

Community Forum October 24, 2018





Welcome and Introductions

- Planning Board
- Town Planning Department
- Metropolitan Area Planning Council



Tonight's Meeting

- Master Plan Overview
- Phase 2 Existing Conditions
 - Economic Development
 - Transportation and Circulation
 - Municipal Facilities and Services
 - Sustainability Energy
 - Sustainability Climate
- Open House Feedback



Meeting Purpose and Goals

- Provide a Master Plan update
- Present initial findings for Phase 2 Elements
- Share Phase 1 Draft Elements
- Invite <u>your feedback</u> to help define goals and priorities









The Master Plan: Overview



What is a Master Plan?

A master plan is a strategic framework that guides the future physical and economic development of a town or city based on the community's vision and goals.

It is your plan, your vision and your goals.

- The Master Plan provides the Town with:
- A vision for its future
- Goals and strategies to capitalize on opportunities
- An action plan for shaping positive change

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What will be in the Master Plan?

MASTER PLAN ELEMENTS

2

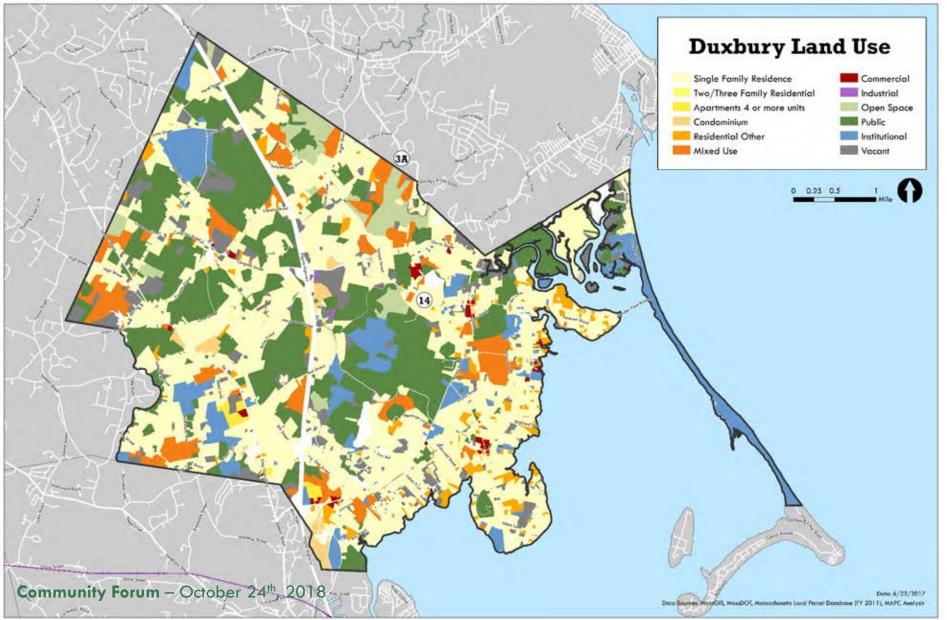
PHASE

- Duxbury Today
- Vision
- Housing
- Historic & Cultural Resources
- Open Space

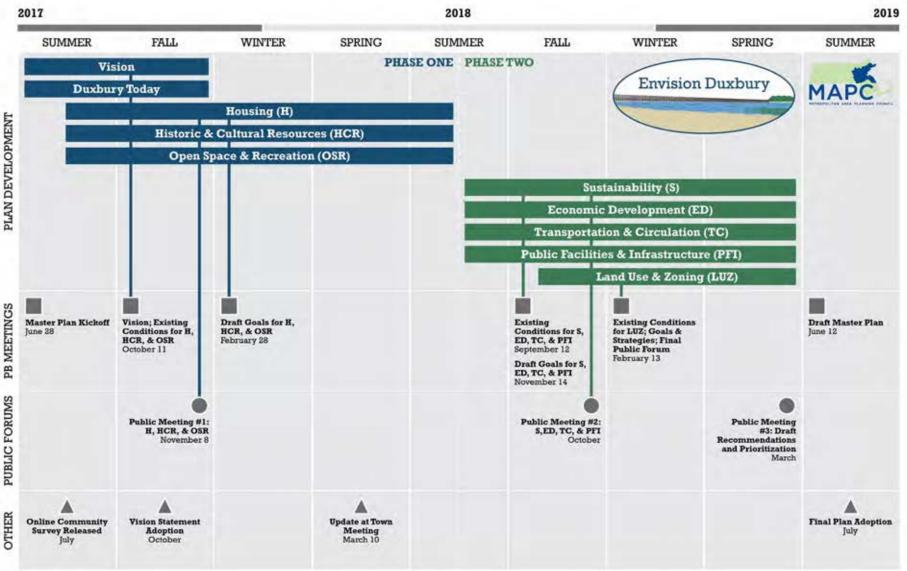
Economic Development

- Transportation and Circulation
- Public Facilities and Services
- Sustainability (Climate and Energy)
- Land Use and Zoning
- Implementation

Where does the Master Plan apply?



What is the Master Plan schedule?



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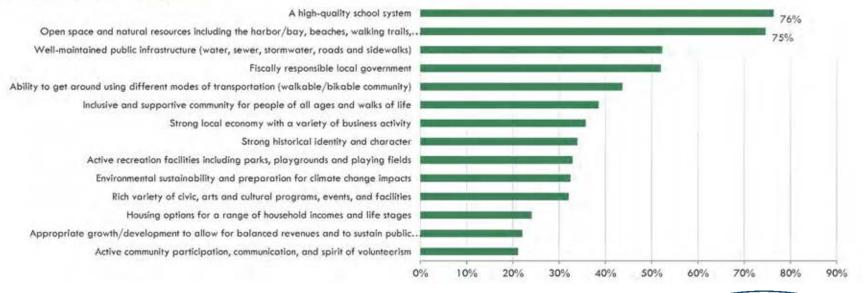
Online Survey Results Informing Master Plan

Over 1,200 responses!

SURVEY QUESTION 1.

Which of these community values are most important to you?

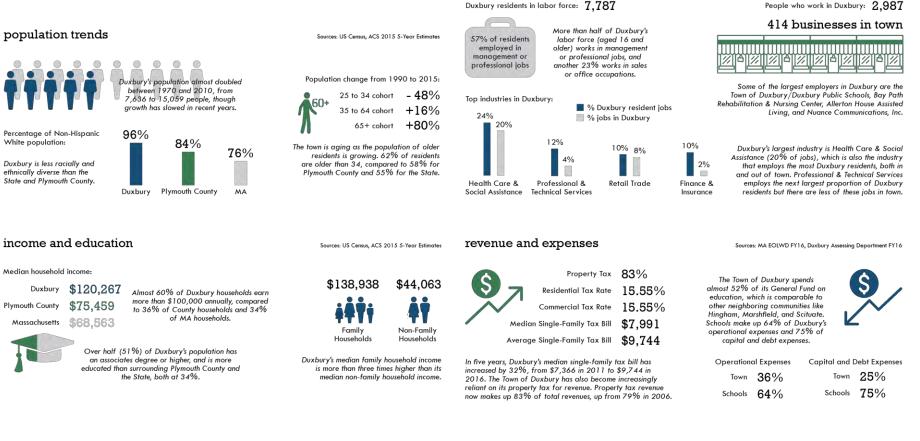
Results from the 1,226 responses to this survey question.





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Phase 1 Elements Duxbury Today



Duxbury residents in labor force: 7.787

business and labor force

Sources: ACS 2015 5-Year Estimates, MA EOLWD FY15

Envision Duxbury

Community Forum – October 24th, 2018

Phase 1 Elements A Vision for the Town of Duxbury

Looking forward, the Town of Duxbury continues to be a prosperous coastal community with exceptional assets. Residents of all ages and backgrounds are able to enjoy a high quality of life in Duxbury with convenient access to everything the town has to offer: beautiful beaches, an excellent school system, a thriving harbor, thousands of acres of protected open space, vibrant businesses, and attractive residential neighborhoods.

Duxbury's rich maritime and shipbuilding history is embraced through continued waterfront activity, and both residents and visitors are continuously drawn to Duxbury's pristine public beach and active bay. The Town proactively protects its waterfront heritage and resources to make them more resilient against the impacts of climate change.

The thousands of acres of preserved open space in Duxbury continue to offer opportunities for recreation, enhance scenic views in the town, and protect the Town's water supply and rare species that are native to Duxbury. In the last decade, additional land has been protected, and open space connections are enhanced via bike and pedestrian paths that are safe and attractive.

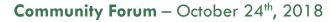
Duxbury Public Schools sustain excellence and the town attracts families looking to form deep roots in the community. Transparent and fiscally-responsible Town government manages growth and development in a way that maintains Duxbury's authentic character yet balances revenues to sustain excellent public services, facilities, and infrastructure.

Hall's Corner serves as the economic center of Duxbury, and mixed-use buildings with first floor retail, transportation improvements, and streetscape updates have created a more vibrant and walkable commercial district.

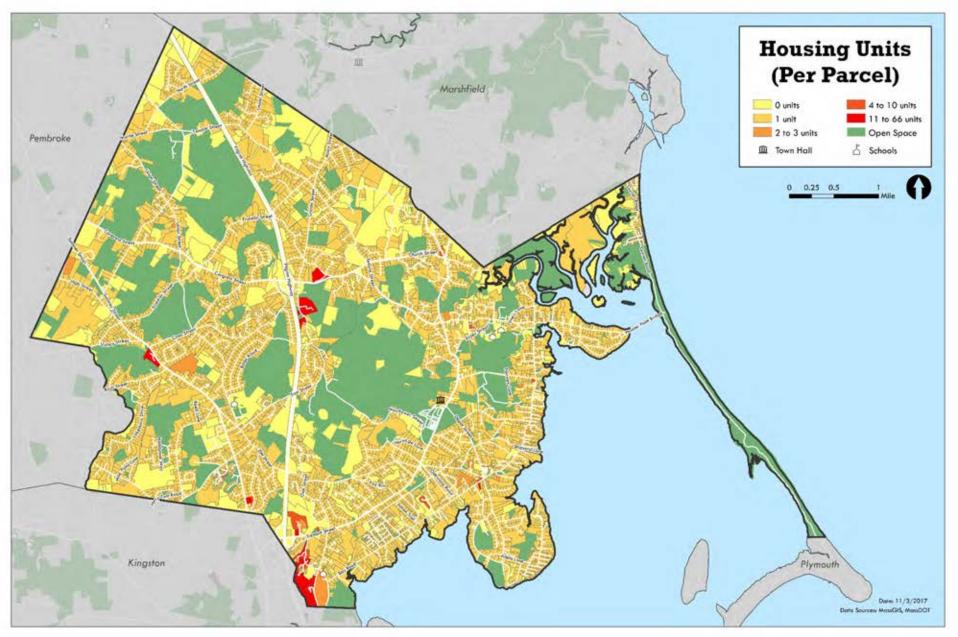
The town's smaller commercial areas also support successful businesses that serve residents and visitors of Duxbury in compact and walkable districts. Duxbury continues to protect its historic resources, especially working to preserve historic homes that may otherwise be torn down and replaced. Alternative housing types have also created a greater variety of housing options for Duxbury residents, leading to more affordable options for families, seniors, and young adults while integrating with the character of the Town.

Envision Duxbury

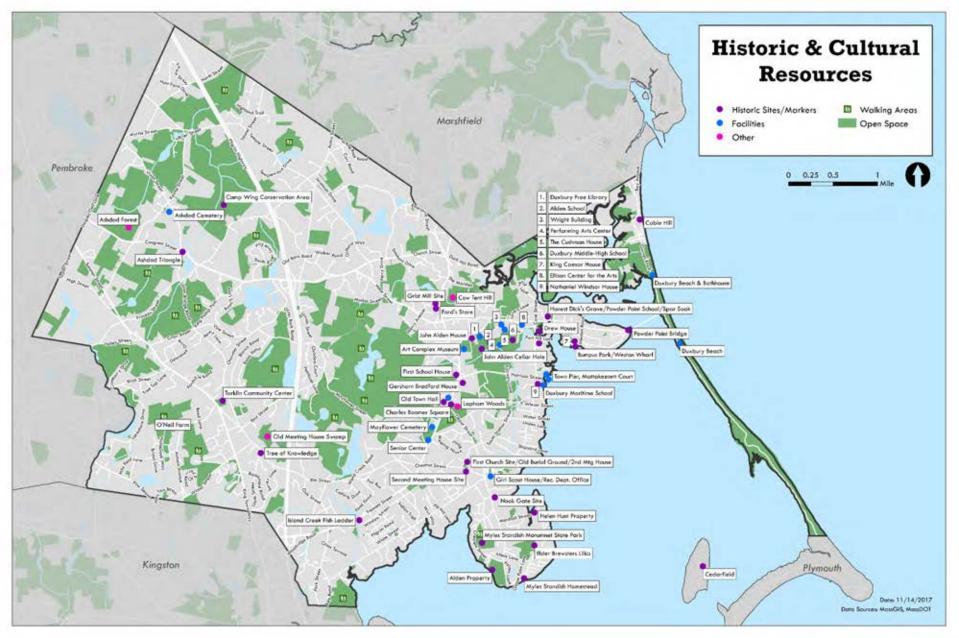
As observed throughout the Envision Duxbury Master Plan process, the vision for Duxbury in 2028 is strengthened through a community that is informed, engaged, and productively working toward a shared vision and commitment to achieving a prosperous and sustainable future.



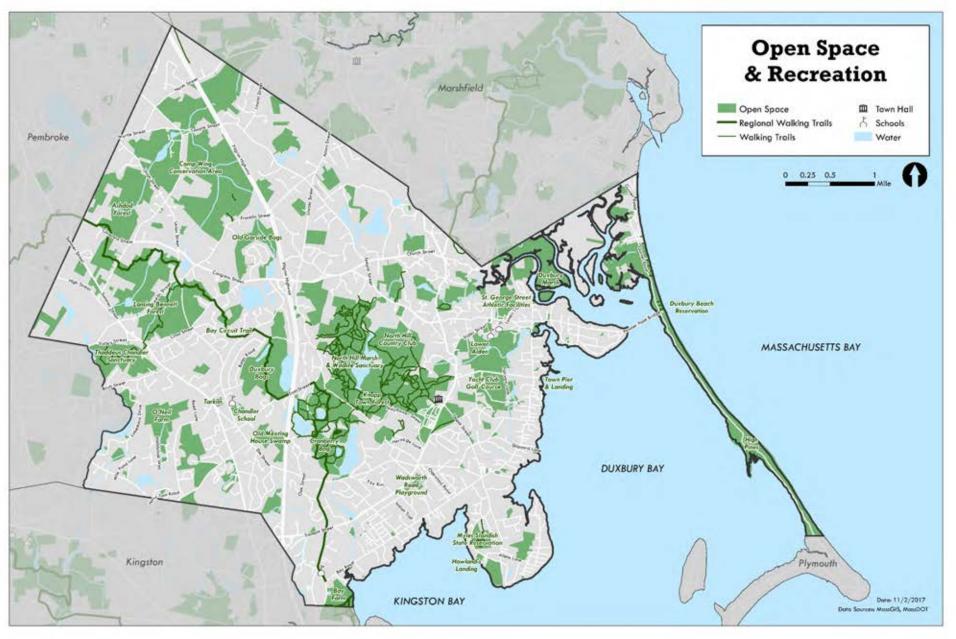
Phase 1 Elements Housing



Phase 1 Elements Historic and Cultural



Phase 1 Elements Open Space



Phase 2 Elements

MASTER PLAN ELEMENTS

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PHASE

- Duxbury Today
- Vision
- Housing
- Historic & Cultural Resources
- Open Space

Economic Development

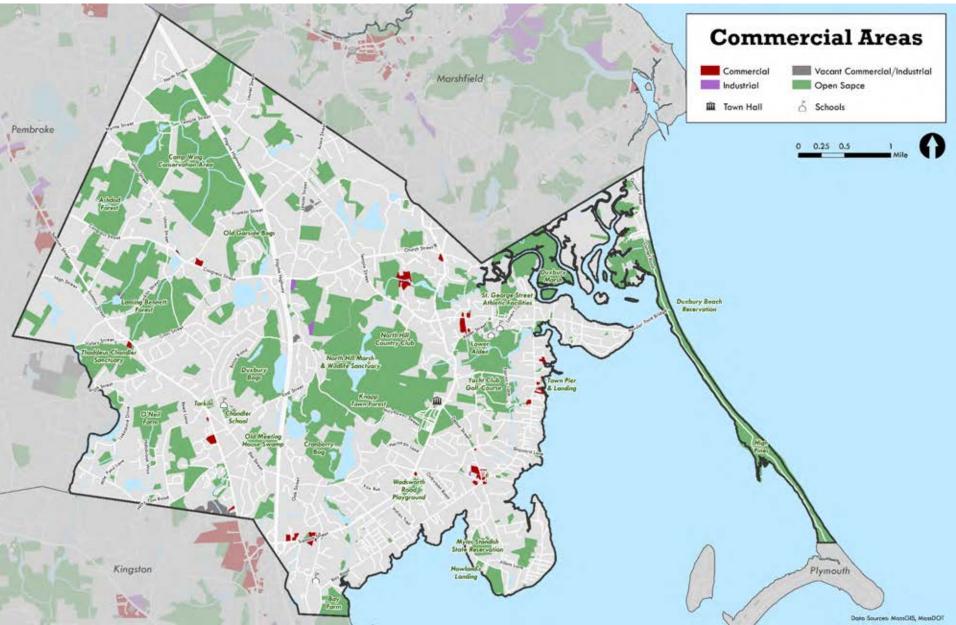
- Transportation and Circulation
- Public Facilities and Services
- Sustainability (Climate and Energy)
- Land Use and Zoning
- Implementation



Summary of Phase 2 Elements



Economic Development



Economic Development: Element Outline

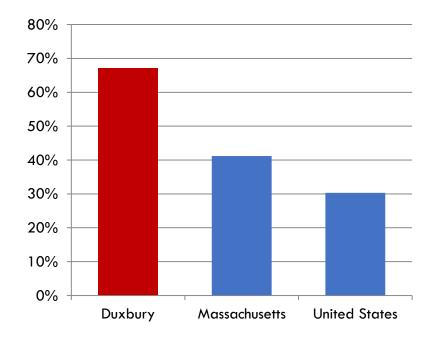
• Existing Conditions

- Industry Profile wages, job and wage growth, employers
- Workforce Profile Labor force and education, resident occupations
- Opportunity Sectors employment projections, retail opportunities
- Opportunity Areas Hall's Corner, Snug Harbor, Millbrook, others
- Fiscal Considerations
- Development Constraints and Limitations



Economic Development: Industry Profile

3.5% Unemployment in July 2018 (Of a labor force of 7,656 there were 7,409 employed)



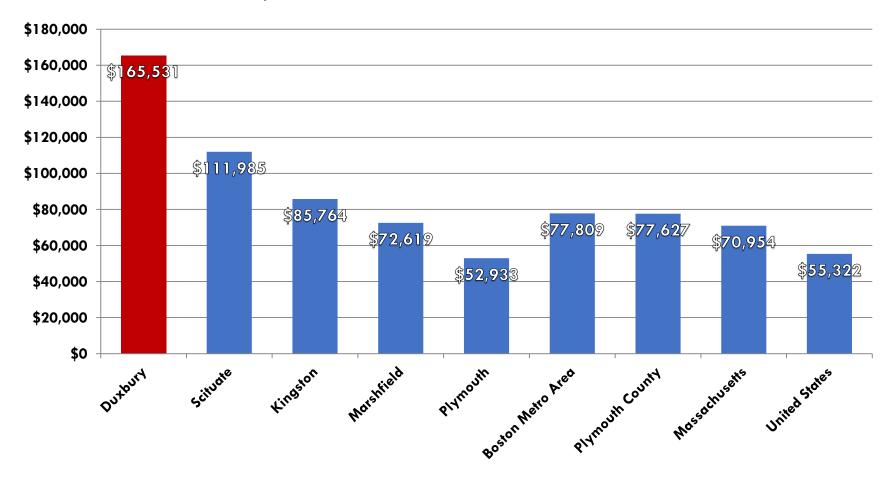
Major Commercial Centers include Hall's Corner, Snug Harbor, and Millbrook

Bachelor's degree or higher, percent of persons age 25 years+, 2012-2016

Source: Official Website of the Executive Office of Labor and Workforce Development (EOLWD)

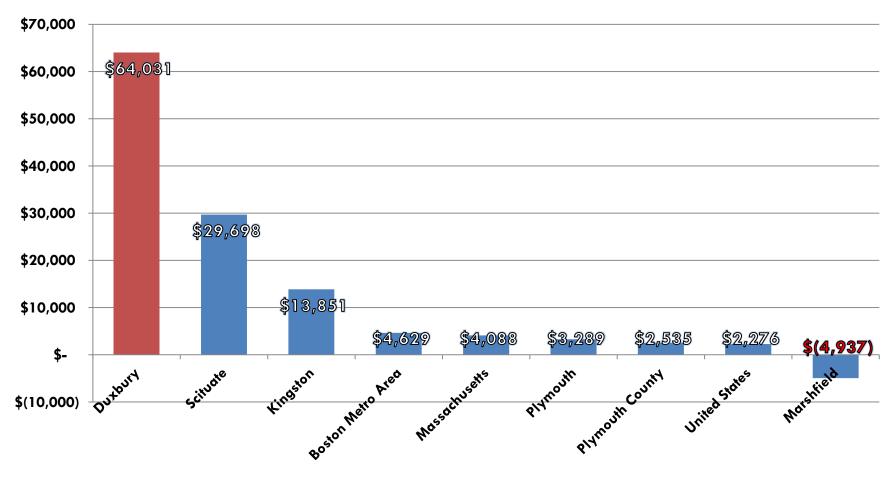
Economic Development: wages

 Households in Duxbury have a median annual income of \$165,531, which is almost three times the median annual income in the United States. Compared to neighboring towns, Duxbury had a household median income that was \$53,546 more than Scituate and \$112,598 more than Plymouth.



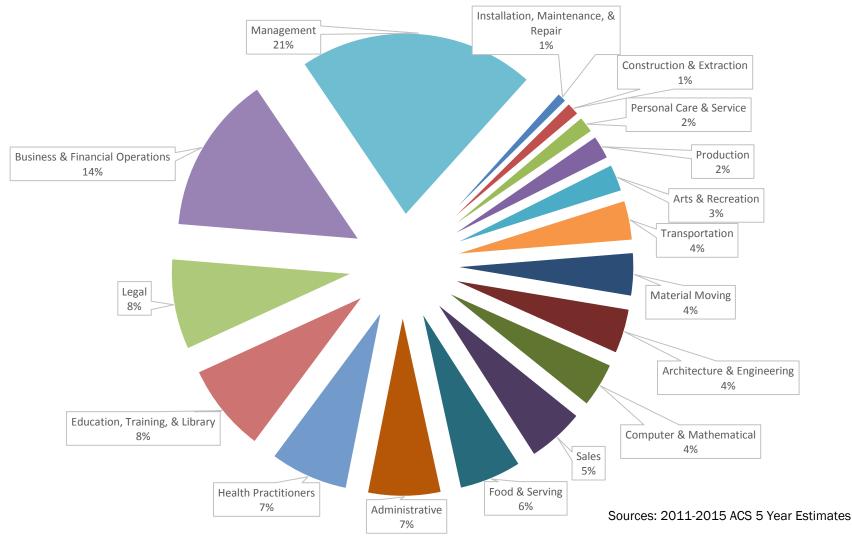
Economic Development: Wage Growth

 Households in Duxbury saw annual income increase within the four year period by \$64,031, slightly more than double the amount Scituate, the community that came closest in income growth. Most other areas saw smaller growth, with Marshfield losing nearly \$5,000 in the year.



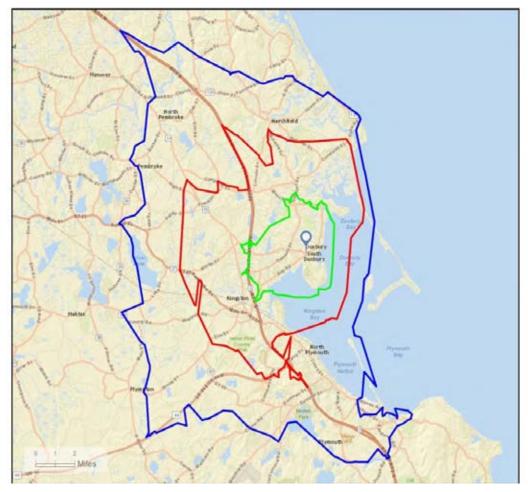
Economic Development: Wage Growth

 From 2015 to 2016, employment in Duxbury grew at a rate of 9.2%, from 639 employees to 698 employees. The most common job groups, by number of people living in Duxbury, are Management, Business, Science, & Arts, Sales & Office, and Service.



Economic Development: Drive Time

• This geography is displayed below includes the entire local market as well as portions of Marshfield, Pembroke, Kingston, and Plymouth. The 10 minute drive time is outlined in red. The blue line indicates a 15 minute drive time and the green line indicates a 5 minute drive time.

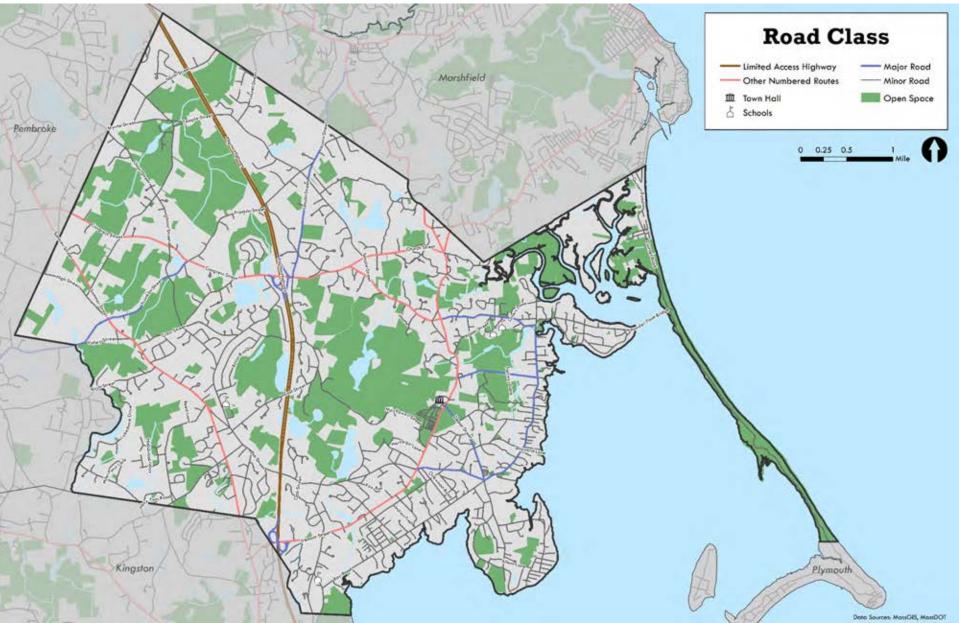


Economic Development: Retail Opportunities

• Figures in red are negative numbers that indicate there is a surplus of sales within the designated drive time. Figures in green are positive numbers that indicate a retail gap or leakage and represent potential opportunities for more retail in the area. There is an opportunity for all of the following types of businesses within the Local Trade Area.

	LOCAL TRADE AREA	PRIMARY TRADE AREA
	5 minute drive time	10 minute drive time
Total Retail Trade and Food & Drink	\$87,410,923	-\$30,383,730
Total Retail	\$78,568,576	-\$41,773,614
Total Food & Drink	\$8,842,347	\$11,389,885
Furniture & Home Furnishings Stores	\$3,362,003	\$5,491,899
Electronics & Appliance Stores	\$3,861,354	\$8,519,700
Building Materials, Garden Equip. & Supply	\$8,206,710	-\$9,320,052
Food & Beverage Stores	\$19,475,318	-\$54,381,242
Health and Personal Care	\$1,453,350	-\$1,698,661
Clothing & Clothing Accessories	\$6,411,831	\$4,631,541
Sporting Goods, Hobby, Book and Music Stores	\$2,426,051	\$3,011,509
General Merchandise Stores	\$14,787,787	\$815,720
Miscellaneous Store Retailers	\$1,968,010	\$3,304,340
Food Services & Drinking Places	\$8,842,347	\$11,389,885

Transportation and Connectivity



Transportation and Connectivity: Element Outline

- Transportation history and evolution
- Transportation Infrastructure
 - Roads, public transit, pedestrian and bicycle facilities, parking
- Commuting characteristics
- Transportation Planning in Duxbury



Streets and Roadways

- 125 miles of roadways
 - Vast majority town controlled
 - Most classified as local streets
- Little change in vehicular traffic since 1999 Comp Plan
 - Example: Washington St north of Harrison St:
 - 1990 AADT: 4,950
 - 2017 AADT: 4,925
 - Exception: increase in traffic along Route 3A
- Increase in number of crashes

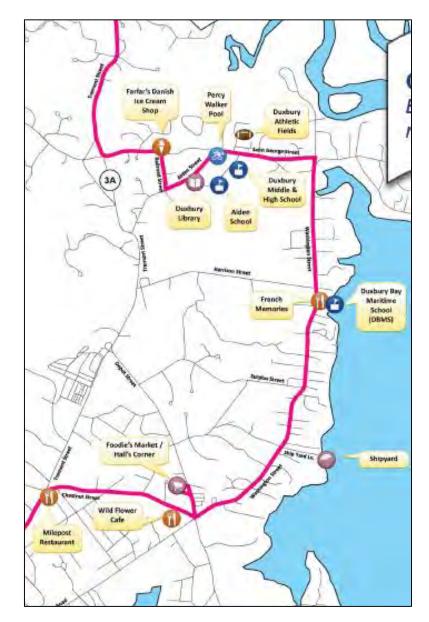
Year	Town of Duxbury	Plymouth County
2010	189	9,250
2011	181	9,319
2012	169	8,834
2013	178	9,660
2014	199	9,804



Depot Street looking south

Transit

- Limited transit services
- One GATRA bus route piloting revised routing along Washington Street
- Nearest rail option: Kingston/Route 3
- Other transit services:
 - GATRA Boston Hospital Bus (medical trips to South Shore area)
 - Duxbury Senior Center Shuttle



Parking

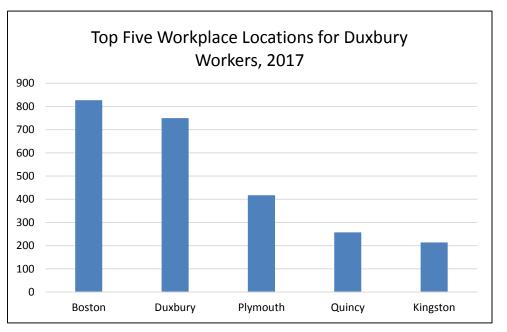
- Some parking issues noted in previous studies
 - Hall's Corner
 - Snug Harbor
- No known Town-wide survey or study of parking facilities



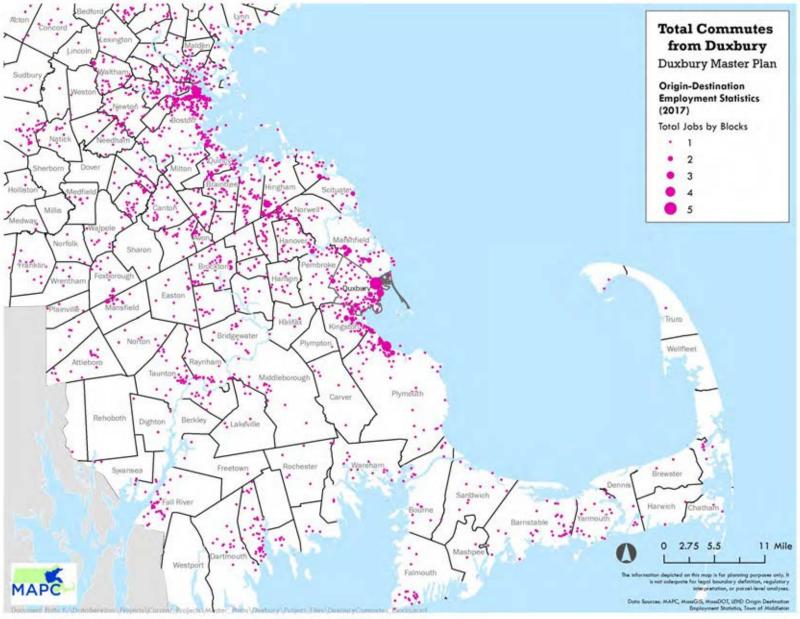


Commuting Characteristics

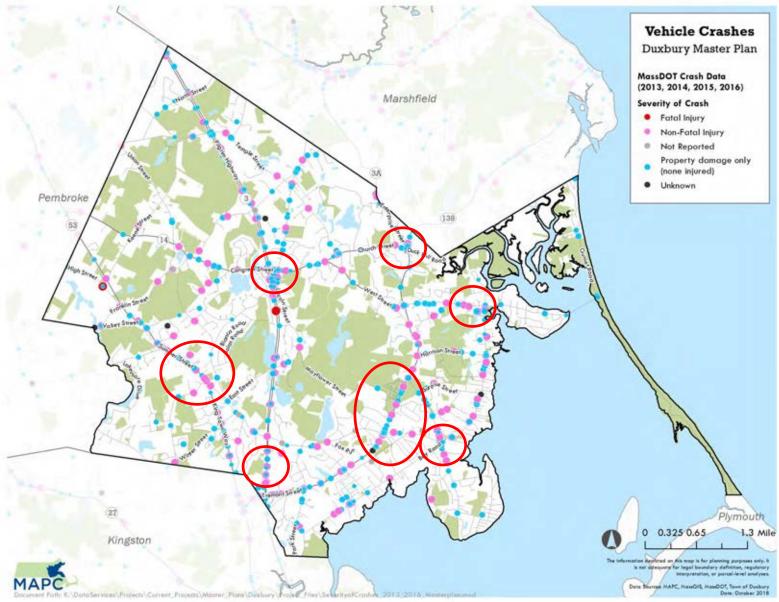
- Over 83% drive to work
- Work from home: doubled since 1990 (5% to 10%)
- Most commute within Duxbury or to Plymouth
- 30% travel fewer than 20 min
- Over 20% commute more than one hour



Commuting Characteristics

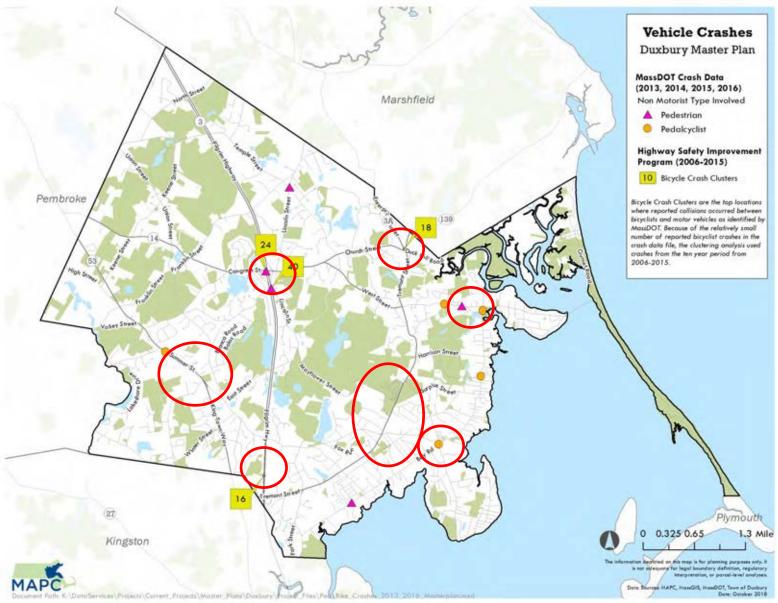


Vehicle Crashes (2013-2016)



Source: MassDOT Crash Data (2013-2016)

Pedestrian/Cyclist/Vehicle Crashes



Source: MassDOT Crash Data (2013-2016)

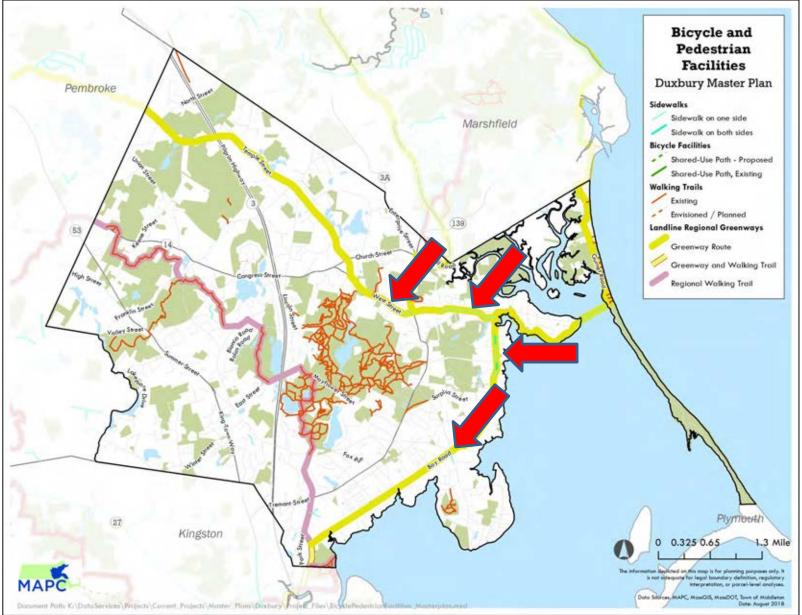
Pedestrian and Bicycle

- Limited sidewalk network
- No bicycle facilities
- Proposed LandLine regional greenway network
- Lack of facilities/complete streets noted in previous planning efforts
- Ped/Bike top ranked "challenge" by residents in 2017 Master Plan Visioning survey

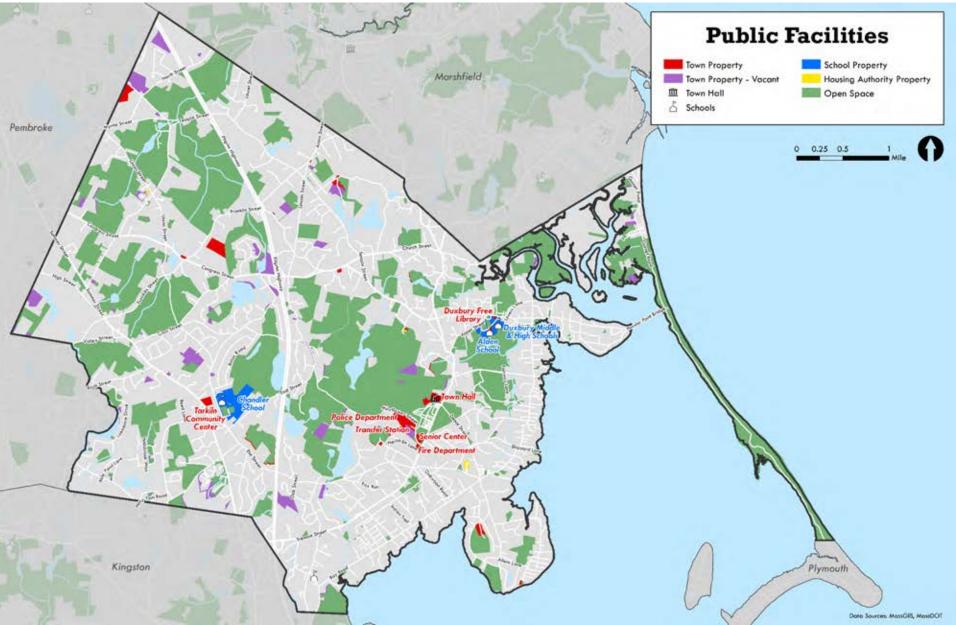


Route 3A near Town Hall

Pedestrian and Bicycle



Public Facilities and Services



Public Facilities and Services: Element Outline

Town Administration

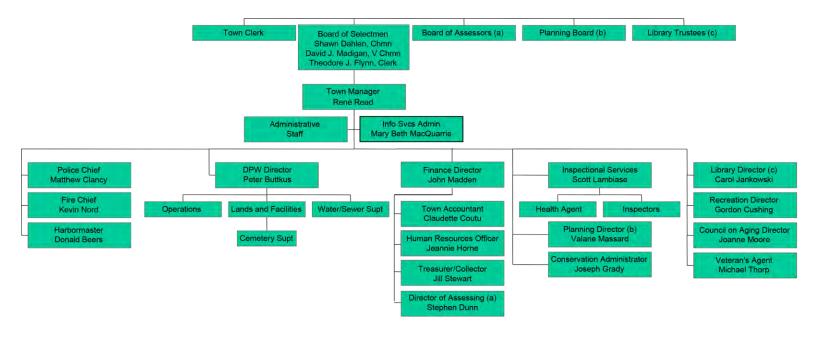
 Town Charter and Bylaws, Departments, Boards and Committees, Organizational Chart, Town Reps to Other Organization, Department Size

• Town Facilities

• Schools, Town owned buildings



Public Facilities and Services: Administration & Governance





Source: FY17 CAFR

- Town governed by Open Town Meeting and three member Board of Selectmen
- Town Manager form of government established in 1987 by Special Act Charter

Public Facilities and Services: Administration & Governance

In 2015, Town Meeting voted to authorize the Moderator to appoint a nine (9) member Government Study Committee, to review the Town's form of government, organizational structure, and general by-laws.



The Committee's final report, published in March 2018:

- Affirmed Duxbury's basic form of government – no recommended change to the model of Open Town Meeting with three selectmen and strong Town Manager
- Recommended creating an Audit Committee, disbanding the Personnel Board, and changing the Town Planner's reporting line from the Planning Board to the Town Manager
- Proposed corrective revisions to the Town's general by-laws to enhance clarity and consistency as well as eight substantive changes

Public Facilities and Services: Administration & Governance

The Government Study Committee advanced their recommended corrective and substantive amendments to the Town's general by-laws through the submission of nine Town Meeting articles.

All proposed articles were approved by Town Meeting.



Photo: 959 WATD

Article # and Description

Article 20: Amend the General By-Laws of the Town by making non-substantive edits for clarity and consistency

Article 21: Increase Moderator's term of office from one to three years

Article 22: Narrow the use of reconsideration in Town Meeting, limiting its use to when new relevant info emerges

Article 23: Change the appointing and reporting authority of the Town Planner from the Planning Board to the Town Manager

Article 24: Establish an Audit Committee

Article 25: Prohibit elected officials from being employed by the Town of Duxbury

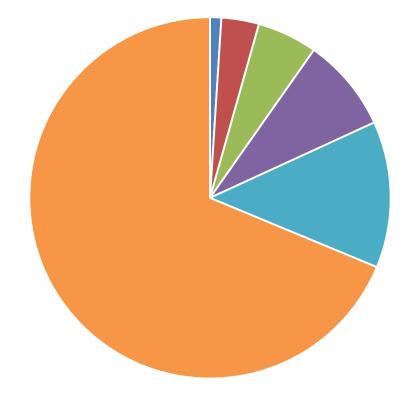
Article 26: Allow payment plans for tax title properties

Article 27: Enable the refusal of Town licenses for applicants who are delinquent in tax payments for under one year

Article 28: Disband the Personnel Board

Public Facilities and Services: Town Departments

Full-time Equivalent Employees by Function

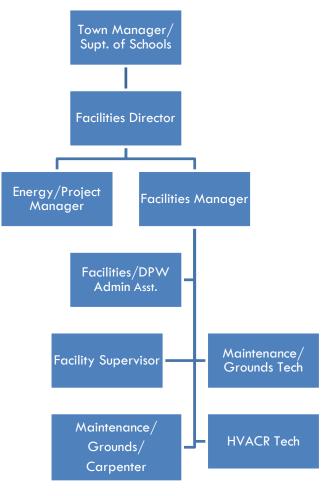


Total FTE: 595

Governmental Function: Departments	FTE (FY17)
Human Services: Council on Aging, Veterans	6
Culture and Recreation: Library, Recreation	20
General Government: Selectmen, Finance, Info Sys, Accounting, Assessor, Treasurer/Collector, Human Resources, Town Clerk, Conservation, Planning Board, Facilities	32
Public Works: DPW Management, Vehicle Maintenance, Hwy Dept, Snow & Ice, Transfer Station, Sewer Dept, Cemetery, Animal Control	50
Public Safety: Police, Fire, Muni Services, Harbormaster	78
Education: Duxbury Public Schools	409

Public Facilities and Services: Facilities Management

Duxbury's Facilities Department



- Consolidated Facilities
 Department created in FY13,
 with first Facilities Director hired
 in FY14
- Facilities Dept. serves the town's 63 public facilities, including school owned buildings
- Responsible for corrective and preventative maintenance, as well as renovation and new construction
- Also creates and implements a 10 year capital improvement plan

Public Facilities and Services: Town Facilities

Town Owned Facilities Used for Town Services

Facility Name	Address	Year Built and Notes
Town Hall	878 Tremont Street	1975
Old Town Hall	878 Tremont Street	1840, most recently remodeled in the late 1990s
Animal Shelter	878R Tremont Street	2005
Duxbury Senior Center	10 Mayflower Street	2001. In 2018, Town Meeting approved the construction of a new Senior Center facility.
Central Fire Station	668 Tremont Street	2012
Ashdod Fire Station	794 Franklin Street	2000
Harbormaster's Office	25 Mattakeesett Court	
DPW Operations Center	878R Tremont Street	1970. A feasibility study for replacing the facility is underway, and the Department will request funds for the next phase of the project in March 2019
Duxbury Free Library	71 Alden Street	1997
Police Station	155 Mayflower Street	2012

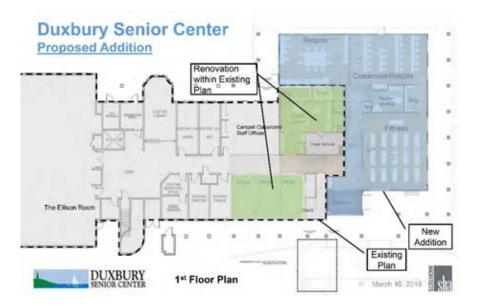
Public Facilities and Services: School Facilities

Town Owned Facilities Used for Town Services

Facility Name	Address	Year Built and Notes
Duxbury Middle-High School	71 Alden Street	2014
Alden School	75 Alden Street	1949; renovated in 2010
Chandler School	93 Chandler Street	1968; renovated in 2003
Center for the Performing Arts	75 Alden Street	2003; remodeled in 2014 to join with the new Middle-High School

Public Facilities and Services: Future Facilities Projects

In 2018, Town Meeting voted to fund the expansion of the Duxbury Senior Center. Construction is projected to complete in Spring 2019.



At 2018 Annual Town Meeting, the Department of Public Works presented an update on a feasibility study exploring the replacement of the DPW Operations Center.

Over the next year, the feasibility study process will develop concepts and an overall project budget. Funds will be requested in March 2018 for the project's next phase.



Town of Duxbury DPW Operations Center



Feasibility Study - Town Meeting Update Presentation March 10, 2018

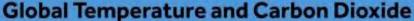
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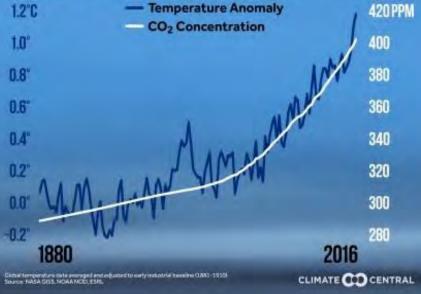
Sustainability (Energy and Climate)



Sustainability: What is Climate Change?







Sustainability (Energy): Element Outline

- Benefits
- Energy Management
- Municipal Sector
 - Staffing, Renewable Energy, Energy Cost, Energy Efficiency
- Residential, Small Business and Commercial/Industrial Sectors
 - Energy Use, Renewable Energy, Energy Efficiency, Energy Cost, Natural Gas Leaks

Sustainability (Energy): Benefits

- Energy efficiency program can help save money and reduce costs
- Stabilize energy prices through clean energy
- Reduce air pollution
- Reduce greenhouse gas emissions
- Clean energy can add to energy resilience and energy independence

Green Communities Designation

- Received designation in 2017
- Developed a 5-year energy reduction plan to reduce municipal energy use by 20% includes measures:
 - Energy Management Systems, LED lighting and smart controls, plug load controls, ventilation, weatherization, behavioral changes
- Received \$139,705 in grant funding from state to implement projects

The Town of Duxbury Energy Reduction Plan

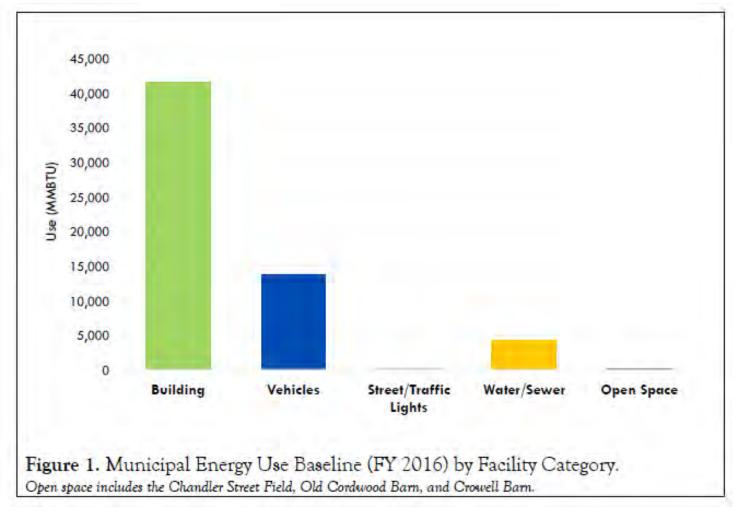
Prepared by the Metropolitan Area Planning Council with support from the Town of Duxbury



In fulfillment of the Massachusetts Green Communities Grant Program Criterion 3

Adopted by Board of Selectmen October 16, 2017 Adopted by School Committee October 19, 2017

Municipal Energy Use (FY 2016)



Source: Duxbury Energy Reduction Plan (2017)

Schools are the largest energy user

- Duxbury Middle-High School, Alden
 Elementary School, and Chandler Elementary
 combined make up 42% of town's energy use
- Duxbury Middle-High School, is a verified
 Collaborative High Performance School
 (CHPS) which is similar to LEED Silver for green
 and sustainable building elements

Renewable Energy in Duxbury

- Roof-mounted solar at Middle-High School and Performing Arts Center
- Solar Array at Chandler School
 - 2.4 kW ground mounted system
 - Used for educational programming
- Acushnet Gravel Pit Solar Array



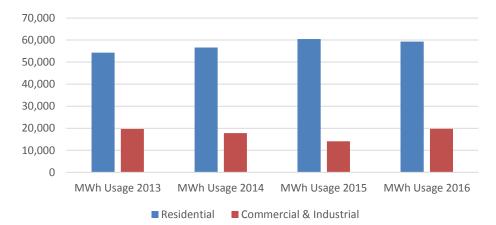
- 300 kW systems, provides energy to municipal buildings (approx. 25%)
- Town of Duxbury Landfill Solar Array
 - 585 kW system on 3 acres
 - Town leases land and received energy through Power Purchase Agreement (PPA)
- Purchasing Electricity from Off-Site Wind Turbine
 - Power Purchase Agreement (PPA)

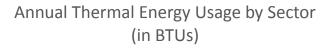
Solar Zoning

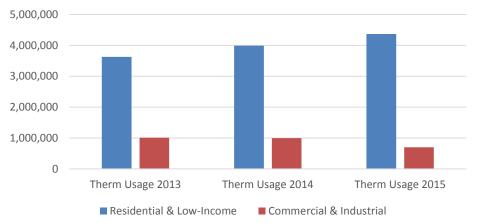
- Article 621 Solar Photovoltaic Facilities
 - Regulates large and small scale solar PV
 - Roof-top accessory use solar PV at 50 kW of less, up to 125% of principal use energy use is **allowed by right** in RC, NB and PD districts
 - Regulates ground mounted and ground mounted solar canopies by site plan review
- Section 618 Ground-Mounted Solar Photovoltaic Installation Overlay Districts
 - Creates a 3-acres overlay district allowing large, 250 kW+ systems on town-owned land at existing transfer station
 - Existing solar installation on-site

Community Energy Use

Annual Electricity Usage by Sector (in MW)







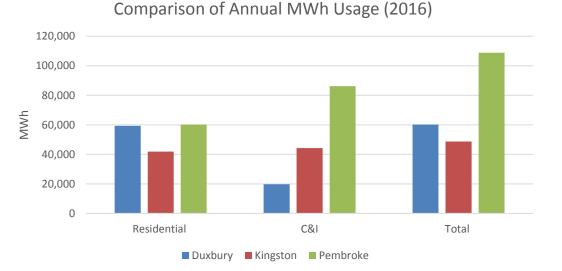
Source: MassSave http://www.masssavedata.com/Public/GeographicSavings?view=U

Comparison of Energy Use

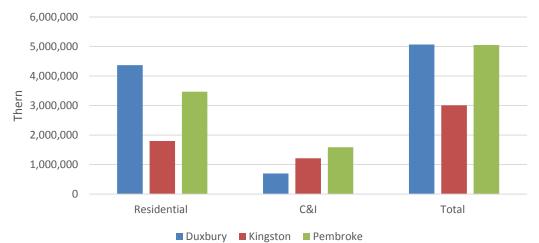
Population Duxbury: 15,926

Kingston: 13,462

Pembroke: 18,358



Comparison of Annual Therm Usage (2015)



Sustainability (Climate): Element Outline

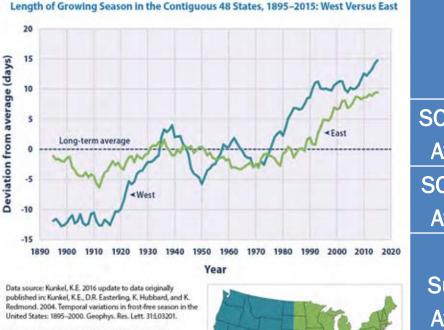
Climate Risks

- Sea Level Rise/Storm Surge
- Extreme Heat and Warming
- Changes in Precipitation Events
- Duxbury Vulnerability
 - Infrastructure, Environment, Society
- Climate Action Plan and Natural Hazard Mitigation Recommendations and Integration



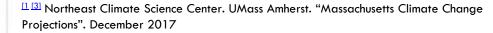
Sustainability (Climate): Temperature Observed and Projected

East



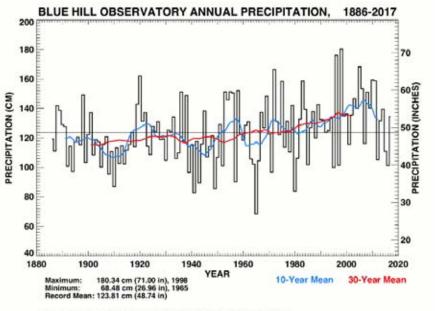
West

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

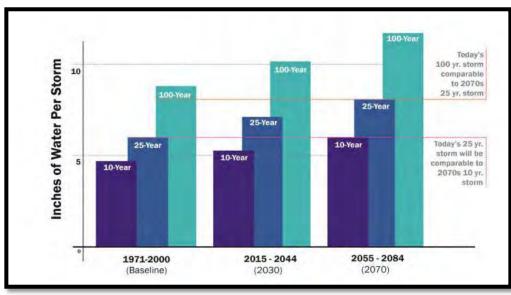


	Baseline			
	1961-	2030	2050-	2090-
	2010		2070	2100
SC Annual	50°	52° 58°	52°-58°	53° 60°
Average	50	52 -56	52 -56	53-00
SC Winter	31°	33°-35°	33°-39°	34°-40°
Average	JT.	00 00	00 00	JU
SC				
Summer	69°	71°-73°	71°-78°	72°-81°
Average				

Sustainability (Climate): Element Outline Precipitation Observed and Projected



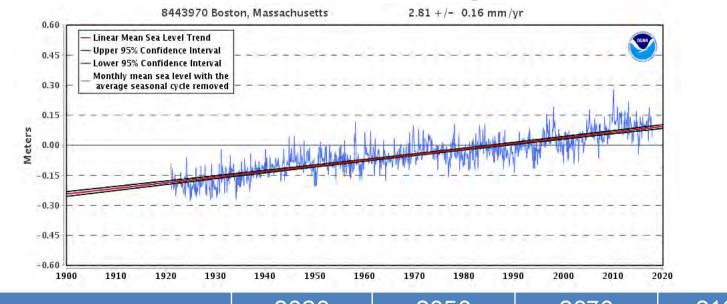
Michael J. Iacono, Atmospheric and Environmental Research / Blue Hill Observatory



Cambridge Climate Vulnerability Assessment 2015. Kleinfelder based on ATMOS projections November 2015

Sustainability (Climate):

Sea Level Rise Observed and Projected



	2030	2050	2070	2100
Boston BH_FRM ¹	8.00 in.	1.50 ft.	3.10 ft.	7.40 ft.
South Shore ²	8.04 in.	1.85 ft.	3.39 ft.	6.52 ft.
Boston Tide Gauge ³	0.4-0.9 ft.	0.8-1.5 ft.	1.3-2.4 ft.	2.0-4.0 ft.

Douglas, E.M., Kirshen, P.H., Bosma, K., et al. 2017. Simulating the Impacts and Assessing the Vulnerability of the Central Artery/Tunnel System

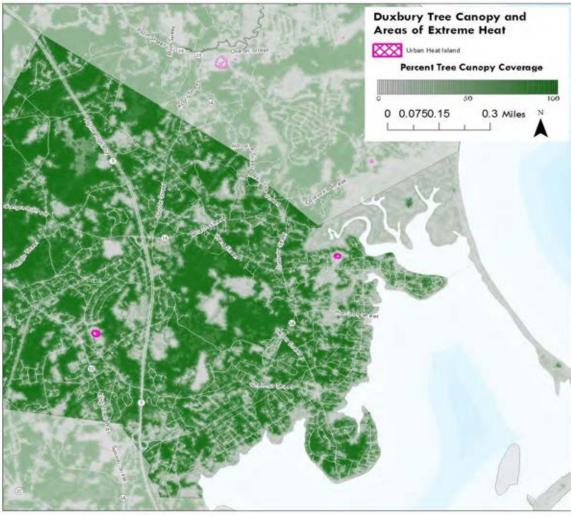
to Sea level Rise and Increased Coastal Flooding. J Extreme Events 3 (4): 1650013 (28 pages).

^[2] "Sea Level Rise Study. The Towns of Marshfield, Duxbury, Scituate, MA". 2013. Kleinfelder.

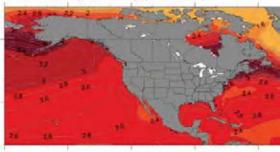
[3] Northeast Climate Science Center. UMass Amherst. "Massachusetts Climate Change Projections". December 2017

Sustainability (Climate):

Extreme Heat – Strengths and Vulnerabilities

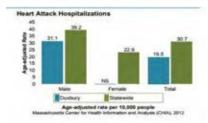


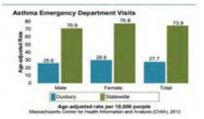
(2050-2099)-(1956-2005)



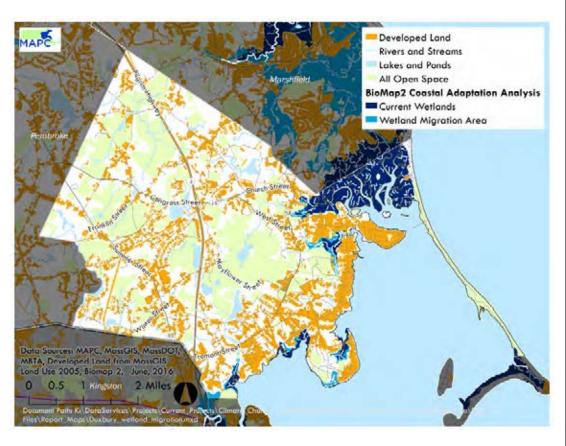
°C 0.0 0.3 0.6 0.9 1.2 1.5 1.8 2.1 2.4 2.7 3.0 3.3

Projected changes in sea surface temperature (*C) for the control United States under the higher service (RCPUS). Protected immunity for the 2020-2029 period are calculated using a comparison from the average sea surface temperatures ever 1554-2026. Projected changes are exemined using the Coupled Model inter comparison Project Rises & (CMPR) surface of model simulations. (Figure materix, NDAM)



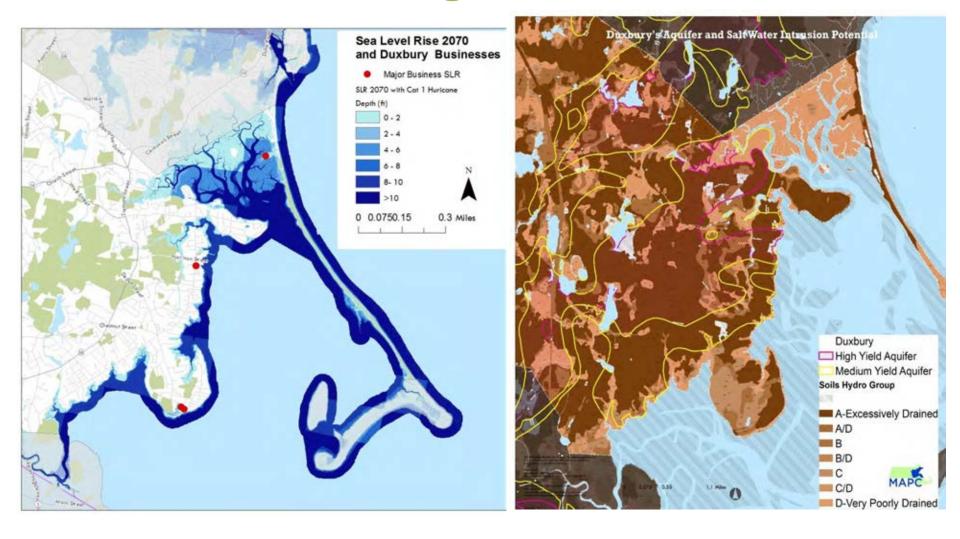


Sustainability (Climate): Sea Level Rise – Strengths and Vulnerabilities





Sustainability (Climate): Sea Level Rise – Strengths and Vulnerabilities

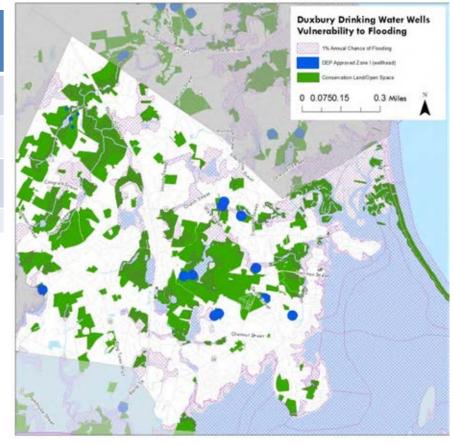


Sustainability (Climate):

Increased Precipitation-Strengths and Vulnerabilities

BioMap2 Core Habitat	Location	Acres	Core Type
1011	Duxbury Bay	12,81 5	Aquatic Core
947	North Hill Marsh/Town Forest	1,185	Wetland
1083	Camp Wing Conservation Area/ South River	374	Wetland/Aquati c Core
407	Island Creek	53	Aquatic Core

Waterbody	Category	Impairment
Duxbury	5	Fecal coliform, discharges from municipal
Bay		separate storm sewer systems (MS4)
Kingston	5	Fecal coliform, discharges from municipal
Bay		separate storm sewer systems (MS4)
Bluefish	5	Fecal coliform, source unknown
River		
Jones	4a	Fecal coliform, discharges from municipal
River		separate storm sewer systems (MS4)
(Kingston)		



Sustainability (Climate):

Integration Climate Vulnerability/Action Plan and Natural Hazard Mitigation Plan

- Review the Climate Action Plan/Natural Hazard Mitigation Actions.
- 2. Evaluate impacts of climate vulnerability in all Envision Duxbury components.
- 3. Envision Duxbury recommendations have a climate resilience lens and application.









Open House



Open House Feedback

- We invite you to let us know your thoughts and priorities
 - Leave comments on boards
 - Follow exercises
 - Fill-in handout and return
 - Discuss with planning team members, but please also leave notes in writing

Thank you!

Stay connected to the process at: **Envisionduxbury.mapc.org**



Next Steps

- Compile Community Forum results
- Draft Phase 2 element goals
- <u>Next</u> Planning Board Meeting November
 - Review Community Forum results
 - Draft goals for Economic Development, Transportation and Circulation, Public Facilities and Services, Sustainability (Climate and Energy),
- Planning Board Meeting February
 - Land Use and Zoning
 - Discussion of recommendations/implementation
 - Community Forum in March Draft Recommendations and Prioritization

Community Forum – March





Community Forum October 24, 2018



