMA flood zone maps are of concern to Harbor area businesses. Since many of the commercial spaces are owner-occupied, it would be prohibitive for small business owners to undertake improvements or pay expensive flood insurance premiums. This could have a significant negative impact on the future vitality of the commercial district. It may be advantageous to bury overhead utilities; this would certainly increase the overall attractiveness of the area. Other towns have done this in a limited area. Over the long term, it might be beneficial to shift commercial zoning uphill from Front Street as flooding becomes an increasing problem.

Coastal Foreshore Protection Elements

VULNERABILITIES THAT COULD SIGNIFICANTLY IMPACT SCITUATE¹⁹

HURRICANES

Scituate's coastal geography makes them vulnerable to hurricanes. Historically, hurricanes that have struck the New England region recurved northward on tracks that parallel the eastern seaboard by maintaining a slight north-northeast track direction. Massachusetts is one of three states that geographically project easterly into the Atlantic and have southern exposed shorelines, placing them in direct line of any storm that tracks in this manner. There are three components of vulnerability from the impact of a hurricane: storm surge (coastal flooding), ability to evacuate in a timely manner, and shelter capacity. Storm surge has the potential to create a serious problem in

¹⁹ *Vulnerability Summary*, Page 53. Natural Hazard Mitigation Plan (2016).



Scituate because the waters can rise to high levels with the potential to flood coastal properties and cover roads completely with water. If roads are inundated with water, evacuation routes can be eliminated, which can be a concern in frequent flooded areas like *Humarock, First and Second Cliff, Rebecca, The Ave's and Glades*.

Human vulnerability is based on the availability, reception, and understanding of early warnings of coastal hazard events, as well as access to substantial shelter and a means and desire to evacuate if needed. Once warned of an impending significant coastal hazard event, seeking shelter in a substantial indoor structure that is wind resistant and outside of storm surge zones is recommended as the best protection against bodily harm.

COASTAL ERROSION

Scituate's coastline faces northeast and is vulnerable to nor'easters, which are common winter storms in Massachusetts. Existing foreshore protection stands landward of sediment starved beaches and is not capable of withstanding projected future conditions. Potential over wash, undermining and collapse by higher sea levels and storm surge are serious concerns, particularly since at normal high tides there is no beach present to absorb wave energy or to stabilize the structure.

Based on recent work performed by the Massachusetts Department of Conservation and Recreation (DCR) for the state-wide coastal structure inventory, repairs to the existing seawall infrastructure fronting many of Scituate's shoreline will require approximately \$70,000,000. These repairs will re-establish the 'hardened' shoreline that prevents erosion of the upland; however, this approach does not address the longer-term concerns regarding on-going shoreline migration and lowering of the beaches fronting the seawalls. Specifically, the increased water depth fronting the seawalls during coastal storms allows larger waves to impact the coastal infrastructure. With significant damage along many of our east-facing beaches, with total FEMA claims in excess of \$61.8M from 1978 to March 2015. On-going threats to public and private infrastructure continue to be a major concern for the Town, as both long-term coastal erosion and relative sea-level rise in the coming decades will continue to exacerbate regional storm damage.

FLOOD

Scituate is a water-rich community in that not only does it have its coastline, but it also has many rivers, streams, and brooks flowing within its boundaries. Historical land use patterns and the continued use of structures within areas vulnerable to flooding will continue to promote future risk and vulnerability of flood impacts to structures and people. Local land use regulations and ordinances have done much to curb unregulated development within flood hazard areas; however, Scituate is an old community that developed around the coast and there is substantial amount of

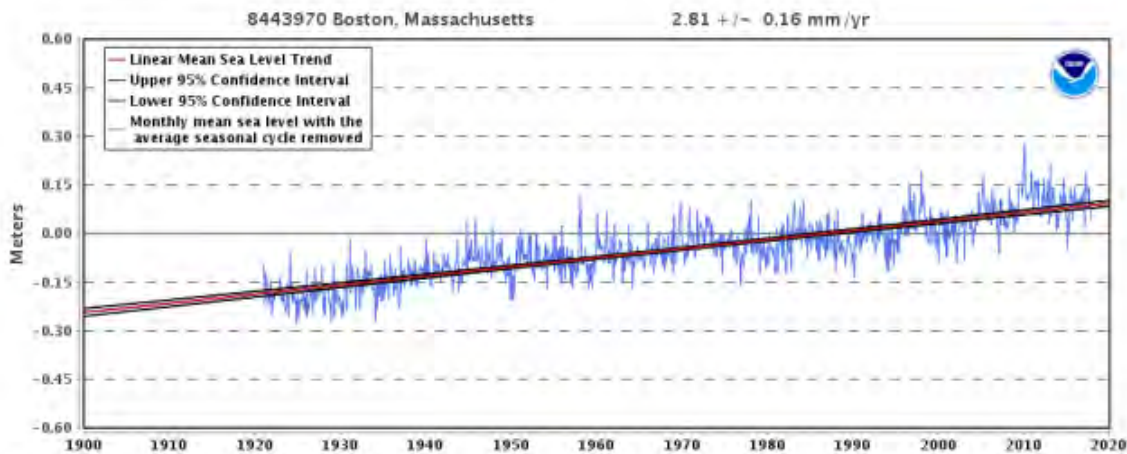


residential and commercial properties located within coastal flooding areas. Scituate is vulnerable to two types of flooding: coastal²⁰ and tidal²¹ flooding. Both types of flooding can be caused by major storms like nor'easters and hurricanes. The frequency and locations of flood hazard events could most often occur along the coast in the low area behind the seawalls and former dunes, with particular frequency at Cedar Point, Surfside Road, Glades Road, Peggoty Beach, Oceanside Drive, Turner Road, The Basin's (The Ave's and Jericho Road), Edward Foster Road, and Humarock. These two types of flooding can increase the rate of precipitation or amount of water, thus overwhelming the capacity of natural and structured drainage systems to convey water causing it to overflow the system.

Critical infrastructure located in current or future flood zones includes two well heads, pump stations, wastewater treatment plant, two bridges, and a few businesses. There are 16 roads that are prone to flooding in a 1% Annual Chance Storm. Businesses located in a 2088 flood zone are valued today at over \$57M. There are 127 historic structures at risk to flooding in a 1% Annual Chance Flood Zone and approximately 60 historic structures vulnerable to sea level rise in 2088.²²

SEA LEVEL RISE²³

Over the last century, sea level rise increased by 11 inches (*Observed Sea Level Rise* image below).



Boston Tide Station from 1921-2016 which indicates over 11 inches of sea level rise in the last century.

²⁰ Coastal flooding is where wind and tide exacerbates flooding along the shore.

²¹ Tidal waterways and inland flooding where the rate of precipitation or amount of water overwhelms the capacity of natural and structured drainage system to convey water causing it to overflow the system.

²² *Scituate's Strength and Vulnerability*, Page IV. Building a Resilient Scituate (2018).

²³ *Sea Level Rise*, Page 9. Building a Resilient Scituate (2018).



The Boston Research Advisory Group (BRAG) anticipates that the rate of increase will accelerate, anticipating an additional eight inches by 2030. Warm temperatures contribute to sea level rise in two ways: warm water expands to take up more space and then rising temperatures melt land-based ice that enters the ocean as meltwater. Another minor contributor to rising sea levels in New England is a small amount of land subsidence (drop in elevation) as a result from pressure from the heavy ice compressing the land during the last glacial period. Following the glacial retreat, some areas of the east coast have rebounded while others subside.

WINTER

Historically, winter storms have had an enormous impact on Scituate. Most blizzards and ice storms in the region cause more inconvenience than they do serious property damage, injuries, or deaths. Occasionally, winter storms can hinder the tidal exchange in tidally restricted watersheds and result in localized flooding within these areas. Additionally, ice buildup at gate structures can also damage tidal gates and increase the hazard potential as a result of malfunctioning tide gates. Winter storms, ice storms, and extreme cold can adversely affect people, some more than others. Infants and those persons 65 years of age or older are especially vulnerable.

Community Facilities and Services

General Building Stock²⁴

Hazus²⁵ estimates approximately 8,492 buildings in the region which have an aggregate total replacement value of \$1.9 billion (2006 dollars). **Table 2** presents the relative distribution of the value with respect to the general occupancies.

Table 2. Building Exposure by Occupancy Type

Occupancy	Exposure (\$1,000)	Percent of Tot
Residential	1,625,664	85.4%
Commercial	192,910	10.1%
Industrial	43,281	2.3%
Agricultural	4,529	0.2%

²⁴ *Mitigation Strategy*, Scituate Natural Hazard Mitigation Plan (2016).

²⁵ Hazus is a risk assessment software program for analyzing potential losses from floods, hurricanes winds, and earthquakes. Scituate's assessment utilizes 2010 Census data.



Occupancy	Exposure (\$1,000)	Percent of Tot
Religious	18,912	1.0%
Government	7,161	0.4%
Education	12,056	0.6%
Total	1,904,513	100.0%

Public Facilities and Emergency Services

PUBLIC FACILITIES

COMMUNITY CAMPUS PROJECT FOR SENIOR CENTER AND RECREATION FACILITIES

A new community Senior Center and campus site along with upgrades to the Recreation Veteran’s Memorial Gymnasium has been approved. The new community Senior Center will include a veteran’s agent office. The site is on the C wing of the old Gates School. The upgrades to the gymnasium include an elevator for ADA accessibility, restrooms on the second floor, and roof repair or replacement. Site improvements include a 70-space parking area adjacent to the Senior Center as well as a 21-space lot in front of the gymnasium and Recreation offices. The existing parking spaces behind the former Gates school will also remain available for use. The Recreation Department will continue to occupy areas of the A-wing and the gymnasium for their offices and programs. Both the A- and B-wings of the school will remain until a decision is made as to the future of the building by the Board of Selectmen.²⁶

LIBRARY

In 2012, the Scituate Town Library received a \$5M library construction provisional grant. The library needed to replace exterior features and the HVAC system, along with upgrades for accessibility. In 2013, the Town moved forward with the library renovation project. Construction began at 85 Branch Street on September 1, 2015. The new library opened on June 12, 2017. The library expanded by ~9,000 square feet which doubled parking and added quiet spaces and a technology center.^{27,28}

²⁶ <https://www.scituatema.gov/community-campus-project-for-senior-center-and-recreation-facilities>

²⁷ <https://www.wickedlocal.com/article/20131216/News/312169503>

²⁸ http://www.scituatestownlibrary.org/about_libraryrenovationproject.html



SCHOOLS

Scituate Public Schools consists of six education facilities. 4 K-5 Schools, one middle school and one high school. **Table 3** shows a summary of the major renovations on each building.²⁹

Table 3. Major Renovations on Schools in the Community

Facility	Year Opened	History of Major Renovations
Scituate High School	1959	1967 (major addition)
		2002 (major renovation)
		2017 (major renovation – addition of CPA, new art wing, and relocated nurse suite)
Gates Middle School	2017	New, state-of-the-art, Gates Middle School now in operation
Wampatuck Elementary School	1957	1968 (partial addition)
		2007 (major renovation)
		2014 (major renovation – EEC)
Jenkins Elementary School	2002	Jenkins Elementary School replaced aging building in 2002
Cushing Elementary School	1965	No major renovations
Hatherly Elementary School	1962	No major renovations

EMERGENCY SERVICES

FIRE

The Scituate Fire Department provides fire, emergency medical services (EMS), and other emergency services 24 hours a day and seven days a week. The Department is staffed with a career firefighting force rather than volunteers. The Fire Department operates from three stations throughout the Town and houses three engine companies, one ladder truck, two rescue/ambulances, and one command vehicle. They also maintain two reserve engines, a dive truck, two rescue boats, and one hazmat trailer.³⁰

²⁹ <http://www.scituate.k12.ma.us/~scitk12/images/2018 - 2023 Facilities Capital Plan FY20 update complete.pdf>

³⁰ <https://www.scituatema.gov/fire-department>



The Humarock Fire Station 4 is an 85-year-old small fire station that is in disrepair. It is the only public-safety building on the small peninsula of Humarock.³¹ In 2018, the Town allocated \$250,000 for construction on a new two-bay 2,000 square foot replacement on the south side of the building. The current garage only holds a single fire truck and holds water. The new apparatus bay will elevate about two feet to try to prevent flooding during winter storms.³² In 2018, the fire department had \$150,000 for building renovations. The Town expects future completion of the repairs.

POLICE

The Scituate Police Department is the primary law enforcement agency for the Town of Scituate. The patrol area includes the mainland of Scituate and Humarock, which is only accessible through Marshfield. The police department runs various community programs including Drug Abuse Resistance Education (D.A.R.E.), safety, and driver's education programs for students.³³ The police department is responsible for the following services:

- Animal Control
- Detective Unit
- Harbormaster
- Patrol Division
- Prosecution and Records Division
- Scituate Police K-9
- Traffic Division

SCITUATE PUBLIC SAFETY COMPLEX

In 2015, the Town approved funding to build a new public safety complex to replace the Police Station and some fire department facilities. This new 28,818-square-foot facility is the headquarters of both the Scituate Police and Fire Departments and includes a joint dispatch center and emergency operations center. The building includes three bays for fire apparatus and a sally port for the safe transfer of prisoners between police vehicles and detention facility. Construction completed in 2017.^{34,35,36}

³¹ <https://www.patriotledger.com/news/20180807/scituate-fire-chief-says-humarock-station-is-obsolete>

³² <https://www.wickedlocal.com/news/20180807/scituate-fire-station-to-get-new-two-bay-garage>

³³ <https://www.scituatema.gov/police-department/about-us>

³⁴ <http://www.ctaconstruction.com/project/ordinary/scituate-public-safety-building>

³⁵ <https://www.patriotledger.com/news/20170320/scituates-new-public-safety-complex-opens-for-business>

³⁶ <https://doreandwhittier.com/scituate-public-safety-complex.html>



CEMETERIES

The following cemeteries are listed in the climate vulnerability and action plan as a critical infrastructure susceptible to coastal flooding and sea level rise:

- Cudward Cemetery is Town-owned and was established in 1800.
- Fairview Cemetery is a private cemetery and was established in 1825. The cemetery still accepts new burials.
- Union Cemetery is a Town-owned cemetery and was established in 1726.
- Old St Mary's Cemetery is a private cemetery immediately adjacent to the Union Cemetery
- Mount Hope Cemetery is a private cemetery and was established around the 1780s. The cemetery still accepts new burials.
- Groveland Cemetery is a private cemetery that was established around 1720. The cemetery still accepts new burials.

TOWN HALL

The Scituate Town Hall is located on Route 3A at First Parish Road. The Town Hall is listed in the climate vulnerability and action plan as a critical infrastructure susceptible to heat island impacts.



APPENDIX D: TRANSPORTATION



TO:	Harriman Company	DATE:	January 2020
FROM:	Howard Stein Hudson	HSH PROJECT NO.:	2018165.00
SUBJECT:	Transportation and Circulation Element		

Transportation System Context

Mode Split in Scituate

Mode split estimates for the Town of Scituate, shown in **Table 1**, are based on the 2017 five-year American Community Survey. Most Scituate residents, 71.1%, travel between work and home using an automobile, 11.2% of people travel using public transportation, and 4% walk or bike to work. A significant number of residents, 13.7%, work at home.

Table 1. Scituate Mode Split

Means of Transportation to Work	Percentage of Population
Car, truck, or van	71.1%
Public Transportation	11.2%
Walk/Bike	4.0%
Worked at Home	13.7%

Commuting Patterns in Scituate

Commuting patterns were taken from U.S. Census OnTheMap data. In 2017, 2,292 people lived outside of Scituate but were employed in Scituate. 7,871 lived in Scituate but worked outside of Scituate. 1,391 lived and worked in Scituate. Of these totals, those that lived and worked in Scituate were the most vulnerable to the effects of climate change in the Town. Most residents worked outside of Scituate.

Roadway System

Scituate is a coastal town and it is served by several network of highways, arterial roadways, and local streets, with many signalized and unsignalized intersections.



MAJOR ROADWAYS

Route 3A is the major arterial state-owned road that traverses the Town of Scituate. It is a heavily traveled road with 16,685 average daily trips. Country Way and Hatherly Road also run parallel with Route 3A. Kent Street, First Parish/Beaver Dam Road, and Gannett Road connect Route 3A to the coast.

SAFETY ANALYSIS

Crash data was taken from Massachusetts Department of Transportation (MassDOT) crash reports from the five most recent complete years of data; at the time of this report, the most recent data available is from 2015 – 2019. Five years of data are used to get a larger set of data points and a better sense of patterns in crashes. One head-on vehicle collision in 2015 resulted in a fatality in the last five years on Route 3A near Tack Factory Pond. No pedestrian and bicycle crashes in the last five years resulted in a fatality. This information is shown in **Table 2**.

Table 2. MassDOT Reported Crashes in Scituate, 2015-2019

Year	Total	Pedestrian	Bicycle
2015	162	1	2
2016	164	1	1
2017	174	0	1
2018	190	1	1
2019*	97	0	2

**Full 2019 crash dataset not yet available*



PARKING

The predominant mode of transportation within Scituate is by vehicle. Most popular destinations have parking lots for patrons. The Town of Scituate operates five oceanfront beach areas which each include parking lots. The number of spaces in each lot are shown in **Table 3**.¹

Table 3. Beach Parking Spaces

Beach Parking Lots	# of Spaces
Humarock Beach	120
Minot Beach (two lots)	101
Egypt Beach	77
Sand Hills Beach	24
Peggotty Beach	200

In addition to beach parking, Scituate Harbor is also a popular destination for residents and visitors. Two large parking lots are located at Scituate Harbor: 172 spaces at Mill Wharf and 431 spaces at Cole Parkway. There is a total of 18 accessible spaces between both parking lots. The Metropolitan Area Planning Council (MAPC) conducted parking occupancy spot checks in several private and public lots surrounding the Scituate Harbor business district in order to evaluate potential options for satellite parking. MAPC's observations showed that parking occupancy in the study area was an average of 53% during the weekday in summer and fall but at 99% in some areas during peak parking demand.¹ Potential satellite parking areas that were observed were:

- Jericho Road Community Center lot (public)
- Scituate Harbor Yacht Club on Jericho Road (private)
- Jericho Road Boat Launch (public)
- St. Mary's of the Nativity lot at First Parish Road and Front Street (private)

Two parking lots are also used for park and ride service at the Greenbush and North Scituate Massachusetts Bay Transportation Authority (MBTA) commuter rail stations. Details for Greenbush and North Scituate stations are in **Table 4**.

¹ <http://www.mapc.org/wp-content/uploads/2017/11/2015-Scituate-Harbor-Parking-Study-FINAL.pdf>



Table 4. Scituate Commuter Rail Parking

Station	Cost	Number of Spaces
Greenbush	\$2 everyday, No Overnight parking	100, 22 accessible
North Scituate	Hourly: <ul style="list-style-type: none"> ■ 30 min: \$8 ■ 1 hr: \$15 ■ 1-2 hrs: \$22 ■ 2-3 hrs: \$26 ■ 3-12 hrs: \$30 ■ Daily max: \$68 ■ Events: \$48 Early Bird (in by 9 AM, out by 6 PM): \$24	249, 7 accessible

Alternative Transportation Options

Scituate has several alternative transportation options that are existing or proposed for the future. The development of these alternative transportation options will have an impact on the future transportation infrastructure and should be considered in future planning.

PEDESTRIAN AND BICYCLE FACILITIES

Scituate has a significant sidewalk network, specifically in the Town center. Greenbush and North Scituate MBTA Stations have bicycle racks for commuters. Some trailheads also include bicycle racks. The Town of Scituate is working on expanding their active transportation network.

TRAILS

Herring River Trail

The Herring River Trail is a 0.4-mile long trail along a former railbed that runs from New Driftway through the marshes of the Herring River and ends at the beginning of the North River. The North



River has no public access. The trail is suitable for walking, bicycles, and strollers.² There is a parking lot at the head of the trail with bicycle parking.

Driftway Multi-Purpose Path

The Driftway Multi-Purpose Path is a 1.5-mile long paved trail that is an extension of the Herring River Trail off the railbed from the parking area for the Herring River Trail to Gilson Road.

Greenbush Driftway Future Vision Plan

A recommendation of the strategic plan was to improve intermodal and non-auto transportation options and amenities within the Greenbush-Driftway District. The plan recommends providing alternatives within the district and connecting it with neighboring residents, villages, and public amenities.³

South Shore Greenway Project

The South Shore Greenway walking trail runs along the coast of Scituate connecting from Front Street and continuing along the coast to the Town of Cohasset. **Error! Bookmark not defined.** An approximately 2.5 mile portion of this route is considered a shared use path running along Driftway and south on Route 3A. Walking trails throughout Scituate are minimal with a few near the Greenbush MBTA commuter rail station.

COMPLETE STREETS PRIORITIZATION PLAN PROJECTS

The Town of Scituate received approval of their prioritization plan in December 2018. As Scituate has no current bicycle connections, below are a list of the proposed bicycle projects on the prioritization plan:

- ***Gannet Road Bike Lanes*** – Bicycle lanes will be installed on Gannet Road to connect the North Scituate Commuter Rail stop to Minot Beach.
- ***Front Street Bicycle Racks*** – Bicycle racks will be installed in the vicinity of Front Street near the harbor.
- ***Cole Parkway Bike Lanes and Bicycle Parking*** – Bicycle Lanes will be installed on Cole Parkway that loop behind Front Street along the Harbor.

² <https://www.nsrwa.org/listing/herring-river-trail/>

³ https://www.scituatema.gov/sites/scituatema/files/pages/greenbush-driftway_visioning_report_draft_08.31.16_low_res_0.pdf



TRANSIT NETWORK

MBTA COMMUTER RAIL STOPS

In 2018, the Central Transportation Planning Staff (CTPS) completed one-day passenger boarding and alighting counts at all stations on the MBTA Commuter Rail system. It takes approximately one hour to reach South Station from Scituate on the Greenbush Line. North Scituate is in Zone 5 and Greenbush is in Zone 6. To reach South Station, the fare is \$9.75 for Zone 5 and \$10.50 for Zone 6. The train arrives approximately every half-hour to one hour in the a.m. peak and 1.5 hours in the p.m. peak. The following counts are for the Greenbush Line at the North Scituate and Greenbush stations.

North Scituate

Inbound	a.m. Peak		Midday		p.m. Peak		Evening		All Day	
	Trains 70–78		Trains 80–84		Trains 86–88		Trains 90–92		Trains 70–92	
Station	Ons	Offs	Ons	Offs	Ons	Offs	Ons	Offs	Ons	Offs
North Scituate	320	1	12	0	4	0	0	1	336	2

Outbound	a.m. Peak		Midday		p.m. Peak		Evening		All Day	
	Trains 71–73		Trains 75–79		Trains 81–89		Trains 91–93		Trains 71–93	
Station	Ons	Offs	Ons	Offs	Ons	Offs	Ons	Offs	Ons	Offs
North Scituate	0	3	0	22	0	263	0	18	0	306

Greenbush

Inbound	a.m. Peak		Midday		p.m. Peak		Evening		All Day	
	Trains 70–78		Trains 80–84		Trains 86–88		Trains 90–92		Trains 70–92	
Station	Ons	Offs	Ons	Offs	Ons	Offs	Ons	Offs	Ons	Offs
Greenbush	408	—	21	—	7	—	5	—	441	—

Outbound	a.m. Peak		Midday		p.m. Peak		Evening		All Day	
	Trains 71–73		Trains 75–79		Trains 81–89		Trains 91–93		Trains 71–93	
Station	Ons	Offs	Ons	Offs	Ons	Offs	Ons	Offs	Ons	Offs
Greenbush	—	9	—	29	—	340	—	16	—	394



GREATER ATTLEBORO TAUNTON REGIONAL TRANSIT AUTHORITY

The Greater Attleboro Taunton Regional Transit Authority (GATRA) operates a fixed route local shuttle bus service with regional connections in Scituate. The SLOOP-Scituate Loop provides hourly weekday and weekend service between Scituate Harbor, Widows Walk, Greenbush MBTA, Town Hall, Central Park, Wheeler Park, and the Senior Center. The regular fare is \$1.50 and \$0.75 for seniors, disabled and Medicare cardholders, and students. Children under 6 are free.⁴ A Route Map for the SLOOP-Scituate Loop can be seen in **Figure 1**.

Figure 1. SLOOP Route Map. Credit: GATRA



⁴ <http://www.gatra.org/index.php/sloop-scituate-loop/>



Public Capital Investment Projects

Planned and proposed public capital investment projects will potentially have a significant impact on Scituate's transportation network in coming years.

COHASSET AND SCITUATE: CORRIDOR IMPROVEMENTS AND RELATED WORK ON JUSTICE CUSHING HIGHWAY (ROUTE 3A), FROM BEECHWOOD STREET TO THE SCITUATE TOWN LINE

This project includes corridor improvements from the Beechwood Street intersection in the Town of Cohasset to the Cohasset/Scituate Town Line. The Route 3A/Beechwood Street intersection will be upgraded with new traffic signal equipment and minor geometric improvements. The Route 3A/Henry Turner Bailey Road intersection will be reviewed for meeting requirements for traffic signals and geometric improvements. Pedestrian and bicycle accommodation will be included along the corridor. This project is planned for the year 2023.⁵

Climate Change

GENERAL FACTS

The Town has seven miles of coastline with steep bedrock headlands and several barrier islands and pebbly beaches, including Humarock. Scituate could experience an additional eight inches in sea level rise by 2030 and six and a half feet by the end of the century.

VULNERABILITIES

Critical infrastructure located in current or future flood zones include two well heads, pump stations, wastewater treatment plant, two bridges, and some businesses (i.e., Front Street area). There are 16 roads that are prone to flooding in a 1% Annual Chance Storm.

Humarock contains a higher population of seniors who are at risk to coastal flooding, storm surge, and extreme heat. They may not have access to transportation, impairing their ability to relocate to emergency shelters or away from areas susceptible to climate impacts. Scituate is already providing extensive services through its Council on Aging and community-based disaster relief organization called SANDS. The Council on Aging connects with seniors during extreme weather events and provides rides to shelters if requested.

⁵ Boston Region MPO, Transportation Improvement Program, Federal Fiscal Years 2020-24



MBTA

Greenbush and North Scituate Commuter Rail Stations

Vulnerabilities include:

Flooding

- Both stations are located within a 1%-annual-chance flood hazard area.
- They are low-lying and generally prone to flooding today.
- Portions of the Commuter Rail Line itself are susceptible to flooding between North Scituate and Cohasset Stations during a 1%-annual-chance flood.
- They are located within an existing urban heat island.
- Its adjacency to a regulatory floodway and a 1%-annual-chance flood hazard area.

Extreme Heat

Temperatures that rise above 85 degrees Fahrenheit can cause buckled rails, overheated equipment, regional power failures, wear and tear on paved surfaces, and health and safety issues for workers and passengers.

ROADWAYS

The increase in extreme temperatures for long periods due to climate change will increase deterioration of roadways and their components. Thermal expansion of metal structures will stress bridge infrastructure. The extreme temperatures would also affect roadway materials through softening and expanding, which can lead to rutting and potholes. Roadways that are subject to heat damage from heat island effects include:

- Roads adjacent to North Scituate Commuter Rail Stop, including Gannet Road and Country Way.
- Roads adjacent to Greenbush Commuter Rail Station, including Driftway, Stockbridge Road, and Country Way.
- Driveways and parking lots located at the municipal buildings complex off Route 3A, including the Scituate High School, Gates Middle School, and Scituate Town Hall.
- Front Street at Retail Center.
- Roads in and around Humarock Beach.



Flooding has the potential to block roadways for both regular and emergency transportation access. **Table 5**, an excerpt from MAPC's *Building a Resilient Scituate* Report, shows 16 major roads likely to flood during a 1%-annual-chance flood.⁶ **Table 6**, an excerpt from the *Natural Hazard Mitigation* Plan for Scituate, shows local areas of flooding that do not coincide with the flood zones from the FIRM maps. The areas of flooding may be due to inadequate drainage systems or other local conditions rather than location within a flood zone.⁷

Table 5. Major Roads Prone to Flooding in 1% Annual Chance Flood

Road	1% Annual Chance Flood
Gannet	X
Surfside	X
Hatherly	X
Glades	X
Hollet	X
Oceanside	X
Rebecca	X
Lighthouse	X
Jericho	X
Front	X
Edward Foster	X
Kent	X
The Driftway	X
Central Ave	X
Gilson	X
River Street	X

⁶ MAPC's Building a Resilient Scituate Report

⁷ VHB's Risk Assessment Report



Table 6. Locally Identified Areas of Flooding

Local Area of Flooding	Impact or Action
1. Glades & Gannett Roads – (Minot Beach, North Scituate Beach)	During coastal storms seawater washes over sea walls, then collects in low areas. The energy from overwash water and debris routinely damages homes. Debris collects on roads limiting access, with expensive removal costs.
2. Surfside Road, Seagate Circle and Musquashicut Pond	During coastal storms seawater washes over sea walls, then collects in low areas. The energy from overwash water and debris routinely damages homes. Debris collects on roads limiting access, with expensive removal costs.
3. Mann Hill Road, Egypt Beach, Pricilla and Alden Avenue	During coastal storms seawater washes over sea walls, then collects in low areas. The energy from overwash water and debris routinely damages homes.
4. Oceanside Drive and Turner Road	During coastal storms seawater washes over sea walls, then collects in low areas. The energy from overwash water and debris routinely damages homes. Debris collects on roads limiting access, with expensive removal costs.
5. Rebecca Road, Lighthouse Road and Lighthouse Point	During coastal storms seawater washes over sea walls, then collects in low areas. The energy from overwash water and debris routinely damages homes.
6. The Basin's (The Ave's and Jericho Road Basins)	This is a low area that collects overwash routinely. Improvements to subsurface infrastructure have contributed to faster drainage in this area.
7. Scituate Harbor (Cole Parkway, Front Street and Old Dock Street)	While the Harbor jetties provide some protection, flooding of parking and businesses occurs regularly with coastal storms.
8. Edward Foster Road (including the bridge and low point south of the Maritime Center)	While the Harbor jetties provide some protection, its bridge which provides the main access to First and Second Cliff can often flood during coastal storms.
9. Peggotty Beach (Inner Harbor Road and Town Way Extension)	This exposed area has adjacent homes on small lots which are very vulnerable. A number were purchased by FEMA.
10. Gilson Rd. (culverts)	This road crosses a low area where culverts need to be enlarged to carry stormwater to prevent serious road flooding during coastal storms.
11. Humarock (Central Ave, Atlantic Ave, roads parallel to the beach including Humarock Beach)	During coastal storms seawater washes over sea walls, then collects in low areas. The energy from overwash water and debris routinely damages homes. Debris collects on roads limiting access, with expensive removal costs.



Local Area of Flooding	Impact or Action
12. Buttonwood Road and Bayberry Road	This is a low area subject to flooding.
13. Maple Street	Some flooding occurs where the road crosses First Herring Brook.
14. Jericho Road (from Rebecca to Foam Road, including the Jericho boat Ramp parking lot)	This is a low area that collects overflow routinely. Improvements to subsurface infrastructure have contributed to faster drainage in this area.
15. Satuit Brook (in front of the Bank of America)	Front St. crosses the Satuit Brook in a low area where culverts need to be enlarged to carry stormwater to prevent serious road flooding during coastal storms.
16. Hatherly Road (near the Musquashicut Pond)	Hatherly Rd. at Musquashicut Pond crosses a low area where culverts need to be enlarged to carry stormwater to prevent serious road flooding during coastal storms.
17. Bailey's Causeway	Bailey's Causeway often floods during coastal storms. It is a main access to the Glades/Minot area.

