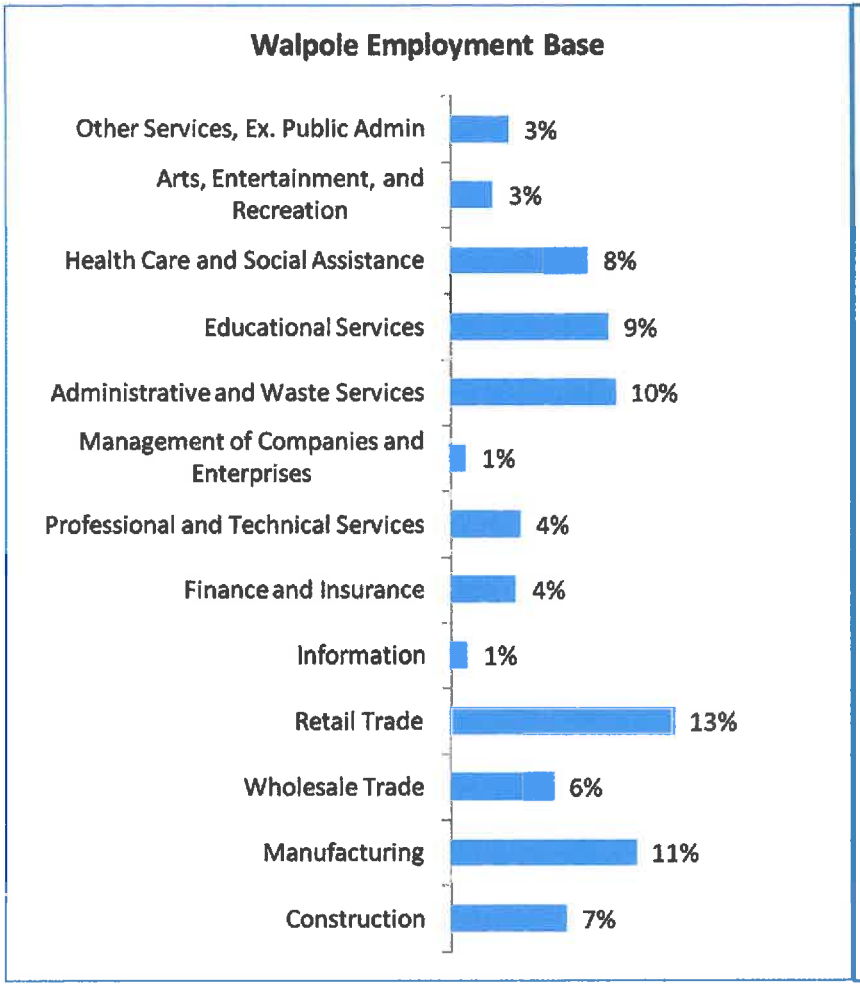
Walpole Solar Energy and Data Centers

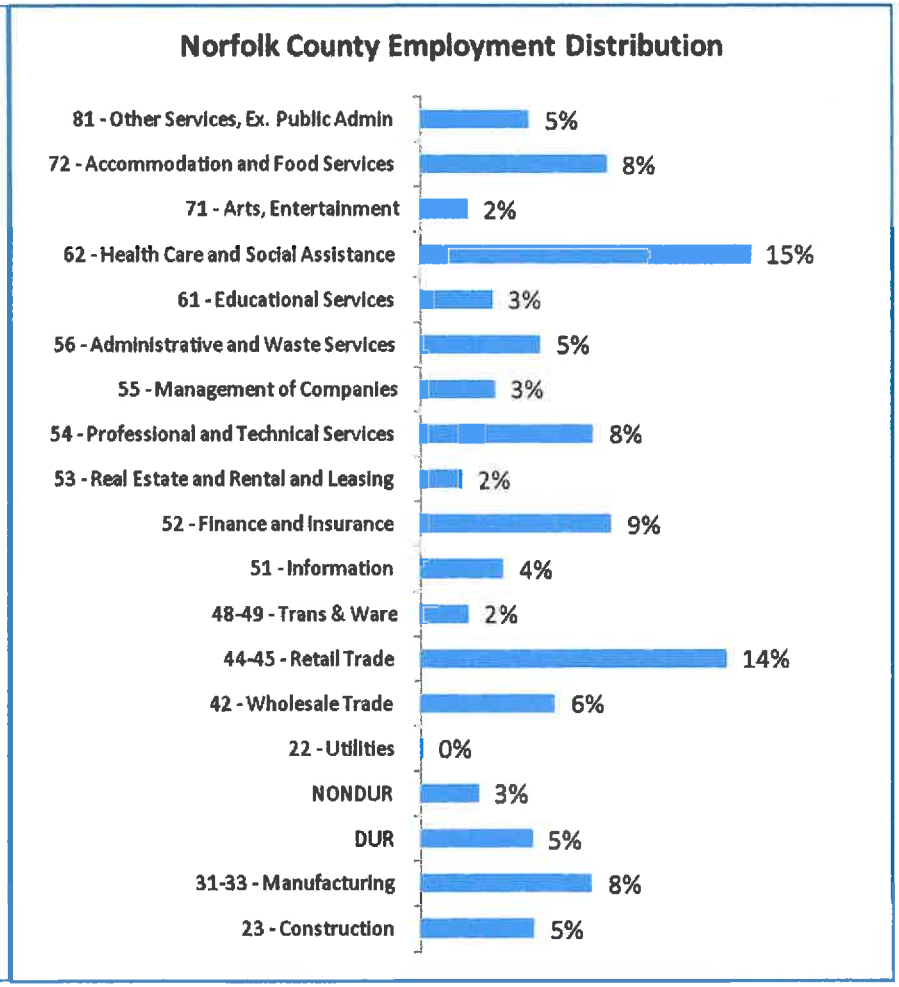
4/28/2011

Ninigret | Partners

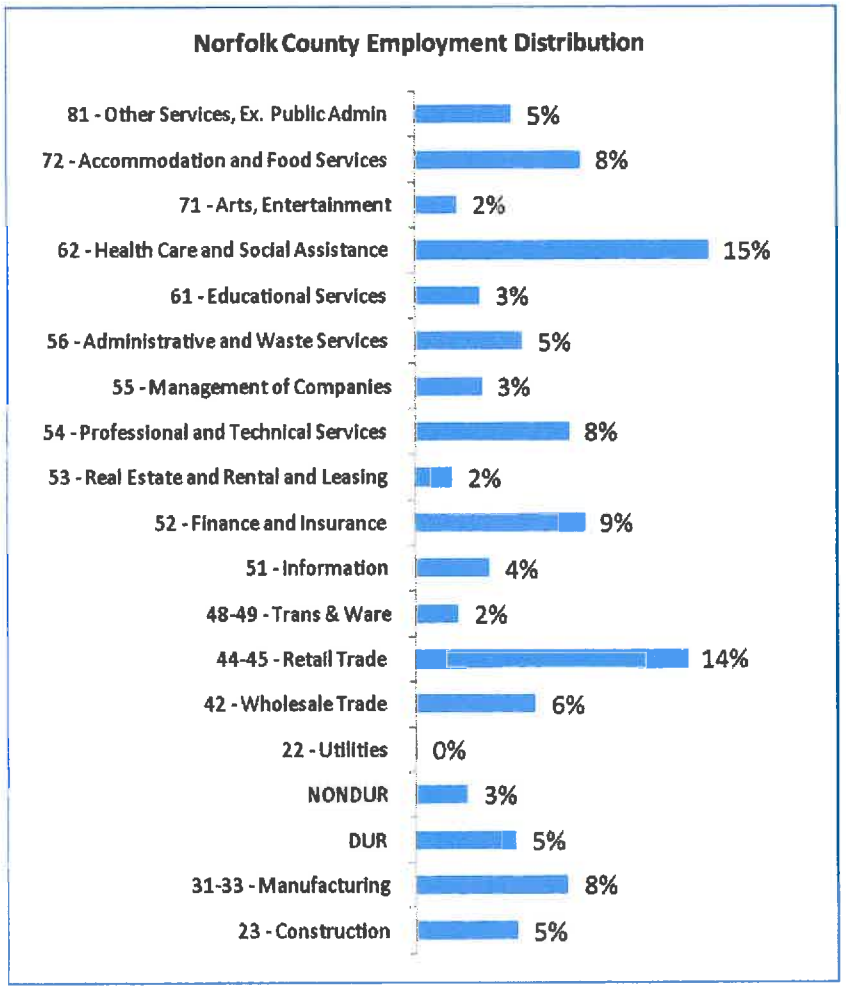
Summary of Previous Meeting

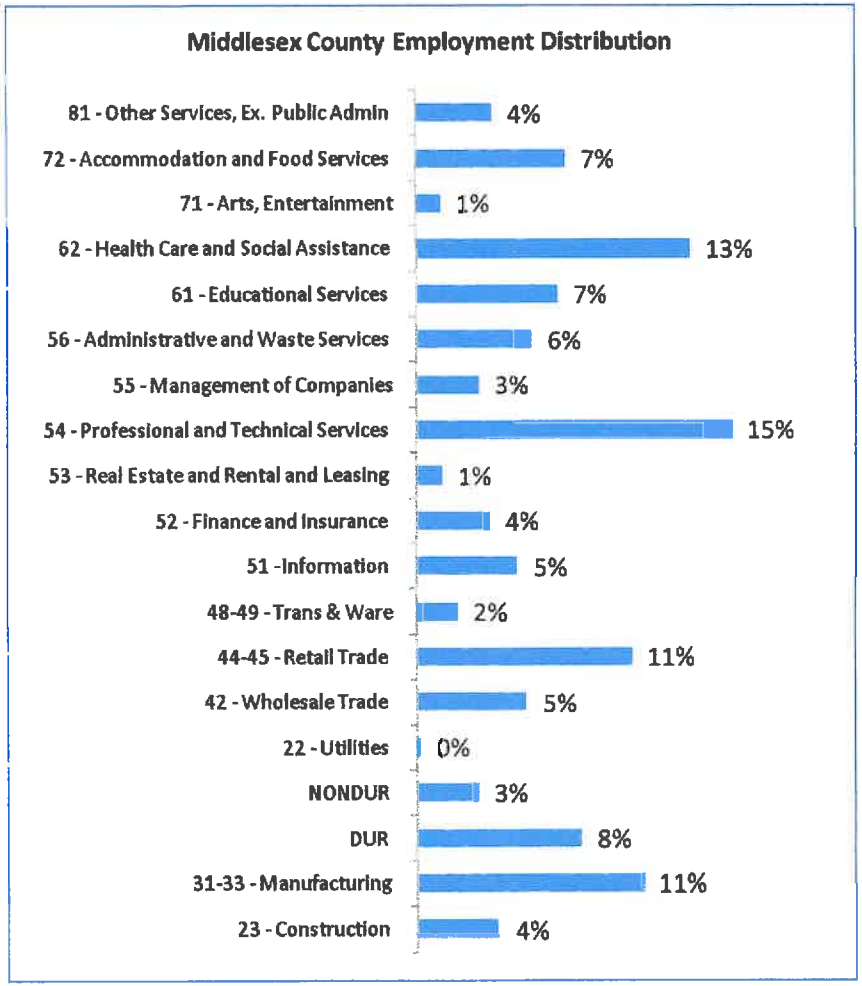
Walpole's 808 businesses employ 10,200 people with major concentrations in manufacturing and industries that don't generate substantial demand for office space





Middlesex vs. Norfolk county employment



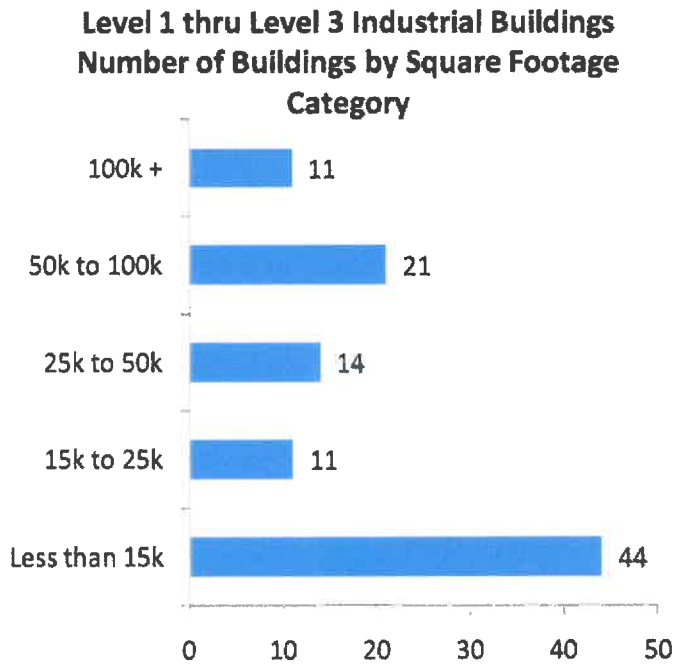


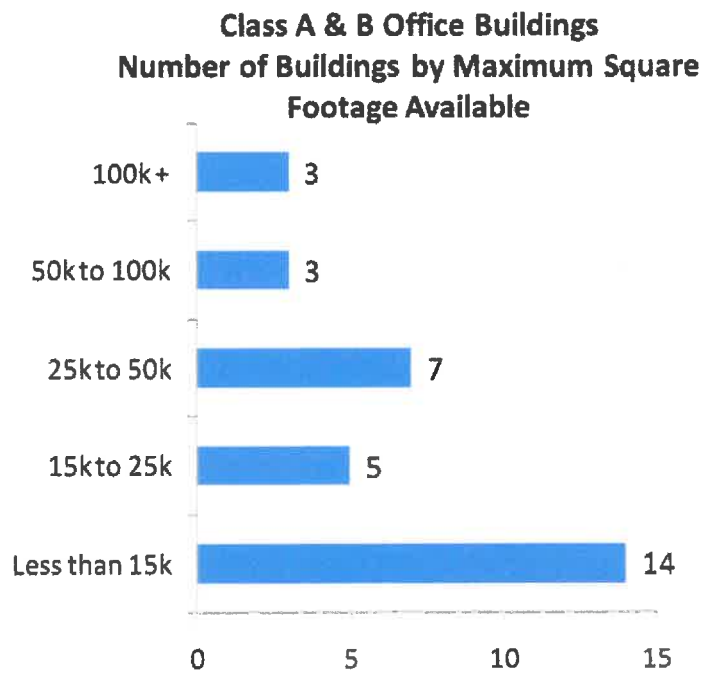
Industries with the largest employment growth have specialized space needs or are not real estate driven businesses

NAICS	Industry	Year 2001	Year 2009	Difference	% change
622	Hospitals	141,879	176,986	35,107	25%
6221	General Medical and Surgical Hospitals	124,999	155,208	30,209	24%
621	Ambulatory Health Care Services	121,290	146,119	24,829	20%
722	Food Services and Drinking Places	201,904	220,142	18,238	9%
611	Educational Services	111,914	126,713	14,799	13%
814	Private Households	15,673	29,894	14,221	91%
7221	Full-Service Restaurants	100,160	114,270	14,110	14%
623	Nursing and Residential Care Facilities	87,560	98,728	11,168	13%
5417	Scientific Research and Development Svc	33,319	43,818	10,499	32%
624	Social Assistance	58,582	68,249	9,667	17%
454	Nonstore Retailers	13,376	22,992	9,616	72%
7222	Limited-Service Eating Places	71,333	80,298	8,965	13%
6216	Home Health Care Services	19,104	27,004	7,900	41%
6113	Colleges and Universities	77,433	85,076	7,643	10%
541	Professional and Technical Services	244,148	251,386	7,238	3%
6211	Offices of Physicians	45,141	51,969	6,828	15%
6241	Individual and Family Services	24,127	30,930	6,803	28%
4251	Electronic Markets and Agents/Brokers	21,261	27,502	6,241	29%
6232	Residential Mental Health Facilities	13,318	18,895	5,577	42%
5239	Other Financial Investment Activities	20,510	25,657	5,147	25%
813	Membership Organizations & Associations	33,412	38,466	5,054	15%
4543	Direct Selling Establishments	6,997	11,934	4,937	71%
5191	Other Information Services	1,094	5,850	4,756	435%
6233	Community Care Facility for the Elderly	10,535	15,240	4,705	45%
5313	Activities Related to Real Estate	8,639	13,241	4,602	53%

Across the market area approximately 4.1 million square feet of industrial space is available as well as approximately 1 million square feet of office space

- Approximately 10% of the industrial space consists of one warehouse with nearly 400ksft
- A potential opportunity in the marketplace is for buildings with relatively small footprints in the 25ksft range
- Under present economic conditions buildings will accept smaller lease arrangements to generate some revenue, however, that will likely change as the economy improves
- It is also important to note that much of the industrial can be easily converted to office space

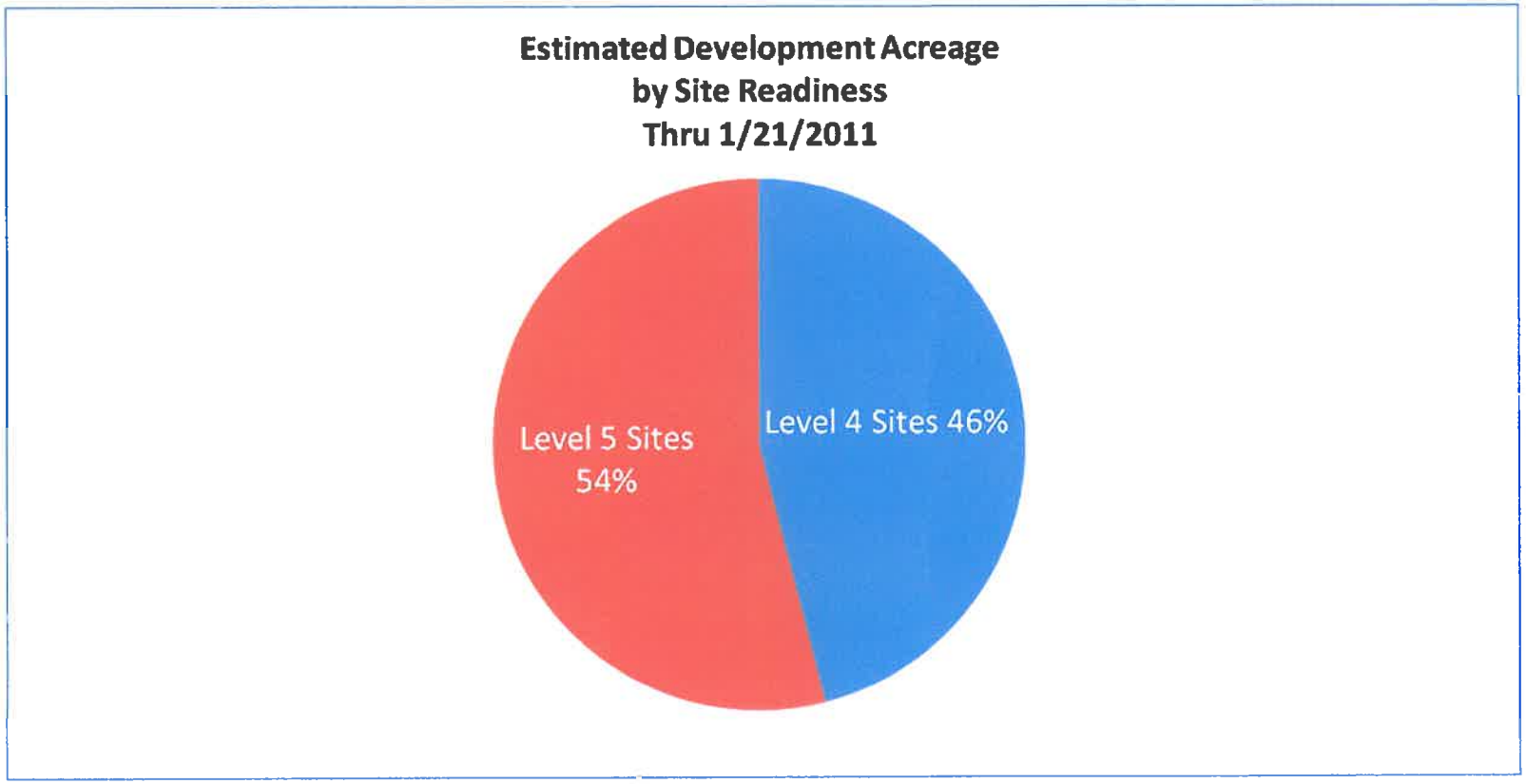




Note: there is some overlap in building types due to existence of FLEX buildings
Source: NP calculations based on broker reportsand Loopnet searches

An estimated 387 acres are available for commercial or industrial development in the market area

- 179 acres in the market area are considered site ready by MassEcon
- 208 unimproved acres are available between I-90/495 and Franklin
- Note: This excludes more than 200 acres of land for sale presently zoned residential



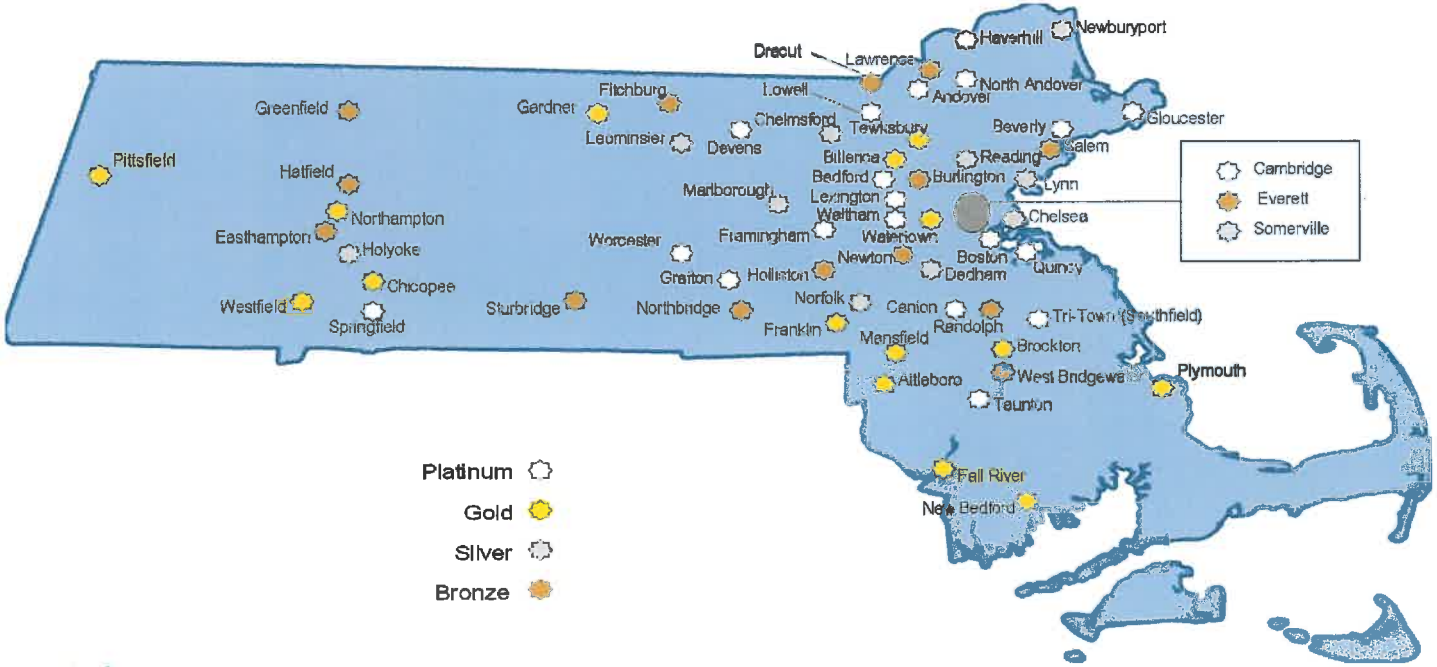
Source: Mass Site Finder – Loopnet; NP calculations

Competing for biotech/life sciences will likely require becoming a BioReady community given the regional competition

- At this point it's a "needed to play" situation as opposed to "needed to win"

Massachusetts BioReady™ Community Ratings Map

(January 2011)



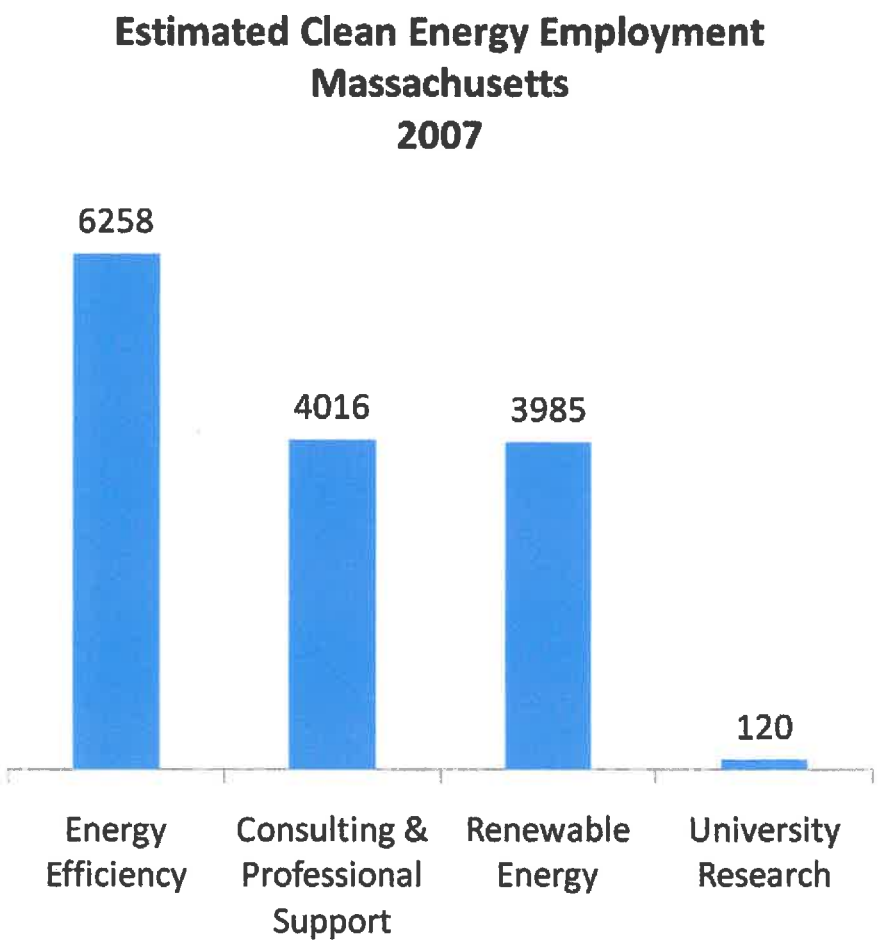
MassBio

Typical utility infrastructure requirements for life science companies

- Note significant process development work is underway to reduce the amount of water consumed through single use technologies

	Footprint	Water Use	Sewer	Natural Gas
Basic Research	10-20ksft minimum with expansion capacity	8-20000 gpd	Some pretreatment, use of neutralization tanks	Required
Process Development	10 to 20ksft minimum Typically able to expand to pilot plant	20000 gpd	Same as above	Required
Pilot Manufacturing	10 to 35ksft	2400 gph per 1000sft	Adequate public sewer capacity. Discharges require kill systems and pH pretreatment	Higher volume than process development
Manufacturing	At least 100ksft	Varies by process but planning model 1.5 million gpd per 100ksft manufacturing Also requires standby water system	Same as pilot with larger scale	High volume
Fill & Finish	20ksft minimum	Much less than manufacturing		Required

556 clean energy companies employing approximately 14000 people exist in Massachusetts



- Most of these companies are small with 40% having fewer than $1 million in revenues
- Most companies in the renewable space are less than 5 years old
- Renewable energy is the fastest growing sector in Massachusetts
  - Projections are for 30% employment growth in this subsector in the next year
- MassTech estimates that clean energy could employ 75,000 people statewide by 2017
- If the present configuration of industry continues forward flex space that can accommodate industrial and office uses will be required

Source: MASSTECH; NP analysis

Retail & Hotel/Hospitality

- Retail and hospitality were not examined in depth
- Our site survey quickly identified a substantial amount of retail capacity in the immediate vicinity
  - Retail capacity represents a full range of retail mix from local retail to chain store discount shopping to branded consumer / mass luxury retail
- In addition the close proximity to Patriots Place and Wrentham outlets leaves little gaps in the market place for a differentiated retail product
- Moreover the location is not conducive to a major retail development or lifestyle center given its location and more attractive options on main thoroughfares
- Similarly its our opinion that the location is unattractive as a hotel site for a major chain hotel group given its low visibility to major traffic corridors or lack of proximity to major employment centers

As a follow up to the previous meeting we were asked to consider solar arrays and data centers for the sites

Solar Arrays

Examination of EPA Brownfields Energy Generation Potential database for the region suggest solar may have some potential as an off-grid power source

- Pursuing an affiliated grant program may require considering all potential forms of renewable energy

		EPA Designated Potential Based on Resource Available				
Site Name	City	Wind Potential	DNI Solar Potential	Non-Grid PV Solar Potential	Biopower Potential	Biorefinery Potential
Leavens Awards Inc.	Attleboro	Poor	Moderate	Good	Outstanding	Outstanding
Walton & Lonsbury	Attleboro	Poor	Moderate	Good	Outstanding	Outstanding
Nu-Style Company, In. (aka Armstrong Property)	Franklin	Poor	Moderate	Good	Outstanding	Outstanding
HATHEWAY & PATTERSON	MANSFIELD	Poor	Moderate	Good	Outstanding	Outstanding
Reliable Electro Plating	Norton	Poor	Moderate	Good	Outstanding	Outstanding
SHPACK LANDFILL	NORTON/ATTLEBORO	Poor	Moderate	Good	Outstanding	Outstanding
NORWOOD PCBS	NORWOOD	Poor	Moderate	Good	Outstanding	Outstanding
Seekonk Mfg	Seekonk	Poor	Moderate	Good	Outstanding	Outstanding
F. B. Rogers	Taunton	Poor	Moderate	Good	Outstanding	Outstanding
Parcel 6A	Taunton	Poor	Moderate	Good	Outstanding	Outstanding
Robertson on the River	Taunton	Poor	Moderate	Good	Outstanding	Outstanding
Taunton LF	Taunton	Poor	Moderate	Good	Outstanding	Outstanding
BLACKBURN & UNION PRIVILEGES	WALPOLE	Poor	Moderate	Good	Outstanding	Outstanding
Former Doug's Texaco	Wrentham	Poor	Moderate	Good	Outstanding	Outstanding
The Foot-The Toof	Wrentham	Poor	Moderate	Good	Outstanding	Outstanding

Source: EPA Brownfield Renewable Energy Database

Considerations for a landfill-based solar array

Features of an Attractive Landfill Site

- Closed and capped in accordance with requirements
- Contents already settled and able to bear weight of solar arrays sitting on rails
- No federal CERCLA obligations or other open compliance items
- Large flat, graded, unshadowed areas for maximum sun exposure
- Methane extracted
- Transmission and interconnection access (likely to exist if there has been methane capture)
- No major contamination, leaks, or groundwater intrusion
- Receptive site owner, local officials and neighbors

Challenges of Landfill Siting

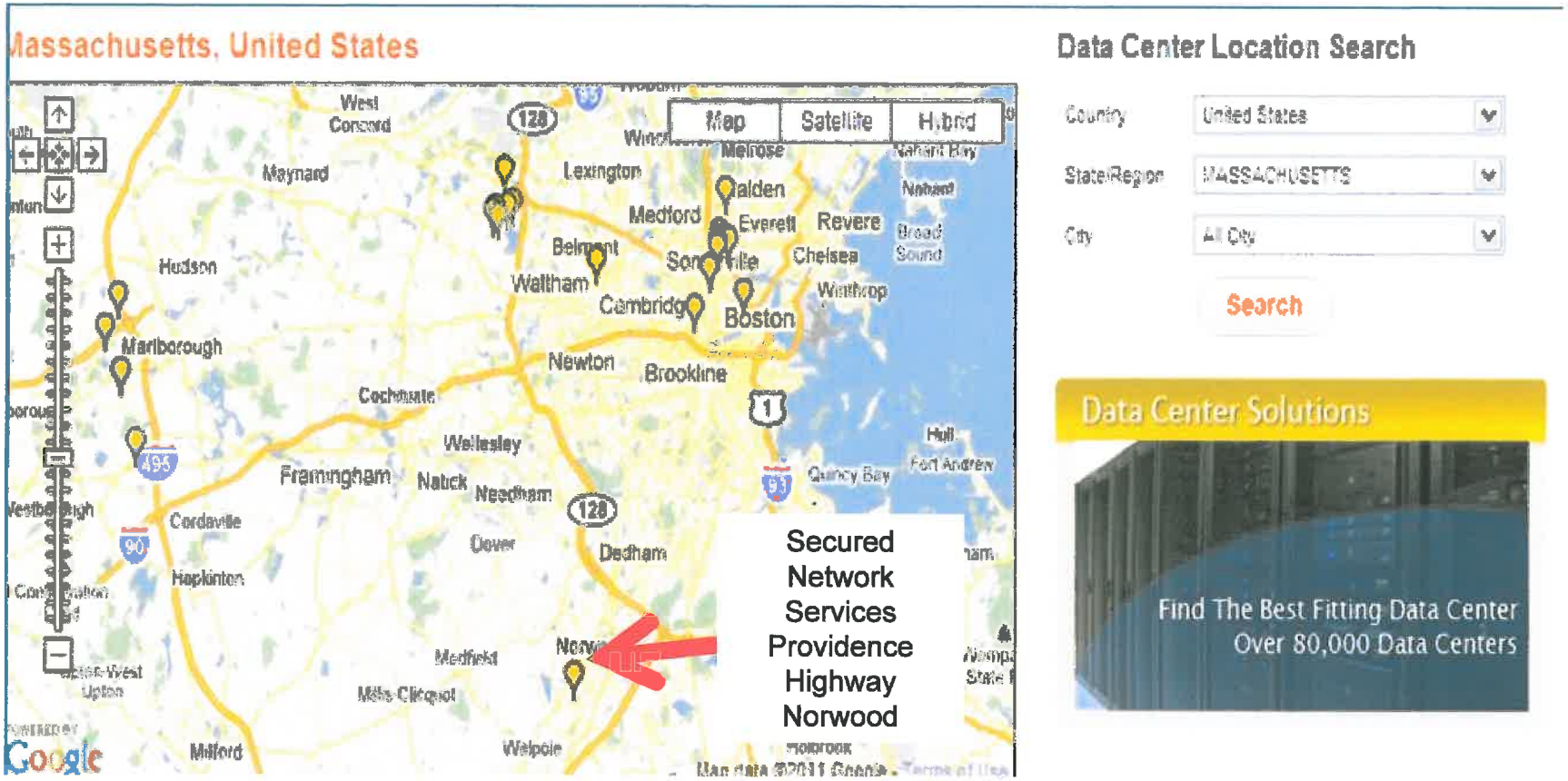
- Small size of some landfills may require several sites, possibly in several different localities, to achieve economies of scale
- Permitting criteria for local and state discretionary approvals, including zoning requirements, are uncertain
- Cost of environmental review and discretionary approval process
- Careful site evaluation needed to avoid problematic sites and portions of sites
- Community concerns
- Liability must be allocated between site owner and project developer
- Financial assurances needed for project
- Compliance record should be clean

Source: Carter, Ledyard and Millburn

Data Centers

Critical to success of a data center/switch operation or carrier hotel is access to multiple telecom providers

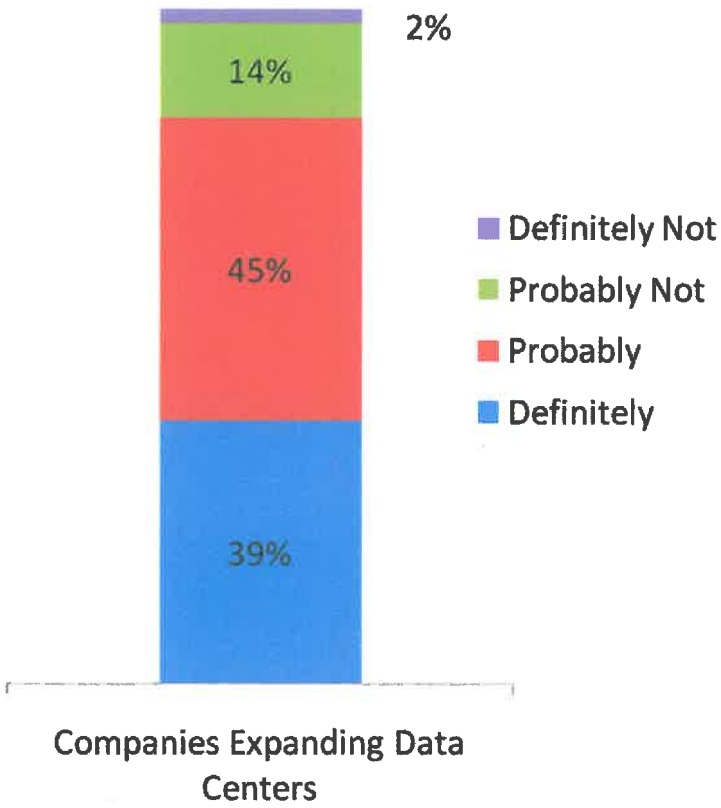
- 22 data centers in eastern Massachusetts are located near major fiber network corridors

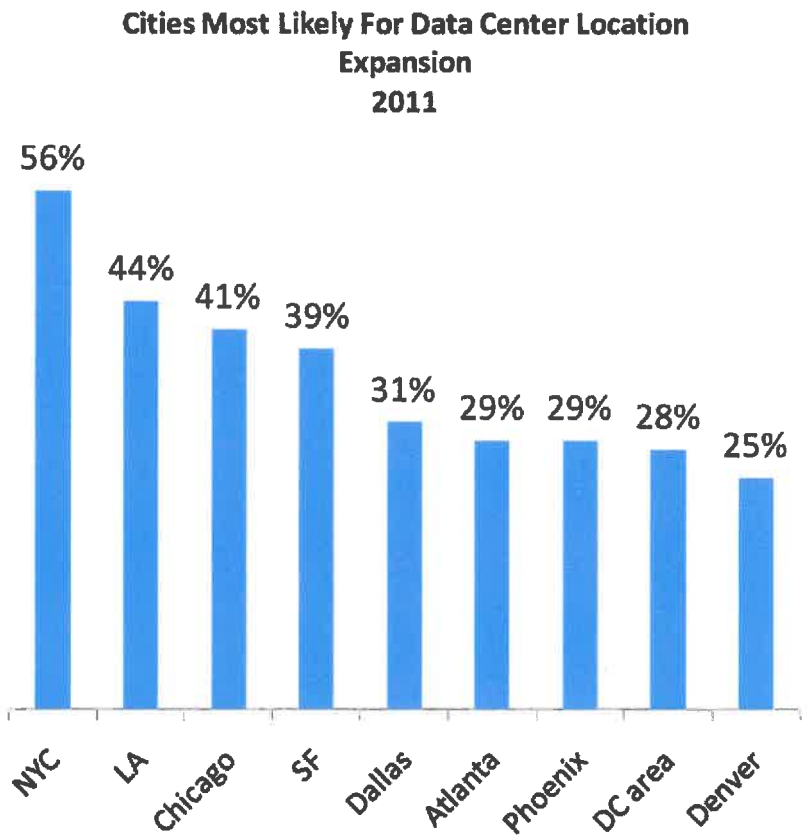


Source: Oikos

Nationally, data center expansion appears to be restarting – however – Boston is not considered a prime location for expansion

- 60% of companies with definite expansion plans are likely to lease space from existing providers





Source: Digital Realty Trust, 2011

Cloud computing / virtualization could dramatically impact dedicated data center construction

- The increasing use of cloud computing models particularly by web-oriented companies
  - A key implication could be that existing locations particularly enhanced by compression and digitization technologies get "locked in" due to existing infrastructure rather than create additional data centers with their significant telecommunications, powering and cooling requirements
- A countervailing force could be the growth in electronic health records and the data center requirements for those services