APPENDIX E: Statewide Diagnostic

This separate appendix for Ocean State Accelerates includes an economic base analysis, workforce analysis, national indicators analysis, sustainable growth and economic resilience analysis, small business analysis, and community development analysis.

These analyses were completed in March-**April** 2023 and prepared for the RI Commerce Corporation by Camoin Associates and &Access.

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Economic Base Analysis

APPENDIX E: STATEWIDE DIAGNOSTIC COMPONENT
Ocean State Accelerates
Rhode Island Long-Term Economic Development Strategy

March 2023

camoin associates

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EXECUTIVE SUMMARY

Overview

The Economic Base Analysis is a comprehensive examination of demographic, economic, and occupational data trends in Rhode Island compared to neighboring states and the US as a whole. The goal of this data is to offer a baseline understanding of current and expected trends impacting Rhode Island's economy. This analysis, in combination with other research and engagement, will inform the development of Rhode Island's Long-Term Economic Development Strategy.

Region of Analysis

This analysis compares Rhode Island's demographic, economic, and occupational data to that of neighboring states (Connecticut and Massachusetts), the New England region (which includes six states: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont), and the US.

Key Takeaways

The following list provides a summary of the key data findings of the economic base analysis conducted for Rhode Island.

1. **Declining population in 2022**. Natural change (births – deaths) and domestic migration were both net negative for Rhode Island's population.
2. **Slowing population growth going forward**. Rhode Island's population is projected to increase slightly through 2027, but at a slower rate than in previous years.
3. **Growing racial and ethnic diversity.** The White population is projected to decrease over the next five years, while residents of other races and ethnicities are projected to increase. Rhode Island is less diverse than neighboring states.
4. **Opportunities to increase educational attainment.** Rhode Island has the lowest population share with a bachelor's degree or higher among its peers and across New England.
5. **Low unemployment.** Rhode Island recovered quickly from the high unemployment rates immediately following the 2020 pandemic. Unemployment in Rhode Island is now below the pre-pandemic level of 3.6%.
6. **Low labor force participation rate.** Current participation rate in Rhode Island is 63.5%, which is lower than neighboring states but higher than the United States.
7. **Slow job recovery.** Total 2022 employment was still 2% below 2017 levels. The shift share analysis indicate that Rhode Island is facing a negative competitive advantage, indicating regional factors are limiting job growth potential.
8. **Strength in services.** Rhode Island has above average employment concentrations in Educational Services, Management of Companies and Enterprises, Finance and Insurance, and Health Care and Social Assistance.
9. **Diverse emerging industries.** Transportation and Warehousing; Professional, Scientific, and Technical Services; Construction; and Agriculture, Forestry, Fishing, and Hunting all grew by at least 5% over the last five years.

10. **Export opportunities in manufacturing, higher education, and health care.** The state has above-average employment concentrations in several sectors that produce goods for out-of-state customers or can attract nonresident students and patients.

11. **Strong overall growth.** Despite job losses, Rhode Island's GRP grew 23% and the number of business establishments increased by 20% over the last five years.

12. **Low labor costs.** Rhode Island's average earnings are below the national average, and well below those of its neighbors and New England as a whole.

13. **Strength in diverse occupations.** The state has above- average concentrations in the growing occupations of Legal, Business and Financial, Computer and Mathematical, and Community and Social Service occupations.

DEMOGRAPHICS

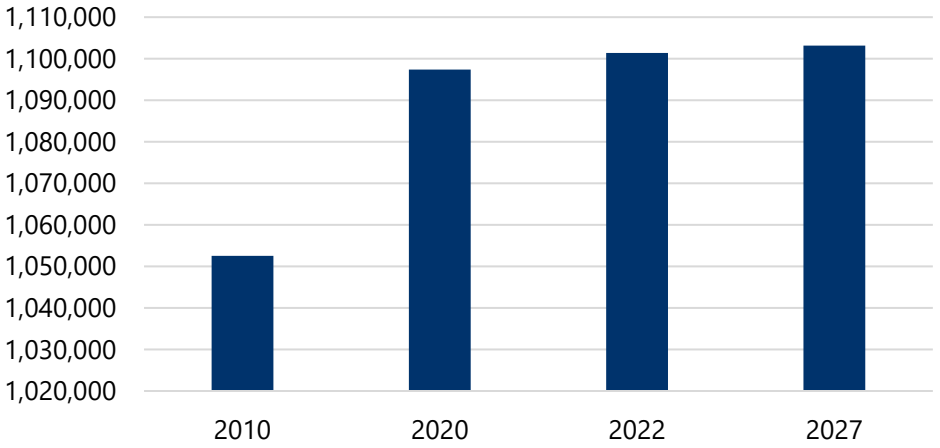
The following Demographic Snapshot captures data related to population, migration, households, age, race and ethnicity, foreign-born population, educational attainment, income and poverty, unemployment, labor force, and commuting patterns.

Population, Change

According to the 2020 Decennial Census 1,097,379 people reside in the state of Rhode Island. Population growth has been modest between 2010 and 2020. The latest Decennial Census shows an increase of 44,818 residents, a change of 4.3% since 2010. This growth is similar to the New England region that increased by a slightly higher 4.6% over the same period. Massachusetts, which is keeping pace with the national trend for population change, is growing at nearly twice the rate. Only Connecticut's anemic intercensal population change of 0.9% is lower among the comparative regions.

Future change in population is expected to be positive, but even slower than in the recent past. Esri forecasts population increases for the state in 2022 (+0.4%) and 2027 (+0.2%) that are only slightly above replacement rate. The Esri population estimate for Rhode Island in 2027 is 1,103,145, a compound annual rate of +0.28% going back to 2010.

Rhode Island Total Population by Year



Source: Decennial Census, Esri

Total Population

Region	Population			
	2010	2020	2022	2027
Rhode Island	1,052,567	1,097,379	1,101,372	1,103,145
Connecticut	3,574,097	3,605,944	3,605,915	3,610,724
Massachusetts	6,547,629	7,029,917	7,083,391	7,087,101
New England	14,444,865	15,116,205	15,196,821	15,239,029
United States	308,745,538	331,449,281	335,707,897	339,902,796

Source: Decennial Census, Esri

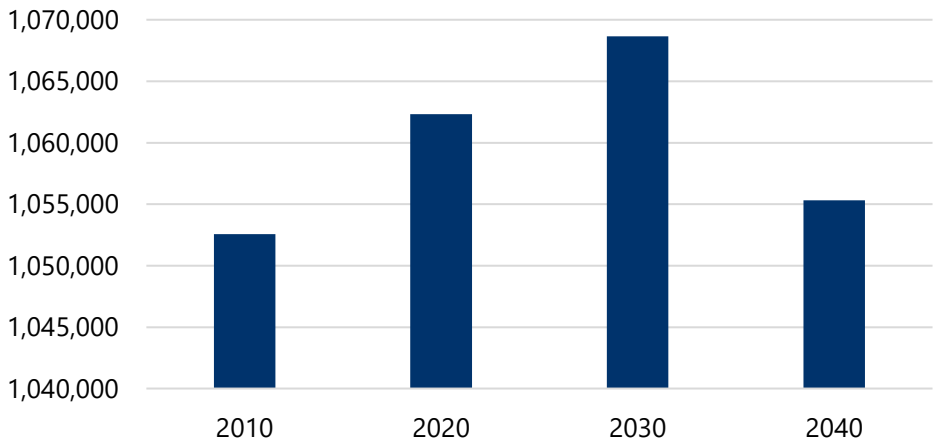
Population Percent Change

Region	2010-2020	2020-2022	2022-2027
Rhode Island	4.3%	0.4%	0.2%
Connecticut	0.9%	0.0%	0.1%
Massachusetts	7.4%	0.8%	0.1%
New England	4.6%	0.5%	0.3%
United States	7.4%	1.3%	1.2%

Source: Decennial Census, Esri

The Weldon Cooper Center at the University of Virginia has produced decadal population estimates for Rhode Island out to 2040. The state's population is expected to peak in 2030 at 1,068,663, 0.6% higher than in 2020, then shrink by 1.2% to 1,055,318 in 2040. Over the same period, the United States, New England, and Massachusetts are all expected to grow. The nation's population is projected to increase 7.7% from 2020 to 2030 and 6.0% from 2030 to 2040. Massachusetts' expected growth is similar, at 6.3% from 2020 to 2030 and 4.3% from 2030 to 2040. Connecticut is expected to see slower growth than Rhode Island, increasing by only 0.2% from 2020 to 2030 and shrinking by 1.6% from 2030 to 2040.

Rhode Island Total Population by Decade



Source: Weldon Cooper

Population Percent Change

Region	2010-2020	2020-2030	2030-2040
Rhode Island	0.9%	0.6%	-1.2%
Connecticut	0.5%	0.2%	-1.6%
Massachusetts	6.6%	6.3%	4.3%
New England	3.5%	3.3%	1.4%
United States	7.7%	7.7%	6.0%

Source: Weldon Cooper

Total Population

	Population			
Region	2010	2020	2030	2040
Rhode Island	1,052,567	1,062,334	1,068,663	1,055,318
Connecticut	3,574,097	3,593,542	3,601,202	3,542,707
Massachusetts	6,547,629	6,982,092	7,420,882	7,742,628
New England	14,444,865	14,952,534	15,439,356	15,662,130
United States	308,745,538	332,527,548	357,975,719	379,392,779

Source: Weldon Cooper

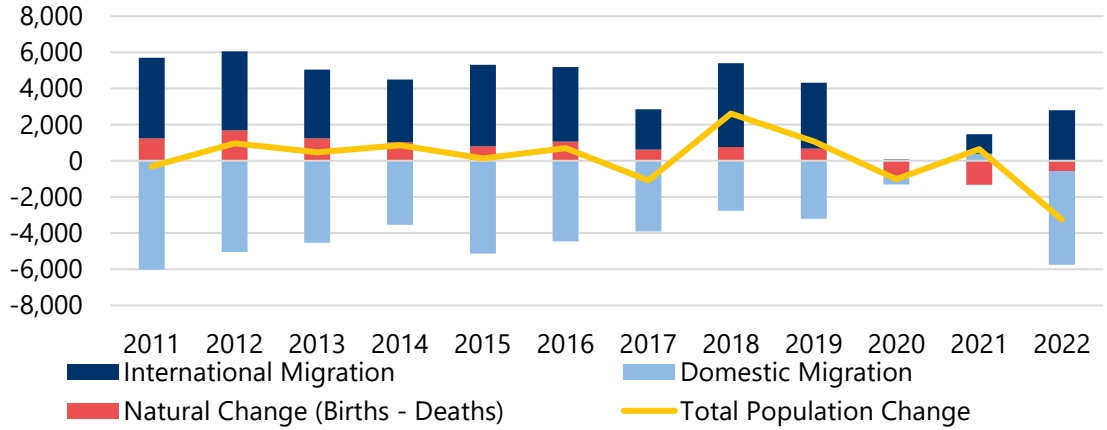
Population, Components of Change

Census estimates for factors of population change give insight into the reasons for slowing population growth in Rhode Island.

Natural change to population adds births minus deaths in the state for a given year. Between 2010 and 2019 Rhode Island had positive but declining natural changes to its population. In 2020 this number turned negative and stayed that way the next two years. This is the smallest contributor to population change, but is trending in the wrong direction.

International migration is a key demographic factor and, like natural change, has declined since 2019. Before 2020 the state would welcome nearly 4,000 people as international migrants. COVID travel restrictions made international migration negligible in 2020. Fortunately, it appears to be recovering and 2022's estimate is back up to 75% of earlier volumes.

Rhode Island - Components of Population Change, 2011-2022



Source: Census 2022 Population Estimates

Domestic migration includes anyone moving to Rhode Island from within the United States. This factor is similar in scale to international migration but is generally in the opposite direction. From 2011 to 2022 only 2021 saw domestic net in-migration (+389). Since 2010 the state has lost over 40,000 residents to other parts of the US.

Rhode Island Components of Population Change

Component of Change	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Natural Change (Births - Deaths)	549	1,244	1,686	1,240	1,034	796	1,070	619	752	679	-842	-1,335	-566
Domestic Migration	-1,168	-6,018	-5,043	-4,539	-3,539	-5,129	-4,458	-3,912	-2,769	-3,215	-474	389	-5,196
International Migration	1,661	4,455	4,376	3,799	3,469	4,509	4,120	2,226	4,653	3,645	76	1,073	2,799
Total Population Change	**995**	**-310**	**972**	**460**	**855**	**129**	**705**	**-1,097**	**2,614**	**1,074**	**-1,026**	**640**	**-3,251**
Percent Change	**0.09%**	**-0.03%**	**0.09%**	**0.04%**	**0.08%**	**0.01%**	**0.07%**	**-0.10%**	**0.25%**	**0.10%**	**-0.09%**	**0.06%**	**-0.30%**

Source: Census Population Estimates, 2010-2022

Migration, By Age and Income

IRS tax return data show that the state's net in-migration in 2020 was due largely to individuals with incomes of $25,000 or more. This was driven mainly by the 26-to-34 age group. Most domestic in-migrants were high-income individuals earning at least $200,000. The state lost residents earning less than $25,000; the youngest workers, those under age 26; and residents aged 45 to 54.

Net (Inflow – Outflow) Rhode Island Returns by Income and Age, 2020

Income Bracket	Under 26	26 to 34	35 to 44	45 to 54	55 to 64	65+	Total
$1 under $10,000	-34	-47	-41	-18	-19	-12	-171
$10,000 under $25,000	-54	-112	-49	-12	3	9	-215
$25,000 under $50,000	-81	163	-3	-7	-2	-28	42
$50,000 under $75,000	-31	159	58	-25	-52	57	166
$75,000 under $100,000	-1	104	19	-24	-24	-23	51
$100,000 under $200,000	-1	168	11	-34	-17	16	143
$200,000 or more	0	63	63	65	116	48	355
Total	**-202**	**498**	**58**	**-55**	**5**	**67**	**371**

Source: IRS 2020

This migration represents a net increase of $310.3 million of personal income in Rhode Island. The largest contributors were older individuals aged 55 to 64 (+$88.2 million) and younger individuals aged 26 to 34 (+$81.5 million). However, the state saw an exodus of residents and income among those aged under 26 and those aged 45 to 64 at most income levels.

Net (Inflow – Outflow) Rhode Island Returns by Income and Age, 2020

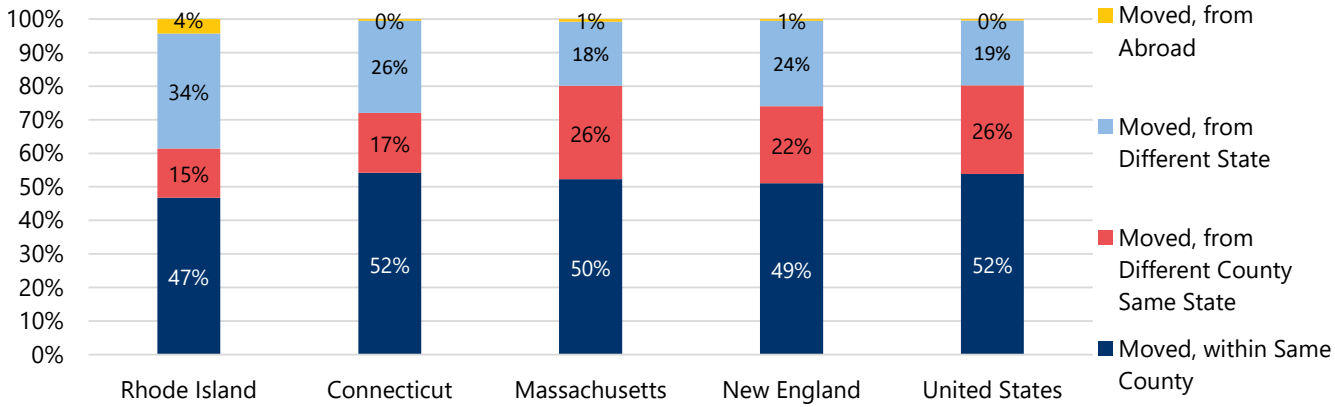
Income Bracket	Under 26	26 to 34	35 to 44	45 to 54	55 to 64	65+	Total
$1 under $10,000	-$273,000	-$162,000	-$177,000	-$63,000	-$72,000	$10,000	-$737,000
$10,000 under $25,000	-$1,083,000	-$1,690,000	-$837,000	-$157,000	$186,000	$129,000	-$3,452,000
$25,000 under $50,000	-$2,776,000	$5,974,000	-$394,000	-$379,000	-$129,000	-$858,000	$1,438,000
$50,000 under $75,000	-$1,953,000	$9,604,000	$3,830,000	-$1,543,000	-$3,161,000	$3,977,000	$10,754,000
$75,000 under $100,000	$132,000	$8,964,000	$1,397,000	-$1,987,000	-$1,951,000	-$2,018,000	$4,537,000
$100,000 under $200,000	-$908,000	$23,772,000	$2,408,000	-$6,395,000	-$1,746,000	$735,000	$17,866,000
$200,000 or more	$0	$35,000,000	$36,142,000	$57,548,000	$95,121,000	$56,074,000	$279,885,000
Total	**-$6,861,000**	**$81,462,000**	**$42,369,000**	**$47,024,000**	**$88,248,000**	**$58,049,000**	**$310,291,000**

Source: IRS 2020

Geographic Mobility

Among current residents in 2021 who moved in the past year, Rhode Island had the largest share who had moved in from another state or country compared with its peers, New England, and the nation as a whole. While a similar portion of residents in all comparison regions did not move (87% to 89%), 38% of Rhode Island residents who did move came from out of state. Connecticut was second, with 27% of "movers" being new residents to the state. Massachusetts matched the US overall, with roughly one in five movers coming from out of state. In New England, on average, one in four movers were from another state or country. Rhode Island's broader, more geographically dispersed mobility includes a larger share of new state residents.

Geographic Mobility by Current Place of Residence, 2021



Source: ACS, 1-yr Estimates, 2021

Household Change and Regional Comparison

Household formation is an important part of population growth and a key demographic characteristic. The 2020 Census counted 441,274 households in the state, an increase of +27,674 or +6.7% in the last ten years. This household increase is greater than New England (+6.3%) but lags both Massachusetts (+7.9%) and the US (+8.7%). Rhode Island household change is nearly double that of Connecticut (+3.4%) since 2010.

Part of the dampening growth in population for Rhode Island can be attributed to slowing household formation. The Esri estimates for total households show a growth rate that is lower and decelerating.

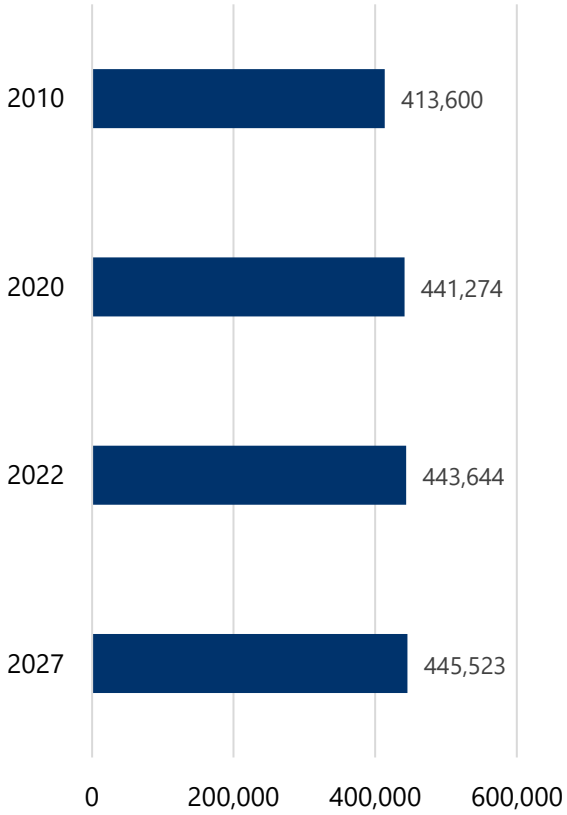
- 2020–2022: 443,644 households, +2,370 in two years, +0.5% total or +0.27% per year
- 2022–2027: 445,523 households, +1,879 in five years, +0.4% total or +0.08% per year

Total Households

	Households				Change	% Change
Geography	2010	2020	2022	2027	2010-2020	2010-2020
Rhode Island	413,600	441,274	443,644	445,523	27,674	7%
Connecticut	1,371,087	1,418,069	1,421,687	1,429,443	46,982	3%
Massachusetts	2,547,075	2,749,225	2,771,842	2,781,755	202,150	8%
New England	5,664,396	6,019,252	6,062,592	6,103,630	354,856	6%
United States	116,716,292	126,817,580	128,657,669	130,651,872	10,101,288	9%

Source: Decennial Census, Esri

Rhode Island Total Households



Source: Decennial Census, Esri

Household Size, Change

Household size is affected by a number of factors. The most common factor increasing the size of households is a higher number of children in larger families. Household configurations have become more diverse over time, but smaller households are often older with children who have moved out of the house. The size, configuration and age of a household has specific impacts on the demand for different types of housing in a region.

Rhode Island's average household size in 2020 is 2.38 people. This is down from 2010 by -0.6 people or -2.5%. This drop may seem small, but it's the most significant decrease of any of the comparative regions. All of the regions are experiencing shrinking average household size since 2010. Massachusetts is down the least (-0.4%) and Connecticut is the most besides Rhode Island (2.0%).

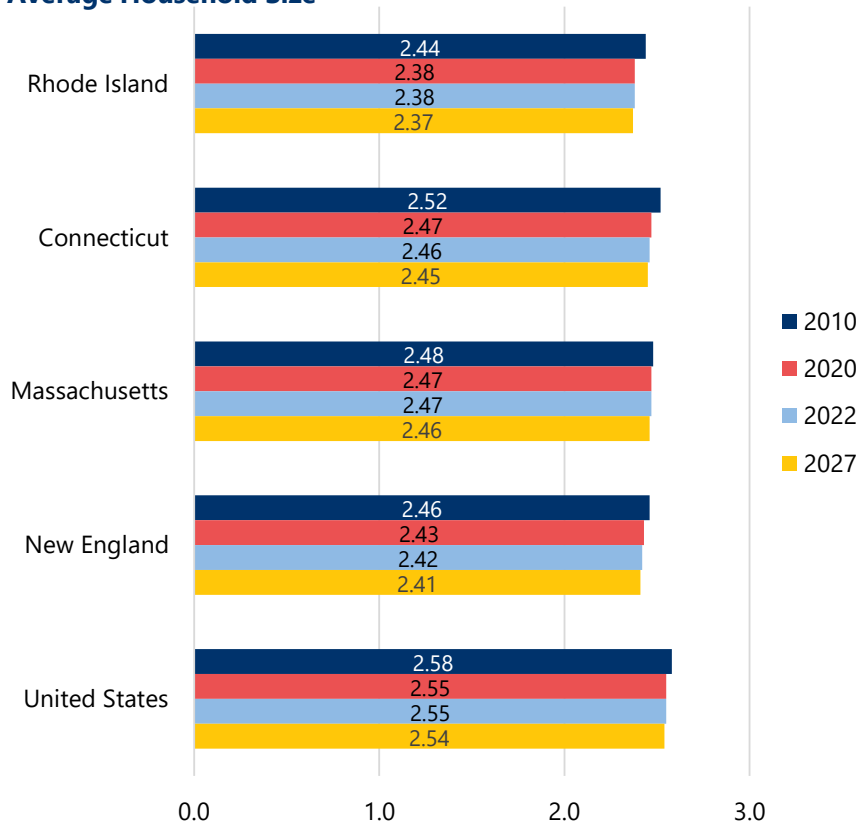
Rhode Island's average household size stabilizes in 2022 and the average drops only a small amount by 2027.

Average Household Size

Geography	2010	2020	2022	2027
Rhode Island	2.44	2.38	2.38	2.37
Connecticut	2.52	2.47	2.46	2.45
Massachusetts	2.48	2.47	2.47	2.46
New England	2.46	2.43	2.42	2.41
United States	2.58	2.55	2.55	2.54

Source: Decennial Census, Esri

Average Household Size



Source: Decennial Census, Esri

Median Age

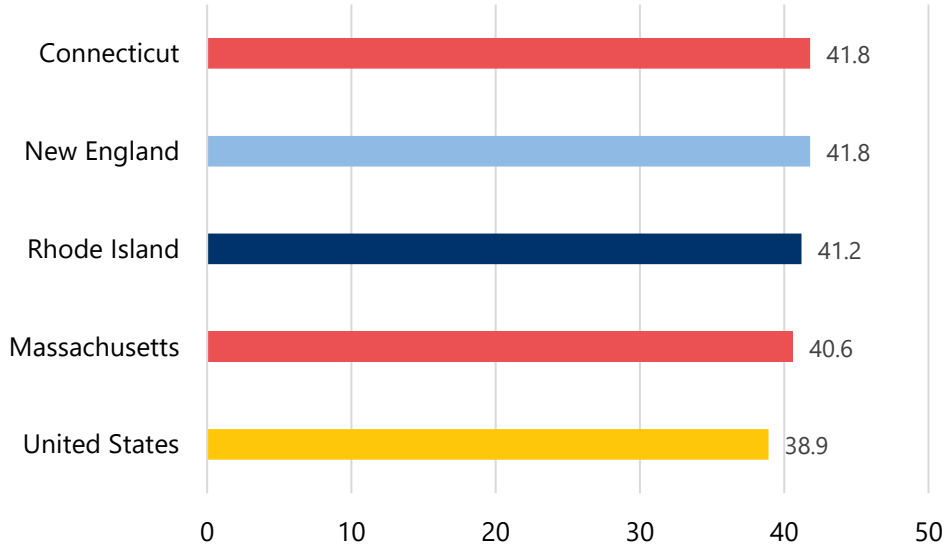
This metric for characterizing the age of a region offers a summary description and is useful for comparing multiple regions or one region over time.

Rhode Island's median age in 2022 is 41.2 years. This makes it a younger state than Connecticut and younger than the New England region. It's more than half a year older than Massachusetts and more than two years older than the national median age.

The median age for Rhode Island residents in 2010, 39.3 years, is almost a full two years less than the current estimate. This makes the 2022 median age tied with New England for the largest increase in years. Because Rhode Island had a lower median age in 2010, this means that it is the region aging the fastest.

Esri projects an increase of +0.7 year in the median age of each region by 2027. This means Rhode Island's population will continue to age, but at a slower rate than before 2022.

Median Age, 2022



Source: Decennial Census, Esri

Median Age

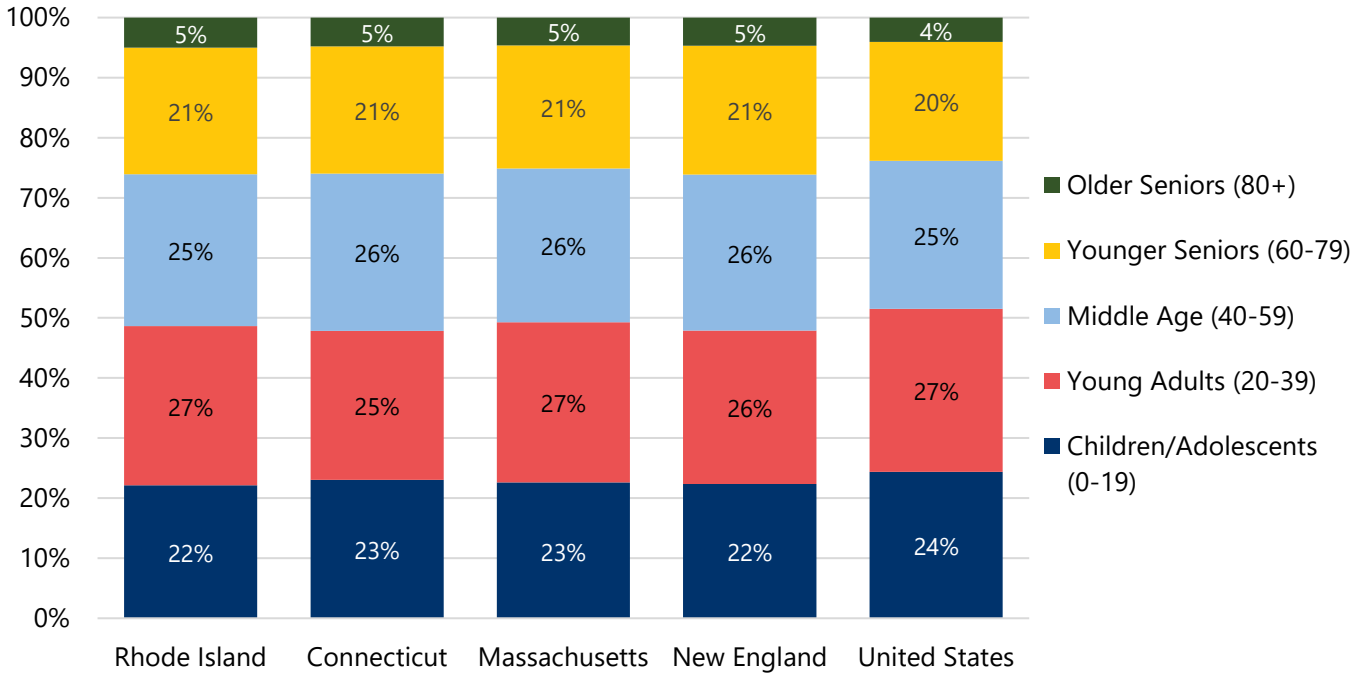
Region	2010	2022	2027
Rhode Island	39.3	41.2	41.9
Connecticut	40.0	41.8	42.5
Massachusetts	39.0	40.6	41.3
New England	39.9	41.8	42.5
United States	37.1	38.9	39.6

Source: Decennial Census, Esri

Age Distribution

Younger populations tend to be more dynamic, and younger residents represent potential future workforce and a source of future population growth. Digging into the data behind the median ages shows that young adults represent the same share of Rhode Island's population as in Massachusetts and the US, and slightly larger than in Connecticut and New England overall. The middle age share of the population in Rhode Island is slightly below Connecticut, Massachusetts, and New England and matches the national average. However, seniors (age 60+) make up the same share of Rhode Island's population as in Connecticut, Massachusetts, and New England, and the state has a slightly smaller share than its peers of children and adolescents under age 20 (22% vs. 23%).

Age Distribution by Cohort, 2022

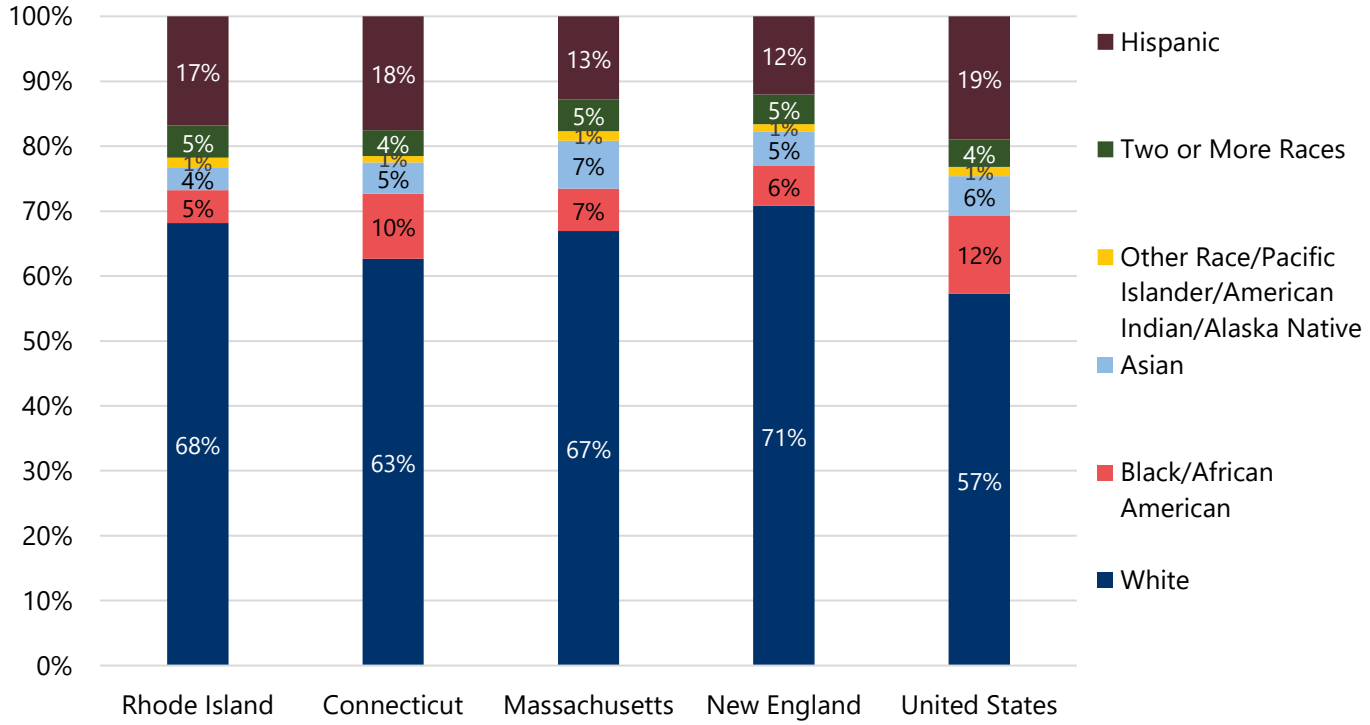


Source: Esri

Race and Ethnicity

Rhode Island is less racially diverse than the United States as a whole. The state's non-White population is less than 32% of the total compared with over 42% for the US. It also has a lower percentage of non-White residents than either Connecticut or Massachusetts.

Population by Race, 2022

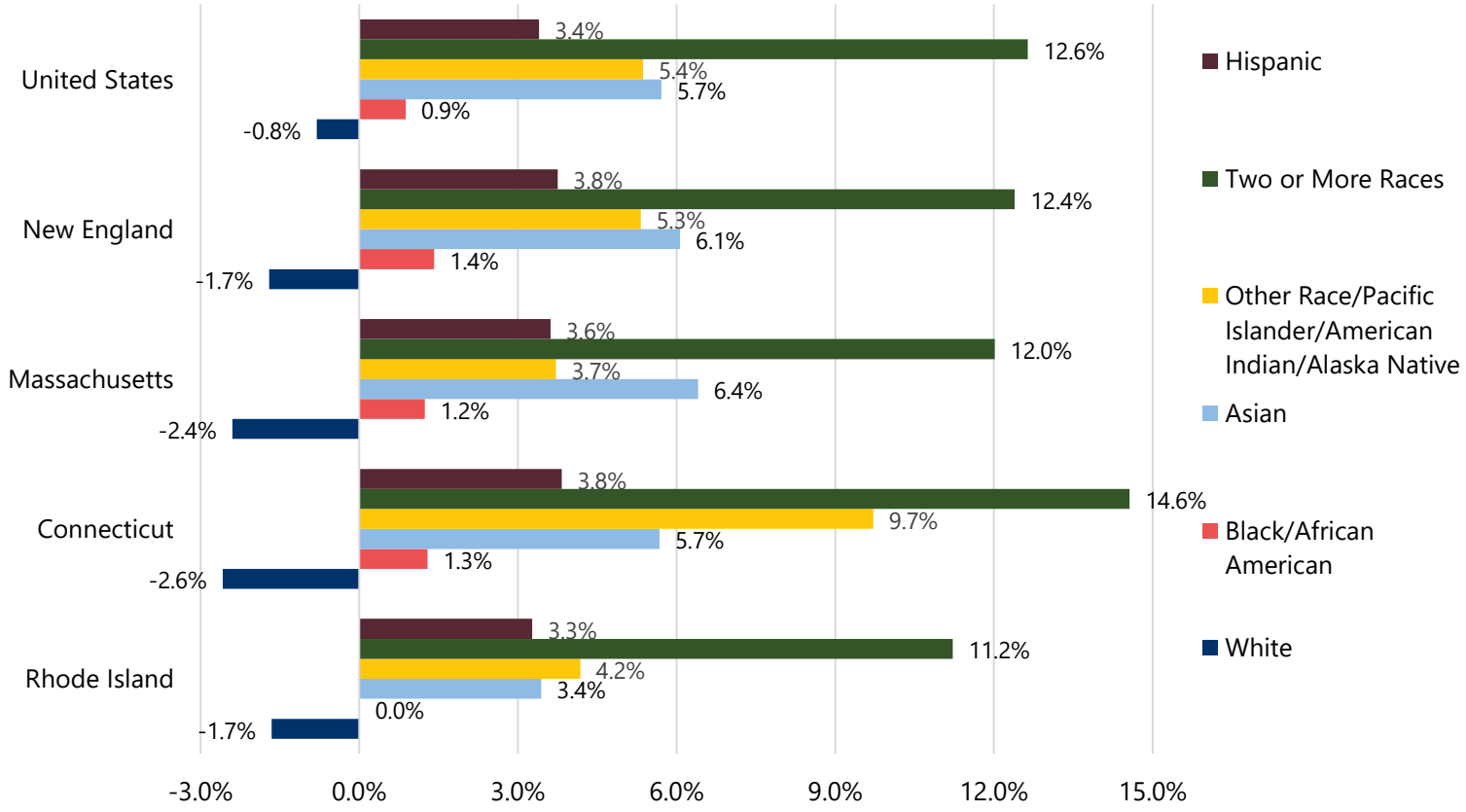


Source: Esri

Race and Ethnicity, Change

The White population is projected to decrease from 2022 to 2027 in the US, New England, Massachusetts, Connecticut, and Rhode Island while non-White groups are expected to grow. Rhode Island is expected to see slower growth of its non-White population than its peers, New England, or the US. However, the state's slower loss of Whites, the largest racial group, compared with Connecticut and Massachusetts drives its slightly higher total population growth rate.

Percent Change in Population by Race, 2022-2027

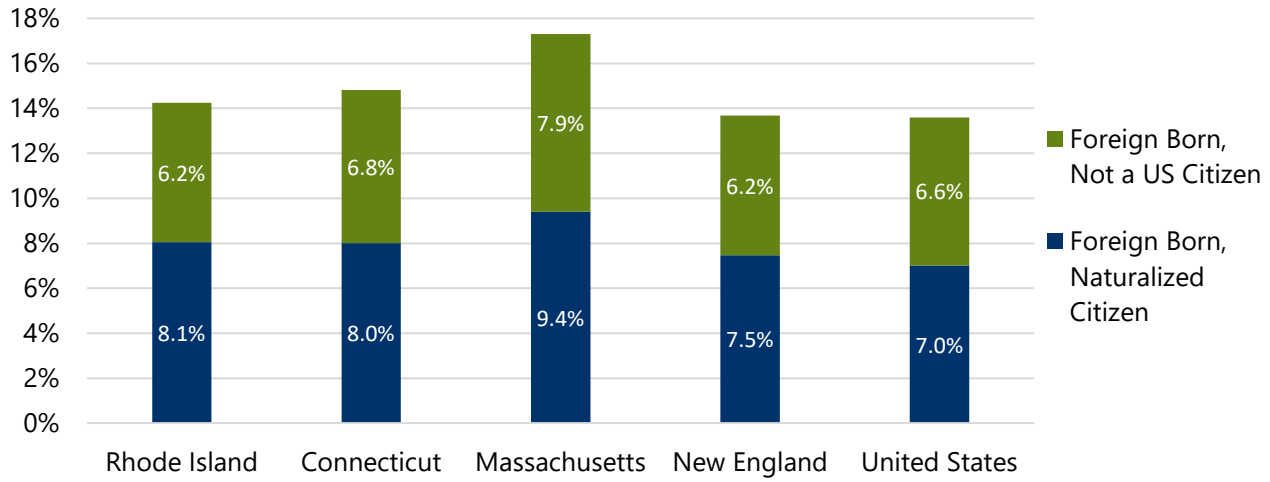


Source: Esri

Foreign-Born Population

Like a younger population, international immigrants add economic dynamism, often working in high-tech fields or starting new businesses. Rhode Island has a smaller share of immigrants than Connecticut and, particularly, Massachusetts, though it is slightly higher than New England and the US.

Foreign Born Population by Citizenship, 2021



Source: ACS, 5-yr Estimates, 2021

Population by Nativity, 2021

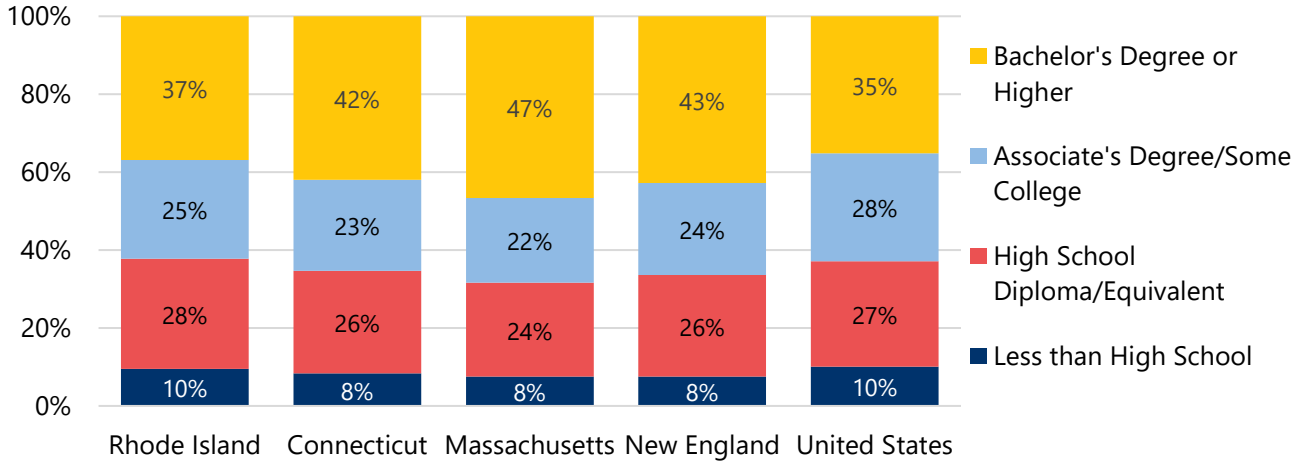
	Population	Native	Foreign Born	Foreign Born, Naturalized Citizen	Foreign Born, Not a US Citizen
Rhode Island	1,091,949	936,369	155,580	87,940	67,640
Connecticut	3,605,330	3,071,110	534,220	288,881	245,339
Massachusetts	6,991,852	5,782,135	1,209,717	657,058	552,659
New England	15,059,989	13,000,269	2,059,720	1,124,621	935,099
United States	329,725,481	284,880,673	44,844,808	23,141,369	21,703,439

Source: ACS, 5-year Estimates, 2021

Educational Attainment

Educational attainment is strongly correlated with income and employment. Individuals with more education tend to earn more and are more likely to be employed. Although the share of Rhode Island residents with at least a bachelor's degree is slightly above the national average, at 37% the state lags behind Connecticut, Massachusetts, and New England as a whole. At 38%, the state also has the highest share of its population with a high school education or less.

Educational Attainment of Population 25+, 2022



Source: Esri

Educational Attainment of Population 25+, 2022

Educational Attainment	Rhode Island	Connecticut	Massachusetts	New England	United States
Less than High School	10%	8%	8%	8%	10%
High School Diploma/Equivalent	28%	26%	24%	26%	27%
Associate's Degree/Some College	25%	23%	22%	24%	28%
Bachelor's Degree or Higher	37%	42%	47%	43%	35%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

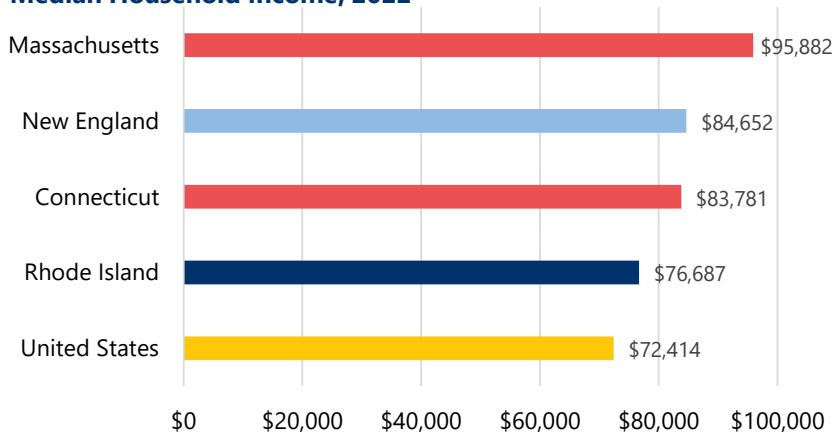
Source: Esri

Median Income and Poverty

Rhode Island's median household income, at $76,687 in 2022, is higher than the national average ($72,414) but below every regional peer, including New England as a whole ($84,652).

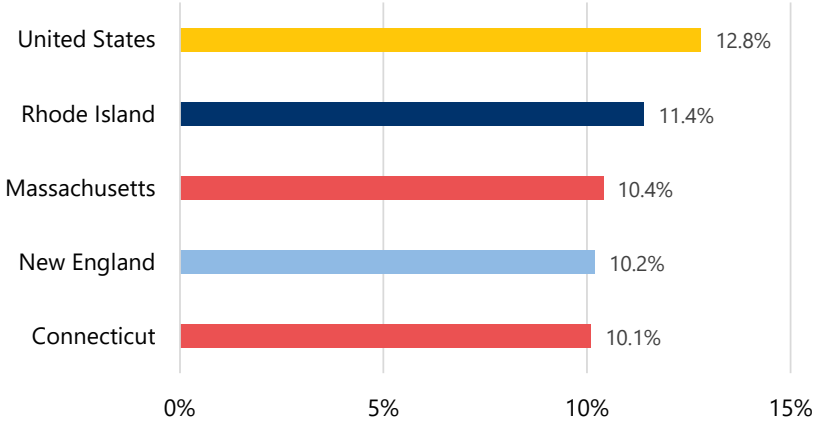
Not surprisingly, the state's 11.4% poverty rate is below the national average of 12.8% but above rates in Massachusetts, Connecticut, and New England.

Median Household Income, 2022



Source: Esri

Poverty Rate, 2021

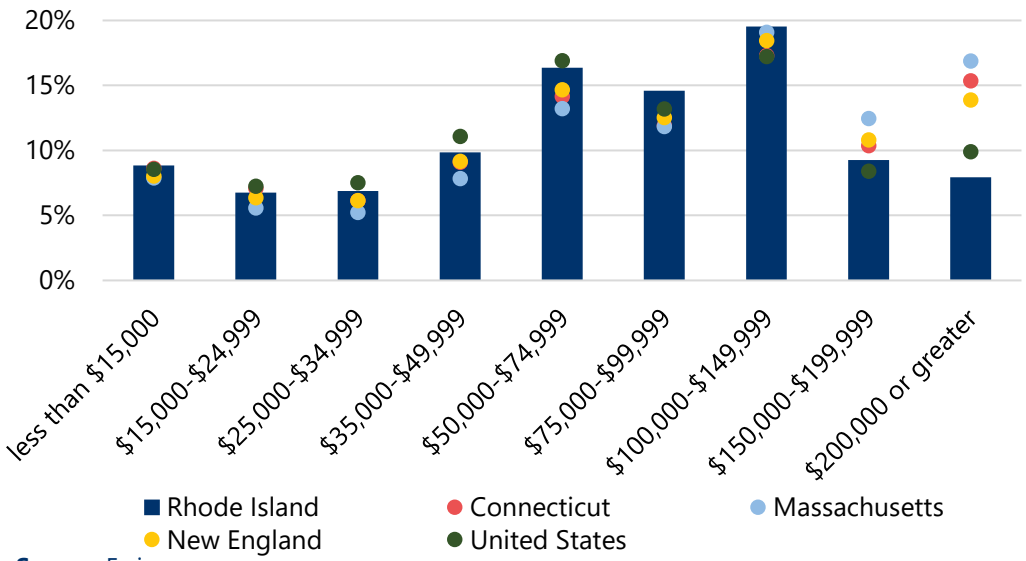


Source: ACS 1-yr Estimates, 2021

Income Distribution

The distribution of household income reveals the source of Rhode Island's lower median income compared with its regional peers. The state has equal or larger shares of households in the lower income brackets up to $150,000 and significantly smaller shares of households with incomes of $150,000 or more.

Household Income Distribution, 2022



Source: Esri

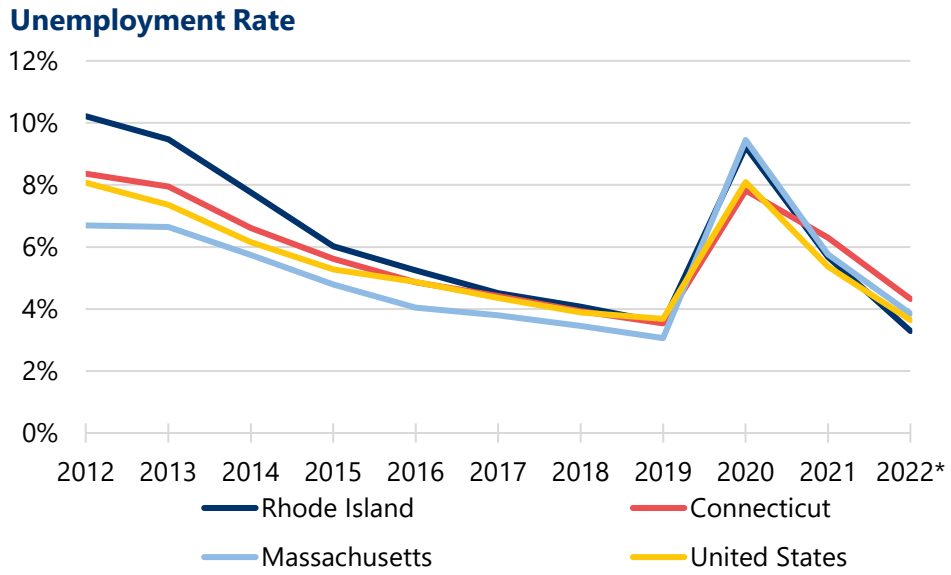
Household Income Distribution, 2022

Income Bracket	Rhode Island	Connecticut	Massachusetts	New England	United States
less than $15,000	9%	9%	8%	8%	9%
$15,000-$24,999	7%	7%	6%	6%	7%
$25,000-$34,999	7%	6%	5%	6%	8%
$35,000-$49,999	10%	9%	8%	9%	11%
$50,000-$74,999	16%	14%	13%	15%	17%
$75,000-$99,999	15%	12%	12%	13%	13%
$100,000-$149,999	20%	17%	19%	18%	17%
$150,000-$199,999	9%	10%	12%	11%	8%
$200,000 or greater	8%	15%	17%	14%	10%

Source: Esri

Unemployment Rate

From 2012 through 2019, Rhode Island had the highest unemployment rate among its peers. However, since the pandemic hit in 2020, Rhode Island has recovered more quickly. The state's 3.3% unemployment rate in 2022 was below both Massachusetts (3.9%) and Connecticut (4.3%), and even below the national average of 3.6%. Unemployment in Rhode Island is also below 2019's pre-pandemic level of 3.6%.



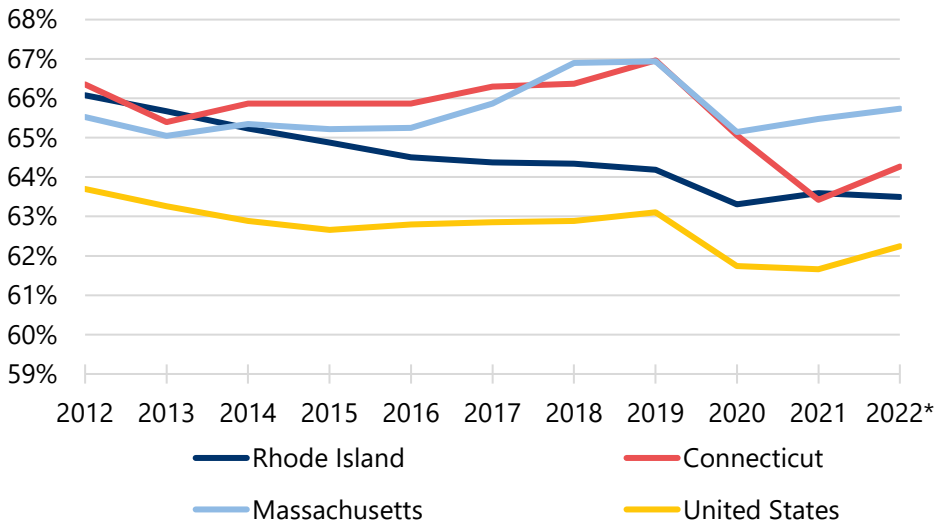
Note: 2022 calculated using preliminary monthly average for December

Source: Bureau of Labor Statistics

Labor Force Participation

Low labor force participation rates indicate unutilized human capital that could instead be contributing to economic growth. Despite strong post-pandemic improvements in the unemployment rate, Rhode Island's 63.5% labor force participation rate is currently the lowest of its peers. It has also been on a downward trend since at least 2012, whereas the rates in Connecticut and Massachusetts increased from 2013 to 2019 and have continued to rise from at least 2021.

Labor Force Participation Rate



Note: 2022 calculated using preliminary monthly average for December
Source: Bureau of Labor Statistics

Labor Force Participation Rate

Year	Rhode Island	Connecticut	Massachusetts	United States
2012	66.1%	66.4%	65.5%	63.7%
2013	65.7%	65.4%	65.1%	63.3%
2014	65.2%	65.9%	65.4%	62.9%
2015	64.9%	65.9%	65.2%	62.7%
2016	64.5%	65.9%	65.3%	62.8%
2017	64.4%	66.3%	65.9%	62.9%
2018	64.3%	66.4%	66.9%	62.9%
2019	64.2%	67.0%	66.9%	63.1%
2020	63.3%	65.1%	65.1%	61.7%
2021	63.6%	63.4%	65.5%	61.7%
2022*	63.5%	64.3%	65.7%	62.2%

Note: 2022 calculated using preliminary monthly average for December
Source: Bureau of Labor Statistics

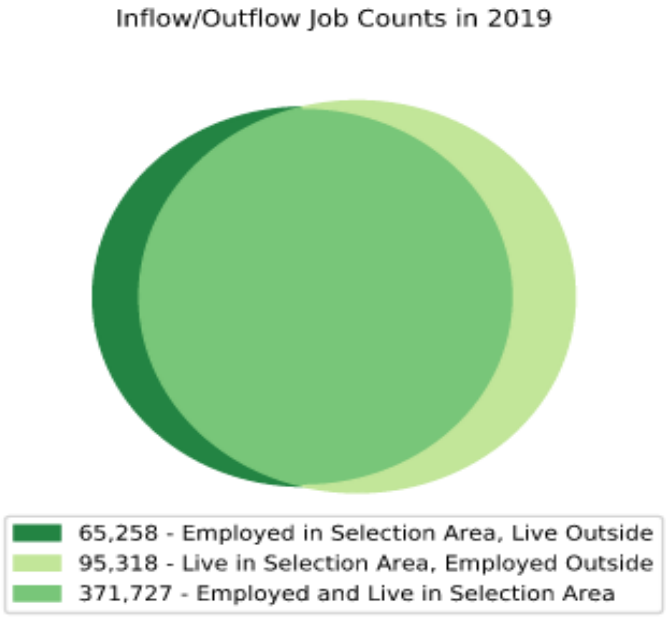
Net Commuting Flows

One in five, 20%, of Rhode Island's resident workers commuted to jobs outside the state in 2019.[1] Fifteen percent of primary jobs in the state are held by nonresidents. By way of comparison, just 5% of Massachusetts and 10% of Connecticut resident workers commute out of state, and 8% of the jobs in both states are held by nonresidents. Improving economic opportunities in Rhode Island could keep more residents working in-state.

In-Commuting and Out-Commuting, 2019, Primary Jobs

	Count	Share
Employed in Rhode Island	436,985	100%
Employed in Rhode Island but Living Outside	65,258	15%
Employed and Living in Rhode Island	371,727	85%
Living in Rhode Island	467,045	100%
Living in Rhode Island but Employed Outside	95,318	20%
Living and Employed in Rhode Island	371,727	80%

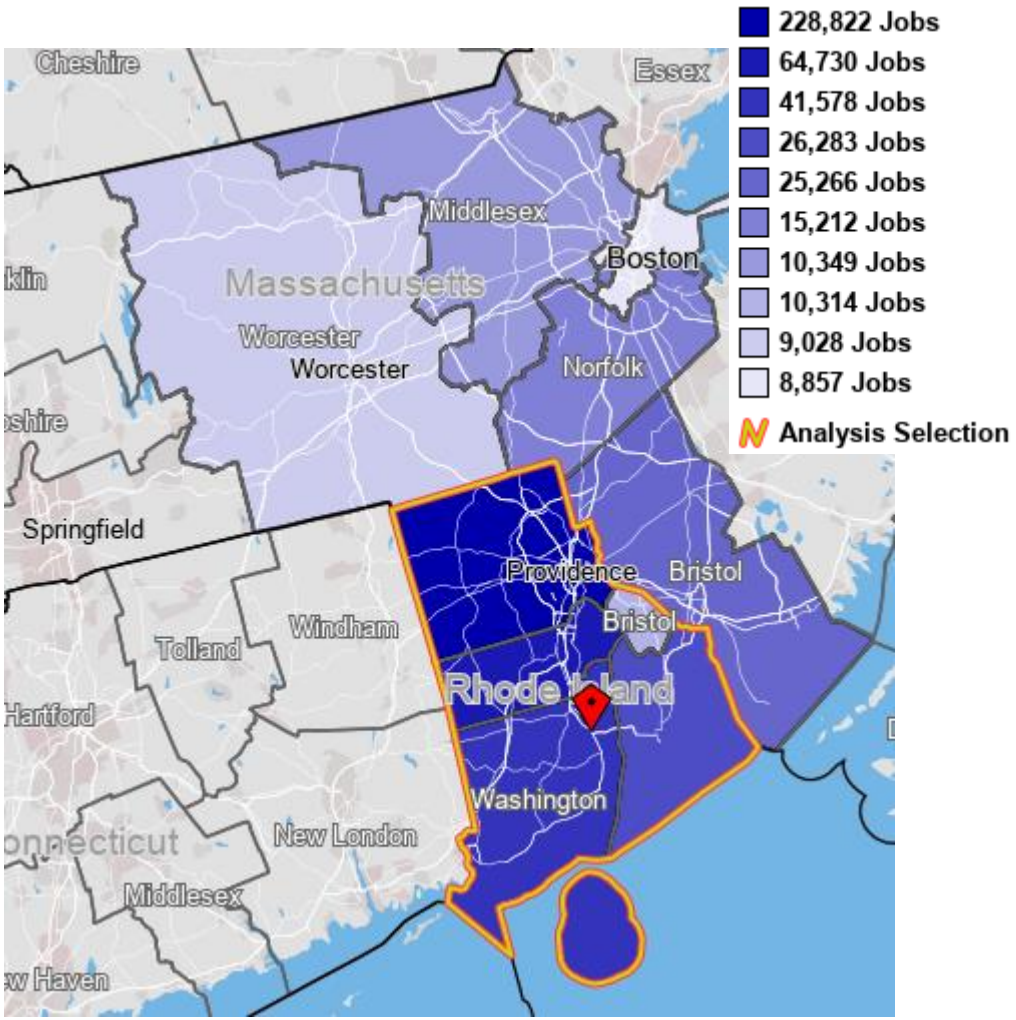
Source: Census OnTheMap



[1] Note that these and the following commuting data are prepandemic numbers, the most recent available. The increase in remote work and working from home since 2020 may have affected these patterns.

Commute Destinations, Where Residents Work

Most Rhode Islanders who leave the state for work commute to Massachusetts, with Bristol (MA), Norfolk, and Middlesex counties as the top destinations.



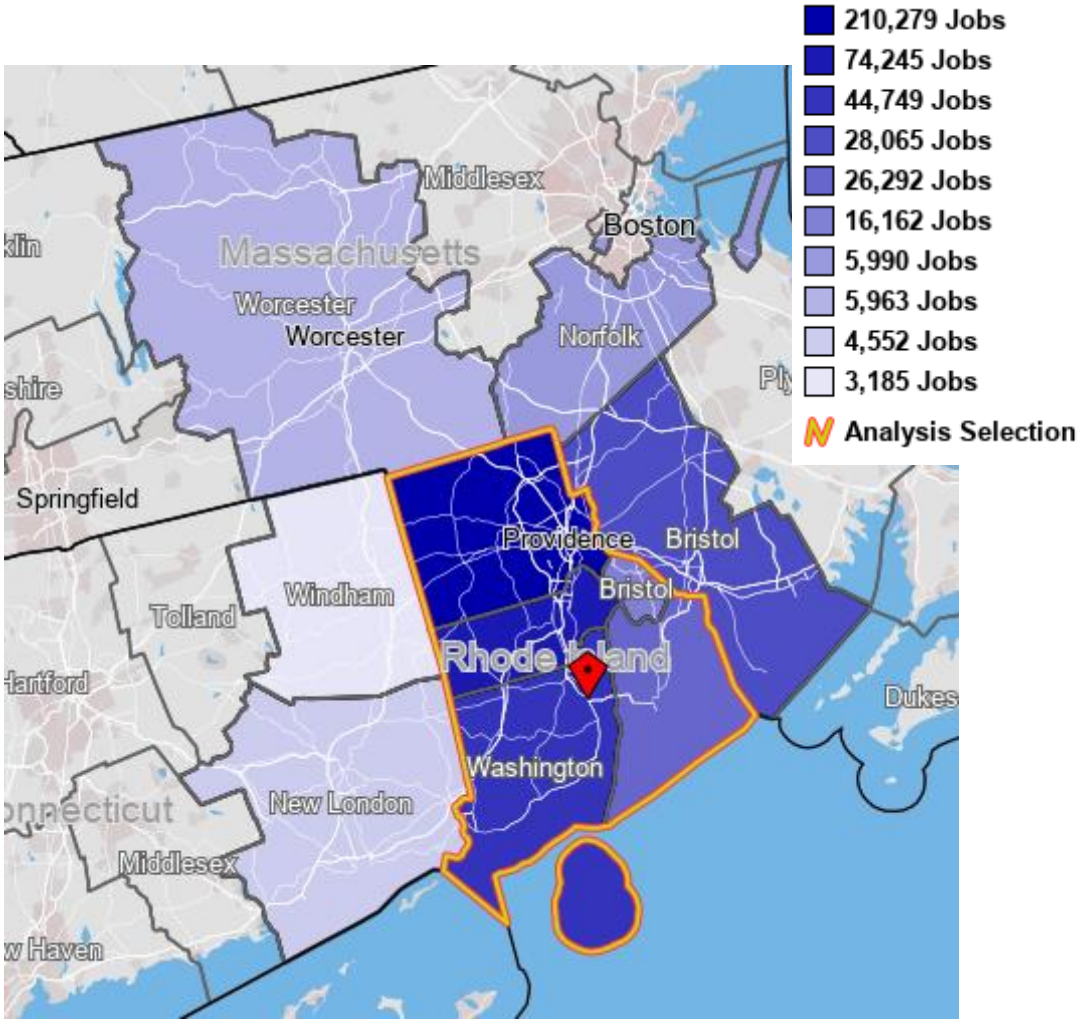
Where Rhode Island Residents Work, 2019, Primary Jobs

City/Town	Count	Share
Providence County, RI	228,822	49%
Kent County, RI	64,730	14%
Washington County, RI	41,578	9%
Newport County, RI	26,283	6%
Bristol County, MA	25,266	5%
Norfolk County, MA	15,212	3%
Middlesex County, MA	10,349	2%
Bristol County, RI	10,314	2%
Worcester County, MA	9,028	2%
Suffolk County, MA	8,857	2%
All Other Locations	26,606	6%
Total	**467,045**	**100%**

Source: Census OnTheMap

Commute Origins, Where Workers Live

Massachusetts is also the main source of workers commuting into Rhode Island, with Bristol (MA), Norfolk, and Worcester counties sending the largest numbers.



Where Rhode Island Workers Live, 2019, Primary Jobs

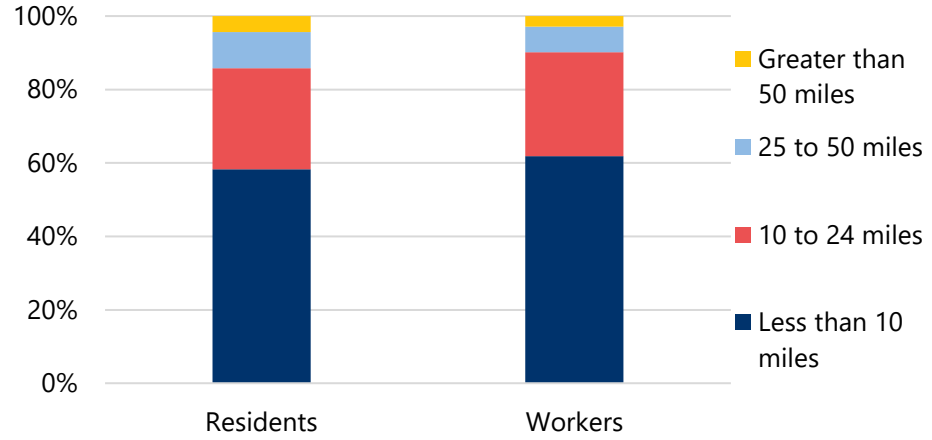
City/Town	Count	Share
Providence County, RI	210,279	48%
Kent County, RI	74,245	17%
Washington County, RI	44,749	10%
Bristol County, MA	28,065	6%
Newport County, RI	26,292	6%
Bristol County, RI	16,162	4%
Norfolk County, MA	5,990	1%
Worcester County, MA	5,963	1%
New London County, CT	4,552	1%
Windham County, CT	3,185	1%
All Other Locations	17,503	4%
Total	**436,985**	**100%**

Source: Census OnTheMap

Commute Distances

Due at least partially to the state's small size, the majority of workers have a short commute. Nearly 60% of Rhode Island's resident workers commute less than 10 miles, as do 62% of individuals who work in the state, regardless of where they live.

Commuting Distance for Rhode Island Residents and Workers, 2019



Source: Census OnTheMap

Commuting Distance for Rhode Island Residents and Workers, 2019

	Residents		Workers	
	Count	Share	Count	Share
Less than 10 miles	272,211	58%	270,337	62%
10 to 24 miles	128,497	28%	123,759	28%
25 to 50 miles	46,216	10%	30,439	7%
Greater than 50 miles	20,121	4%	12,450	3%

Source: Census OnTheMap

Commute Distances (Regional Comparison) and Travel Time to Work

Rhode Island residents have shorter commutes than those of Connecticut, Massachusetts, or New England in general. Compared with Rhode Island's 58% of resident workers with a commute of less than 10 miles, 49% of Connecticut's resident workers, 53% in Massachusetts, and 51% in New England have such short commutes.

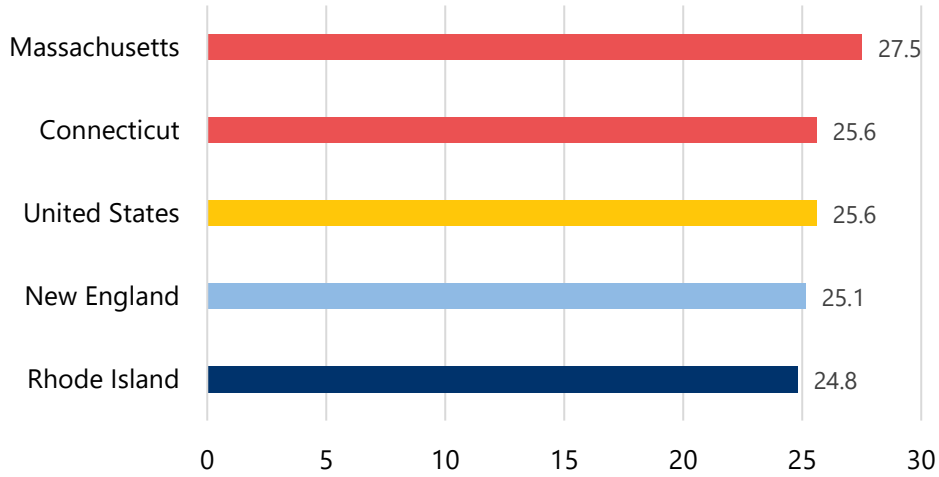
Commuting Distance for Residents, 2019

	Rhode Island		Connecticut		Massachusetts		New England	
	Count	Share	Count	Share	Count	Share	Count	Share
Less than 10 miles	272,211	58%	756,995	49%	1,680,757	53%	3,391,518	51%
10 to 24 miles	128,497	28%	463,185	30%	928,968	29%	1,956,891	29%
25 to 50 miles	46,216	10%	216,175	14%	374,643	12%	863,167	13%
Greater than 50 miles	20,121	4%	107,049	7%	196,632	6%	491,259	7%

Source: Census OnTheMap

Rhode Island's commuting benefits are also evident in average travel times to work. The state's 24.8-minute average commute is shorter than those of its peers, as well as the national average. Massachusetts' is the longest of the group, at 27.5 minutes.

Mean Travel Time to Work, 2021



Source: ACS 1-yr Estimates, 2021

ECONOMIC BASE SNAPSHOT

The following Economic Base Snapshot captures data related to jobs and population change, employment, competitive metrics, jobs and industry mix, industry lifecycle, jobs and industry detail, gross regional product, payrolled business locations, and earnings.

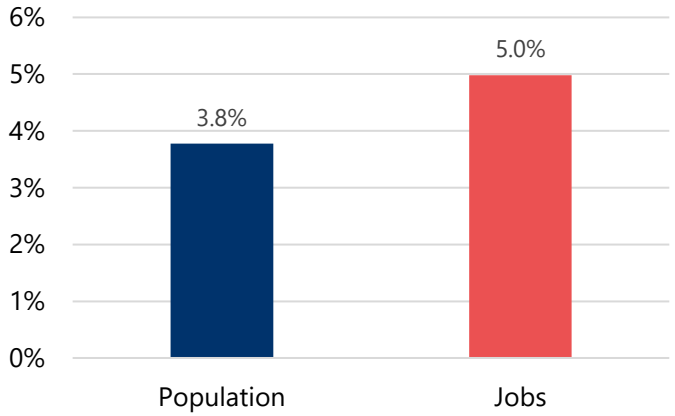
Jobs and Population Change

In 2010, Rhode Island's ratio of jobs to population stood at 47.7%, a full half percent ahead of the national average (47.2%). Then, as its economy emerged from the Great Recession, the State started to add jobs at a rate above 1% annually (+2.1% in 2014!). Growth continued steadily through 2019, with the State adding jobs at a rate of at least +0.5% per year. Over the same period population increased at a slower but positive rate. In 2019, Rhode Island's ratio of jobs to population reached its recent peak of 51.5%.

The last three years including the COVID-19 pandemic have seen three distinct changes in a relatively short period of time.

- ***Jobs and Population moved in opposite directions*** from 2019 to 2020 as the economy closed down (-40,044 jobs, -7.3%) and Rhode Island became a destination during a period of high mobility in the country (+36,984 population, +3.5%).
- In 2021 ***population change leveled off*** (+640, +0.1%), but the economy reopened and many of the lost ***jobs were recovered*** (+20,388, +4.0%).
- In 2022 ***job changes stabilized*** at a positive but slower rate of increase (+1,966, +0.4%), while ***population growth reversed*** (3,251, -0.3%).

Percent Change in Population and Jobs, 2010-2022



Source: Population: Census Population Estimates, 2010-2022; Jobs: Lightcast

In 2022, Rhode Island's jobs-to-population ratio was 48.3%, now 1.6% lower than the US (49.9%). The US has had more population growth than Rhode Island, but it has also added jobs at nearly triple the rate since 2010. It lost a smaller share of jobs in 2020 and has rebounded faster. In order to capitalize on recent positive migration, Rhode Island will need to develop pathways for job growth to meet it.

Employment, Regional Comparison

Rhode Island's job market has not yet recovered to 2017 levels. While the state is recovering faster than Connecticut, total 2022 employment was still 2% below 2017 levels, whereas the US was nearly 2% above and Massachusetts had almost broken even.

Job Change by Region

Geography	2017 Jobs	2022 Jobs	2017-2022 Jobs Change	2017-2022 Jobs % Change
Rhode Island	539,302	528,095	-11,207	-2.1%
Connecticut	1,875,603	1,824,760	-50,843	-2.7%
Massachusetts	3,975,147	3,974,754	-393	0.0%
New England	8,196,901	8,131,367	-65,534	-0.8%
US	162,772,285	165,918,718	3,146,434	1.9%

Source: Lightcast

Competitive Metrics, Regional and National Comparison

Like its peers and New England as a whole, Rhode Island's job growth is performing below expectations. The industry mix effect represents national industry trends and the national growth effect reflects the overall growth rate of the national economy. The sum of these two effects gives the expected employment change based on nationwide trends. The competitive effect reflects each region's specific conditions affecting employment growth — its competitive advantage or disadvantage. All four geographies had negative competitive effects, indicating that local factors are leading each region to add jobs more slowly than the nation as a whole.

Shift Share Indicators, 2022

Region	Ind. Mix Effect	Nat'l Growth Effect	Expected Change	Competitive Effect
Rhode Island	467	10,425	10,892	-22,098
Connecticut	7,338	36,256	43,594	-94,436
Massachusetts	32,507	76,841	109,347	-109,740
New England	36,328	158,448	194,776	-260,310

Source: Lightcast

Jobs, Industry Mix

Rhode Island has above average employment concentrations in Educational Services (2.24 times the national average share), Management of Companies and Enterprises (1.63 times), Finance and Insurance (1.25), Health Care and Social Assistance (1.17), and Accommodation and Food Services (1.14). However, all of these sectors lost jobs in the state between 2017 and 2022.

The state's largest sectors include Health Care and Social Assistance, Government, Retail Trade, Accommodation and Food Services, and Manufacturing. The fastest growth over the past five years occurred in Mining, Quarrying, and Oil and Gas Extraction; Transportation and Warehousing; Professional, Scientific, and Technical Services; and Construction.

Key Industry Metrics by Sector, Rhode Island

NAICS	Description	2022 Jobs	2017-2022 Jobs % Change	2022 Location Quotient
11	Agriculture, Forestry, Fishing and Hunting	2,215	5%	0.34
21	Mining, Quarrying, and Oil and Gas Extraction	303	55%	0.18
22	Utilities	1,108	0%	0.63
23	Construction	27,335	11%	0.89
31	Manufacturing	40,168	-3%	0.99
42	Wholesale Trade	16,051	-6%	0.86
44	Retail Trade	48,175	-5%	0.94
48	Transportation and Warehousing	14,305	19%	0.63
51	Information	5,646	-13%	0.58
52	Finance and Insurance	27,857	-3%	1.25
53	Real Estate and Rental and Leasing	7,515	-6%	0.82
54	Professional, Scientific, and Technical Services	34,736	16%	0.92
55	Management of Companies and Enterprises	12,311	-9%	1.63
56	Admin and Support and Waste Mgmt and Remediation Services	31,690	-1%	0.97
61	Educational Services	31,444	0%	2.24
62	Health Care and Social Assistance	80,339	-4%	1.17
71	Arts, Entertainment, and Recreation	8,255	-26%	1.02
72	Accommodation and Food Services	45,870	-7%	1.14
81	Other Services (except Public Administration)	23,203	-7%	0.87
90	Government	69,513	-2%	0.91

Source: Lightcast

Jobs, Industry Concentration

Rhode Island's strong concentration in Educational Services is similar to that of Massachusetts (2.36) and exceeds that of Connecticut (1.80) and New England as a whole (2.03). The state's concentration in Management of Companies and Enterprises is the largest among its peers and could indicate a regional advantage as a location for corporate headquarters.

Industry Location Quotients, 2022

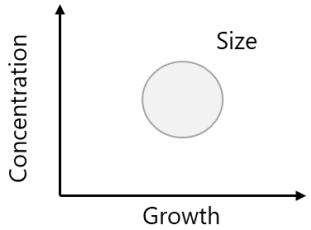
NAICS	Description	Rhode Island	Connecticut	Massachusetts	New England
11	Agriculture, Forestry, Fishing and Hunting	0.34	0.33	0.39	0.59
21	Mining, Quarrying, and Oil and Gas Extraction	0.18	0.09	0.07	0.13
22	Utilities	0.63	0.82	0.97	0.88
23	Construction	0.89	0.83	0.93	0.94
31	Manufacturing	0.99	1.11	0.78	0.95
42	Wholesale Trade	0.86	0.90	0.87	0.89
44	Retail Trade	0.94	0.99	0.89	0.99
48	Transportation and Warehousing	0.63	0.92	0.62	0.68
51	Information	0.58	0.95	1.34	1.07
52	Finance and Insurance	1.25	1.38	1.09	1.12
53	Real Estate and Rental and Leasing	0.82	0.81	0.87	0.83
54	Professional, Scientific, and Technical Services	0.92	0.91	1.49	1.19
55	Management of Companies and Enterprises	1.63	1.16	1.22	1.20
56	Administrative and Support and Waste Management and Remediation Services	0.97	0.89	0.82	0.85
61	Educational Services	2.24	1.80	2.36	2.03
62	Health Care and Social Assistance	1.17	1.23	1.30	1.24
71	Arts, Entertainment, and Recreation	1.02	1.05	1.02	1.05
72	Accommodation and Food Services	1.14	0.84	0.84	0.89
81	Other Services (except Public Administration)	0.87	0.99	0.93	0.93
90	Government	0.91	0.87	0.79	0.85

Source: Lightcast

Industry Lifecycle

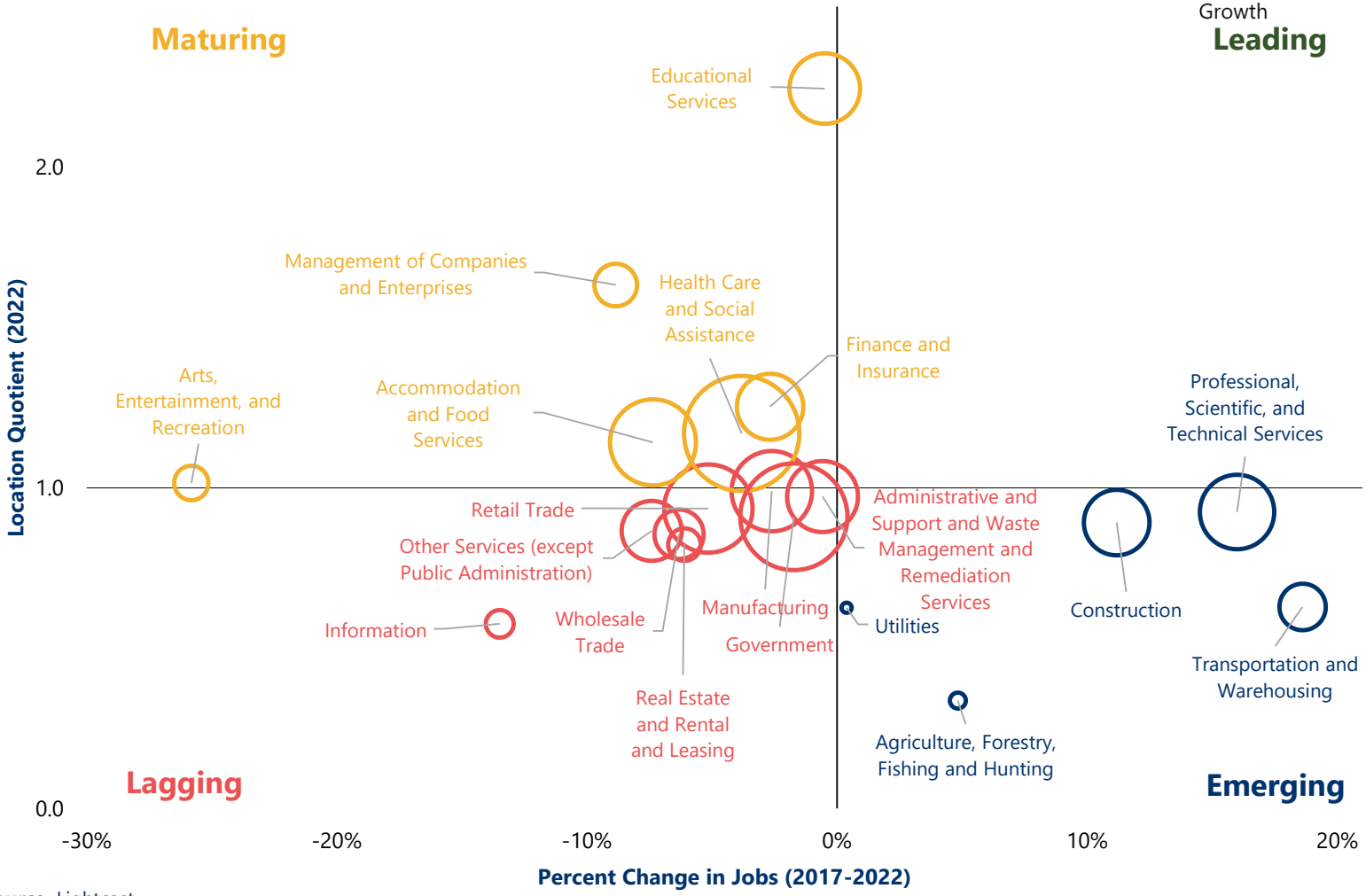
Rhode Island has no leading industries (those with above-average concentrations and that grew over the last five years), but it does have five emerging industries: Professional, Scientific, and Technical Services; Construction; Transportation and Warehousing; Agriculture, Forestry, Fishing, and Hunting; and Utilities all added jobs from 2017 to 2022.

Unfortunately, most sectors shrank between 2017 and 2022, a sign that some of them may not yet have recovered from pandemic-induced job losses. Among these, six are maturing industries, with employment shares above the national average. These may be considered potential "export" industries, providing services to customers outside the state or drawing nonresidents in.



Key Metrics by Sector, Rhode Island

Bubble size indicates 2022 job count



Source: Lightcast

Jobs, Industry Detail

Looking at more detailed industries, Rhode Island's largest sectors include strong representation from education and health care, government, Restaurants and Other Eating Places, and Management of Companies and Enterprises. Average annual earnings among the top five industries range from $29,793 for Restaurants and Other Eating Places to $164,305 for Management of Companies and Enterprises.

Among the state's 20 largest industries, it has competitive advantages (positive competitive effect) in Federal Government, State Government, Services to Buildings and Dwellings, Computer Systems Design and Related Services, and a slight advantage in Building Equipment Contractors.

Rhode Island Top 20 4-Digit NAICS Industries by Job Count

NAICS	Description	2022 Jobs	2017-2022 Jobs Change	2017-2022 Jobs % Change	2022-2027 Jobs Change	2022-2027 Jobs % Change	Avg. Earnings Per Job	2022 Location Quotient	Competitive Effect	2021 Payrolled Business Locations	2021 GRP	2017-2021 GRP % Change
7225	Restaurants and Other Eating Places	35,851	-3,267	-8.4%	2,391	6.7%	$29,793	1.12	-773	2,538	$1,726,475,211	29.1%
6113	Colleges, Universities, and Professional Schools	21,240	-1,150	-5.1%	446	2.1%	$47,991	3.27	-2,391	122	$1,225,305,797	-4.2%
9036	Education and Hospitals (Local Government)	20,016	-689	-3.3%	125	0.6%	$88,939	0.76	-21	40	$1,787,241,426	4.6%
6221	General Medical and Surgical Hospitals	18,537	201	1.1%	171	0.9%	$79,645	1.21	-170	19	$1,753,253,487	5.7%
5511	Management of Companies and Enterprises	12,311	-1,195	-8.8%	-145	-1.2%	$164,305	1.63	-1,717	299	$2,265,065,328	5.7%
9011	Federal Government, Civilian	11,611	608	5.5%	92	0.8%	$124,578	1.22	199	183	$1,954,870,821	17.1%
9029	State Government, Excluding Education and Hospitals	11,587	1,433	14.1%	351	3.0%	$108,435	1.64	1,685	118	$1,616,007,215	24.3%
9039	Local Government, Excluding Education and Hospitals	11,120	-575	-4.9%	-174	-1.6%	$89,745	0.63	-362	357	$1,115,885,339	4.9%
5617	Services to Buildings and Dwellings	11,011	986	9.8%	499	4.5%	$45,287	1.17	693	1,383	$595,393,025	36.1%
2361	Residential Building Construction	9,851	1,269	14.8%	871	8.8%	$53,113	2.33	-1,292	1,136	$701,186,722	31.7%
5415	Computer Systems Design and Related Services	9,733	2,446	33.6%	1,515	15.6%	$124,300	1.17	1,105	2,333	$1,250,147,301	37.5%
4451	Grocery Stores	9,600	-91	-0.9%	-323	-3.4%	$36,189	1.08	-174	335	$569,375,178	19.2%
5221	Depository Credit Intermediation	9,536	-318	-3.2%	15	0.2%	$95,849	1.71	-472	361	$2,350,769,617	13.3%
5613	Employment Services	9,514	-831	-8.0%	-57	-0.6%	$55,928	0.81	-1,112	846	$714,524,066	30.1%
6211	Offices of Physicians	8,808	275	3.2%	114	1.3%	$125,617	0.97	-450	599	$1,184,375,920	16.7%
9026	Education and Hospitals (State Government)	7,989	-1,097	-12.1%	-278	-3.5%	$71,393	0.83	-741	11	$608,456,306	7.7%
6231	Nursing Care Facilities (Skilled Nursing Facilities)	7,696	-2,491	-24.5%	-898	-11.7%	$56,663	1.77	-811	89	$505,995,062	1.6%
6241	Individual and Family Services	7,238	229	3.3%	759	10.5%	$36,646	0.74	-1,345	1,437	$279,905,706	17.9%
9012	Federal Government, Military	7,190	-902	-11.2%	-15	-0.2%	$56,857	1.18	-609	0	$1,129,083,880	3.6%
2382	Building Equipment Contractors	6,537	583	9.8%	100	1.5%	$80,950	0.71	24	1,010	$668,970,325	28.4%

Source: Lightcast

The industries adding the most jobs over the last five years include Computer Systems Design and Related Services, State Government, Excluding Education and Hospitals; Residential Building Construction; Couriers and Express Delivery Services; and Services to Buildings and Dwellings.

Rhode Island Top 20 4-Digit NAICS Industries by Job Growth (2017-2022)

NAICS	Description	2022 Jobs	2017-2022 Jobs Change	2017-2022 Jobs % Change	2022-2027 Jobs Change	2022-2027 Jobs % Change	Avg. Earnings Per Job	2022 Location Quotient	Competitive Effect	2021 Payrolled Business Locations	2021 GRP	2017-2021 GRP % Change
5415	Computer Systems Design and Related Services	9,733	2,446	33.6%	1,515	15.6%	$124,300	1.17	1,105	2,333	$1,250,147,301	37.5%
9029	State Government, Excluding Education and Hospitals	11,587	1,433	14.1%	351	3.0%	$108,435	1.64	1,685	118	$1,616,007,215	24.3%
2361	Residential Building Construction	9,851	1,269	14.8%	871	8.8%	$53,113	2.33	-1,292	1,136	$701,186,722	31.7%
4921	Couriers and Express Delivery Services	3,152	1,234	64.4%	408	12.9%	$50,023	0.96	14	56	$195,513,374	59.7%
5617	Services to Buildings and Dwellings	11,011	986	9.8%	499	4.5%	$45,287	1.17	693	1,383	$595,393,025	36.1%
5419	Other Professional, Scientific, and Technical Services	3,144	794	33.8%	378	12.0%	$72,536	0.94	305	329	$454,445,790	20.6%
6111	Elementary and Secondary Schools	6,509	756	13.1%	264	4.0%	$55,085	1.59	90	124	$357,110,512	17.6%
5416	Management, Scientific, and Technical Consulting Services	4,808	746	18.4%	545	11.3%	$107,542	0.73	-126	1,589	$618,364,754	36.6%
3366	Ship and Boat Building	5,385	675	14.3%	44	0.8%	$85,265	11.42	272	36	$504,711,413	16.5%
6213	Offices of Other Health Practitioners	4,777	665	16.2%	472	9.9%	$55,559	1.23	-150	642	$319,442,898	-0.1%
5611	Office Administrative Services	1,636	635	63.4%	305	18.6%	$81,310	0.87	524	317	$146,213,469	75.4%
9011	Federal Government, Civilian	11,611	608	5.5%	92	0.8%	$124,578	1.22	199	183	$1,954,870,821	17.1%
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	2,099	603	40.3%	242	11.5%	$118,548	0.93	416	372	$365,913,332	75.2%
6214	Outpatient Care Centers	4,755	585	14.0%	392	8.2%	$67,484	1.34	-190	212	$447,725,808	25.3%
2382	Building Equipment Contractors	6,537	583	9.8%	100	1.5%	$80,950	0.71	24	1,010	$668,970,325	28.4%
4539	Other Miscellaneous Store Retailers	1,497	501	50.2%	175	11.7%	$44,412	0.98	290	172	$126,244,921	88.1%
7211	Traveler Accommodation	5,134	481	10.3%	1,374	26.8%	$42,589	1.14	1,707	199	$425,591,407	20.7%
3119	Other Food Manufacturing	1,320	480	57.1%	330	25.0%	$64,210	1.68	375	34	$150,346,618	80.6%
6222	Psychiatric and Substance Abuse Hospitals	1,137	470	70.5%	17	1.5%	$68,819	2.80	431	5	$93,275,794	97.0%
4889	Other Support Activities for Transportation	480	446	1289.0%	123	25.7%	$26,339	4.23	442	10	$11,873,031	Insf. Data

Source: Lightcast

Several sectors have fewer jobs in 2022 than they did in 2017; 10 lost over 1,000 jobs. Some of this may be due to the effects of the pandemic, some may be the result of longer-term trends. Education- and health care-related industries, while some of the state's largest sectors, also saw some of the biggest job losses.

Rhode Island Lowest Growth 4-Digit NAICS Industries (2017-2022)

NAICS	Description	2022 Jobs	2017-2022 Jobs Change	2017-2022 Jobs % Change	2022-2027 Jobs Change	2022-2027 Jobs % Change	Avg. Earnings Per Job	2022 Location Quotient	Competitive Effect	2021 Payrolled Business Locations	2021 GRP	2017 -2021 GRP % Change
7225	Restaurants and Other Eating Places	35,851	-3,267	-8.4%	2,391	6.7%	$29,793	1.12	-773	2,538	$1,726,475,211	29.1%
6231	Nursing Care Facilities (Skilled Nursing Facilities)	7,696	-2,491	-24.5%	-898	-11.7%	$56,663	1.77	-811	89	$505,995,062	1.6%
7132	Gambling Industries	29	-1,930	-98.5%	3	10.0%	$44,465	0.09	-1,468	4	$6,076,361	-97.8%
5511	Management of Companies and Enterprises	12,311	-1,195	-8.8%	-145	-1.2%	$164,305	1.63	-1,717	299	$2,265,065,328	5.7%
5231	Securities and Commodity Contracts Intermediation and Brokerage	2,823	-1,189	-29.6%	-170	-6.0%	$199,969	2.00	-1,102	185	$626,106,549	-28.1%
6113	Colleges, Universities, and Professional Schools	21,240	-1,150	-5.1%	446	2.1%	$47,991	3.27	-2,391	122	$1,225,305,797	-4.2%
3399	Other Miscellaneous Manufacturing	2,985	-1,112	-27.1%	-837	-28.0%	$83,059	2.86	-1,206	160	$417,483,265	9.6%
9026	Education and Hospitals (State Government)	7,989	-1,097	-12.1%	-278	-3.5%	$71,393	0.83	-741	11	$608,456,306	7.7%
4239	Miscellaneous Durable Goods Merchant Wholesalers	1,250	-1,074	-46.2%	-299	-24.0%	$92,575	1.24	-1,061	203	$234,274,167	-32.5%
6243	Vocational Rehabilitation Services	1,360	-1,069	-44.0%	-397	-29.2%	$45,191	1.55	-561	45	$68,618,111	-12.2%
8134	Civic and Social Organizations	1,706	-923	-35.1%	-50	-2.9%	$29,051	1.87	-184	189	$54,490,872	-5.9%
9012	Federal Government, Military	7,190	-902	-11.2%	-15	-0.2%	$56,857	1.18	-609	0	$1,129,083,880	3.6%
5613	Employment Services	9,514	-831	-8.0%	-57	-0.6%	$55,928	0.81	-1,112	846	$714,524,066	30.1%
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	3,616	-816	-18.4%	-199	-5.5%	$84,228	4.53	-1,172	8	$370,554,474	-6.1%
4461	Health and Personal Care Stores	4,285	-816	-16.0%	-484	-11.3%	$61,753	1.26	-639	423	$364,620,029	10.2%
4251	Wholesale Electronic Markets and Agents and Brokers	2,390	-802	-25.1%	83	3.5%	$148,200	1.54	667	1,220	$406,600,066	-14.3%
6232	Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	3,280	-746	-18.5%	-209	-6.4%	$44,582	1.64	-701	231	$155,540,409	13.0%
6233	Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	2,728	-697	-20.3%	80	3.0%	$42,858	0.93	-657	62	$124,908,246	-6.0%
9036	Education and Hospitals (Local Government)	20,016	-689	-3.3%	125	0.6%	$88,939	0.76	-21	40	$1,787,241,426	4.6%
4481	Clothing Stores	2,646	-644	-19.6%	119	4.5%	$29,503	1.05	264	320	$148,951,133	Insf. Data

Source: Lightcast

Rhode Island has above-average employment concentrations in several manufacturing sectors, especially Ship and Boat Building and Fabric Mills. These represent export industries that bring new money into the state and help drive growth. Unfortunately, many of them shrank between 2017 and 2022. The state also has strong concentrations in higher education (Junior Colleges and Colleges, Universities, and Professional Schools) and health care (Specialty Hospitals and Psychiatric and Substance Abuse Hospitals) sectors. These also represent export opportunities through attracting out-of-state students and patients.

Rhode Island Top 20 4-Digit NAICS Industries by Location Quotient, 2022

NAICS	Description	2022 Jobs	2017-2022 Jobs Change	2017-2022 Jobs % Change	2022-2027 Jobs Change	2022-2027 Jobs % Change	Avg. Earnings Per Job	2022 Location Quotient	Competitive Effect	2021 Payrolled Business Locations	2021 GRP	2017-2021 GRP % Change
3366	Ship and Boat Building	5,385	675	14.3%	44	0.8%	$85,265	11.42	272	36	$504,711,413	16.5%
1141	Fishing	832	-30	-3.5%	-20	-2.4%	$47,913	7.79	-78	23	$105,433,711	-56.4%
3132	Fabric Mills	1,113	-171	-13.3%	-137	-12.3%	$62,609	7.48	23	20	$111,789,822	1.6%
3314	Nonferrous Metal (except Aluminum) Production and Processing	1,054	-46	-4.1%	-55	-5.2%	$84,172	5.87	19	29	$206,964,363	14.6%
6112	Junior Colleges	585	-70	-10.7%	-113	-19.2%	$52,387	5.51	91	5	$34,344,038	-26.5%
3133	Textile and Fabric Finishing and Fabric Coating Mills	415	-195	-32.0%	-104	-25.2%	$77,188	5.07	-82	15	$35,575,405	-19.4%
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	3,616	-816	-18.4%	-199	-5.5%	$84,228	4.53	-1,172	8	$370,554,474	-6.1%
4889	Other Support Activities for Transportation	480	446	1289.0%	123	25.7%	$26,339	4.23	442	10	$11,873,031	402.1%
4854	School and Employee Bus Transportation	2,248	66	3.0%	452	20.1%	$40,207	3.93	310	39	$94,319,632	17.2%
5615	Travel Arrangement and Reservation Services	1,789	-459	-20.4%	279	15.6%	$69,206	3.32	250	136	$148,631,106	-7.3%
6113	Colleges, Universities, and Professional Schools	21,240	-1,150	-5.1%	446	2.1%	$47,991	3.27	-2,391	122	$1,225,305,797	-4.2%
3399	Other Miscellaneous Manufacturing	2,985	-1,112	-27.1%	-837	-28.0%	$83,059	2.86	-1,206	160	$417,483,265	9.6%
6222	Psychiatric and Substance Abuse Hospitals	1,137	470	70.5%	17	1.5%	$68,819	2.80	431	5	$93,275,794	97.0%
4453	Beer, Wine, and Liquor Stores	1,481	51	3.5%	-67	-4.5%	$37,778	2.57	-68	235	$88,662,478	21.6%
3169	Other Leather and Allied Product Manufacturing	111	-1	-0.9%	-17	-15.1%	$57,779	2.48	-9	6	$13,723,351	128.8%
3259	Other Chemical Product and Preparation Manufacturing	617	-207	-25.1%	-31	-5.1%	$105,138	2.36	-191	11	$159,805,517	-7.6%
2361	Residential Building Construction	9,851	1,269	14.8%	871	8.8%	$53,113	2.33	-1,292	1,136	$701,186,722	31.7%
3328	Coating, Engraving, Heat Treating, and Allied Activities	921	-152	-14.2%	-33	-3.5%	$56,495	2.29	-61	50	$84,944,230	-0.7%
4872	Scenic and Sightseeing Transportation, Water	136	4	2.9%	32	23.7%	$52,328	2.29	4	46	$7,465,017	2.1%
4879	Scenic and Sightseeing Transportation, Other	18	6	46.1%	15	82.7%	$40,817	2.28	9	2	$237,270	Insf. Data

Source: Lightcast

Gross Regional Product

Despite Rhode Island's 2% job loss from 2017 to 2022, the state's gross regional product (GRP) grew by 23%, implying that the workers who retained their jobs became more productive. GRP measures the final market value of all goods and services produced in the state. While Rhode Island's GRP growth exceeded that of Connecticut, it lagged behind Massachusetts, New England as a whole, and the US.

Gross Regional Product

Region	2017 GRP	2022 GRP	2017-2022 Change	2017-2022 % Change
Rhode Island	$58,085,000,000	$71,402,200,000	$13,317,200,000	22.9%
Connecticut	$271,443,200,000	$321,844,600,000	$50,401,400,000	18.6%
Massachusetts	$531,008,000,000	$688,391,600,000	$157,383,600,000	29.6%
New England	$1,035,653,900,000	$1,312,167,400,000	$276,513,500,000	26.7%
US	$19,477,337,000,000	$25,462,722,000,000	$5,985,385,000,000	30.7%

Source: US Bureau of Economic Analysis

Payrolled Business Locations

Similar to GRP, despite job losses in most study areas, the number of business establishments grew between 2017 and 2022 across all study areas. Rhode Island saw the fastest growth at 20%, adding almost 7,300 new establishments. The fact that the number of establishments increased while jobs decreased implies that the new businesses were relatively small, and did not add more jobs than were lost at existing businesses. Nonetheless, establishment growth is a sign of economic health.

Payrolled Business Locations

Region	2017 Payrolled Business Locations	2022 Payrolled Business Locations	2017-2022 Change	2017-2022 % Change
Rhode Island	37,350	44,638	7,288	19.5%
Connecticut	118,601	134,988	16,386	13.8%
Massachusetts	252,756	283,594	30,838	12.2%
New England	540,043	613,318	73,276	13.6%
US	9,834,366	11,226,671	1,392,305	14.2%

Source: Lightcast

Earnings

Rhode Island's average earnings are below the national average, and well below those of its peers and New England as a whole. The state's lower labor costs could provide a regional advantage in business recruitment.

Average Earnings per Job, 2022

Region	Average Earnings
Rhode Island	$73,234
Connecticut	$89,025
Massachusetts	$98,270
New England	$88,552
US	$77,767

Source: Lightcast

WORKFORCE & OCCUPATIONAL OVERVIEW

Industry data are based on what businesses do and how they do it. Occupational data provide another window into the economy, this time focused on what workers do. For example, a manufacturing company produces bicycles using a combination of aluminum, carbon fiber, rubber, steel cable, and so on. The company also employs a variety of occupations, including production workers to fabricate and assemble the bicycles, a CEO, and possibly accountants, marketing professionals, lawyers, salesmen, and administrative support personnel. All of these employees of the bicycle maker count as manufacturing jobs, but the occupations can be found at companies in other industries as well. Note that occupational data shown in this section is based on place of work rather than place of residence.

Competitive Metrics, Regional and National Comparison

Like its peers and New England as a whole, Rhode Island's job growth is performing below expectations. The occupational mix effect represents national occupational employment trends and the national growth effect reflects the overall growth rate of the national economy. The sum of these two effects gives the expected change based on nationwide trends. The competitive effect reflects each region's specific conditions affecting employment growth — its competitive advantage or disadvantage. All four geographies had negative competitive effects, indicating that local factors are leading each region to add jobs more slowly than the nation as a whole.

Shift Share Indicators, 2022

Region	Occ. Mix Effect	Nat'l Growth Effect	Expected Change	Competitive Effect
Rhode Island	-798	10,425	9,627	-20,834
Connecticut	7,339	36,256	43,595	-94,437
Massachusetts	43,331	76,841	120,172	-120,565
New England	47,626	158,448	206,074	-271,608

Source: Lightcast

Occupational Mix

Rhode Island has strong concentrations in Legal occupations (location quotient of 1.28), Educational Instruction and Library occupations (1.21), Business and Financial Operations (1.20), Military (1.18), and Community and Social Service occupations (1.16). Legal and Business and Financial Operations jobs both grew by approximately 25% from 2017 to 2022, while Community and Social Service jobs grew 6%. High location quotients represent specializations within the state that could provide an advantage over others.

Key Occupation Metrics, Rhode Island

NAICS	Description	2022 Jobs	2017 - 2022 Jobs % Change	2022 Location Quotient
11-0000	Management	27,494	7%	0.75
13-0000	Business and Financial Operations	40,140	25%	1.20
15-0000	Computer and Mathematical	17,341	8%	1.04
17-0000	Architecture and Engineering	9,052	-3%	1.06
19-0000	Life, Physical, and Social Science	4,415	3%	0.91
21-0000	Community and Social Service	10,861	6%	1.16
23-0000	Legal	5,949	26%	1.28
25-0000	Educational Instruction and Library	36,527	-5%	1.21
27-0000	Arts, Design, Entertainment, Sports, and Media	9,962	-4%	1.02
29-0000	Healthcare Practitioners and Technical	33,932	-3%	1.12
31-0000	Healthcare Support	24,800	-2%	1.01
33-0000	Protective Service	12,880	-1%	1.13
35-0000	Food Preparation and Serving Related	43,520	-8%	1.13
37-0000	Building and Grounds Cleaning and Maintenance	18,992	-8%	1.04
39-0000	Personal Care and Service	13,463	-7%	0.95
41-0000	Sales and Related	47,238	-6%	0.98
43-0000	Office and Administrative Support	63,804	-13%	1.00
45-0000	Farming, Fishing, and Forestry	1,776	14%	0.46
47-0000	Construction and Extraction	22,917	7%	0.96
49-0000	Installation, Maintenance, and Repair	18,142	-2%	0.88
51-0000	Production	27,767	-9%	0.97
53-0000	Transportation and Material Moving	33,369	2%	0.74
55-0000	Military-only	3,756	-10%	1.18
99-0000	Unclassified	0	0%	0.00

Workers, Occupational Concentration

Rhode Island's concentration in Legal occupations is greater than the occupation's concentrations in Connecticut, Massachusetts, and New England as a whole. The state's concentration in Business and Financial Operations also exceeds concentrations in its peer states and New England. Rhode Island's above-average employment share in Educational Instruction and Library occupations is similar to those in Massachusetts and New England, and slightly lower than in Connecticut.

Location Quotient by Occupation, 2022

SOC	Description	Rhode Island	Connecticut	Massachusetts	New England
11-0000	Management	0.75	1.23	1.38	1.24
13-0000	Business and Financial Operations	1.20	0.96	1.14	1.04
15-0000	Computer and Mathematical	1.04	0.92	1.31	1.10
17-0000	Architecture and Engineering	1.06	1.23	1.15	1.15
19-0000	Life, Physical, and Social Science	0.91	0.93	1.82	1.37
21-0000	Community and Social Service	1.16	1.17	1.38	1.28
23-0000	Legal	1.28	1.15	1.19	1.07
25-0000	Educational Instruction and Library	1.21	1.27	1.22	1.21
27-0000	Arts, Design, Entertainment, Sports, and Media	1.02	1.00	1.07	1.03
29-0000	Healthcare Practitioners and Technical	1.12	1.07	1.15	1.11
31-0000	Healthcare Support	1.01	1.11	1.17	1.09
33-0000	Protective Service	1.13	0.95	0.98	0.93
35-0000	Food Preparation and Serving Related	1.13	0.90	0.87	0.91
37-0000	Building and Grounds Cleaning and Maintenance	1.04	1.15	0.94	1.03
39-0000	Personal Care and Service	0.95	1.14	1.00	1.03
41-0000	Sales and Related	0.98	0.94	0.88	0.93
43-0000	Office and Administrative Support	1.00	1.01	0.93	0.97
45-0000	Farming, Fishing, and Forestry	0.46	0.35	0.44	0.64
47-0000	Construction and Extraction	0.96	0.86	0.92	0.95
49-0000	Installation, Maintenance, and Repair	0.88	0.83	0.74	0.83
51-0000	Production	0.97	0.95	0.71	0.85
53-0000	Transportation and Material Moving	0.74	0.83	0.70	0.76
55-0000	Military-only	1.18	0.53	0.42	0.54
99-0000	Unclassified	0.00	0.00	0.00	0.00

Source: Lightcast

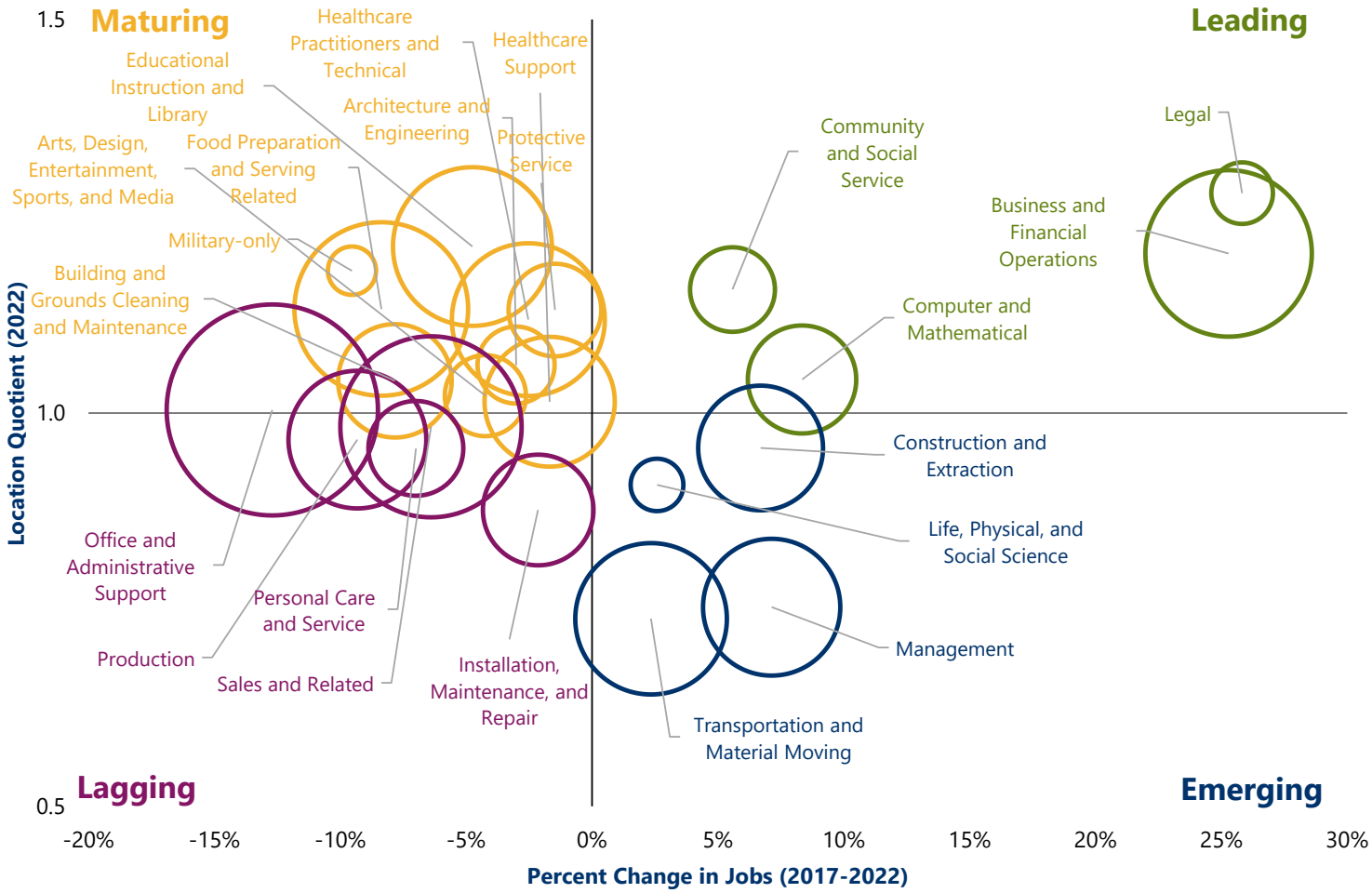
Occupational Lifecycle

While Rhode Island has four leading occupation groups. Business and Financial Operations, Computer and Mathematical, Community and Social Service, and Legal occupations all grew between 2017 and 2022 and account for above-average employment shares. The state also has four emerging occupational groups that saw job gains from 2017 to 2022.

Several occupations are maturing, with above-average employment shares but job losses of up to 10%. The largest of these are Food Preparation and Serving-Related occupations, Educational Instruction and Library occupations, and Healthcare Practitioners and Technical occupations.

Key Metrics by Occupation, Rhode Island

Bubble size indicates 2022 job count



Source: Lightcast

Workers, Occupational Key Metrics

Rhode Island has competitive advantages and above-average concentrations in Business and Financial Operations and Legal occupations. Both occupational groups added jobs between 2017 and 2022 and are expected to continue to grow through 2027. The state also has competitive advantages and historic and expected growth in Farming, Fishing, and Forestry occupations and Construction and Extraction occupations.

Rhode Island Economic Base, 2-Digit SOC Occupations

SOC	Description	2022 Jobs	2017-2022 Change	2017-2022 % Change	2022-2027 Change	2022-2027 % Change	Median Hourly Earnings	2022 Location Quotient	Competitive Effect
11-0000	Management	27,494	1,832	7%	1,499	5%	$56.58	0.75	-4,211
13-0000	Business and Financial Operations	40,140	8,103	25%	1,160	3%	$38.67	1.20	524
15-0000	Computer and Mathematical	17,341	1,336	8%	1,276	7%	$43.29	1.04	-480
17-0000	Architecture and Engineering	9,052	-282	-3%	288	3%	$43.02	1.06	-263
19-0000	Life, Physical, and Social Science	4,415	111	3%	155	4%	$37.55	0.91	-174
21-0000	Community and Social Service	10,861	574	6%	208	2%	$23.82	1.16	-232
23-0000	Legal	5,949	1,221	26%	279	5%	$46.54	1.28	689
25-0000	Educational Instruction and Library	36,527	-1,822	-5%	960	3%	$33.68	1.21	-1,002
27-0000	Arts, Design, Entertainment, Sports, and Media	9,962	-441	-4%	471	5%	$27.14	1.02	-810
29-0000	Healthcare Practitioners and Technical	33,932	-880	-3%	441	1%	$37.58	1.12	-3,236
31-0000	Healthcare Support	24,800	-424	-2%	220	1%	$16.54	1.01	-3,102
33-0000	Protective Service	12,880	-192	-1%	453	4%	$28.35	1.13	-161
35-0000	Food Preparation and Serving Related	43,520	-3,975	-8%	2,555	6%	$13.70	1.13	1,089
37-0000	Building and Grounds Cleaning and Maintenance	18,992	-1,614	-8%	665	3%	$16.31	1.04	-537
39-0000	Personal Care and Service	13,463	-1,013	-7%	829	6%	$14.38	0.95	297
41-0000	Sales and Related	47,238	-3,228	-6%	-741	-2%	$17.07	0.98	-335
43-0000	Office and Administrative Support	63,804	-9,281	-13%	-1,612	-3%	$21.60	1.00	-4,941
45-0000	Farming, Fishing, and Forestry	1,776	212	14%	92	5%	$14.33	0.46	276
47-0000	Construction and Extraction	22,917	1,439	7%	742	3%	$26.24	0.96	852
49-0000	Installation, Maintenance, and Repair	18,142	-397	-2%	231	1%	$25.58	0.88	-1,005
51-0000	Production	27,767	-2,854	-9%	-944	-3%	$19.18	0.97	-1,582
53-0000	Transportation and Material Moving	33,369	764	2%	1,167	3%	$17.91	0.74	-2,172
55-0000	Military-only	3,756	-396	-10%	-8	0%	$23.55	1.18	-318
99-0000	Unclassified	0	0	0%	0	0%	$0.00	0.00	0
	Total	**59,588**	**683**	**1%**	**3,124**	**5%**			**-369**

Source: Lightcast

Workers, Earnings Regional Comparison

Compared with its peers, Rhode Island has more affordable Computer and Mathematical workers; Life, Physical, and Social Science workers; Community and Social Service workers; Legal workers; Arts, Design, Entertainment, Sports, and Media workers; Healthcare Practitioners and Technical workers; Healthcare Support workers; Food Preparation and Serving Related workers; Construction and Extraction workers; Installation, Maintenance, and Repair workers; and Production workers.

Median Hourly Earnings by Occupation, 2022

SOC	Description	Rhode Island	Connecticut	Massachusetts	New England	US
11-0000	Management	$56.58	$56.07	$58.93	$54.55	$47.32
13-0000	Business and Financial Operations	$38.67	$38.29	$40.77	$38.57	$34.98
15-0000	Computer and Mathematical	$43.29	$45.99	$51.20	$47.37	$44.79
17-0000	Architecture and Engineering	$43.02	$42.23	$43.36	$41.94	$40.72
19-0000	Life, Physical, and Social Science	$37.55	$38.54	$42.73	$39.31	$34.15
21-0000	Community and Social Service	$23.82	$26.06	$24.46	$24.06	$23.50
23-0000	Legal	$46.54	$47.40	$49.94	$45.44	$41.16
25-0000	Educational Instruction and Library	$33.68	$31.11	$31.59	$29.70	$25.17
27-0000	Arts, Design, Entertainment, Sports, and Media	$27.14	$27.81	$27.99	$26.37	$24.14
29-0000	Healthcare Practitioners and Technical	$37.58	$39.33	$42.04	$38.90	$33.59
31-0000	Healthcare Support	$16.54	$16.62	$17.60	$17.51	$14.38
33-0000	Protective Service	$28.35	$26.27	$28.76	$26.50	$21.29
35-0000	Food Preparation and Serving Related	$13.70	$14.18	$14.99	$14.67	$13.31
37-0000	Building and Grounds Cleaning and Maintenance	$16.31	$16.36	$18.32	$17.22	$14.67
39-0000	Personal Care and Service	$14.38	$14.38	$15.64	$14.90	$13.76
41-0000	Sales and Related	$17.07	$16.99	$18.54	$17.43	$16.03
43-0000	Office and Administrative Support	$21.60	$21.60	$22.84	$21.84	$19.21
45-0000	Farming, Fishing, and Forestry	$14.33	$13.53	$14.51	$14.63	$14.02
47-0000	Construction and Extraction	$26.24	$27.42	$29.73	$26.38	$22.94
49-0000	Installation, Maintenance, and Repair	$25.58	$26.32	$26.78	$25.54	$23.50
51-0000	Production	$19.18	$21.11	$20.85	$20.31	$18.53
53-0000	Transportation and Material Moving	$17.91	$17.70	$18.43	$17.89	$17.01
55-0000	Military-only	$23.55	$12.63	$29.80	$22.75	$16.93
99-0000	Unclassified	$0.00	$0.00	$0.00	$0.00	$0.00

Source: Lightcast

Workers, Occupational Detail

The state's largest occupations include Laborers and Material Movers, Retail Salespersons, Building Cleaning Workers, Cooks, and Cashiers. Of these, the state has above-average concentrations only in Cooks (location quotient of 1.30) and Cashiers (1.02). Among the 20 largest occupations, those that are most "overrepresented" include Nursing Assistants, Orderlies, and Psychiatric Aides (1.81), Postsecondary Teachers (1.65), and Accountants and Auditors (1.30). These tie into the state's industry concentrations in health care, higher education, and Management of Companies and Enterprises.

Rhode Island Top 20 4-Digit SOC Occupations by Job Count, 2022

SOC	Description	2022 Jobs	2017-2022 Jobs Change	2017-2022 Jobs % Change	2022-2027 Jobs Change	2022-2027 Jobs % Change	Median Hourly Earnings	2022 Location Quotient	Competitive Effect
53-7060	Laborers and Material Movers	16,382	573	3.6%	136	0.8%	$15.10	0.78	-648
41-2030	Retail Salespersons	12,048	-826	-6.4%	-197	-1.6%	$14.16	0.96	1,051
37-2010	Building Cleaning Workers	11,809	-1,656	-12.3%	275	2.3%	$14.50	0.96	-511
35-2010	Cooks	11,324	2,076	22.4%	918	8.1%	$14.43	1.30	1,100
41-2010	Cashiers	11,078	-2,133	-16.1%	-751	-6.8%	$13.70	1.02	-1,280
29-1140	Registered Nurses	11,059	-1,529	-12.1%	7	0.1%	$37.91	1.09	-2,267
43-4050	Customer Service Representatives	10,145	1,185	13.2%	-261	-2.6%	$18.20	1.08	993
43-9060	Office Clerks, General	9,833	-2,172	-18.1%	-327	-3.3%	$21.03	1.08	-839
53-3030	Driver/Sales Workers and Truck Drivers	9,707	881	10.0%	372	3.8%	$20.06	0.78	-339
25-1090	Postsecondary Teachers	9,533	-724	-7.1%	258	2.7%	$41.99	1.65	-567
43-6010	Secretaries and Administrative Assistants	9,524	-3,059	-24.3%	-384	-4.0%	$22.89	0.86	-1,489
31-1120	Home Health and Personal Care Aides	9,286	1,389	17.6%	369	4.0%	$14.09	0.71	-242
35-3020	Fast Food and Counter Workers	9,264	-1,583	-14.6%	308	3.3%	$13.47	0.89	621
31-1130	Nursing Assistants, Orderlies, and Psychiatric Aides	8,514	-2,070	-19.6%	-489	-5.7%	$17.85	1.81	-930
35-3030	Waiters and Waitresses	6,982	-3,065	-30.5%	503	7.2%	$12.56	1.13	-455
11-1020	General and Operations Managers	6,687	1,065	19.0%	287	4.3%	$57.18	0.65	-1,051
41-4010	Sales Representatives, Wholesale and Manufacturing	6,565	210	3.3%	51	0.8%	$31.04	1.25	831
13-2010	Accountants and Auditors	6,388	999	18.5%	94	1.5%	$38.57	1.30	582
25-2020	Elementary and Middle School Teachers	5,926	250	4.4%	112	1.9%	$36.91	0.93	378
31-9090	Miscellaneous Healthcare Support Occupations	5,876	326	5.9%	218	3.7%	$18.58	1.09	-418

Source: Lightcast

Eight occupations in Rhode Island grew by more than 1,000 jobs from 2017 to 2022. The largest increases were among Cooks, Logisticians and Project Management Specialists, Home Health and Personal Care Aids, Miscellaneous Business Operations Specialists, and Financial Analysts and Advisors. Of the state's 20 highest-growth occupations, it has high concentrations and competitive advantages in 13.

Rhode Island Top 20 4-Digit SOC Occupations by Job Growth (2017-2022)

SOC	Description	2022 Jobs	2017-2022 Jobs Change	2017-2022 Jobs % Change	2022-2027 Jobs Change	2022-2027 Jobs % Change	Median Hourly Earnings	2022 Location Quotient	Competitive Effect
35-2010	Cooks	11,324	2,076	22.4%	918	8.1%	$14.43	1.30	1,100
13-1080	Logisticians and Project Management Specialists	3,522	1,508	74.9%	177	5.0%	$45.18	1.05	94
31-1120	Home Health and Personal Care Aides	9,286	1,389	17.6%	369	4.0%	$14.09	0.71	-242
13-1190	Miscellaneous Business Operations Specialists	2,951	1,331	82.1%	102	3.5%	$37.83	0.80	154
13-2050	Financial Analysts and Advisors	4,461	1,281	40.3%	26	0.6%	$41.54	1.63	539
43-4050	Customer Service Representatives	10,145	1,185	13.2%	-261	-2.6%	$18.20	1.08	993
13-1160	Market Research Analysts and Marketing Specialists	3,315	1,102	49.8%	270	8.1%	$30.45	1.25	476
11-1020	General and Operations Managers	6,687	1,065	19.0%	287	4.3%	$57.18	0.65	-1,051
13-2010	Accountants and Auditors	6,388	999	18.5%	94	1.5%	$38.57	1.30	582
13-1110	Management Analysts	4,700	941	25.0%	274	5.8%	$48.01	1.43	191
53-3030	Driver/Sales Workers and Truck Drivers	9,707	881	10.0%	372	3.8%	$20.06	0.78	-339
15-1250	Software and Web Developers, Programmers, and Testers	5,476	827	17.8%	673	12.3%	$49.30	0.81	-265
23-1010	Lawyers and Judicial Law Clerks	3,676	797	27.7%	168	4.6%	$68.34	1.25	479
47-2150	Pipelayers, Plumbers, Pipefitters, and Steamfitters	2,534	778	44.3%	79	3.1%	$28.97	1.46	750
35-1010	Supervisors of Food Preparation and Serving Workers	4,191	673	19.1%	284	6.8%	$23.37	1.02	118
47-2030	Carpenters	4,671	653	16.2%	110	2.4%	$25.83	1.38	637
51-9060	Inspectors, Testers, Sorters, Samplers, and Weighers	1,927	592	44.4%	-135	-7.0%	$22.26	1.04	552
53-7060	Laborers and Material Movers	16,382	573	3.6%	136	0.8%	$15.10	0.78	-648
15-1230	Computer Support Specialists	3,614	524	17.0%	129	3.6%	$32.01	1.23	316
13-1070	Human Resources Workers	3,104	522	20.2%	93	3.0%	$36.65	1.07	-203

Source: Lightcast

Eleven occupations in Rhode Island lost more than 1,000 jobs from 2017 to 2022, and six of these are expected to continue to shrink over the next five years. The largest losses were among Waiters and Waitresses, Secretaries and Administrative Assistants, General Office Clerks, Cashiers, and Nursing Assistants, Orderlies, and Psychiatric Aides. More than half (12) of these bottom 20 occupations earn less than $20 an hour, while Registered Nurses ($37.91) and Postsecondary Teachers ($41.99) are the highest earners to see large job losses.

Rhode Island Lowest Growth 4-Digit SOC Occupations (2017-2022)

SOC	Description	2022 Jobs	2017-2022 Jobs Change	2017-2022 Jobs % Change	2022-2027 Jobs Change	2022-2027 Jobs % Change	Median Hourly Earnings	2022 Location Quotient	Competitive Effect
35-3030	Waiters and Waitresses	6,982	-3,065	-30.5%	503	7.2%	$12.56	1.13	-455
43-6010	Secretaries and Administrative Assistants	9,524	-3,059	-24.3%	-384	-4.0%	$22.89	0.86	-1,489
43-9060	Office Clerks, General	9,833	-2,172	-18.1%	-327	-3.3%	$21.03	1.08	-839
41-2010	Cashiers	11,078	-2,133	-16.1%	-751	-6.8%	$13.70	1.02	-1,280
31-1130	Nursing Assistants, Orderlies, and Psychiatric Aides	8,514	-2,070	-19.6%	-489	-5.7%	$17.85	1.81	-930
37-2010	Building Cleaning Workers	11,809	-1,656	-12.3%	275	2.3%	$14.50	0.96	-511
35-3020	Fast Food and Counter Workers	9,264	-1,583	-14.6%	308	3.3%	$13.47	0.89	621
29-1140	Registered Nurses	11,059	-1,529	-12.1%	7	0.1%	$37.91	1.09	-2,267
43-3030	Bookkeeping, Accounting, and Auditing Clerks	5,202	-1,392	-21.1%	-128	-2.5%	$22.92	0.94	-1,453
51-9190	Miscellaneous Production Workers	1,856	-1,170	-38.7%	-52	-2.8%	$15.79	0.90	-474
35-3010	Bartenders	2,626	-1,106	-29.6%	105	4.0%	$13.41	1.53	-580
25-9040	Teaching Assistants	3,857	-995	-20.5%	93	2.4%	$14.71	0.87	-708
39-9010	Childcare Workers	3,012	-958	-24.1%	-80	-2.7%	$13.04	0.76	-401
41-2030	Retail Salespersons	12,048	-826	-6.4%	-197	-1.6%	$14.16	0.96	1,051
43-1010	First-Line Supervisors of Office and Administrative Support Workers	4,161	-744	-15.2%	-62	-1.5%	$29.73	0.84	-751
25-1090	Postsecondary Teachers	9,533	-724	-7.1%	258	2.7%	$41.99	1.65	-567
35-9020	Dishwashers	1,613	-722	-30.9%	95	5.9%	$13.83	1.26	-230
43-4180	Reservation and Transportation Ticket Agents and Travel Clerks	184	-692	-79.0%	24	13.1%	$18.07	0.52	-460
41-1010	First-Line Supervisors of Sales Workers	5,000	-663	-11.7%	-67	-1.3%	$24.56	0.89	-522
43-3020	Billing and Posting Clerks	1,553	-650	-29.5%	-17	-1.1%	$22.73	1.07	-475

Source: Lightcast

Rhode Island has particularly strong concentrations in Fishing and Hunting Workers, Computer and Information Research Scientists, and Fiberglass Laminators and Fabricators, all of which have over three-and-a-half times the national average employment share and added jobs from 2017 to 2022. Computer and Information Research Scientists and Fiberglass Laminators and Fabricators are also expected to continue to grow from 2022 to 2027.

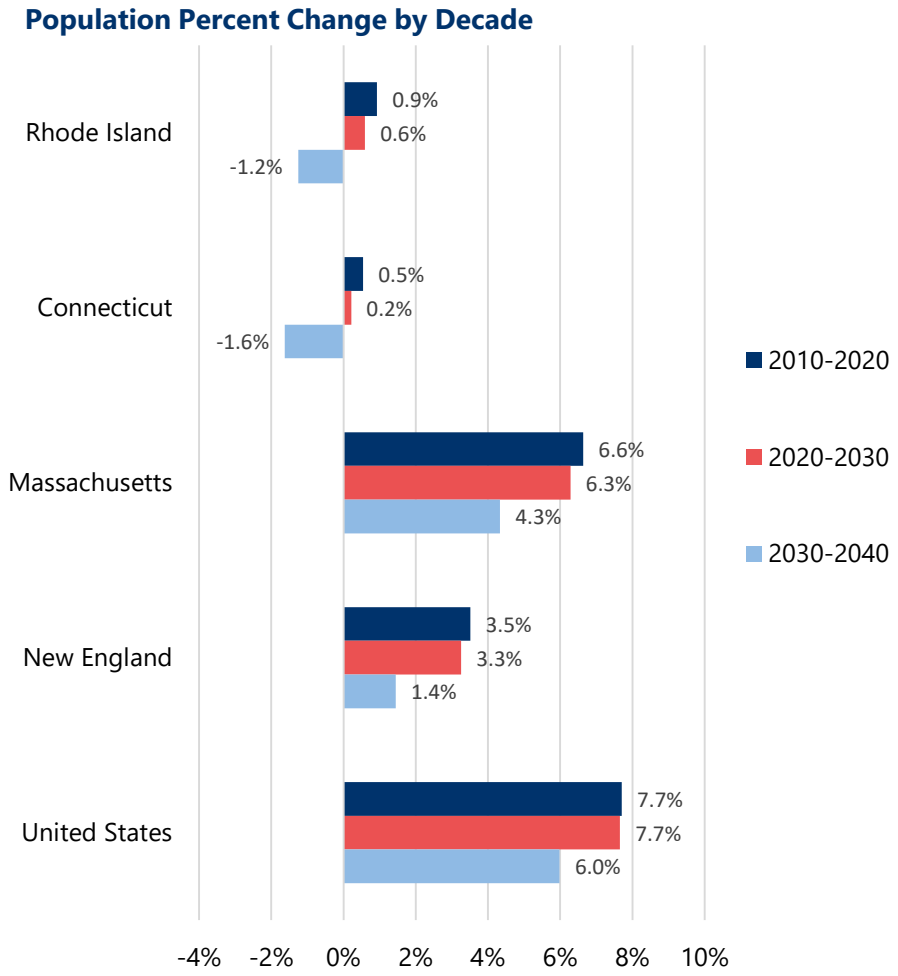
Rhode Island Top 20 4-Digit SOC Occupations by Location Quotient 2022

SOC	Description	2022 Jobs	2017-2022 Jobs Change	2017-2022 Jobs % Change	2022-2027 Jobs Change	2022-2027 Jobs % Change	Median Hourly Earnings	2022 Location Quotient	Competitive Effect
45-3030	Fishing and Hunting Workers	678	4	0.5%	-12	-1.8%	$15.91	6.07	-68
51-9070	Jewelers and Precious Stone and Metal Workers	591	-201	-25.4%	-157	-26.5%	$18.04	4.26	-340
15-1220	Computer and Information Research Scientists	454	25	5.9%	41	9.1%	$56.78	3.99	-43
51-2040	Structural Metal Fabricators and Fitters	782	-491	-38.6%	-71	-9.1%	$25.54	3.76	-251
51-2050	Fiberglass Laminators and Fabricators	233	28	13.4%	8	3.3%	$22.81	3.66	43
51-6060	Textile Machine Setters, Operators, and Tenders	690	-97	-12.4%	-109	-15.9%	$15.67	3.65	95
43-2020	Telephone Operators	44	0	-0.1%	-1	-2.9%	$18.19	3.43	18
39-4010	Embalmers and Crematory Operators	64	45	227.3%	-2	-3.8%	$27.27	3.08	44
43-4010	Brokerage Clerks	372	-309	-45.4%	-37	-10.1%	$22.81	2.83	-119
33-1020	First-Line Supervisors of Firefighting and Prevention Workers	692	91	15.2%	-5	-0.7%	$37.98	2.70	-136
13-2060	Financial Examiners	557	138	33.1%	39	6.9%	$38.92	2.62	60
33-9010	Animal Control Workers	96	30	44.6%	1	0.5%	$23.68	2.58	35
13-1130	Fundraisers	929	1	0.1%	12	1.3%	$31.38	2.56	-107
11-2010	Advertising and Promotions Managers	223	110	97.7%	0	0.2%	$57.80	2.45	118
25-4010	Archivists, Curators, and Museum Technicians	291	33	12.8%	11	3.7%	$24.38	2.44	21
49-3050	Small Engine Mechanics	656	347	112.7%	10	1.6%	$26.14	2.39	318
51-9150	Photographic Process Workers and Processing Machine Operators	62	-50	-44.5%	-7	-11.1%	$18.25	2.38	18
29-1160	Nurse Midwives	56	1	2.6%	0	0.3%	$61.07	2.00	-12
25-3090	Miscellaneous Teachers and Instructors	1,502	-394	-20.8%	30	2.0%	$46.10	1.97	-583
29-9090	Miscellaneous Health Practitioners and Technical Workers	682	276	67.9%	16	2.3%	$28.87	1.96	32

Source: Lightcast

ADDITIONAL MATERIALS

This attachment includes additional data and charts that provide more detail to supplement those in the body of the report.



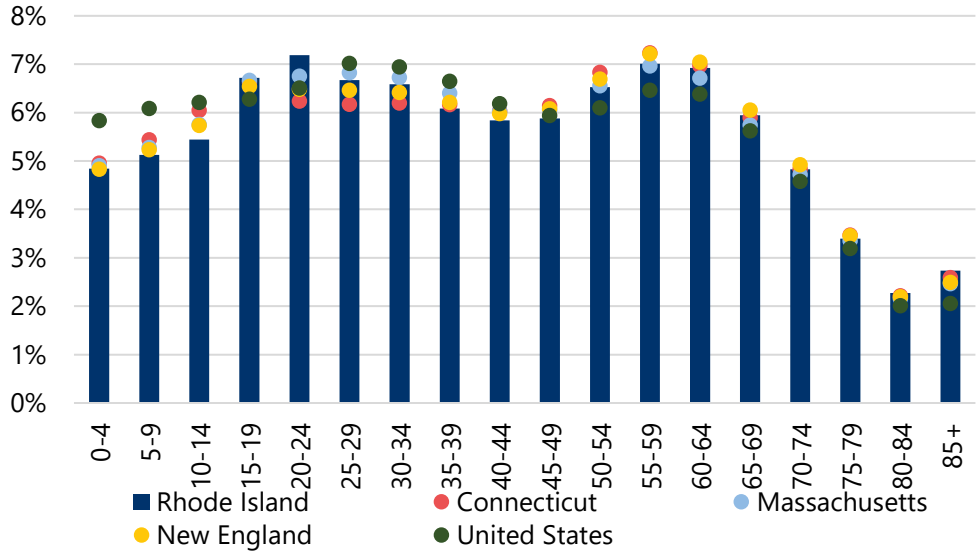
Source: Weldon Cooper

Geographic Mobility by Current Place of Residence, 2021

Region	Population	Same House	Moved, within Same County	Moved, from Different County Same State	Moved, from Different State	Moved, from Abroad
Rhode Island	1,085,539	959,140	59,069	18,622	43,266	5,442
Connecticut	3,571,470	3,168,509	210,215	69,113	106,618	17,015
Massachusetts	6,916,314	6,043,959	433,009	230,145	158,311	50,890
New England	14,952,232	13,163,330	877,159	394,149	436,741	80,853
United States	328,464,538	286,552,923	21,878,668	10,698,453	7,859,837	1,474,657

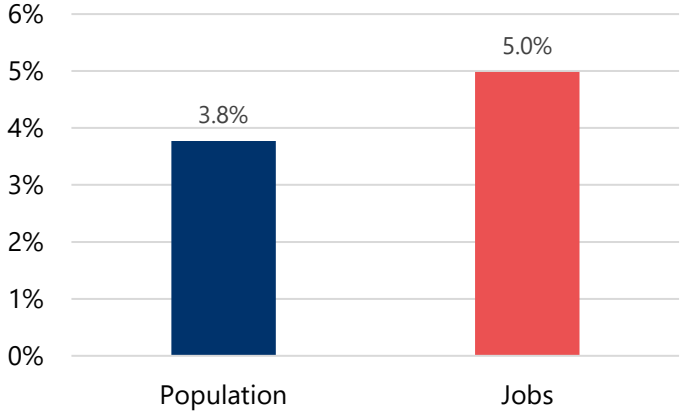
Source: ACS, 1-year Estimates, 2021

Age Distribution, 2022



Source: Esri

Percent Change in Population and Jobs, 2010-2022



Source: Population: Census Population Estimates, 2010-2022; Jobs: Lightcast

Key Industry Metrics by Sector, Rhode Island

NAICS	Description	2022 Jobs	2017-2022 Jobs % Change	2022 Location Quotient
11	Agriculture, Forestry, Fishing and Hunting	2,215	5%	0.34
21	Mining, Quarrying, and Oil and Gas Extraction	303		0.18
22	Utilities	1,108	0%	0.63
23	Construction	27,335	11%	0.89
31	Manufacturing	40,168	-3%	0.99
42	Wholesale Trade	16,051	-6%	0.86
44	Retail Trade	48,175	-5%	0.94
48	Transportation and Warehousing	14,305	19%	0.63
51	Information	5,646	-13%	0.58
52	Finance and Insurance	27,857	-3%	1.25
53	Real Estate and Rental and Leasing	7,515	-6%	0.82
54	Professional, Scientific, and Technical Services	34,736	16%	0.92
55	Management of Companies and Enterprises	12,311	-9%	1.63
56	Admin and Support and Waste Mgmt and Remediation Services	31,690	-1%	0.97
61	Educational Services	31,444	0%	2.24
62	Health Care and Social Assistance	80,339	-4%	1.17
71	Arts, Entertainment, and Recreation	8,255	-26%	1.02
72	Accommodation and Food Services	45,870	-7%	1.14
81	Other Services (except Public Administration)	23,203	-7%	0.87
90	Government	69,513	-2%	0.91
	Total	**528,095**	**-2%**	

Source: Lightcast

Job Change by Sector, 2017-2022

NAICS	Description	Rhode Island	Connecticut	Massachusetts	New England	US
11	Agriculture, Forestry, Fishing and Hunting	5%	5%	38%	20%	3%
21	Mining, Quarrying, and Oil and Gas Extraction	55%	-7%	-13%	4%	-18%
22	Utilities	0%	-8%	12%	4%	-1%
23	Construction	11%	3%	8%	7%	9%
31	Manufacturing	-3%	-4%	-4%	-2%	0%
42	Wholesale Trade	-6%	-9%	-5%	-4%	-3%
44	Retail Trade	-5%	-9%	-7%	-7%	-3%
48	Transportation and Warehousing	19%	36%	8%	15%	23%
51	Information	-13%	-5%	4%	-1%	4%
52	Finance and Insurance	-3%	-7%	1%	-2%	7%
53	Real Estate and Rental and Leasing	-6%	-3%	2%	1%	5%
54	Professional, Scientific, and Technical Services	16%	2%	18%	15%	14%
55	Management of Companies and Enterprises	-9%	-6%	3%	3%	4%
56	Administrative and Support and Waste Management and Remediation Services	-1%	-2%	-1%	-1%	1%
61	Educational Services	0%	4%	8%	6%	8%
62	Health Care and Social Assistance	-4%	3%	2%	2%	6%
71	Arts, Entertainment, and Recreation	-26%	-14%	-16%	-14%	-9%
72	Accommodation and Food Services	-7%	-12%	-19%	-15%	-9%
81	Other Services (except Public Administration)	-7%	-7%	-5%	-6%	-2%
90	Government	-2%	-7%	-2%	-4%	-2%
99	Unclassified Industry	63%	370%	Insf. Data	147%	-6%

Source: Lightcast

Average Earnings per Job, 2022

NAICS	Description	Rhode Island	Connecticut	Massachusetts	New England	US
11	Agriculture, Forestry, Fishing and Hunting	$44,698	$53,889	$79,984	$57,946	$50,190
21	Mining, Quarrying, and Oil and Gas Extraction	$69,828	$84,032	$95,636	$154,053	$129,485
22	Utilities	$165,961	$191,436	$200,110	$187,081	$169,373
23	Construction	$74,950	$78,573	$92,988	$81,710	$74,435
31	Manufacturing	$81,621	$111,090	$121,130	$106,691	$93,916
42	Wholesale Trade	$104,887	$127,117	$140,433	$128,684	$104,544
44	Retail Trade	$46,114	$49,957	$52,517	$49,709	$47,147
48	Transportation and Warehousing	$56,435	$61,710	$71,178	$65,643	$69,468
51	Information	$106,012	$165,577	$174,231	$159,824	$165,778
52	Finance and Insurance	$128,360	$216,732	$204,450	$189,111	$147,219
53	Real Estate and Rental and Leasing	$69,468	$86,185	$104,291	$90,863	$78,190
54	Professional, Scientific, and Technical Services	$103,457	$130,210	$176,650	$153,542	$122,504
55	Management of Companies and Enterprises	$164,305	$180,138	$171,944	$183,804	$163,444
56	Administrative and Support and Waste Management and Remediation Services	$55,649	$61,963	$69,562	$64,752	$57,628
61	Educational Services	$49,413	$65,850	$61,400	$59,398	$53,963
62	Health Care and Social Assistance	$68,630	$73,770	$77,808	$74,974	$70,175
71	Arts, Entertainment, and Recreation	$40,752	$43,226	$53,555	$45,845	$51,011
72	Accommodation and Food Services	$31,497	$32,167	$35,957	$33,927	$30,434
81	Other Services (except Public Administration)	$41,272	$39,963	$43,003	$41,080	$38,244
90	Government	$92,821	$95,482	$101,034	$92,879	$85,844
99	Unclassified Industry	$106,827	$138,819	Insf. Data	$125,473	$86,058

Source: Lightcast

Rhode Island Economic Base, 2-Digit NAICS Industries

NAICS	Description	2022 Jobs	2017-2022 Jobs Change	2017-2022 Jobs % Change	2022-2027 Jobs Change	2022-2027 Jobs % Change	Avg. Earnings Per Job	2022 Location Quotient	Competitive Effect	2021 Payrolled Business Locations	2021 GRP ($ Millions)	2017-2021 GRP % Change
11	Agriculture, Forestry, Fishing and Hunting	2,215	102	4.8%	145	6.6%	$44,698	0.34	42	203	$207.6	-41.7%
21	Mining, Quarrying, and Oil and Gas Extraction	303	107	54.7%	9	3.0%	$69,828	0.18	142	15	$56.5	-38.8%
22	Utilities	1,108	4	0.4%	-58	-5.3%	$165,961	0.63	11	52	$768.6	29.5%
23	Construction	27,335	2,748	11.2%	1,057	3.9%	$74,950	0.89	574	3,998	$3,059.9	19.8%
31	Manufacturing	40,168	-1,077	-2.6%	-748	-1.9%	$81,621	0.99	-1,253	1,511	$6,047.6	12.2%
42	Wholesale Trade	16,051	-1,082	-6.3%	246	1.5%	$104,887	0.86	-607	3,271	$3,399.5	11.7%
44	Retail Trade	48,175	-2,612	-5.1%	-1,935	-4.0%	$46,114	0.94	-1,206	3,905	$4,093.3	23.5%
48	Transportation and Warehousing	14,305	2,244	18.6%	1,296	9.1%	$56,435	0.63	-554	920	$1,064.8	13.6%
51	Information	5,646	-880	-13.5%	-399	-7.1%	$106,012	0.58	-1,139	905	$1,702.3	14.4%
52	Finance and Insurance	27,857	-766	-2.7%	100	0.4%	$128,360	1.25	-2,870	2,008	$7,206.1	13.0%
53	Real Estate and Rental and Leasing	7,515	-489	-6.1%	-217	-2.9%	$69,468	0.82	-893	1,317	$2,360.6	16.9%
54	Professional, Scientific, and Technical Services	34,736	4,789	16.0%	2,870	8.3%	$103,457	0.92	593	7,207	$4,614.6	23.1%
55	Management of Companies and Enterprises	12,311	-1,195	-8.8%	-145	-1.2%	$164,305	1.63	-1,717	299	$2,265.1	5.7%
56	Administrative and Support and Waste Management and Remediation Services	31,690	-186	-0.6%	1,538	4.9%	$55,649	0.97	-661	3,438	$2,221.9	25.8%
61	Educational Services	31,444	-156	-0.5%	904	2.9%	$49,413	2.24	-2,613	820	$1,781.6	-0.1%
62	Health Care and Social Assistance	80,339	-3,184	-3.8%	708	0.9%	$68,630	1.17	-8,053	4,493	$6,313.3	10.5%
71	Arts, Entertainment, and Recreation	8,255	-2,872	-25.8%	789	9.6%	$40,752	1.02	-1,896	713	$473.5	-40.2%
72	Accommodation and Food Services	45,870	-3,643	-7.4%	3,907	8.5%	$31,497	1.14	988	3,264	$2,330.7	21.7%
81	Other Services (except Public Administration)	23,203	-1,857	-7.4%	243	1.0%	$41,272	0.87	-1,298	3,762	$1,326.1	5.5%
90	Government	69,513	-1,222	-1.7%	101	0.1%	$92,821	0.91	287	710	$8,211.5	11.0%
99	Unclassified Industry	57	22	63.0%	-24	-41.8%	$106,827	0.09	24	119	Insf. Data	Insf. Data
	Total	**528,095**	**-11,207**	**-2.1%**	**10,386**	**2.0%**	**$59,872**		**-10,386**	**59,872**	**$70,258.8**	**13.0%**

Source: Lightcast

Competitive Effect by Occupation, 2022

SOC	Description	Rhode Island	Connecticut	Massachusetts	New England
11-0000	Management	-4,211	-12,789	-15,801	-38,084
13-0000	Business and Financial Operations	524	-15,386	69	-14,897
15-0000	Computer and Mathematical	-480	-6,866	-7,571	-18,267
17-0000	Architecture and Engineering	-263	-1,327	-4,727	-6,355
19-0000	Life, Physical, and Social Science	-174	-34	611	582
21-0000	Community and Social Service	-232	-3,903	-4,058	-7,168
23-0000	Legal	689	-833	841	-455
25-0000	Educational Instruction and Library	-1,002	522	756	-2,378
27-0000	Arts, Design, Entertainment, Sports, and Media	-810	-1,790	-2,833	-7,178
29-0000	Healthcare Practitioners and Technical	-3,236	-5,115	-4,618	-18,599
31-0000	Healthcare Support	-3,102	-1,671	-7,966	-23,630
33-0000	Protective Service	-161	-680	2,625	74
35-0000	Food Preparation and Serving Related	1,089	-4,430	-27,810	-31,865
37-0000	Building and Grounds Cleaning and Maintenance	-537	-222	-5,340	-6,660
39-0000	Personal Care and Service	297	-3,055	-4,306	-5,802
41-0000	Sales and Related	-335	-13,402	-2,085	-17,955
43-0000	Office and Administrative Support	-4,941	-14,314	-16,907	-36,894
45-0000	Farming, Fishing, and Forestry	276	-60	3,063	5,814
47-0000	Construction and Extraction	852	-768	2,287	3,384
49-0000	Installation, Maintenance, and Repair	-1,005	-1,733	-4,566	-9,244
51-0000	Production	-1,582	437	3,194	1,908
53-0000	Transportation and Material Moving	-2,172	-5,689	-25,650	-35,493
55-0000	Military-only	-318	-1,327	229	-2,446
99-0000	Unclassified	0	0	0	0

Source: Lightcast

DATA SOURCES

Lightcast (formerly Emsi Burning Glass) is a global leader in labor market analytics, offering a data platform that gives a comprehensive, nuanced, and up-to-date picture of labor markets at all scales from national to local. Key components of the platform include traditional labor market information, job postings analytics, talent profile data, compensation data, and skills analytics. Lightcast integrates government data with information from online job postings, talent profiles, and resumes to produce timely intelligence on the state of the labor market. Job and compensation data is available by industry, occupation, educational program, and skill type. Click to learn more.

Esri ArcGIS Business Analyst combines proprietary statistical models covering demographic, business, and spending data with map-based analytics to offer insights on market opportunities for industries, businesses, and sites. Business Analyst integrates datasets covering a wide range of topics including demographics, consumer spending, market potential, customer segmentation, business locations, traffic counts, and crime indexes, which can be overlaid spatially to produce customizable maps and uncover market intelligence. Data can be pulled for standard and custom geographies, allowing for valuable comparison between places. Click to learn more.

The **American Community Survey** (ACS) is an ongoing statistical survey by the US Census Bureau that gathers demographic and socioeconomic information on age, sex, race, family and relationships, income and benefits, health insurance, education, veteran status, disabilities, commute patterns, and other topics. Mandatory to fill out, the survey is sent to a small sample of the population on a rotating basis. The questions on the ACS are different than those asked on the decennial census and provide ongoing demographic updates of the nation down to the block group level. Click to learn more.

Conducted every ten years in years ending in zero, the **US Decennial Census of Population and Housing** is a complete count of each resident of the nation based on where they live on April 1st of the Census year. The Constitution mandates the enumeration to determine how to apportion the House of Representatives among the states. The latest release of the 2020 Census contains data for a limited number of variables, including: total population by race/ethnicity, population under 18, occupied and vacant housing units, and group quarters population. Click to learn more.

The **Local Area Unemployment Statistics** (LAUS) program estimates total employment and unemployment for approximately 7,500 geographic areas on a monthly basis, from the national level down to the city and town level. LAUS data is offered through the US Bureau of Labor Statistics (BLS) by combining data from the Current Population Survey (CPS), Current Employment Statistics (CES) survey, and state unemployment (UI) systems. Click to learn more.

Population Estimates Program | US Census Bureau

The Census Bureau's **Population Estimates Program** (PEP) produces estimates of the population for the US and its states, counties, cities, and towns. Demographic components of population change—births, deaths, and migration—are produced at the national, state, and county levels. PEP provides population estimates on an annual basis. Click to learn more.

OnTheMap | US Census Bureau

OnTheMap is a tool developed through the US Census Longitudinal Employer-Household Dynamics (LEHD) program that helps to visualize Local Employment Dynamics (LED) data about where workers are employed and where they live. It offers visual mapping capabilities for data on age, earnings, industry distributions, race, ethnicity, educational attainment, and sex. Click to learn more.

Workforce Analysis

APPENDIX E: STATEWIDE DIAGNOSTIC COMPONENT

Ocean State Accelerates

Rhode Island Long-Term Economic Development Strategy

March 2023

camoin associates

www.camoinassociates.com

EXECUTIVE SUMMARY

Overview

Access to workforce is a critical issue for economic development. Lack of workforce constrains business expansion and attraction. This workforce gap analysis compares the projected increase in Rhode Island's labor force from 2022 to 2032 with the expected job openings over the same period. It focuses on the 10 largest gaps for high-, medium-, and low-barrier-to-entry occupations. Earnings and demographic characteristics are presented for each occupation.

Region of Analysis

The state of Rhode Island is the geography throughout this workforce analysis.

Methodology

The 2032 labor force is estimated by projecting the Bureau of Labor Statistics' national age-based labor force participation rates forward 10 years and adjusting them by the difference between Rhode Island's and the US's overall labor force participation rates. These state-adjusted age-based participation rates are then applied to Lightcast's age-based 2032 population projections for Rhode Island to derive the state's 2032 labor force. Subtracting the 2022 labor force from the 2032 labor force gives the labor force change.

The 2022–2032 labor force change is distributed among occupations using the average of each occupation's employment shares in 2022 and 2032. Lightcast provides projected occupational "openings" over the same period (openings include new jobs due to growth as well as replacement of retiring workers and others leaving an occupation). The gap is the difference between job openings and projected labor force for a given occupation. The occupations were then sorted from largest to smallest gap by level of entry barrier.

Key Takeaways

- **Large workforce gap.** The number of workers available over the next 10 years is far below the number of job openings. There are projected to be over 700,000 job openings over the next ten years, while the workforce is only projected to grow by 50,000.
- **Abundant occupations with low barriers to entry.** Low-barrier occupations have the largest projected workforce gaps but also the lowest average earnings and typically a higher potential for automation. Examples include waiters, cashiers, and other retail service workers.
- **Aging workforce.** Over a quarter of workers in top gap high-barrier occupations are aged 55 or older.
- **Opportunity to increase female labor force participation.** Women are underrepresented in occupations with some of the largest workforce gaps, particularly in STEM, trades, and management related occupations.
- **Opportunity to diversify representation of underserved populations across top workforce gap occupations.** Increasing diverse racial and ethnic participation in high- and medium-barrier occupations (and associated career pathways) could help fill gaps.

WORKFORCE ANALYSIS OVERVIEW

The following analysis compares Rhode Island's 2022–2032 projected labor force growth to expected job openings by occupation over the same period. The state's labor force, generally the population age 16 and older, is projected to increase by approximately 52,400 from 2022 to 2032. In contrast, there are projected to be roughly 706,500 job openings over the same period (openings include new jobs created due to growth plus openings from retirement and other regular churn out of the occupation). This leaves a gap of over 654,000 workers by 2032, or an average annual gap of 65,400.

- **Low Barriers to Entry:** High school diploma or equivalent or no formal educational credential needed for entry; less than 5 years of related work experience; and short-term or moderate-term on-the-job training to attain competency
- **Medium Barriers to Entry:** Associate's degree, postsecondary non-degree award, or some college but no degree needed for entry; 5+ years of related work experience; and long-term on-the-job training or an apprenticeship to attain competency
- **High Barriers to Entry:** Bachelor's degree or higher needed for entry

Table 1 summarizes the findings. The largest projected shortfalls are in low-barrier occupations, with the 10 largest gaps representing 157,000 jobs. The top 10 gaps for medium- and high-barrier occupations are less than one-third as large, at 47,500 and 49,300 respectively.

Not surprisingly, both median earnings and age increase with rising barrier levels. The top gap low-barrier occupations earn $12.56 to $21.03 per hour while the top gap high-barrier occupations earn $30.45 to $57.20. Median hourly earnings for all occupations in the state are $22.97. In the top gap low-barrier occupations 22% of workers are age 55 or older versus 29% of those in the top gap high-barrier occupations. Across all occupations, 26.7% of workers are age 55 or older. The top gap medium-barrier occupations fall between the high-barrier and low-barrier groups on these two measures.

Statewide, women make up 51.2% of the employed workforce. However, they represent a larger share of the projected top gap occupations. The average female share ranges from 53% of the top gap medium-barrier occupations to 59% of high-barrier occupations to 63% of low-barrier occupations.

One-fifth of employed Rhode Island workers are not White, with Hispanics representing 10%, African Americans 5%, and Asians 3%. The non-White share is larger among the top gap medium-barrier and low-barrier occupations, at 27% and 30% respectively. Slightly less than one-fifth of workers in the top gap high-barrier occupations are not White.

Table 1

Summary Rhode Island Top Gap Occupations Metrics, 2022

Barriers to Entry	2022 Jobs	2022–2032 Gap	Median Hourly Earnings Range	Average Share Age 55+	Average Share Female	Average Share NonWhite
High Barriers	57,991	(49,302)	$30.45–$57.20	28.8%	59.3%	18.8%
Medium Barriers	38,782	(47,518)	$14.04–$29.07	27.1%	53.2%	26.8%
Low Barriers	91,381	(157,026)	$12.56–$21.03	22.3%	63.4%	29.6%
All Occupations	**535,941**	**(654,077)**	**$57.20**	**26.7%**	**51.2%**	**20.0%**

Source: Lightcast, Bureau of Labor Statistics

HIGH-BARRIER TOP GAP OCCUPATIONS

The 10 high-barrier occupations with the largest projected gaps are shown in Table 2. Average annual gaps range from 873 Postsecondary Teachers to 301 Business Operations Specialists. Together, these 10 occupations represent an annual shortfall of 4,930 workers, roughly 8% of the state's total gap.

Table 2

Rhode Island Largest Projected High-Barrier Occupational Gaps, 2032

			2022–2032 Projections				
SOC	Description	2022 Jobs[1]	Labor Force Change[2]	–	Openings[3]	= Gap	Average Annual Gap
25-1099	Postsecondary Teachers	9,649	937		9,672	(8,735)	(873)
11-1021	General and Operations Managers	6,860	685		7,421	(6,735)	(674)
29-1141	Registered Nurses	11,063	1,064		7,168	(6,105)	(610)
13-2011	Accountants and Auditors	6,475	628		6,326	(5,698)	(570)
13-1111	Management Analysts	4,641	464		5,227	(4,763)	(476)
13-1161	Market Research Analysts and Marketing Specialists	3,339	340		4,226	(3,886)	(389)
15-1252	Software Developers	3,829	413		4,182	(3,769)	(377)
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	5,175	504		4,080	(3,576)	(358)
25-2021	Elementary School Teachers, Except Special Education	3,969	389		3,412	(3,023)	(302)
13-1199	Business Operations Specialists, All Other	2,992	295		3,307	(3,012)	(301)
Total		**57,991**	**5,718**		**55,020**	**(49,302)**	**(4,930)**

1. Source: Lightcast

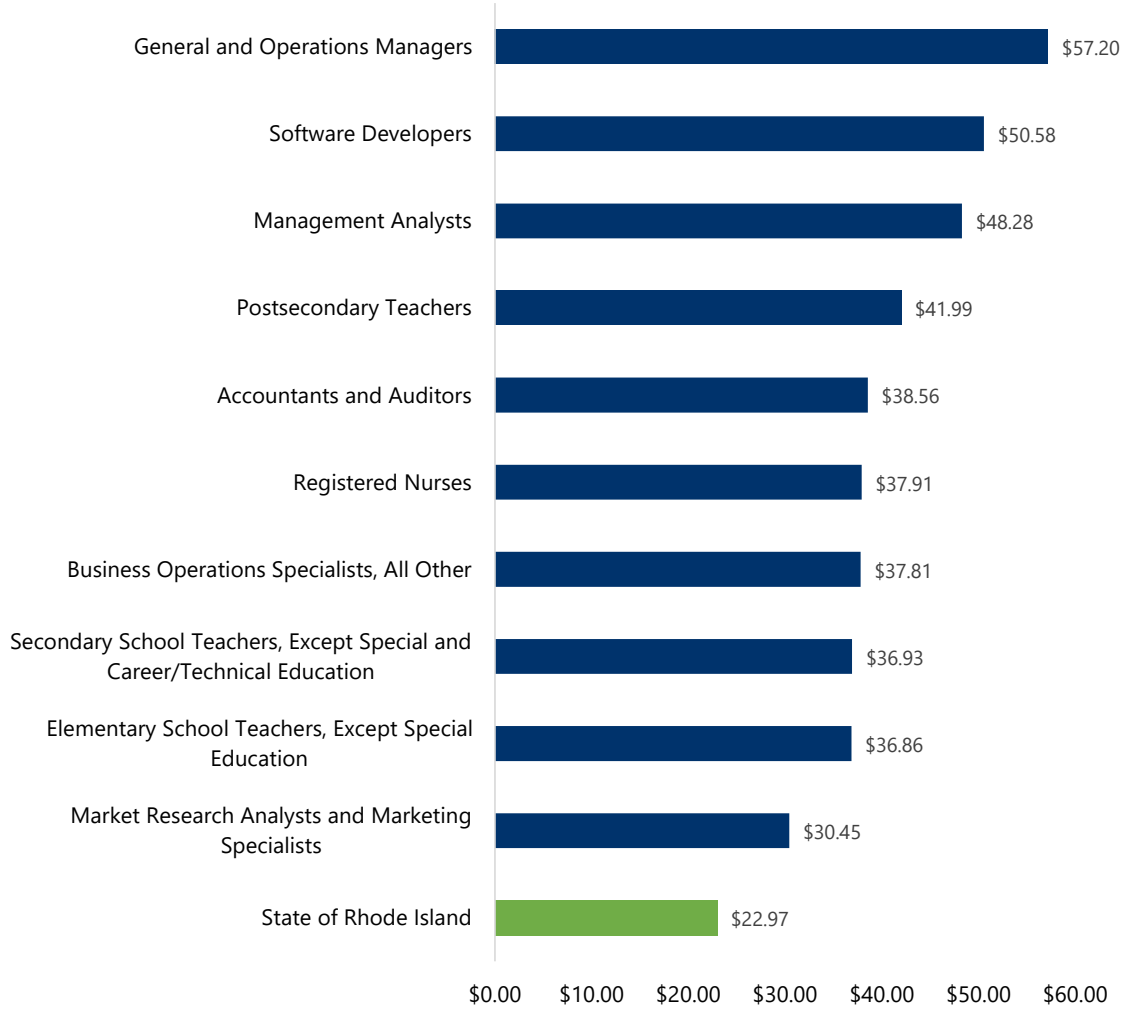
2. Labor force change = (Total 2022–2032 change in labor force) x (average of occupation's 2022 and 2032 shares of total employment). Source: Camoin model using data from the BLS and Lightcast.

3. Openings = projected new jobs + replacement jobs (jobs that will need to be filled by new hires due to existing workers retiring or a worker otherwise exiting the occupation). Source: Lightcast

All of the high-barrier top gap occupations have median hourly earnings above the statewide median of $22.97 (see Figure 1). Market Research Analysts and Marketing Specialists have the lowest median earnings of the high-barrier occupations at $30.45 per hour. The highest earnings go to General and Operations Managers at $57.20.

Figure 1

Median Hourly Earnings for High-Barrier Top Gap Occupations, 2022



Source: Lightcast

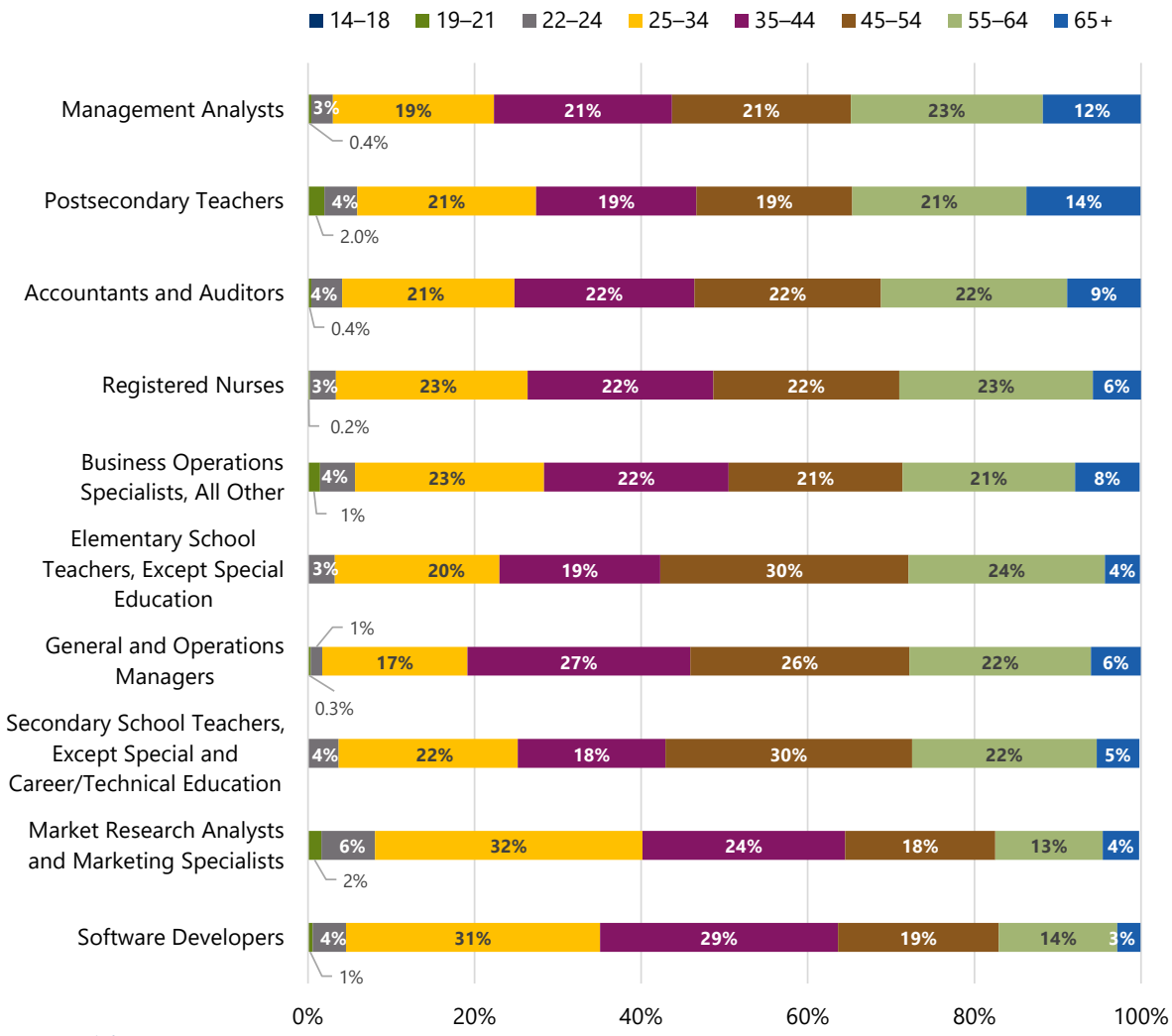
Demographics

Management Analysts and Postsecondary Teachers are the most exposed to retirement risk, with 35% of each occupation currently age 55 or older (see Figure 2).

Market Research Analysts and Marketing Specialists and Software Developers are the youngest high-barrier occupations, with just 17% of each age 55 or older.

Figure 2

Age Distribution for High-Barrier Top Gap Occupations, 2022



Source: Lightcast

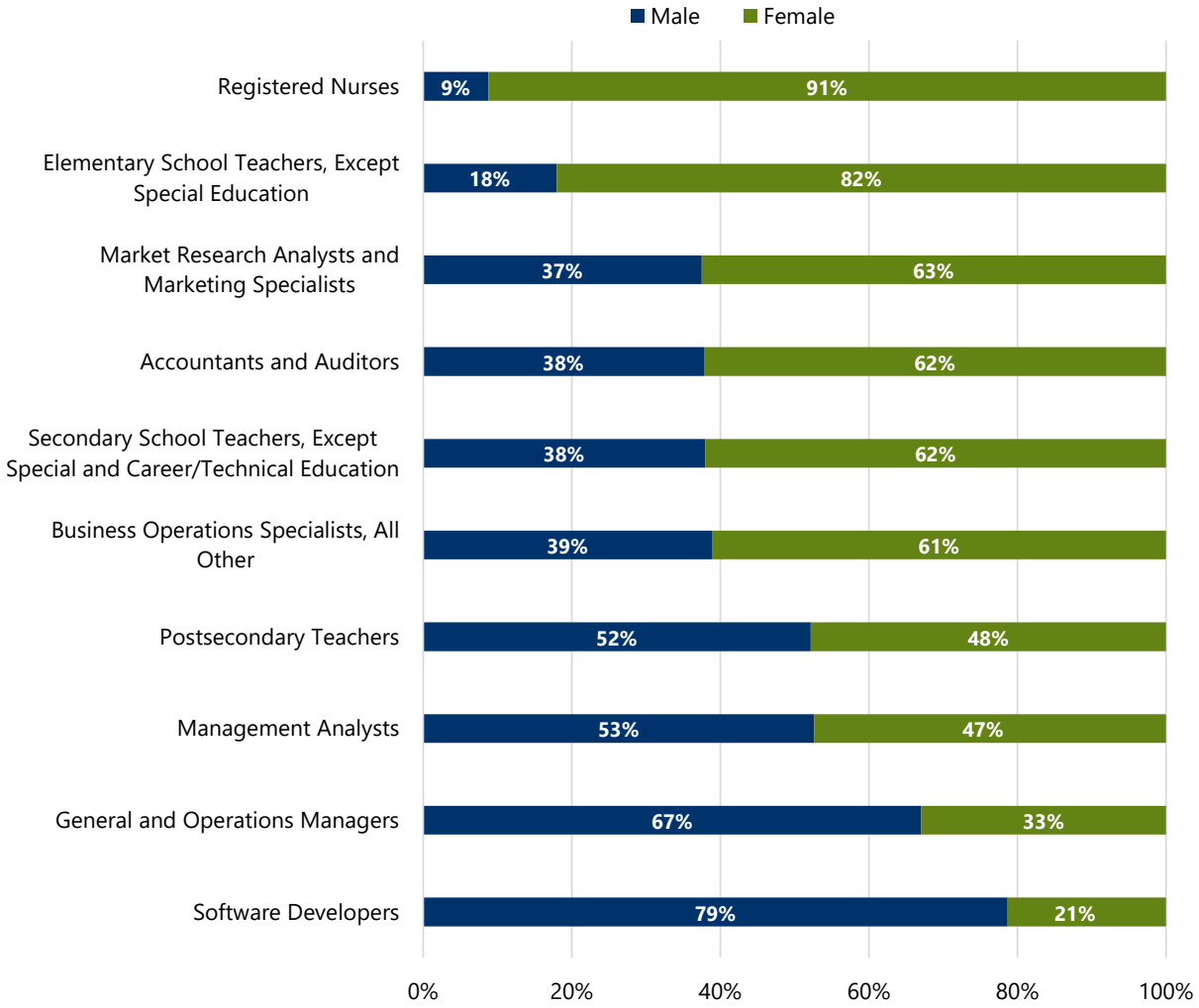
Registered Nurses have the highest share of women among high-barrier top gap occupations, with males representing only 9% of the current workforce.

At the other end are Software Developers, who are 79% male and 21% female.

The most evenly split occupations are Postsecondary Teachers and Management Analysts, with 48% and 47% women, respectively.

Figure 3

Sex Distribution for High-Barrier Top Gap Occupations, 2022



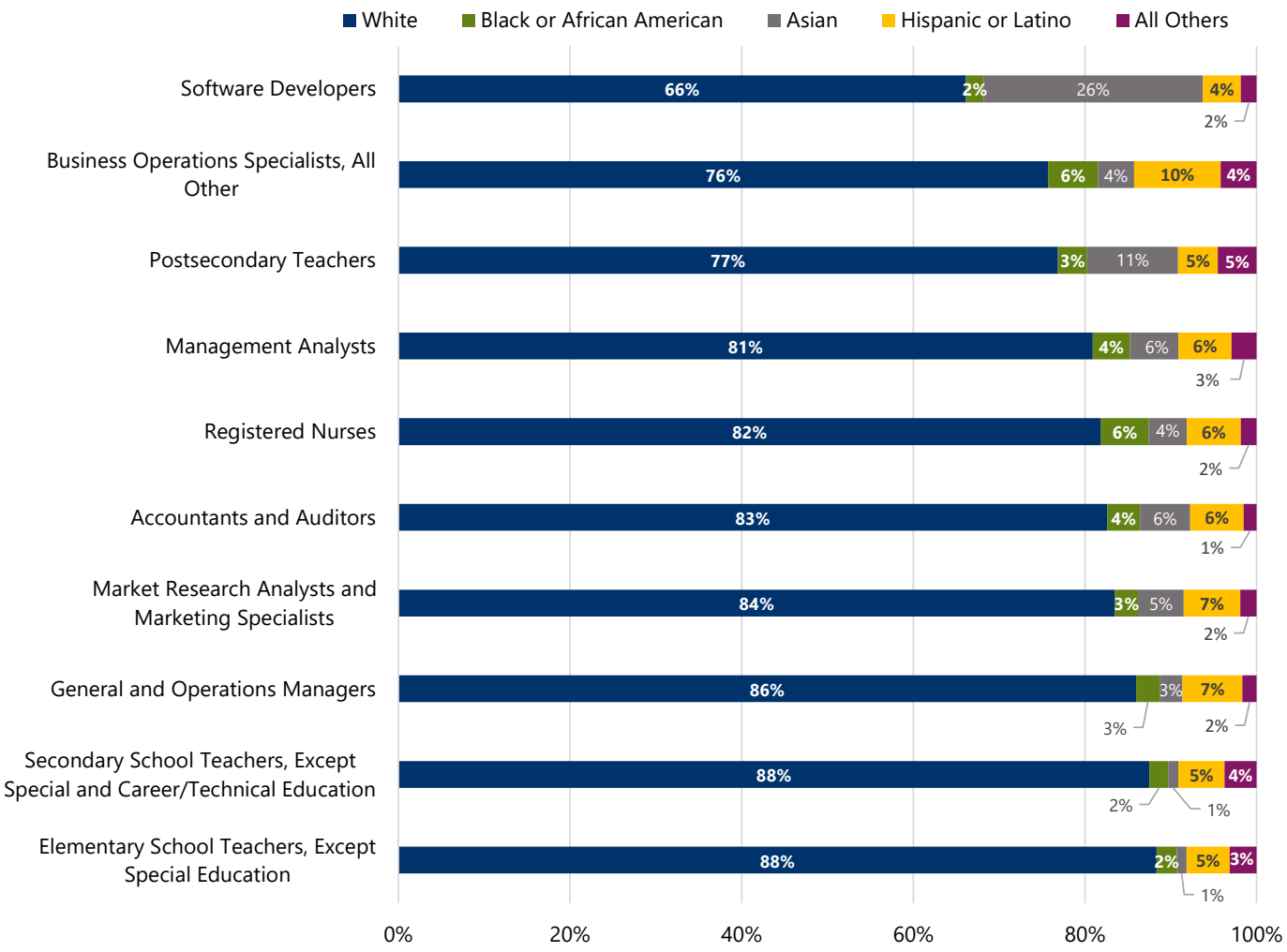
Source: Lightcast

At 66% White, Software Developers have the largest minority participation, with 26% Asian, 4% Hispanic, 2% Black, and 2% some other race, including multiple races.

Elementary and Secondary School Teachers have the lowest shares of minorities, with 88% of the workforce of each identifying as White. The largest minority group in both levels of teachers is Hispanics, who make up 5% of Elementary and Secondary School Teachers.

Figure 4

Race/Ethnicity Distribution for High-Barrier Top Gap Occupations, 2022



Source: Lightcast

MEDIUM-BARRIER TOP GAP OCCUPATIONS

The 10 medium-barrier occupations with the largest projected gaps are shown in **Error! Reference source not found.**. Average annual gaps range from 1,095 Nursing Assistants to 259 Plumbers, Pipefitters, and Steamfitters. Together, these 10 occupations represent an annual shortfall of 4,752 workers, roughly 7% of the state's total gap.

Table 3

Rhode Island Largest Projected Medium-Barrier Occupational Gaps, 2032

			2022–2032 Projections				
SOC	Description	2022 Jobs[1]	Labor Force Change[2]	–	Openings[3]	= Gap	Average Annual Gap
31-1131	Nursing Assistants	8,073	734		11,685	(10,951)	(1,095)
43-3031	Bookkeeping, Accounting, and Auditing Clerks	5,289	498		6,722	(6,224)	(622)
31-9092	Medical Assistants	3,261	325		5,312	(4,987)	(499)
53-3032	Heavy and Tractor-Trailer Truck Drivers	3,949	388		5,317	(4,929)	(493)
47-2031	Carpenters	4,617	452		5,011	(4,559)	(456)
25-9045	Teaching Assistants, Except Postsecondary	3,595	355		4,883	(4,528)	(453)
39-5012	Hairdressers, Hairstylists, and Cosmetologists	2,217	218		3,521	(3,302)	(330)
47-2111	Electricians	2,512	247		3,004	(2,757)	(276)
49-3023	Automotive Service Technicians and Mechanics	2,774	265		2,954	(2,690)	(269)
47-2152	Plumbers, Pipefitters, and Steamfitters	2,495	242		2,832	(2,590)	(259)
Total		**38,782**	**3,722**		**51,240**	**(47,518)**	**(4,752)**

1. Source: Lightcast

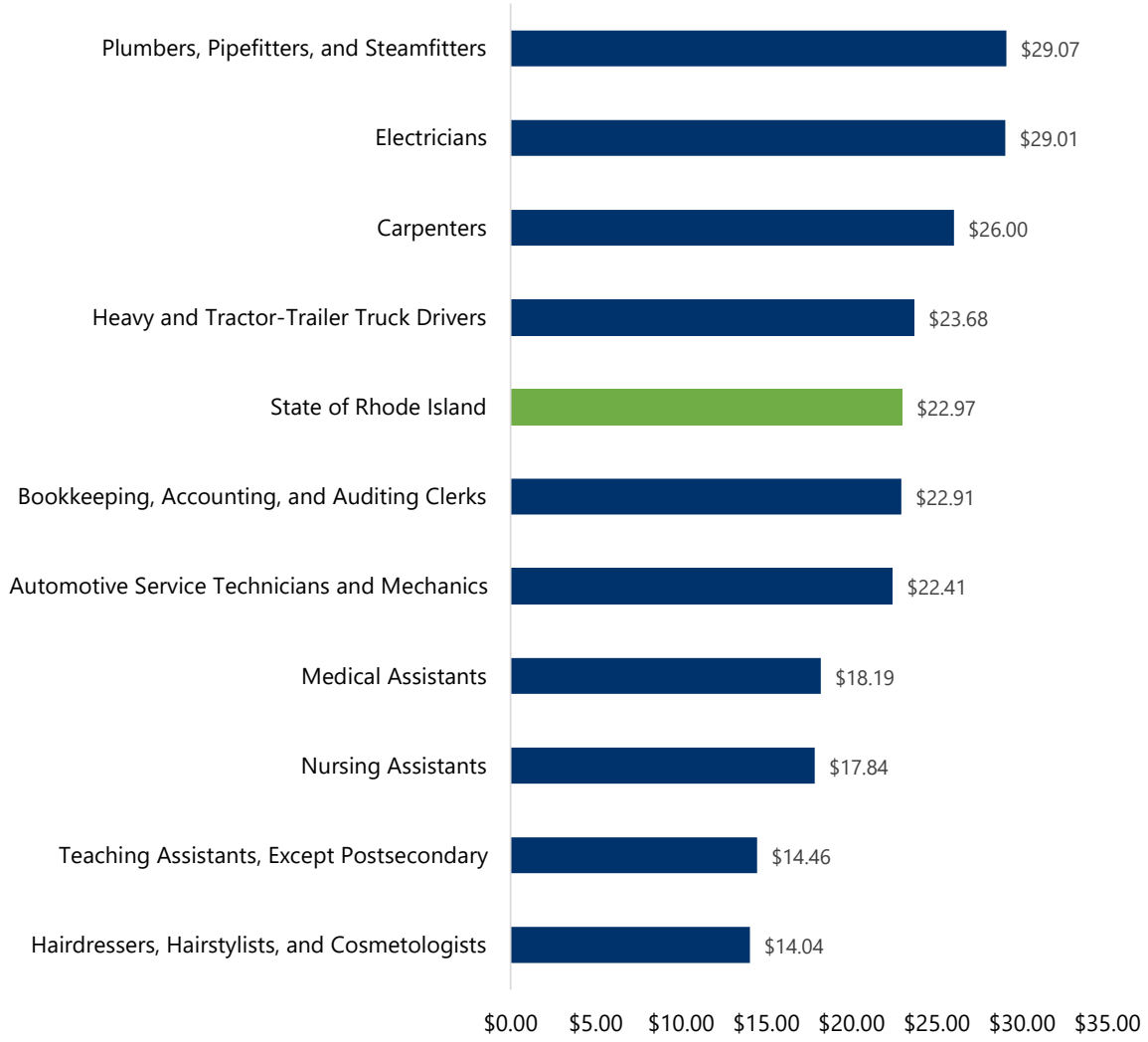
2. Labor force change = (Total 2022–2032 change in labor force) x (average of occupation's 2022 and 2032 shares of total employment). Source: Camoin model using data from the BLS and Lightcast.

3. Openings = projected new jobs + replacement jobs (jobs that will need to be filled by new hires due to existing workers retiring or a worker otherwise exiting the occupation). Source: Lightcast

Four of the 10 medium-barrier top gap occupations have median hourly earnings above the statewide median: Heavy and Tractor-Trailor Truck Drivers ($23.68), Carpenters ($26.00), Electricians ($29.01), and Plumbers, Pipefitters, and Steamfitters ($29.07) (see Figure 5). Hairdressers, Hairstylists, and Cosmetologists and Teaching Assistants have the lowest median earnings of the medium-barrier occupations at $14.04 and $14.46 per hour, respectively.

Figure 5

Median Hourly Earnings for Medium-Barrier Top Gap Occupations, 2022



Source: Lightcast

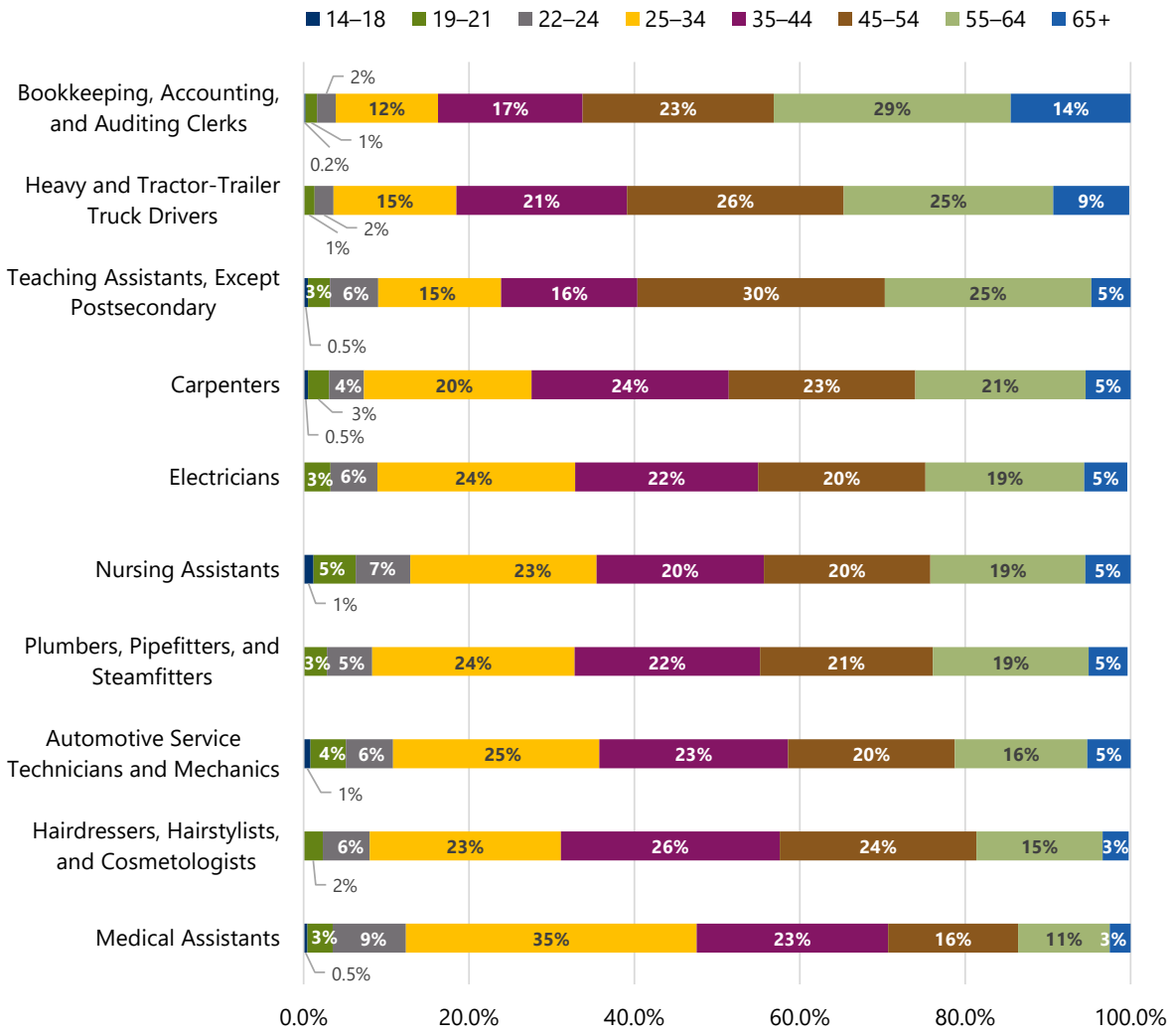
Demographics

Bookkeeping, Accounting, and Auditing Clerks are the most exposed to retirement risk, with 43% of current workers age 55 or older (see Figure 6). Over one-third (34%) of Heavy and Tractor-Trailer Truck Drivers are also 55 or older.

Medical Assistants and Hairdressers, Hairstylists, and Cosmetologists are the youngest medium-barrier occupations, with 14% and 18%, respectively, over 55.

Figure 6

Age Distribution for Medium-Barrier Top Gap Occupations, 2022



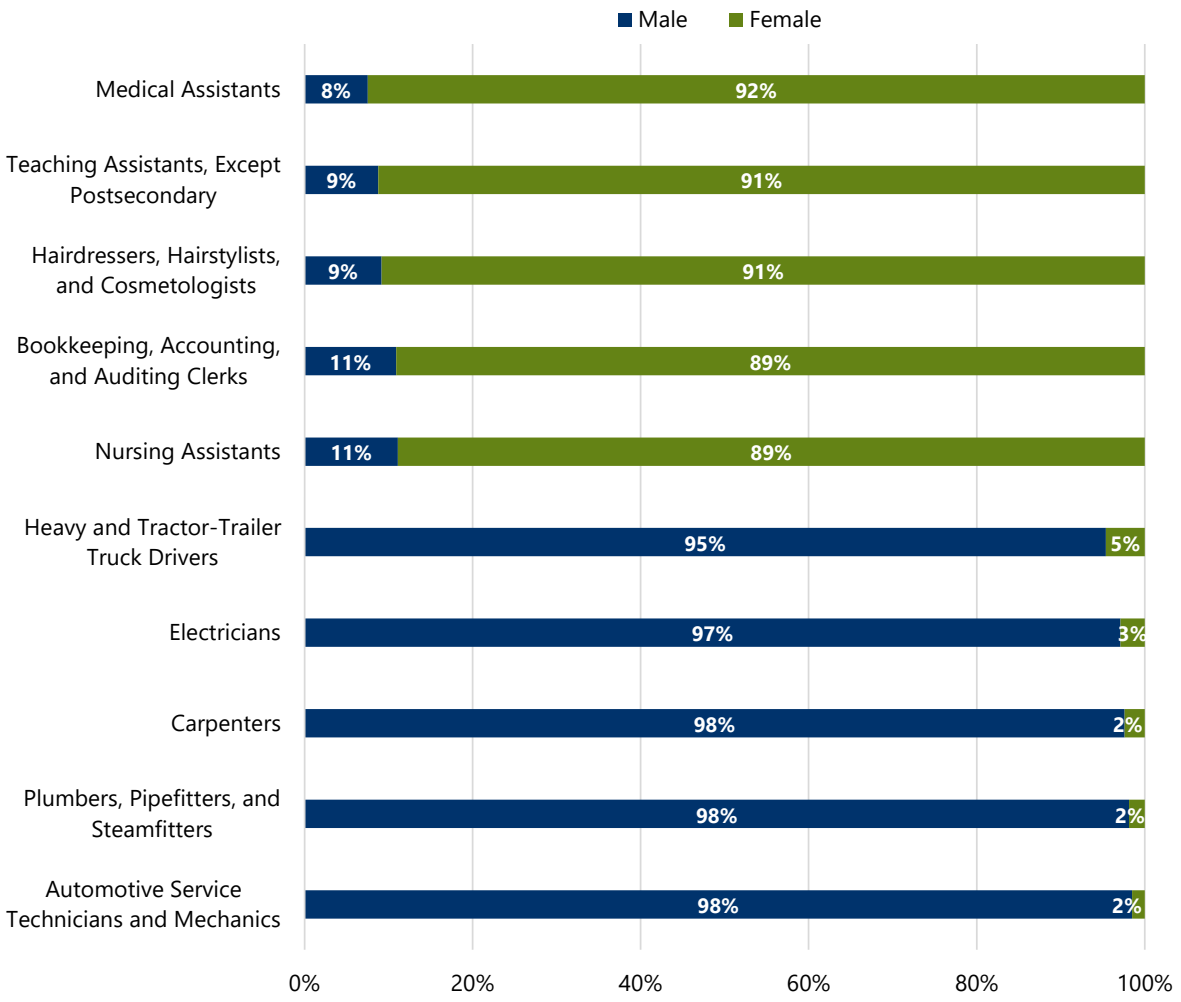
Source: Lightcast

The 10 medium-barrier top gap occupations are evenly divided between female- and male-dominated occupations. Half are filled predominantly by women. Medical Assistants, Teaching Assistants, and Hairdressers, Hairstylists, and Cosmetologists are all more than 90% female. Bookkeeping, Accounting, and Auditing Clerks and Nursing Assistants are close behind with an 89% female workforce.

Truck Drivers, Electricians, Carpenters, Plumbers, Pipefitters, and Steamfitters, and Automotive Service Technicians and Mechanics are all at least 95% male.

Figure 7

Sex Distribution for Medium-Barrier Top Gap Occupations, 2022



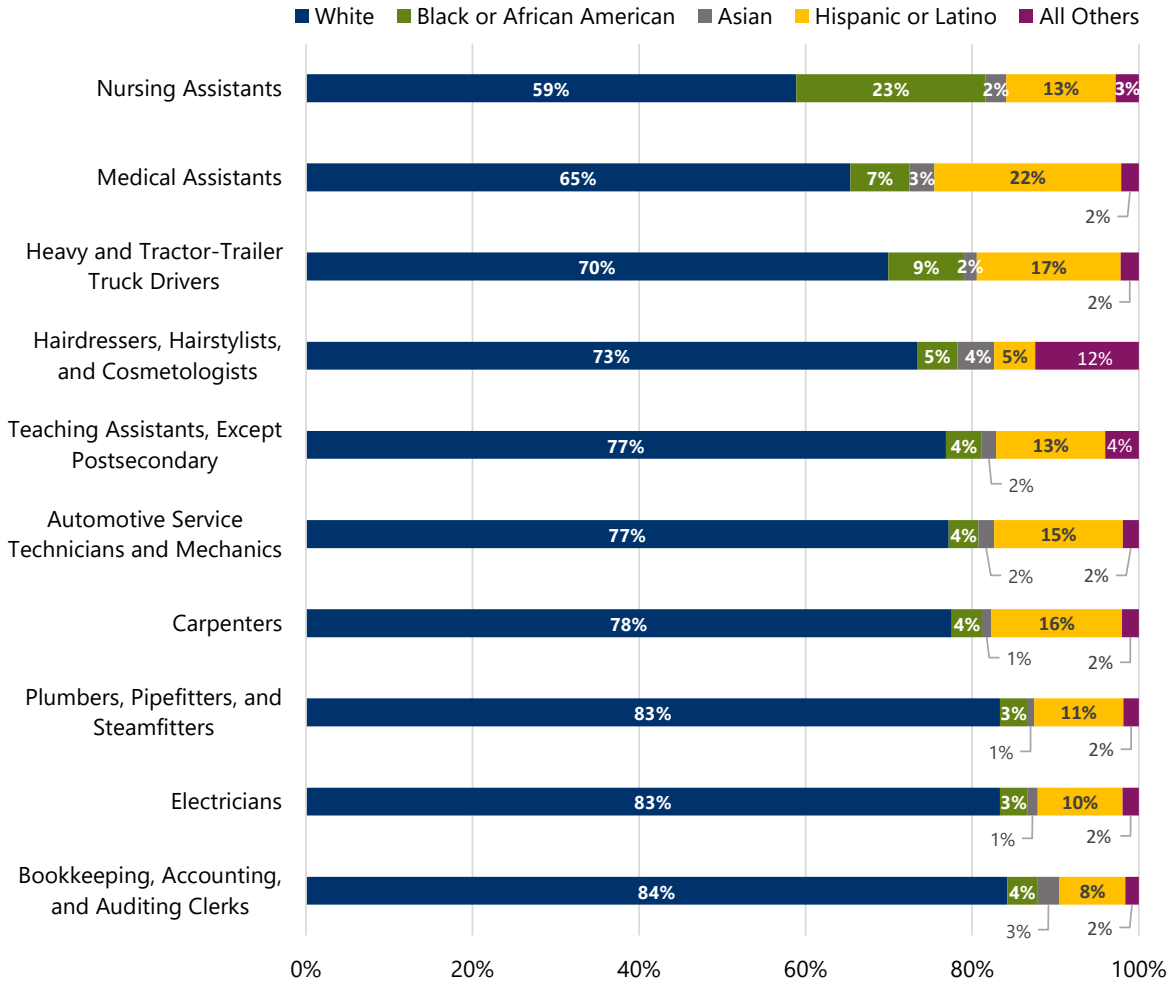
Source: Lightcast

At 59% White, Nursing Assistants have the largest minority representation, with 23% Black, 13% Hispanic, 2% Asian, and 3% some other race or multiple races.

Plumbers, Pipefitters, and Steamfitters, Electricians, and Bookkeeping, Accounting, and Auditing Clerks have the lowest shares of minorities, with at least 83% of the workforce identifying as White. Hispanics are the largest minority group in each occupation, representing 8% to 11% of workers.

Figure 8

Race/Ethnicity Distribution for Medium-Barrier Top Gap Occupations, 2022



Source: Lightcast

LOW-BARRIER TOP GAP OCCUPATIONS

The 10 low-barrier occupations with the largest projected gaps are shown in Table 3. Average annual gaps range from 2,207 Fast Food and Counter Workers to 1,126 Stockers and Order Fillers. Together, these 10 occupations represent an annual shortfall of 15,703 workers, 24% of the state's total gap.

Table 3

Rhode Island Largest Projected Low-Barrier Occupational Gaps, 2032

			2022–2032 Projections				
SOC	Description	2022 Jobs[1]	Labor Force Change[2]	–	Openings[3]	= Gap	Average Annual Gap
35-3023	Fast Food and Counter Workers	9,564	942		23,014	(22,072)	(2,207)
41-2011	Cashiers	11,311	1,034		20,995	(19,961)	(1,996)
35-3031	Waiters and Waitresses	7,628	789		19,025	(18,236)	(1,824)
41-2031	Retail Salespersons	12,384	1,190		19,292	(18,102)	(1,810)
31-1128	Home Health and Personal Care Aides	9,421	945		16,774	(15,829)	(1,583)
35-2014	Cooks, Restaurant	6,961	767		15,290	(14,523)	(1,452)
43-4051	Customer Service Representatives	10,221	956		14,708	(13,752)	(1,375)
43-9061	Office Clerks, General	10,020	936		12,826	(11,890)	(1,189)
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	7,581	747		12,151	(11,405)	(1,140)
53-7065	Stockers and Order Fillers	6,291	615		11,871	(11,256)	(1,126)
Total		**91,381**	**8,921**		**165,947**	**(157,026)**	**(15,703)**

1. Source: Lightcast

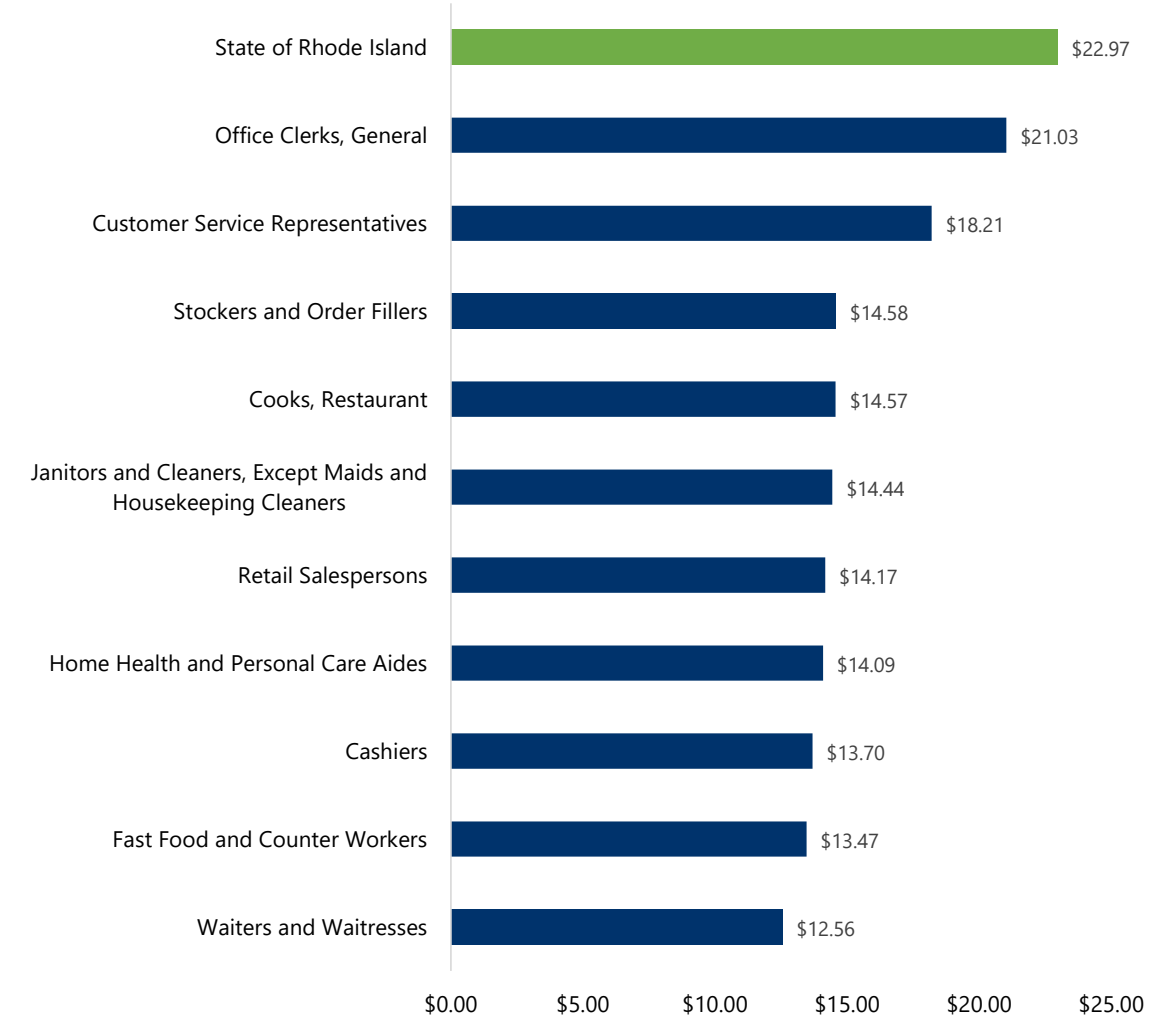
2. Labor force change = (Total 2022–2032 change in labor force) x (average of occupation's 2022 and 2032 shares of total employment). Source: Camoin model using data from the BLS and Lightcast.

3. Openings = projected new jobs + replacement jobs (jobs that will need to be filled by new hires due to existing workers retiring or a worker otherwise exiting the occupation). Source: Lightcast

All of the 10 low-barrier top gap occupations have median hourly earnings below the statewide median. Eight earn less than $15 per hour; Waiters and Waitresses earn the least, with a median of $12.56 per hour. The highest earners are General Office Clerks, with a median of $21.03.

Figure 9

Median Hourly Earnings for Low-Barrier Top Gap Occupations, 2022



Source: Lightcast

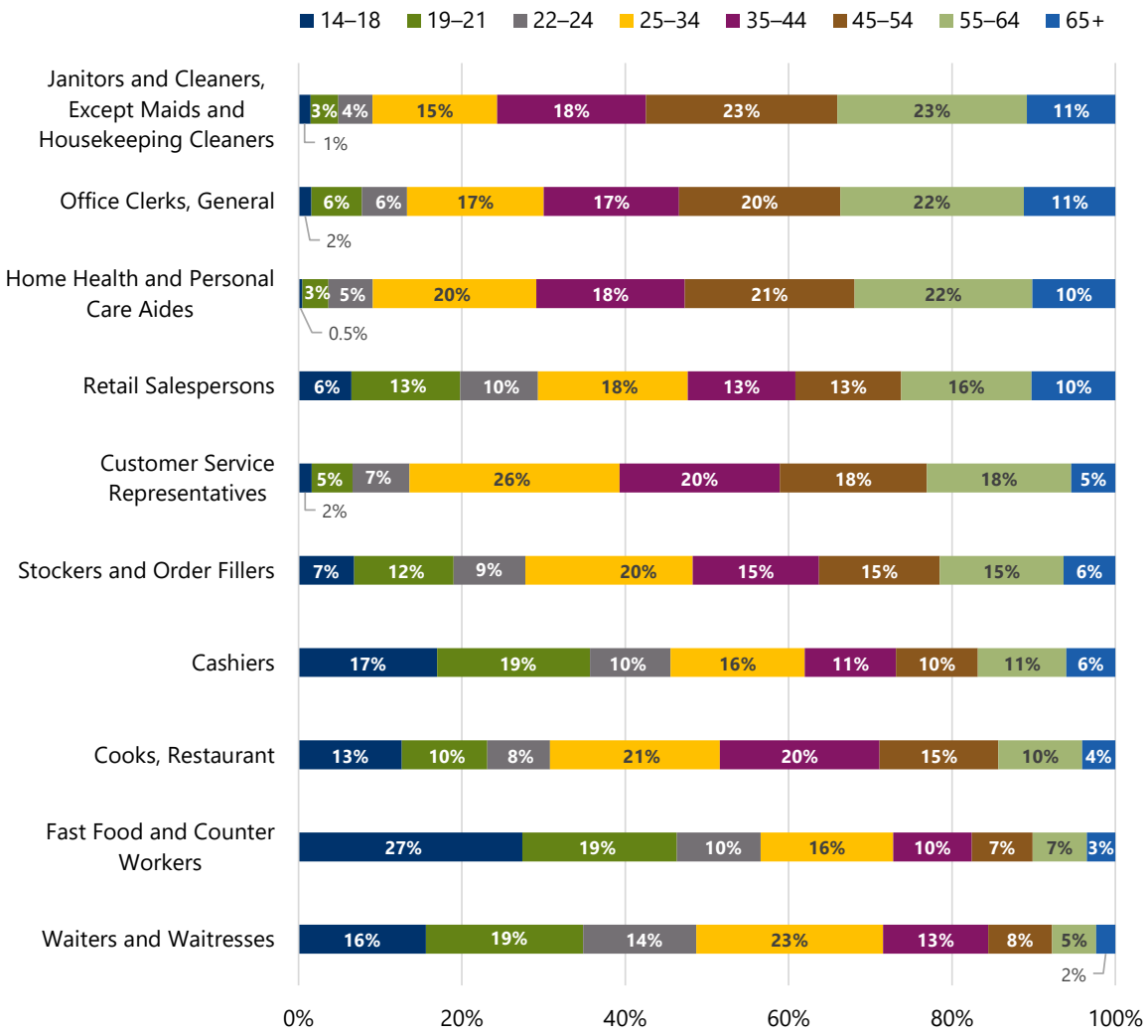
Demographics

More than 40% of Janitors and Cleaners, General Office Clerks, and Home Health and Personal Care Aides are currently age 55 or older (see Figure 10).

Restaurant Cooks, Fast Food and Counter Workers, and Waiters and Waitresses are the youngest low-barrier occupations, with 14% or less over age 55. Just 7% of Waiters and Waitresses are over 55.

Figure 10

Age Distribution for Low-Barrier Top Gap Occupations, 2022



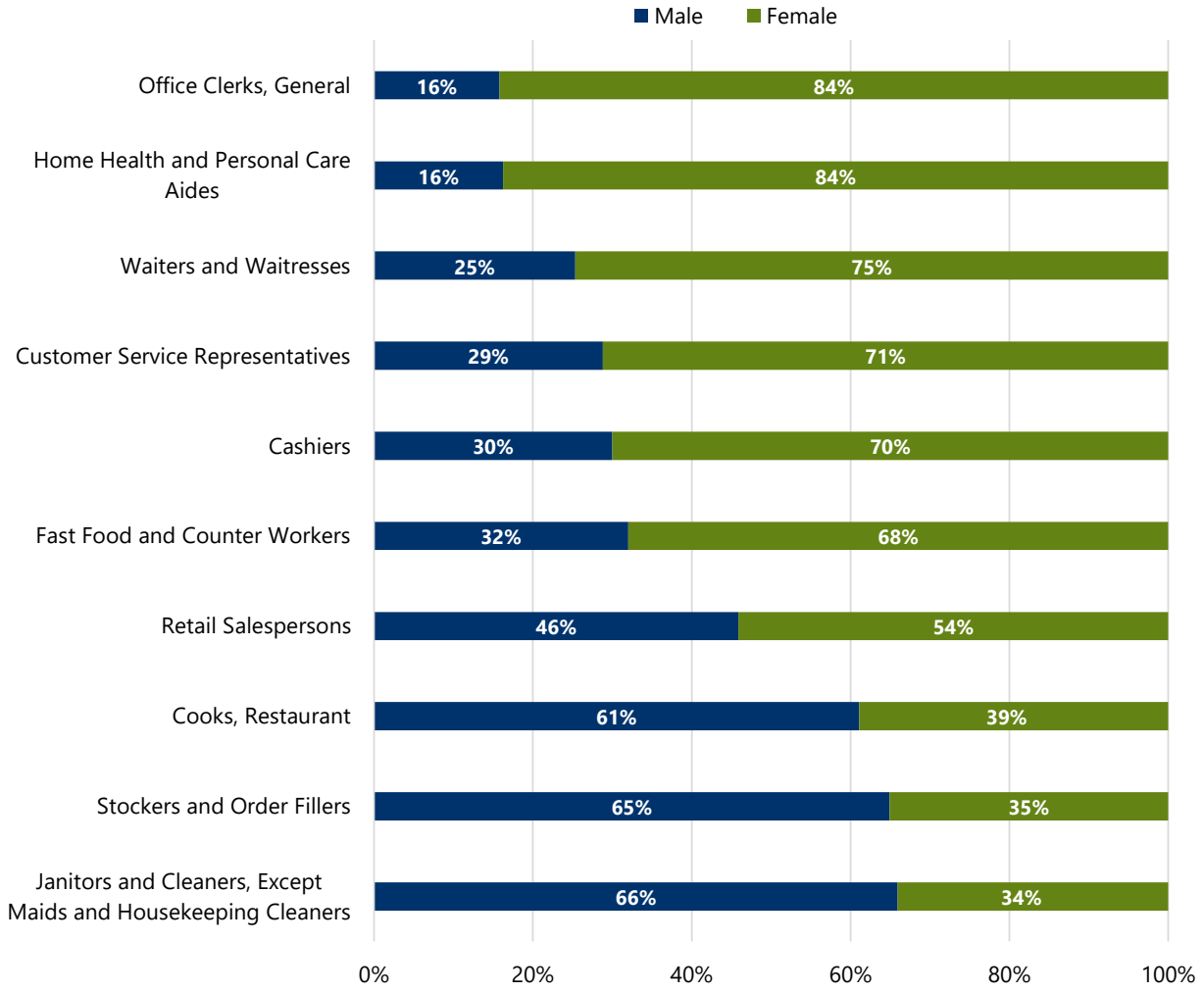
Source: Lightcast

Seven of the 10 low-barrier top gap occupations have predominantly female workforces. Retail Salespersons are the closest to parity at 54% female. General Office Clerks have the highest concentration of women, with 84% of the workforce.

Restaurant Cooks, Stockers and Order Fillers, and Janitors and Cleaners are majority-male occupations, with workforces ranging from 61% to 66% male.

Figure 11

Sex Distribution for Low-Barrier Top Gap Occupations, 2022



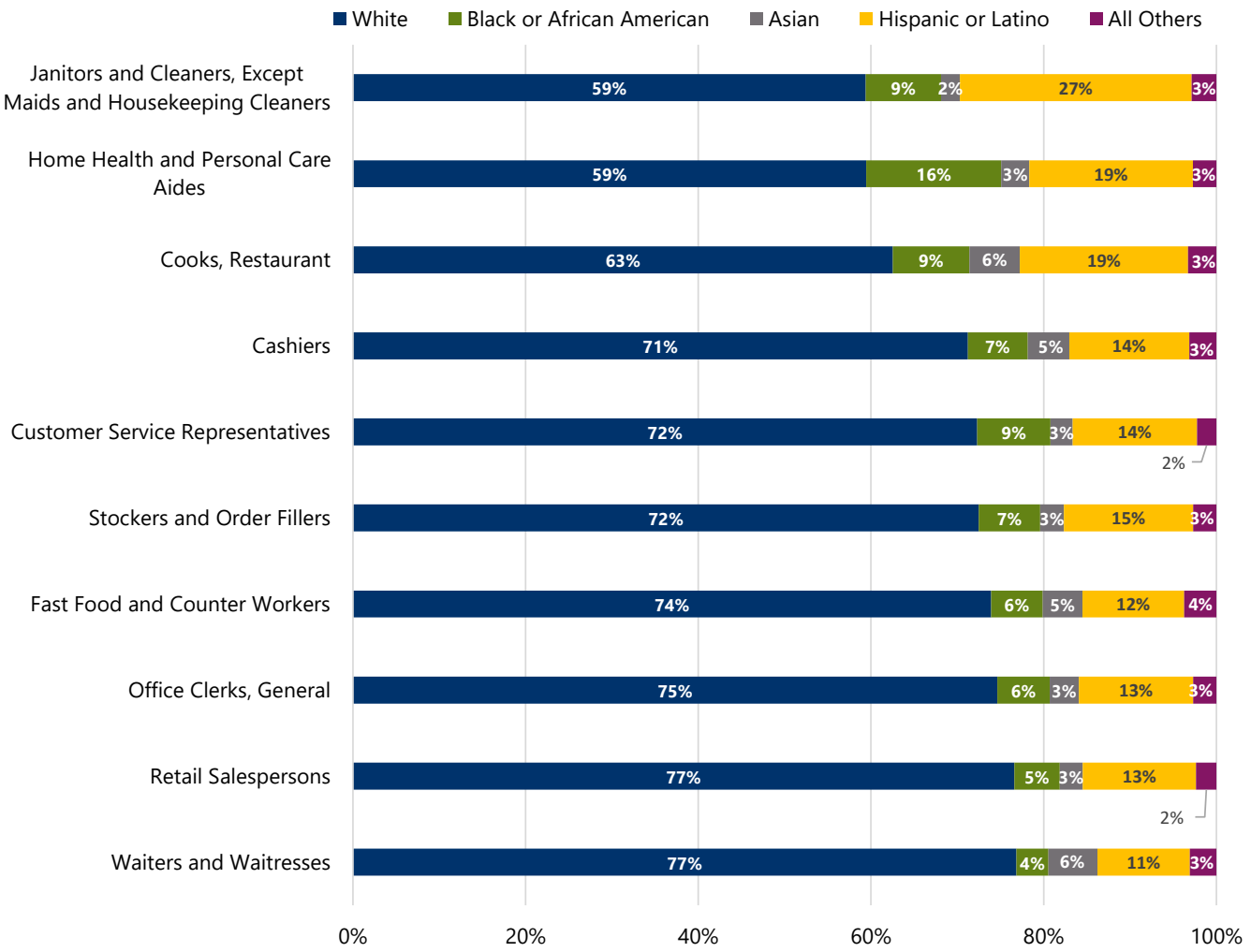
Source: Lightcast

At 59% White, Janitors and Cleaners and Home Health and Personal Care Aides have the largest minority representation. Over one-quarter, 27%, of Janitors and Cleaners and 19% of Home Health and Personal Care Aides are Hispanic; 16% of Home Health and Personal Care Aides are Black as are 9% of Janitors and Cleaners.

Three of the low-barrier top gap occupations are at least 75% White: General Office Clerks, Retail Salespersons, and Waiters and Waitresses. Hispanics are the largest minority among these occupations, accounting for 11% of Waiters and Waitresses and 13% of Retail Salespersons and General Office Clerks. Black workers represent 4% to 6% of these three occupations and Asians make up 3% to 6%.

Figure 12

Race/Ethnicity Distribution for Low-Barrier Top Gap Occupations, 2022



Source: Lightcast

DATA SOURCES

Lightcast (formerly Emsi Burning Glass) is a global leader in labor market analytics, offering a data platform that gives a comprehensive, nuanced, and up-to-date picture of labor markets at all scales from national to local. Key components of the platform include traditional labor market information, job postings analytics, talent profile data, compensation data, and skills analytics. Lightcast integrates government data with information from online job postings, talent profiles, and resumes to produce timely intelligence on the state of the labor market. Job and compensation data is available by industry, occupation, educational program, and skill type. Click to learn more.

The **Local Area Unemployment Statistics** (LAUS) program estimates total employment and unemployment for approximately 7,500 geographic areas on a monthly basis, from the national level down to the city and town level. LAUS data is offered through the US Bureau of Labor Statistics (BLS) by combining data from the Current Population Survey (CPS), Current Employment Statistics (CES) survey, and state unemployment (UI) systems. Click to learn more.

National Indicators Analysis

APPENDIX E: STATEWIDE DIAGNOSTIC COMPONENT
Ocean State Accelerates
Rhode Island Long-Term Economic Development Strategy

March 2023

camoin associates
www.camoinassociates.com

NATIONAL INDICATORS OVERVIEW

The following data analysis highlights the fundamentals of economic prosperity in the State of Rhode Island.

Camoin Associates developed a series of indicators for the state to represent a framework around 6 I's*:

- Infrastructure
- Innovation
- Intellectual Capital
- Interest
- International
- Investment

The development of the indicators considered population differences and other demographic anomalies that may affect the data results.

In some cases, the differential between scoring is nominal and therefore rankings should be carefully considered.

The results of the data analysis are intended to guide the State in the development of its Long-Term Economic Development Strategy, which includes its Comprehensive Economic Development Strategy (CEDS).

This data was presented to the State to generate discussion about economic strengths and weaknesses, highlight Rhode Island's competitive advantages, and provide a framework for CEDS engagement and analysis.

This is also valuable information for the State to determine how and where specific investments will move the needle on economic prosperity.

METHODOLOGY

- Camoin Associates has compiled metrics that quantify the components of the 6 I's, requisite drivers for a region's economic prosperity while acknowledging that some are easier to measure than others.
- Data selection was constrained by sources that were available at the state level.
- Whenever possible we used "normalized" measures—per capita amounts, shares, etc.—so as not to disadvantage smaller states.
- We ranked each region on each component metric, then averaged the ranks of the metrics in each I. A lower score is better. In this approach, all components are given equal weight and we do not account for the distribution of values within a given metric (e.g., the distance between the highest and lowest values).
- For the overall ranks, we calculated the average of each I's average rank, then ranked the averages of the averages. This approach weights each I equally rather than favoring those with more component metrics (for example, Infrastructure comprises seven metrics while Intellectual Capital consists of five).

DEFINING EACH "I"

Infrastructure Includes Roads, Water & Sewer, Bridges, Telecommunications, Airport Access, Business Parks, Railroads, Digital/Broadband, Office Buildings, Retail/Community Facilities, Public Transportation, Energy, Housing (availability, affordability, desirability)

Innovation Includes Birth of New Industries, New Value-Add Products and Services, Research Labs, Commercialization of Products, Garage Inventors, Adapting to Disruptive Technologies, Idea Generation

Intellectual Capital Includes Pre-School to 12th Grade, Higher Education Institutions, Skills of Workforce, Job Training Programs, Life-Long Learning Opportunities

Interest Includes Appeal of Area to Residents, Visitors, Outside Interests, Tourism, Intrigue and Inspiration, Vibrant Downtowns, Place Making, Creative Capital, Arts, Culture and Entertainment, History/Heritage, Outdoor Splendor

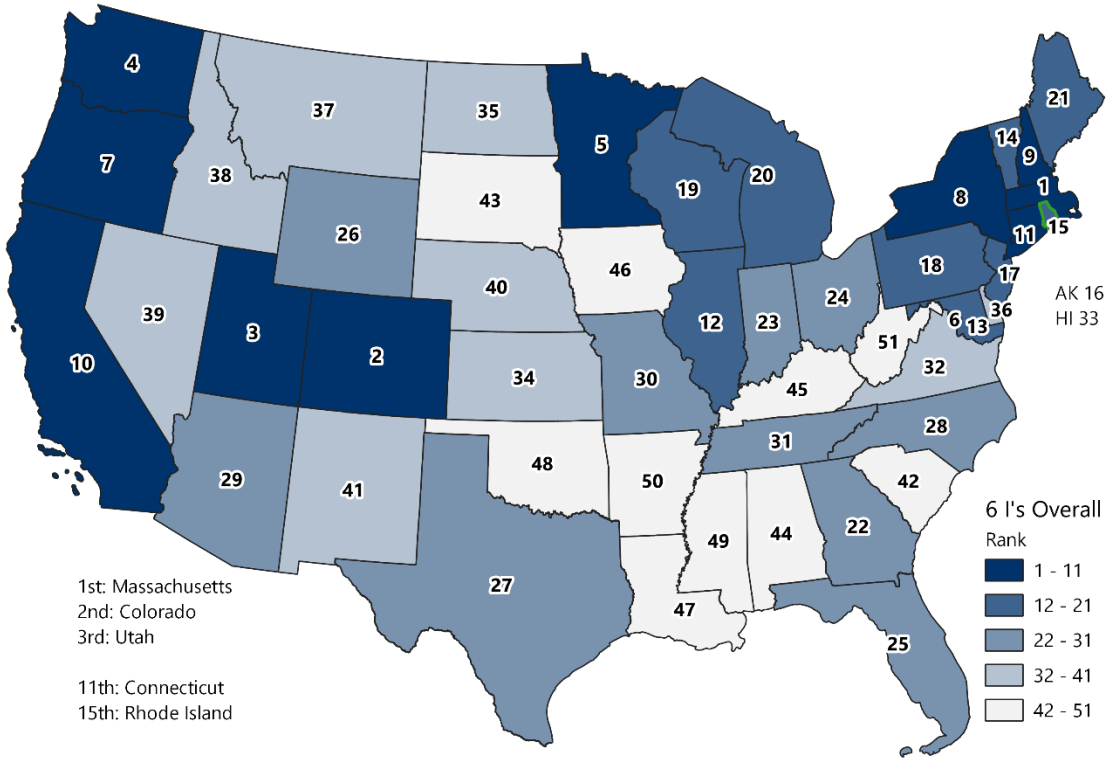
International Includes Global Trade and Export of Products and Services, Direct Foreign Investment, Cultural Amenities, Ethnic Influences, Languages Spoken, Access to World Markets, Learning Opportunities, Awareness of Region Worldwide, Ease of Travel

Investment Includes Public Investment in Infrastructure, Angel and Venture Capital Investment, Commercial Lending, Educational Resources, Economic Development Financing, Small Business Support, Human Capital, Social Support System, Philanthropy, Volunteerism[1]

[1] Note that not every concept from the definitions above is reflected in the data; however, we did choose indicators that best reflect the spirit of each category.

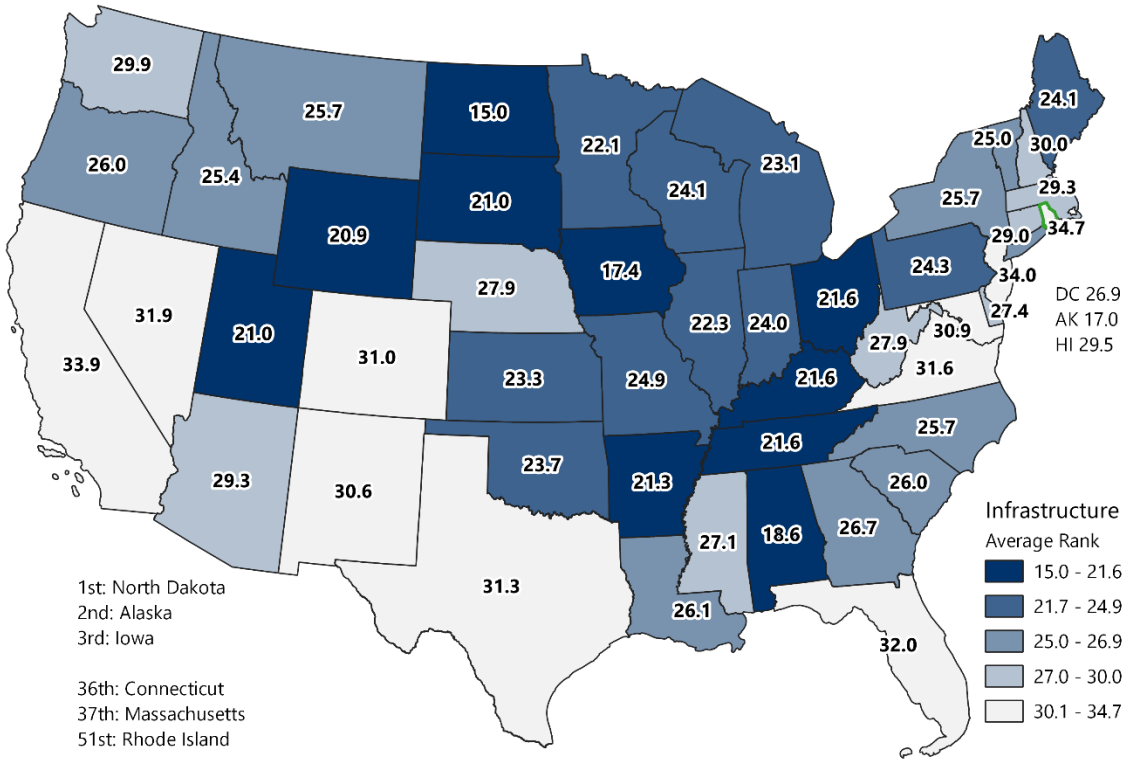
RESULTS

OVERALL RANKING



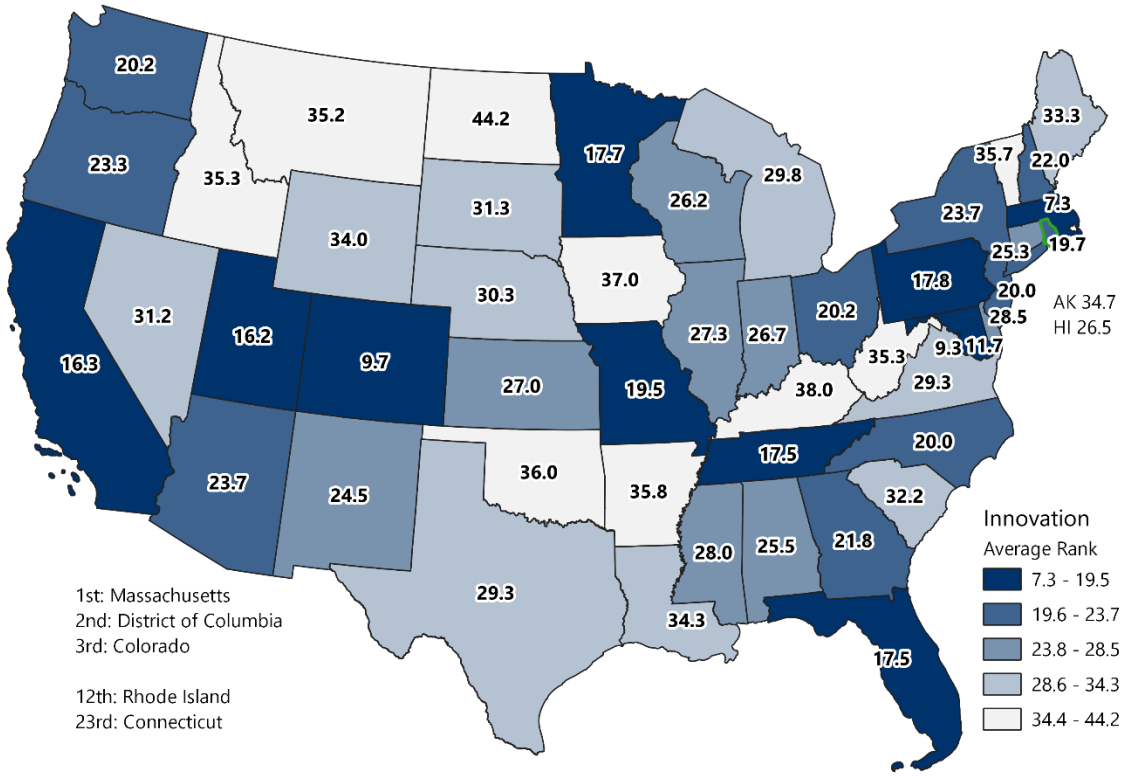
Based on the indicators presented on the following pages, we determined that Rhode Island ranks 15th in the nation in this analysis of the fundamentals of economic prosperity.

1 – INFRASTRUCTURE



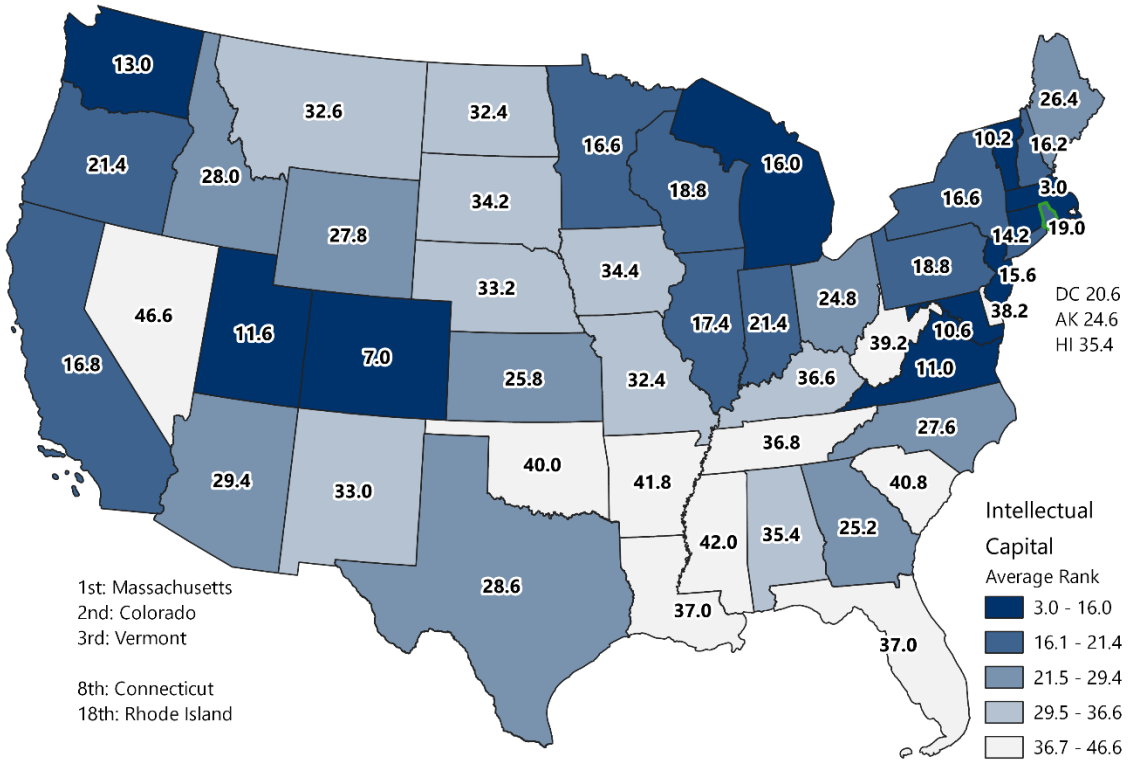
Infrastructure Indicator	Description
Shr HH cost-burdened	Share of occupied housing units where selected monthly owner costs or gross rent are 30% or more of household income
Housing Change Minus Pop Change	2011–2021 percent change in total housing units minus the percent change in total population
Broadband Infrastructure and Adoption Index	A composite of five variables related to broadband infrastructure and adoption
Roads Percent Acceptable	Percent of total road miles with an International Roughness Index of not more than 170
Mean Travel Time to Work	Average reported time to commute to place of work, in minutes
Baseline Water Stress	Baseline water stress measures the ratio of total water withdrawals to available renewable surface and groundwater supplies.
GA + Commercial Operations	General aviation itinerant flights and commercial flights combined

2 – INNOVATION



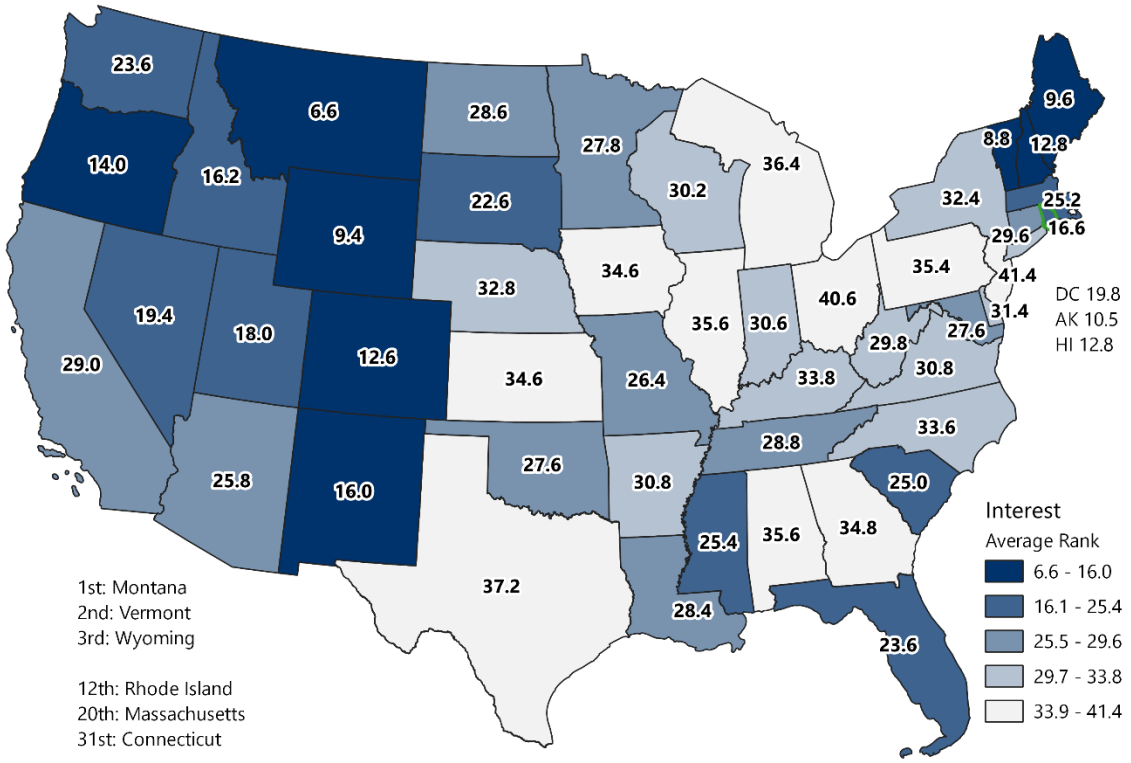
Innovation Indicator	Description
Patent Technology Diffusion Index	The degree to which a technology spreads and is adopted. It is based on a region's volume of patents and the technology classes of those patents.
Average High-Tech Industry Employment Share Index	The percentage of total employment that is in high-tech industries
Establishment Births to Deaths Ratio Index	The ratio of establishment births to establishment deaths, signaling the degree to which new businesses are replacing businesses that are dying
Knowledge Creation and Technology Diffusion Index	The extent to which a region's population and labor force have the know-how to engage in innovative activities
Incubators per Million Workers	Number of incubators per million workers
Income from Licensed Research per Establishment	License income received includes license issue fees, payments under options, annual minimums, and running license income paid to other institutions.

3 – INTELLECTUAL CAPITAL



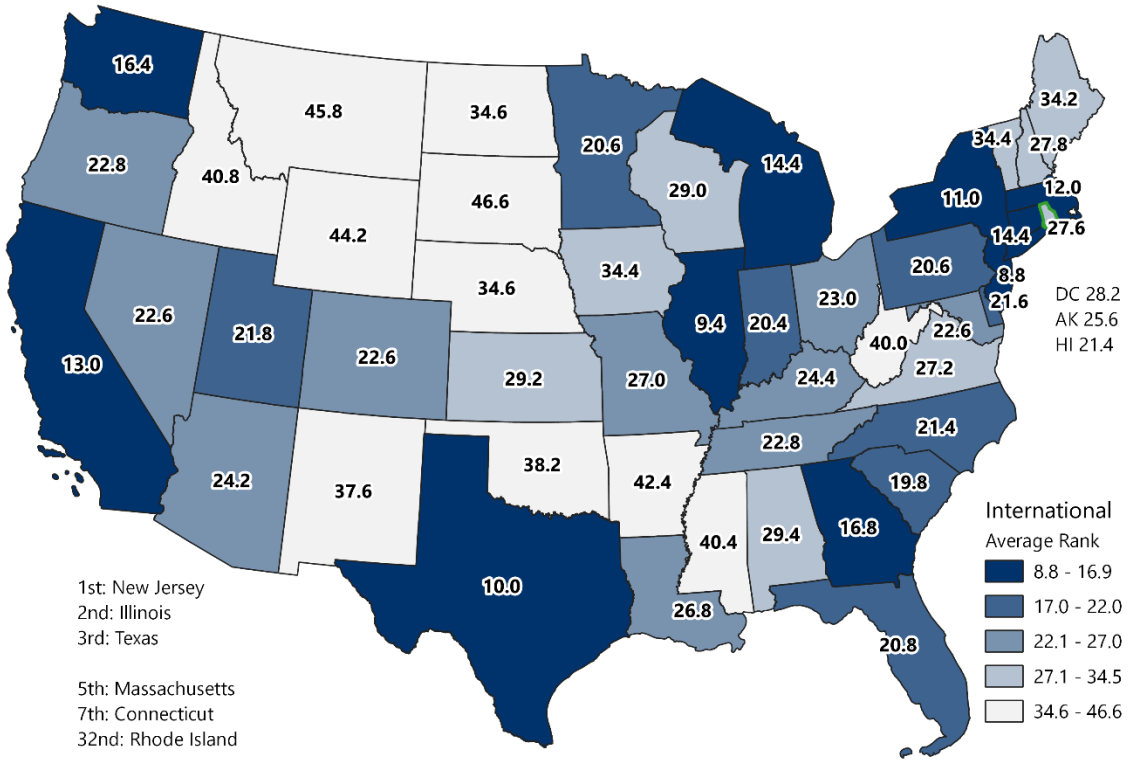
Intellectual Capital Indicator	Description
Avg 8th Grade Proficiency	Average of share of 8th-graders scoring at or above *Proficient* in math and share scoring at or above *Proficient* in reading in 2022
Technology-Based Knowledge Occupation Clusters	The employment share of occupations that apply higher technology (e.g., scientists and engineers) relative to all jobs
Average STEM Degree Creation (per 1,000 Population)	The number of STEM degree graduates (at the bachelor's, master's and doctorate level) per 1,000 individuals from colleges and universities in the county or region, averaged across the last three years available
Occupation Diversity Percentile	A ranking of employment distribution across occupation clusters compared to the typical region
Shr with Bachelor's degree or higher	Percentage of the population age 25 and older with a bachelor's, master's, doctorate, or professional degree

4 – INTEREST



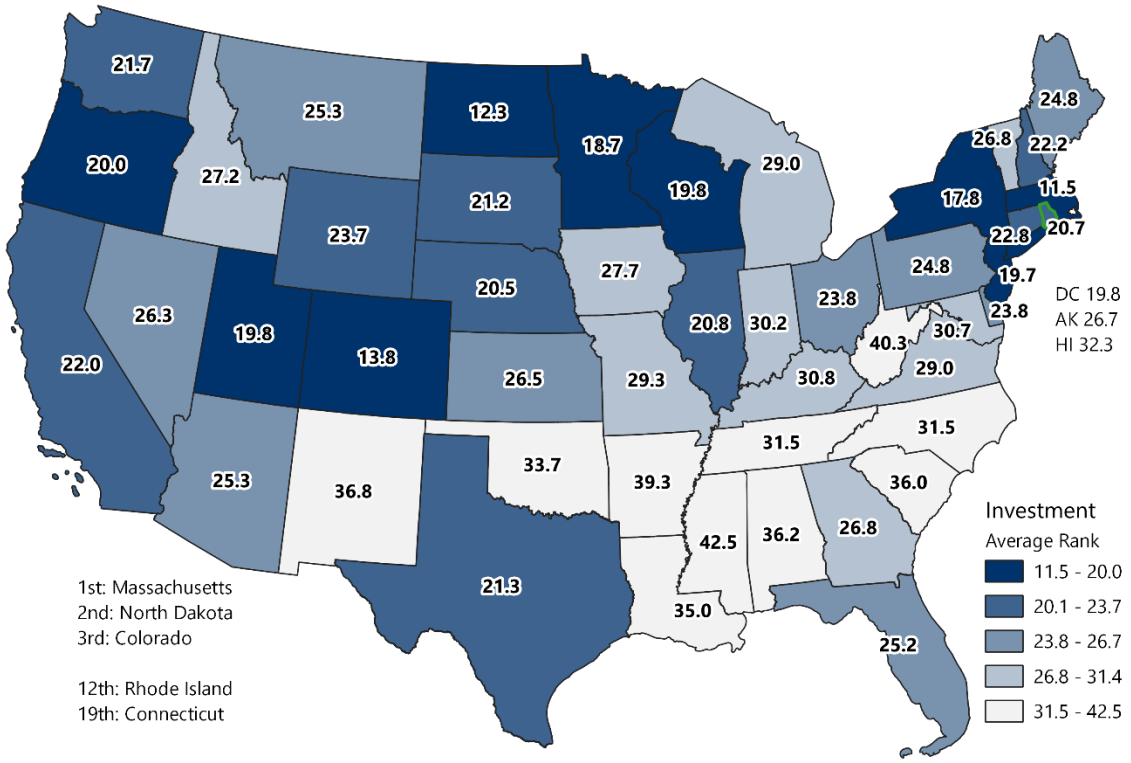
Interest Indicator	Description
Avg NEA+NEH Grants per capita	Sum of non-research National Endowment for the Humanities outright and matching grants and National Endowment for the Arts non-research grants per fiscal year, divided by total population (2010–2021 average)
Social Capital Index, Community Health Subindex	Combines measures of registered non-religious non-profits per 1,000 population, religious congregations per 1,000 population, and shares of the population who volunteered, who attended a public meeting, who report having worked with neighbors to fix/improve something, who served on a committee or as an officer, who attended a meeting where politics was discussed, and who took part in a demonstration in the past year
Natural Amenities Scale	Measure of the physical characteristics of an area that enhance the location as a place to live
Arts, Ent, Rec, Accom, Food Shr GDP	Gross Domestic Product of the Arts, Entertainment, and Recreation and Accommodation and Food Services industries as a share of total private-industry GDP (2017–2021 five-year average)
Outdoor Rec Shr GDP	Economic activity plus sales or receipts generated by outdoor recreational activities, such as fishing and RVing, as a share of GDP (2017–2021 five-year average)

5 – INTERNATIONAL



International Indicator	Description
% foreign born	Share of the population *not* born in the United States, Puerto Rico, or U.S. Island Areas or born abroad to American parent(s)
Majority-Owned US Affiliates Avg. Emp Shr	2016–2020 average share of total employment represented by U.S. business enterprises in which the combined ownership of all foreign parents exceeds 50%
Avg New FDI shr GDP	First-year expenditures by foreign direct investors to acquire, establish or expand U.S. businesses; average share of GDP from 2017 to 2021.
Avg Goods Exports per Job	2017–2021 average value of total international goods exports divided by total jobs of employees and the self-employed.
Avg Int'l Passengers per 1000 pop	2015–2019 average of all nonstop commercial passengers traveling between international points and U.S. airports per 1,000 residents.

6 – INVESTMENT



Investment Indicator	Description
K-12 Spending per Student	Public Elementary-Secondary Education Finance Data
Social Capital Index, Social Support Subindex	Measure of social support, including emotional support, number of friends, helpfulness, and trust
504 Loans + 7A Loans / Estab	SBA 504 Fixed Asset loans and 7A other business loans divided by the number of business establishments
Index Average Annual Venture Capital (scaled by GDP)	The five-year average of venture capital funding in the region divided by the region's five-year average GDP
2020 Private Non-Residential Construction per cap	Total dollar value of construction work done in the U.S. Data estimates include the cost of labor and materials, cost of architectural and engineering work, overhead costs, interest and taxes paid during construction, and contractor's profits.
Community Reinvestment Act Loans to SMB / 1,000 Pop	Dollar value of loans per 1,000 population made under CRA guidelines to meet credit needs of communities where they are chartered

RESULTS BREAKDOWN

High Performing Components

- Knowledge Creation and Technology Diffusion (1st)
- Average STEM Degree Creation (2nd)
- Broadband Infrastructure and Adoption (3rd)
- Patent Technology Diffusion (4th)

Low Performing Components

- Roads Percent Acceptable (50th)
- GA + Commercial Flights (50th)
- Average New FDI Share of GDP (50th)
- Establishment Births to Deaths (46th)

6-I INDICATOR DEFINITIONS

Indicator	Description	Source
Shr HH cost-burdened	Share of occupied housing units where monthly owner costs or gross rent are 30% or more of household income	U.S. Census Bureau, 2021 1-Yr. American Community Survey, Table DP04, https://data.census.gov/
Housing Change Minus Pop Change	2011–2021 percent change in total housing units minus the percent change in total population	U.S. Census Bureau, Annual Estimates of the Resident Population and of Housing Units, https://www.census.gov/programs-surveys/popest.html
Broadband Infrastructure and Adoption Index	A composite of five variables related to broadband infrastructure and adoption: (1) percentage of total 2018 population without access to fixed broadband of at least 100 Mbps download and 20 Mbps upload as of December 2019; (2) percent of homes without a computing device (desktops, laptops, smartphones, tablets, etc.); (3) percent of homes with no internet access (have no internet subscription, including cellular data plans or dial-up); (4) median maximum advertised download speeds; and (5) median maximum advertised upload speeds.	StatsAmerica Innovation Index, Economic Well-Being, https://www.statsamerica.org/innovation/
Roads Percent Acceptable	Percent of total road miles with an International Roughness Index of not more than 170, where IRI < 95 is considered *Good* and IRI of 95–170 is considered *Fair*.	U.S. Department of Transportation, Bureau of Transportation Statistics, https://www.bts.gov/road-condition
Mean Travel Time to Work	Average reported time to commute to place of work, in minutes	U.S. Census Bureau, 2021 1-Yr. American Community Survey, Table S0801, https://data.census.gov/
Baseline Water Stress	Spatially weighted average of Baseline Water Stress across each county. Baseline water stress measures the ratio of total water withdrawals to available renewable surface and groundwater supplies. A higher ratio indicates more competition among users. Risk scores range from low water stress (<10%) to extremely high water stress (>80%). Water withdrawals include domestic, industrial, irrigation and livestock consumptive and non-consumptive uses. Available renewable water supplies include surface and groundwater supplies and the impact of upstream consumptive water use and large dams on downstream water availability. Values are calculated based on data from years 1960 to 2014.	World Resources Institute and Utrecht University, Aqueduct 3.0, https://resourcewatch.org/data/explore/wat050-Aqueduct-Baseline-Water-Stress

Indicator	Description	Source
GA + Commercial Operations	General aviation itinerant* flights and commercial flights combined. * Those general aviation operations (excluding commuter or air taxi) originating from or ending at an airport more than 20 miles away.	Federal Aviation Administration, Airport Data and Information Portal, https://adip.faa.gov/agis/public/#/airportSearch/advanced
Patent Technology Diffusion Index	The degree to which a technology spreads and is adopted. It is based on a region's volume of patents and the technology classes of those patents.	StatsAmerica Innovation Intelligence, https://www.statsamerica.org
Average High-Tech Industry Employment Share Index	The percentage of total employment that is in high-tech industries.	StatsAmerica Innovation Intelligence, https://www.statsamerica.org
Establishment Births to Deaths Ratio Index	The ratio of establishment births to establishment deaths, signaling the degree to which new businesses are replacing businesses that are dying.	StatsAmerica Innovation Intelligence, https://www.statsamerica.org
Knowledge Creation and Technology Diffusion Index	The extent to which a region's population and labor force have the know-how to engage in innovative activities	StatsAmerica Innovation Intelligence, https://www.statsamerica.org
Incubators per Million Workers	Number of incubators per million workers	PolicyMap, https://www.policymap.com/
Income from Licensed Research per Establishment	License income received includes license issue fees, payments under options, annual minimums, and running license income paid to other institutions.	Association of University Tenchology Managers - https://autm.net/surveys-and-tools/databases
Avg 8th Grade Proficiency	Average of share of 8th-graders scoring at or above *Proficient* in math and share scoring at or above *Proficient* in reading in 2022	National Assessment of Educational Progress, Nation's Report Card, https://www.nationsreportcard.gov/profiles/stateprofile?chort=2&sub=RED&sj=AL&sfj=NP&st=AP&year=2022R3
Technology-Based Knowledge Occupation Clusters	The employment share of occupations that apply higher technology (e.g., scientists and engineers) relative to all jobs.	StatsAmerica Innovation Index, Human Capital and Knowledge Creation, STEM Education and Occupations, https://www.statsamerica.org/innovation/
Average STEM Degree Creation (per 1,000 Population)	The number of STEM degree graduates (at the bachelor's, master's and doctorate level) per 1,000 individuals from colleges and universities in the county or region, averaged across the last three years available.	StatsAmerica Innovation Index, Human Capital and Knowledge Creation, STEM Education and Occupations, https://www.statsamerica.org/innovation/
Occupation Diversity Percentile	A ranking of employment distribution across occupation clusters compared to the typical region. A region with high diversity can signal economic stability and more easily withstand economic pressures, while a region with low diversity can signal economic instability.	Lightcast

Indicator	Description	Source
Shr with bachelor's degree or higher	Percentage of the population age 25 and older with a bachelor's, master's, doctorate, or professional degree	U.S. Census Bureau, 2021 1-Yr. American Community Survey, Table DP02, https://data.census.gov/
Avg NEA+NEH Grants per capita	Sum of non-research National Endowment for the Humanities outright and matching grants and National Endowment for the Arts non-research grants per fiscal year, divided by total population; 2010–2021 average	National Endowment for the Humanities, https://securegrants.neh.gov/open/data/; National Endowment for the Arts, https://apps.nea.gov/grantsearch/
Social Capital Index, Community Health Subindex	Combines measures of registered non-religious non-profits per 1,000 population, religious congregations per 1,000 population, and shares of the population who volunteered, who attended a public meeting, who report having worked with neighbors to fix/improve something, who served on a committee or as an officer, who attended a meeting where politics was discussed, and who took part in a demonstration in the past year	U.S. Congress, Joint Economic Committee, https://www.jec.senate.gov/public/index.cfm/republicans/socialcapitalproject
Natural Amenities Scale	The natural amenities scale is a measure of the physical characteristics of a county area that enhance the location as a place to live. The scale was constructed by combining six measures of climate, topography, and water area that reflect environmental qualities most people prefer. These measures are warm winter, winter sun, temperate summer, low summer humidity, topographic variation, and water area. State values represent an average of county values.	U.S. Department of Agriculture, Economic Research Service, https://www.ers.usda.gov/data-products/natural-amenities-scale.aspx
Arts, Ent, Rec, Accom, Food Shr GDP	Gross Domestic Product of the Arts, Entertainment, and Recreation and Accommodation and Food Services industries as a share of total private-industry GDP; 2017–2021 five-year average.	U.S. Bureau of Economic Analysis, https://apps.bea.gov/iTable/iTable.cfm?reqid=70&step=1#reqid=70&step=1&isuri=1
Outdoor Rec Shr GDP	Measures the economic activity as well as the sales or receipts generated by outdoor recreational activities, such as fishing and RVing. These statistics also measure each industry's production of outdoor goods and services and its contribution to U.S. GDP. 2017–2021 five-year average share of total GDP.	U.S. Bureau of Economic Analysis, https://www.bea.gov/data/special-topics/outdoor-recreation
% foreign born	Share of the population *not* born in the United States, Puerto Rico, or U.S. Island Areas or born abroad to American parent(s).	U.S. Census Bureau, 5-Yr. American Community Survey, Table DP02, https://data.census.gov/

Indicator	Description	Source
Majority-Owned US Affiliates Avg. Emp Shr	2016–2020 average share of total employment represented by U.S. business enterprises in which the combined ownership of all foreign parents exceeds 50%.	U.S. Bureau of Economic Analysis, https://apps.bea.gov/iTable/iTable.cfm?ReqID=2&step=1
Avg New FDI shr GDP	First-year expenditures by foreign direct investors to acquire, establish or expand U.S. businesses; average share of GDP from 2017 to 2021.	U.S. Bureau of Economic Analysis, https://apps.bea.gov/iTable/iTable.cfm?ReqID=2&step=1
Avg Goods Exports per Job	2017–2021 average value of total international goods exports divided by total jobs of employees and the self-employed.	U.S. Census Bureau, USATradeOnline, https://usatrade.census.gov/
Avg Int'l Passengers per 1,000 pop	2015–2019 average of all nonstop commercial passengers traveling between international points and U.S. airports per 1,000 residents.	U.S. Department of Transportation, Transportation.gov, https://data.transportation.gov/Aviation/International_Report_Passengers/xgub-n9bw
K-12 Spending per Student	2021 average spending per public school pupil in grades K through 12, aggregated at the state level. It includes state payments made on behalf of public school systems.	Public Elementary-Secondary Education Finance Data, https://www.census.gov/data/tables/2020/econ/school-finances/secondary-education-finance.html
Social Capital Index, Social Support Subindex	Measure of social support, including emotional support, number of friends, helpfulness, and trust	U.S. Congress, Joint Economic Committee, https://www.jec.senate.gov/public/index.cfm/republicans/socialcapitalproject
504 Loans + 7A Loans / Estab	SBA 504 Fixed Asset loans and 7A other business loans divided by the number of business establishments	Small Business Administration 7(a) & 504 FOIA, https://data.sba.gov/dataset/7-a-504-foia
Index Average Annual Venture Capital (scaled by GDP)	The five-year average of venture capital funding in the region divided by the region's five-year average GDP	StatsAmerica Innovation Intelligence, https://www.statsamerica.org
Community Reinvestment Act Loans to SMB / 1,000 Pop	Dollar value of loans per 1,000 population made under CRA guidelines to meet credit needs of communities where they are chartered	Federal Financial Institutions Examination Council CRA Data Products, https://www.ffiec.gov/cra/craproducts.htm
2020 Private Non-Residential Construction per capita	Total dollar value of construction work done in the U.S. Data estimates include the cost of labor and materials, cost of architectural and engineering work, overhead costs, interest and taxes paid during construction, and contractor's profits.	U.S. Census Bureau Value of Construction Put in Place Survey, https://www.census.gov/construction/c30/c30index.html

INDIVIDUAL METRIC VALUES

1. Infrastructure

	SCORES								RANKS							
State	Shr HH cost-burdened	Housing Change Minus Pop Change	Broadband Infrastructure and Adoption Index	Roads Percent Acceptable	Mean Travel Time to Work	General Aviation + Commercial Flights	Baseline Water Stress	BWS Label	Shr HH cost-burdened	Housing Change Minus Pop Change	Broadband Infrastructure and Adoption Index	Roads Percent Acceptable	Mean Travel Time to Work	General Aviation + Commercial Flights	Baseline Water Stress	Average Rank (lower is better)
Alabama	25.3%	1.1%	93.6	90.9%	25.3	1,303,662	6.5%	Low (<10%)	11	26	35	11	31	10	6	18.6
Alaska	30.8%	4.8%	158.4	80.9%	19.8	754,434	6.5%	Low (<10%)	36	3	17	26	8	22	7	17.0
Arizona	29.6%	-2.7%	180.5	77.5%	24.8	1,786,357	63.6%	High (40–80%)	34	47	12	34	26	4	48	29.3
Arkansas	24.8%	1.3%	76.3	92.0%	22.2	586,424	17.1%	Low - Medium (10–20%)	6	20	44	8	13	31	27	21.3
California	40.4%	1.5%	119.1	67.0%	27.6	5,611,530	81.1%	Extremely High (>80%)	51	18	25	46	47	1	49	33.9
Colorado	32.6%	0.6%	104.6	78.1%	25.0	1,239,292	53.1%	High (40–80%)	40	30	30	32	28	11	46	31.0
Connecticut	34.0%	2.5%	194.4	67.0%	25.6	261,565	14.8%	Low - Medium (10–20%)	42	11	5	45	35	42	23	29.0
Delaware	27.8%	1.4%	198.8	83.7%	25.4	51,217	28.6%	Medium - High (20–40%)	27	19	2	22	33	51	38	27.4
District of Columbia	36.0%	12.5%	200	8.6%	28.3	498,054	5.5%	Low (<10%)	47	1	1	51	48	35	5	26.9
Florida	35.1%	-2.9%	106.7	87.7%	27.1	4,519,699	29.2%	Medium - High (20–40%)	45	48	29	17	44	2	39	32.0
Georgia	29.3%	-1.1%	51.8	92.8%	27.1	1,534,396	1.0%	Low (<10%)	32	45	50	6	44	9	1	26.7
Hawaii	39.7%	3.5%	197.8	60.0%	25.3	356,274			50	6	4	48	31	38		29.5
Idaho	26.7%	-4.8%	125	90.2%	21.6	653,196	18.8%	Low - Medium (10–20%)	23	50	24	13	10	27	31	25.4
Illinois	29.3%	4.1%	78	80.2%	26.8	1,684,681	1.1%	Low (<10%)	31	5	41	28	43	6	2	22.3
Indiana	23.8%	0.7%	89.6	81.8%	23.8	663,482	16.6%	Low - Medium (10–20%)	4	29	38	25	21	26	25	24.0
Iowa	23.6%	2.0%	90.8	91.1%	19.7	495,022	11.8%	Low - Medium (10–20%)	3	12	37	10	7	36	17	17.4
Kansas	24.9%	1.5%	68.3	88.6%	19.6	597,451	29.3%	Medium - High (20–40%)	7	17	48	15	6	30	40	23.3
Kentucky	25.0%	0.6%	72.2	92.6%	23.6	697,906	11.2%	Low - Medium (10–20%)	9	31	46	7	20	24	14	21.6
Louisiana	29.5%	4.7%	92	77.0%	25.5	648,396	11.0%	Low - Medium (10–20%)	33	4	36	35	34	28	13	26.1
Maine	26.3%	-0.5%	186.4	79.3%	24.2	173,479	3.0%	Low (<10%)	17	42	10	30	23	44	3	24.1
Maryland	31.0%	1.1%	180.5	72.3%	29.3	432,076	11.4%	Low - Medium (10–20%)	37	23	12	42	50	37	15	30.9
Massachusetts	34.5%	1.5%	192.2	72.5%	27.5	743,083	18.6%	Low - Medium (10–20%)	44	16	7	40	46	23	29	29.3
Michigan	26.4%	-0.5%	96.9	78.6%	23.8	1,136,480	3.1%	Low (<10%)	19	41	34	31	21	12	4	23.1
Minnesota	25.9%	0.1%	109.3	90.7%	22.2	1,059,093	23.9%	Medium - High (20–40%)	14	39	27	12	13	15	35	22.1
Mississippi	26.5%	4.9%	69.3	73.9%	25.2	531,535	13.1%	Low - Medium (10–20%)	20	2	47	39	29	33	20	27.1
Missouri	25.2%	0.6%	60.6	75.6%	23.1	812,024	9.3%	Low (<10%)	10	32	49	36	17	20	10	24.9

1. Infrastructure (continued)

	SCORES								RANKS							
State	Shr HH cost-burdened	Housing Change Minus Pop Change	Broadband Infrastructure and Adoption Index	Roads Percent Acceptable	Mean Travel Time to Work	General Aviation + Commercial Flights	Baseline Water Stress	BWS Label	Shr HH cost-burdened	Housing Change Minus Pop Change	Broadband Infrastructure and Adoption Index	Roads Percent Acceptable	Mean Travel Time to Work	General Aviation + Commercial Flights	Baseline Water Stress	Average Rank (lower is better)
Montana	26.1%	-3.4%	109.2	87.3%	19.1	340,710	17.1%	Low - Medium (10–20%)	16	49	28	18	4	39	26	25.7
Nebraska	25.6%	-0.1%	76.3	92.9%	19.3	324,412	57.1%	High (40–80%)	13	40	44	5	5	41	47	27.9
Nevada	35.6%	-5.4%	178.7	85.7%	24.6	788,449	44.0%	High (40–80%)	46	51	14	21	25	21	45	31.9
New Hampshire	28.4%	-0.9%	192.3	82.4%	25.7	139,039	14.6%	Low - Medium (10–20%)	29	44	6	24	37	48	22	30.0
New Jersey	36.3%	1.1%	187.3	55.2%	28.6	861,250	36.8%	Medium - High (20–40%)	48	22	9	49	49	19	42	34.0
New Mexico	28.0%	2.7%	137.7	66.0%	23.2	335,213	88.8%	Extremely High (>80%)	28	9	21	47	19	40	50	30.6
New York	37.5%	3.0%	150.4	74.0%	31.4	1,653,225	7.0%	Low (<10%)	49	7	20	38	51	7	8	25.7
North Carolina	27.5%	0.9%	88.4	89.5%	24.5	1,556,773	29.7%	Medium - High (20–40%)	26	27	40	14	24	8	41	25.7
North Dakota	24.5%	3.0%	181.8	94.1%	17.5	254,893	22.1%	Medium - High (20–40%)	5	8	11	3	2	43	33	15.0
Ohio	24.9%	0.6%	97.7	83.7%	23.1	1,129,529	14.8%	Low - Medium (10–20%)	8	33	33	23	17	13	24	21.6
Oklahoma	26.0%	0.1%	77	93.7%	22.0	685,787	18.7%	Low - Medium (10–20%)	15	38	42	4	12	25	30	23.7
Oregon	33.7%	-0.6%	155.6	88.6%	22.6	962,732	20.3%	Medium - High (20–40%)	41	43	18	16	15	17	32	26.0
Pennsylvania	26.5%	1.6%	130.7	72.3%	25.7	998,323	12.2%	Low - Medium (10–20%)	21	14	23	41	37	16	18	24.3
Rhode Island	34.3%	0.5%	198.1	51.9%	24.8	56,436	24.5%	Medium - High (20–40%)	43	35	3	50	26	50	36	34.7
South Carolina	26.4%	0.3%	133.8	91.5%	25.6	498,239	17.9%	Low - Medium (10–20%)	18	36	22	9	35	34	28	26.0
South Dakota	23.2%	0.5%	117.5	86.2%	17.4	161,918	12.6%	Low - Medium (10–20%)	2	34	26	20	1	45	19	21.0
Tennessee	26.5%	0.2%	89.2	94.6%	25.2	1,060,409	7.8%	Low (<10%)	22	37	39	1	29	14	9	21.6
Texas	31.4%	2.6%	50	77.6%	25.9	3,954,927	42.7%	High (40–80%)	38	10	51	33	40	3	44	31.3
Utah	27.0%	1.5%	161.3	80.0%	21.4	532,866	14.5%	Low - Medium (10–20%)	25	15	16	29	9	32	21	21.0
Vermont	30.2%	0.9%	187.5	80.7%	23.0	78,158	10.5%	Low - Medium (10–20%)	35	28	8	27	16	49	12	25.0
Virginia	28.5%	1.3%	76.9	86.8%	26.4	631,836	27.7%	Medium - High (20–40%)	30	21	43	19	42	29	37	31.6
Washington	31.7%	-1.4%	154.2	71.5%	26.0	1,775,842	11.6%	Low - Medium (10–20%)	39	46	19	43	41	5	16	29.9
West Virginia	21.4%	1.1%	103.8	68.7%	25.7	142,445	9.9%	Low (<10%)	1	24	31	44	37	47	11	27.9
Wisconsin	25.5%	1.1%	103	74.8%	21.9	946,046	22.4%	Medium - High (20–40%)	12	25	32	37	11	18	34	24.1
Wyoming	26.9%	1.6%	176.4	94.3%	18.3	147,734	37.2%	Medium - High (20–40%)	24	13	15	2	3	46	43	20.9

2. Innovation

	SCORES						RANKS						
State	Patent Technology Diffusion Index	Average High-Tech Industry Employment Share Index	Establishment Births to Deaths Ratio Index	Knowledge Creation and Technology Diffusion Index	Incubators per Million Workers	Income from Licensed Research per Establishment	Patent Technology Diffusion Index	Average High-Tech Industry Employment Share Index	Establishment Births to Deaths Ratio Index	Knowledge Creation and Technology Diffusion Index	Incubators per Million Workers	Income from Licensed Research per Establishment	Average Rank (lower is better)
Alabama	119.8	76.8	73.4	118.6	29.7	$370	19	34	37	20	15	28	25.5
Alaska	143.4	60.6	87.4	130.7	9.3	$1	17	43	30	17	51	50	34.7
Arizona	81.7	98.5	156.3	100.4	23.7	$1,034	32	25	11	32	31	11	23.7
Arkansas	73.3	78.1	109.3	95.3	10.7	$164	36	32	21	39	50	37	35.8
California	96.8	179.4	145.9	107.5	28.7	$1,698	27	6	13	27	19	6	16.3
Colorado	172.0	192.9	167.5	145.1	45.0	$475	10	4	8	11	2	23	9.7
Connecticut	174.4	167.4	58.4	157.9	20.4	$36	9	8	49	5	36	45	25.3
Delaware	66.3	91.8	175.7	128.8	22.1	$36	42	29	5	18	33	44	28.5
District of Columbia	145.3	181.7	119.0	172.6	76.0	$973	16	5	20	2	1	12	9.3
Florida	164.4	77.5	155.9	141.1	31.5	$557	15	33	12	16	10	19	17.5
Georgia	87.5	122.3	142.6	102.4	29.9	$381	29	18	15	30	13	26	21.8
Hawaii	164.7	59.5	106.2	144.4	28.8	$29	14	45	22	12	18	48	26.5
Idaho	50.9	74.7	200.0	84.2	19.9	$148	50	35	1	50	38	38	35.3
Illinois	74.5	119.7	71.5	96.1	23.2	$3,579	35	20	39	36	32	2	27.3
Indiana	165.6	74.5	89.0	141.5	19.5	$380	13	36	29	15	40	27	26.7
Iowa	57.9	68.1	138.2	87.6	18.7	$267	47	39	17	47	41	31	37.0
Kansas	108.0	149.9	63.6	112.6	15.8	$752	20	14	45	21	46	16	27.0
Kentucky	82.9	68.3	65.8	100.1	11.6	$191	31	38	41	33	49	36	38.0
Louisiana	74.6	64.8	70.7	96.0	25.0	$412	34	40	40	37	30	25	34.3
Maine	71.7	62.8	89.6	96.0	38.6	$10	39	42	27	37	6	49	33.3
Maryland	180.8	168.5	84.2	152.7	33.0	$1,213	5	7	32	8	9	9	11.7
Massachusetts	189.1	200.0	89.5	158.3	38.5	$7,596	3	1	28	4	7	1	7.3
Michigan	55.4	124.6	92.2	86.6	29.8	$415	49	17	26	49	14	24	29.8
Minnesota	200.0	161.8	63.8	158.8	18.3	$2,693	1	9	44	3	44	5	17.7
Mississippi	170.5	53.6	94.7	143.9	20.3	$202	11	49	23	13	37	35	28.0
Missouri	103.7	120.3	142.3	110.5	29.2	$489	21	19	16	23	16	22	19.5

2. Innovation (continued)

State	SCORES						RANKS						
	Patent Technology Diffusion Index	Average High-Tech Industry Employment Share Index	Establishment Births to Deaths Ratio Index	Knowledge Creation and Technology Diffusion Index	Incubators per Million Workers	Income from Licensed Research per Establishment	Patent Technology Diffusion Index	Average High-Tech Industry Employment Share Index	Establishment Births to Deaths Ratio Index	Knowledge Creation and Technology Diffusion Index	Incubators per Million Workers	Income from Licensed Research per Establishment	Average Rank (lower is better)
Montana	73.2	52.1	145.2	95.1	25.5	$45	37	50	14	40	28	42	35.2
Nebraska	100.5	86.2	65.7	108.9	21.4	$359	22	30	42	25	34	29	30.3
Nevada	99.9	58.0	188.0	109.3	18.5	$36	23	48	3	24	43	46	31.2
New Hampshire	99.6	156.7	94.1	112.3	28.6	$355	24	11	24	22	21	30	22.0
New Jersey	175.4	150.2	75.1	154.8	14.2	$1,617	8	13	36	7	48	8	20.0
New Mexico	94.1	95.0	60.2	105.9	43.0	$929	28	26	48	29	3	13	24.5
New York	72.8	92.7	78.1	96.7	41.2	$3,335	38	28	33	35	4	4	23.7
North Carolina	85.4	129.7	165.7	101.5	26.9	$1,072	30	16	9	31	24	10	20.0
North Dakota	50.0	58.1	60.9	83.5	21.3	$238	51	47	47	51	35	34	44.2
Ohio	179.5	116.2	64.1	148.7	25.7	$890	6	22	43	9	27	14	20.2
Oklahoma	57.7	63.6	76.8	87.5	30.8	$262	48	41	34	48	12	33	36.0
Oregon	68.6	155.8	177.0	93.6	28.7	$528	41	12	4	42	20	21	23.3
Pennsylvania	178.0	117.6	73.4	148.4	25.3	$3,483	7	21	37	10	29	3	17.8
Rhode Island	184.3	99.0	63.1	187.5	30.9	$263	4	24	46	1	11	32	19.7
South Carolina	61.3	85.3	174.0	89.5	26.8	$40	44	31	6	44	25	43	32.2
South Dakota	131.3	60.4	94.0	124.2	18.6	$98	18	44	25	19	42	40	31.3
Tennessee	196.0	74.0	120.3	156.7	26.0	$812	2	37	19	6	26	15	17.5
Texas	59.9	110.5	162.7	88.5	16.4	$1,660	45	23	10	46	45	7	29.3
Utah	167.8	159.5	195.8	142.8	19.7	$551	12	10	2	14	39	20	16.2
Vermont	58.2	94.9	57.6	89.4	38.6	$65	46	27	50	45	5	41	35.7
Virginia	70.9	198.2	85.0	94.3	27.7	$144	40	2	31	41	23	39	29.3
Washington	63.6	197.3	172.0	90.8	34.3	$619	43	3	7	43	8	17	20.2
West Virginia	98.5	58.4	50.0	108.0	29.0	$36	25	46	51	26	17	47	35.3
Wisconsin	77.9	131.7	76.4	97.7	27.7	$584	33	15	35	34	22	18	26.2
Wyoming	97.3	50.0	121.1	107.3	14.4	NA	26	51	18	28	47	NA	34.0

3. Intellectual Capital

	SCORES							RANKS					
State	Shr 8th Grade Math ≥ Proficient	Shr 8th Grade Reading ≥ Proficient	Avg 8th Grade Proficiency	Technology-Based Knowledge Occupation Clusters	Average STEM Degree Creation (per 1,000 Population)	Occupation Diversity Percentile	Shr with Bachelor's degree or higher	Avg 8th Grade Proficiency	Technology-Based Knowledge Occupation Clusters	Average STEM Degree Creation (per 1,000 Population)	Occupation Diversity Percentile	Shr with Bachelor's degree or higher	Average Rank (lower is better)
Alabama	18.7%	22.0%	20.4%	7.67%	0.35	52.9%	27.4%	46	32	28	25	46	35.4
Alaska	23.3%	26.0%	24.6%	7.05%	1.12	100.0%	32.8%	39	45	9	1	29	24.6
Arizona	23.8%	28.2%	26.0%	7.69%	0.71	27.5%	32.4%	34	29	15	38	31	29.4
Arkansas	18.9%	25.8%	22.4%	7.09%	0.18	31.4%	25.3%	44	43	37	36	49	41.8
California	23.0%	29.9%	26.4%	8.37%	1.27	60.8%	36.2%	30	11	5	21	17	16.8
Colorado	27.8%	34.2%	31.0%	9.02%	1.26	78.4%	44.4%	10	4	6	12	3	7.0
Connecticut	30.0%	34.8%	32.4%	8.41%	0.34	62.7%	42.1%	5	10	29	20	7	14.2
Delaware	18.3%	23.8%	21.1%	7.63%	0.00	11.8%	35.6%	45	33	48	46	19	38.2
District of Columbia	16.5%	22.2%	19.3%	12.10%	1.54	3.9%	63.0%	48	1	3	50	1	20.6
Florida	23.0%	29.4%	26.2%	7.28%	0.18	5.9%	33.2%	33	40	36	49	27	37.0
Georgia	23.7%	30.6%	27.2%	7.94%	0.78	21.6%	34.6%	26	22	13	41	24	25.2
Hawaii	22.2%	30.7%	26.4%	6.62%	0.04	33.3%	35.3%	29	50	42	35	21	35.4
Idaho	32.4%	32.1%	32.3%	7.49%	0.02	68.6%	30.7%	6	36	44	17	37	28.0
Illinois	26.5%	32.4%	29.4%	8.25%	1.92	23.5%	37.1%	19	14	1	40	13	17.4
Indiana	30.1%	30.6%	30.4%	7.94%	1.10	66.7%	28.9%	15	21	10	18	43	21.4
Iowa	28.1%	28.8%	28.4%	7.41%	0.13	35.3%	30.5%	23	38	38	34	39	34.4
Kansas	23.2%	25.8%	24.5%	8.08%	0.37	54.9%	35.4%	40	18	27	24	20	25.8
Kentucky	21.5%	29.0%	25.3%	7.69%	0.12	41.2%	27.0%	36	30	39	31	47	36.6
Louisiana	18.9%	26.9%	22.9%	7.37%	0.53	37.3%	26.4%	43	39	22	33	48	37.0
Maine	24.4%	29.3%	26.8%	7.11%	0.20	80.4%	36.0%	27	42	34	11	18	26.4
Maryland	24.7%	32.8%	28.7%	8.65%	0.74	92.2%	42.5%	22	6	14	5	6	10.6
Massachusetts	35.1%	39.8%	37.4%	9.61%	1.15	98.0%	46.6%	1	2	8	2	2	3.0
Michigan	25.4%	28.2%	26.8%	8.66%	1.20	86.3%	31.7%	28	5	7	8	32	16.0
Minnesota	31.5%	29.7%	30.6%	8.29%	0.31	74.5%	38.9%	13	13	31	14	12	16.6
Mississippi	17.8%	22.0%	19.9%	6.89%	0.54	15.7%	24.8%	47	48	21	44	50	42.0
Missouri	23.9%	28.5%	26.2%	7.94%	0.19	25.5%	31.7%	32	24	35	39	32	32.4

3. Intellectual Capital (continued)

	SCORES							RANKS					
State	Shr 8th Grade Math ≥ Proficient	Shr 8th Grade Reading ≥ Proficient	Avg 8th Grade Proficiency	Technology-Based Knowledge Occupation Clusters	Average STEM Degree Creation (per 1,000 Population)	Occupation Diversity Percentile	Shr with Bachelor's degree or higher	Avg 8th Grade Proficiency	Technology-Based Knowledge Occupation Clusters	Average STEM Degree Creation (per 1,000 Population)	Occupation Diversity Percentile	Shr with Bachelor's degree or higher	Average Rank (lower is better)
Montana	28.5%	29.1%	28.8%	6.76%	0.09	43.1%	34.8%	21	49	40	30	23	32.6
Nebraska	31.0%	28.8%	29.9%	7.57%	0.01	17.6%	34.4%	17	34	46	43	26	33.2
Nevada	20.8%	28.8%	24.8%	5.72%	0.00	2.0%	27.6%	38	51	48	51	45	46.6
New Hampshire	29.0%	32.8%	30.9%	8.19%	0.61	49.0%	40.2%	11	15	19	27	9	16.2
New Jersey	33.1%	41.6%	37.4%	8.35%	0.99	7.8%	43.1%	2	12	11	48	5	15.6
New Mexico	12.7%	18.4%	15.6%	8.00%	0.00	90.2%	30.1%	51	19	48	6	41	33.0
New York	28.4%	32.3%	30.3%	8.57%	0.99	29.4%	39.9%	16	8	12	37	10	16.6
North Carolina	25.4%	25.7%	25.5%	7.78%	0.43	45.1%	34.9%	35	28	24	29	22	27.6
North Dakota	28.2%	27.1%	27.6%	7.08%	0.00	72.5%	31.7%	24	44	47	15	32	32.4
Ohio	29.0%	33.1%	31.1%	7.94%	0.23	58.8%	30.7%	9	23	33	22	37	24.8
Oklahoma	15.9%	21.3%	18.6%	7.68%	0.00	47.1%	27.9%	49	31	48	28	44	40.0
Oregon	22.0%	27.8%	24.9%	7.94%	0.60	84.3%	36.3%	37	25	20	9	16	21.4
Pennsylvania	27.4%	30.6%	29.0%	7.92%	1.45	64.7%	34.5%	20	26	4	19	25	18.8
Rhode Island	23.7%	31.3%	27.5%	7.84%	1.89	51.0%	36.5%	25	27	2	26	15	19.0
South Carolina	22.0%	26.6%	24.3%	7.52%	0.02	9.8%	31.5%	41	35	45	47	36	40.8
South Dakota	32.2%	31.1%	31.7%	6.89%	0.04	19.6%	31.7%	7	47	43	42	32	34.2
Tennessee	24.8%	28.0%	26.4%	7.49%	0.24	13.7%	30.5%	31	37	32	45	39	36.8
Texas	23.8%	23.2%	23.5%	8.14%	0.39	39.2%	33.1%	42	16	25	32	28	28.6
Utah	34.5%	35.7%	35.1%	8.59%	0.63	70.6%	36.8%	3	7	18	16	14	11.6
Vermont	26.9%	34.5%	30.7%	8.13%	0.70	96.1%	44.4%	12	17	16	3	3	10.2
Virginia	31.2%	31.0%	31.1%	9.41%	0.38	82.4%	41.8%	8	3	26	10	8	11.0
Washington	27.8%	31.8%	29.8%	8.57%	0.49	94.1%	39.0%	18	9	23	4	11	13.0
West Virginia	15.1%	21.7%	18.4%	7.16%	0.04	76.5%	24.1%	50	41	41	13	51	39.2
Wisconsin	33.2%	32.4%	32.8%	7.97%	0.66	56.9%	32.5%	4	20	17	23	30	18.8
Wyoming	31.4%	29.7%	30.6%	7.00%	0.31	88.2%	29.2%	14	46	30	7	42	27.8

4. Interest

	SCORES					RANKS					
State	Avg NEA+NEH Grants per capita	Social Capital Index, Community Health Subindex	Avg. Natural Amenities Scale	Arts, Ent, Rec, Accom, Food Shr GDP	Outdoor Rec Shr GDP	Avg NEA+NEH Grants per capita	Social Capital Index, Community Health Subindex	Avg. Natural Amenities Scale	Arts, Ent, Rec, Accom, Food Shr GDP	Outdoor Rec Shr GDP	Average Rank (lower is better)
Alabama	$0.52	-0.86	0.25	3.8%	1.9%	42	42	22	40	32	35.6
Alaska	$3.37	1.57	NA	4.2%	3.8%	3	3		29	7	10.5
Arizona	$0.47	-1.20	4.87	5.0%	2.5%	46	48	2	16	17	25.8
Arkansas	$0.78	-1.08	0.02	3.9%	2.3%	27	46	26	34	21	30.8
California	$0.50	-0.81	6.73	4.8%	1.8%	45	40	1	19	40	29.0
Colorado	$1.02	0.36	4.03	5.5%	2.9%	21	17	4	12	9	12.6
Connecticut	$0.91	0.16	1.80	3.6%	1.3%	22	19	12	45	50	29.6
Delaware	$2.07	-0.28	0.00	3.0%	1.7%	9	30	27	49	42	31.4
District of Columbia	$10.29	3.97	-0.76	5.8%	1.0%	1	1	38	8	51	19.8
Florida	$0.25	-1.38	2.94	6.4%	3.9%	51	51	8	4	4	23.6
Georgia	$0.54	-0.86	0.32	3.7%	2.0%	40	41	20	42	31	34.8
Hawaii	$1.64	-0.58	NA	13.0%	5.5%	12	36		2	1	12.8
Idaho	$1.12	0.03	2.02	4.5%	2.9%	18	22	11	22	8	16.2
Illinois	$0.65	-0.54	-2.12	4.3%	1.8%	34	34	45	26	39	35.6
Indiana	$0.55	-0.18	-2.28	4.0%	2.9%	39	25	46	33	10	30.6
Iowa	$0.67	0.65	-2.61	3.2%	1.9%	31	13	48	48	33	34.6
Kansas	$0.73	0.08	-1.04	3.3%	1.9%	29	20	39	47	38	34.6
Kentucky	$0.57	-0.78	-0.46	4.1%	2.0%	37	39	35	30	28	33.8
Louisiana	$0.77	-1.25	-0.34	4.8%	2.5%	28	49	32	18	15	28.4
Maine	$1.90	0.90	0.83	5.9%	3.8%	10	9	16	7	6	9.6
Maryland	$1.05	0.07	-0.07	4.6%	1.5%	20	21	28	21	48	27.6
Massachusetts	$1.77	-0.16	0.74	4.2%	1.6%	11	24	17	27	47	25.2
Michigan	$0.51	-0.21	-1.41	3.8%	1.9%	43	27	40	38	34	36.4
Minnesota	$1.39	0.83	-2.88	3.6%	2.4%	14	11	49	46	19	27.8
Mississippi	$0.85	-0.70	-0.39	5.5%	2.5%	25	38	33	13	18	25.4
Missouri	$0.87	-0.39	-0.32	4.5%	2.2%	23	32	31	23	23	26.4

4. Interest (continued)

	SCORES					RANKS					
State	Avg NEA+NEH Grants per capita	Social Capital Index, Community Health Subindex	Avg. Natural Amenities Scale	Arts, Ent, Rec, Accom, Food Shr GDP	Outdoor Rec Shr GDP	Avg NEA+NEH Grants per capita	Social Capital Index, Community Health Subindex	Avg. Natural Amenities Scale	Arts, Ent, Rec, Accom, Food Shr GDP	Outdoor Rec Shr GDP	Average Rank (lower is better)
Montana	$2.26	1.34	1.36	6.1%	4.6%	7	4	14	6	2	6.6
Nebraska	$1.22	0.44	-1.45	3.0%	1.8%	17	15	41	50	41	32.8
Nevada	$0.69	-1.35	4.72	16.4%	2.8%	30	50	3	1	13	19.4
New Hampshire	$1.38	1.15	0.24	5.7%	2.9%	15	5	23	10	11	12.8
New Jersey	$0.43	-1.00	0.15	3.6%	1.6%	48	45	24	44	46	41.4
New Mexico	$1.32	-0.05	3.54	5.7%	2.1%	16	23	6	9	26	16.0
New York	$1.60	-0.94	-0.58	4.6%	1.4%	13	44	36	20	49	32.4
North Carolina	$0.43	-0.70	0.36	4.2%	1.9%	47	37	19	28	37	33.6
North Dakota	$2.60	0.38	-2.50	2.9%	2.2%	5	16	47	51	24	28.6
Ohio	$0.41	-0.30	-1.73	3.9%	1.7%	49	31	44	36	43	40.6
Oklahoma	$0.63	-0.25	0.59	4.3%	2.0%	36	29	18	25	30	27.6
Oregon	$0.82	1.04	3.78	4.9%	2.5%	26	6	5	17	16	14.0
Pennsylvania	$0.65	-0.24	-0.18	3.7%	1.7%	33	28	30	41	45	35.4
Rhode Island	$2.17	-0.19	1.68	5.6%	2.2%	8	26	13	11	25	16.6
South Carolina	$0.53	-0.54	0.32	5.4%	2.7%	41	35	21	14	14	25.0
South Dakota	$2.36	0.92	-1.60	3.9%	2.3%	6	8	42	35	22	22.6
Tennessee	$0.51	-0.92	0.03	6.2%	2.1%	44	43	25	5	27	28.8
Texas	$0.28	-1.09	1.27	3.8%	1.9%	50	47	15	39	35	37.2
Utah	$0.87	0.84	3.41	3.8%	2.9%	24	10	7	37	12	18.0
Vermont	$3.78	2.15	-0.41	7.4%	4.3%	2	2	34	3	3	8.8
Virginia	$0.67	0.21	-0.09	4.0%	1.7%	32	18	29	31	44	30.8
Washington	$0.64	0.73	2.78	4.0%	2.0%	35	12	10	32	29	23.6
West Virginia	$1.08	-0.47	-0.59	4.4%	1.9%	19	33	37	24	36	29.8
Wisconsin	$0.56	0.93	-1.71	3.6%	2.4%	38	7	43	43	20	30.2
Wyoming	$2.98	0.55	2.88	5.2%	3.8%	4	14	9	15	5	9.4

5. Investment

	SCORES						RANKS						
State	K-12 Spending per Student	Social Capital Index, Social Support Subindex	504 Loans + 7A Loans / Estab	Index Average Annual Venture Capital (scaled by GDP)	2020 Private Non-Res Construction Put-In-Place per Cap	Community Reinvestment Act Loans to SMB / 1,000 Pop	K-12 Spending per Student	Social Capital Index, Social Support Subindex	504 Loans + 7A Loans / Estab	Index Average Annual Venture Capital (scaled by GDP)	2020 Private Non-Res Construction per cap	Community Reinvestment Act Loans to SMB / 1,000 Pop	Average Rank (lower is better)
Alabama	$10,108	-0.7	$9,635	51.2	$1,165	$337	41	38	35	47	17	39	36.2
Alaska	$18,392	0.5	$14,497	50.0	$372	$425	7	18	17	49	49	20	26.7
Arizona	$8,770	-0.9	$17,393	106.5	$1,340	$404	49	43	10	12	10	28	25.3
Arkansas	$10,414	-0.8	$6,066	51.5	$936	$366	38	42	49	46	27	34	39.3
California	$13,642	-1.7	$17,031	199.9	$567	$560	19	50	11	2	46	4	22.0
Colorado	$11,070	0.8	$19,429	132.8	$1,152	$562	35	12	7	8	18	3	13.8
Connecticut	$21,146	-0.2	$8,946	79.4	$787	$568	5	30	37	26	37	2	22.8
Delaware	$15,931	-0.5	$6,301	87.6	$1,237	$433	14	33	47	17	15	17	23.8
District of Columbia	$22,832	-1.0	$5,115	122.2	$3,237	$476	2	44	50	10	1	12	19.8
Florida	$9,983	-1.3	$13,815	84.6	$1,108	$554	42	48	18	18	20	5	25.2
Georgia	$11,203	-1.0	$18,288	79.9	$1,014	$414	34	45	8	25	23	26	26.8
Hawaii	$16,128	-0.7	$7,611	50.0	$602	$551	13	37	44	49	45	6	32.3
Idaho	$8,041	0.6	$17,803	54.8	$923	$426	50	15	9	42	28	19	27.2
Illinois	$16,277	-0.1	$15,243	178.7	$667	$412	11	25	15	4	43	27	20.8
Indiana	$10,256	0.3	$14,836	64.8	$960	$307	40	21	16	33	26	45	30.2
Iowa	$11,935	1.1	$10,436	54.9	$1,502	$250	29	7	31	41	8	50	27.7
Kansas	$11,327	0.5	$11,273	82.3	$1,114	$293	32	17	24	21	19	46	26.5
Kentucky	$11,278	-0.4	$6,855	96.7	$1,307	$264	33	32	46	14	11	49	30.8
Louisiana	$11,917	-1.2	$6,123	53.4	$1,529	$379	30	47	48	45	7	33	35.0
Maine	$15,691	1.3	$9,826	61.8	$650	$434	15	6	34	34	44	16	24.8
Maryland	$15,582	-0.7	$7,788	78.7	$696	$417	16	36	43	27	41	21	30.7
Massachusetts	$19,193	0.2	$11,245	200.0	$1,609	$490	6	22	25	1	5	10	11.5
Michigan	$12,053	-0.2	$13,495	80.5	$836	$328	27	27	19	23	34	44	29.0
Minnesota	$13,302	1.6	$22,991	82.9	$906	$340	21	2	2	20	30	37	18.7
Mississippi	$9,255	-0.3	$7,214	50.2	$335	$365	46	31	45	48	50	35	42.5
Missouri	$11,349	0.4	$10,561	80.4	$839	$332	31	19	28	24	33	41	29.3

5. Investment (continued)

	SCORES						RANKS						
State	K-12 Spending per Student	Social Capital Index, Social Support Subindex	504 Loans + 7A Loans / Estab	Index Average Annual Venture Capital (scaled by GDP)	2020 Private Non-Res Construction Put-In-Place per Cap	Community Reinvestment Act Loans to SMB / 1,000 Pop	K-12 Spending per Student	Social Capital Index, Social Support Subindex	504 Loans + 7A Loans / Estab	Index Average Annual Venture Capital (scaled by GDP)	2020 Private Non-Res Construction per cap	Community Reinvestment Act Loans to SMB / 1,000 Pop	Average Rank (lower is better)
Montana	$11,983	0.7	$10,522	56.9	$784	$519	28	13	29	37	38	7	25.3
Nebraska	$12,741	0.9	$11,060	90.7	$1,293	$340	22	9	26	16	12	38	20.5
Nevada	$9,124	-2.5	$19,628	57.3	$1,657	$441	48	51	6	36	3	14	26.3
New Hampshire	$17,456	0.8	$15,793	56.2	$457	$440	9	11	13	38	47	15	22.2
New Jersey	$21,334	-0.7	$12,319	124.3	$668	$571	3	41	22	9	42	1	19.7
New Mexico	$10,469	-0.5	$10,597	61.2	$781	$274	37	35	27	35	39	48	36.8
New York	$24,881	-1.3	$8,722	191.6	$1,584	$511	1	49	39	3	6	9	17.8
North Carolina	$9,798	-0.5	$10,521	84.3	$804	$414	45	34	30	19	36	25	31.5
North Dakota	$14,037	1.0	$19,915	69.6	$1,646	$518	18	8	4	32	4	8	12.3
Ohio	$13,437	0.0	$12,613	112.0	$987	$330	20	23	21	11	25	43	23.8
Oklahoma	$9,200	-0.7	$10,407	133.0	$835	$331	47	39	32	7	35	42	33.7
Oregon	$12,460	0.9	$11,577	75.9	$1,491	$415	25	10	23	29	9	24	20.0
Pennsylvania	$16,897	-0.2	$8,641	101.2	$911	$397	10	28	40	13	29	29	24.8
Rhode Island	$17,539	-0.1	$13,352	56.0	$1,095	$486	8	24	20	39	22	11	20.7
South Carolina	$10,991	-0.7	$10,188	71.7	$739	$358	36	40	33	31	40	36	36.0
South Dakota	$10,326	1.5	$19,964	54.1	$1,000	$453	39	4	3	44	24	13	21.2
Tennessee	$9,942	-0.2	$8,043	81.6	$1,275	$337	43	29	41	22	14	40	31.5
Texas	$9,871	-1.1	$16,332	138.8	$1,811	$431	44	46	12	6	2	18	21.3
Utah	$7,951	3.0	$31,003	175.1	$873	$385	51	1	1	5	31	30	19.8
Vermont	$21,219	1.4	$8,868	54.7	$445	$415	4	5	38	43	48	23	26.8
Virginia	$12,638	-0.2	$8,009	74.4	$1,106	$385	24	26	42	30	21	31	29.0
Washington	$14,348	0.3	$15,531	94.0	$859	$381	17	20	14	15	32	32	21.7
West Virginia	$12,266	0.7	$3,631	50.0	$266	$247	26	14	51	49	51	51	40.3
Wisconsin	$12,694	1.5	$19,892	76.2	$1,283	$277	23	3	5	28	13	47	19.8
Wyoming	$16,231	0.6	$9,094	55.3	$1,172	$416	12	16	36	40	16	22	23.7

6. International

	SCORES					RANKS					
State	% foreign born	Majority-Owned US Affiliates Avg. Emp Shr	Avg New FDI shr GDP	Avg Goods Exports per Job	Avg Int'l Passengers per 1000 pop	% foreign born	Majority-Owned US Affiliates Avg. Emp Shr	Avg New FDI shr GDP	Avg Goods Exports per Job	Avg Int'l Passengers per 1000 pop	Average Rank (lower is better)
Alabama	3.5%	5.7%	0.25%	$8,257	0.58	46	15	32	13	41	29.4
Alaska	8.1%	4.8%	0.00%	$12,288	115.28	25	24	51	6	22	25.6
Arizona	12.6%	4.2%	0.44%	$6,275	302.69	15	29	28	31	18	24.2
Arkansas	4.7%	3.7%	0.03%	$3,904	0.09	39	38	47	40	48	42.4
California	26.6%	4.6%	1.26%	$7,806	1,030.23	1	25	11	19	9	13.0
Colorado	9.8%	4.2%	2.11%	$2,350	466.41	19	28	2	50	14	22.6
Connecticut	15.2%	6.5%	1.64%	$7,310	35.26	10	7	6	22	27	14.4
Delaware	10.1%	5.5%	1.40%	$8,118	0.02	17	17	9	15	50	21.6
District of Columbia	13.3%	3.0%	0.22%	$2,979	11,470.67	14	47	33	46	1	28.2
Florida	21.2%	4.1%	0.41%	$4,627	1,708.59	4	31	29	36	4	20.8
Georgia	10.0%	5.9%	0.55%	$6,858	1,129.88	18	12	22	25	7	16.8
Hawaii	18.8%	5.8%	0.19%	$665	4,068.94	5	13	36	51	2	21.4
Idaho	6.1%	2.4%	0.10%	$3,790	0.24	30	49	40	41	44	40.8
Illinois	14.2%	6.0%	1.71%	$8,665	1,067.18	13	11	4	11	8	9.4
Indiana	5.6%	6.6%	0.49%	$10,677	19.12	33	6	25	9	29	20.4
Iowa	5.4%	3.8%	0.21%	$7,326	0.13	34	37	34	21	46	34.4
Kansas	6.9%	4.6%	0.85%	$6,522	0.19	28	27	18	28	45	29.2
Kentucky	4.0%	6.9%	0.59%	$12,876	0.12	45	4	21	5	47	24.4
Louisiana	4.3%	3.7%	0.45%	$26,157	37.01	41	39	27	1	26	26.8
Maine	4.1%	5.7%	0.11%	$3,557	8.75	43	14	39	44	31	34.2
Maryland	15.9%	4.1%	1.09%	$3,709	183.87	9	30	12	42	20	22.6
Massachusetts	17.6%	6.1%	4.05%	$6,273	972.17	7	10	1	32	10	12.0
Michigan	6.8%	6.8%	1.06%	$10,624	354.31	29	5	13	10	15	14.4
Minnesota	8.5%	5.0%	0.88%	$6,370	520.60	22	22	17	29	13	20.6
Mississippi	2.1%	3.6%	0.05%	$7,814	0.06	50	40	45	18	49	40.4
Missouri	4.1%	4.6%	1.91%	$4,085	54.09	43	26	3	39	24	27.0

6. International (continued)

	SCORES					RANKS					
State	% foreign born	Majority-Owned US Affiliates Avg. Emp Shr	Avg New FDI shr GDP	Avg Goods Exports per Job	Avg Int'l Passengers per 1000 pop	% foreign born	Majority-Owned US Affiliates Avg. Emp Shr	Avg New FDI shr GDP	Avg Goods Exports per Job	Avg Int'l Passengers per 1000 pop	Average Rank (lower is better)
Montana	2.2%	1.8%	0.05%	$2,651	0.72	49	51	43	48	38	45.8
Nebraska	7.4%	3.4%	0.15%	$6,166	3.18	26	44	37	33	33	34.6
Nevada	18.4%	4.0%	0.12%	$6,349	1,206.10	6	33	38	30	6	22.6
New Hampshire	5.9%	7.1%	0.07%	$6,909	0.50	31	2	41	23	42	27.8
New Jersey	23.0%	7.0%	1.03%	$7,602	1,443.48	2	3	14	20	5	8.8
New Mexico	9.1%	2.1%	0.07%	$4,224	0.90	21	50	42	38	37	37.6
New York	22.3%	5.4%	1.62%	$6,901	1,760.48	3	18	7	24	3	11.0
North Carolina	8.2%	6.1%	0.52%	$5,766	334.93	24	9	23	35	16	21.4
North Dakota	4.4%	3.2%	0.04%	$11,883	2.10	40	45	46	7	35	34.6
Ohio	5.0%	5.3%	0.91%	$7,869	46.77	38	19	16	17	25	23.0
Oklahoma	5.8%	3.4%	0.39%	$2,767	0.60	32	42	30	47	40	38.2
Oregon	9.7%	3.4%	0.50%	$10,799	180.05	20	41	24	8	21	22.8
Pennsylvania	7.2%	5.3%	1.65%	$5,805	319.51	27	20	5	34	17	20.6
Rhode Island	14.5%	5.5%	0.00%	$4,337	83.14	12	16	50	37	23	27.6
South Carolina	5.2%	7.2%	0.47%	$12,888	4.40	36	1	26	4	32	19.8
South Dakota	3.5%	3.1%	0.01%	$2,618	0.48	46	46	49	49	43	46.6
Tennessee	5.3%	6.3%	0.28%	$8,390	32.11	35	8	31	12	28	22.8
Texas	17.2%	5.1%	1.42%	$19,054	720.14	8	21	8	2	11	10.0
Utah	8.3%	3.4%	1.30%	$8,128	268.70	23	43	10	14	19	21.8
Vermont	4.2%	3.9%	0.20%	$6,850	3.10	42	35	35	26	34	34.4
Virginia	12.4%	4.8%	0.95%	$3,652	0.62	16	23	15	43	39	27.2
Washington	14.8%	3.8%	0.64%	$14,920	670.56	11	36	20	3	12	16.4
West Virginia	1.6%	4.0%	0.02%	$7,967	0.02	51	34	48	16	51	40.0
Wisconsin	5.1%	4.1%	0.79%	$6,611	16.10	37	32	19	27	30	29.0
Wyoming	3.4%	2.7%	0.05%	$3,490	0.90	48	48	44	45	36	44.2

Sustainable Growth and Economic Resilience Analysis

APPENDIX E: STATEWIDE DIAGNOSTIC COMPONENT
Ocean State Accelerates
Rhode Island Long-Term Economic Development Strategy

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OVERVIEW

This document provides a state and county-level analysis of different factors linked to sustainability and economic resilience. The goal of the analysis is to highlight how Rhode Island and its regions have performed across these measures since 2010 and highlight environmental, economic, and institutional considers as the state aims to enhance sustainability and resilience in its Long-Term Economic Development Strategy.

Key Takeaways

1. **The state as a whole shows signs of greater resilience compared to the individual counties**. The small geographic size of the state is a strength for sharing resources and encouraging regional approaches to address social, economic, environmental, and other issues associated with building resilience.
2. **Each region has a unique strength in resilience**. Regions with a higher tourism economy base tended to have lower Economic resilience (Newport, Washington Counties) and higher Environmental resilience. It should be noted that risk of sea level rise is not a factor for the BRIC analysis, and the impact of climate change on these coastal regions will be important to consider.
3. **Housing and Infrastructure resilience is low throughout the state.** The strength of resilience in Housing and Infrastructure dropped steeply for all geographies from 2010.
4. **Rhode Island's top industries (by employment) align with the nation overall**. Health Care and Social Assistance, Government, Retail Trade, Accommodation and Food Services, and Manufacturing make up the top five largest industries in the state. While ensuring a diverse economy is critical to building economic resilience across the board, these top five industries are major employers and drivers of the state's economy and should be assessed for their ability to remain viable through periods of economic disruption.

Methodology

The Sustainable Growth and Economic Resilience Analysis uses the University of South Carolina's Baseline Resilience Indicators for Communities (BRIC) Index. The BRIC Index includes 49 variables across six categories to capture community resilience:

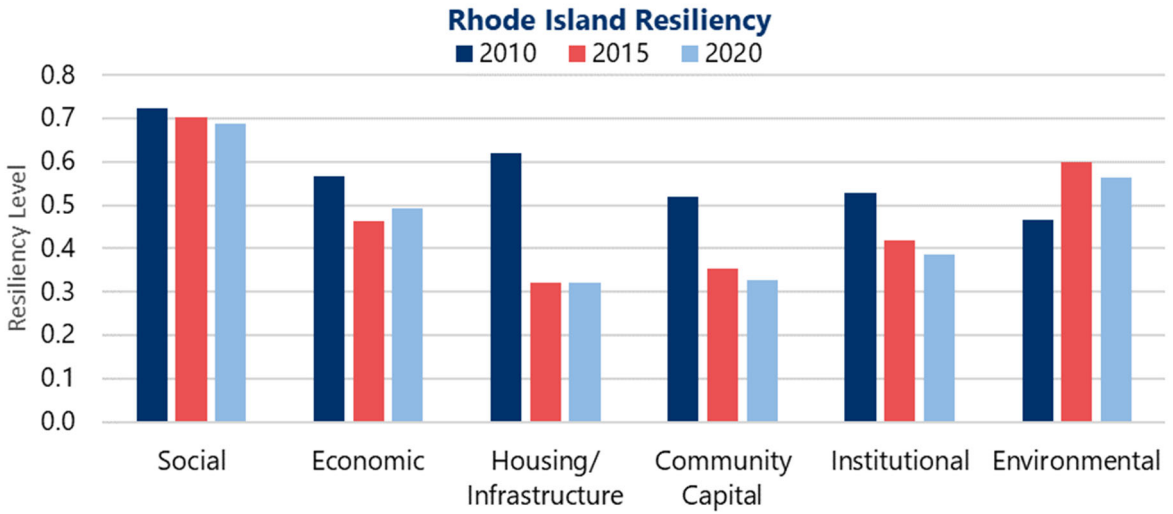
1. **Human Well-Being/Cultural/Social**—physical attributes of populations, values, and belief systems (ex: educational equality, food security)
2. **Economic/Financial**—economic assets and livelihoods (e.g., employment rate, income inequality, non-dependence on primary/tourism sector)
3. **Infrastructure/Built Environment/Housing**—buildings and infrastructure (e.g., housing stock construction quality, temporary shelter, medical care capacity)
4. **Institutional/Governance**—access to resources and the power to influence their distribution (ex. jurisdictional fragmentation, disaster aid experience, population stability)
5. **Community Capacity**—social networks and connectivity among individuals and groups (volunteerism, religious affiliation, attachment to place, political engagement)
6. **Environmental/Natural**—natural resource base and environmental conditions (local food supplies, energy use, perviousness, water stress)

The index is scaled from 0 to 1 with 1 meaning greater resilience. The six categories are then summed to create an overall BRIC score ranging from 0-6 for each county.

RESILIENCY OUTLOOK

Rhode Island Outlook

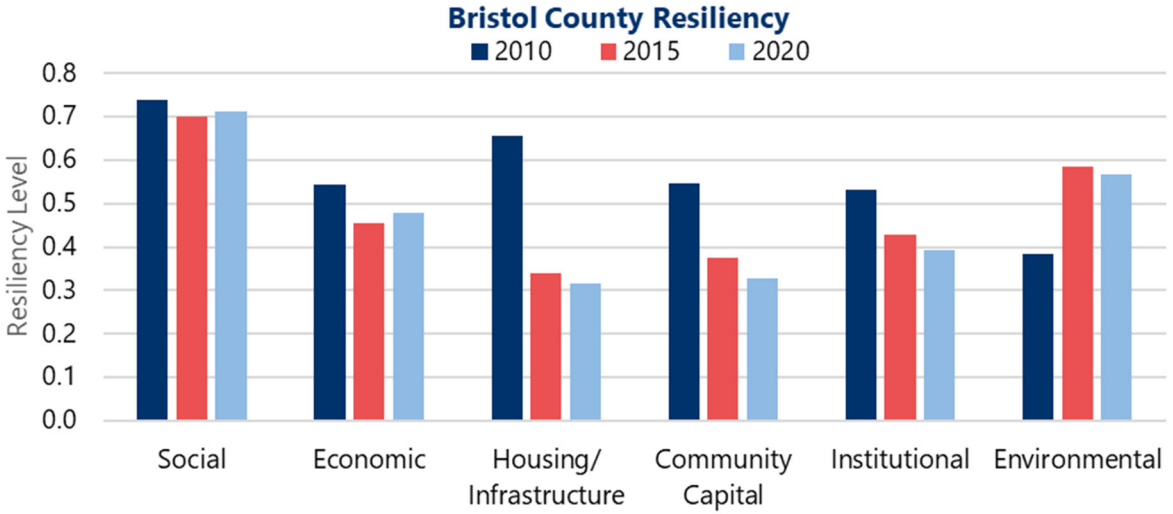
Overall, the State of Rhode Island's resiliency has been decreasing across most categories since 2010 with the notable exception being Environmental resiliency. This trend continued between 2015 and 2020, yet Economic resiliency improved slightly over the last five years. Though it has steadily decreased since 2010, Rhode Island's Social resiliency level is the highest among the state's resiliency indicators in 2020. It is worth noting that this data predates the pandemic, so it is possible that the BRIC scores in Rhode Island and its counties have further decreased over the past two years based on the trends seen from 2010 to 2020.



Source: Baseline Resilience Indicators for Communities (BRIC) Index

Bristol County Outlook

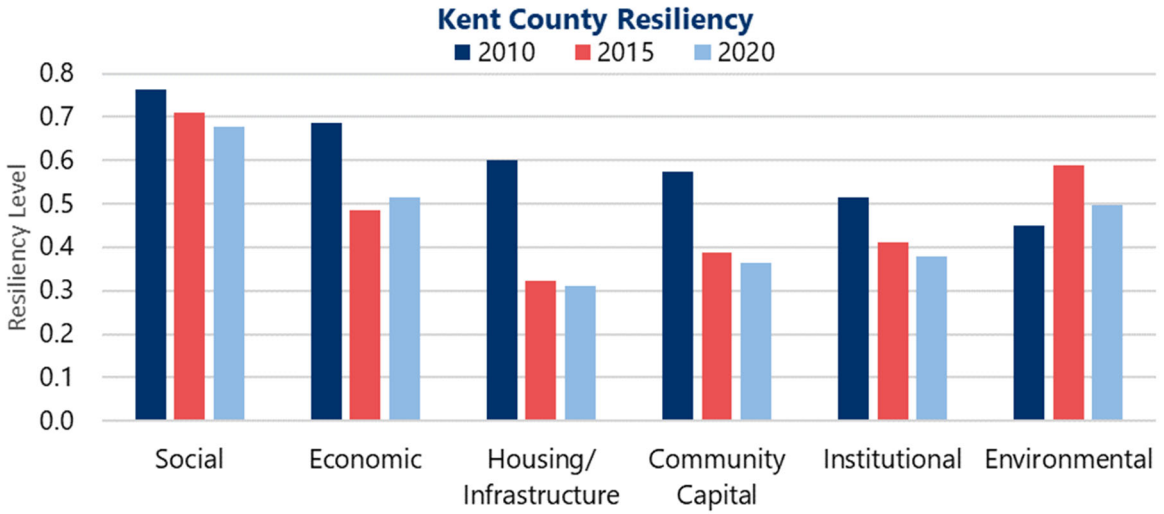
Within Bristol County, resiliency has been decreasing across most categories since 2010 with the notable exception being Environmental resiliency. However, the last five years show a slightly better trend, with Economic and Social resiliency levels both up since 2015. The Social resiliency level in Bristol County is the highest among the resiliency indicators in 2020.



Source: Baseline Resilience Indicators for Communities (BRIC) Index

Kent County Outlook

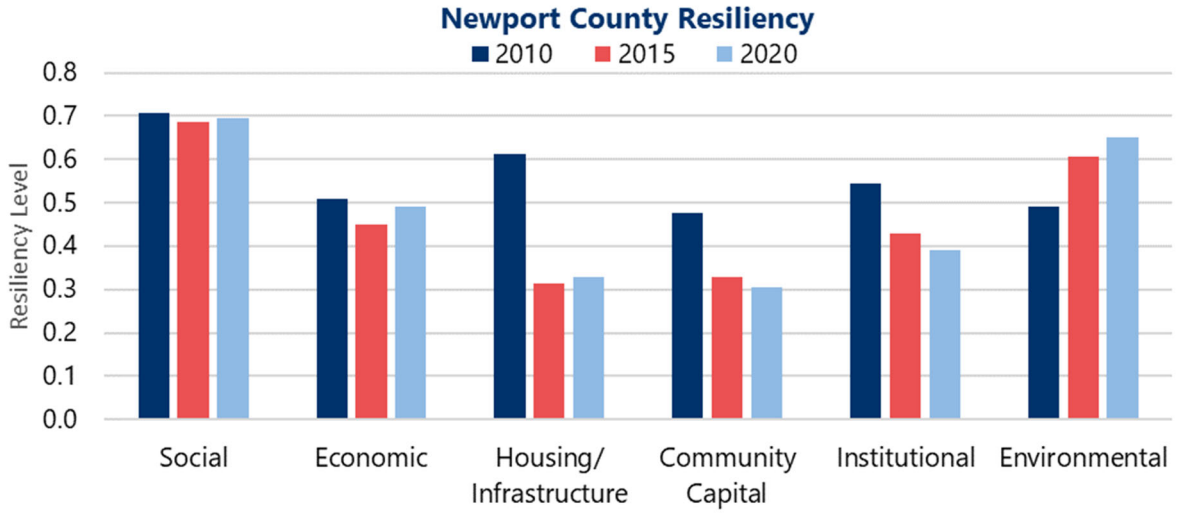
Within Kent County, resiliency has been decreasing across most categories since 2010 with the notable exception being Environmental resiliency. However, the last five years show a slightly better trend, with Economic resiliency slightly up since its 2015 level. Following the state trend, the Social resiliency level in Kent County is the highest among the resiliency indicators in 2020.



Source: Baseline Resilience Indicators for Communities (BRIC) Index

Newport County Outlook

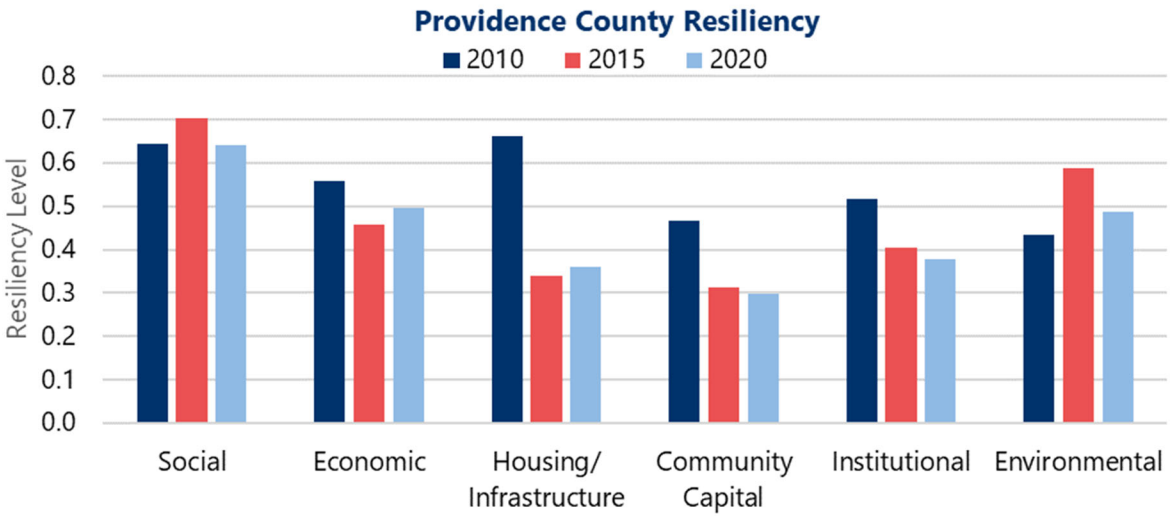
Within Newport County, resiliency has been decreasing across most categories since 2010 with the notable exception being Environmental resiliency. In a slight break from state-level trends over the last five years, Social and Housing/Infrastructure resiliency are up since 2015. Economic resiliency has also trended upward over the last five years. Following the state trend, the Social resiliency level in Newport County is the highest among the resiliency indicators in 2020.



Source: Baseline Resilience Indicators for Communities (BRIC) Index

Providence County Outlook

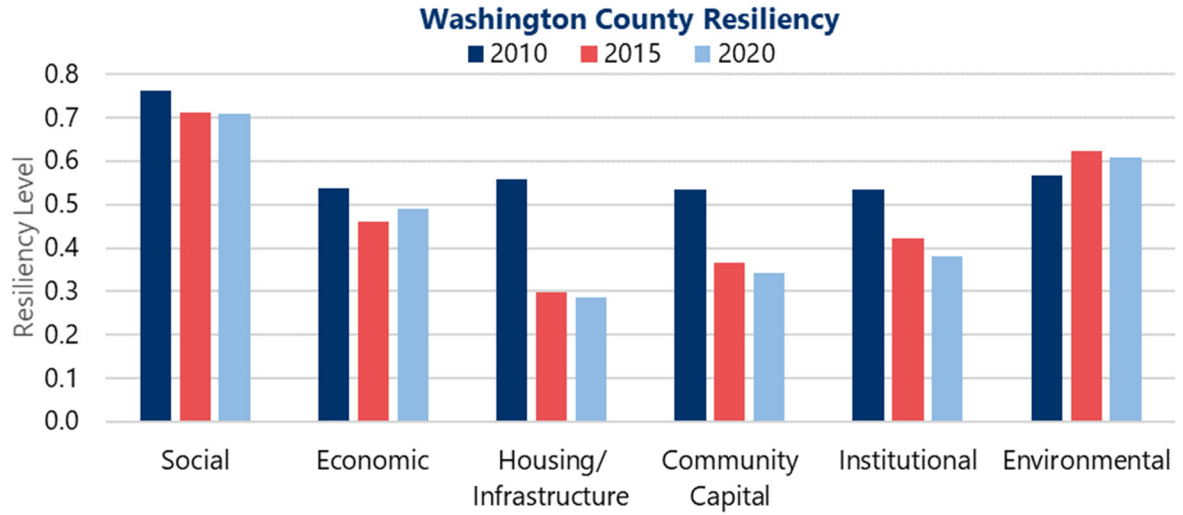
Within Providence County, resiliency decreased across most categories since 2010 with the exception being Environmental and Social resiliency. Since 2015, Economic and Housing/Infrastructure resiliency have increased but Environmental and Social resiliency have both fallen. Keeping with the state trend, the Social resiliency level in Washington County is the highest among the resiliency indicators in 2020.



Source: Baseline Resilience Indicators for Communities (BRIC) Index

Washington County Outlook

Within Washington County, resiliency decreased across most categories since 2010 with the exception being Environmental resiliency (though this has decrease since 2015). Economic resiliency is up since its 2015 level. Following the state trend, the Social resiliency level in Washington County is the highest among the resiliency indicators in 2020.

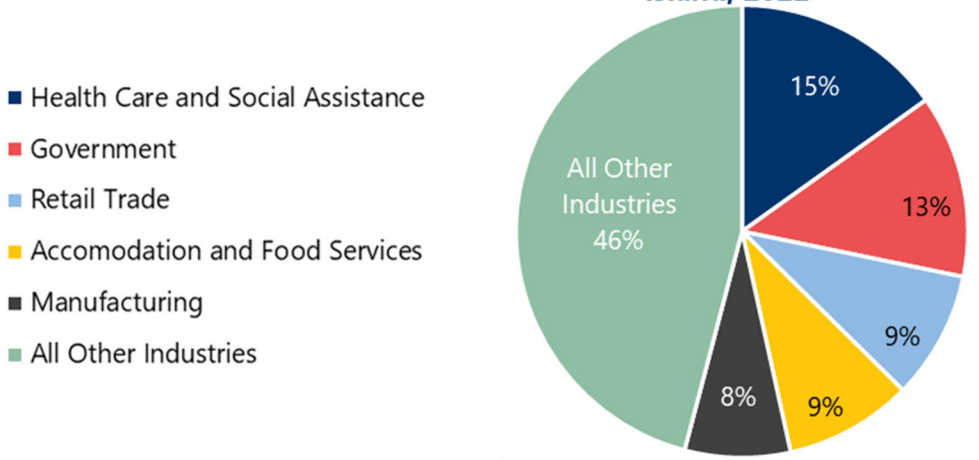


Source: Baseline Resilience Indicators for Communities (BRIC) Index

RISK FACTORS: TOP INDUSTRY SECTORS

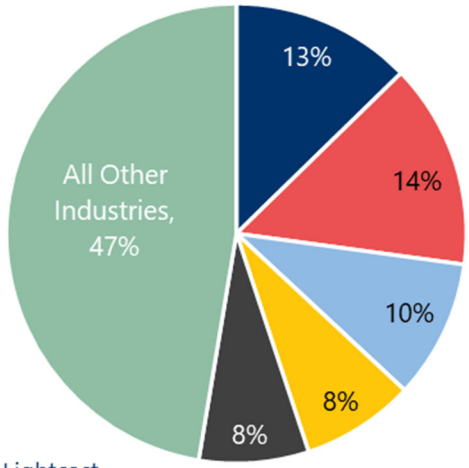
From an industry perspective, Rhode Island's top five industry sectors – which account for 54% of all jobs – show some signs of weakness in terms of job growth, earnings growth, import dependence, and/or age of the workforce. On the national level, these sectors contribute roughly the same share of employment as in Rhode Island.

Top Industry Sectors Share of Employment in Rhode Island, 2022



Source: Lightcast

Top Industry Sectors Share of Employment in US, 2022



Source: Lightcast

Each of the top Rhode Island industry sectors are examined in greater detail below, indicating the potential risk factors in each sector that can negatively impact the sector's resiliency as a whole.

Health Care and Social Assistance – 15% of all jobs

While the Health Care and Social Assistance sector had the highest share of employment in Rhode Island, the state is losing jobs in the sector (-4%) faster than at the national level which increased jobs by 13%. Within the Health and Social Assistance sector, the sub-industries with the most job loss since 2013 are Nursing Care Facilities (-3,227) and Specialty (except Psychiatric and Substance Abuse) Hospitals (-2,961). At 17%, earnings growth for this sector is significantly lower than at the national level (32%). The industry with the lowest earnings growth within the sector is: Blood and Organ Banks (-1%).

Government – 13% of all jobs

The Government sector has the second largest share of employment within the state and has seen a 1% growth in employment since 2013. The state is also adding jobs faster than at the national level (0% growth). The sub-industries within the Government sector with the most job loss since 2013 are State Government jobs including Colleges and Universities (-1,291) and Hospitals (-406). At 24%, earnings growth for this sector is lower than the national level (30%). The industry within this sector with the lowest earnings growth is: US Postal Service (+3%).

Retail Trade – 9% of all jobs

The Retail Trade sector account for the 3rd largest share of employment in the state, and while the sector has grown by 1%, the state is adding jobs slower than at the national level which experience a 3% growth in employment since 2013. The sub-industries with the Retail Trade sector with the most job loss since 2013 are Department Stores (-546) and All Other General Merchandise Stores (-311). At 40%, earnings growth for this sector is lower than the national level (42%). This may make it harder for the state to attract and retain talent. The industry with the lowest earnings growth within the sector is: Used Car Dealers (0%).

Accommodation and Food Services – 9% of all jobs

Of the top 5 Rhode Island industry sectors, the Accommodation and Food Services sector is performing the best relative to the national level. The sector accounts for the 4th largest share of employment in the state and has grown 7.1% since 2013. The state is adding jobs slightly faster than at the national level which experience a 6.9% growth over the same time series. The sub-industries within the Accommodation and Food Services sector with the most job loss since 2013 are Drinking Places (Alcoholic Beverages) (-280) and Food Service Contractors (-278). At 55%, earnings growth for this sector is higher than at the national level (45%). The industry with the lowest earnings growth within the sector is: Cafeterias, Grill Buffets, and Buffets (+19%).

Manufacturing – 8% of all jobs

The Manufacturing sector rounds out the top 5 industry sectors in terms of share of Rhode Island's Employment at 8%. The sector has however seen a 1% reduction in total employment in Rhode Island since 2013, indicating that the state is losing jobs faster than at the national level, which increased jobs by 5%. The sub-industries within the Manufacturing sector with the most job loss since 2013 are Jewelry and Silverware Manufacturing (-1,033) and Boat Building (-2,018). At 24%, earnings growth for this sector is lower than at the national level (27%). The industry with the lowest earnings growth within the sector is: Office Supplies (Except Paper) Manufacturing (-45%).

DATA SOURCES

Lightcast (formerly Emsi Burning Glass) is a global leader in labor market analytics, offering a data platform that gives a comprehensive, nuanced, and up-to-date picture of labor markets at all scales from national to local. Key components of the platform include traditional labor market information, job postings analytics, talent profile data, compensation data, and skills. analytics. Lightcast integrates government data with information from online job postings, talent profiles, and resumes to produce timely intelligence on the state of the labor market. Job and compensation data is available by industry, occupation, educational program, and skill type. Click to learn more.

University of South Carolina BRIC- The Baseline Resilience Indicators for Communities (BRIC) index considers six broad categories of community disaster resilience: social, economic, community capital, institutional, infrastructural, and environmental at the county level. Used as an initial baseline for monitoring existing attributes of resilience to natural hazards, BRIC can be used to compare places to one another, to determine the specific drivers of resilience for counties, and to monitor improvements in resilience over time. Presently, county-level BRIC is available at two time-periods, 2010 and 2015 for the continental U.S., with 2015 also including Alaska and Hawaii. The BRIC index uses a capitals approach in providing an overall baseline assessment for monitoring existing attributes of resilience to natural hazards. Developed for U.S. counties, BRIC can compare one county to another, help to understand the specific drivers of resilience for individual counties, and monitor improvements in resilience over time.

Small Business Analysis

APPENDIX E: STATEWIDE DIAGNOSTIC COMPONENT
Ocean State Accelerates

Rhode Island Long-Term Economic Development Strategy

April 2023

&Access camoin associates

SMALL BUSINESS OVERVIEW

In alignment with the U.S. Commerce Department's Economic Development Administration (EDA), Rhode Island General Assembly defines "small businesses" as a person, partnership, corporation, or other forms of business entity independently owned and operated, not dominant in its field and which business employs five hundred (500) or fewer employees and has its principal place of business located in the state of Rhode Island. This definition shall apply in the interpretation of any statute, regulation, or executive order.

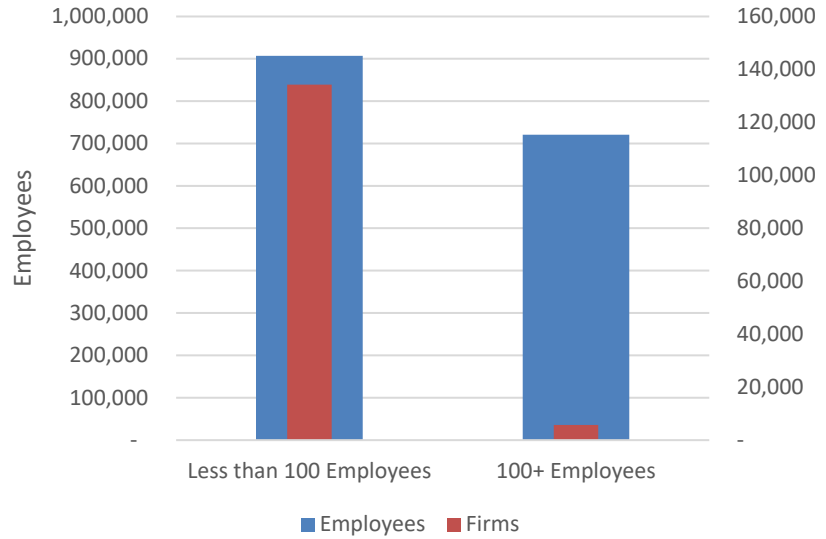
Since only 2% of firms have over 100 employees, the following analysis grouped firms with 100 to 249, 250 to 499, and 500 employees or more. This approach aligns with previous work completed by Commerce, namely Rhode Island BIPOC Small Business Ecosystem Assessment (2022) and Risk Reduction for Small Business Resiliency in Rhode Island (2019) that uses less than 50 employees.

The following report seeks to answer:

- What is the current makeup of Rhode Island's small businesses?
- How hard is it to start a small business?
- What barriers are there to developing a small business?

Key Stats

In Rhode Island, approximately 96% of businesses are small (less than 100 employees) and these businesses employ 55.7% of the private workforce, not adding the sole proprietors.



Source: U.S. Census Bureau | Annual Business Survey (2017); U.S. Bureau of Labor Statistics | Quarterly Census of Employment and Wages (2021)

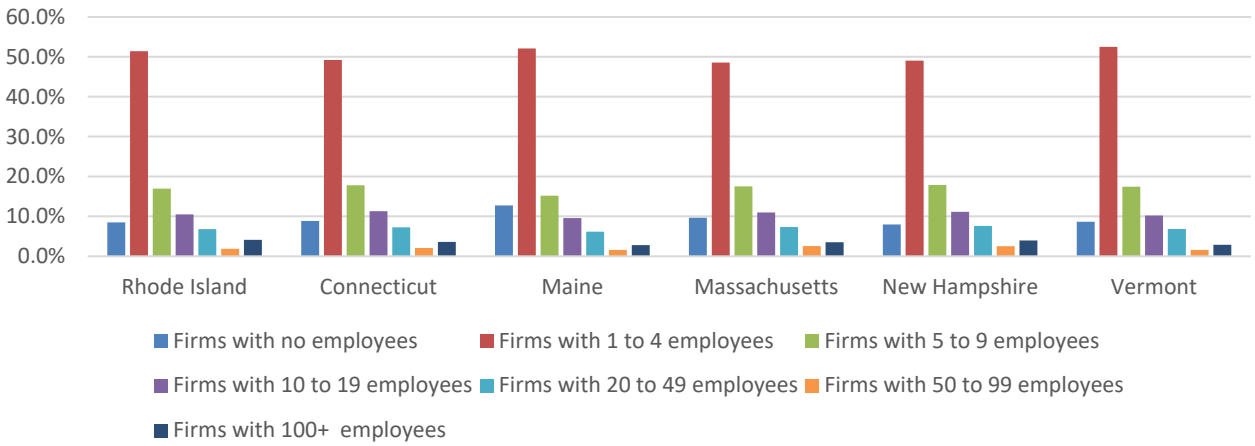
Key Takeaways

1. **Firms with 1 to 4 employees represent 51.4% of all businesses by employment size**. 96% of all Rhode Island businesses employ less than 100 employees, and most firms employ 1 to 4 people. However, these firms only employ 15.5% of all small business employees. Strategies to help these firms grow could increase the state's economic activity.
2. **The Construction and Professional, Scientific, and Technical Services Industries exhibited substantial growth from 2017 to 2022 and represented sizable industries by firm and employment count**. Construction firms with less than 100 employees grew by 11% from 2017 to 2022, representing 16% of all small businesses, nearly 21,000 firms, and over 108,000 employees. And Professional, Scientific, and Technical Services firms with less than 100 employees grew by 16% from 2017 to 2022, representing 14% of all small businesses, over 18,000 firms, and over 90,000 employees.
3. **Rhode Island has a healthy balance of legacy and newly established businesses.** Approximately 55% of businesses opened in 2020 or earlier, showcasing the opportunity for Rhode Island to foster mature businesses. This balanced mix contributes to innovation, stability, and a resilient local economy.
4. **The Community Reinvestment Act details how small business lending activity primarily serves firms with more than $1 million in revenue, even though firms with fewer than five employees across all industries (except Wholesale Trade) make less than $1 million on average**. This finding highlights the need to reassess lending practices to serve the range of smaller businesses' access to capital needs. Many smaller businesses may not be deemed as "bankable" and do not favor loans; therefore, grant opportunities might be better aligned with the needs of firms with fewer than five employees.

Number of Small Businesses

Rhode Island's distribution of firms aligns with other New England states, with nearly half of all firms having between 1 to 4 employees. 9% of Rhode Island Firms have no employees compared to an average of 8.5% across all other New England states. Rhode Island also has a greater share of firms with 100 or more employees (4.1%) than any other state in New England. When comparing the residential population to the number of firms with less than 100 employees in the state, Rhode Island's population exceeds the firm count 8.2 times at the upper range of New England states, meaning there are fewer small businesses per capita than in states with lower ratios (i.e., Vermont). 9% of Rhode Island Firms have no employees compared to an average of 8.5% across all other New England states. Rhode Island also has a greater share of firms with 100 or more employees (4.1%) than any other state in New England.

Number of Firms by Employment Size



Resident to Small Business Ratio

8.2 | Rhode Island

8.6 | Connecticut

6.8 | Maine

8.1 | Massachusetts

8.0 | New Hampshire

6.5 | Vermont

Source: U.S. Census Bureau | Annual Business Survey (2017) & ESRI

Small Business by NAICS Code

Firm Count by New England State

Throughout New England, small businesses make up a comparable share of North American Industry Classification System (NAICS) codes by state. Construction (NAICS code 23) and Professional, Scientific, and Technical Services (NAICS code 54) have larger shares of small businesses when compared across states. In Rhode Island, Accommodation and Food Service firms (NAICS code 72) make up a greater share of small businesses than in other New England states, highlighting the state's major tourism and restaurant clusters.

Firm Count by NAICS Code in New England State

NAICS Code		Rhode Island	Connecticut	Maine	Massachusetts	New Hampshire	Vermont
11	Agriculture, forestry, fishing and hunting	0%	0%	3%	0%	1%	1%
21	Mining, quarrying, and oil and gas extraction	0%	0%	0%	0%	0%	0%
22	Utilities	0%	0%	0%	0%	0%	0%
23	Construction	16%	13%	17%	15%	15%	17%
31	Manufacturing	6%	5%	5%	4%	6%	6%
42	Wholesale trade	4%	4%	3%	4%	5%	3%
44	Retail trade	13%	13%	13%	12%	13%	15%
48	Transportation and warehousing	3%	2%	3%	2%	2%	2%
51	Information	1%	1%	1%	1%	1%	1%
52	Finance and insurance	3%	4%	2%	3%	3%	2%
53	Real estate and rental and leasing	1%	4%	5%	4%	4%	4%
54	Professional, scientific, and technical services	14%	13%	11%	15%	12%	13%
55	Management of companies and enterprises	0%	0%	0%	0%	0%	0%
56	Administrative and support and waste management and remediation services	7%	7%	7%	7%	7%	7%
61	Educational services	1%	1%	1%	2%	1%	1%
62	Health care and social assistance	9%	10%	9%	9%	8%	8%
71	Arts, entertainment, and recreation	1%	2%	2%	2%	2%	2%
72	Accommodation and food services	13%	11%	12%	11%	11%	11%
81	Other services (except public administration)	8%	9%	6%	8%	8%	6%

Source: U.S. Census Bureau | Annual Business Survey (2017)

Number of Firms by NAICS Code and Firm Size (Rhode Island)

The following analysis details Rhode Island's business counts, providing darker green shades for a greater count of firms by column/employment (e.g., the 14,096 firms in the construction industry is the greatest of all firms with 1 to 4 employees). Across all industries, except for Real Estate and Rental and Leasing (NAICS code 53) and Management of Companies and Enterprises (NAICS code 55), firms with 1 to 4 employees represent the greatest firm count across all NAICS codes.

Number of Firms by NAICS Code and Firm Size

NAICS Code		0 employees	1 to 4 employees	5 to 9 employees	10 to 19 employees	20 to 49 employees	50 to 99 employees
11	Agriculture, forestry, fishing and hunting		234				
21	Mining, quarrying, and oil and gas extraction						
22	Utilities						
23	Construction	62	14,096	4,183	1,650	705	169
31	Manufacturing		4,057	1,315	916	1,218	468
42	Wholesale trade	473	2,738		905	466	330
44	Retail trade	1,652	8,979	3,386	1,732	824	349
48	Transportation and warehousing	580	2,348	451	418	236	
51	Information	131	684	235	98	102	
52	Finance and insurance	219	2,579	727	193	12	72
53	Real estate and rental and leasing	802	194	668		23	
54	Professional, scientific, and technical services	1,227	11,840	2,845	1,332	879	255
55	Management of companies and enterprises						93
56	Administrative and support and waste management and remediation services	2,814	4,633	1,187	763	539	
61	Educational services	186	732	107	59	90	38
62	Health care and social assistance	702	5,791	2,605	1,642	1,240	331
71	Arts, entertainment, and recreation	82	1,060	419	252	40	19
72	Accommodation and food services	2,234	4,916	3,461	3,812	2,715	461
81	Other services (except public administration)	689	6,902	2,131	880	390	

Source: U.S. Census Bureau | Annual Business Survey (2017)

Firm Growth

Since small businesses account for 96% of all establishments, the following table analyzes establishment growth for businesses of all sizes.

From 2017 to 2022, most industries decreased in the number of firms. Arts, Entertainment, and Recreation (NAICS Code 71) experienced the greatest percentage change in the firm count, likely an economic impact of the pandemic as people were unable and uncomfortable patronizing many businesses in the category.

Over the same period, sizable growth occurred in Mining, Quarrying, and Oil and Gas Extraction (NAICS Code 21), Construction (NAICS Code 23), Transportation and Warehousing (NAICS Code 48), and Professional, Scientific, and Technical Services (NAICS Code 54). Mining, Quarrying, and Oil and Gas Extraction firms represent few small businesses, while the other categories likely experienced greater growth in the number of firms.

Percentage Growth by Industry (2017-2022)

NAICS Code		% Change
11	Agriculture, forestry, fishing and hunting	5%
21	Mining, quarrying, and oil and gas extraction	55%
22	Utilities	0%
23	Construction	11%
31	Manufacturing	-3%
42	Wholesale trade	-6%
44	Retail trade	-5%
48	Transportation and warehousing	19%
51	Information	-13%
52	Finance and insurance	-3%
53	Real estate and rental and leasing	-6%
54	Professional, scientific, and technical services	16%
55	Management of companies and enterprises	-9%
56	Administrative and support and waste management and remediation services	-1%
61	Educational services	0%
62	Health care and social assistance	-4%
71	Arts, entertainment, and recreation	-26%
72	Accommodation and food services	-7%
81	Other services (except public administration)	-7%

Source: Lightcast (2022)

Rhode Island Employment by Firm Size

To further detail Rhode Island's small businesses, the following table assesses the sum of each NAICS 2-digit employment count by the employment size cohorts. Note, firms with 0 employees were included as sole proprietors are individuals who also work, while corporations might employ only one person.

Overall, firms with 20 to 49 employees have the most employees, with Manufacturing, Retail Trade, Health Care and Social Assistance, and Accommodation and Food Services accounting for industries with over 20,000 employees. The greatest share of employees is in Accommodation and Food Services (NAICS code 72), more specifically in firms with 20 to 49 employees. There are several firm size cohorts without employees or firms, an insight that needs further research to determine why.

Number of Employees by Firm Size – Rhode Island

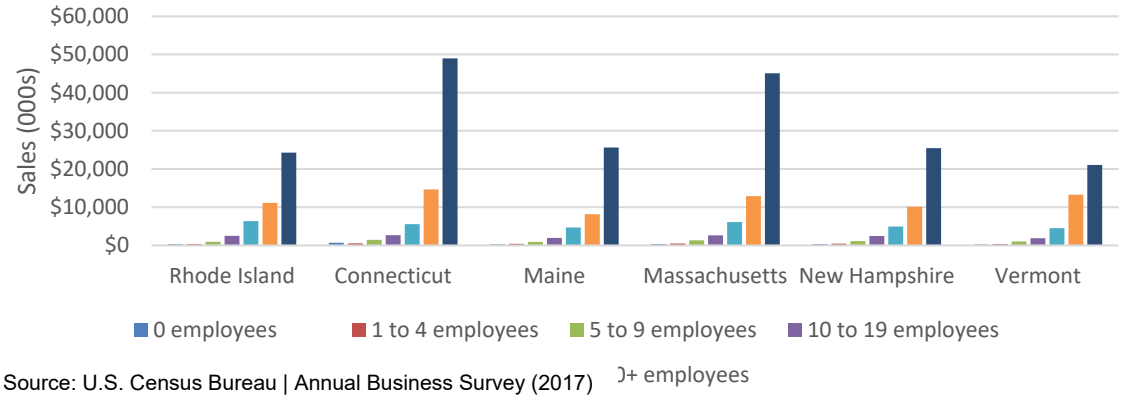
NAICS Code		0 employees	1 to 4 employees	5 to 9 employees	10 to 19 employees	20 to 49 employees	50 to 99 employees	Average
11	Agriculture, forestry, fishing and hunting	-	410	-	-	-	-	1.8
21	Mining, quarrying, and oil and gas extraction	-	-	-	-	-	-	-
22	Utilities	-	-	-	-	-	-	-
23	Construction	62	25,001	27,947	22,116	20,464	13,292	22.1
31	Manufacturing	-	7,879	8,506	13,411	34,731	28,232	19.2
42	Wholesale trade	473	5,521	-	11,962	10,758	14,326	21.0
44	Retail trade	1,652	19,260	22,126	22,432	22,870	14,625	14.9
48	Transportation and warehousing	580	3,898	3,029	5,670	6,020	-	10.9
51	Information	131	1,196	1,508	1,411	2,626	-	12.2
52	Finance and insurance	219	5,494	4,577	2,503	325	4,280	17.8
53	Real estate and rental and leasing	802	366	3,996	-	571	-	7.0
54	Professional, scientific, and technical services	1,227	20,995	19,468	16,700	19,950	11,833	16.2
55	Management of companies and enterprises	-	-	-	-	-	882	9.4
56	Administrative and support and waste management and remediation services	2,814	8,886	7,937	9,877	13,620	-	10.6
61	Educational services	186	1,765	691	818	2,897	2,235	13.5
62	Health care and social assistance	702	12,849	17,874	22,293	38,140	22,657	22.1
71	Arts, entertainment, and recreation	82	2,248	3,027	3,509	1,141	1,073	10.5
72	Accommodation and food services	2,234	12,739	23,172	55,384	81,137	26,683	18.6
81	Other services (except public administration)	689	14,481	13,651	10,956	11,778	-	10.7
TOTAL		**11,853**	**142,988**	**157,509**	**199,042**	**267,028**	**140,118**	**12.5**

Source: U.S. Census Bureau | Annual Business Survey (2017)

Small Business Sales

Sales, value of shipments, or revenue of employer firms is defined as Sales throughout this analysis and was analyzed by firm size, by NAICS, and per employee to understand revenue expectations when designing business support programs.

Sales by Firm Size per State

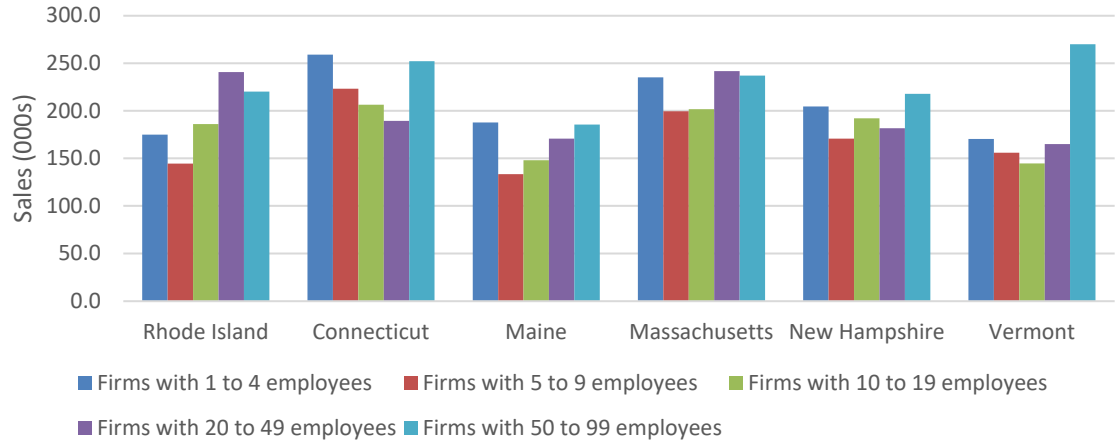


Source: U.S. Census Bureau | Annual Business Survey (2017)

Average Sales by Firm Size (New England Comparison)

Across New England states, sales increase with employment size. Notably, Connecticut and Massachusetts exceed the New England average across all categories, particularly with much higher sales among larger firms with 100 or more employees. Rhode Island's average sales are below the New England average in all employment cohorts except for those between 10 and 99 employees.

Average Sales per employee by Firm Size



Source: U.S. Census Bureau | Annual Business Survey

Average Sales per Employee by Firm Size (New England Comparison)

However, when comparing sales per employee for small businesses, firms with 1 to 4 employees have greater revenues than those with 5 to 9 employees in all states. There is no trend across other cohorts of firm sizes. In Rhode Island, firms with 20 to 49 employees generate the most sales per employee.

Average Sales by Firm Size (Rhode Island)

When diving into Rhode Island sales data more precisely, Wholesale Trade (NAICS Code 42) firms are the most productive in the state, with the highest average sales per firm and employee (note, there are no firms in the Wholesale Trade industry with 5 to 9 employees). Revenues diminish as firm employment decreases, yet Wholesale Trade firms with 20 to 49 employees make more on average than those with 50 to 99 employees. Similarly, the sales of firms 20 to 49 and 50 to 99 are comparable for Arts, Entertainment, and Recreation (NAICS Code 71) firms.

Average Sales by Firm Size

NAICS Code		Firms with no employees	Firms with 1 to 4 employees	Firms with 5 to 9 employees	Firms with 10 to 19 employees	Firms with 20 to 49 employees	Firms with 50 to 99 employees	Average
11	Agriculture, forestry, fishing and hunting	$0	$383	$0	$0	$0	$0	$383
21	Mining, quarrying, and oil and gas extraction	$0	$0	$0	$0	$0	$0	$0
22	Utilities	$0	$0	$0	$0	$0	$0	$0
23	Construction	$162	$302	$1,180	$2,657	$9,390	$15,702	$4,852
31	Manufacturing	$0	$368	$1,526	$2,656	$8,809	$13,622	$4,664
42	Wholesale trade	$895	$1,313	$0	$10,543	$22,665	$21,572	$11,680
44	Retail trade	$409	$607	$1,657	$3,032	$11,061	$19,795	$4,677
48	Transportation and warehousing	$145	$289	$748	$1,720	$3,021	$0	$1,072
51	Information	$64	$239	$1,017	$1,762	$4,161	$0	$1,481
52	Finance and insurance	$209	$380	$1,123	$3,066	$6,173	$16,576	$3,780
53	Real estate and rental and leasing	$947	$460	$1,415	$0	$3,070	$0	$1,180
54	Professional, scientific, and technical services	$125	$257	$918	$2,164	$3,454	$6,313	$1,915
55	Management of companies and enterprises	$0	$0	$0	$0	$0	$244	$244
56	Administrative and support and waste management and remediation services	$173	$233	$772	$979	$2,323	$0	$770
61	Educational services	$166	$148	$205	$879	$1,906	$5,221	$770
62	Health care and social assistance	$333	$225	$788	$1,598	$2,569	$5,688	$1,731
71	Arts, entertainment, and recreation	$258	$429	$654	$1,454	$3,266	$3,305	$1,034
72	Accommodation and food services	$319	$214	$391	$823	$1,919	$3,351	$950
81	Other services (except public administration)	$120	$212	$580	$1,098	$3,476	$0	$928

Source: U.S. Census Bureau | Annual Business Survey (2017)

Average Sales per Employee by NAICS Code

NAICS Code		1 to 4 employees	5 to 9 employees	10 to 19 employees	20 to 49 employees	50 to 99 employees	Average
11	Agriculture, forestry, fishing and hunting	218	-	-	-	-	218.2
21	Mining, quarrying, and oil and gas extraction	-	-	-	-	-	
22	Utilities	-	-	-	-	-	
23	Construction	176	180	198	324	200	209.0
31	Manufacturing	194	237	185	312	226	227.7
42	Wholesale trade	642	-	798	988	547	736.9
44	Retail trade	282	251	231	384	473	309.6
48	Transportation and warehousing	180	111	127	119	-	139.3
51	Information	136	158	122	163	-	144.0
52	Finance and insurance	186	178	235	228	281	216.1
53	Real estate and rental and leasing	315	237		124	-	241.5
54	Professional, scientific, and technical services	148	135	173	152	132	147.5
55	Management of companies and enterprises	-	-	-	-	26	25.5
56	Administrative and support and waste management and remediation services	122	115	76	94	-	103.1
61	Educational services	62	31	60	59	89	55.0
62	Health care and social assistance	104	115	118	82	83	101.4
71	Arts, entertainment, and recreation	203	92	105	115	59	134.0
72	Accommodation and food services	88	59	57	64	57	66.2
81	Other services (except public administration)	99	91	88	115	-	98.5

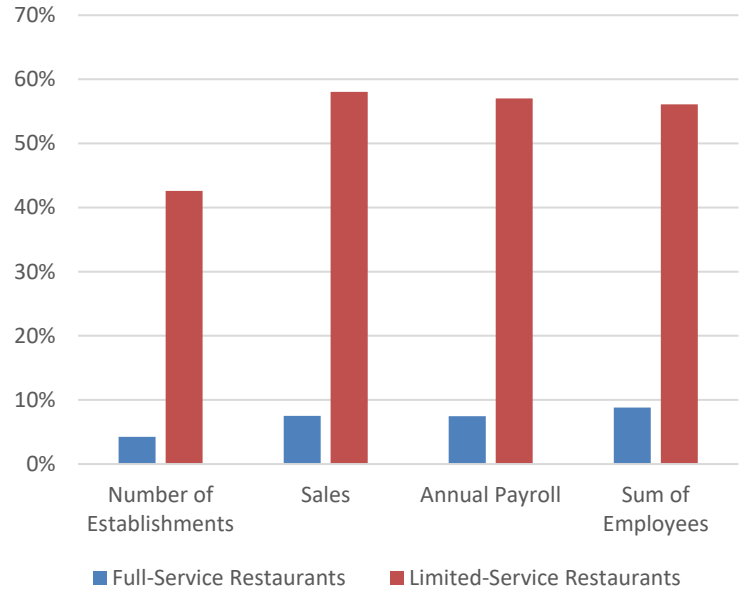
Source: U.S. Census Bureau | Annual Business Survey (2017)

Franchised Establishments (NAICS 72251 – Restaurants and Other Eating Places)

Franchising is distributing products or services involving a franchisor, which establishes the brand's trademark or trade name and a business system, and a franchisee, who pays a royalty and often an initial fee for the right to do business under the franchisor's name and system. The U.S. Census Bureau 2017 Economic Census details how franchises are most commonly fast-food establishments and provides data for franchised establishments in Rhode Island's Restaurants and Other Eating Places industry (NAICS code 72251). This data details how a greater share of establishments for both full-service and limited-service restaurants are not franchised. However, limited-service restaurants are more likely to be franchises than full-service restaurants.

Limited-service restaurants comprise establishments primarily providing food services (except snack and nonalcoholic beverage bars) where patrons generally order or select items and pay before eating. Food and drink may be consumed on premises, taken out, or delivered to the customer's location. Some establishments in this industry may provide these food services and sell alcoholic beverages. With standard operating procedures, brand recognition, and economies of scale in sourcing and other operations, franchise establishments have greater economic outputs per store. Limited-service restaurants account for over 50% of total sales, payroll, and employment in the subindustry, while full-service restaurants do not exceed 10% In any category studied. There is an opportunity to support independent businesses in reaching these outcomes.

Key Statistics for Franchise Establishments
(Percentage share of total establishment count - NAICS code 72251)



Source: U.S. Census Bureau | Annual Business Survey (2017)

Restaurant Establishments in Rhode Island

	Full-service restaurants		Limited-service restaurants	
	All establishments	**Franchise establishments**	**All establishments**	**Franchise establishments**
Number of Establishments	1,155	49	892	380
Sales	$1,253,000	$94,006	$632,600	$367,069
Annual Payroll	$434,091	$32,428	$168,816	$96,244
Sum of Employees	22,142	1,947	11,193	6,277

Source: U.S. Census Bureau | Economic Census (2017) | Franchise Statistics Report (2017)

Rhode Island Business Owner Characteristics

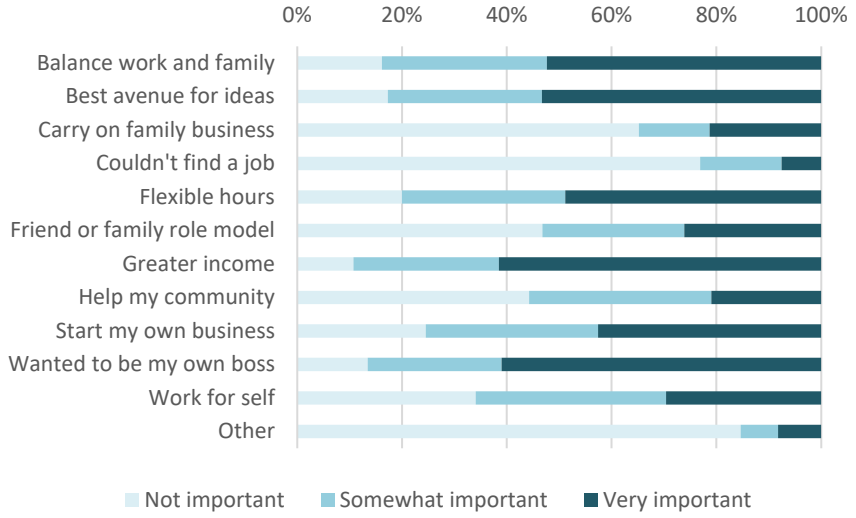
Business owners in Rhode Island were surveyed in 2017 through the U.S. Census Bureau's Annual Business Survey (ABS) to provide greater understanding of the following subjects, many of which analyzed in the section below:

- How Initially Acquired Business
- Year Acquired Ownership of Business
- Primary Function(s) in Business
- Average Hours Per Week Spent Working
- Primary Source of Income
- Number of Businesses Owned Previously
- Highest Level of Education Completed
- Field of Highest Degree
- Age of the Owner
- Reasons for Owning the Business
- Owner Born in the United States
- Owner Citizen of the United States
- Service-Disabled
- Other Veteran Characteristics
- Current Status of Prior Businesses Owned

Reason for Owning the Business

Business owners start/own businesses for a range of reasons from wanting to fulfill an unmet need or providing reasons to get out of the house (insights from qualitative interviews). Per the 2017 ABS, options that were rated the most important included greater income, wanted to be my own boss, and best avenue for ideas. Conversely, couldn't find a job, carry on family business, and friend or family role model were the top three "not important" factors. Most business owners are skilled with critical thinking skills and tenacity that enables them to remain employed. More below.

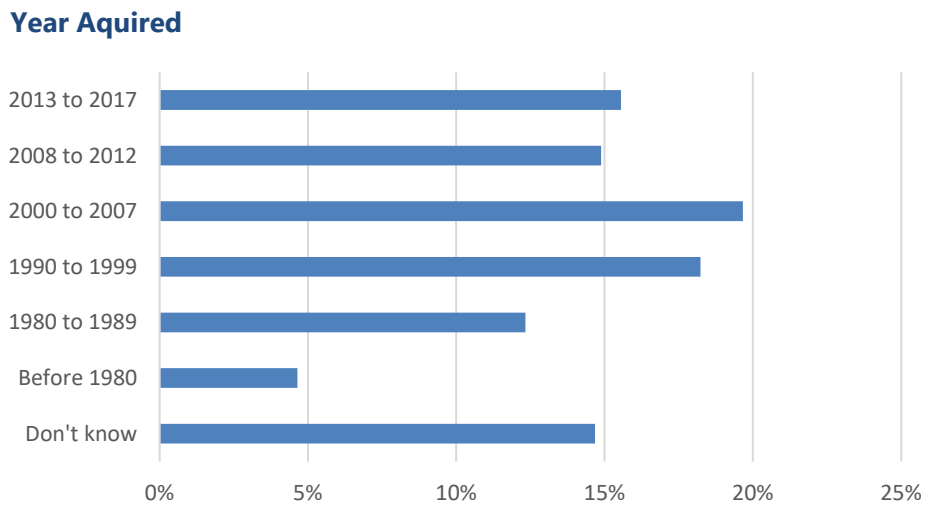
Reason for Ownership



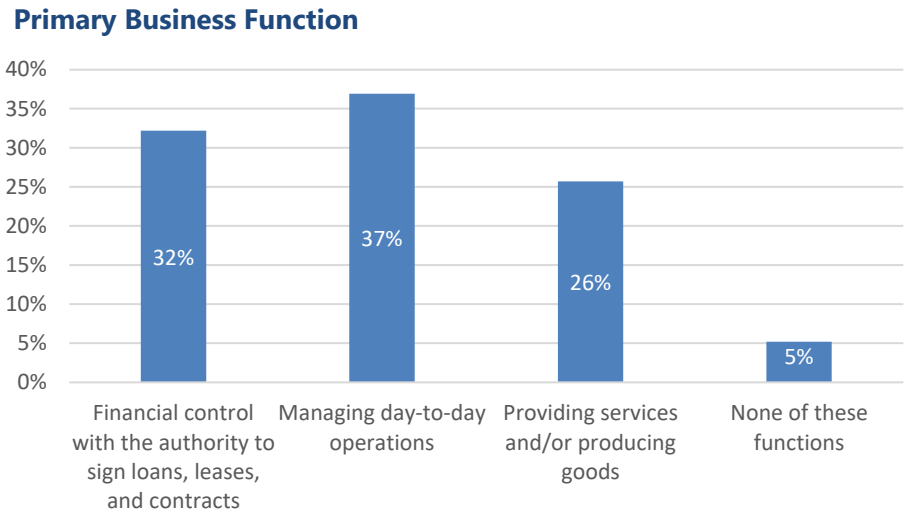
Source: U.S. Census Bureau | Annual Business Survey | Characteristics of Business Owners (2017)

Year Acquired Ownership of Business

The following chart groups businesses in ranges of years businesses were acquired/started. These ranges are unequal in the number of years, but it can be concluded that most businesses were open in the five years preceding the ABS. However, from 2000 to 2017 the number of businesses acquired were comparable year-over-year, indicating the age of many businesses. The mix of newly established and legacy businesses creates a balanced ecosystem that supports both innovation and stability in the local economy.



Source: U.S. Census Bureau | Annual Business Survey | Characteristics of Business Owners (2017)



Source: U.S. Census Bureau | Annual Business Survey | Characteristics of Business Owners (2017)

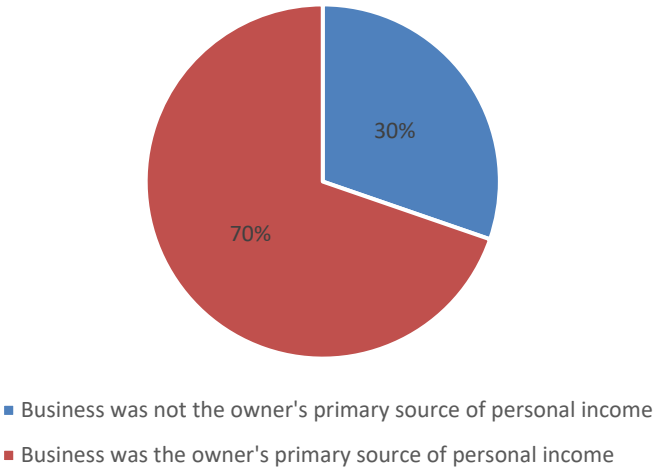
Primary Function(s) in Business

Although many business owners conduct a range of functions, particularly those who or sole employees/proprietors, the ABS inquired which functions are the primary ones of the owner. Managing day-to-day operations was the most frequent response, with 37% of the total. However, financial control represented nearly a third of the responses as well.

Primary Source of Income

The 2017 ABS asked owners if the business was the owner's primary source of personal income, alluding to whether their business was a "side hustle" or business that the owner had alongside other employment or business ventures. Most business owners rely on their businesses as their primary source of income.

Business Owners Primary Income Source

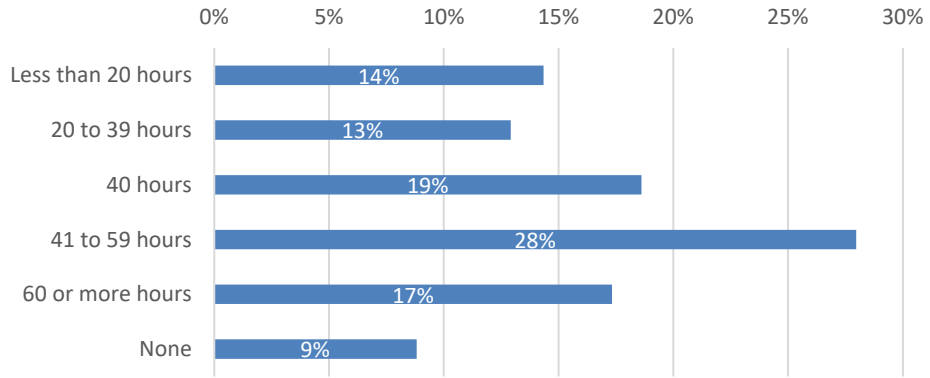


Source: U.S. Census Bureau | Annual Business Survey | Characteristics of Business Owners (2017)

Average Hours Spent Working per Week

Building upon the previous findings, the ABS also asked about how many hours each owner worked per week. A majority (45%) of business owners devoted more than 40 hours per week working for their business. Business owners that spent no hours working on their business potentially have dedicated business operators/managers or are businesses that do not produce income.

Weekly Work Hours

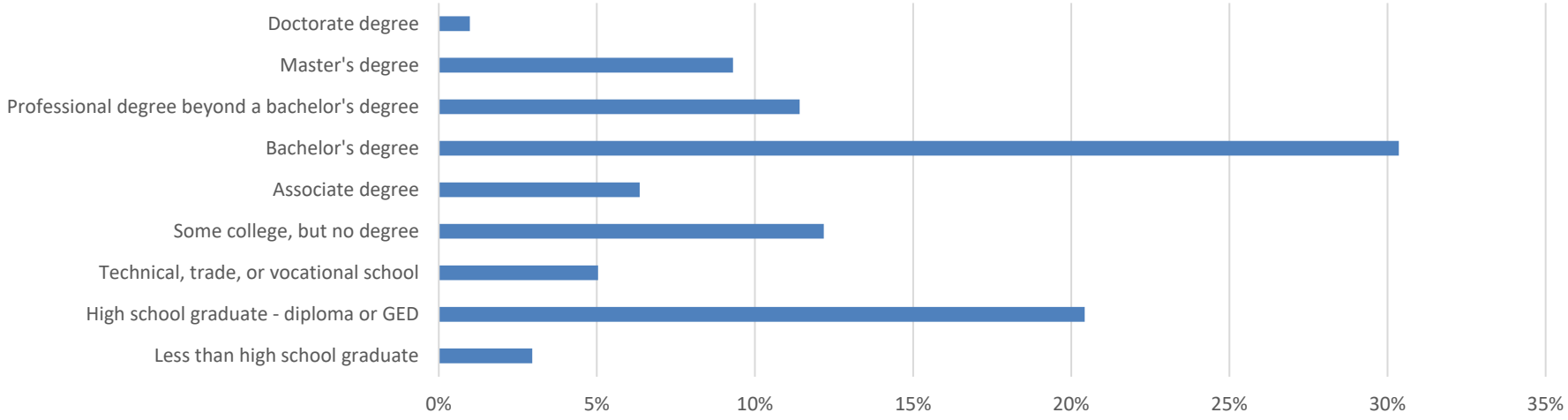


Source: U.S. Census Bureau | Annual Business Survey | Characteristics of Business Owners (2017)

Educational Attainment

In Rhode Island, the educational attainment of business owners varies across a broad spectrum. Only 3% of owners have not completed high school, while 20% hold a high school diploma or GED. A significant proportion of business owners have pursued higher education, with 12% having some college experience without obtaining a degree, 6% possessing an associate degree, and 30% having earned a bachelor's degree. Additionally, 11% have professional degrees beyond a bachelor's, 9% hold a master's degree, 5% are graduates of technical, trade, or vocational schools, and just 1% have achieved a doctorate degree. This indicates that a majority of business owners in Rhode Island have higher levels of education attainment. This may indicate a barrier to entry for those who are lacking higher education qualifications, in particular immigrants or groups with lower levels of formal education may face additional obstacles when entering the small business entrepreneurial ecosystem. These challenges can include language barriers, limited awareness of business resources, lack of familiarity with local regulations and requirements, and technical literacy.

Rhode Island Business Owner Education Attainment

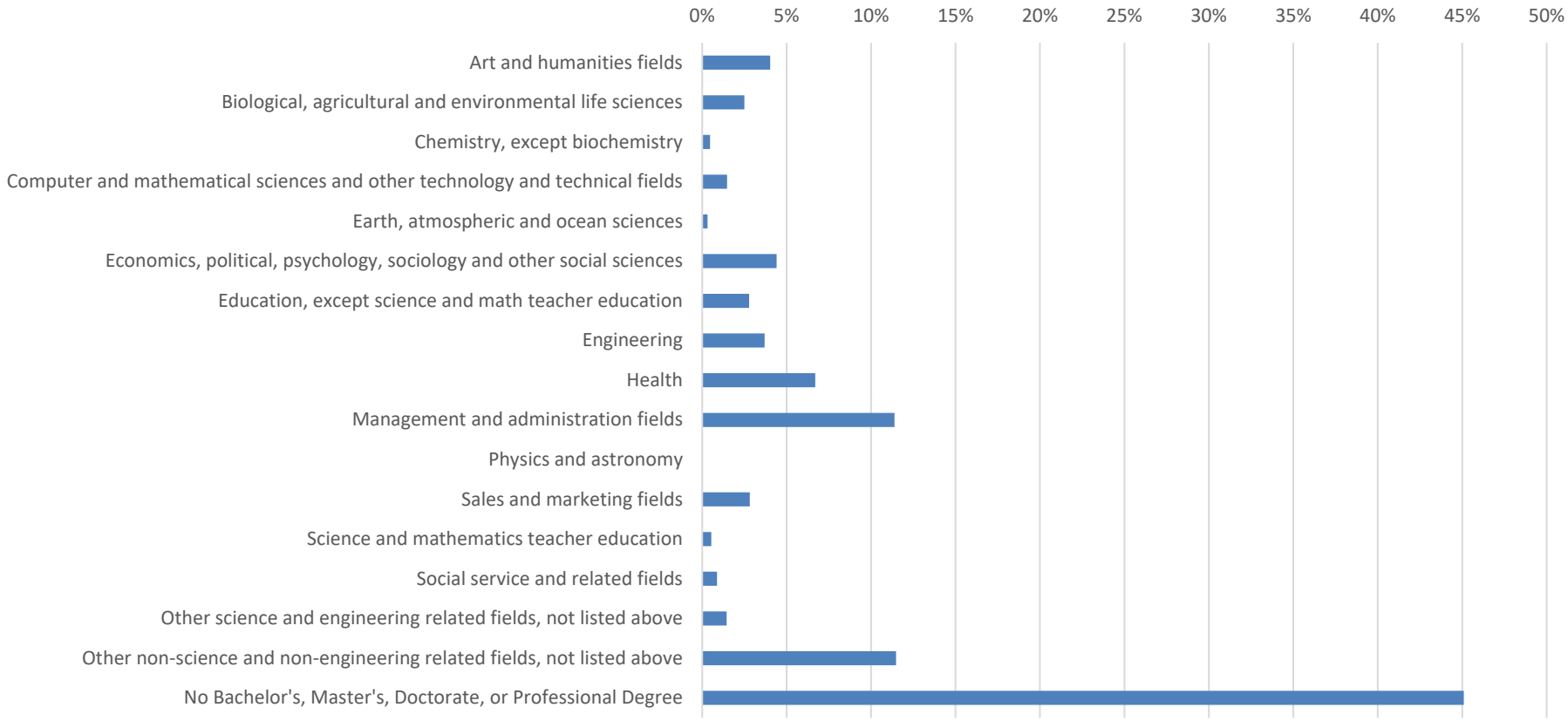


Source: U.S. Census Bureau | Annual Business Survey | Characteristics of Business Owners (2017)

Educational Field

In Rhode Island, the educational backgrounds of business owners span a diverse range of fields. A significant portion of owners have degrees in management, administration, and other non-science and non-engineering related disciplines, while others have pursued health, engineering, arts and humanities, and various social sciences. 45% of business owners do not hold a bachelor's, master's, doctorate, or professional degree but may have some form of higher education as shown in the chart regarding Educational Attainment.

Educated Business Owner Field of Study

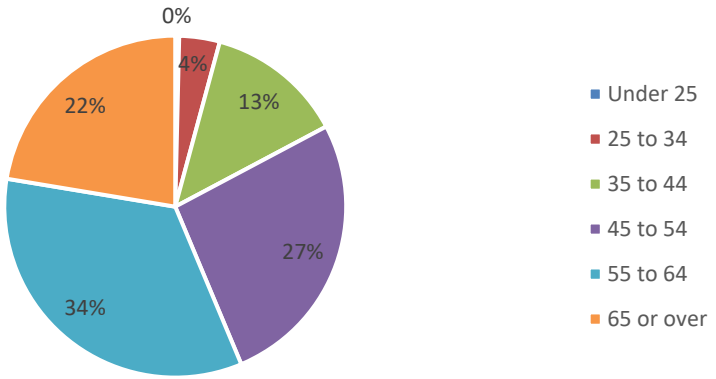


Source: U.S. Census Bureau | Annual Business Survey | Characteristics of Business Owners (2017)

Owner's Age

In Rhode Island, most business owners are aged 45 and older, with 34% between 55-64 and 27% between 45-54 years old. Only a small proportion (4%) of owners are aged 25-34, and less than 1% are under 25. This suggests that the small business ecosystem in Rhode Island is predominantly led by older, more experienced individuals, potentially indicating a high barrier to entry for younger entrepreneurs and a significant need to have succession plans in place to support retirement of these owners.

Rhode Island Business Owner Age Range

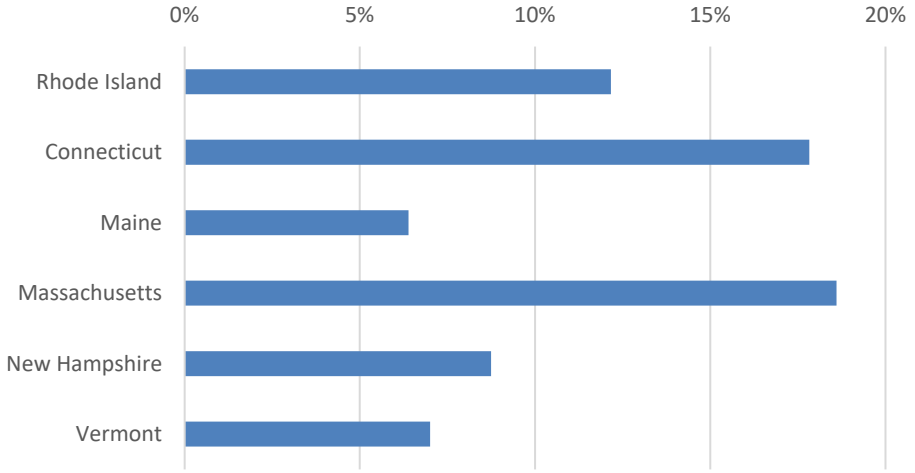


Source: U.S. Census Bureau | Annual Business Survey | Characteristics of Business Owners (2017)

Foreign Born Owners

Rhode Island has a notable percentage of foreign-born business owners at 12%, although it is not the highest in the region. Massachusetts leads with 19%, followed by Connecticut at 18%, while Maine (6%), New Hampshire (9%), and Vermont (7%) have lower percentages. This data suggests that there may be varying levels of immigrant integration and support for foreign-born entrepreneurs. The presence of foreign-born business owners in Rhode Island indicates a degree of diversity in the state's small business ecosystem.

Percent of Foreign Born Owners



Source: U.S. Census Bureau | Annual Business Survey | Characteristics of Business Owners (2017)

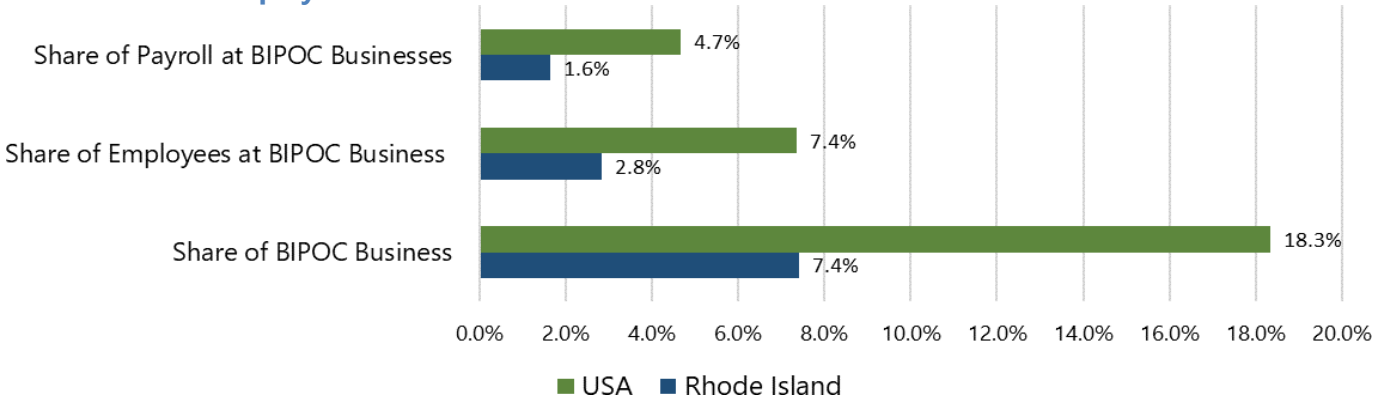
Rhode Island's BIPOC Environment

In January 2022, Rhode Island Commerce released Rhode Island Black, Indigenous, and people of color (BIPOC) Small Business Ecosystem Assessment that intended to provide a strategy for supporting the startup, sustainability, and growth of Rhode Island's BIPOC businesses. The following outlines the reports key findings provided in chapter 2, Rhode Island BIPOC Business Environment by the Numbers.

BIPOC Business Employer Participation Rates, RI vs. US

In Rhode Island, the percentage of BIPOC-owned businesses falls short of the national average. Data from the 2016 U.S. Census Bureau Annual Survey of Entrepreneurs reveals that out of more than 21,000 firms operating in the state, only 2,275 are owned by BIPOC individuals, accounting for just 7.4% of all businesses. In contrast, the proportion of BIPOC-owned businesses nationally is twice that figure, at 18.3%. Furthermore, BIPOC-owned businesses have a larger percentage of employees and payroll nationwide, at 7.4% and 4.7%, respectively, compared to 2.8% and 1.6% in Rhode Island. Note that the data examined originates from 2016 census data and may have changed since the time of analysis.

BIPOC Business Employer Data

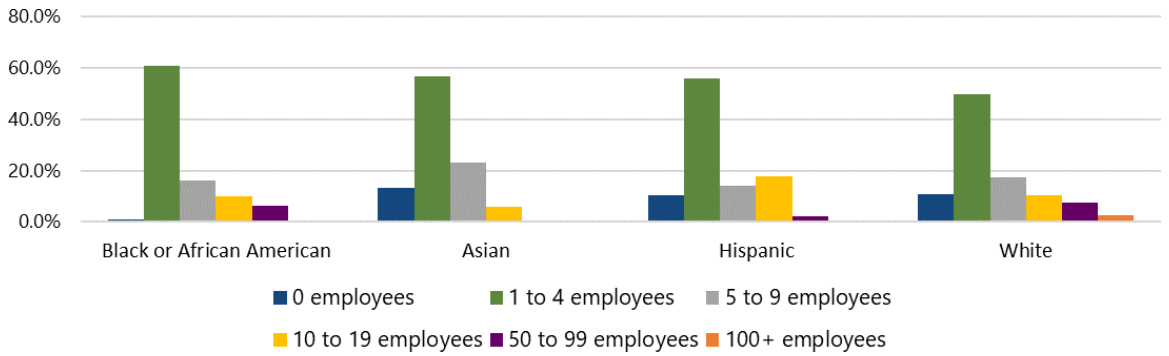


Source: US Census Annual Business Survey, Table AB1800CSA01, 2018

Percent of Firms by Size in Rhode Island

Most businesses owned by BIPOC in Rhode Island have limited growth potential with most of these businesses employing under 5 workers with many being self-employed. Conversely, White-owned businesses represent 100% of all companies with over 100 employees.

Firm Size Distribution in Rhode Island

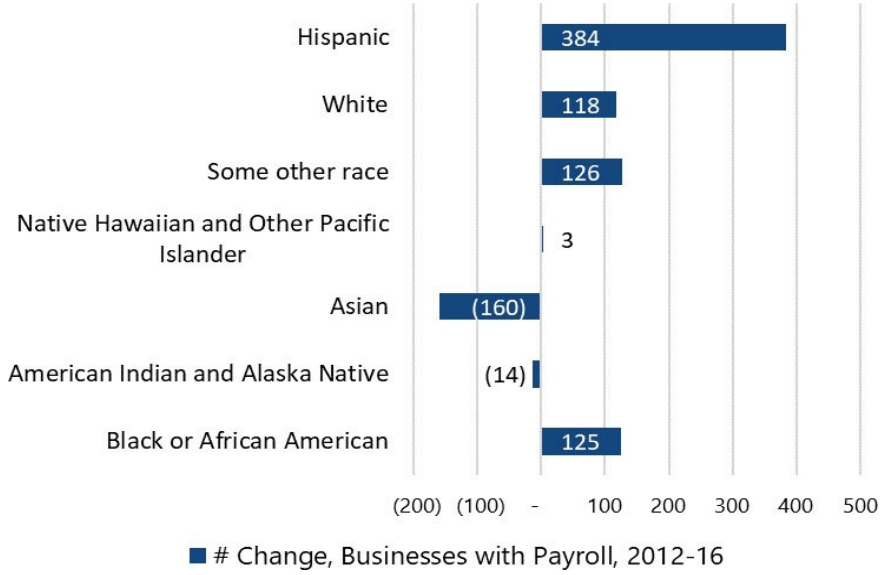


Source: 2016 US Census Bureau Annual Survey of Entrepreneurs

Change in Rhode Island Businesses with Payroll, 2012-2016

Black and Hispanic businesses in Rhode Island have seen significant growth in number of businesses preceding the COVID-19 pandemic with Black-owned businesses increasing by 87.3% and Hispanic-owned businesses increasing by 73.5%. Notably, Asian-owned businesses in Rhode Island decreased substantially more than any other ethnic group.

Change in Rhode Island Payroll by Race/Ethnicity



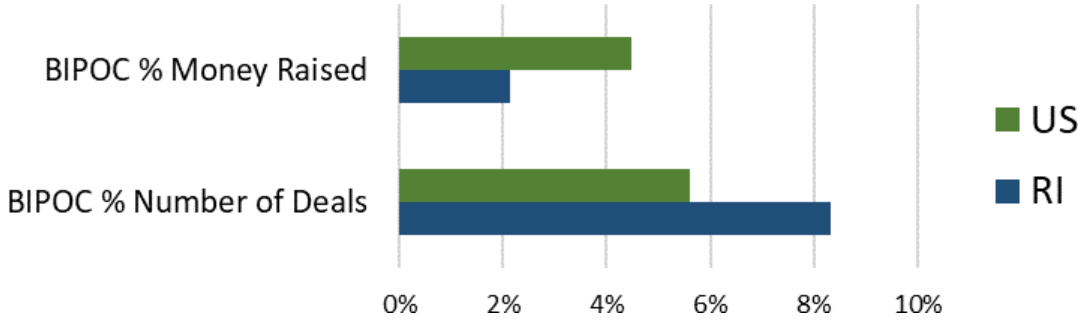
Source: 2016 US Census Bureau Annual Survey of Entrepreneurs

Rhode Island BIPOC Venture Capital Activity, 2016 - 2021

The majority of small businesses rely on self-funding through personal savings or business profits, although White-owned businesses are more likely to obtain outside funding than BIPOC-owned businesses. BIPOC entrepreneurs are historically and currently disadvantaged in receiving outside investment and loans from banks, often relying on personal credit cards for expenses. Rhode Island's BIPOC founders have achieved above-average success in securing venture capital deals, but the total amount raised falls short of national benchmarks, with BIPOC founders raising just over 4% of the total venture capital nationally.

The challenges faced by BIPOC entrepreneurs in securing outside investment and loans from banks have persisted over time and continue to impact their ability to grow their businesses. While Rhode Island's BIPOC founders have achieved above-average success in securing venture capital deals, there is still a disparity in the total amount of funding raised compared to national benchmarks. This highlights the importance of creating more equitable access to funding for BIPOC-owned businesses, both in Rhode Island and across the United States.

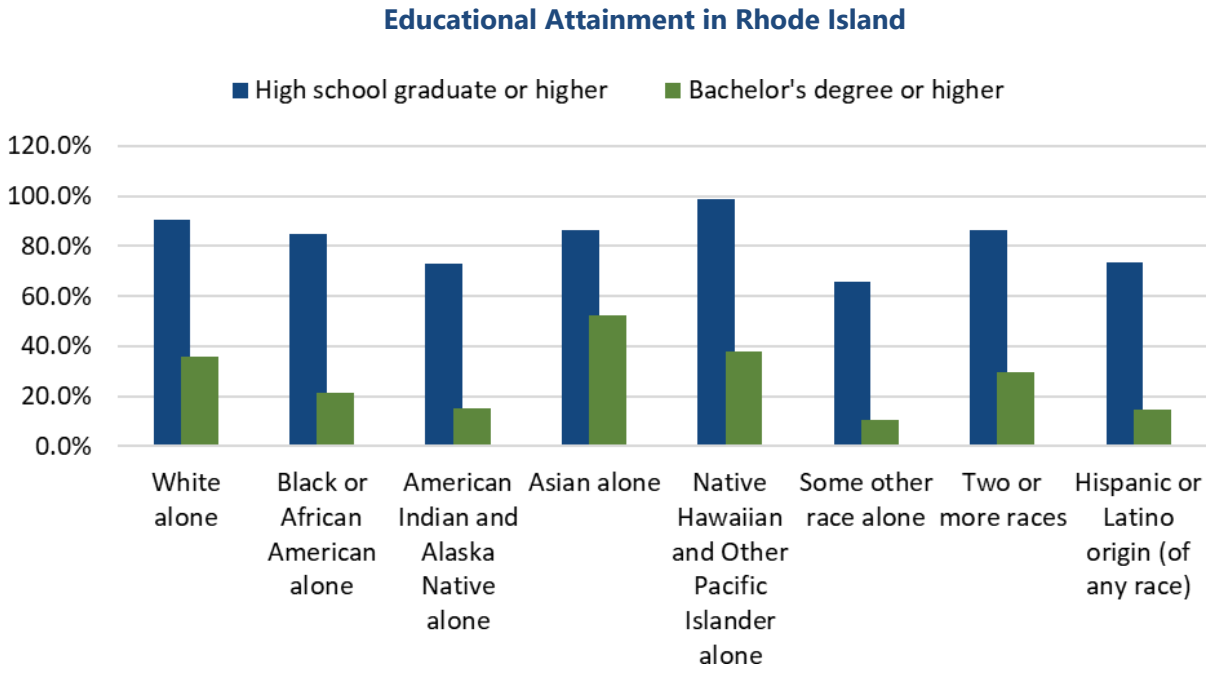
Venture Capital Activity in BIPOC Rhode Island Communities



Source: Crunchbase | Note: 2021 is YTD ending 4/27/2021

Rhode Island Education Attainment by Race + Ethnicity, 2019

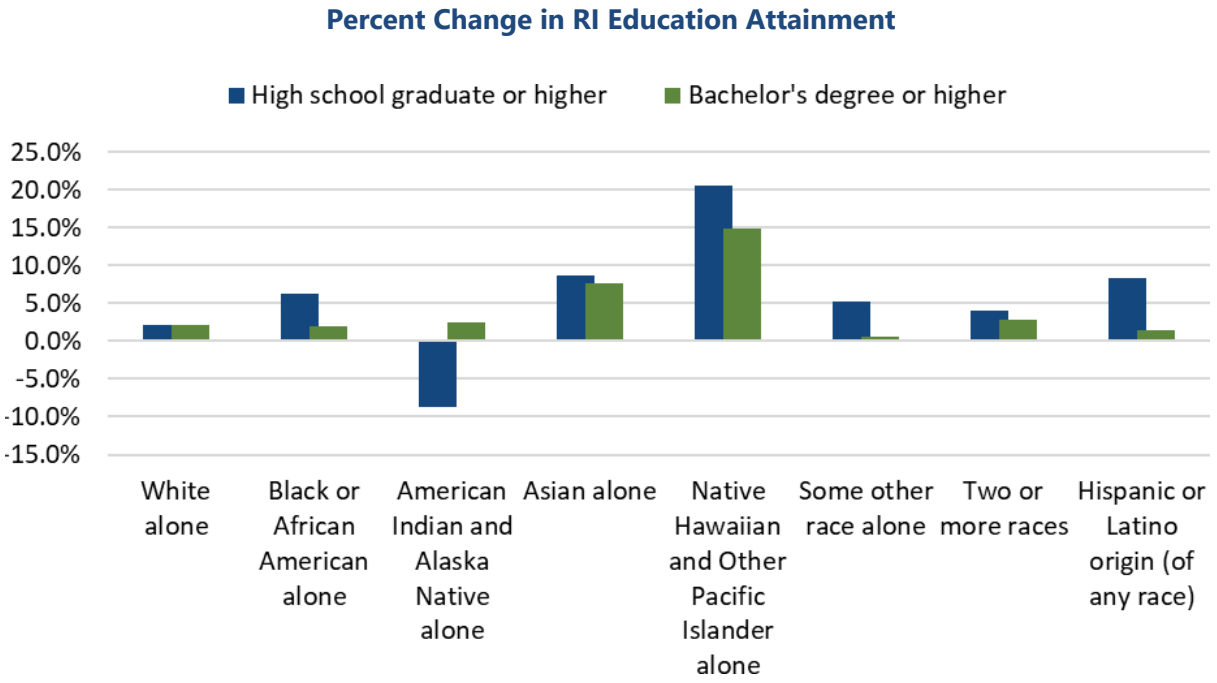
In Rhode Island, BIPOC residents have lower levels of educational attainment than White residents, with the exception of the Asian population. In 2019, 35.9% of White residents held a bachelor's degree or higher, while only 21.1% of Black residents and 14.4% of Hispanic residents held the same level of education. Educational attainment among entrepreneurs varies, with some possessing minimal formal education and others holding a bachelor's degree or higher. Nationwide, 51.4% of entrepreneurs held a bachelor's degree or higher, while only 3.6% of entrepreneurs had not completed high school.



Source: 2019 American Community Survey 5-Year Estimates, 2010 US Census

Change in Rhode Island Education Attainment by Race + Ethnicity, 2010 - 2019

Nationwide, more than 50% of Black entrepreneurs hold at least a bachelor's degree, (See "Educational Attainment in RI" Chart) which is twice the percentage of the entire Black population in Rhode Island. There are similar trends among Hispanic and Asian populations in Rhode Island. Despite these concerning disparities, educational attainment among Rhode Island's BIPOC residents has moderately improved over the last ten years. Although the moderate improvement in educational attainment among Rhode Island's BIPOC residents is a positive trend, there is still much work to be done to close the gap with White residents and address the existing disparities.



Source: 2019 American Community Survey 5-Year Estimates, 2010 US Census

ENTREPRENEURIAL ECOSYSTEMS ANALYSIS

Rhode Island's entrepreneurial ecosystem includes many governmental, non-profit, banking, and private organizations offering goods and services to support small business growth and sustainability. The following analysis identifies gaps in the ecosystem and examines access to capital through Community Reinvestment Act loan analysis.

Entrepreneurial Ecosystem Gap Analysis

Across the state, an estimated 71 organizations are working to support entrepreneurs, ranging from Goldman Sachs's 10k Small Businesses and Rhode Island School of Design's E'Ship program to privately run Hope & Main and The Refinery Accelerator. For a complete list of organizations identified through the analysis desk research, see Appendix B: Entrepreneurial Ecosystem Organizations. This analysis assessed which stage of business was supported and whether organizations addressed needs in subcategories across Community Building, Design Services, Education, Financial Support, and Technical Assistance categories.

Furthermore, there is a significant gap in organizations that publicly list supporting businesses in the decline/pivot stage. Only two organizations, SCORE Small Business Mentoring and The Rhode Island Small Business Development Center offer this service, leaving many struggling businesses without access to critical support needed for Rhode Island's aging business owner population.

Another significant gap in the ecosystem is the lack of funding options and organizations in Rhode Island for minority business owners. While the Rhode Island Black Business Association (RIBBA) offers financial assistance in the form of loans and grants specifically for minorities, there is a shortage of other organizations offering similar services. There are only two Community Development Financial Institutions (CDFIs) working in Rhode Island, providing $3.15 million in loans since 1996.

The majority of organizations are geared towards the early stages of businesses, such as startups and business planning. While these organizations are essential for initial success, they often neglect the long-term needs of established businesses, such as accounting/tax assistance, feasibility studies, and licensing support. Overall, the entrepreneurial ecosystem in Rhode Island faces several significant gaps, including limited access to capital, support for struggling businesses, and resources for minority business owners. Addressing these gaps will be critical for the continued growth and success of Rhode Island's entrepreneurial community.

Rhode Island Business Assistance Snapshot

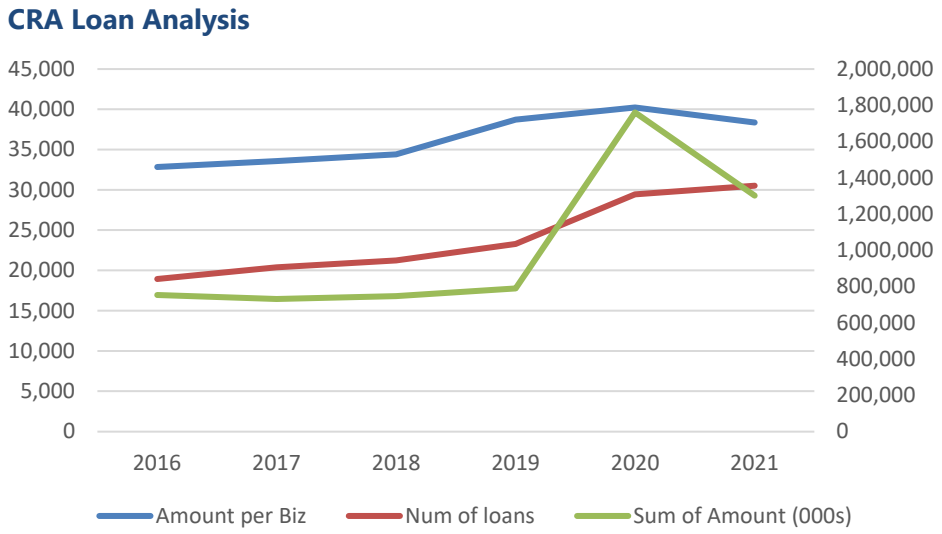
Business Assistance Category	Business Assistance Offered	Business Count
Stage	Business Planning	43
	Start up	51
	Growth	36
	Decline/pivot	3
Community Building	Networking	29
	Mentoring	17
Design Services	Architecture	0
	Graphic Design	1
	Branding	3
Education	Financial Literacy	11
	Sales and Marketing	7
	Workforce Development	9
	Management and Operations	8
Financial Support	Grants	10
	Loans	7
	Lines of Credit	0
	Venture Capital	4
Real Estate	Pop Up	0
	Traditional Leases	0
	Other	1
	Incubator	1
Technical Assistance	Accounting and tax	1
	Business Planning	6
	Legal	1
	Feasibility Studies	2
	Licensing Support	5
	Business & Nonprofit Consulting	4
	Prototype, Product, and Production Development	2

Source: &Access Desk Research (2023)

Community Reinvestment Act (CRA) Loan Analysis

The Community Reinvestment Act (CRA) is a federal law that is designed to encourage commercial banks and savings associations to help meet the lending needs of borrowers from all segments of the community, especially low- and moderate-income neighborhoods. The following analysis leveraged Federal Finance Examinations Council | Community Revitalization Act Aggregate Reports (2016-2021) to determine the state of access to capital in Rhode Island.

In Rhode Island, there are 214 banks participating in CRA loans. From 2016 to 2021, these banks contributed to an overall increase in the amount of CRA loans per business, the total number of CRA loans, and the sum of CRA loans.



Source: Federal Finance Examinations Council | Community Revitalization Act Aggregate Reports (2016-2021)

Lending Institutions

The 214 CRA lending institutions in Rhode Island contributed to an average loan range of $2,000 to $992,000 per business. Gorham Savings Bank lent $3,000 total as the lowest amount by any single bank, while Bank of America provided over $750 million in loans. Fifty-nine (59) banks provided only one CRA loan over the 5-year period studied (2016-2021). The following table outlines the top 10 lenders by three metrics – Total Amount, Number of Loans, and Amount per Business. Cells highlighted in green represent banks that are present in 2 categories. The larger lenders by total amount and number of loans did not have the largest loan size per business.

Number of Loans and Businesses Loaned to by Lending Institutions

RANK	Total Amount		Number of Loans		Amount per Business (000s)	
1	Bank of America, N.A.	$757,327	American Express National Bank	20,372	Republic Bank of Chicago	$992
2	Bank Rhode Island	$728,645	Bank of America, N.A.	16,020	Origin Bank	$949
3	Citizens Bank, NA	$719,252	Citizens Bank, NA	13,113	Pathfinder Bank	$934
4	Webster Bank, N.A.	$370,065	CITIBANK, N.A.	9,775	IncredibleBank	$880
5	Santander Bank N.A.	$364,163	American Express, FSB	9,520	Sterling National Bank	$856
6	Bank Newport	$309,509	Capital One Bank (USA), N.A.	7,318	CIBC Bank USA	$856
7	Washington TC of Westerly	$284,520	US Bank NA	6,714	Patriot Bank, N.A.	$823
8	American Express National Bank	$230,693	JPMorgan Chase Bank, NA	6,636	South Shore Bank	$730
9	Bristol County Savings Bank	$192,465	Synchrony Bank	5,422	Wintrust Bank	$712
10	HarborOne Bank	$185,465	Santander Bank N.A.	4,742	Boston Private Bank and Trust	$700

Source: Federal Finance Examinations Council | Community Revitalization Act Aggregate Reports (2016-2021)

Loans by Business Revenue

When analyzing this data in the two cohorts defined by the Federal Finance Examinations Council (less than or equal to $1 million and greater than $1 million), more loans by all metrics are given to businesses with greater than $1 million. These businesses are often deemed more bankable, leaving smaller businesses with fewer options, especially given that on average almost all businesses with less than 5 employees have less than $1 million in sales and this same cohort represent over 50% of Rhode Island firms.

Rhode Island Business Loans

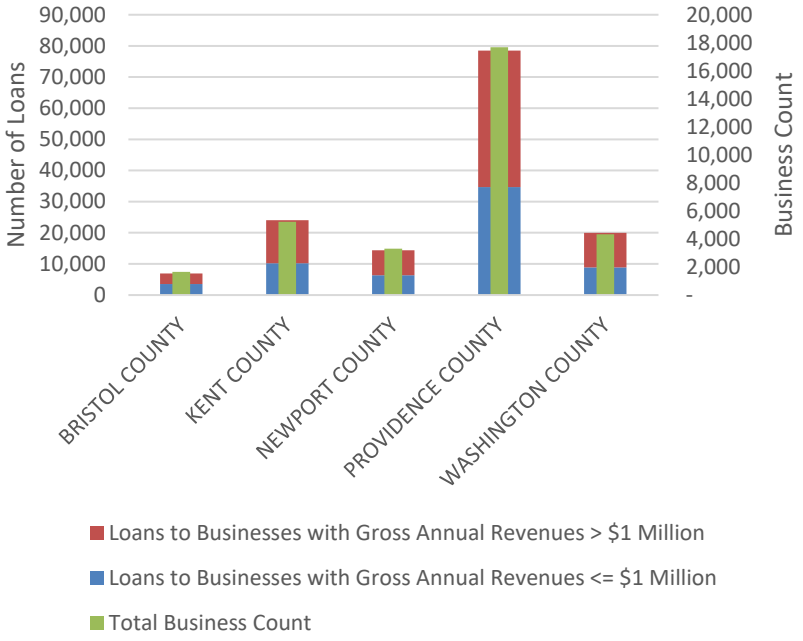
Gross Annual Revenues	Less than or equal to $1 Million	Greater than $1 Million
Total Amount of Loans to Businesses (000s)	1,701,300	4,381,605
Loans to Businesses	63,568	80,213
Avg. Avg loan amount - <1mil (000s)	113	137

Source: Federal Finance Examinations Council | Community Revitalization Act Aggregate Reports (2016-2021)

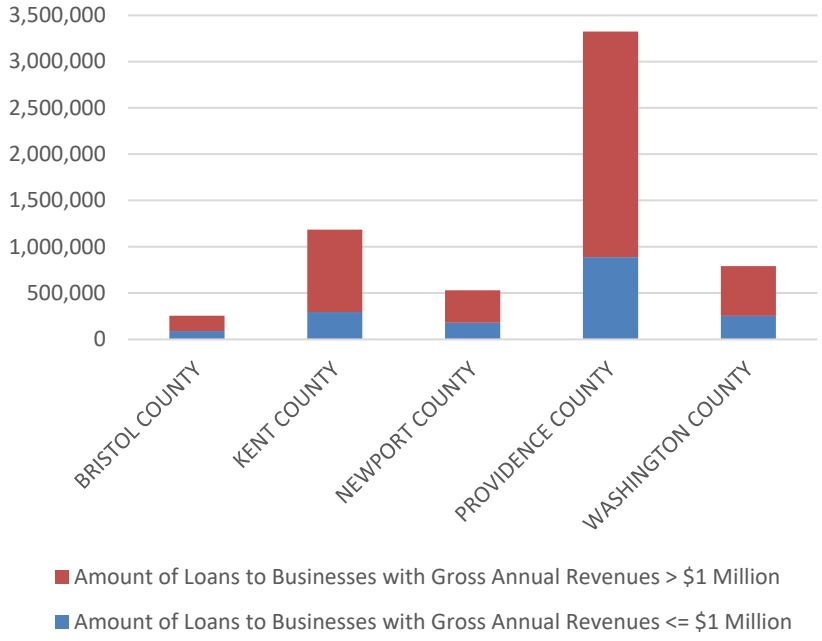
Number of Loans and Loan Value by Business Revenue

The Federal Finance Examinations Council analyze loans by metropolitan statistical area (MSA) and by county. For this analysis, counties were the smallest geography available in Rhode Island's single MSA. The number of loans are comparable to the total business count in each county, with 55.8% of loans going to businesses with gross annual revenues of greater than $1 million. Additionally, when analyzing the sum of the loan value, over 72% ($4.38 million) goes to businesses with over $1 million in gross annual revenues.

Number of Loans per County



Loan Amount



Source: Federal Finance Examinations Council | Community Revitalization Act Aggregate Reports (2016-2021)

PAYROLL DATA TABLES

Total Payroll (New England Comparison)

NAICS Code		Rhode Island	Connecticut	Maine	Massachusetts	New Hampshire	Vermont
11	Agriculture, forestry, fishing and hunting	0%	0%	1%	0%	0%	0%
21	Mining, quarrying, and oil and gas extraction	0%	0%	0%	0%	0%	0%
22	Utilities	0%	0%	0%	0%	0%	0%
23	Construction	15%	13%	18%	14%	16%	17%
31	Manufacturing	13%	11%	10%	8%	12%	11%
42	Wholesale trade	6%	5%	3%	7%	8%	8%
44	Retail trade	10%	9%	11%	8%	12%	17%
48	Transportation and warehousing	2%	2%	3%	2%	2%	2%
51	Information	1%	2%	2%	3%	1%	2%
52	Finance and insurance	4%	9%	3%	6%	4%	2%
53	Real estate and rental and leasing	1%	2%	2%	3%	2%	2%
54	Professional, scientific, and technical services	15%	14%	13%	19%	14%	12%
55	Management of companies and enterprises	0%	0%	0%	0%	0%	0%
56	Administrative and support and waste management and remediation services	4%	5%	6%	6%	5%	4%
61	Educational services	1%	1%	1%	1%	1%	1%
62	Health care and social assistance	14%	13%	12%	11%	12%	11%
71	Arts, entertainment, and recreation	1%	1%	2%	1%	1%	1%
72	Accommodation and food services	10%	7%	11%	8%	8%	9%
81	Other services (except public administration)	5%	4%	4%	4%	4%	3%

Source: U.S. Census Bureau | Annual Business Survey (2017)

Total Payroll (Rhode Island)

NAICS Code		Firms with 1 to 4 employees	Firms with 5 to 9 employees	Firms with 10 to 19 employees	Firms with 20 to 49 employees	Firms with 50 to 99 employees	TOTAL
11	Agriculture, forestry, fishing and hunting	$20,878	$0	$0	$0	$0	$20,878
21	Mining, quarrying, and oil and gas extraction	$0	$0	$0	$0	$0	$0
22	Utilities	$0	$0	$0	$0	$0	$0
23	Construction	$1,026,737	$1,142,104	$1,087,911	$1,387,238	$761,727	$5,405,717
31	Manufacturing	$380,467	$460,212	$646,882	$1,809,483	$1,472,648	$4,769,692
42	Wholesale trade	$225,520	$0	$662,744	$610,250	$694,624	$2,193,138
44	Retail trade	$435,483	$599,911	$789,735	$875,313	$716,428	$3,416,870
48	Transportation and warehousing	$127,907	$97,064	$249,719	$230,359	$0	$705,049
51	Information	$48,206	$84,855	$41,357	$174,638	$0	$349,056
52	Finance and insurance	$249,152	$378,043	$233,341	$24,421	$399,200	$1,284,157
53	Real estate and rental and leasing	$14,465	$162,224	$0	$28,634	$0	$205,323
54	Professional, scientific, and technical services	$972,989	$1,040,420	$1,051,737	$1,452,034	$744,185	$5,261,365
55	Management of companies and enterprises	$0	$0	$0	$0	$119,831	$119,831
56	Administrative and support and waste management and remediation services	$300,575	$317,496	$310,892	$445,358	$0	$1,374,321
61	Educational services	$27,406	$10,226	$21,370	$103,760	$97,140	$259,902
62	Health care and social assistance	$484,964	$793,502	$1,100,514	$1,599,390	$931,802	$4,910,172
71	Arts, entertainment, and recreation	$99,785	$90,834	$83,482	$49,297	$25,487	$348,885
72	Accommodation and food services	$207,009	$322,740	$953,571	$1,654,534	$532,216	$3,670,070
81	Other services (except public administration)	$371,162	$418,760	$340,787	$485,514	$0	$1,616,223
TOTAL		$4,992,705	$5,918,391	$7,574,042	$10,930,223	$6,495,288	$35,910,649

Source: U.S. Census Bureau | Annual Business Survey (2017)

Payroll per Employee (New England Comparison)

NAICS Code		Rhode Island	Connecticut	Maine	Massachusetts	New Hampshire	Vermont
11	Agriculture, forestry, fishing and hunting	$51	$31	$37	$31	$35	$26
21	Mining, quarrying, and oil and gas extraction	$0	$52	$0	$46	$42	$0
22	Utilities	$0	$0	$29	$40	$54	$26
23	Construction	$49	$55	$46	$57	$53	$46
31	Manufacturing	$49	$53	$44	$55	$52	$43
42	Wholesale trade	$51	$63	$48	$60	$60	$51
44	Retail trade	$32	$32	$27	$32	$32	$30
48	Transportation and warehousing	$36	$50	$35	$35	$36	$36
51	Information	$47	$63	$41	$79	$59	$38
52	Finance and insurance	$75	$144	$54	$87	$71	$56
53	Real estate and rental and leasing	$43	$46	$39	$55	$51	$38
54	Professional, scientific, and technical services	$57	$66	$54	$77	$65	$58
55	Management of companies and enterprises	$138	$95	$41	$202	$79	$0
56	Administrative and support and waste management and remediation services	$33	$42	$34	$41	$40	$34
61	Educational services	$21	$26	$25	$29	$25	$24
62	Health care and social assistance	$42	$42	$34	$45	$44	$39
71	Arts, entertainment, and recreation	$35	$30	$28	$30	$30	$27
72	Accommodation and food services	$17	$18	$22	$20	$20	$18
81	Other services (except public administration)	$30	$30	$29	$31	$32	$30

Source: U.S. Census Bureau | Annual Business Survey (2017)

Payroll per Employee Rhode Island

NAICS Code		Firms with 1 to 4 employees	Firms with 5 to 9 employees	Firms with 10 to 19 employees	Firms with 20 to 49 employees	Firms with 50 to 99 employees
11	Agriculture, forestry, fishing and hunting	$51	$0	$0	$0	$0
21	Mining, quarrying, and oil and gas extraction	$0	$0	$0	$0	$0
22	Utilities	$0	$0	$0	$0	$0
23	Construction	$41	$40	$49	$68	$57
31	Manufacturing	$45	$51	$48	$51	$52
42	Wholesale trade	$39	$0	$55	$57	$52
44	Retail trade	$21	$27	$36	$37	$49
48	Transportation and warehousing	$32	$32	$44	$37	$0
51	Information	$38	$57	$29	$67	$0
52	Finance and insurance	$43	$83	$94	$75	$94
53	Real estate and rental and leasing	$47	$40	$0	$50	$0
54	Professional, scientific, and technical services	$45	$51	$63	$73	$63
55	Management of companies and enterprises	$0	$0	$0	$0	$138
56	Administrative and support and waste management and remediation services	$32	$40	$31	$31	$0
61	Educational services	$16	$15	$27	$36	$44
62	Health care and social assistance	$37	$46	$47	$42	$41
71	Arts, entertainment, and recreation	$45	$31	$25	$43	$24
72	Accommodation and food services	$16	$13	$17	$20	$20
81	Other services (except public administration)	$23	$30	$31	$39	$0

Source: U.S. Census Bureau | Annual Business Survey (2017)

Payroll to Sales Ratio (Rhode Island)

NAICS Code		Firms with 1 to 4 employees	Firms with 5 to 9 employees	Firms with 10 to 19 employees	Firms with 20 to 49 employees	Firms with 50 to 99 employees	Average
11	Agriculture, forestry, fishing and hunting	24%	0%	0%	0%	0%	24%
21	Mining, quarrying, and oil and gas extraction	0%	0%	0%	0%	0%	0%
22	Utilities	0%	0%	0%	0%	0%	0%
23	Construction	23%	25%	25%	21%	29%	24%
31	Manufacturing	23%	22%	26%	17%	23%	22%
42	Wholesale trade	7%	0%	7%	6%	11%	8%
44	Retail trade	8%	11%	15%	10%	10%	11%
48	Transportation and warehousing	18%	29%	35%	32%	0%	27%
51	Information	28%	36%	24%	41%	0%	32%
52	Finance and insurance	24%	46%	40%	33%	34%	35%
53	Real estate and rental and leasing	16%	17%	0%	41%	0%	19%
54	Professional, scientific, and technical services	30%	37%	37%	48%	48%	39%
55	Management of companies and enterprises	0%	0%	0%	0%	555%	555%
56	Administrative and support and waste management and remediation services	26%	35%	42%	33%	0%	33%
61	Educational services	25%	47%	46%	61%	49%	40%
62	Health care and social assistance	37%	39%	40%	51%	50%	43%
71	Arts, entertainment, and recreation	22%	33%	23%	38%	41%	28%
72	Accommodation and food services	20%	23%	31%	32%	35%	27%
81	Other services (except public administration)	24%	33%	36%	34%	0%	31%

Source: U.S. Census Bureau | Annual Business Survey (2017)

ENTREPRENEURIAL ECOSYSTEM ORGANIZATIONS

1. 10K Small Businesses
2. Babson: Entrepreneurial Operations: Launching a startup (Online)
3. Brown University: Nelson Center for Entrepreneurship
4. Bryant University: Entrepreneurship Program
5. Center for Women & Enterprise
6. Cherrystone Angel Group
7. CIC Providence
8. CoLab
9. CSEA
10. DEM
11. Design Office
12. DESIGNxRI
13. Driven Accelerator Hub
14. Elevate
15. Gateway Cowork Centre
16. Hatch Entrepreneurial Center
17. Hope & Main
18. Innovate Newport
19. Johnson & Wales University: Small Business LibGuide
20. MassChallenge Rhode Island
21. NEMIC Business Accelerator
22. Ocean State Maker Mill
23. Polaris MEP
24. PrepareRI
25. Providence Chamber of Commerce
26. Providence Equity
27. Providence Geeks
28. Providence Revolving Loan Fund
29. Providence Women's Jewelry Association
30. RevUp
31. Rhode Island Hospitality Association
32. Rhode Island Israel Collaborative
33. Rhode Island School of Design: E'Ship
34. Rhode Island School of Design: RISD Co-Works
35. Rhode Island Small Business Development Center
36. Rhode Island Virtual Reality
37. RI Commerce
38. RI Food Policy Council

39. RI Hub
40. RI Maker Mill
41. RI Procurement Technical Assistance Center
42. RI Small Business Coalition
43. RI Small Business Development Center
44. RI Small Business Journal
45. RIBBA
46. RIDOH
47. RIHCC
48. RISD Co-Works
49. Roger Williams University: Business Start-Up Clinic
50. SCORE Small Business Mentoring
51. SEG
52. Skills for Rhode Island's Future
53. Social Enterprise Greenhouse
54. Southside Community Land Trust
55. Spire Space
56. Sprout CoWorking Providence
57. Sprout CoWorking Warren
58. Supply RI
59. Tech Collective
60. TechHire Rhode Island
61. The BDC (Business Development Company)
62. The Capital Good Fund
63. The Institute of Entrepreneurship and Leadership
64. The Nelson Center for Entrepreneurship
65. The Newport Collab
66. The Refinery Accelerator
67. The Slater Fund
68. Tinker - Bristol
69. University of Rhode Island: Innovate@URI
70. West Elmwood NeighborWorks Homeownership Center Inc
71. Westway Club

DATA SOURCES

Bureau of Labor Statistics | Quarterly Census of Employment and Wages (QCEW)

US Census Bureau | Annual Business Survey (2017)

US Census Bureau | Economic Census (2017) | Franchise Statistics Report

Rhode Island BIPOC Small Business Ecosystem Assessment: Ssupporting the startup, sustainability, and growth of BIPOC businesses in Rhode Island (2022)

Federal Finance Examinations Council | Community Revitalization Act Aggregate Reports (2016-2021)

Lightcast

Community Development Analysis

APPENDIX E: STATEWIDE DIAGNOSTIC COMPONENT
Ocean State Accelerates
Rhode Island Long-Term Economic Development Strategy

April 2023

&Access camoin associates

COMMUNITY DEVELOPMENT OVERVIEW

The following analysis examines the role of Community Development in creating high quality places that support long-term economic development goals. This approach highlights placemaking opportunities for Rhode Island Commerce Corporation to further economic growth statewide. Key aspects of the analysis include looking at transportation and walkability, community asset mapping, and documentation of community development investments. Specifically, it examines Development Block Grant (CDBG) spending and key quality-of-life assets to understand opportunities for Rhode Island.

This analysis seeks to answer:

- How can Rhode Island identify and invest in placemaking and community development assets in its cities/towns?
- How is the U.S. Department of Housing and Urban Development (HUD) Community Development Block Grants (CBDG) distributed to community development activities?

Key Takeaways

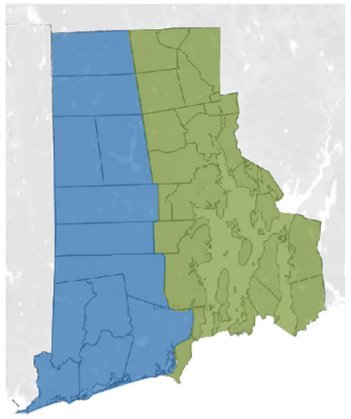
1. **Rhode Island has barriers to accessibility outside of the urban core with many areas not being accessible via public transportation**. Strengthening public transportation networks, particularly in the less populated areas of the state can increase access to essential services and assets for residents while also attracting visitors to these areas. Transit Score is a measure of how well a location is served by public transit on a scale from 0 to 100, Providence has the most extensive public transportation network, with a transit score of 52, followed by Pawtucket at 41 and Newport at 29, indicating a severe lack of access to transportation in the western region of Rhode Island.
2. **Rhode Island has a robust and diverse mix of environmental assets in both rural and urban areas**. Recreational opportunities outside of fishing and hunting are correlated with population density and evolving pedestrian and bicycle infrastructure. Central cities such as Central Falls and Providence have the lowest rate of car ownership, yet higher Walk, Bike, and Transit Scores than most other communities. Fishing and hunting assets are clustered outside of these areas.
3. **Rhode Island and its Entitlement Cities address urban blight through U.S. Department of Housing and Urban Development Community Development Block Grant program**. Some entitled cities in Rhode Island can utilize CDBG funds for real estate acquisition, clearance, and cleanup. Prioritizing these activities can help eliminate urban blight and create a more attractive environment for tourists and businesses. From 2010-2020, Providence received $564,874 for real estate acquisition, clearance and demolition. Funds were also provided to various entitlement cities: East Providence received $85,341.16, Pawtucket received $955,674.31, Providence received $13,777.33, and Woonsocket received $63,956.29. Additionally, funds for cleanup of contaminated sites were given to Pawtucket ($409,414.63) and Providence ($111,216.75). The proportional funding allocation on Clearance/Demolition and Cleanup may indicate an increased priority of treating urban blight in Rhode Island.

4. **CDBG Funds distributed to Rhode Island did not equate with economic development outcomes in job creation, retention, access, and assistance by public facilities investment.** Providence accounted for the greatest number of jobs created. The city mobilized funds using methods that created over 2,000 jobs, which may further serve the purpose of the CDBG by benefiting low- and moderate-income persons. Except for Pawtucket (108 jobs created), other areas, including Rhode Island, saw either zero or less than 50 jobs created, including no jobs created through CDBG fund disbursed to the state.

Accessibility by City/Town

Walk Score (including Transit Score and Bike Score) data was leveraged to detail placemaking opportunities. The score ranges and definitions below start to contextualize cities and towns and the types of resources required to increase their vibrancy.

Note, throughout, this analysis we discuss the state as Eastern (green) and Western (blue) regions that align with more urbanized cities/towns in the Eastern Region, as illustrated by the map to the right.

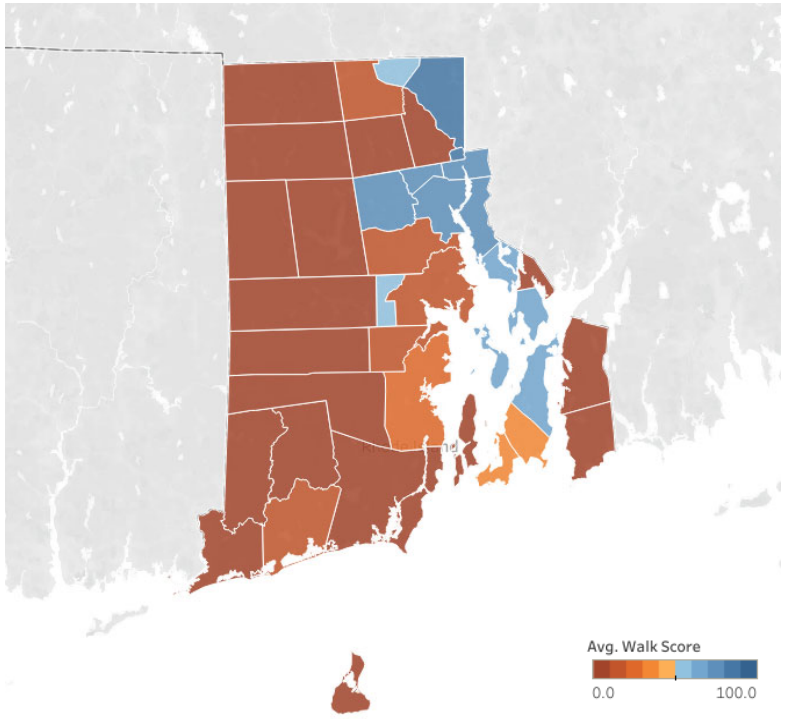


East-West divide in Rhode Island.

Walk Score

Walk Score measures the walkability of any address using a patented system. Walk Score analyzes hundreds of walking routes to nearby amenities for each address. Points are awarded based on the distance to amenities in each category. Amenities within a 5-minute walk (.25 miles) are given maximum points. A decay function is used to give points to more distant amenities, with no points given after a 30-minute walk. Walk Score also measures pedestrian friendliness by analyzing population density and road metrics such as block length and intersection density. Data sources include Google, Factual, Great Schools, Open Street Map, the U.S. Census, Localeze, and places added by the Walk Score user community.

The western region of Rhode Island has a low walk score, indicating that the area is not pedestrian-friendly and relies heavily on cars. Most locations in this area have a score below 10, with Burrillville, Glocester, Foster, West Greenwich, Richmond, South Kingstown, Smithfield, and Narragansett all having a walk score of zero. The town of Charlestown has the highest walk score in western Rhode Island, with a score of 11. Other towns in the area have scores ranging from 1 to 8, with New Shoreham having a score of one, Scituate having a score of four, Coventry having a score of five, Hopkinton and Westerly having a score of seven, and Exeter having a score of eight. This information suggests that there is a need for increased pedestrian infrastructure and transportation options in western Rhode Island.



Rhode Island Walk Score Heat Map

The Eastern municipalities in Rhode Island exhibit higher walk scores than those in the western region. This trend is particularly noticeable in areas bordering Massachusetts, with Cumberland having the highest walk score in the state at 81. Providence and its surrounding areas, including Johnston, North Providence, Pawtucket, and East Providence, have scores ranging from 71 to 75. Bristol, Portsmouth, and Barrington all have a walk score of 61, while West Warwick and Woonsocket have scores of 53 and 57, respectively. North Kingstown, Newport, and Middletown have slightly higher scores ranging from 26 to 32, while areas such as North Smithfield, Cranston, Warwick, and East Greenwich have scores ranging from 12 to 16.

Outliers in the Eastern area of the state include Jamestown, Little Compton, Tiverton, and Warren all have walk scores between 2 and 5.

Score Ranges	Description
90-100	Walker's Paradise - Daily errands do not require a car.
70-89	Very Walkable - Most errands can be accomplished on foot.
50-69	Somewhat Walkable - Some errands can be accomplished on foot.
25-49	Car-Dependent - Most errands require a car.
0-24	Car-Dependent - Almost all errands require a car.

Source: Walk Score (April 2023)

Bike Score

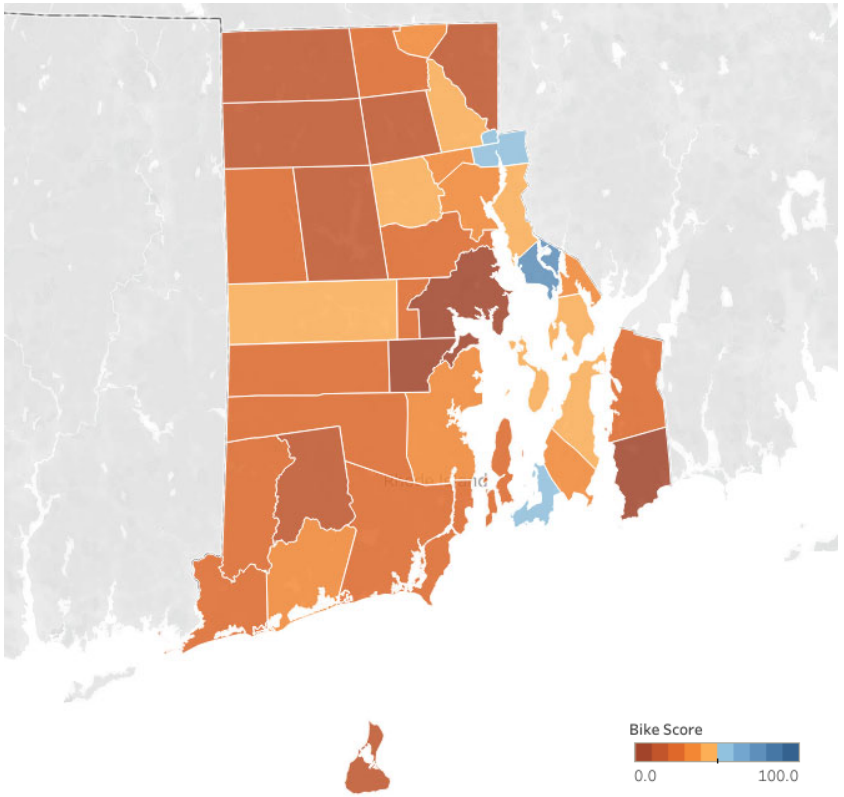
Bike Score measures whether a location is good for biking on a scale from 0 - 100 based on four equally weighted components that include:

- Bike lanes
- Hills
- Destinations and road connectivity
- Bike commuting mode share

The Bike Score in Rhode Island overall is low, with only Barrington scoring over 47. This score is likely due to the town having a designated bike path that runs along the East Bay, which connects to other bike routes in the area. Additionally, there are bike lanes on some of the major roads, such as County Road, Middle Highway, and Maple Avenue.

Providence and North Providence both have scores of 39, while Coventry, Johnston, Lincoln, Bristol, and Portsmouth have bike scores ranging from 42 to 47, indicating that these areas have a moderate level of bike infrastructure development, with some bike lanes and paths available for cyclists, but with room for improvement. These scores are based on factors such as bike lane availability, connectivity, and safety. While the scores for Coventry, Johnston, Lincoln, Bristol, and Portsmouth are higher than the state average, many areas in Rhode Island still lack adequate bike infrastructure.

Most other areas in the state have scores ranging from 10 to 23. East Greenwich, and Warwick are outliers due to their scores being less than 7.



Rhode Island Bike Score Heat Map

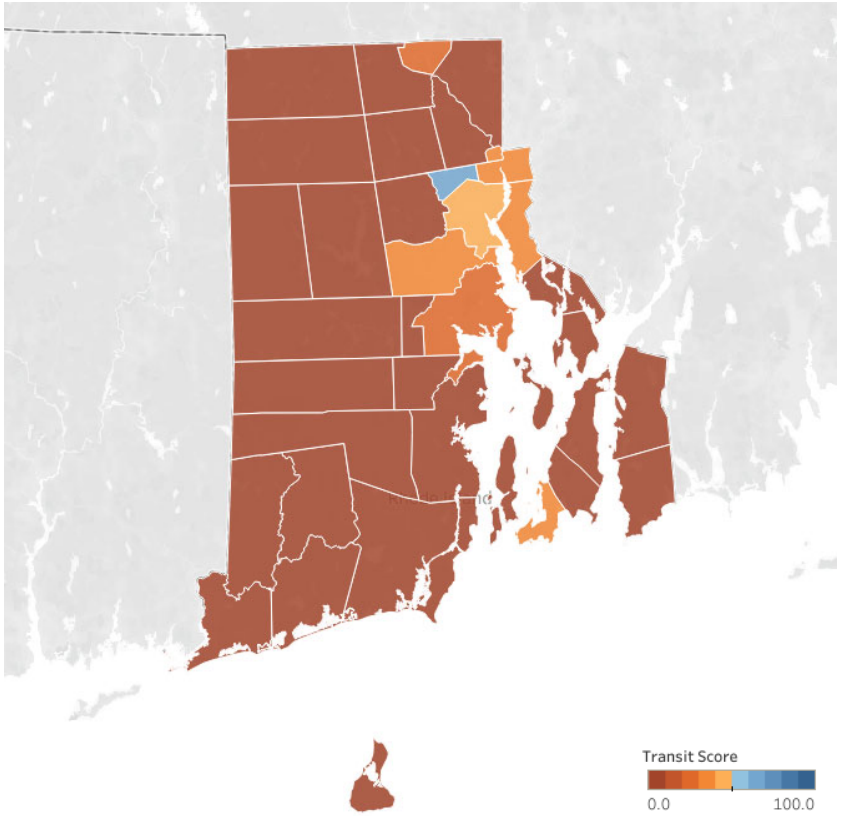
Score Ranges	Description
90-100	Biker's Paradise – Daily Errands can be accomplished on a bike
70-89	Very Bikeable - Biking is convenient for most trips
50-69	Bikeable – Some bike infrastructure
0-49	Somewhat Bikeable – Minimal bike infrastructure

Source: Walk Score (April 2023)

Transit Score

Transit Score is a patented measure of how well a location is served by public transit on a scale from 0 to 100. The Transit Score algorithm calculates a score for a specific point by summing the relative "usefulness" of nearby routes. Walk Score defines usefulness of the Transit Score as the distance to the nearest stop on the route, the frequency of the route, and the type of route.

Rhode Island's public transportation system, particularly its bus service, has significantly improved in recent years, but there are still challenges. The state's capital, Providence, has the most extensive public transportation network, with buses operated by the Rhode Island Public Transit Authority (RIPTA) providing service to the surrounding areas. RIPTA also operates bus routes in Pawtucket, including some bus routes connecting it to Providence and other neighboring cities. Additionally, Newport has bus service, but it is limited compared to other cities in the state. Providence has a transit score of 52, while Pawtucket has a transit score of 41, indicating that it is "some transit," and Newport has a transit score of 29, which is considered "minimal transit." In other areas of the state, particularly rural areas, public transportation is limited, and many residents rely on personal vehicles for transportation.



Rhode Island Transit Score Heat Map

Score Ranges	Description
90-100	Rider's Paradise – World-class public transportation
70-89	Excellent Transit – Transit is convenient for most trips
50-69	Good Transit – Many nearby public transportation options
25-49	Some Transit – A few nearby public transportation options
0-24	Minimal Transit – It is possible to get on a bus

Source: Walk Score (April 2023)

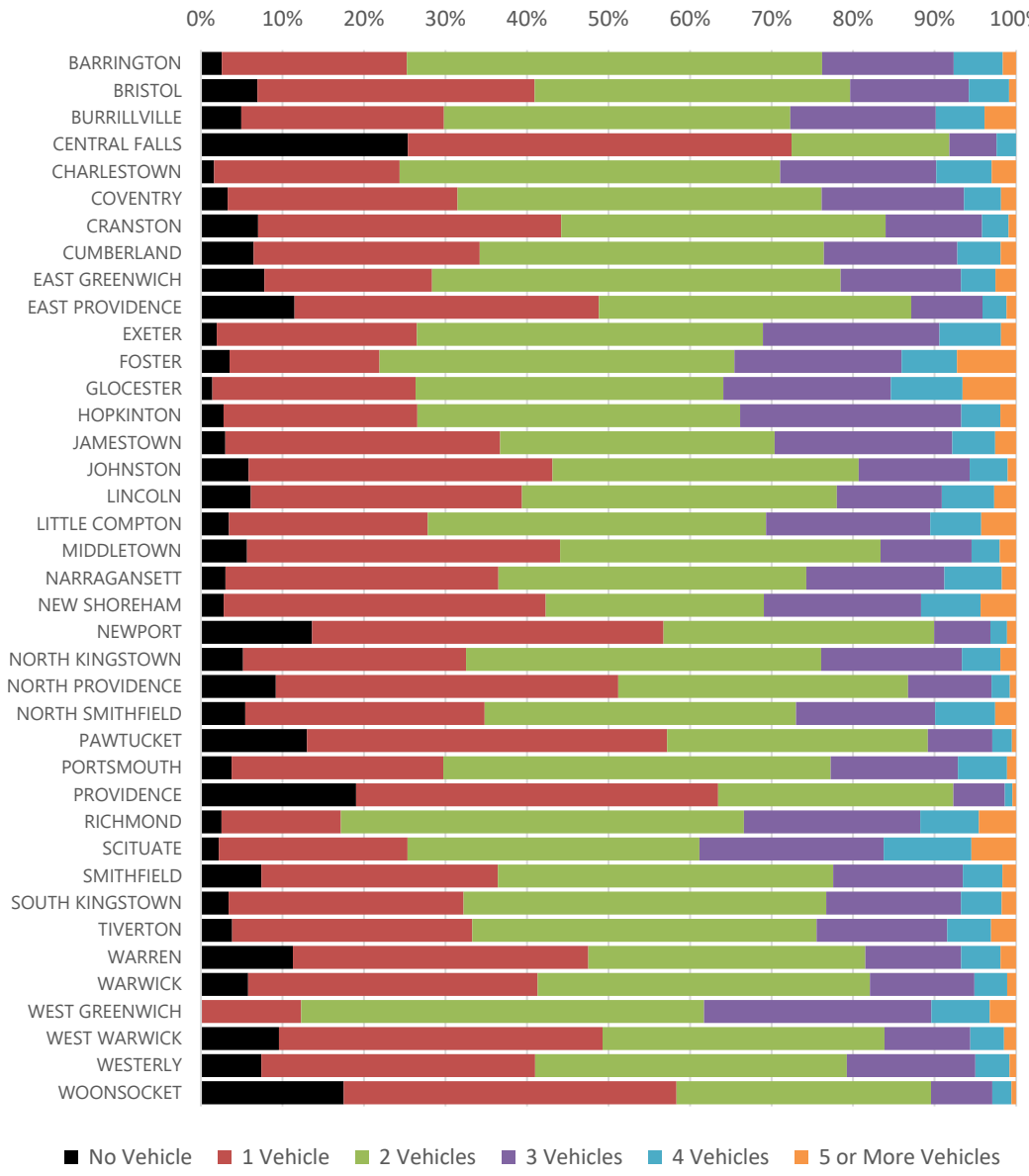
Vehicles Available by Household

The final factor in accessibility is the number of vehicles available in each household. Across Rhode Island, a majority of homes have 1-2 vehicles available.

Central Falls has the greatest share of its household count with no access to a vehicle (25%), and 47% of households have access to only 1 vehicle. Central Falls has a higher Walk Score and Bike Score than Providence – the city with the second highest percentage of households with no or 1 vehicle. However, transit in Central Falls is lower.

Conversely, Scituate, West Greenwich, and Glocester have the most vehicles available per household and among the lowest scores across other accessibility metrics.

Vehicles Per Household

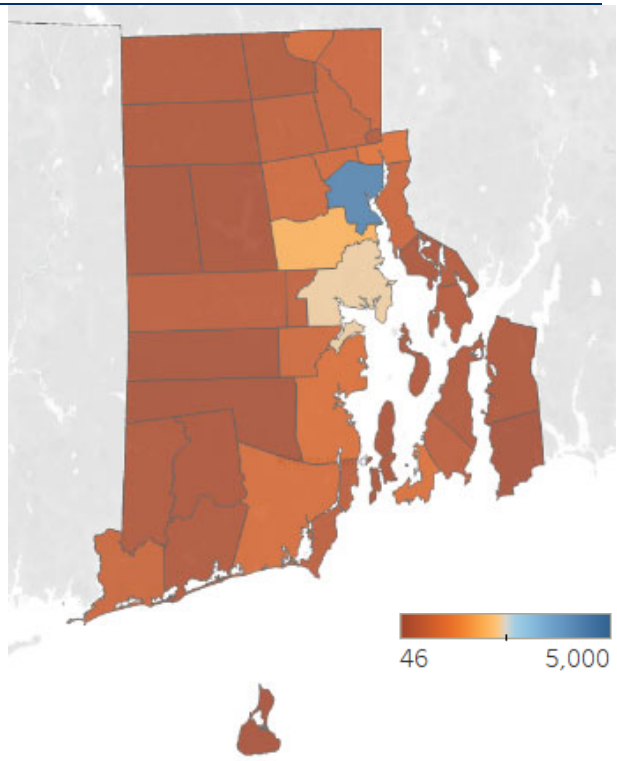


Source: Sitewise by Tetrad (2023)

Community Development Assets

This section of the community development report examines the distribution and impact of various assets within the state. We assessed a range of community assets, including educational institutions, healthcare facilities, arts and entertainment venues, hotels and lodging establishments, and museums and historic sites. These characteristics were chosen as the most prominent quality of life and placemaking indicators across sectors. Additionally, we evaluated the walkability, bikeability, and public transit accessibility across all municipalities in Rhode Island. Lastly, we explored natural resources and fishing and hunting-related assets by mapping their locations.

This data was collected through an analysis of Google establishment data that identified locations of the previously identified assets and geotagged each to a city or town. Overall, areas in and surrounding Providence have the highest concentration of assets and NAICS locations.



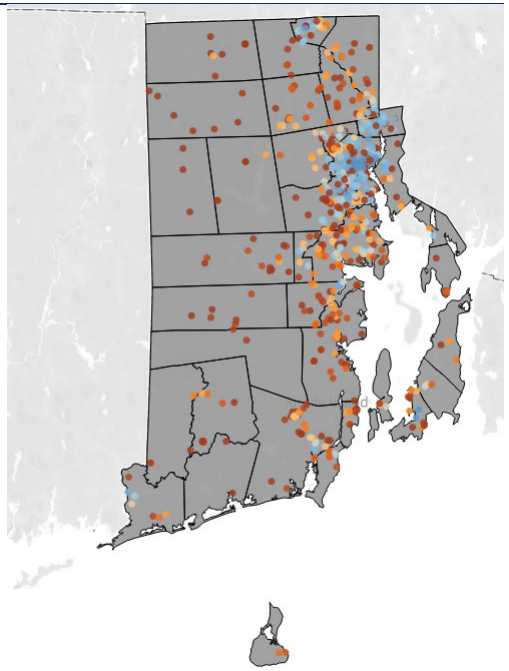
Community Development Assets Per Municipality

Education

Educational facilities play a critical role in community development and placemaking. They provide essential services and resources to the community such as academic programs for various age groups, access to libraries and technology, continuing education courses, and community outreach initiatives, helping to create a sense of place and contributing to the social and economic well-being of the area.

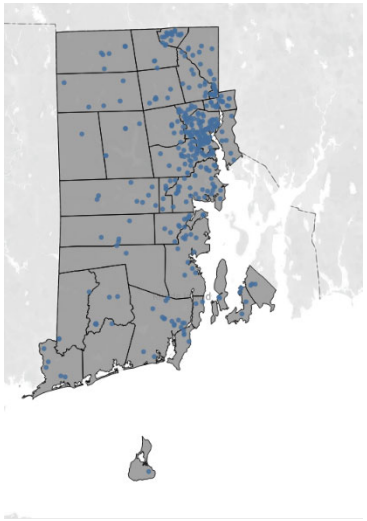
Educational facilities were organized into four categories according to their NAICS description. Elementary & Secondary schools are contained in the first group, Junior Colleges (611210) and Universities & Professional schools (611213) are combined to create the second group, Educational Support Services are contained in the third group, and all remaining schools, such as cosmetology schools, fine arts schools, and language schools were grouped into the last group.

The majority of schools were located in the Eastern half of the state with a concentration around Providence. Woonsocket contained a suprisingly high number of schools when compared to the area's population.

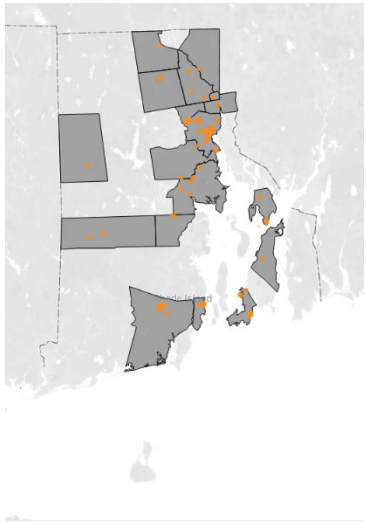


Source: Google Scrape of RI NAICS Codes

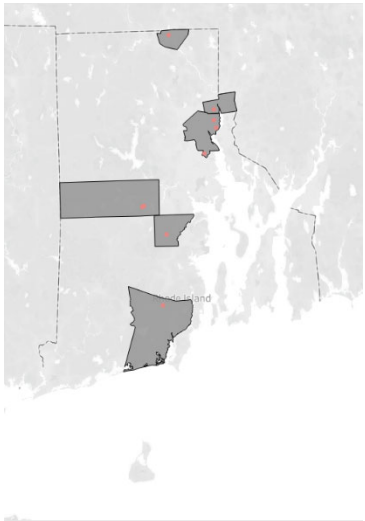
Elementary & Secondary Schools



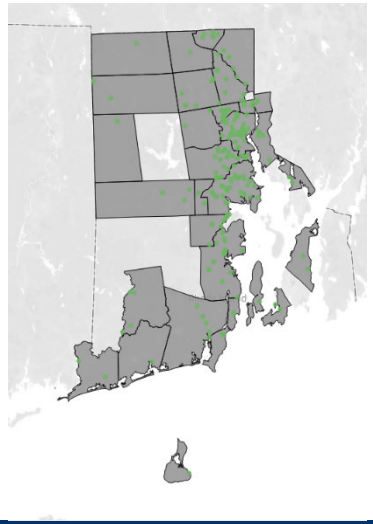
Jr. Colleges & Universities



Educational Support Services



Other Schools



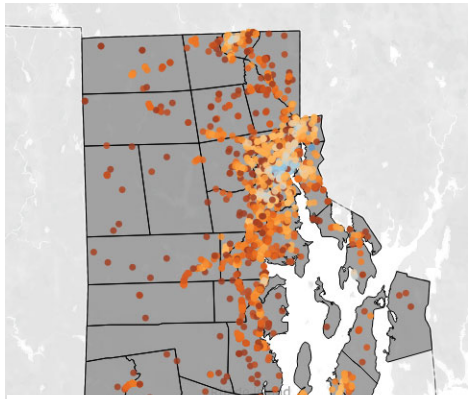
Distribution of Education Facilities by City/Town

Town	Educational Support Services	Elementary and Secondary Schools	Junior Colleges	Colleges, Universities, and Professional Schools	Business Schools and Computer and Management Training	Technical and Trade Schools	Other Schools and Instruction
BARRINGTON					0	0	1
BRISTOL				6	0	0	0
BURRILLVILLE		7			0	0	1
CENTRAL FALLS		8		1	0	0	0
CHARLESTOWN		1			0	0	1
COVENTRY	2	8			0	0	3
CRANSTON		35		2	1	5	17
CUMBERLAND		14		1	0	0	5
EAST GREENWICH	1	10		2	1	0	9
EAST PROVIDENCE		6			0	0	5
EXETER		2			0	0	0
FOSTER		1		1	0	1	0
GLOCESTER		5			0	0	2
HOPKINTON		3			0	0	0
JAMESTOWN		3			0	0	1
JOHNSTON		8			0	0	2
LINCOLN		11	1	2	0	2	5
LITTLE COMPTON					0	0	0
MIDDLETOWN		3			0	0	0
NARRAGANSETT		6		12	0	1	3
NEW SHOREHAM		1			0	0	1
NEWPORT		4	1	7	0	1	1
NORTH KINGSTOWN		11			1	0	21
NORTH PROVIDENCE		12		3	1	1	6
NORTH SMITHFIELD		4		1	1	0	0
PAWTUCKET	1	18		1	0	1	5
PORTSMOUTH				1	0	0	2
PROVIDENCE	3	97	2	116	3	8	25
RICHMOND		5			0	0	4
SCITUATE		5			0	0	0
SMITHFIELD		6		4	0	3	5
SOUTH KINGSTOWN	1	16		20	1	0	4
TIVERTON					0	0	0
WARREN					0	0	1
WARWICK		37	1	5	0	7	24
WEST GREENWICH		4		2	0	0	2
WEST WARWICK		7			0	1	1
WESTERLY		5			0	0	0
WOONSOCKET	1	17			0	1	5

Source: Google Scrape of RI NAICS Codes

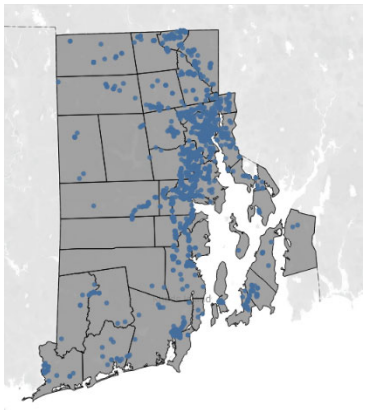
Health Services

In examining the distribution of health-related services in Rhode Island, the analysis was organized into four categories based on 3-digit NAICS codes: (1) Medical Offices (621), (2) Hospitals (622), (3) Nursing Facilities (623), and (4) a combination of all other services. The data indicates that a significant portion of health service locations is concentrated in Providence and its surrounding municipalities. Although at least one medical office and "other service" location can be found in every municipality, there is a noticeable scarcity of hospitals in the western region of the state.



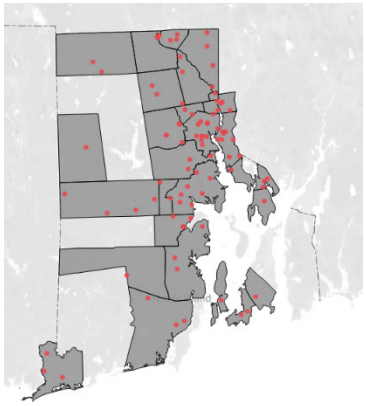
Source: Google Scrape of RI NAICS Codes

621 – Medical Offices

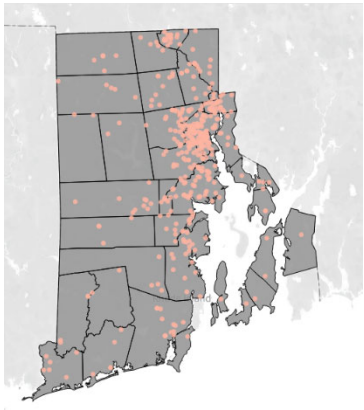


622 - Hospitals

623 – Nursing Facilities



624 – Other Services



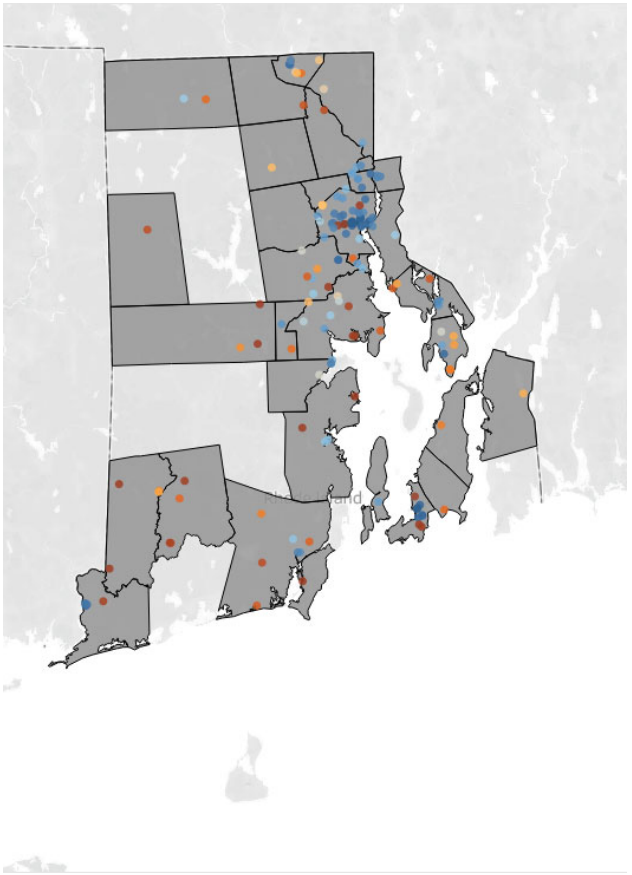
Distribution of Health Services by City/Town

Town	Medical Offices	Hospitals	Nursing Facilities	Other Medical Services
BARRINGTON	6		1	1
BRISTOL	4	1	1	3
BURRILLVILLE	22	1	2	5
CENTRAL FALLS	9		1	2
CHARLESTOWN	13			5
COVENTRY	25		4	10
CRANSTON	327	3	3	38
CUMBERLAND	130		4	12
EAST GREENWICH	224	4	4	11
EAST PROVIDENCE	42	1	8	6
EXETER	2		1	4
FOSTER	10		1	2
GLOCESTER	14			5
HOPKINTON	14			5
JAMESTOWN	9		1	1
JOHNSTON	61	1	5	22
LINCOLN	158	1	2	10
LITTLE COMPTON				
MIDDLETOWN	22	1	1	1
NARRAGANSETT	33			1
NEW SHOREHAM				
NEWPORT	18		2	1
NORTH KINGSTOWN	117		3	21
NORTH PROVIDENCE	133	4	2	14
NORTH SMITHFIELD	23		2	5
PAWTUCKET	51	2	5	29
PORTSMOUTH	7			2
PROVIDENCE	386	17	13	94
RICHMOND	10			1
SCITUATE	5			2
SMITHFIELD	33		3	10
SOUTH KINGSTOWN	172	3	3	14
TIVERTON	2			1
WARREN	7	1	3	3
WARWICK	457	3	7	46
WEST GREENWICH	4			4
WEST WARWICK	19		2	8
WESTERLY	41	3	3	6
WOONSOCKET	155	3	4	18

Source: Google Scrape of RI NAICS Codes

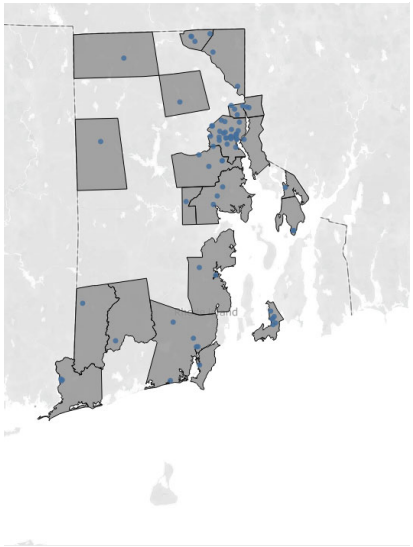
Arts & Entertainment

For this report, arts and entertainment locations have been classified into two main categories: Theatre & Performance venues and Sports-related venues. The majority of these facilities are situated in and around Providence, with a handful dispersed across other parts of the state. It is important to note that certain areas, particularly in the central and western regions of Rhode Island, lack these assets.

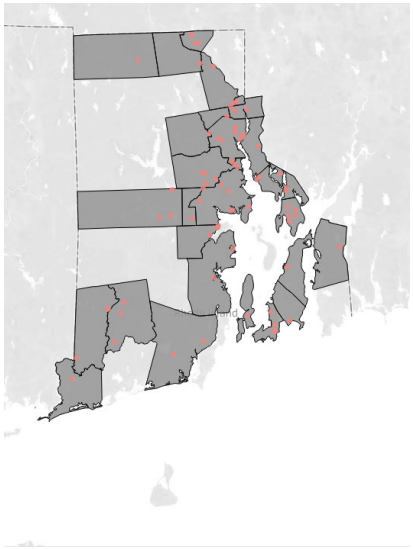


Source: Google Scrape of RI NAICS Codes

7111 – Theatre & Performance



7112 – Sports Venues & Clubs



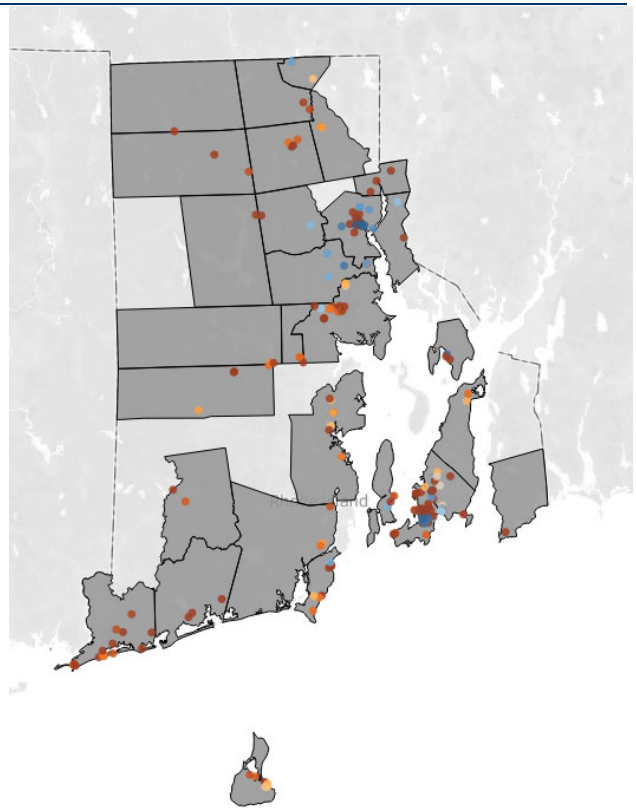
Distribution of Arts & Entertainment Facilities by City/Town

Town	Theater Companies and Dinner Theaters	Dance Companies	Musical Groups and Artists	Sports Teams and Clubs	Racetracks	Other Spectator Sports
BARRINGTON						3
BRISTOL	2					5
BURRILLVILLE	1					1
CENTRAL FALLS						1
CHARLESTOWN						
COVENTRY				1	1	1
CRANSTON	3	1	1	1	1	4
CUMBERLAND	1	1				
EAST GREENWICH						4
EAST PROVIDENCE	1			1		
EXETER						
FOSTER	1					
GLOCESTER						
HOPKINTON	1					3
JAMESTOWN						1
JOHNSTON						1
LINCOLN						2
LITTLE COMPTON						
MIDDLETOWN				1		
NARRAGANSETT			1			
NEW SHOREHAM						
NEWPORT	6					4
NORTH KINGSTOWN	2					2
NORTH PROVIDENCE						1
NORTH SMITHFIELD				1		
PAWTUCKET	5	1		1		2
PORTSMOUTH						1
PROVIDENCE	21	3	6	1		9
RICHMOND			1	1		2
SCITUATE						
SMITHFIELD						
SOUTH KINGSTOWN	4		1	1		1
TIVERTON						1
WARREN			1			2
WARWICK	2			1	1	5
WEST GREENWICH						
WEST WARWICK	1					1
WESTERLY	3					1
WOONSOCKET	4			1		3

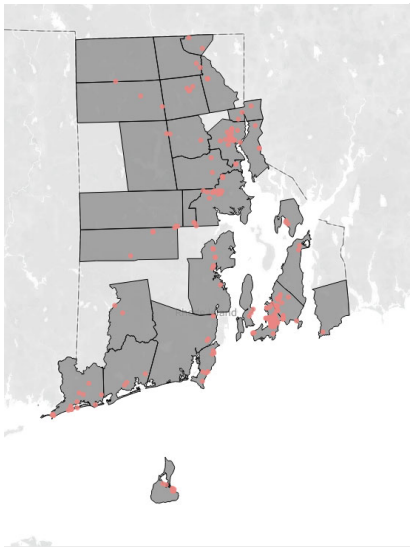
Source: Google Scrape of RI NAICS Codes

Hotels, Lodging, & Convention Centers

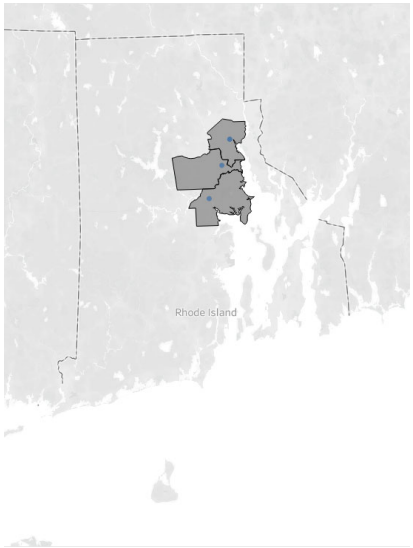
Rhode Island's hotels and lodging establishments are primarily found in several distinct regions. Providence boasts the greatest number of accommodations, attributed to its sizable population and the presence of convention centers. Additionally, Providence's cultural attractions, academic institutions, and diverse culinary scene contribute to its popularity as a destination. Newport, a prominent tourist hub beyond Providence, lures visitors with its coastal location and rich historical background. Numerous historic structures situated along the waterfront offer a unique lodging experience for travelers. Westerly also presents an array of coastal hotels and lodging options for visitors.



721110 Hotels & Lodging



561920 Convention Centers



Source: Google Scrape of RI NAICS Codes

Distribution of Hotels & Convention Centers by City/Town

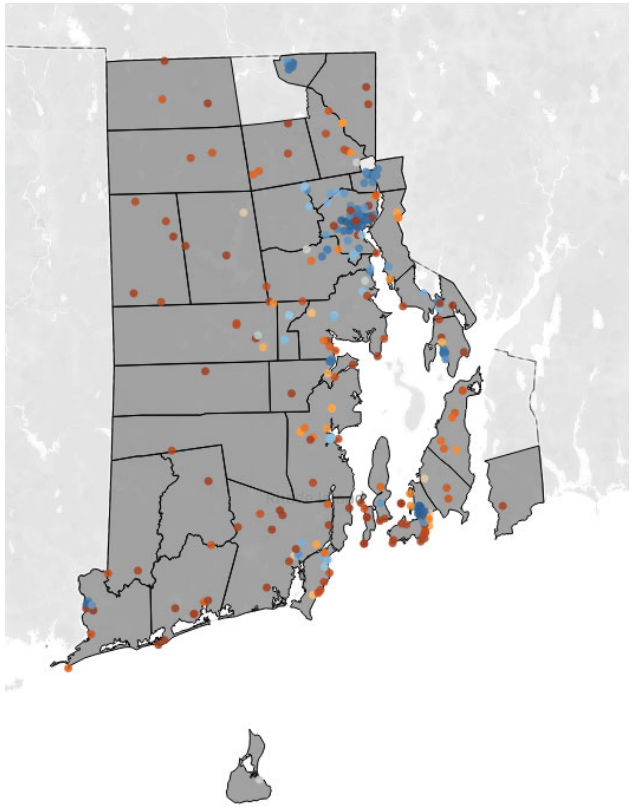
Town	Convention Centers	Hotels & Lodging
BARRINGTON		
BRISTOL		3
BURRILLVILLE		1
CENTRAL FALLS		
CHARLESTOWN		3
COVENTRY		2
CRANSTON	1	4
CUMBERLAND		
EAST GREENWICH		
EAST PROVIDENCE		3
EXETER		
FOSTER		
GLOCESTER		2
HOPKINTON		
JAMESTOWN		3
JOHNSTON		2
LINCOLN		2
LITTLE COMPTON		1
MIDDLETOWN		21
NARRAGANSETT		8
NEW SHOREHAM		8
NEWPORT		69
NORTH KINGSTOWN		7
NORTH PROVIDENCE		
NORTH SMITHFIELD		2
PAWTUCKET		3
PORTSMOUTH		2
PROVIDENCE	2	24
RICHMOND		2
SCITUATE		1
SMITHFIELD		4
SOUTH KINGSTOWN		3
TIVERTON		
WARREN		
WARWICK	1	16
WEST GREENWICH		4
WEST WARWICK		3
WESTERLY		19
WOONSOCKET		2

Source: Google Scrape of RI NAICS Codes

Museums & Historic Sites

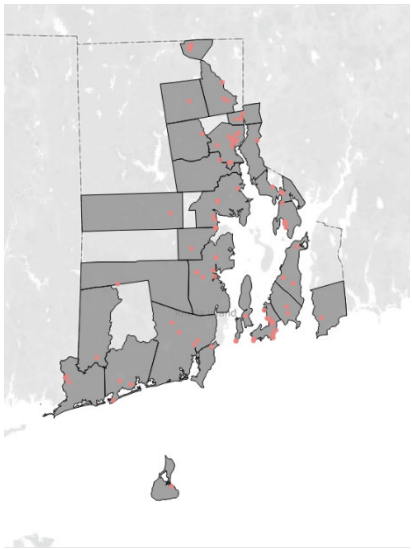
Rhode Island is a state steeped in history, with numerous attractions and points of interest distributed throughout the state. The following section examines two categories of NAICS codes: Museums and Historical Sites. Providence and Newport dominate in terms of the density of historical sites. However, 37 out of 39 municipalities feature at least one historical site. The widespread distribution of historical sites throughout Rhode Island showcases the state's rich heritage and highlights its diverse historical narratives. The presence of these sites in both urban and rural areas may indicate potential opportunities for leveraging the state's historical assets to foster community development.

Museums follow a similar distribution pattern, with Providence and Newport taking the lead. Newport, in particular, is home to a plethora of museums, primarily due to the presence of numerous historic mansions that are open to the public. These mansions offer a glimpse into the region's past and serve as cultural institutions that help preserve and promote Rhode Island's heritage.

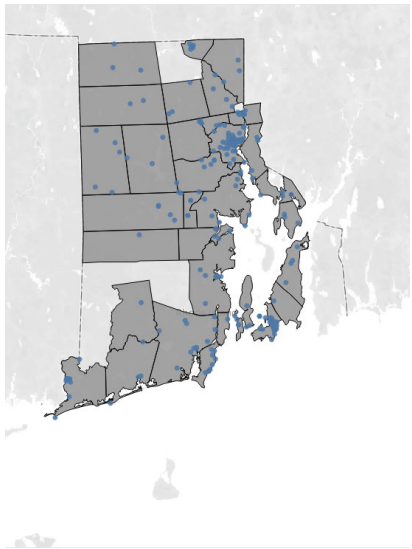


Source: Google Scrape of RI NAICS Codes

712110 - Museums



712120 – Historical Sites



Distribution of Museums & Historical Sites by City/Town

Town	Museums	Historical Sites
BARRINGTON	1	1
BRISTOL	7	3
BURRILLVILLE		3
CENTRAL FALLS		
CHARLESTOWN	4	4
COVENTRY	1	5
CRANSTON	1	9
CUMBERLAND		3
EAST GREENWICH	3	2
EAST PROVIDENCE	1	4
EXETER	1	
FOSTER		5
GLOCESTER		2
HOPKINTON	1	
JAMESTOWN	3	7
JOHNSTON	1	2
LINCOLN	3	4
LITTLE COMPTON	1	
MIDDLETOWN	2	1
NARRAGANSETT	1	10
NEW SHOREHAM	1	
NEWPORT	17	41
NORTH KINGSTOWN	7	7
NORTH PROVIDENCE		3
NORTH SMITHFIELD		
PAWTUCKET	3	12
PORTSMOUTH	3	4
PROVIDENCE	15	60
RICHMOND		1
SCITUATE		3
SMITHFIELD	1	3
SOUTH KINGSTOWN	4	11
TIVERTON		
WARREN	3	3
WARWICK	5	10
WEST GREENWICH		1
WEST WARWICK		5
WESTERLY	3	9
WOONSOCKET	4	8

Source: Google Scrape of RI NAICS Codes

Environmental Assets

Rhode Island is known for its robust environmental assets. The state's Department of Environmental Management (DEM) was established with a mission to protect, restore, and promote Rhode Island's environment to ensure the state remains a beautiful place to live, visit, and raise a family. The environmental assets detailed in the following section highlight the role of natural assets and recreation opportunities that aid in long-term quality of life.

Throughout the state, 1,850 land and water assets support a desirable quality of life in Rhode Island. Many of these assets are leveraged to protect residential communities, while others are purely recreational. Many of these assets are sustained by the State Department of Environmental Management, a partner in community development activities around natural assets.

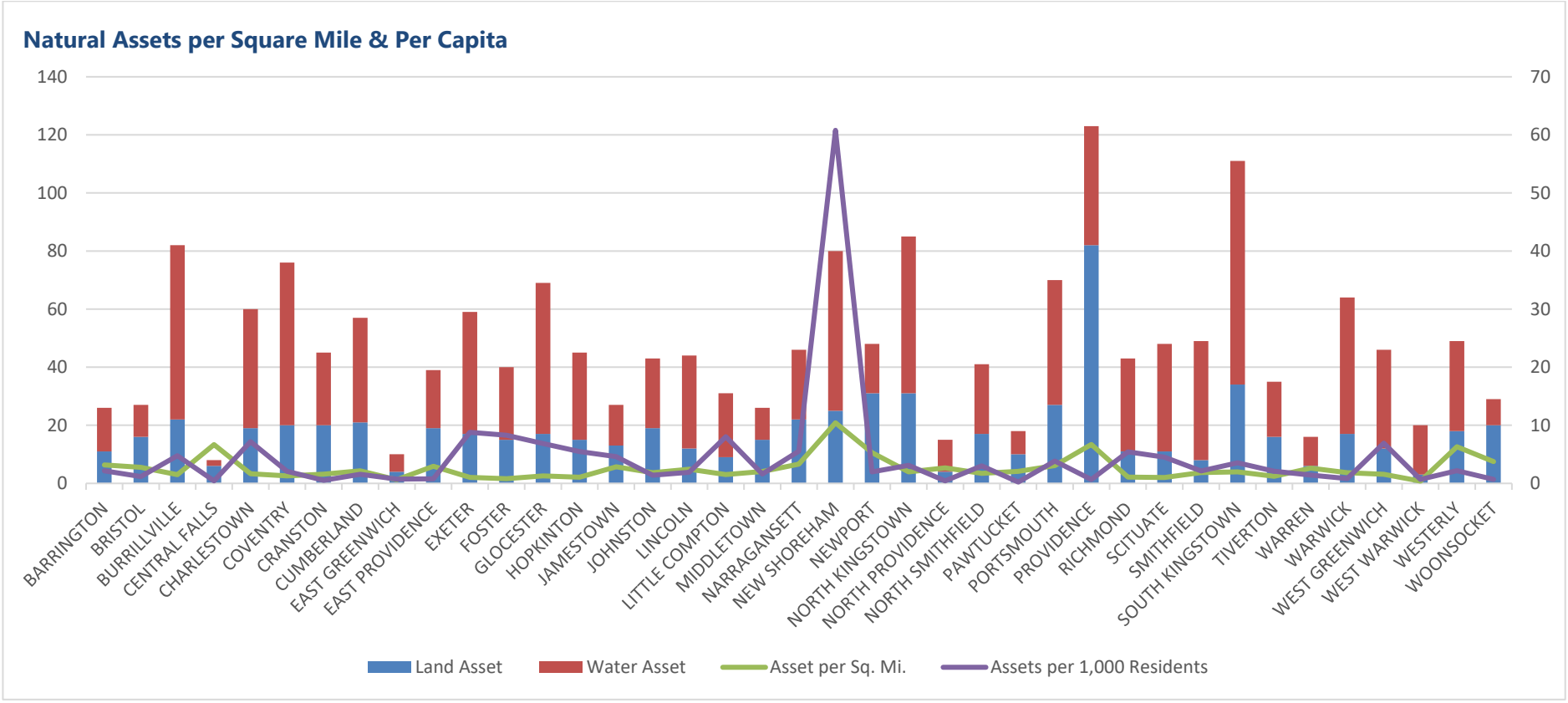
Count & Distribution of Rhode Island's Natural

	Asset	Number of Assets	Percentage of Cities/Towns with Asset
LAND	Area	6	3%
	Bench	3	0%
	Cliff	5	3%
	Forest	2	0%
	Island	57	31%
	Park	301	87%
	Pillar	23	18%
	Range	1	0%
	Summit	243	92%
	Tower	38	18%
	Trail	5	3%
	Valley	6	3%
	Woods	5	3%
WATER	Bar	2	0%
	Bay	27	13%
	Beach	58	33%
	Bend	1	0%
	Canal	1	0%
	Cape	168	49%
	Dam	136	72%
	Falls	4	0%
	Gut	3	0%
	Lake	238	69%
	Reservoir	207	74%
	Stream	238	77%
	Swamp	64	36%

Source: URI Environmental Data Center and RIGIS; see Attachment A for the definitions of each term based upon the Geographic Names Information System (GNIS) Federal standard for geographic nomenclature.

Natural Assets per Square Mile and per Capita

This analysis focuses on the distribution of natural assets across Rhode Island municipalities, including lakes, beaches, trails, and summits among many others. New Shoreham is ranked first in terms of assets per capita and per square mile. This number can be misleading due to New Shoreham's population being the lowest of any municipality in the state (1,316) in addition to a high number of natural assets, including 10 capes, 10 swamps, 23 Lakes, and 14 summits which can be attributed to the island's unique geography. Despite having a small population, Exeter has an unexpectedly high number of assets per 1,000 residents but a below-average rate of assets per square mile. Exeter also is also home to an abundance of cemeteries (97 out of 201 total assets). Overall, there are 444 cemeteries present in 28 of 39 Rhode Island cities and towns. North Providence has a relatively high population of 34,504 but a low number of natural assets resulting in one of Rhode Island's lowest assets per capita rates. Providence, with a population exceeding 185,000, boasts a significant number of parks, totaling 71 within its boundaries. Conversely, Pawtucket, despite being among the municipalities with the highest populations at 74,913 residents, has the lowest assets per capita ratio in the state.



Source: URI Environmental Data Center and RIGIS

Hunting Land (Acreage)

Hunting in Rhode Island is offered in 27 of 39 cities and towns across the state, most of which are in the Eastern region of the state. Over 5,000 acres of designated hunting land exists in Burrillville, Exeter, Scituate, and West Greenwich.

Rhode Island Hunting Assets by City/Town

Location	Special Hunting Area	State Hunting Land
Barrington		42
Bristol	248	
Burrillville		7,306
Central Falls		
Charlestown	2,729	1,867
Coventry		2,830
Cranston		178
Cumberland		408
East Greenwich		5
East Providence		3
Exeter	722	8,839
Foster	629	505
Glocester		3,530
Hopkinton	876	3,067
Jamestown	169	112
Johnston		480
Lincoln		
Little Compton		556
Middletown		
Narragansett	249	160
New Shoreham	244	
Newport		
North Kingstown	161	694
North Providence		
North Smithfield		
Pawtucket		
Portsmouth		2,551
Providence		
Richmond	460	4,310
Scituate	7,017	
Smithfield		86
South Kingstown	727	3,448
Tiverton	488	942
Warren		
Warwick		
West Greenwich	252	12,705
West Warwick		
Westerly	514	1,244
Woonsocket		

Source: Rhode Island Department of Environmental Management | Outdoor Recreation GIS (April 2023)

Fishing

Rhode Island offers fishing opportunities on its lakes (2,574 acres), rivers (134 miles), and shoreline (318 access points). Charlestown and Tiverton offer the most fishing amenities, and Richmond and Hopkinton provide over 15 miles of river to fish. Only three centrally located cities/towns do not offer any fishing opportunities - Central Falls, Johnston, and North Providence.

Rhode Island Fishing Assets by City/Town

Place	Trout Stock Lake (Acreage)	Trout Stock River (Miles)	Fishing Public Shoreline Access Points (Count)
Barrington	105		23
Bristol			30
Burrillville	14	9	
Central Falls			
Charlestown	576	4	12
Coventry	284	13	
Cranston	30	1	5
Cumberland			
East Greenwich		4	6
East Providence	5	2	9
Exeter	234	12	
Foster	23	6	
Glocester	215	5	
Hopkinton	105	16	
Jamestown			21
Johnston			
Lincoln	150		
Little Compton	37	4	5
Middletown			10
Narragansett			29
New Shoreham			24
Newport			23
North Kingstown	17	2	7
North Providence			
North Smithfield	18	3	
Pawtucket			5
Portsmouth	16		26
Providence			5
Richmond	58	22	
Scituate		4	
Smithfield	1	4	
South Kingstown	141	5	16
Tiverton	498	1	7
Warren			14
Warwick		1	18
West Greenwich	42	10	
West Warwick		6	
Westerly		1	23
Woonsocket	3	1	

Source: Rhode Island Department of Environmental Management | Outdoor Recreation GIS (April 2023)

Recreation

Active lifestyles outside of fishing and hunting recreation opportunities are most commonly a factor of urban cores and pedestrian and bicycle infrastructure. The following table outlines the amount of bike and pedestrian trails and parkland. Parkland is present in each city/town, and over 1,000 acres exist in Charlestown, Glocester, North Kingstown, Smithfield, and South Kingstown. Central Falls and North Providence, the smallest towns, have the least parkland acreage. When analyzing this data on a per square acre basis, West Warwick has the least density of park/recreational areas (3 acres per sq. mi.). In contrast, Barrington, New Shoreham, and Westerly have over 75 acres per sq. mi.

Rhode Island Recreational Assets by City/Town

Place	Recreational Bike Paths (Miles)	Recreational Trails (Miles)	Public Park/Recreation Area (Acreage)	Park/Recreation Area per Sq. Mi.
Barrington	3.6	9.7	624.8	76.0
Bristol	2.7	41.9	403.7	41.1
Burrillville			385.4	7.0
Central Falls	0.2	28.3	27.9	23.2
Charlestown		17.9	2,358.0	64.7
Coventry	9.0		907.9	15.4
Cranston	5.9	13.3	245.3	8.7
Cumberland	2.4	0.1	1,803.7	68.2
East Greenwich			439.5	26.8
East Providence	6.2	100.9	434.2	32.8
Exeter		3.3	957.4	16.7
Foster		20.1	360.9	7.1
Glocester		20.4	1,101.0	20.3
Hopkinton		3.0	349.1	8.1
Jamestown		9.6	589.6	62.4
Johnston	1.7	13.9	209.9	9.0
Lincoln	7.3	3.4	831.7	45.9
Little Compton			444.3	21.7
Middletown		1.2	365.7	28.8
Narragansett	0.3	1.8	280.6	20.2
New Shoreham		2.0	631.9	82.4
Newport		8.9	154.1	17.0
North Kingstown	2.3		1,146.8	26.6
North Providence			92.7	16.5
North Smithfield	0.1		593.3	24.9
Pawtucket	2.3		385.5	44.4
Portsmouth	0.3		313.8	13.7
Providence	3.5	34.5	790.9	43.0
Richmond			401.8	10.0
Scituate			297.5	6.2
Smithfield		8.6	1,101.4	41.9
South Kingstown	6.6		1,498.9	26.6
Tiverton	0.2		249.5	8.6
Warren	3.0	7.1	359.9	58.8
Warwick	1.8	133.0	840.5	24.0
West Greenwich			645.0	21.9
West Warwick	2.7	16.8	149.0	3.0
Westerly			603.4	77.5
Woonsocket	1.7		492.6	63.6

Source: Rhode Island Department of Environmental Management | Outdoor Recreation GIS (April 2023)

Community Development Block Grants (CBDG), 2010-2020

CDBG in Rhode Island

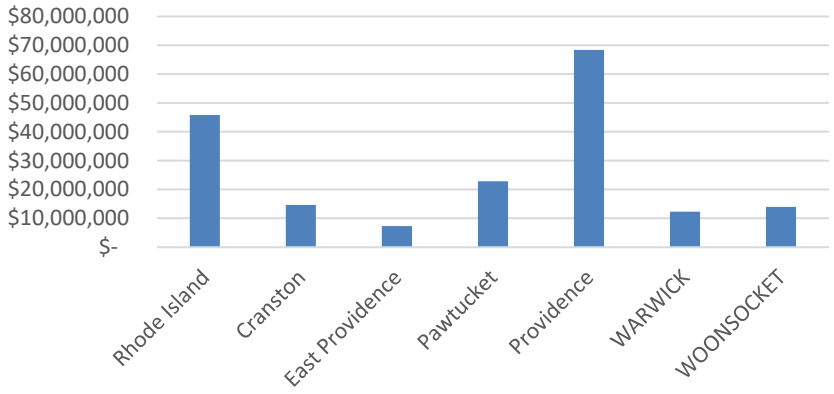
The Housing and Urban Development (HUD) CDBG program provides funds to states and entitled cities and counties to perform targeted housing development and economic development activities, including real estate acquisitions, rehabilitation, redevelopment, and demolition; construction of public facilities and improvements; and providing assistance to profit-motivated businesses to carry out economic development and job creation/retention activities.

Rhode Island has six entitled cities that receive block funding from this grant source: Cranston, East Providence, Pawtucket, Providence, Warwick, and Woonsocket. Entitled cities are empowered to create their own, locally focused programs and criteria for mobilizing these funds to "develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low- and moderate-income persons." In RI, the HUD CDBG funds are being used in various ways. In Cranston: Housing Rehabilitation, Adult Day Care, and a Mayor's Scholarship Program that helps low- and moderate-income youths attend college vocational school or technical school are used to improve the area and the life of its residents. Providence uses grant funds to execute the Providence Anti-Displacement and Comprehensive Housing Strategy.

Total CDBG Disbursement (State and Entitlement Cities)

With a large portion of the state's population, Providence receives much more funding from the CDBG program by HUD. HUD determines the amount of each entitlement grantee's annual funding allocation by a statutory dual formula which uses several objective measures. Entitled cities are empowered to create and administer the programs that will ultimately deliver the funds to the needed projects but must adhere to specific requirements set forth by HUD.

Total CDBG Dispursement by City



Source: U.S. Housing and Urban Development Community Development Block Grant Expenditure and Performance Reports; PR-50 and PR-54 (2010-2020)

Annual CDBG Disbursement by Activity Group

The combined use of funds by the State of Rhode Island and the 6 Entitled Cities in Rhode Island is shown below. Public Improvements have received about 30% of available funds during the observed period. Pawtucket is the only geography with funds expended on neighborhood revitalization strategy or by a community development financial institution (CDFI) ($745,000 during the studied period). CDFIs are a primary tool nationally for the overall economic health of small and medium enterprises. Few (2) of these institutions exist in Rhode Island.

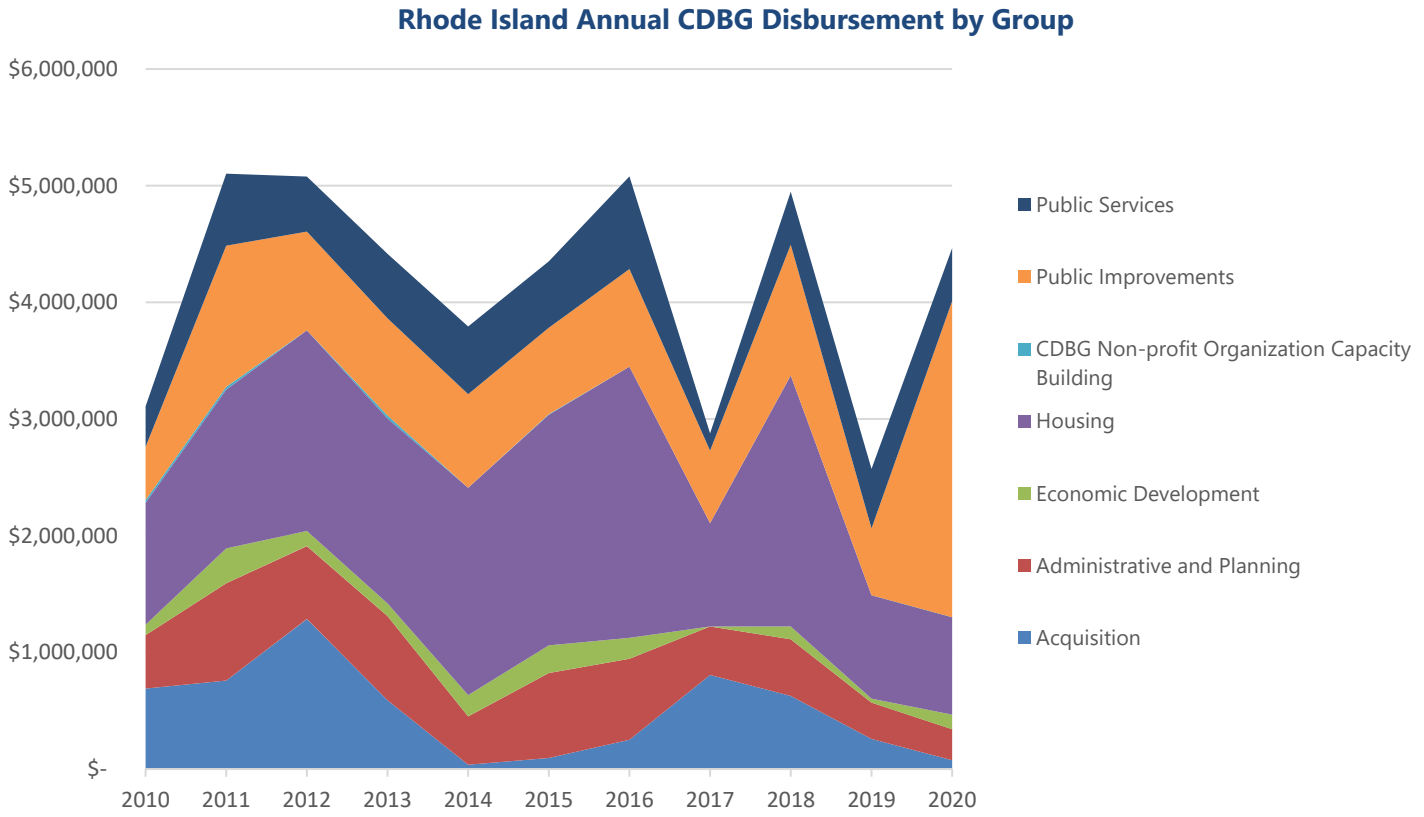
Annual CDBG Disbursement by Activity Group

	Acquisition	Administrative and Planning	Economic Development	Housing	CDBG Non-profit Organization Capacity Building	Public Improvements	Public Services	Planned Repayment of Section 108 Loan Principal	Grand Total
2010	$1,184,416	$2,748,475	$561,383	$3,940,536	$25,000	$4,005,573	$3,109,268	$771,378	**$16,346,028.95**
2011	$868,346	$2,975,037	$765,040	$3,476,891	$25,000	$3,791,708	$3,027,981	$366,376	**$15,296,379.39**
2012	$1,494,057	$2,783,497	$845,448	$3,616,941		$3,548,768	$2,890,419	$808,170	**$15,987,301.12**
2013	$779,376	$2,700,924	$843,811	$3,389,024	$26,375	$5,810,176	$2,247,475	$778,490	**$16,575,651.72**
2014	$170,785	$4,093,360	$1,913,499	$3,497,313		$4,343,750	$2,860,735	$685,389	**$17,564,830.88**
2015	$550,906	$3,102,669	$3,633,465	$4,130,831	$6,144	$7,973,478	$2,737,681	$653,173	**$22,788,346.47**
2016	$391,542	$3,716,404	$2,378,192	$4,110,669		$4,802,996	$2,723,779	$720,422	**$18,844,004.59**
2017	$856,260	$2,503,087	$630,395	$2,838,288		$3,606,324	$1,725,958	$625,112	**$12,785,423.18**
2018	$644,818	$2,542,854	$1,446,180	$4,284,614		$5,337,890	$2,230,917	$1,970,657	**$18,457,929.50**
2019	$1,108,530	$2,629,528	$913,509	$2,402,340		$5,980,819	$2,137,772	$50,825	**$15,223,323.43**
2020	$126,518	$2,260,204	$1,654,798	$2,007,429		$6,734,637	$2,254,479	$287,772	**$15,325,835.94**
Grand Total	**$8,175,553.25**	**$32,056,039.09**	**$15,585,718.70**	**$37,694,876.43**	**$82,519.25**	**$55,936,119.82**	**$27,946,463.50**	**$7,717,765.13**	**$185,195,055.17**

Source: U.S. Housing and Urban Development Community Development Block Grant Expenditure and Performance Reports; PR-50 and PR-54 (2010-2020)

State of RI Annual CDBG Disbursement by Activity Group

Actual spending on Administration & Planning and Public Services is less affected by annual changes in available funds than other spending categories in the state's separate grant funding. Spending on Public Improvements spiked in total and proportional spending during 2020, likely due to the COVID-19 pandemic. While the state took on Land Acquisition spend at a much higher rate than the municipal grantees, there were significant reductions in this category of spend between 2014 and 2016. State-level spend on economic development was proportionally low. This spending category was proportionally higher among the entitled cities with the largest economies and populations (see CDBG Disbursement by Activity Group and Selected Activity Group – Economic Development below).



Source: U.S. Housing and Urban Development Community Development Block Grant Expenditure and Performance Reports; PR-50 and PR-54 (2010-2020)

CDBG Disbursement by Activity Group

According to the Community Development Block Grants data, Non-Profit Organization Capacity Building is identified as an area of need; however, this area of spending has received appreciably little attention over the 11-year period observed; and zero spending in the latter 5 years. Public Improvements—including Parks & Recreation Facilities, Street and Sidewalk Improvements, and Neighborhood Facilities—received the highest amount of spend and were the primary focus in Pawtucket, Providence, and Woonsocket. RI State used a significantly higher proportion (almost 12%) of spend on Real Estate Acquisition and on Housing.

CDBG Disbursement by Activity Group

Activity Group	Rhode Island	Cranston	East Providence	Pawtucket	Providence	Warwick	Woonsocket	Grand Total
Acquisition	$5,467,682		$85,341	$1,768,858	$689,868	$99,848	$63,956	$8,175,553
Administrative and Planning	$5,952,952	$2,527,050	$1,447,458	$4,398,302	$13,641,132	$1,982,716	$2,106,430	$32,056,039
Economic Development	$1,497,675		$383,730	$1,169,963	$12,135,049	$31,469	$367,832	$15,585,719
Housing	$16,547,761	$6,826,481	$1,832,436	$1,433,357	$4,964,725	$4,959,679	$1,130,438	$37,694,876
CDBG Non-profit Organization Capacity Building	$82,519							$82,519
Public Improvements	$10,745,201	$3,292,796	$396,008	$9,131,498	$21,930,344	$3,631,977	$6,808,296	$55,936,120
Public Services	$5,500,180	$1,959,309	$844,092	$4,903,185	$12,206,955	$1,602,964	$929,779	$27,946,464
Planned Repayment of Section 108 Loan Principal		$30,267	$2,324,284		$2,821,571		$2,541,643	$7,717,765
Total	$45,793,970	$14,635,902	$7,313,349	$22,805,163	$68,389,645	$12,308,653	$13,948,373	$185,195,055

Source: U.S. Housing and Urban Development Community Development Block Grant Expenditure and Performance Reports; PR-50 and PR-54 (2010-2020)

Selected Activity Group – Acquisition

Entitled cities exhibit a varied focus of priorities for preparing acquired real estate. The State and Providence focused on the actual acquisition, while Pawtucket, East Providence, and Woonsocket mobilized funds to prepare real estate for rehabilitation and reuse through Clearance and Cleanup. The proportional spend on Clearance/Demolition and Cleanup may indicate a priority on one of the CDBG secondary goals of eliminating urban blight. Cranston had no Acquisition activity during the observed period and was omitted.

Acquired Real Estate by Activity Group (2010 – 2020)

	Rhode Island	East Providence	Pawtucket	Providence	Warwick	Woonsocket	Grand Total
Acquisition of Real Property	$5,009,586.09			$564,874.00	$50,000.00		$5,624,460.09
Clearance and Demolition	$439,850.95	$85,341.16	$955,674.31	$13,777.33		$63,956.29	$1,558,600.04
Cleanup of Contaminated Sites	$18,244.98		$409,414.63	$111,216.75			$538,876.36
Disposition of Real Property			$328,696.71				$328,696.71
Relocation					$49,847.85		$49,847.85
Grand Total	**$5.467.682.02**	**$85.341.16**	**$1.693.785.65**	**$689.868.08**	**$99.847.85**	**$63.956.29**	**$8.100.481.05**

Source: U.S. Housing and Urban Development Community Development Block Grant Expenditure and Performance Reports; PR-50 and PR-54 (2010-2020)

Selected Activity Group – Economic Development

Providence—the state's population and economic center—had the highest total funding and highest proportional funding mobilized for economic development. Almost 80% of the Economic Development spend in Providence was granted as direct financial assistance to businesses. East Providence also highly prioritized direct financial assistance to businesses (75% of Economic Development Spend). In all Entitled Areas, less than 1% of total spend focused on commercial and industrial real estate.

Rhode Island Activity Group Spending by City/Town

	Rhode Island	East Providence	Pawtucket	Providence	Warwick	Woonsocket	Grand Total
Economic Development: Direct Financial Assistance to For-Profit Business	$40,000.00	$187,711.65	$885,699.68	$9,540,267.10		$130,000.00	$10,783,678.43
Economic Development: Micro-Enterprise Assistance	$486,206.87		$175,000.00	$1,895,876.70		$10,000.00	$2,567,083.57
Rehabilitation: Publicly or Privately Owned Commercial/Industrial	$905,749.00	$2,860.00	$5,624.00	$305,289.63	$31,469.09	$193,019.18	$1,444,010.90
Commercial/Industrial: Infrastructure Development		$193,158.43		$305,000.00			$498,158.43
Economic Development: Technical Assistance			$57,572.62	$88,615.61		$34,812.96	$181,001.19
Commercial/Industrial: Building Acquisition, Construction, Rehabilitation	$65,719.12						$65,719.12
Commercial/Industrial: Other Improvements			$46,067.06				$46,067.06
Grand Total	**$1,497,674.99**	**$383,730.08**	**$1,169,963.36**	**$12,135,049.04**	**$31,469.09**	**$367,832.14**	**$15,585,718.70**

Source: U.S. Housing and Urban Development Community Development Block Grant Expenditure and Performance Reports; PR-50 and PR-54 (2010-2020)

Selected Activity Group – Public Improvements

Parks & Recreational Facilities and Street Improvements receive high priority in most Entitled Areas. Targeted investment in these areas often provides a noticeable improvement that is almost universally beneficial to area residents. Notably, Warwick places little emphasis on these areas, giving greater attention to Neighborhood Facilities and Homeless Facilities. The State fund was used to take a leading role in many Public Improvement categories, providing all or substantially most of the expending on Senior Centers, Water/Sewer Improvements, Flood Drainage Improvements, and Abused and Neglected Children Facilities.

Spending on Public Improvements per City/Town

	Rhode Island	Cranston	East Providence	Pawtucket	Providence	Warwick	Woonsocket	Grand Total
Parks, Recreational Facilities	$1,811,332.82	$70,000.00	$88,051.83	$4,543,439.43	$7,852,979.86	$16,484.92	$1,078,880.92	**$15,461,169.78**
Street Improvements	$3,183,198.82	$1,711,473.86		$675,380.79	$2,183,386.17	$53,421.33	$3,168,470.47	**$10,975,331.44**
Neighborhood Facilities	$370,245.93	$52,691.00		$562,742.39	$3,354,410.23	$1,439,100.30		**$5,779,189.85**
Public Facilities and Improvements	$636,665.32	$508,142.81	$81,130.24	$370,143.12	$3,226,174.28	$636,907.94	$141,474.06	**$5,600,637.77**
Sidewalks	$635,387.50		$8,414.24	$1,606,329.74	$2,334,490.92	$85,136.60	$121,117.33	**$4,790,876.33**
Fire Stations/Equipment					$659,659.00		$2,018,441.49	**$2,678,100.49**
Other Public Improvements Not Listed in 03A-03S	$452,658.38		$41,753.47	$316,595.34	$616,747.89	$84,732.55	$265,789.14	**$1,778,276.77**
Senior Center	$1,003,899.63	$476,248.99	$12,458.35	$71,507.17		$60,000.00		**$1,624,114.14**
Facilities for Persons with Disabilities	$207,112.38	$433,358.87		$70,901.60	$608,988.11			**$1,320,360.96**
Youth Centers	$439,413.69		$25,000.00	$38,708.97	$480,882.21	$62,562.40		**$1,046,567.27**
Homeless Facilities (not operating costs)	$122,549.19		$15,000.00		$91,955.83	$699,235.75	$14,122.25	**$942,863.02**
Water/Sewer Improvements	$839,094.31				$8,300.00			**$847,394.31**
Child Care Centers	$22,144.00			$125,649.97	$281,030.93	$304,629.80		**$733,454.70**
Parking Facilities	$59,550.56			$606,080.13				**$665,630.69**
Flood Drainage Improvements	$657,859.52							**$657,859.52**
Health Facilities	$74,089.00		$104,200.00			$189,765.67		**$368,054.67**
Tree Planting				$144,019.49	$156,565.70			**$300,585.19**
Abused and Neglected Children Facilities	$229,999.88		$20,000.00					**$249,999.88**
Non-Residential Historic Preservation		$40,880.00			$74,773.04			**$115,653.04**
Grand Total	$10,745,200.93	$3,292,795.53	$396,008.13	$9,131,498.14	$21,930,344.17	$3,631,977.26	$6,808,295.66	**$55,936,119.82**

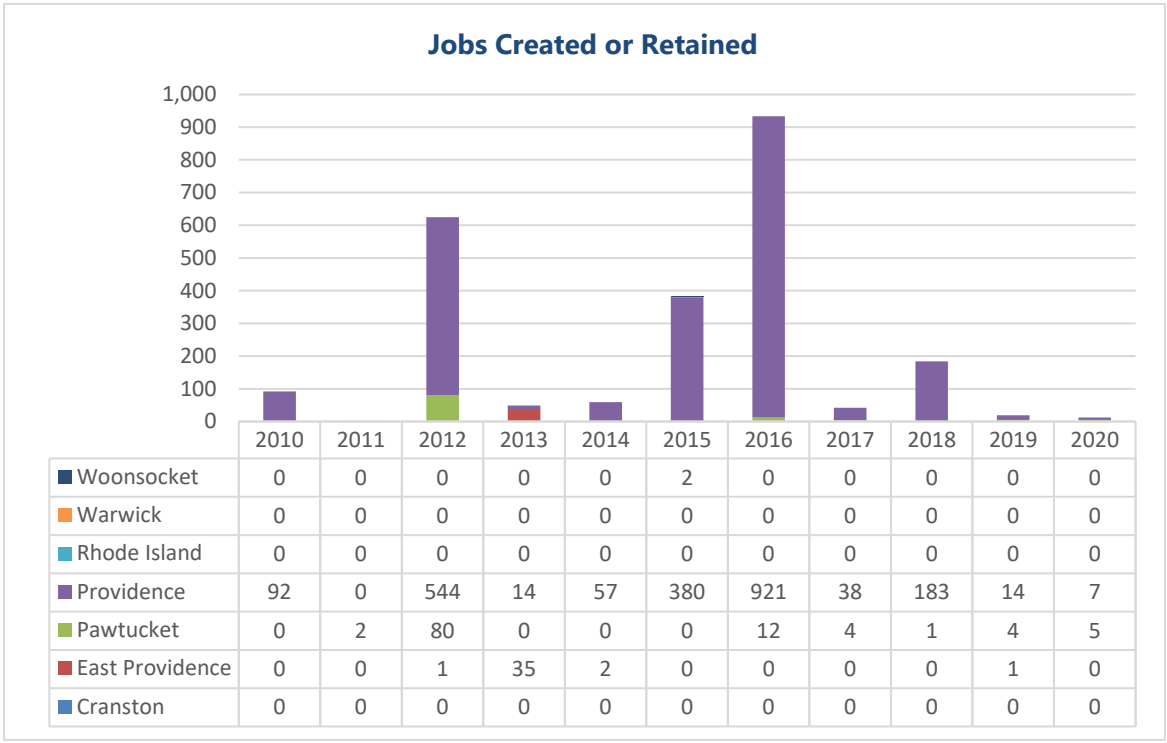
Source: U.S. Housing and Urban Development Community Development Block Grant Expenditure and Performance Reports; PR-50 and PR-54 (2010-2020)

CDBG Accomplishments

The Community Development Block Grant Performance Profile is produced each fiscal year (July 1 to June 30) for each grantee. It summarizes six categories of measurable impact through funds leveraged: actual jobs created or retained; households receiving housing assistance; persons assisted directly, primarily by public services and public facilities persons for whom services and facilities were available; units rehabilitated-single units; and units rehabilitated-multi unit housing. For this analysis, the previously bolded categories were analyzed, as they relate most directly to non-housing community and economic development activities.

Selected Accomplishments – Actual Jobs Created or Retained

Providence accounted for the greatest number of jobs created. The city mobilized funds using methods that created over 2,000 jobs, which may further serve the purpose of the CDBG by benefiting low- and moderate-income persons. Except for Pawtucket (108 jobs created), other areas saw either zero or less than 50 jobs created, including no jobs created through CDBG fund disbursed to the state.

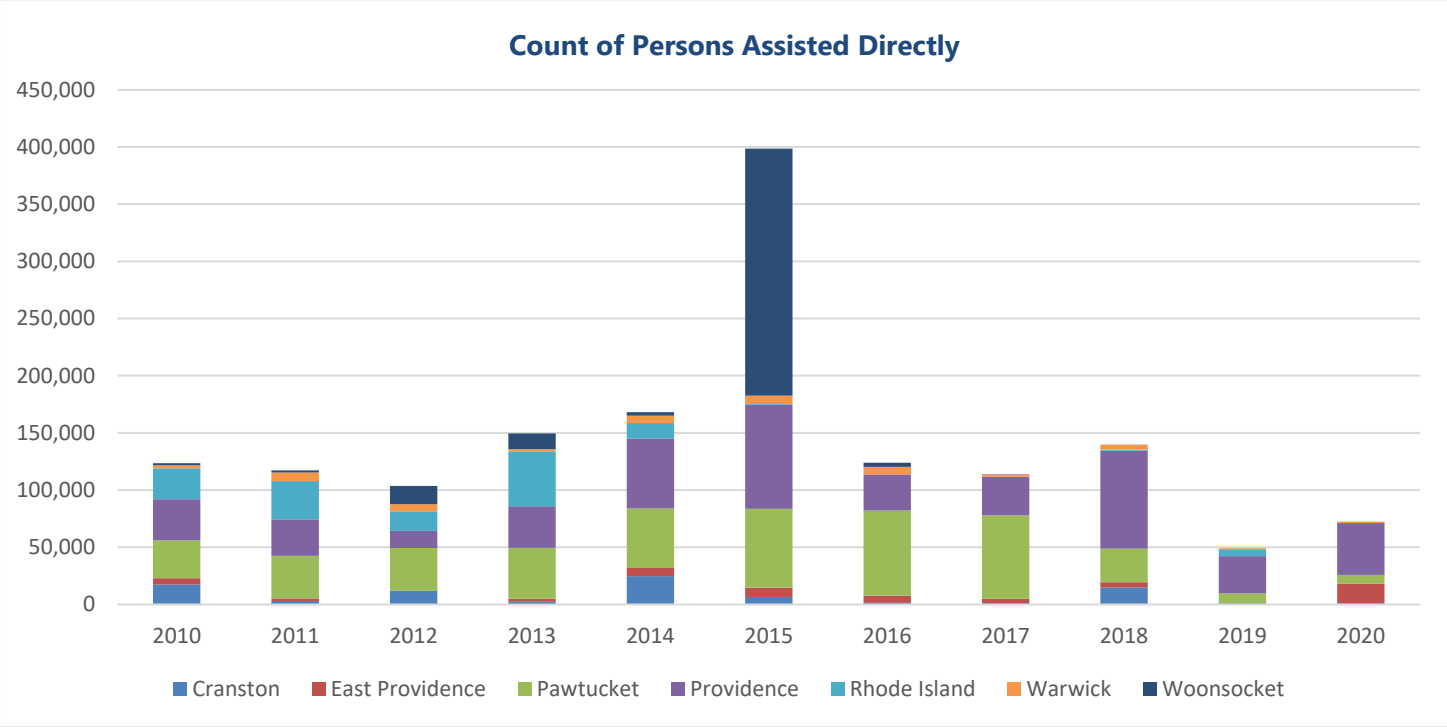


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Woonsocket	0	0	0	0	0	2	0	0	0	0	0
Warwick	0	0	0	0	0	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0	0	0	0	0	0
Providence	92	0	544	14	57	380	921	38	183	14	7
Pawtucket	0	2	80	0	0	0	12	4	1	4	5
East Providence	0	0	1	35	2	0	0	0	0	1	0
Cranston	0	0	0	0	0	0	0	0	0	0	0

Source: U.S. Housing and Urban Development Community Development Block Grant Expenditure and Performance Reports; PR-50 and PR-54 (2010-2020)

Selected Accomplishments – Persons Assisted Directly, Primarily by Public Services and Public Facilities

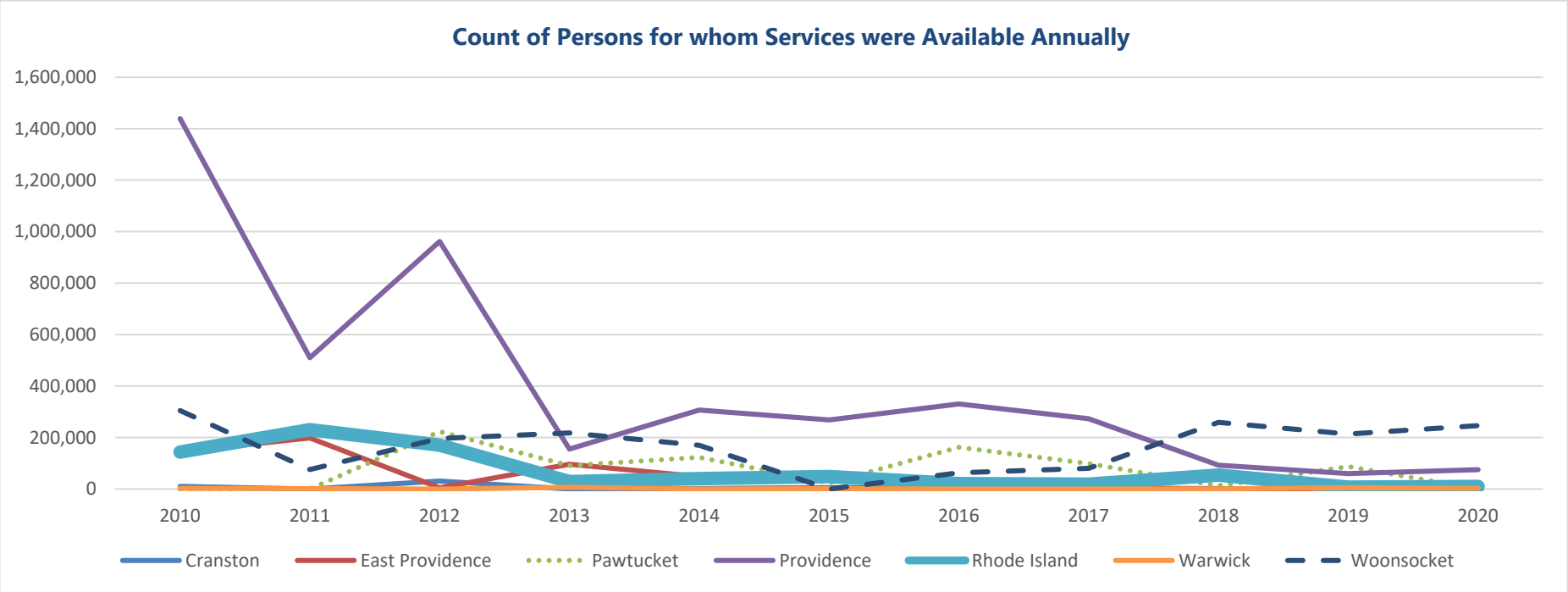
Direct assistance through Public Services and Public Facilities was highest in 2015, corresponding with significant increases to the CBDG budget in Economic Development and Public Improvement Activities. Note, this number represents the total number of persons/households for whom services/facilities were available for [in many cases] multiple area benefit activities as reported by grantees. This number can include all residents in the area and have overlapping service areas, contributing to double counting. It can be assumed that the spike in Woonsocket's data is attributed to repeatedly counting the same population, as their distribution didn't substantially increase from 2014 to 2015.



Source: U.S. Housing and Urban Development Community Development Block Grant Expenditure and Performance Reports; PR-50 and PR-54 (2010-2020)

Selected Accomplishment – Persons for Whom Services and Facilities were Available

Most entitled areas show a decrease in the persons for whom services and facilities were available. Providence received the greatest amount of CBDG funding, over the state allocation. This yields a greater number of people served by services and facilities offered, particularly in the early years of the studied period. In recent years, Woonsocket has supported more people with their public facilities grants.



Source: U.S. Housing and Urban Development Community Development Block Grant Expenditure and Performance Reports; PR-50 and PR-54 (2010-2020)

APPENDIX A: NATURAL ASSET DEFINITIONS

Asset	Asset Definition
Airport	A manmade facility maintained for
Area	A natural area is a region or tract of land that has not been significantly modified by human activity and is home to a variety of plants and animals.
Bar	A natural bar is a ridge or mound of sand, gravel, or other sediment that forms in a body of water, typically at the mouth of a river or in a bay.
Bay	A body of water partly surrounded by land. [includes arm, bight, cove, and inlet]
Beach	A natural beach is a sandy or rocky shore along the edge of a body of water, typically a sea or ocean.
Bench	A natural bench is a flat or gently sloping area of land that is raised above the surrounding terrain.
Bend	A natural bend is a curve or turn in a river or other body of water.
Bridge	A structure spanning and providing passage over a river, chasm, road, or the like.
Building	A relatively permanent structure, such as a house, office, factory, or warehouse, intended for shelter, storage, or occupancy.
Canal	An artificial waterway constructed to transport water, to irrigate or drain land, to connect two or more bodies of water, or to serve as a waterway for watercraft. [includes lateral]
Cape	A high point of land that extends into a river, lake, or ocean.
Cemetery	A place or area for burying the dead. [including burying ground and memorial garden]
Census	A statistical area that is defined for a named concentration of population and is the statistical counterpart of an incorporated place
Church	A sanctified place or structure where people gather for religious worship; examples include church, synagogue, temple, and mosque
Civil	A political division formed for administrative purposes, with a government that exercises authority over a particular area or territory. Examples include counties, parishes, boroughs, and townships.
Cliff	A very steep or vertical slope. [including bluff, crag, head, headland, nose, palisades, precipice, promontory, rim, and rimrock]
Crossing	A place where a road, railway, river, or other obstacle may be crossed.
Dam	A barrier built across the course of a stream to impound water and/or control water flow.
Falls	Natural falls, also known as waterfalls, are areas where water flows over a vertical drop or a series of drops, typically in a river or other body of water.
Forest	A natural forest is a dense collection of trees and other vegetation that typically covers a large area of land.
Gut	a narrow coastal body of water, a channel or strait, usually one that is subject to strong tidal currents flowing back and forth.
Hospital	An institution providing medical and surgical treatment and nursing care for sick or injured people.
Island	An area of dry or relatively dry land surrounded by water or low wetland. [including archipelago, atoll, cay, hammock, hummock, isla, isle, key, moku, and rock]
Lake	A standing body of water that is surrounded by land
Locale	A place where something happens or is set, or that has particular events or associations connected with it.
Military	An area owned and/or occupied by the Department of Defense for use by a branch of the armed forces (such as the Army, Navy, Air Force, Marines, or Coast Guard), or a state owned area for the use of the National Guard.
Mine	An excavation in the earth for extracting coal, minerals, or other geological materials.

Asset	Asset Definition
Park	A place or area set aside for recreation or preservation of a cultural or natural resource.
Pillar	A landform, either of rock or earth, defined by the USGS as: "Vertical, standing, often spire-shaped, natural rock formation"
Populated Place	A concentration of human settlement, including cities, towns, villages, hamlets, and other named communities.
Post office	An official facility of the U.S. Postal Service used for processing and distributing mail and other postal material.
Range	A natural range is a long, narrow chain of mountains or hills.
Reservoir	An artificially impounded body of water.
School	An institution for preschool, elementary or secondary study, teaching, and learning.
Stream	A natural flowing waterway. [includes anabranch, awawa, branch, brook, creek, distributary, fork, kill, pup, rio, and run]
Summit	A summit is a point on a surface that is higher in elevation than all points immediately adjacent to it.
Swamp	A natural swamp is a low-lying area of land that is typically saturated with water and is characterized by an abundance of trees and other vegetation.
Tower	A tall narrow structure, typically used for observation, communication, or as a vantage point.
Trail	A path or track made for walking, riding, or cycling.
Valley	A natural valley is a low area of land between two higher areas, typically formed by a river or other body of water.
Woods	Natural woods are areas of land that are covered by trees and other vegetation.

Source: U.S. Board on Geographic names

Selected Industry Analysis

APPENDIX E: STATEWIDE DIAGNOSTIC COMPONENT
Ocean State Accelerates
Rhode Island Long-Term Economic Development Strategy

April 2023

PREPARED FOR:

Rhode Island Commerce Corporation
315 Iron Horse Way Suite 101
Providence, RI 02908

&Access
camoin associates
www.camoinassociates.com

SELECTED INDUSTRY ANALYSIS OVERVIEW

Overview

The Selected Industry Analysis provides a deep dive into four of Rhode Island's priority industries: Advanced Manufacturing, Bioscience, Retail, and Tourism. Rhode Island Commerce Corporation has engaged additional partners to conduct a parallel study on the Blue Economy, which is a fifth priority industry in the state.

Throughout this document, the four profiles include narrative and data on the industry's National Outlook, Rhode Island Cluster Performance, Subclusters, Economic Performance Metrics, and Occupations. The Retail Selected Industry Analysis also expands on this data with a Retail as Placemaking Analysis and more granular information on retail performance in municipalities across the state. More information on data sources is available in the Appendix.

Key Takeaways

- **The four selected industry clusters account for approximately 25% of all jobs in the state of Rhode Island.** The Retail cluster, which includes restaurants, is the largest, with over 17.5% of all jobs in the state. Bioscience accounts for just over 1.5% of all jobs in the state, but with a significantly higher average earnings per job.
- **Both Bioscience and Advanced Manufacturing are showing growth over the last five years.** The overlap of these sectors, along with the Blue Economy could present unique opportunities for Rhode Island.
- **Each of the clusters include subsectors of particular concentration and growth.** Subsectors that are leading for Rhode Island include Medical Devices (Biosciences), Defense Manufacturing (Advanced Manufacturing) – both have high location quotients and have been gaining jobs.

Cluster Economic Performance Comparison, Rhode Island	2022 Jobs	Cluster Share of Total Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Cluster Share of Total GRP
Bioscience	8,571	1.6%	1,452	20.4%	0.89	546	$121,353	987	$2,143.3M	3.4%
Retail	94,219	17.6%	(2,326)	-2.4%	1.04	12	$38,890	7,410	$6,511.6M	10.2%
Tourism	11,837	2.2%	(1,753)	-12.9%	1.04	948	$42,524	821	$974.9M	1.5%
Advanced Manufacturing	16,549	3.1%	888	5.7%	1.07	960	$90,832	390	$2,561.6M	4.0%

Source: Lightcast

Key Metrics by Cluster, Rhode Island

Bubble size indicates 2022 job count

Source: Lightcast

ADVANCED MANUFACTURING INDUSTRY CLUSTER ANALYSIS

The Advanced Manufacturing cluster consists of firms using innovative technologies to develop and produce new products. Production activities in this cluster typically rely on information, automation, computation, software, sensing, and networking.

Advanced Manufacturing is characterized by customization and customer-focused processes; high need for skilled, technical labor; reinvestment of revenues into research and development; and significant IT and digital infrastructure demands.

Rhode Island has competitive strengths in five manufacturing subclusters: Defense, Computers & Related Electronics, Automation & Industrial Machinery, Polymers & Plastics Products, and Food Products & Processing.

It should be noted that the Biosciences subclusters of Medical Devices and Biopharmaceuticals might also be classified within the Advanced Manufacturing cluster.

National Outlook[1]

Federal spending and policy has a direct impact on economic opportunities within the Defense sub-sector.

- The types of geopolitical threats facing the US are likely to require more investment in Naval capabilities and create consistent and increasing demand for all aerospace and defense industries.
- Domestic demand for missile manufacturing will be driven, again, by increases in federal defense spending, but will also be buoyed by export demands and more activity in the commercial segment as NASA has pushed participation in commercial space flight.
- Opportunity for high revenue growth in shipping due to sustained demand for tankers and other vessels from increased federal funding and rising oil and gas production. This is occurring in combination with a declining number of establishments which will create a lower competition environment.
- Due to the longer project periods of federal contracts, these activities are less sensitive to short term economic cycles and have more consistent and predictable growth patterns.

Major Products and Services

Defense

- Search, detection, and navigation instruments
- Aircraft
- Aircraft engines and engine parts
- Other aircraft parts and auxiliary equipment
- Missile systems
- Space systems
- Propulsion systems
- Other missile and space vehicle parts
- Military shipbuilding
- Nonmilitary shipbuilding and repair
- Military ship repair

[1] National Outlook sourced from IBISWorld, a leading industry research and analysis provider.

- Non-defense related federal investments due to Infrastructure Investment and Jobs Act along with continued private spending on R&D and growth in downstream sectors like health and energy will increase demand for transportation and measuring instrumentation.
- Growth in private demand for telecommunication satellites will spur additional commercial launches.

Demand for new technology is driving the Computers & Related Electronics sector.

- Continuing growth in the share of households with computing devices globally will provide adequate demand for computer manufacturing, but operators will need to continue to streamline and automate manufacturing processes to compete.
- As consumer computing demand increases, the growth prospects for peripherals will be tied to whether market share goes to tablets and laptops. Improved quality and lower prices have made the most of these opportunities.
- Trade policies enabling the onshoring of semiconductor manufacturing means decreases the emphasis on challenges related to competitiveness in the face of strong global demand.
- Colocation of semiconductor and computer production facilities means that the resurgence of domestically produced chips in the U.S. may also spur growth of computer manufacturing.
- Wire/cable and wiring devices will see dividends from post-pandemic stabilization of downstream markets. Trade regulations moving against Chinese imports also may provide room for growth in market share.
- Broad growth in both domestic and global industrial activity will create supply chain demands to boost many of the Computer and Electronic sectors, especially wiring device and wire/cable manufacturing, semiconductors and power conversion equipment.
- Shifts in consumer sentiment for solar power are being reinforced by federal policy incentives that should make the most of domestic demand even as prices and international trade remain volatile.
- Similar growth in preferences for electric vehicles along with growing domestic capacity as supply chains re-organize will create some chances for regaining lost domestic market share for US battery manufacturers. A weakening dollar should help the export markets.

Major Products and Services

Computers & Related Electronics

- Computers
- Computer storage devices
- Computer terminals
- Computer peripheral equipment
- Parts and attachments for POS terminals
- Semiconductor products and parts (e.g., microprocessors)
- Memory
- Integrated circuits
- Transistors
- Diodes and rectifiers
- Primary and secondary batteries and parts
- Electronic, telecom, and building wire and cable
- Fiber-optic cable
- Current-carrying wiring devices, switches, connectors, and supplies
- Pole line and transmission hardware
- Electrical conduit and conduit fittings
- Noncurrent-carrying wiring device and supplies
- Carbon and graphite products
- Laser systems, equipment, and supplies
- Rectifying apparatus
- Uninterruptible power supplies
- Extension and electrical equipment cords
- Capacitors

Post-pandemic levels of production are creating increased demand in the Automation & Industrial Machinery sector.

- Post-pandemic normalization of the economy will spur demand. Rebounding consumer sentiment and returning levels of industrial production of all types will help recover lost business during the COVID-19 downturn.
- Recent federal programs incentivize investment in industrial jobs, infrastructure, and products. The Inflation Reduction Act (IRA) targets manufacturing generally and especially increasing locally supplied manufactured goods. The Infrastructure Investment and Jobs Act (IIJA) allocates resources for improved public investments (especially infrastructure investment and general construction) and manufacturing.
- All of these point to a strong horizon of construction markets where recent trends show growth in revenue, profits, sales volume, imports, and exports.
- Emerging markets where industrialization is ongoing and accelerating are a source of demand for specialized metalworking machinery. Evidence of exports increasing as a share of revenue should be assisted by a weakening dollar.
- As technology and food safety concerns continue to be central to public awareness, increased sales of high-margin products will help support industry profit for food manufacturing machinery that reduces risk of health issues and meets increasingly strict regulatory guidelines.

The Polymers & Plastics Products sector is closely tied to consumer habits.

- Industry performance is tightly coupled with the economy as a whole given the diversity of products and client industries. Rebounding consumer sentiment and returning levels of industrial production of all types will help recover lost business during the COVID-19 downturn.
- The pandemic has carried mixed effects on industry revenue, as domestic demand for single-use plastics is expected to have surged as a sanitary measure against the virus. For example, previously implemented regulation regarding plastic bag usage in retail establishments was suspended amid the pandemic, in an effort to avoid unnecessary contact between consumers and employees, benefiting the industry.
- Recovery in the broader economy is expected to generate growth in consumer spending, increasing plastic packaging, film, and bag requirements among downstream industry markets. Similarly, e-commerce sales are forecast to increase over the coming years, benefiting operators directly involved in shipment packaging.

Major Products and Services

Automation & Industrial Machinery

- Robotics
- Cranes
- Plastic working machinery
- Cutting tools
- HVAC equipment
- Packaging machinery
- Industrial trucks and forklifts
- Pumps
- Engines and generators
- Drilling machinery
- Sawmill and wood product equipment
- Food product machinery
- Specialty tools
- Other machinery parts
- Other general-purpose machinery

- In addition to consumer segments, downstream demand from two areas, agriculture, forestry and fishing and construction are large drivers of industry revenue. Agriculture industries use plastic film, sheets, and bags for irrigation, weed control and packaging purposes. Construction uses packaging and plastic sheets that control moisture in concrete slabs, walls, and ceilings.
- For miscellaneous plastic manufacturing the downstream clients are different, but equally impactful: automotive manufacturers purchase various plastic components for vehicle interiors and engine units, while hardware and home improvement wholesalers purchase construction materials, plumbing fixtures and plastic flooring, among other items, to sell to endpoint customers.

Increasing demand for variety and health-conscious products and driving the Food Products & Processing sector.

- Everyday food items are some of the most sensitive to changes in price and consumer perceptions of inflation. Reduced purchasing power from inflation is a core threat to demand and continued easing price pressure trends will alleviate this threat.
- Industry operators have strived to increase the quality and variety of products. This has been essential to keep up with increased health consciousness among consumers. To stay relevant, manufacturers have been forced to introduce a variety of healthier prepared foods to appeal to the increasingly health-conscious consumer base.
- As disposable income rises, consumers are anticipated to demand more prepared meals, which are generally more expensive to produce, but also carry a higher ticket price for customers. Additionally, increasing employment may cause an increase in demand as consumers work more and have less time to prepare meals at home. Higher demand for healthier and more nutritious products will likely provide opportunities for more specialized operators.

Major Products and Services

Polymers & Plastics Products

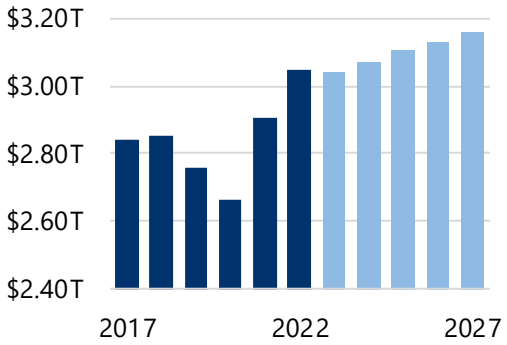
- Thermoplastics
- Synthetic rubber
- Plastic bags
- Plastic film and sheets
- Pipes and pipe fittings
- Plumbing fixtures
- Foams
- Bottles
- Plastic packaging
- Building and construction products
- Transportation products
- Plastic extrusions and shapes

Food Products & Processing

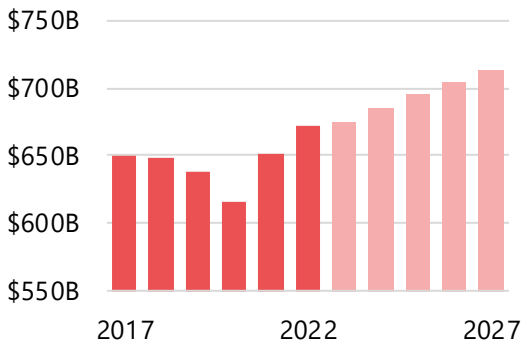
- Ready-to-eat cereals
- Sugar and candy, including chocolate
- Bread and tortilla products
- Coffee and tea
- Frozen prepared food
- Frozen fruit and vegetables
- Canned fruits and vegetables
- Seafood products
- Dairy products
- Processed meats
- Spices and flavoring products
- Sauces and condiments
- Animal food products
- Cotton ginning
- Wheat, corn, and rice products
- Oils and oil refining

Advanced Manufacturing (All Subsectors) - US Industry Performance

Industry Revenue in 2022: $3.0T
Historic Annual Growth 2017-22: 1.4%
Forecast Annual Growth 2022-27: 0.7%

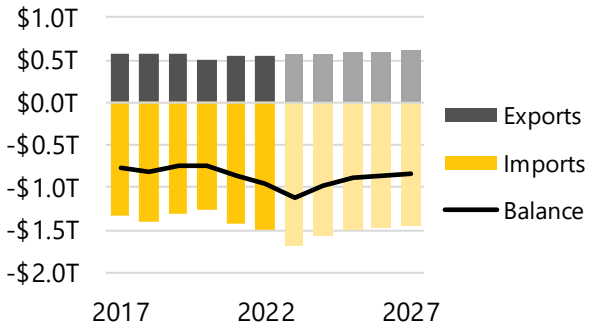


Industry Value Added in 2022: $673B
Historic Annual Growth 2017-22: 0.7%
Forecast Annual Growth 2022-27: 1.2%



Exports in 2022: $0.6T
2017-22 Growth: -0.9%
2022-27 Growth: 1.9%
Share of Revenue: 18%

Imports in 2022: $1.5T
2017-22 Growth: 2.4%
2022-27 Growth: -0.8%
Share of Demand: 38%



Source: IBISWorld

Supply Chain

SUPPLYING INDUSTRIES
Advanced Materials
Packaging
Machinery & Equipment
Agriculture
Utilities
Mining

ADVANCED MANUFACTURING CLUSTER

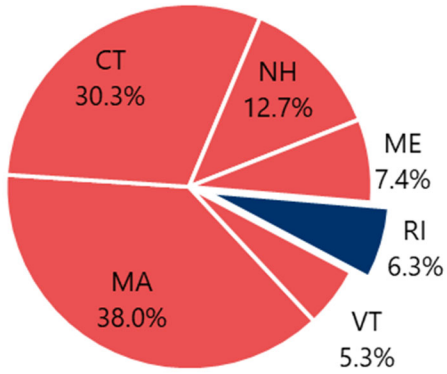
BUYING INDUSTRIES
Manufacturing
Wholesalers
Government
Consumers

Rhode Island Cluster Performance

Rhode Island's Advanced Manufacturing cluster constitutes about 6.3% of New England jobs in the cluster (compared to the state's 6.6% share of all jobs economy-wide), the second lowest share of all states. With a location quotient of 1.07, the presence of the cluster in Rhode Island is on par with the nation overall. Despite the cluster's relatively small size, job gains in the cluster have outpaced all other New England states the last five years (2017-2022), increasing by 5.7%, compared to a 2.1% decline New England-wide and a 2.2% increase nationally.

Average earnings for manufacturing jobs in Rhode Island of about $91,000 are 15% below the national average ($106,250) and 22% below the New England average of $119,000.

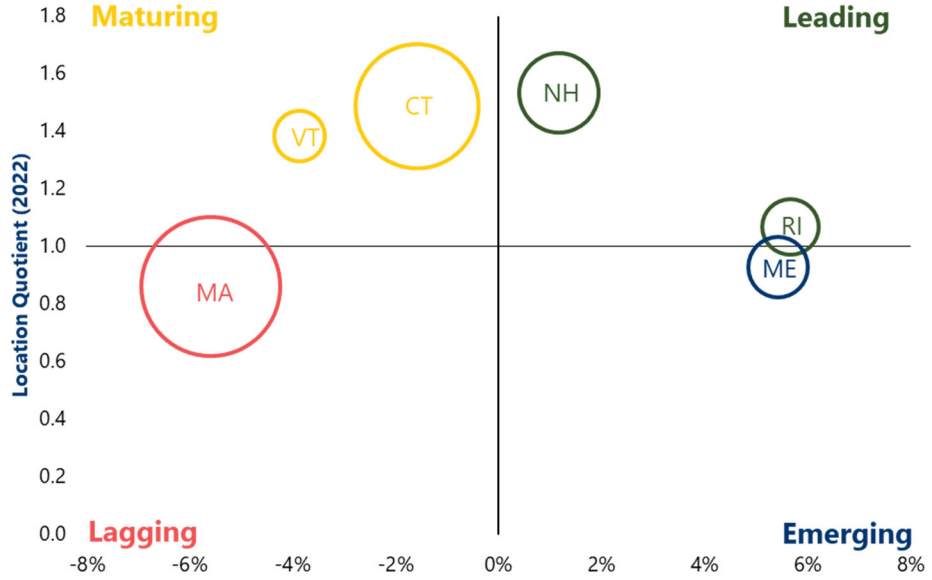
New England Adv. Mfg. Cluster Jobs by State, 2022



Source: Lightcast

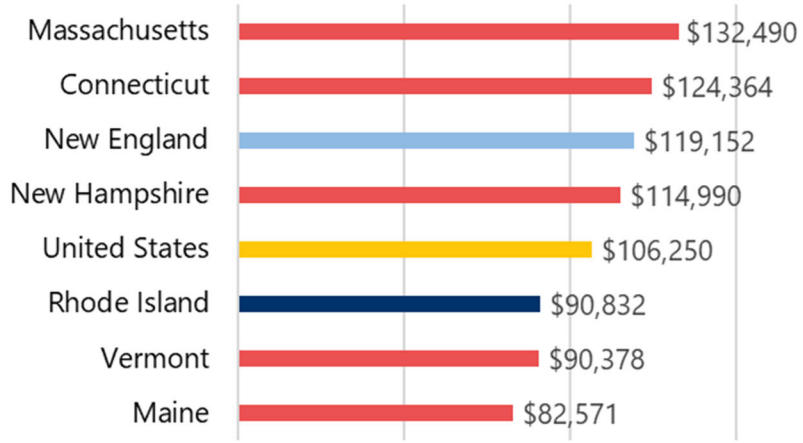
Key Metrics for Mfg. Cluster, New England States

Bubble size indicates 2022 job count



Source: Lightcast

Average Earnings per Job, Adv. Mfg. Cluster



Source: Lightcast

Advanced Manufacturing Cluster Economic Performance Comparison, New England States and US

NAICS	2022 Jobs	Cluster Share of Total Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Cluster Share of Total GRP
Rhode Island	16,549	3.1%	888	5.7%	1.07	960	$90,832	390	$2,561.6M	4.0%
Connecticut	78,961	4.3%	(1,271)	-1.6%	1.49	(1,525)	$124,364	1,226	$20,252.9M	6.9%
Maine	19,161	2.7%	986	5.4%	0.93	(348)	$82,571	384	$2,552.2M	3.3%
Massachusetts	99,025	2.5%	(5,862)	-5.6%	0.86	(11,250)	$132,490	1,873	$22,492.3M	3.6%
New Hampshire	33,005	4.4%	384	1.2%	1.53	(513)	$114,990	614	$7,180.6M	7.4%
Vermont	13,913	4.0%	(559)	-3.9%	1.38	(1,760)	$90,378	330	$2,307.6M	6.2%
New England	260,823	3.2%	(5,461)	-2.1%	1.11	(14,469)	$119,152	4,819	$57,370.1M	4.8%
United States	4,813,683	2.9%	101,362	2.2%	1.00	-	$106,250	96,536	$949,116.5M	4.2%

Source: Lightcast

Advanced Manufacturing Subclusters

The Advanced Manufacturing cluster consists of five subclusters: Defense, Computers & Related Electronics, Automation & Industrial Machinery, Polymers & Plastics Products, and Food Products & Processing.

Defense Manufacturing

The Defense Manufacturing subcluster is the largest of the five, making up over a third (36%) of cluster employment. It is dominated by two industries: Shipbuilding & Repairing (which makes up over 83% of Defense Manufacturing employment in the state) and Search, Detection, Navigation, Guidance, Aeronautical and Nautical System and Instrument Manufacturing, making up most the remaining jobs in the Defense subcluster. Both of these industries have seen employment growth between 25-30% over the last 5 years. Ship Building & Repairing is highly concentrated within Rhode Island, exhibiting a location quotient of 15.33.

Computers & Related Electronics

The state's strengths within Computers & Related Electronics manufacturing lie in the production of specialized communications and electronic equipment and instruments. Specific industries with a particularly high presence, concentration, and/or growth in Rhode Island include the following:

- Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
- Capacitator, Resistor, Coil, Transformer, and Other Inductor Manufacturing
- Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables

- Primary Battery Manufacturing
- Other Communication and Energy Wire Manufacturing
- Current-Carrying Wiring Device Manufacturing

The cluster as a whole has seen overall declines in employment over the last five year and has a below-average concentration relative to the US. Nonetheless, Rhode Island firms have carved out specialized niches in certain parts of the cluster that give the state an advantage for growth in these areas.

Automation & Industrial Machinery

Automation & Industrial Machinery make up about 11% of subcluster jobs. This cluster has experienced the largest declines of all subclusters over the last five years, contracting by over 10%. Growth industries within the cluster have included Fluid Power Valve and Hose Fitting Manufacturing; Heating Equipment Manufacturing; and Switchgear and Switchboard Apparatus Manufacturing.

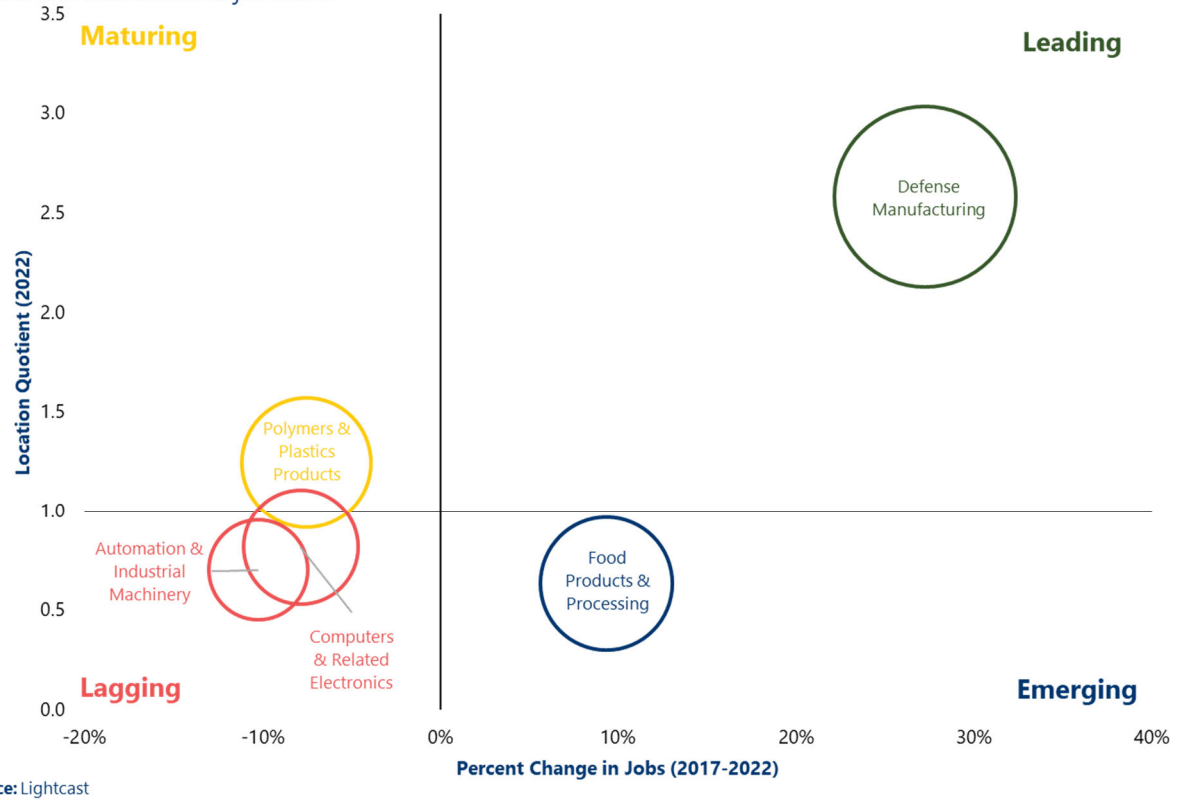
Polymers & Plastics Products

The Polymers & Plastics Products subcluster makes up about 18% of cluster jobs though it registered an employment decline of 7.5% over the last 5 years. Rhode Island has particularly large concentrations of employment in the following industries:

- Custom Compounding of Purchased Resins
- Unlaminated Plastics Film and Sheet Manufacturing
- Plastics Material and Resin Manufacturing
- All Other Rubber Product Manufacturing

Key Metrics by Advanced Manufacturing Subcluster, Rhode Island

Bubble size indicates 2022 job count



Source: Lightcast

Food Products & Processing

While not traditionally an advanced manufacturing industry, food production is increasingly incorporating advanced technologies to boost sustainability and agility. Food Products & Processing is the second largest employer of the five Advanced Manufacturing subclusters and was one of two to experience job gains over the last five years. Rhode Island's most concentrated food production industries include:

- Perishable Prepared Food Manufacturing
- Frozen Cakes, Pies, and Other Pastries Manufacturing
- Coffee and Tea Manufacturing
- Seafood Product Preparation and Packaging
- Meat Processed from Carcasses

Rhode Island Advanced Manufacturing Cluster Economic Performance Metrics

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Competitive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Food Products & Processing											
311111	Dog and Cat Food Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.4M	0.0%
311119	Other Animal Food Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.3M	0.0%
311211	Flour Milling	0	0.0%	(58)	-99.7%	0.00	(64)	$129,082	1	$0.1M	0.0%
311212	Rice Milling	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
311213	Malt Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
311221	Wet Corn Milling	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
311225	Fats and Oils Refining and Blending	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
311230	Breakfast Cereal Manufacturing	2	0.0%	(29)	-92.2%	0.06	(27)	$39,588	1	$0.2M	0.0%
311313	Beet Sugar Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
311314	Cane Sugar Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
311340	Nonchocolate Confectionery Manufacturing	37	0.2%	0	1.3%	0.48	0	$51,713	5	$4.5M	0.2%
311351	Chocolate and Confectionery Manufacturing from Cacao Beans	-	0.0%	-	-	-	-	$0	-	$0.3M	0.0%
311352	Confectionery Manufacturing from Purchased Chocolate	58	0.3%	(4)	-5.9%	0.56	(5)	$24,390	8	$3.4M	0.1%
311411	Frozen Fruit, Juice, and Vegetable Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.2M	0.0%
311412	Frozen Specialty Food Manufacturing	141	0.9%	116	464.2%	0.68	191	$58,767	2	$15.4M	0.6%
311421	Fruit and Vegetable Canning	37	0.2%	(25)	-39.9%	0.20	(33)	$47,041	6	$4.1M	0.2%
311422	Specialty Canning	10	0.1%	10	-	0.25	16	$63,307	1	$1.1M	0.0%
311423	Dried and Dehydrated Food Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
311511	Fluid Milk Manufacturing	111	0.7%	4	4.1%	0.64	10	$67,307	3	$15.6M	0.6%
311512	Creamery Butter Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
311513	Cheese Manufacturing	3	0.0%	(12)	-81.0%	0.01	(18)	$57,248	2	$0.4M	0.0%
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
311520	Ice Cream and Frozen Dessert Manufacturing	43	0.3%	(12)	-22.0%	0.55	(23)	$53,953	3	$3.6M	0.1%
311611	Animal (except Poultry) Slaughtering	0	0.0%	(0)	-23.5%	0.00	(0)	$56,432	1	$0.0M	0.0%
311612	Meat Processed from Carcasses	883	5.3%	291	49.2%	1.91	417	$65,229	11	$106.3M	4.1%
311613	Rendering and Meat Byproduct Processing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
311615	Poultry Processing	15	0.1%	2	16.9%	0.02	(5)	$50,279	1	$1.3M	0.1%
311710	Seafood Product Preparation and Packaging	167	1.0%	(26)	-13.6%	1.54	(18)	$85,006	8	$18.1M	0.7%
311812	Commercial Bakeries	502	3.0%	(233)	-31.7%	1.11	(404)	$59,697	28	$39.1M	1.5%
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing	94	0.6%	59	170.7%	2.18	91	$62,695	2	$7.3M	0.3%

Rhode Island Advanced Manufacturing Cluster Economic Performance Metrics (Cont'd)

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Food Products & Processing (Cont'd)											
311821	Cookie and Cracker Manufacturing	24	0.1%	(52)	-68.2%	0.20	(65)	$46,171	1	$2.4M	0.1%
311824	Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour	20	0.1%	8	73.0%	0.30	3	$47,269	3	$2.1M	0.1%
311830	Tortilla Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.1M	0.0%
311911	Roasted Nuts and Peanut Butter Manufacturing	38	0.2%	11	42.3%	0.74	18	$72,278	5	$10.4M	0.4%
311919	Other Snack Food Manufacturing	91	0.6%	37	67.4%	0.62	44	$65,920	2	$19.3M	0.8%
311920	Coffee and Tea Manufacturing	126	0.8%	(8)	-5.7%	1.48	(62)	$90,318	11	$29.4M	1.1%
311930	Flavoring Syrup and Concentrate Manufacturing	1	0.0%	(51)	-98.4%	0.03	(43)	$155,801	1	$1.3M	0.0%
311941	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing	-	0.0%	-	-	-	-	$0	-	$1.2M	0.0%
311942	Spice and Extract Manufacturing	18	0.1%	(2)	-9.8%	0.21	(3)	$77,433	3	$3.0M	0.1%
311991	Perishable Prepared Food Manufacturing	794	4.8%	240	43.4%	4.01	251	$62,815	10	$80.9M	3.2%
311999	All Other Miscellaneous Food Manufacturing	5	0.0%	5	-	0.04	4	$113,388	4	$1.6M	0.1%
Subtotal, Food Products & Processing (Cont'd)		**3,222**	**19.5%**	**275**	**9.3%**	**0.64**	**273**	**$64,165**	**120**	**$373.2M**	**14.6%**
Defense Manufacturing											
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	963	5.8%	213	28.5%	2.31	98	$147,184	6	$304.0M	11.9%
336411	Aircraft Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.8M	0.0%
336412	Aircraft Engine and Engine Parts Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	30	0.2%	30	-	0.10	50	$124,688	3	$7.2M	0.3%
336414	Guided Missile and Space Vehicle Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
336611	Ship Building and Repairing	4,983	30.1%	1,036	26.3%	15.33	1,483	$85,273	14	$512.7M	20.0%
Subtotal, Defense Manufacturing		**5,976**	**36.1%**	**1,279**	**27.2%**	**2.58**	**1,631**	**$95,448**	**23**	**$824.6M**	**32.2%**

Rhode Island Advanced Manufacturing Cluster Economic Performance Metrics (Cont'd)

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Competitive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Polymers & Plastics Products											
325211	Plastics Material and Resin Manufacturing	321	1.9%	(43)	-11.9%	1.65	(58)	$91,751	12	$115.8M	4.5%
325212	Synthetic Rubber Manufacturing	6	0.0%	5	390.1%	0.21	7	$110,085	1	$1.1M	0.0%
325510	Paint and Coating Manufacturing	95	0.6%	21	28.1%	0.68	36	$101,350	10	$26.2M	1.0%
325520	Adhesive Manufacturing	31	0.2%	(55)	-64.0%	0.41	(64)	$100,068	3	$8.0M	0.3%
325991	Custom Compounding of Purchased Resins	524	3.2%	(78)	-12.9%	9.28	(160)	$107,746	4	$140.4M	5.5%
326111	Plastics Bag and Pouch Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
326112	Plastics Packaging Film and Sheet (including Laminated) Manufacturing	211	1.3%	167	374.5%	2.76	218	$70,922	3	$27.2M	1.1%
326113	Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing	537	3.2%	(66)	-10.9%	4.54	(14)	$101,891	6	$100.5M	3.9%
326121	Unlaminated Plastics Profile Shape Manufacturing	84	0.5%	(39)	-31.7%	1.15	(9)	$93,387	2	$11.9M	0.5%
326140	Polystyrene Foam Product Manufacturing	42	0.3%	(85)	-66.8%	0.43	(105)	$59,292	3	$3.9M	0.2%
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing	84	0.5%	(138)	-62.1%	0.70	(205)	$57,804	8	$6.7M	0.3%
326160	Plastics Bottle Manufacturing	4	0.0%	(5)	-55.9%	0.04	(10)	$61,119	2	$0.4M	0.0%
326199	All Other Plastics Product Manufacturing	788	4.8%	(102)	-11.5%	0.77	(251)	$75,917	23	$94.4M	3.7%
326220	Rubber and Plastics Hoses and Belting Manufacturing	3	0.0%	(10)	-80.7%	0.03	(13)	$178,488	1	$0.5M	0.0%
326291	Rubber Product Manufacturing for Mechanical Use	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
326299	All Other Rubber Product Manufacturing	366	2.2%	177	93.2%	4.66	269	$73,487	3	$41.7M	1.6%
Subtotal, Polymers & Plastics Products		**3,095**	**18.7%**	**(252)**	**-7.5%**	**1.24**	**(359)**	**$87,729**	**79**	**$578.7M**	**22.6%**
Computers & Related Electronics											
334111	Electronic Computer Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
334112	Computer Storage Device Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing	61	0.4%	41	211.7%	0.58	29	$196,332	5	$20.7M	0.8%
334210	Telephone Apparatus Manufacturing	3	0.0%	(8)	-75.0%	0.05	(7)	$155,503	2	$1.4M	0.1%
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	351	2.1%	26	8.0%	2.08	53	$140,081	5	$132.7M	5.2%
334290	Other Communications Equipment Manufacturing	1	0.0%	(3)	-69.3%	0.03	(2)	$94,759	1	$0.2M	0.0%
334310	Audio and Video Equipment Manufacturing	5	0.0%	5	-	0.08	8	$155,366	1	$1.2M	0.0%
334412	Bare Printed Circuit Board Manufacturing	0	0.0%	(12)	-97.2%	0.00	(10)	$171,276	1	$0.1M	0.0%
334413	Semiconductor and Related Device Manufacturing	183	1.1%	126	221.0%	0.29	189	$154,758	9	$46.5M	1.8%

Rhode Island Advanced Manufacturing Cluster Economic Performance Metrics (Cont'd)

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Computers & Related Electronics (Cont'd)											
334416	Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing	168	1.0%	(6)	-3.3%	3.15	40	$85,426	3	$18.8M	0.7%
334417	Electronic Connector Manufacturing	123	0.7%	23	22.6%	1.70	1	$99,702	4	$16.2M	0.6%
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	211	1.3%	17	8.6%	1.13	35	$69,370	1	$37.4M	1.5%
334419	Other Electronic Component Manufacturing	30	0.2%	23	347.4%	0.15	13	$99,683	6	$3.9M	0.2%
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	35	0.2%	(59)	-62.4%	0.84	(57)	$75,950	1	$3.1M	0.1%
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables	660	4.0%	(95)	-12.6%	3.54	(78)	$88,036	7	$68.8M	2.7%
334514	Totalizing Fluid Meter and Counting Device Manufacturing	1	0.0%	1	-	0.03	2	$95,579	0	$0.6M	0.0%
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	46	0.3%	22	93.1%	0.38	10	$110,853	4	$8.8M	0.3%
334519	Other Measuring and Controlling Device Manufacturing	172	1.0%	(109)	-38.9%	1.46	(165)	$121,876	8	$55.3M	2.2%
334613	Blank Magnetic and Optical Recording Media Manufacturing	0	0.0%	0	-	0.02	1	$209,340	1	$0.1M	0.0%
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing	5	0.0%	(10)	-66.7%	0.17	(6)	$140,291	1	$0.9M	0.0%
335911	Storage Battery Manufacturing	24	0.1%	(59)	-71.4%	0.19	(205)	$99,303	5	$5.3M	0.2%
335912	Primary Battery Manufacturing	54	0.3%	4	7.4%	3.36	17	$113,815	2	$11.0M	0.4%
335921	Fiber Optic Cable Manufacturing	7	0.0%	(144)	-95.3%	0.18	(180)	$182,678	1	$3.4M	0.1%
335929	Other Communication and Energy Wire Manufacturing	95	0.6%	23	31.2%	2.45	24	$92,662	2	$22.8M	0.9%
335931	Current-Carrying Wiring Device Manufacturing	194	1.2%	15	8.4%	2.07	50	$91,247	5	$33.1M	1.3%
335932	Noncurrent-Carrying Wiring Device Manufacturing	0	0.0%	(28)	-98.5%	0.01	(30)	$126,600	1	$0.1M	0.0%
Subtotal, Computers & Related Electronics (Cont'd)		**2,429**	**14.7%**	**(207)**	**-7.8%**	**0.82**	**(269)**	**$106,626**	**76**	**$492.4M**	**19.2%**

Rhode Island Advanced Manufacturing Cluster Economic Performance Metrics (Cont'd)

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Automation & Industrial Machinery											
332911	Industrial Valve Manufacturing	65	0.4%	(121)	-65.2%	0.77	(130)	$94,158	3	$11.3M	0.4%
332912	Fluid Power Valve and Hose Fitting Manufacturing	142	0.9%	111	354.1%	1.26	133	$112,453	2	$29.4M	1.1%
332919	Other Metal Valve and Pipe Fitting Manufacturing	20	0.1%	(43)	-68.5%	0.40	(47)	$95,996	1	$3.5M	0.1%
333249	Other Industrial Machinery Manufacturing	302	1.8%	15	5.3%	1.57	(27)	$84,517	20	$37.2M	1.5%
333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing	553	3.3%	126	29.5%	10.54	91	$96,737	3	$101.5M	4.0%
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	12	0.1%	(62)	-84.0%	0.04	(76)	$103,285	2	$2.6M	0.1%
333511	Industrial Mold Manufacturing	48	0.3%	(55)	-53.7%	0.43	(50)	$67,494	9	$3.7M	0.1%
333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	82	0.5%	(28)	-25.7%	0.45	(32)	$70,206	13	$6.2M	0.2%
333515	Cutting Tool and Machine Tool Accessory Manufacturing	153	0.9%	13	9.6%	2.24	30	$64,599	11	$13.0M	0.5%
333517	Machine Tool Manufacturing	114	0.7%	(45)	-28.2%	0.87	(70)	$94,917	10	$13.2M	0.5%
333519	Rolling Mill and Other Metalworking Machinery Manufacturing	24	0.1%	23	3511.7%	0.63	13	$83,944	2	$2.6M	0.1%
333611	Turbine and Turbine Generator Set Units Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.1M	0.0%
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%

Rhode Island Advanced Manufacturing Cluster Economic Performance Metrics (Cont'd)

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Automation & Industrial Machinery (Cont'd)											
333912	Air and Gas Compressor Manufacturing	-	0.0%	(0)	-100.0%	-	(0)	$0	-	$0.0M	0.0%
333914	Measuring, Dispensing, and Other Pumping Equipment Manufacturing	36	0.2%	(4)	-9.5%	0.41	(6)	$58,309	4	$4.9M	0.2%
333921	Elevator and Moving Stairway Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
333922	Conveyor and Conveying Equipment Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.1M	0.0%
333992	Welding and Soldering Equipment Manufacturing	2	0.0%	(47)	-96.5%	0.04	(47)	$134,236	1	$0.4M	0.0%
333994	Industrial Process Furnace and Oven Manufacturing	9	0.1%	(22)	-70.0%	0.33	(24)	$101,821	4	$1.7M	0.1%
333995	Fluid Power Cylinder and Actuator Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
333996	Fluid Power Pump and Motor Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
333999	All Other Miscellaneous General Purpose Machinery Manufacturing	46	0.3%	2	5.5%	0.35	(9)	$88,796	3	$7.2M	0.3%
335311	Power, Distribution, and Specialty Transformer Manufacturing	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
335312	Motor and Generator Manufacturing	71	0.4%	(9)	-10.8%	0.60	3	$80,536	1	$8.3M	0.3%
335313	Switchgear and Switchboard Apparatus Manufacturing	125	0.8%	77	158.2%	1.11	78	$202,980	2	$42.1M	1.6%
335314	Relay and Industrial Control Manufacturing	22	0.1%	(140)	-86.5%	0.16	(146)	$148,863	2	$3.7M	0.1%
Subtotal, Automation & Industrial Machinery (Cont'd)		**1,826**	**11.0%**	**(208)**	**-10.2%**	**0.70**	**(316)**	**$97,328**	**92**	**$292.7M**	**11.4%**
Total, Rhode Island		**16,549**	**100.0%**	**888**	**5.7%**	**1.07**	**960**	**$90,832**	**390**	**$2,561.6M**	**100.0%**

Source: Lightcast

Advanced Manufacturing Occupations

The top 30 Advanced Manufacturing cluster occupations make up about 61% of all cluster jobs. The rate of growth of jobs in these occupations within Rhode Island has considerably outpaced employment economy-wide, registering a 9% increase over the last five years. Two thirds of the occupations in this cluster require a high school diploma as the typical entry level education credential, while another 7 require a bachelor's degree. These jobs requiring a bachelor's degree contributed disproportionately to job growth in Advanced Manufacturing occupations; while they make up 17% of jobs in the cluster, they drove 58% of job growth. Rhode Island is a net exporter of labor in all but two of the top 30 Advanced Manufacturing occupations, meaning there are more resident workers than in-state jobs.

Rhode Island Advanced Manufacturing Cluster, Top 30 Occupations

SOC	Description	2022 Jobs, Cluster	2022 Jobs, All Industries	Cluster Share of Occupation	Occupation Share of Cluster	Change in Jobs, 2017-2022*	Pct. Change in Jobs, 2017-2022*	Resident Workers per Job*	2022 Location Quotient*	Median Hourly Earnings*	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
51-4121	Welders, Cutters, Solderers, and Brazers	677	1,598	42%	4%	86	6%	1.01	1.10	$27.19	HS diploma or equivalent	None	Moderate-term on-the-job training
51-1011	First-Line Supervisors of Production and Operating Workers	676	2,178	31%	4%	(306)	-12%	1.11	1.02	$36.85	HS diploma or equivalent	Less than 5 years	None
51-2098	Miscellaneous Assemblers and Fabricators	648	2,338	28%	4%	(539)	-19%	1.32	0.52	$17.09	HS diploma or equivalent	None	Moderate-term on-the-job training
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	560	1,945	29%	3%	610	46%	1.11	1.02	$22.26	HS diploma or equivalent	None	Moderate-term on-the-job training
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	545	860	63%	3%	(68)	-7%	1.31	0.92	$15.11	HS diploma or equivalent	None	Moderate-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	494	7,337	7%	3%	(128)	-2%	1.10	0.77	$16.94	No formal educ. credential	None	Short-term on-the-job training
51-2041	Structural Metal Fabricators and Fitters	486	795	61%	3%	(478)	-38%	0.98	3.77	$25.54	HS diploma or equivalent	None	Moderate-term on-the-job training
51-4041	Machinists	475	1,324	36%	3%	59	5%	1.15	1.15	$23.29	HS diploma or equivalent	None	Long-term on-the-job training
51-9111	Packaging and Filling Machine Operators and Tenders	388	962	40%	2%	194	25%	1.10	0.78	$17.16	HS diploma or equivalent	None	Moderate-term on-the-job training
17-2141	Mechanical Engineers	358	1,382	26%	2%	115	9%	1.01	1.45	$45.21	Bachelor's degree	None	None
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	328	5,755	6%	2%	215	4%	1.04	1.30	$30.06	HS diploma or equivalent	None	Moderate-term on-the-job training
17-2112	Industrial Engineers	323	959	34%	2%	208	28%	1.30	0.96	$47.68	Bachelor's degree	None	None
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	321	489	66%	2%	7	1%	1.05	0.90	$17.72	HS diploma or equivalent	None	Moderate-term on-the-job training

Rhode Island Advanced Manufacturing Cluster, Top 30 Occupations (Cont'd)

SOC	Description	2022 Jobs, Cluster	2022 Jobs, All Industries	Cluster Share of Occupation	Occupation Share of Cluster	Change in Jobs, 2017-2022*	Pct. Change in Jobs, 2017-2022*	Resident Workers per Job*	2022 Location Quotient*	Median Hourly Earnings*	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
53-7064	Packers and Packagers, Hand	319	2,002	16%	2%	(120)	-6%	1.20	0.98	$13.74	No formal educ. credential	None	Short-term on-the-job training
49-9071	Maintenance and Repair Workers, General	287	5,269	5%	2%	436	9%	1.02	0.99	$22.95	HS diploma or equivalent	None	Moderate-term on-the-job training
17-2072	Electronics Engineers, Except Computer	284	1,025	28%	2%	(116)	-10%	0.93	2.75	$62.64	Bachelor's degree	None	None
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	257	550	47%	2%	229	71%	1.10	2.73	$22.47	HS diploma or equivalent	None	Moderate-term on-the-job training
43-5071	Shipping, Receiving, and Inventory Clerks	253	2,335	11%	2%	125	6%	1.09	0.87	$18.00	HS diploma or equivalent	None	Short-term on-the-job training
49-9041	Industrial Machinery Mechanics	253	980	26%	2%	346	55%	1.05	0.75	$28.53	HS diploma or equivalent	None	Long-term on-the-job training
51-3092	Food Batchmakers	223	358	62%	1%	135	61%	1.05	0.66	$14.07	HS diploma or equivalent	None	Moderate-term on-the-job training
49-3051	Motorboat Mechanics and Service Technicians	222	585	38%	1%	423	260%	1.01	5.91	$26.70	HS diploma or equivalent	None	Long-term on-the-job training
51-3011	Bakers	220	1,193	18%	1%	291	32%	1.02	1.75	$14.37	No formal educ. credential	None	Long-term on-the-job training
51-2051	Fiberglass Laminators and Fabricators	215	238	90%	1%	33	16%	1.01	3.62	$22.81	HS diploma or equivalent	None	Moderate-term on-the-job training
47-2111	Electricians	212	2,512	8%	1%	249	11%	1.08	1.01	$29.01	HS diploma or equivalent	None	Apprenticeship
15-1252	Software Developers	203	3,829	5%	1%	1,158	43%	1.11	0.78	$50.58	Bachelor's degree	None	None
11-1021	General and Operations Managers	199	6,860	3%	1%	1,240	22%	1.32	0.65	$57.20	Bachelor's degree	5 years or more	None
47-2152	Plumbers, Pipefitters, and Steamfitters	192	2,495	8%	1%	861	53%	1.02	1.55	$29.07	HS diploma or equivalent	None	Apprenticeship
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	186	609	31%	1%	85	16%	1.10	1.16	$22.29	HS diploma or equivalent	None	Moderate-term on-the-job training
13-2011	Accountants and Auditors	172	6,475	3%	1%	1,086	20%	1.00	1.30	$38.56	Bachelor's degree	None	None
42-0700	Industrial Production Managers	168	532	32%	1%	92	21%	1.30	0.81	$48.73	Bachelor's degree	5 years or more	None
Total		**10,142**	**65,769**	**15%**	**61%**	**6,529**	**9%**	**1.11**					

*Metrics are for each occupation across all industries economy-wide, and not specific to the individual cluster

Source: Lightcast 2023.1

BIOSCIENCE INDUSTRY CLUSTER ANALYSIS

The Bioscience cluster consists of companies primarily engaged in using living organisms or molecular and cellular techniques to provide chemicals, food, and services that meet human needs, as well as related supply chain industries including research, testing, and medical laboratories, pharmaceutical manufacturing, medical device manufacturing, agricultural feedstock manufacturing, and related wholesaling and distribution.

Major Products and Services

- Diagnostics
- Therapeutics
- Genetics
- Cell Transplants
- Personalized medicine
- Vaccines
- Biopharmaceuticals
- Tissue engineering
- Genetically modified crops
- Biofuels
- Animal health biotech
- Pollutant removal systems
- Wastewater recycling systems

National Outlook[2]

Biotech is transformative to traditional healthcare delivery.

- Biotechnology's applications for healthcare are rapidly evolving. The main areas of focus for biotech specializing in healthcare include diagnostics, therapeutics, genetics, cell transplants, personalized medicine, vaccines, cancer, biopharmaceuticals and tissue engineering.
- The range of healthcare-centric biotech companies is diverse, including early-stage companies to leading pharmaceutical incumbents. Biotech's potential to transform healthcare makes it the leading category in the field and an attractive target to investors.
- The pandemic highlighted biopharmaceutical research's importance in developing COVID-19 treatments and vaccines. To combat future pandemics, the Biden Administration passed an Executive Order in 2022 to bolster and coordinate federal investment in key research and development (R&D) areas of biotech, which includes expanding domestic biomanufacturing production and developing a skilled workforce.
- A complex regulatory and reimbursement environment for medical technologies and pharmaceuticals can impede progress. Expanding oversight of clinical trials by the Food and Drug Administration could expand already sky-high R&D expenses, while lower drug costs may harm investment into biotech developing pharmaceuticals.
- Pharmaceuticals demand is driven by macro trends related to demographic shifts (older population), increased spending in R&D and a higher share of people with health insurance covering pharmaceutical products. Emphasis is moving towards biologic and biosimilar drugs. Another area of revenue growth is the expiration of exclusivity rights for major branded drugs.
- Market fundamentals, especially import competition and labor costs are directing firms towards more niche and high margin areas of drug research like therapy areas for rare diseases and oncology.

[2] National Outlook sourced from IBISWorld, a leading industry research and analysis provider.

Applications for industrial biotech continue to expand and attract investment.

- Biotech application to industrial processes involves the production of enzymes to create more sustainable processing and production of chemical products, materials and fields. Examples of this process include cleaner chemicals developed for industrial laundering, which reduce pollution and lower energy needs. This process can transform manufacturing processes or develop new products previously out of reach.
- Industrial biotech is relatively new, but its potential to benefit the US economy makes it ripe for investment. This benefit stems mainly from the field's ability to produce less expensive and more environmentally sustainable products.

Expanding human and pet populations support animal health biotech growth.

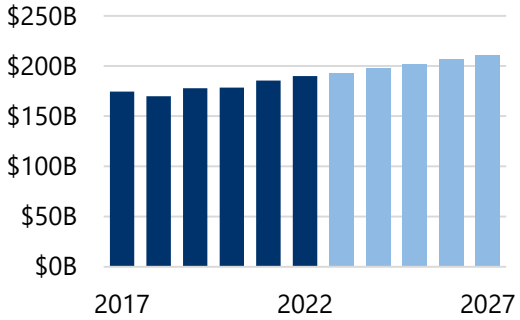
- Biotech applications for animal health include discovering and creating new and innovative therapeutic products (proteins, antibodies, genetic therapies, disease prevention) for household pets and livestock.
- A growing human population increases demand for meat products, leading livestock and poultry to be one of the fastest-growing agriculture sectors globally. Yet, rising threats of infectious diseases and climate change impede how demand is met.
- Animal health biotech will have an expanding role in addressing this, as biotech advances can detect disease early with biomarkers or identify which genes are more susceptible to illness.

Food supply chain challenges, natural disasters, and a government push toward biofuel influence agricultural biotech.

- Agricultural biotechnology (agritech) firms design genetically modified crops to resist herbicides, pests, viruses and fungi in addition to droughts or extreme temperatures, improving crop yields and, in turn, efficiency and profitability.
- A growing global population and recent strains to the global food supply chain stemming from COVID-19, natural disasters and the Russia-Ukraine war are driving agritech growth.
- Biotech operators use renewable sources like plants and algae to produce biofuel, and alternative energy sources like solar or wind. Sharp fluctuations in oil prices and federal and global initiatives to reduce greenhouse gas emissions have increased biofuel demand.
- The use of biofuels could expand substantially moving forward. The US Environmental Protection Agency plans to increase biofuel use by 9.0% by the end of 2025.

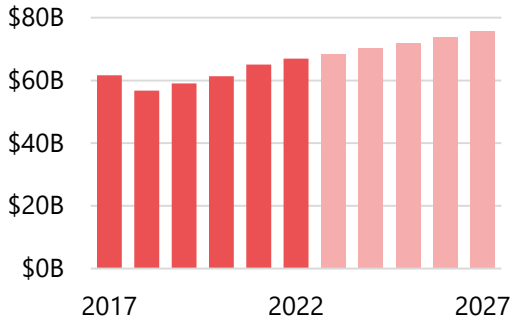
Biotechnology - US Industry Performance

Industry Revenue in 2022: $190B
Historic Annual Growth 2017-22: 1.7%
Forecast Annual Growth 2022-27: 2.1%



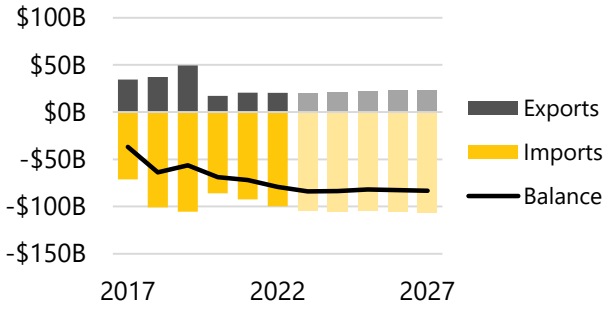
Source: IBISWorld

Industry Value Added in 2022: $202B
Historic Annual Growth 2017-22: 1.7%
Forecast Annual Growth 2022-27: 2.5%



Exports in 2022: $20B
2017-22 Growth: -9.9%
2022-27 Growth: 2.6%
Share of Revenue: 11%

Imports in 2022: $100B
2017-22 Growth: 6.9%
2022-27 Growth: 1.4%
Share of Demand: 37%



Supply Chain

SUPPLYING INDUSTRIES
Chemical Product Mfg.
Plastics Mfg.
Glass Product Mfg.
Electrical Equipment Mfg.
Industrial Machinery & Equipment Mfg.
Professional & Scientific Services

BIOSCIENCE CLUSTER

BUYING INDUSTRIES
Healthcare
Laboratories
Agriculture & Food
Resource Industries
Government

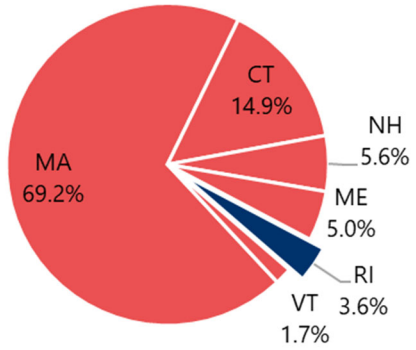
Rhode Island Cluster Performance

Recent growth in Rhode Island's Bioscience cluster has exceeded national growth but lagged New England, and it remains a relatively undersized segment within the state.

Rhode Island's Bioscience cluster constitutes about 3.6% of New England jobs in the cluster (compared to the state's 6.6% share of all jobs economy-wide). Rhode Island ranks 5th in the region in terms of both overall cluster employment and concentration relative to total employment. With a location quotient of 0.89, the cluster has a smaller presence in Rhode Island relative to the nation. Job growth in the cluster has been substantial over the last five years (2017-2022), increasing by 20% (compared to a slight decline economy-wide) but lagging all New England states besides Vermont.

The state's job earnings in this cluster ($121,353) are lower than the New England and US averages and barely half what they are in Massachusetts ($218,565). Massachusetts is the clear dominant player in New England, representing nearly 7 out of 10 jobs in the cluster.

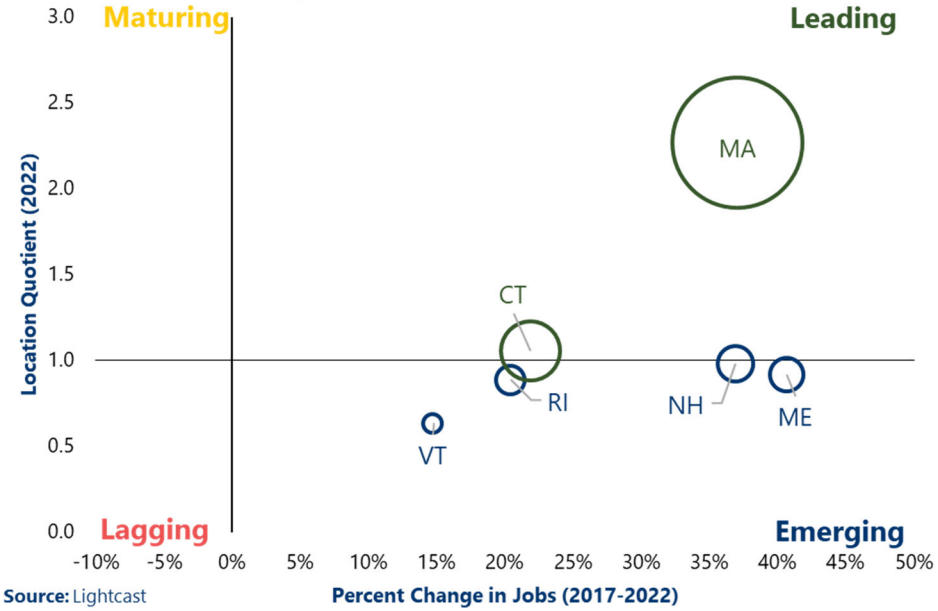
New England Bioscience Cluster Jobs by State, 2022



Source: Lightcast

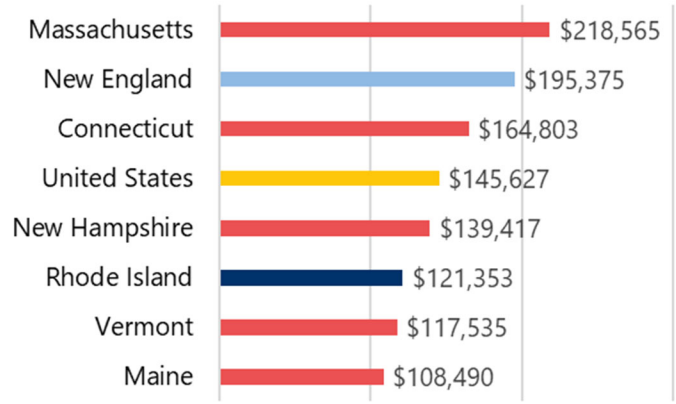
Key Metrics for Bioscience Cluster, New England States

Bubble size indicates 2022 job count



Source: Lightcast

Average Earnings per Job, Bioscience Cluster



Source: Lightcast

Bioscience Cluster Economic Performance Comparison, New England States and US

NAICS	2022 Jobs	Cluster Share of Total Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Cluster Share of Total GRP
Rhode Island	8,571	1.6%	1,452	20.4%	0.89	546	$121,353	987	$2,143.3M	3.4%
Connecticut	34,946	1.9%	6,265	21.8%	1.06	(127)	$164,803	2,620	$11,421.4M	3.9%
Maine	11,792	1.7%	3,408	40.7%	0.92	2,143	$108,490	739	$3,015.0M	3.9%
Massachusetts	162,758	4.1%	43,992	37.0%	2.27	20,822	$218,565	6,025	$58,024.1M	9.3%
New Hampshire	13,168	1.8%	3,550	36.9%	0.98	2,495	$139,417	1,207	$3,740.0M	3.8%
Vermont	3,984	1.1%	511	14.7%	0.64	151	$117,535	492	$921.0M	2.5%
New England	235,219	2.9%	59,178	33.6%	1.60	26,032	$195,375	12,069	$79,264.8M	6.7%
United States	2,998,987	1.8%	495,034	19.8%	1.00	-	$145,627	174,509	$889,945.9M	4.0%

Source: Lightcast

Bioscience Subclusters

The Bioscience cluster consists of five subclusters: Agricultural Feedstock & Industrial Biosciences, Biopharmaceuticals, Medical Devices, Bioscience-Related Distribution, and Research, Testing, and Medical Laboratories.

Research, Testing, and Medical Laboratories

As the largest Bioscience subcluster representing 38% of all jobs in the cluster, the Research, Testing, and Medical Laboratories subcluster consists of firms engaged in research and development (R&D), medical and other laboratory testing, diagnostic imaging, and blood and organ banking. The subcluster has seen high employment growth in recent years, dispersed across almost all component industries. Despite the state's strength in this area, its employment concentration remains below the national average (LQ of 0.73). Only two component industries have an LQ above 1 (indicating a higher concentration than the nation): R&D in Nanotechnology and Diagnostic Imaging Centers.

Medical Devices

The Medical Devices subcluster includes firms engaged in the manufacturing of devices, instruments, equipment, and supplies with healthcare applications. It represents over 1 in 4 jobs (27%) in the Biosciences cluster. Rhode Island has a large representation of over 80 businesses in this subcluster engaged across industries ranging from Electromedical and Electrotherapeutic Apparatus Manufacturing to Surgical and Medical Instrument Manufacturing to Analytical Laboratory Instrument Manufacturing. It is Rhode Island's only Biosciences subcluster that is both more highly concentrated than the national average and also has shown job growth over the last five years.

Biopharmaceuticals

The Biopharmaceuticals subcluster in Rhode Island is concentrated primarily around the manufacturing of in-vivo diagnostic substances and pharmaceutical preparations intended for consumption in dose forms, such as tablets, capsules, ointments, powders, etc. It makes up 16% of jobs in the cluster. This industry has driven Biopharmaceuticals growth in recent years, whereas manufacturing of in-vitro diagnostic substances and biological products has declined, leading to overall employment decline in this subcluster. Nationally, pharmaceutical manufacturing has dispersed away from typically high-cost R&D centers to areas with lower labor and real estate costs.

Agricultural Feedstock & Industrial Biosciences

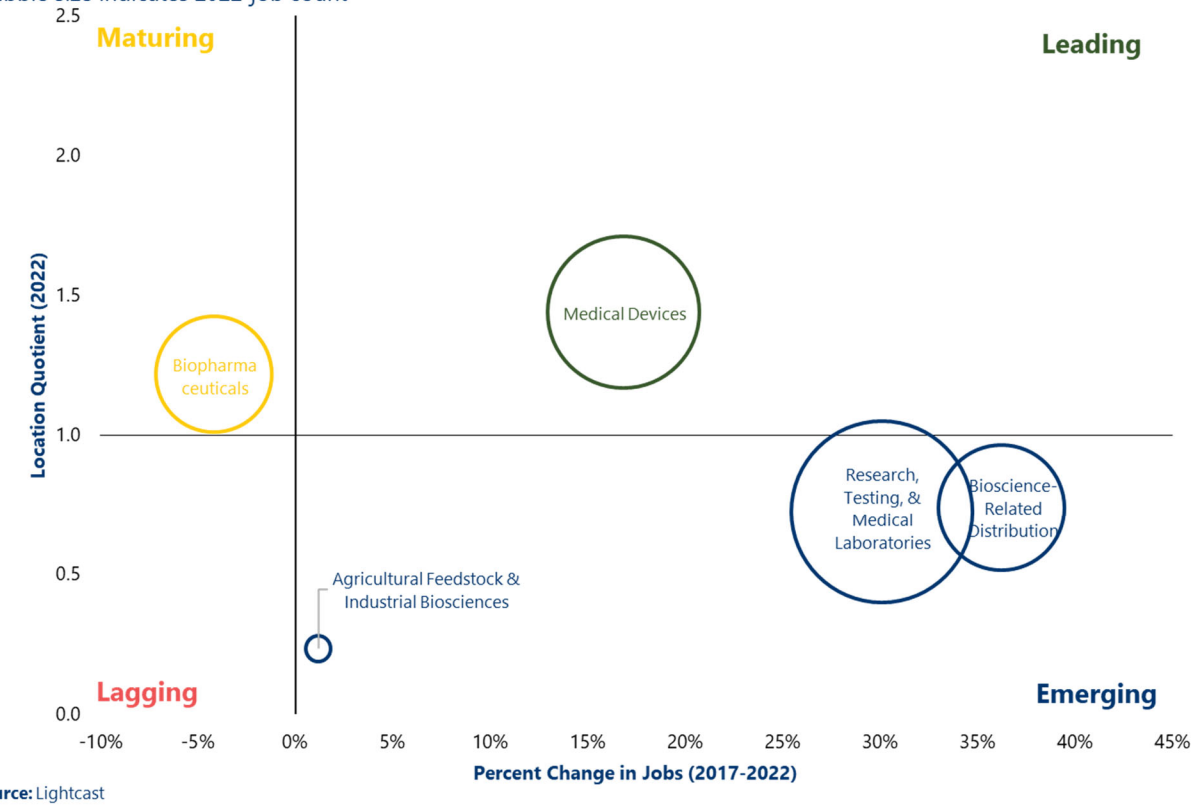
This subcluster is the smallest by far, representing just 1% of cluster jobs. The state has a handful of establishments engaged in manufacturing chemicals and fertilizers with biosciences applications.

Bioscience-Related Distribution

This subcluster consists of the firms that distribute goods produced by any of the biosciences manufacturing subclusters. It makes up 18% of all Bioscience jobs and includes wholesalers of medical and hospital equipment and supplies, drugs, and farm supplies. Bioscience-Related Distribution has undergone the highest job growth of the five subclusters, though its level of employment concentration remains below the national average.

Key Metrics by Bioscience Subcluster, Rhode Island

Bubble size indicates 2022 job count



Source: Lightcast

Rhode Island Bioscience Cluster Economic Performance Metrics

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Research, Testing, & Medical Laboratories											
541380	Testing Laboratories	364	4%	(5)	-1.4%	0.64	(16)	$86,831	53	$36.7M	2%
541713	Research and Development in Nanotechnology	106	1%	106	-	1.32	146	$166,446	4	$20.2M	1%
541714	Research and Development in Biotechnology (except Nanobiotechnology)	235	3%	142	152.0%	0.27	180	$188,451	134	$52.2M	2%
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	800	9%	174	27.8%	0.48	44	$119,609	180	$111.7M	5%
621511	Medical Laboratories	579	7%	33	6.0%	0.73	(124)	$89,883	53	$75.4M	4%
621512	Diagnostic Imaging Centers	740	9%	239	47.6%	2.69	220	$125,530	47	$130.5M	6%
621991	Blood and Organ Banks	448	5%	69	18.2%	1.67	43	$60,522	12	$27.3M	1%
Subtotal, Research, Testing, & Medical Laboratories		**3,273**	**38%**	**757**	**30.1%**	**0.73**	**494**	**$110,418**	**483**	**$454.0M**	**21%**
Medical Devices											
333314	Optical Instrument and Lens Manufacturing	69	1%	(87)	-56.0%	0.97	(123)	$110,395	2	$8.3M	0%
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	639	7%	345	117.4%	2.60	495	$55,616	12	$114.4M	5%
334516	Analytical Laboratory Instrument Manufacturing	288	3%	24	9.2%	2.02	37	$112,938	5	$90.9M	4%
334517	Irradiation Apparatus Manufacturing	43	1%	36	534.1%	0.94	52	$169,361	3	$23.7M	1%
339112	Surgical and Medical Instrument Manufacturing	566	7%	(75)	-11.8%	1.25	(179)	$120,095	10	$115.1M	5%
339113	Surgical Appliance and Supplies Manufacturing	416	5%	112	37.0%	1.23	91	$122,158	18	$105.9M	5%
339114	Dental Equipment and Supplies Manufacturing	11	0%	9	366.1%	0.22	14	$115,499	4	$2.3M	0%
339115	Ophthalmic Goods Manufacturing	189	2%	(35)	-15.6%	2.45	(70)	$86,599	6	$34.0M	2%
339116	Dental Laboratories	75	1%	2	2.5%	0.44	(13)	$78,270	21	$6.4M	0%
Subtotal, Medical Devices		**2,296**	**27%**	**331**	**16.8%**	**1.44**	**303**	**$98,129**	**80**	**$501.0M**	**23%**

Rhode Island Bioscience Cluster Economic Performance Metrics (Cont'd)

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Biopharmaceuticals											
325411	Medicinal and Botanical Manufacturing	-	0%	-	-	-	-	$0	-	$0.7M	0%
325412	Pharmaceutical Preparation Manufacturing	1,324	15%	208	18.7%	1.81	83	$152,614	19	$549.4M	26%
325413	In-Vitro Diagnostic Substance Manufacturing	9	0%	(92)	-90.7%	0.09	(146)	$176,291	3	$4.9M	0%
325414	Biological Product (except Diagnostic) Manufacturing	13	0%	(175)	-92.9%	0.10	(263)	$251,186	4	$15.7M	1%
Subtotal, Biopharmaceuticals		**1,347**	**16%**	**(59)**	**-4.2%**	**1.22**	**(326)**	**$153,760**	**26**	**$570.7M**	**27%**
Agricultural Feedstock & Industrial Biosciences											
311224	Soybean and Other Oilseed Processing	-	0%	-	-	-	-	$0	-	$0.0M	0%
325193	Ethyl Alcohol Manufacturing	-	0%	-	-	-	-	$0	-	$0.0M	0%
325199	All Other Basic Organic Chemical Manufacturing	65	1%	(2)	-3.3%	0.50	(5)	$131,608	3	$78.6M	4%
325311	Nitrogenous Fertilizer Manufacturing	-	0%	-	-	-	-	$0	-	$0.0M	0%
325314	Fertilizer (Mixing Only) Manufacturing	5	0%	3	181.8%	0.16	2	$82,690	1	$3.8M	0%
325320	Pesticide and Other Agricultural Chemical Manufacturing	-	0%	-	-	-	-	$0	-	$0.0M	0%
Subtotal, Agricultural Feedstock & Industrial Biosciences		**70**	**1%**	**1**	**1.2%**	**0.23**	**(3)**	**$128,299**	**4**	**$82.4M**	**4%**
Bioscience-Related Distribution											
423450	Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	930	11%	318	52.1%	0.99	95	$147,664	198	$225.1M	11%
424210	Drugs and Druggists' Sundries Merchant Wholesalers	563	7%	92	19.6%	0.69	(34)	$166,175	177	$293.0M	14%
424910	Farm Supplies Merchant Wholesalers	92	1%	11	13.4%	0.24	18	$70,514	21	$17.2M	1%
Subtotal, Bioscience-Related Distribution		**1,585**	**18%**	**421**	**36.2%**	**0.74**	**78**	**$149,746**	**396**	**$535.2M**	**25%**
Total, Rhode Island		**8,571**	**100%**	**1,452**	**20.4%**	**0.89**	**546**	**$121,353**	**987**	**$2,143.3M**	**100%**

Source: Lightcast

Bioscience Occupations

The top 30 Bioscience cluster occupations make up just over half of all cluster jobs. Jobs in these occupations within Rhode Island have grown at a higher rate (6%) than employment economy-wide (slight decline). Twelve of these occupations require at least a bachelor's degree, and all but one require at least a high school diploma. Rhode Island is a net exporter of labor in all but four of the top 30 Bioscience occupations, meaning there are more resident workers than in-state jobs. At a rate of 1.09 resident workers per job, Rhode Island has an opportunity to employ more residents in-state.

Rhode Island Bioscience Cluster, Top 30 Occupations

SOC	Description	2022 Jobs, Cluster	2022 Jobs, All Industries	Cluster Share of Occupation	Occupation Share of Cluster	Change in Jobs, 2017-2022*	Pct. Change in Jobs, 2017-2022*	Resident Workers per Job*	2022 Location Quotient *	Median Hourly Earnings*	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	299	5,755	5%	3%	215	4%	1.04	1.30	$30.06	HS diploma or equivalent	None	Moderate-term on-the-job training
31-9097	Phlebotomists	296	601	49%	3%	(240)	-29%	0.99	1.34	$22.22	Postsecondary nondegree award	None	None
29-2018	Clinical Laboratory Technologists and Technicians	276	980	28%	3%	(38)	-4%	1.12	0.90	$36.04	Bachelor's degree	None	None
43-4051	Customer Service Representatives	260	10,221	3%	3%	1,261	14%	1.02	1.08	$18.21	HS diploma or equivalent	None	Short-term on-the-job training
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	255	1,945	13%	3%	610	46%	1.11	1.02	$22.26	HS diploma or equivalent	None	Moderate-term on-the-job training
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	238	886	27%	3%	72	9%	1.20	0.95	$37.50	Bachelor's degree	None	Moderate-term on-the-job training
51-2098	Miscellaneous Assemblers and Fabricators	185	2,338	8%	2%	(539)	-19%	1.32	0.52	$17.09	HS diploma or equivalent	None	Moderate-term on-the-job training
17-2112	Industrial Engineers	177	959	18%	2%	208	28%	1.30	0.96	$47.68	Bachelor's degree	None	None
51-9111	Packaging and Filling Machine Operators and Tenders	169	962	18%	2%	194	25%	1.10	0.78	$17.16	HS diploma or equivalent	None	Moderate-term on-the-job training
15-1252	Software Developers	169	3,829	4%	2%	1,158	43%	1.11	0.78	$50.58	Bachelor's degree	None	None
11-1021	General and Operations Managers	157	6,860	2%	2%	1,240	22%	1.32	0.65	$57.20	Bachelor's degree	5 years or more	None
51-1011	First-Line Supervisors of Production and Operating Workers	155	2,178	7%	2%	(306)	-12%	1.11	1.02	$36.85	HS diploma or equivalent	Less than 5 years	None
17-2141	Mechanical Engineers	155	1,382	11%	2%	115	9%	1.01	1.45	$45.21	Bachelor's degree	None	None
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	133	860	15%	2%	(68)	-7%	1.31	0.92	$15.11	HS diploma or equivalent	None	Moderate-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	129	7,337	2%	2%	(128)	-2%	1.10	0.77	$16.94	No formal educational credential	None	Short-term on-the-job training

Rhode Island Bioscience Cluster, Top 30 Occupations (Cont'd)

SOC	Description	2022 Jobs, Cluster	2022 Jobs, All Industries	Cluster Share of Occupation	Occupation Share of Cluster	Change in Jobs, 2017-2022*	Pct. Change in Jobs, 2017-2022*	Resident Workers per Job*	2022 Location Quotient *	Median Hourly Earnings*	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
43-9061	Office Clerks, General	128	10,020	1%	1%	(1,984)	-17%	1.01	1.08	$21.03	HS diploma or equivalent	None	Short-term on-the-job training
13-2011	Accountants and Auditors	114	6,475	2%	1%	1,086	20%	1.00	1.30	$38.56	Bachelor's degree	None	None
43-5071	Shipping, Receiving, and Inventory Clerks	107	2,335	5%	1%	125	6%	1.09	0.87	$18.00	HS diploma or equivalent	None	Short-term on-the-job training
19-4031	Chemical Technicians	102	245	42%	1%	(5)	-2%	1.04	1.27	$22.40	Associate's degree	None	Moderate-term on-the-job training
13-1161	Market Research Analysts and Marketing Specialists	99	3,339	3%	1%	1,125	51%	1.01	1.24	$30.45	Bachelor's degree	None	None
51-9011	Chemical Equipment Operators and Tenders	98	282	35%	1%	88	45%	0.97	0.80	$23.12	HS diploma or equivalent	None	Moderate-term on-the-job training
51-9082	Medical Appliance Technicians	95	133	71%	1%	88	194%	1.08	2.44	$18.22	HS diploma or equivalent	None	Moderate-term on-the-job training
13-1082	Project Management Specialists	89	2,805	3%	1%	1,346	92%	1.05	1.06	$47.75	Bachelor's degree	None	None
19-1042	Medical Scientists, Except Epidemiologists	89	340	26%	1%	(52)	-13%	1.42	0.84	$39.32	Doctoral or professional degree	None	None
17-2072	Electronics Engineers, Except Computer	87	1,025	8%	1%	(116)	-10%	0.93	2.75	$62.64	Bachelor's degree	None	None
19-2031	Chemists	84	193	44%	1%	(68)	-26%	1.46	0.69	$45.46	Bachelor's degree	None	None
51-4041	Machinists	84	1,324	6%	1%	59	5%	1.15	1.15	$23.29	HS diploma or equivalent	None	Long-term on-the-job training
29-2034	Radiologic Technologists and Technicians	81	842	10%	1%	(29)	-3%	0.99	1.17	$36.97	Associate's degree	None	None
43-3031	Bookkeeping, Accounting, and Auditing Clerks	79	5,289	1%	1%	(1,302)	-20%	1.07	0.94	$22.91	Some college, no degree	None	Moderate-term on-the-job training
53-7065	Stockers and Order Fillers	72	6,291	1%	1%	1,076	21%	1.17	0.76	$14.58	HS diploma or equivalent	None	Short-term on-the-job training
Total		**4,461**	**88,031**	**5%**	**52%**	**5,193**	**6%**	**1.09**					

*Metrics are for each occupation across all industries economy-wide, and not specific to the individual cluster

Source: Lightcast 2023.1

RETAIL INDUSTRY CLUSTER ANALYSIS

The Retail Trade sector is the final step in the distribution of merchandise to end consumers and includes retailers operating through brick-and-mortar locations, online selling, and omni-channel. Merchandise sold by retailers is purchased from suppliers and is then sold to consumers though the retailers' store or other mediums. Though not formally a retail subsector, restaurants and other eating and drinking places are also included in the retail industry cluster for the purposes of this analysis.

Major Products and Services

- Food and beverage stores
- Health and personal care stores
- Home furnishings stores
- Apparel stores
- Building material and garden equipment stores
- General merchandise stores
- Motor vehicle and parts dealers
- Gasoline stations
- Miscellaneous other retail
- Restaurants
- Bars

National Outlook[3]

The Retail Trade sector is expected to grow in tandem with growth in per capita disposable income and consumer spending.

- Consumer confidence is expected to rise, encouraging consumers to spend as they feel more comfortable with their economic position. However, added price competition due to the shift toward online shopping is anticipated to further constrain revenue growth for brick-and-mortar-only retailers.
- Over the next five years, per capita disposable income is anticipated to continue to grow. As a result, many consumers will continue to purchase discretionary goods in addition to their everyday needs. Consumers with particularly high-income levels will also continue to opt for high-end merchandise, the high price tags of which will boost sector revenue.

Consumers anticipated to continue using the internet to do a growing portion of their shopping.

- Individuals seeking to save money on necessities, as well as those hoping to find the best deals on discretionary goods, are expected to turn to online operators and the websites of brick-and-mortar operators to search for the best prices. Large operators with well-established e-commerce operations are expected to direct their focus more toward those operations, while smaller retailers will invest in getting their websites up to par. As a result, a larger portion of operators' total revenue is anticipated to stem from online sales.

Retailer growth is expected to increase due to the low barriers to entry to set up shop online.

- Since operators in the Retail Trade sector sell relatively homogenous goods, price competition among retailers is high. This competition is expected to become an even bigger threat to operators as more consumers use the internet to price check by browsing company websites before placing an order online or visiting a brick-and-mortar store.

[3] National Outlook sourced from IBISWorld, a leading industry research and analysis provider.

- Operators that are unable to move their operations online or offer competitive pricing may struggle to stay afloat. Even so the sector's largest and most competitive operators are anticipated to continue expanding, targeting new markets and focusing on their online operations.

Challenges facing restaurants shift from the pandemic to inflation concerns.

- While the restaurant industry has fully recovered from the pandemic, surpassing 2019 revenue levels at the end of 2022, concerns of inflation and recession have come into the forefront.
- Consumer habits shifted to less expensive and less social food options during the pandemic, and the patterns formed during this time of stress have pulled many to ordering inexpensive food for delivery.
- As restaurant ownership costs rise, chains will have to slim out yet again, losing customers to the many less expensive dining options.

Digital technologies continue to enhance restaurant employee performance and efficiency.

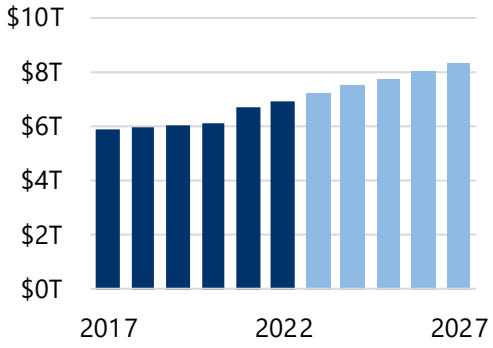
- Most restaurants already leverage digital technology to handle repetitive consumer interaction and management tasks: handhelds help servers collect orders and accept payment, while kitchen screens direct cooks to any dish alterations and preparation time.
- Fully automatic kitchen equipment is also becoming commonplace; conveyor dishwashers blast plates clean, and automated woks stir-fry ingredients without human intervention.
- While fast food and casual restaurants are moving to primarily digital ordering systems, hiring fewer cashiers and experimenting with fully-robotic locations, full-service restaurants have continued to lean on human waitstaff to maintain the full-service experience.

Restaurants will battle image and staffing issues as a result of expanding labor struggles.

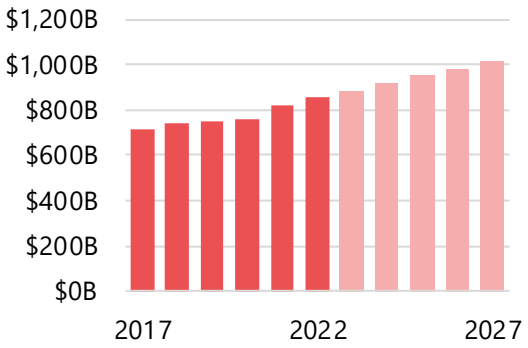
- Burnout, labor recruitment, high turnover, lack of benefits, long hours, and customer battles were issues for restaurant labor teams even before the pandemic erased nearly a million service workers from the economy.
- Even now, half a million food service positions remain permanently open, despite next-day pay schedules and improved healthcare. Without significant changes, this shortfall will continue to worsen, and operators will experiment with less labor-heavy food concepts like "ghost kitchens," where no waitstaff is necessary.

Retail - US Industry Performance[4]

Industry Revenue in 2022: $6.9T
Historic Annual Growth 2017-22: 3.5%
Forecast Annual Growth 2022-27: 3.7%



Industry Value Added in 2022: $854B
Historic Annual Growth 2017-22: 3.7%
Forecast Annual Growth 2022-27: 3.5%



Source: IBISWorld

Supply Chain

SUPPLYING INDUSTRIES
Consumer Goods Wholesalers
Consumer Goods Manufacturers
Food Processing

→

RETAIL CLUSTER

→

BUYING INDUSTRIES
Consumers
Businesses
Other retailers

[4] US industry performance data includes industries formally categorized as retail and excludes restaurants and other eating places.

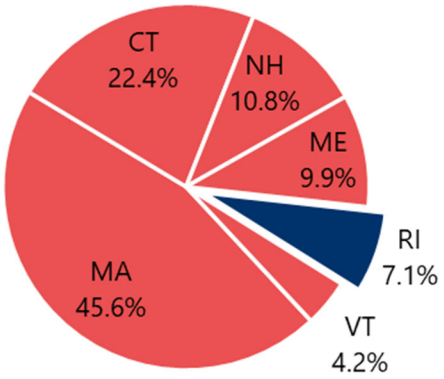
Rhode Island Cluster Performance

New England states saw retail cluster employment declines across the board from 2017-2022, though Rhode Island's losses were among the lowest in percentage terms.

Rhode Island's Retail cluster constitutes about 7.1% of New England jobs in the cluster (compared to the state's 6.6% share of all jobs economy-wide). Rhode Island ranks 5th in the region in terms of overall cluster employment and 3rd in concentration relative to total employment. With a location quotient of 1.04, the cluster has a slightly above average presence in Rhode Island relative to the nation. Employment in the cluster has declined over the last five years (2017-2022), decreasing by 2.4%, notably less than the decline of 6.4% experienced in New England as a whole.

The state's job earnings in this cluster ($38,890) are lower than in the other five New England states and slightly below the US average.

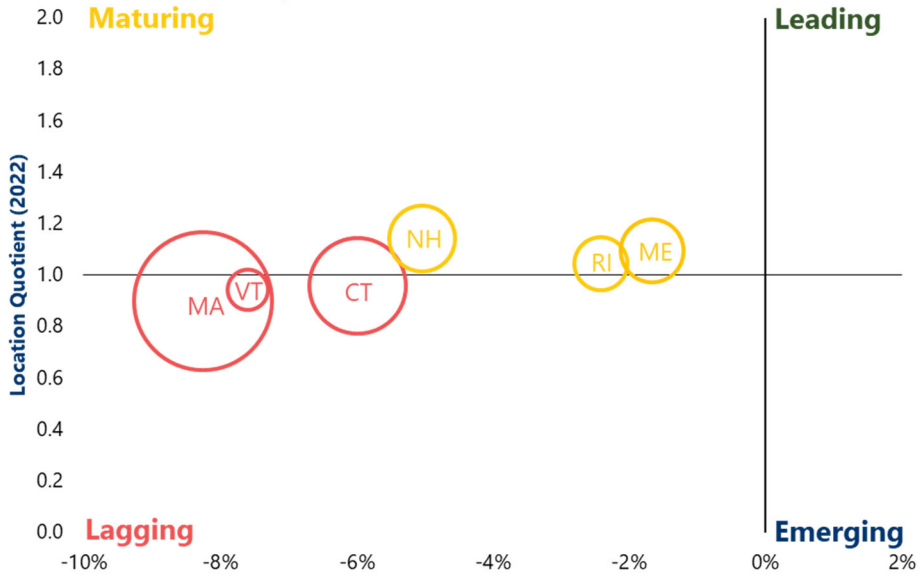
New England Retail Cluster Jobs by State, 2022



Source: Lightcast

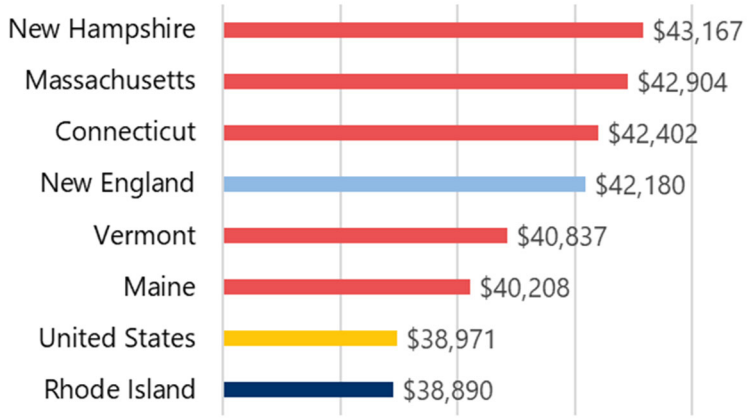
Key Metrics for Retail Cluster, New England States

Bubble size indicates 2022 job count



Source: Lightcast

Average Earnings per Job, Retail Cluster



Source: Lightcast

Retail Cluster Economic Performance Comparison, New England States and US

NAICS	2022 Jobs	Cluster Share of Total Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Cluster Share of Total GRP
Rhode Island	94,219	17.6%	(2,326)	-2.4%	1.04	12	$38,890	7,410	$6,511.6M	10.2%
Connecticut	296,051	16.1%	(18,835)	-6.0%	0.96	(7,962)	$42,402	22,327	$23,578.8M	8.0%
Maine	131,582	18.4%	(2,223)	-1.7%	1.10	(8,055)	$40,208	9,622	$9,888.4M	12.9%
Massachusetts	603,012	15.1%	(54,266)	-8.3%	0.90	(28,641)	$42,904	40,530	$43,653.7M	7.0%
New Hampshire	143,101	19.2%	(7,595)	-5.0%	1.14	(9,384)	$43,167	9,207	$10,754.5M	11.0%
Vermont	55,252	15.9%	(4,538)	-7.6%	0.94	(4,313)	$40,837	4,347	$4,394.0M	11.8%
New England	1,323,215	16.2%	(89,782)	-6.4%	0.96	(58,344)	$42,180	93,444	$98,781.0M	8.3%
United States	28,011,096	16.8%	(693,225)	-2.4%	1.00	-	$38,971	1,801,830	$1,931,670.7M	8.6%

Source: Lightcast

Retail Subclusters

The Retail cluster consists of seven subclusters: Apparel, Automotive, Food & Beverage at Home, Home Improvement and Furnishings, Personal Care Goods and Services, Restaurants and Other Eating and Drinking Places, and General Merchandise and Other Retailers.

Apparel

Apparel retailers have the smallest employment of the subclusters, representing 4% of all retail jobs. The subsector experienced the highest percent decrease in job losses over the last five years, a decline of -15.4%. Earnings per job are below the sector average.

Automotive

The automotive sector makes up a disproportionate share of the retail cluster's contribution to GRP (18.8%) compared to its share of employment (9.2%) due to the relatively high capital intensity of the subsector. Average earnings for automotive sector jobs are about $68,000, which 75% higher than the retail cluster average of $39,000.

Food & Beverage at Home

Food and beverage at home retailers were one of two subclusters that showed employment growth between 2017 and 2022, driven by sales growth in this sector during the pandemic as consumers shifted spending from dining out. However, job growth was not consistent across subclusters, with Supermarkets gaining jobs and most specialty stores losing jobs. It is the subcluster with the highest concentration of employment. In particular, Fish and Seafood Markets and Beer, Wine, and Liquor Stores are particular concentrated in Rhode Island compared to the nation as a whole, with location quotients well above 2.00.

Home Improvement and Furnishings

Home improvement and furnishings stores exhibited the highest employment growth across subsectors over the last five years, growing by 5.0%. Home centers and florists contributed most to this growth. Rhode Island has a below average concentration of employment in this subsector.

Personal Care Goods and Services

Personal care goods and services experienced above-average employment declines over the period, with job totals shrinking by 8.2%. Pharmacies and beauty salons were the largest drivers of this decline. Despite this contraction, the subsector remains substantially more concentrated in Rhode Island than in the US, with a location quotient of 1.18.

Restaurants and Other Eating and Drinking Places

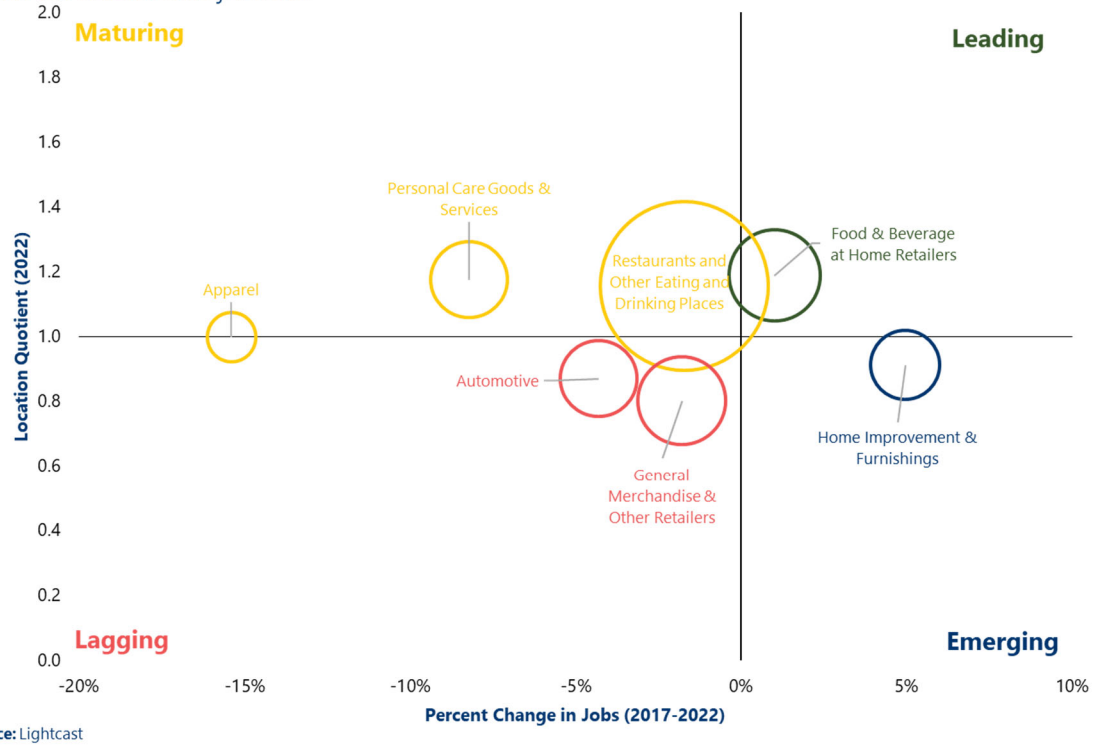
The restaurant subsector comprises over 44% of employment in the retail cluster, the most by far. Full-service and limited-service restaurants constitute a full one third of all retail cluster jobs. While these dining categories saw employment declines over the period, they were largely neutralized by increases in employment at breweries, retail bakeries, and snack bars. Earnings in this subsector are the lowest in the cluster, averaging $30,000 per job. The subsector is more concentrated than the nation, with a location quotient of 1.16.

General Merchandise and Other Retailers

The final subsector is made up of a hodgepodge of miscellaneous retailers ranging from sporting goods and hobby stores, to department stores and supercenters, to pet stores and gift shops. As a whole, the subsector makes up about 12% of retail cluster employment.

Key Metrics by Retail Subcluster, Rhode Island

Bubble size indicates 2022 job count



Source: Lightcast

Rhode Island Retail Cluster Economic Performance Metrics

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Apparel											
448110	Men's Clothing Stores	70	0.1%	(48)	-40.6%	0.61	(21)	$41,268	13	$6.0M	0.1%
448120	Women's Clothing Stores	673	0.7%	(270)	-28.6%	1.04	89	$31,114	85	$40.0M	0.6%
448130	Children's and Infants' Clothing Stores	75	0.1%	(100)	-57.1%	0.74	4	$28,156	9	$3.9M	0.1%
448140	Family Clothing Stores	1,381	1.5%	46	3.4%	1.09	380	$30,792	117	$76.5M	1.2%
448150	Clothing Accessories Stores	264	0.3%	23	9.3%	1.39	72	$40,594	44	$21.5M	0.3%
448190	Other Clothing Stores	405	0.4%	(72)	-15.1%	1.02	25	$34,273	55	$33.9M	0.5%
448210	Shoe Stores	495	0.5%	(121)	-19.7%	0.89	6	$33,576	46	$29.2M	0.4%
448310	Jewelry Stores	362	0.4%	(134)	-27.0%	0.87	(100)	$56,714	83	$46.3M	0.7%
448320	Luggage and Leather Goods Stores	3	0.0%	(0)	-10.9%	0.09	1	$66,577	2	$0.3M	0.0%
Subtotal, Apparel		**3,728**	**4.0%**	**(678)**	**-15.4%**	**1.00**	**457**	**$34,982**	**453**	**$257.6M**	**4.0%**
Automotive											
441110	New Car Dealers	3,214	3.4%	(324)	-9.2%	0.93	(120)	$95,682	63	$561.0M	8.6%
441120	Used Car Dealers	572	0.6%	(124)	-17.8%	0.80	(284)	$42,169	115	$47.7M	0.7%
441210	Recreational Vehicle Dealers	37	0.0%	1	2.4%	0.20	(10)	$60,676	5	$4.1M	0.1%
441222	Boat Dealers	385	0.4%	34	9.7%	2.94	(1)	$76,437	64	$54.3M	0.8%
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	119	0.1%	(12)	-8.8%	0.46	(17)	$59,116	12	$14.5M	0.2%
441310	Automotive Parts and Accessories Stores	1,139	1.2%	57	5.2%	0.93	105	$45,608	130	$101.2M	1.6%
441320	Tire Dealers	343	0.4%	13	4.0%	0.58	29	$62,697	42	$41.6M	0.6%
447110	Gasoline Stations with Convenience Stores	1,642	1.7%	55	3.5%	0.59	(23)	$39,051	256	$186.9M	2.9%
447190	Other Gasoline Stations	278	0.3%	(36)	-11.5%	0.89	(38)	$45,588	56	$36.9M	0.6%
453930	Manufactured (Mobile) Home Dealers	-	0.0%	-	-	-	-	$0	-	$0.8M	0.0%
454310	Fuel Dealers	951	1.0%	(55)	-5.5%	3.84	(67)	$77,029	100	$178.1M	2.7%
Subtotal, Automotive		**8,680**	**9.2%**	**(390)**	**-4.3%**	**0.87**	**(425)**	**$68,418**	**841**	**$1,227.1M**	**18.8%**
Food & Beverage at Home Retailers											
445110	Supermarkets and Other Grocery (except Convenience) Stores	9,183	9.7%	69	0.8%	1.10	471	$37,660	182	$560.3M	8.6%
445120	Convenience Stores	568	0.6%	(9)	-1.6%	1.01	(40)	$29,348	162	$35.5M	0.5%
445210	Meat Markets	332	0.4%	(11)	-3.1%	1.70	(76)	$38,646	46	$20.5M	0.3%
445220	Fish and Seafood Markets	147	0.2%	(13)	-7.9%	2.86	(20)	$37,761	27	$10.1M	0.2%
445230	Fruit and Vegetable Markets	115	0.1%	(22)	-15.9%	0.95	(26)	$47,973	16	$9.5M	0.1%
445291	Baked Goods Stores	62	0.1%	(20)	-24.8%	0.83	(32)	$48,376	7	$5.6M	0.1%
445292	Confectionery and Nut Stores	66	0.1%	(13)	-16.6%	0.95	(10)	$46,986	12	$6.8M	0.1%
445299	All Other Specialty Food Stores	181	0.2%	(56)	-23.5%	0.71	(59)	$47,262	29	$18.7M	0.3%
445310	Beer, Wine, and Liquor Stores	1,513	1.6%	82	5.7%	2.60	(91)	$37,056	236	$91.8M	1.4%
453991	Tobacco Stores	309	0.3%	116	60.3%	1.38	89	$29,895	29	$21.1M	0.3%
Subtotal, Food & Beverage at Home Retailers		**12,475**	**13.2%**	**124**	**1.0%**	**1.19**	**206**	**$37,380**	**745**	**$779.8M**	**12.0%**

Rhode Island Retail Cluster Economic Performance Metrics (Cont'd)

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Home Improvement & Furnishings											
442110	Furniture Stores	463	0.5%	(13)	-2.7%	0.61	(23)	$71,513	63	$48.9M	0.8%
442210	Floor Covering Stores	197	0.2%	(43)	-17.9%	0.82	(45)	$74,550	31	$23.6M	0.4%
442291	Window Treatment Stores	43	0.0%	(1)	-2.5%	1.17	(13)	$76,169	10	$4.8M	0.1%
442299	All Other Home Furnishings Stores	472	0.5%	(181)	-27.7%	0.95	(130)	$37,994	47	$26.3M	0.4%
443141	Household Appliance Stores	191	0.2%	19	11.1%	1.14	57	$69,672	26	$19.3M	0.3%
443142	Electronics Stores	1,093	1.2%	(16)	-1.5%	0.85	228	$62,760	140	$100.6M	1.5%
444110	Home Centers	2,473	2.6%	385	18.5%	0.97	237	$43,353	29	$219.2M	3.4%
444120	Paint and Wallpaper Stores	169	0.2%	(16)	-8.9%	1.28	(25)	$63,008	24	$21.4M	0.3%
444130	Hardware Stores	400	0.4%	(4)	-0.9%	0.73	(43)	$42,529	31	$34.8M	0.5%
444190	Other Building Material Dealers	791	0.8%	(91)	-10.3%	0.98	(183)	$83,424	82	$136.5M	2.1%
444210	Outdoor Power Equipment Stores	65	0.1%	11	21.2%	0.59	9	$57,458	11	$8.0M	0.1%
444220	Nursery, Garden Center, and Farm Supply Stores	401	0.4%	72	21.9%	0.78	28	$43,755	54	$35.8M	0.6%
453110	Florists	484	0.5%	236	95.1%	1.95	319	$26,820	57	$18.8M	0.3%
453920	Art Dealers	47	0.1%	(15)	-24.3%	0.72	(17)	$59,975	20	$16.0M	0.2%
Subtotal, Home Improvement & Furnishings		**7,290**	**7.7%**	**344**	**5.0%**	**0.91**	**400**	**$53,349**	**625**	**$714.2M**	**11.0%**
Personal Care Goods & Services											
446110	Pharmacies and Drug Stores	3,669	3.9%	(426)	-10.4%	1.63	(473)	$63,931	280	$305.5M	4.7%
446120	Cosmetics, Beauty Supplies, and Perfume Stores	378	0.4%	(56)	-13.0%	0.63	(90)	$33,499	50	$20.4M	0.3%
446130	Optical Goods Stores	88	0.1%	(76)	-46.3%	0.41	(83)	$60,553	29	$7.2M	0.1%
446191	Food (Health) Supplement Stores	75	0.1%	(183)	-70.9%	0.49	(163)	$47,635	27	$6.6M	0.1%
446199	All Other Health and Personal Care Stores	167	0.2%	17	11.7%	0.79	3	$100,325	33	$27.6M	0.4%
812111	Barber Shops	415	0.4%	119	40.1%	1.55	103	$41,784	25	$20.0M	0.3%
812112	Beauty Salons	2,512	2.7%	(217)	-7.9%	1.05	43	$32,438	395	$156.5M	2.4%
812113	Nail Salons	697	0.7%	193	38.2%	0.81	(62)	$30,295	95	$42.0M	0.6%
812191	Diet and Weight Reducing Centers	38	0.0%	(41)	-51.9%	0.78	(12)	$32,062	12	$3.3M	0.1%
812310	Coin-Operated Laundries and Drycleaners	405	0.4%	34	9.1%	3.02	36	$29,307	80	$14.7M	0.2%
812320	Drycleaning and Laundry Services (except Coin-Operated)	351	0.4%	(150)	-30.0%	1.06	(2)	$38,749	69	$17.9M	0.3%
Subtotal, Personal Care Goods & Services		**8,794**	**9.3%**	**(786)**	**-8.2%**	**1.18**	**(700)**	**$47,699**	**1,095**	**$621.8M**	**9.5%**

Rhode Island Retail Cluster Economic Performance Metrics (Cont'd)

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Restaurants and Other Eating and Drinking Places											
311811	Retail Bakeries	775	0.8%	193	33.2%	2.12	139	$35,101	57	$35.8M	0.5%
312120	Breweries	388	0.4%	274	239.2%	1.16	329	$44,912	34	$85.7M	1.3%
312130	Wineries	100	0.1%	8	9.3%	0.40	(7)	$52,219	6	$10.2M	0.2%
312140	Distilleries	12	0.0%	(6)	-33.4%	0.15	(21)	$72,223	3	$9.6M	0.1%
722330	Mobile Food Services	205	0.2%	147	254.6%	1.61	191	$24,268	35	$12.2M	0.2%
722410	Drinking Places (Alcoholic Beverages)	2,186	2.3%	(180)	-7.6%	1.70	(268)	$28,109	249	$78.5M	1.2%
722511	Full-Service Restaurants	21,423	22.7%	(972)	-4.3%	1.32	1,806	$33,223	1,186	$1,189.6M	18.3%
722513	Limited-Service Restaurants	10,475	11.1%	(624)	-5.6%	0.74	(920)	$26,107	897	$578.8M	8.9%
722514	Cafeterias, Grill Buffets, and Buffets	135	0.1%	(30)	-18.0%	0.59	71	$26,721	7	$2.8M	0.0%
722515	Snack and Nonalcoholic Beverage Bars	5,919	6.3%	461	8.4%	2.07	(1,940)	$24,706	471	$168.2M	2.6%
Subtotal, Restaurants and Other Eating and Drinking Places		**41,619**	**44.2%**	**(727)**	**-1.7%**	**1.16**	**(621)**	**$30,087**	**2,944**	**$2,171.4M**	**33.3%**
General Merchandise & Other Retailers											
451110	Sporting Goods Stores	683	0.7%	44	6.9%	0.70	62	$36,417	92	$43.7M	0.7%
451120	Hobby, Toy, and Game Stores	285	0.3%	(133)	-31.9%	0.67	(62)	$30,423	32	$20.4M	0.3%
451130	Sewing, Needlework, and Piece Goods Stores	87	0.1%	(13)	-12.7%	0.60	4	$25,441	12	$5.5M	0.1%
451140	Musical Instrument and Supplies Stores	93	0.1%	36	63.1%	0.84	39	$44,849	15	$6.9M	0.1%
451211	Book Stores	293	0.3%	42	16.9%	1.42	133	$32,676	20	$13.7M	0.2%
451212	News Dealers and Newsstands	8	0.0%	(40)	-83.2%	0.44	(17)	$33,299	1	$0.6M	0.0%
452210	Department Stores	3,425	3.6%	(402)	-10.5%	1.11	322	$31,906	41	$186.9M	2.9%
452311	Warehouse Clubs and Supercenters	2,542	2.7%	412	19.4%	0.50	418	$40,077	9	$179.1M	2.7%
452319	All Other General Merchandise Stores	1,268	1.3%	(195)	-13.3%	0.75	(549)	$27,398	161	$75.7M	1.2%
453210	Office Supplies and Stationery Stores	347	0.4%	(135)	-28.0%	1.38	40	$57,511	22	$29.2M	0.4%
453220	Gift, Novelty, and Souvenir Stores	614	0.7%	(164)	-21.0%	1.32	(58)	$30,733	101	$38.3M	0.6%
453310	Used Merchandise Stores	698	0.7%	(195)	-21.8%	0.99	(194)	$29,694	62	$41.2M	0.6%
453910	Pet and Pet Supplies Stores	457	0.5%	39	9.3%	1.09	19	$40,392	45	$30.2M	0.5%
453998	All Other Miscellaneous Store Retailers (except Tobacco Stores)	809	0.9%	486	150.3%	1.00	525	$46,410	87	$67.2M	1.0%
812921	Photofinishing Laboratories (except One-Hour)	15	0.0%	8	127.6%	0.74	11	$81,868	1	$1.2M	0.0%
812922	One-Hour Photofinishing	7	0.0%	(3)	-32.2%	4.98	2	$70,529	2	-$0.1M	0.0%
Subtotal, General Merchandise & Other Retailers		**11,632**	**12.3%**	**(212)**	**-1.8%**	**0.80**	**695**	**$35,505**	**706**	**$739.7M**	**11.4%**
Total, Rhode Island		**94,219**	**100.0%**	**(2,326)**	**-2.4%**	**1.04**	**12**	**$38,890**	**7,410**	**$6,511.6M**	**100.0%**

Source: Lightcast

Retail Occupations

The top 30 Retail cluster occupations make up 87% of all cluster jobs. The rate of growth of jobs in these occupations within Rhode Island has tracked employment economy-wide, registering a slight decline. Occupations in this cluster typically have low barriers to entry, with 16 of the 30 requiring no formal educational credential, and another ten requiring only a high school diploma. Rhode Island is a net exporter of labor in all but four of the top 30 Retail occupations, meaning there are more resident workers than in-state jobs.

Rhode Island Retail Cluster, Top 30 Occupations

SOC	Description	2022 Jobs, Cluster	2022 Jobs, All Industries	Cluster Share of Occupation	Occupation Share of Cluster	Change in Jobs, 2017-2022*	Pct. Change in Jobs, 2017-2022*	Resident Workers per Job*	2022 Location Quotient *	Median Hourly Earnings*	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
41-2031	Retail Salespersons	11,298	12,384	91%	12%	(488)	-4%	1.16	0.96	$14.17	No formal educ. credential	None	Short-term on-the-job training
41-2011	Cashiers	10,584	11,311	94%	11%	(1,619)	-13%	1.11	1.03	$13.70	No formal educ. credential	None	Short-term on-the-job training
35-3023	Fast Food and Counter Workers	8,354	9,564	87%	9%	(1,283)	-12%	1.17	0.89	$13.47	No formal educ. credential	None	Short-term on-the-job training
35-3031	Waiters and Waitresses	6,756	7,628	89%	7%	(2,419)	-24%	1.07	1.14	$12.56	No formal educ. credential	None	Short-term on-the-job training
35-2014	Cooks, Restaurant	6,299	6,961	90%	7%	2,080	43%	1.02	1.52	$14.57	No formal educ. credential	Less than 5 years	Moderate-term on-the-job training
53-7065	Stockers and Order Fillers	4,331	6,291	69%	5%	1,076	21%	1.17	0.76	$14.58	HS diploma or equivalent	None	Short-term on-the-job training
41-1011	First-Line Supervisors of Retail Sales Workers	3,737	4,090	91%	4%	(162)	-4%	1.14	0.89	$22.39	HS diploma or equivalent	Less than 5 years	None
35-2011	Cooks, Fast Food	3,360	3,427	98%	4%	923	37%	0.92	1.29	$12.79	No formal educ. credential	None	Short-term on-the-job training
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	2,935	3,538	83%	3%	538	18%	1.07	0.95	$23.06	HS diploma or equivalent	Less than 5 years	None
35-3011	Bartenders	2,324	2,931	79%	2%	(801)	-21%	1.02	1.57	$13.41	No formal educ. credential	None	Short-term on-the-job training
35-2021	Food Preparation Workers	2,212	2,898	76%	2%	(310)	-10%	1.12	1.06	$14.76	No formal educ. credential	None	Short-term on-the-job training
39-5012	Hairdressers, Hairstylists, and Cosmetologists	1,990	2,217	90%	2%	258	13%	1.04	1.07	$14.04	Postsecondary nondegree award	None	None
43-4051	Customer Service Representatives	1,679	10,221	16%	2%	1,261	14%	1.02	1.08	$18.21	HS diploma or equivalent	None	Short-term on-the-job training
53-3031	Driver/Sales Workers	1,574	2,343	67%	2%	635	37%	0.98	1.37	$17.94	HS diploma or equivalent	None	Short-term on-the-job training

Rhode Island Retail Cluster, Top 30 Occupations (Cont'd)

SOC	Description	2022 Jobs, Cluster	2022 Jobs, All Industries	Cluster Share of Occupation	Occupation Share of Cluster	Change in Jobs, 2017-2022*	Pct. Change in Jobs, 2017-2022*	Resident Workers per Job*	2022 Location Quotient*	Median Hourly Earnings*	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	1,501	2,139	70%	2%	164	8%	0.99	1.71	$11.56	No formal educ. credential	None	Short-term on-the-job training
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	1,439	1,550	93%	2%	199	15%	1.06	1.29	$13.59	No formal educ. credential	None	Short-term on-the-job training
35-9021	Dishwashers	1,422	1,742	82%	2%	(593)	-25%	1.10	1.26	$13.83	No formal educ. credential	None	Short-term on-the-job training
11-1021	General and Operations Managers	1,248	6,860	18%	1%	1,240	22%	1.32	0.65	$57.20	Bachelor's degree	5 years or more	None
29-2052	Pharmacy Technicians	1,223	1,552	79%	1%	(222)	-12%	1.05	1.07	$17.70	HS diploma or equivalent	None	Moderate-term on-the-job training
49-3023	Automotive Service Technicians and Mechanics	1,180	2,774	43%	1%	47	2%	1.04	1.10	$22.41	Postsecondary nondegree award	None	Short-term on-the-job training
51-3011	Bakers	888	1,193	74%	1%	291	32%	1.02	1.75	$14.37	No formal educ. credential	None	Long-term on-the-job training
53-3033	Light Truck Drivers	788	3,604	22%	1%	360	11%	1.11	1.00	$18.26	HS diploma or equivalent	None	Short-term on-the-job training
41-2022	Parts Salespersons	783	1,037	75%	1%	237	30%	1.04	1.17	$17.58	No formal educ. credential	None	Moderate-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	763	7,337	10%	1%	(128)	-2%	1.10	0.77	$16.94	No formal educ. credential	None	Short-term on-the-job training
29-1051	Pharmacists	755	1,157	65%	1%	(379)	-25%	1.06	1.11	$58.67	Doctoral or professional degree	None	None
43-9061	Office Clerks, General	678	10,020	7%	1%	(1,984)	-17%	1.01	1.08	$21.03	HS diploma or equivalent	None	Short-term on-the-job training
51-3021	Butchers and Meat Cutters	661	734	90%	1%	344	88%	0.97	1.53	$14.56	No formal educ. credential	None	Long-term on-the-job training
53-7064	Packers and Packagers, Hand	569	2,002	28%	1%	(120)	-6%	1.20	0.98	$13.74	No formal educ. credential	None	Short-term on-the-job training
35-1011	Chefs and Head Cooks	534	918	58%	1%	400	77%	1.05	1.62	$29.95	HS diploma or equivalent	5 years or more	None
43-5071	Shipping, Receiving, and Inventory Clerks	499	2,335	21%	1%	125	6%	1.09	0.87	$18.00	HS diploma or equivalent	None	Short-term on-the-job training
Total		**82,364**	**132,759**	**62%**	**87%**	**(331)**	**0%**	**1.09**					

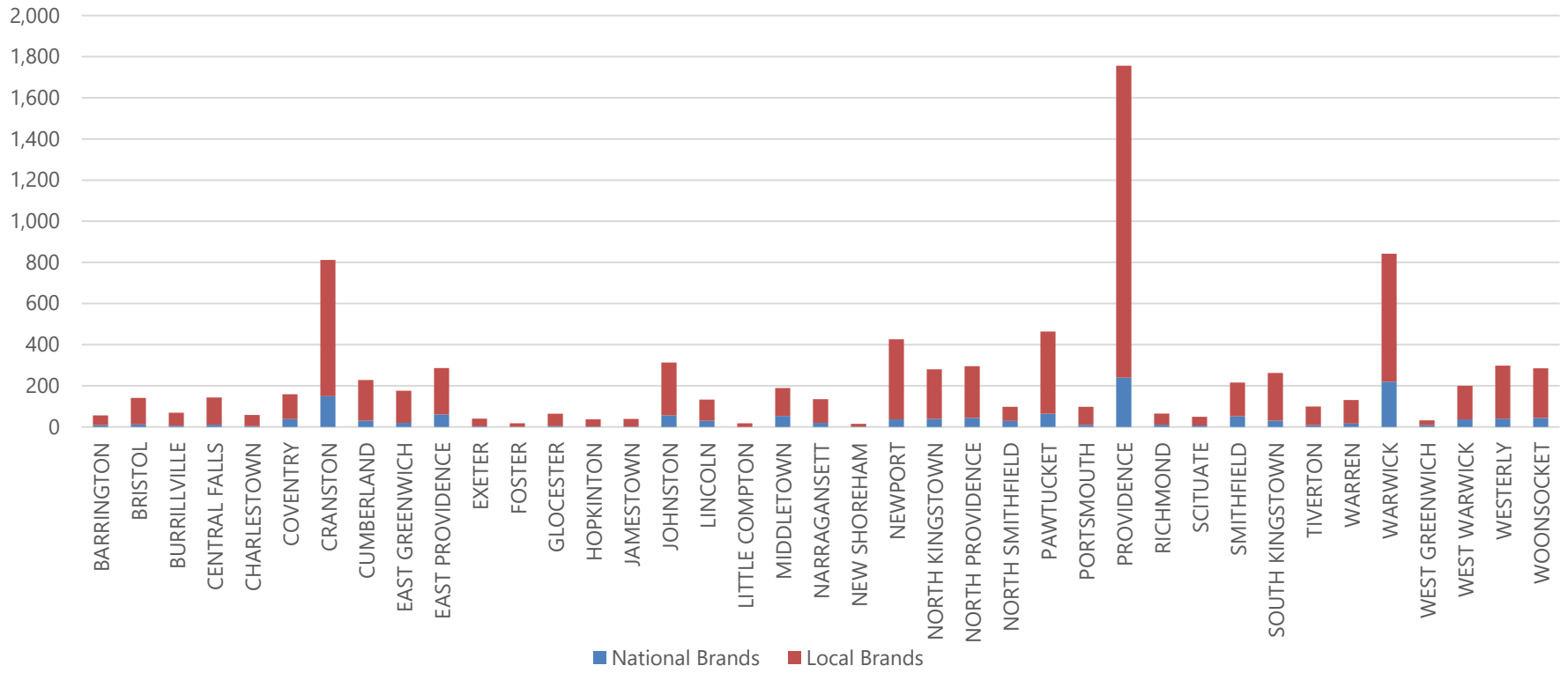
*Metrics are for each occupation across all industries economy-wide, and not specific to the individual cluster

Source: Lightcast 2023.1

City/Town Retail Characteristics

Retail in Rhode Island is clustered in a few cities/towns near the urbanized portion of the state, with the greatest count of businesses in Providence, Warwick, and Cranston. Majority of businesses in each city/town are local brands, with only 16% representing national brands statewide.

Total Retail Establishments



Source: Google; &Access (2023)

Gaps/Concentration in Retail Supply

The following analysis compares the share of the retail mix across subclusters by city and town with the average distribution statewide to identify the gaps (red) and concentrations (green) of retail. For gaps, apparel has the most significant disparity across the state, with less than 3% share in most communities. This condition is likely a factor and impact of e-commerce and mall-centric shopping behaviors, alongside limited purchases in the category. General merchandise includes department and big box stores, often home to apparel departments and areas of concentration in many communities.

Retail Mix by Town/City

City/Town	Apparel	Automotive	Retailers	Other Retailers	Furnishings	Services	and Drinking Places
BARRINGTON	11%	5%	11%	9%	9%	11%	45%
BRISTOL	4%	8%	13%	10%	12%	12%	42%
BURRILLVILLE	0%	17%	12%	7%	10%	16%	38%
CENTRAL FALLS	2%	10%	17%	12%	5%	17%	36%
CHARLESTOWN	7%	7%	19%	24%	12%	12%	19%
COVENTRY	1%	16%	8%	13%	10%	22%	29%
CRANSTON	9%	9%	8%	8%	8%	29%	29%
CUMBERLAND	3%	14%	9%	8%	7%	31%	28%
EAST GREENWICH	5%	9%	6%	7%	6%	30%	37%
EAST PROVIDENCE	8%	17%	11%	9%	6%	17%	31%
EXETER	3%	18%	10%	10%	18%	5%	38%
FOSTER	0%	28%	11%	28%	11%	6%	17%
GLOCESTER	2%	9%	5%	28%	14%	13%	30%
HOPKINTON	5%	16%	16%	19%	5%	8%	30%
JAMESTOWN	5%	3%	10%	18%	26%	10%	28%
JOHNSTON	5%	23%	10%	6%	6%	23%	27%
LINCOLN	5%	8%	10%	9%	5%	21%	43%
LITTLE COMPTON	0%	11%	17%	11%	17%		44%
MIDDLETOWN	2%	16%	10%	10%	10%	16%	37%
NARRAGANSETT	1%	10%	17%	9%	4%	24%	34%
NEW SHOREHAM	0%	7%	20%	13%	20%	7%	33%
NEWPORT	22%	6%	9%	15%	9%	9%	30%
NORTH KINGSTOWN	6%	12%	7%	18%	15%	20%	21%
NORTH PROVIDENCE	7%	11%	8%	5%	4%	32%	33%
NORTH SMITHFIELD	2%	20%	10%	9%	6%	23%	29%
PAWTUCKET	9%	12%	17%	8%	10%	16%	27%
PORTSMOUTH	6%	13%	13%	7%	9%	12%	39%
PROVIDENCE	11%	7%	15%	8%	8%	17%	35%
RICHMOND	2%	12%	9%	11%	15%	25%	26%
SCITUATE	6%	12%	8%	22%	6%	14%	31%
SMITHFIELD	6%	13%	9%	12%	7%	21%	31%
SOUTH KINGSTOWN	5%	11%	6%	12%	11%	17%	38%
TIVERTON	3%	16%	18%	17%	11%	6%	28%
WARREN	7%	11%	8%	15%	11%	5%	42%
WARWICK	8%	14%	8%	11%	8%	22%	30%
WEST GREENWICH	0%	13%	13%	3%	13%	13%	47%
WEST WARWICK	3%	19%	9%	11%	9%	22%	29%
WESTERLY	9%	9%	9%	11%	10%	18%	34%
WOONSOCKET	5%	13%	15%	11%	6%	19%	32%
Rhode Island Average	8%	11%	11%	10%	8%	19%	32%

Source: &Access

State by State Comparison

Rhode Island sits in the south central New England region. While it is the smallest state in the region and the country, and despite its sizable rural geography with limited retail density, Rhode Island has the greatest tenant density. In fact, although Vermont is a larger state, there are more retail tenants and buildings in Rhode Island.

Retail Tenants and Buildings by State

State	Tenants	Buildings	Resident to Tenant Ratio	Tenant Density (per Sq. Mi)
Rhode Island	11,742	5,856	93.8	11.4
Connecticut	41,376	17,667	87.1	8.5
Maine	12,135	6,941	112.9	0.4
Massachusetts	63,616	27,624	111.3	8.1
New Hampshire	14,033	6,459	99	1.6
Vermont	4,071	2,071	158.8	0.4

Source: CoStar, ESRI (2023)

Vacancy Rates

Rhode Island had a lower retail vacancy rate of 3.5% compared to Connecticut, which had a slightly higher rate of 4%. Rhode Island's retail vacancy rate is also very close to the overall vacancy rate of all New England states, which was 3.3%. However, it's important to note that these statistics only reflect a snapshot of the retail market in 2022 and may not necessarily indicate long-term trends.

Retail Vacancy by State

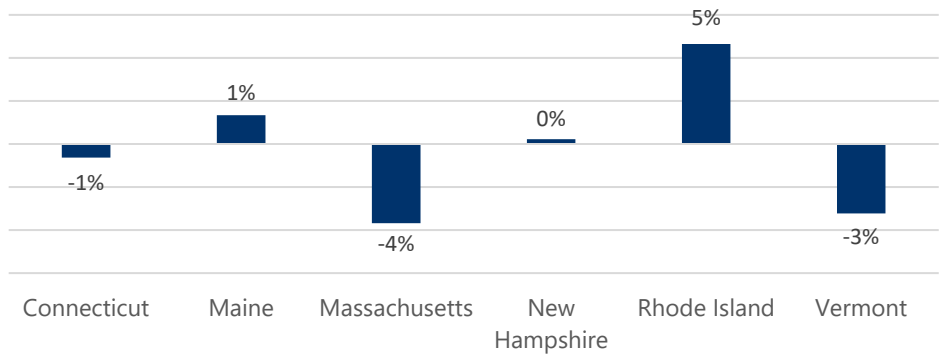
State	Vacancy Rate (2022)
Connecticut	4.0%
Maine	2.4%
Massachusetts	3.1%
New Hampshire	3.1%
Rhode Island	3.5%
Vermont	3.0%
New England	3.3%
US	3.5%

Source: CoStar, ESRI (2023)

Percent Change in Total Retail Establishments

As illustrated in the Total Percent Change in Establishment Count from 2018 Q1 to 2021 Q4 (right), Rhode Island experienced the greatest increase in retail establishments of all New England States. Conversely, Massachusetts experienced the greatest decrease at -4%.

Total Percent Change in Establishment Count (2018 Q1-2021 Q4)



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages (2023)

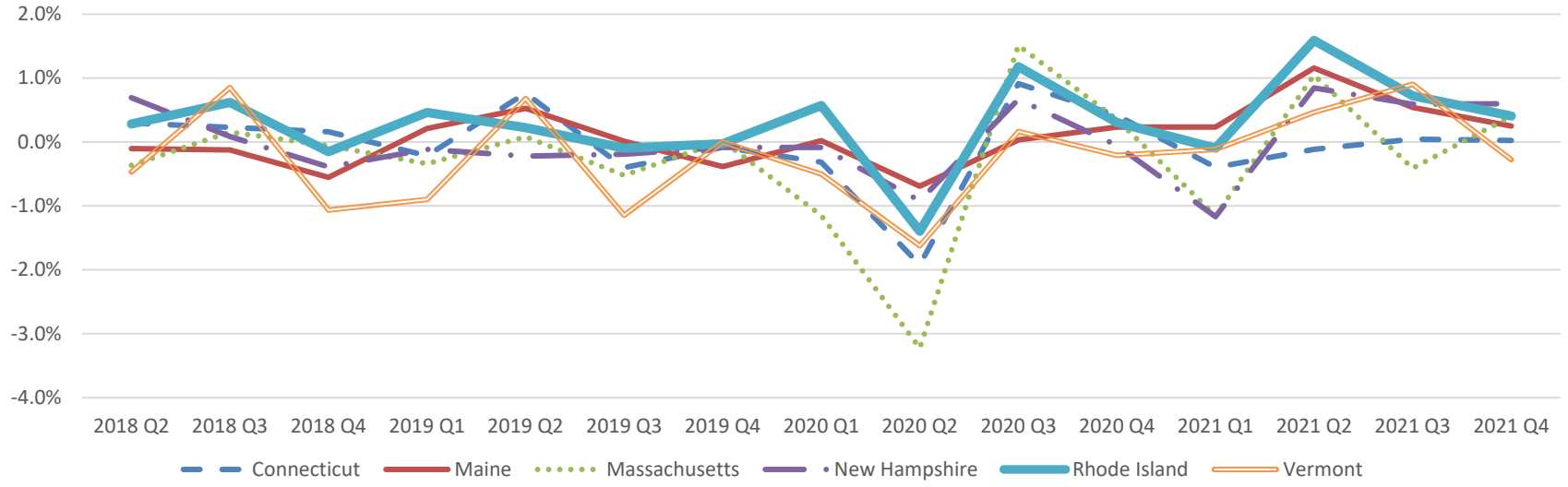
Quarter-over-Quarter Change in Establishment Count

During the period from 2018 to 2021, the retail industry in the New England region witnessed significant fluctuations in the number of business establishments. Rhode Island, however, maintained a relatively stable trend with a change ranging between 0% to 1% quarter after quarter. Beginning in Q2 of 2020 the state experienced a slight decrease of just over 1% in the number of business establishments during this period.

In comparison to its neighboring states, Rhode Island fared relatively well. States such as Massachusetts, Vermont, and Connecticut experienced a much more negative change, with Massachusetts leading the charge with a 3% drop in the number of establishments statewide.

It is worth noting that after the peak of the COVID-19 pandemic, Rhode Island immediately began an uptrend in business count. These trends reflect the ongoing pandemic era challenges faced by the retail industry in the New England.

Quarterly Change in Establishment Count (2018 Q1 - 2021 Q4)

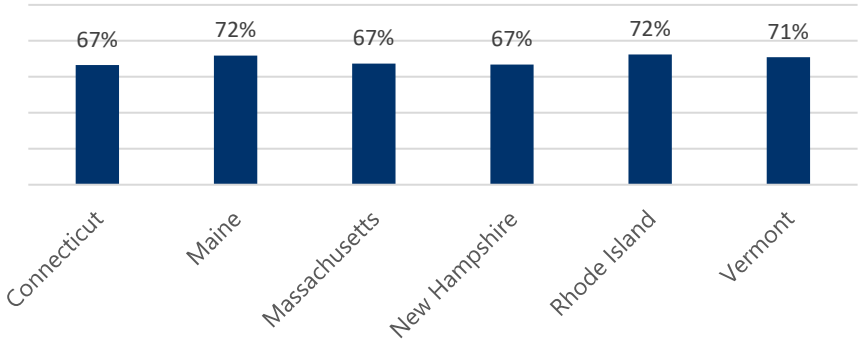


Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages (2023)

Legacy Tenants

A legacy retail business refers to a traditional brick-and-mortar retail establishment that has been in operation for a long time, some with a history spanning several decades and even generations. These businesses typically operate in a physical storefront, where customers can browse and purchase goods or services. Along with Maine, Rhode Island has the highest percentage of legacy businesses among the New England states listed, with 72% of businesses being open for more than 5 years.

Legacy Business
(Occupied Space for More Than 5 Years)



Source: CoStar (2023)

Asking Rent Rates Across New England

Overall, Rhode Island's retail rent rate of $15.46 per square foot is slightly lower than the average rent rate for all of New England, which was $17.95 per square foot. Various factors, such as location, length of occupancy, condition of the space, and vacancy rate in the area can affect rent rates. However, lower rent is typically correlated with lower gross revenue or sales.

2022 Rent Rates

Source: CoStar (2023)

Sales Tax Structure

Sales Tax applies to most consumer goods and services and to many other purchases. Rhode Island has the lowest Corporate Income Tax (7%) and the highest Sales Tax base (7%) in New England. In contrast, New Hampshire levies no Sales Tax. Rhode Island and the other States in New England exempt grocery (cold/non-prepared food) purchases from the Sales Tax base. In Rhode Island specifically, certain clothing and medical purchases are also exempt from Sales Tax. Additionally, some purchases, such as Motor Fuel, Marijuana, and Alcohol are taxed outside of the basic Sales Tax. None of these states allow local municipalities and counties to levy additional sales taxes.

Sales Tax by State

Tax Type	Rhode Island	Connecticut	Maine	Massachusetts	New Hampshire
Corporate Income	7%	8%	9%	8%	8%
Sales	7%	6%	6%	6%	N/A
Marijuana Excise Tax	10% State / 3% Local / 7% Sales	$0.009 per milligram of total THC	5.5% / 8% edibles	6.25%	N/A
Beer	$0.11 / Gallon	$1.20 / Barrel*	$0.35 / Gallon	$0.10 / Gallon	$0.30 / Gallon
Liquor	$5.40 / Gallon	$0.9 / Gallon	0.055	$4.05 / Gallon	N/A
Wine	$1.40 / Gallon	$0.30 / Gallon	$0.60 / Gallon	$0.55 / Gallon	N/A
Cigarettes	$4.25 / Pack	50% Wholesale Price	$2.00 / Pack	$3.51 / Pack	$1.79 / Pack
Cigars	80% Wholesale Price	50% Wholesale Price	20% Wholesale Price	40% Wholesale Price	65% Wholesale Price
Smokeless Tobacco/Snuff	$1.00 / Ounce	$3 / Ounce	$2.02 / Ounce	210% of wholesale price	65% Wholesale Price
Other Tobacco	80% Wholesale Price	50% Wholesale Price	$2.02 / Ounce	N/A	65% Wholesale Price
Motor Fuel Taxes	$0.35 / Gallon	$0.25 / Gallon	$0.30 / Gallon	$0.24 / Gallon	$0.22 / Gallon
Vapes	N/A	10% Wholesale Price	43% Wholesale Price	75% Wholesale Price	8% Wholesale Price

Source: State Governmental Tax Code (2023)

* One Barrel equals 42 gallons

Retail as Placemaking

Placemaking creates quality places people want to live, work, play, and learn (Congress of New Urbanism, 2014). Retail is often considered a critical amenity to places, complementing the mix of uses that attract people, including public spaces, diverse housing options, and arts/cultural options. In the following analysis, the term "building typology" and "neighborhood typology" are used to create groups of assets and inform investment in placemaking. This includes how people arrive at the site, the size and placement of signage, the role of parking, and often how and where people will comfortably gather. For example, urban neighborhoods with tenants in a contiguous row of buildings with a sidewalk separating on-street parking opportunities from the building will facilitate outdoor café seating, pedestrian-scaled signs, and events in a closed street or the right-of-way. Conversely, a regional mall surrounded by large parking lots in a suburban neighborhood will need to think of interior placemaking activities or facilitating placemaking adjacent to the buildings or in parking lot sections, typically not in the street. The data below provides an understanding of the assets in the state to begin designing solutions in the strategy phase of this work.

Typology of Commercial Vacancies

In Rhode Island, retail vacancies are primarily clustered in stand-alone retail buildings. However, buildings across each retail sub-typology also house vacant properties. Note, lifestyle centers (e.g., Chapel View in Cranston) are home to the lowest vacancy rate of all retail buildings, often because of the mix of uses on site and the placemaking features such as lawns surrounded by restaurants and bars. These retail districts are most aligned with modern placemaking outside urban/walkable cores. Also, retail in office buildings accounts for a sizeable share (11.8%) of all spaces, serving the employee population with goods and services required during the workday, most frequently Restaurants and Other Eating and Drinking Places. Identifying strategies to increase the occupancy of traditional retail buildings and community centers will increase the vibrancy of those communities. See appendix for full definitions of retail building typologies.

Comparison of Commercial Vacancies by Use

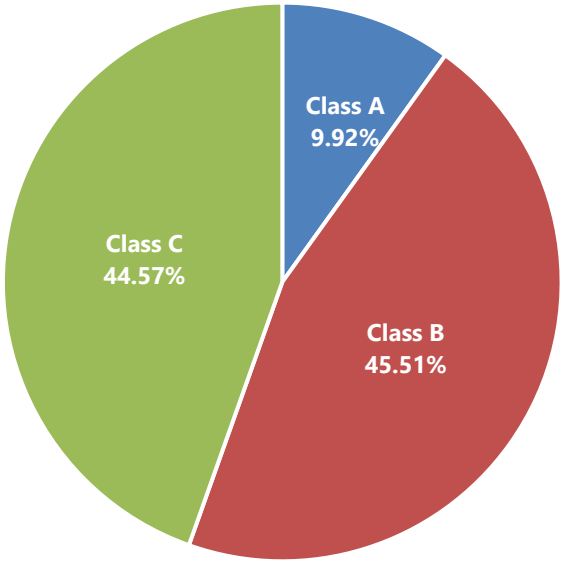
Building Typology	Share of Vacant Space (SF)
Retail	25%
Retail (Community Center)	21%
Retail (Neighborhood Center)	21%
Office	12%
Retail (Strip Center)	9%
Retail (Power Center)	7%
Multi-Family	2%
Hospitality	1%
Retail (Regional Mall)	1%
Industrial	0%
Retail (Lifestyle Center)	0%
Other	2%
Grand Total	**100.00%**

Source: CoStar (2023)

Vacancy by Class of Space

Across Rhode Island, the majority of vacant space lies in Class B and C buildings (as defined by Costar), informing investment needs across the state. Class A buildings only represent 10% of the total and are clustered in the urbanized cities/towns in and near Providence.

Vacancy by Class of Space (Rhode Island)



Source: CoStar (2023)

Walk Score Defined Neighborhood Typologies

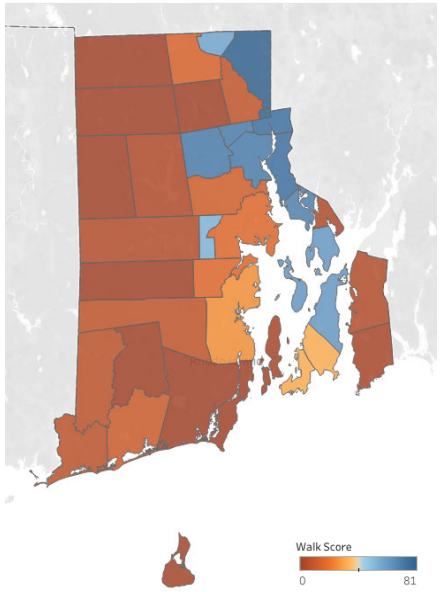
Walk Score data was leveraged to define neighborhood typologies and opportunities to leverage concentrations of retail businesses for placemaking opportunities. The score ranges and definitions below start to contextualize retail districts and the types of resources required to increase their vibrancy.

Walk Score Ratings and Related Neighborhood Typology

Score Ranges	Description	Neighborhood Typology
90-100	Walker's Paradise - Daily errands do not require a car.	Urban
70-89	Very Walkable - Most errands can be accomplished on foot.	Urban/Suburban
50-69	Somewhat Walkable - Some errands can be accomplished on foot.	Suburban
25-49	Car-Dependent - Most errands require a car.	Exurban/Destination
0-24	Car-Dependent - Almost all errands require a car.	Rural

Source: Walk Score (2023)

Walk Score by City/Town

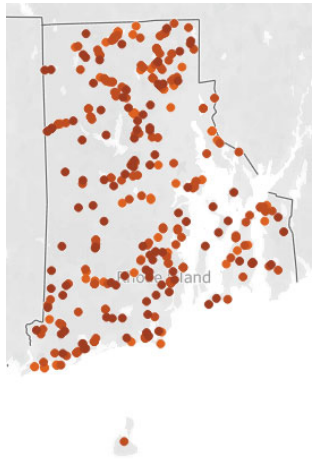


The following maps illustrate the Walk Score by city/town and each retail location. Cities and towns with greater concentrations of retailers in urbanized areas have higher Walk Scores. As Walk Scores decrease, the geographic spread increases; Walk Scores of 0-24 are fairly dispersed, while those 90-100 are concentrated in a limited geography, namely:

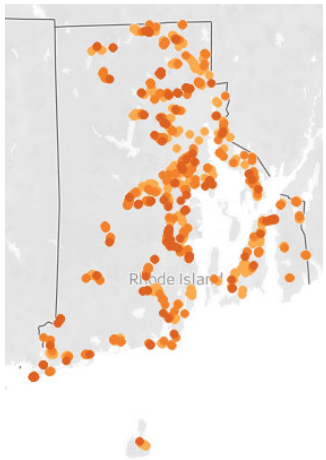
- Bristol
- Central Falls
- Cranston
- East Greenwich
- Newport
- Pawtucket
- Providence
- Westerly

WALK SCORES

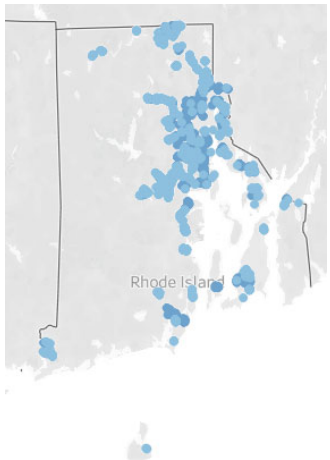
0-24



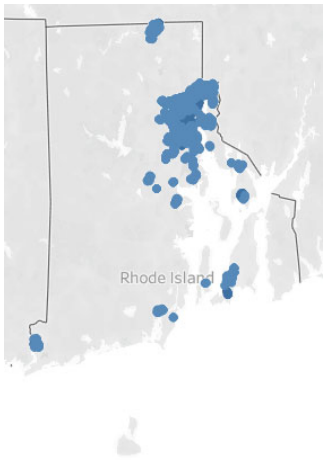
25-49



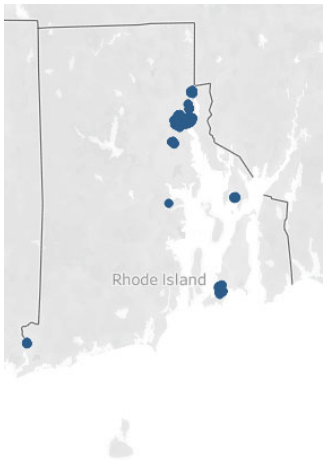
50-69



70-89



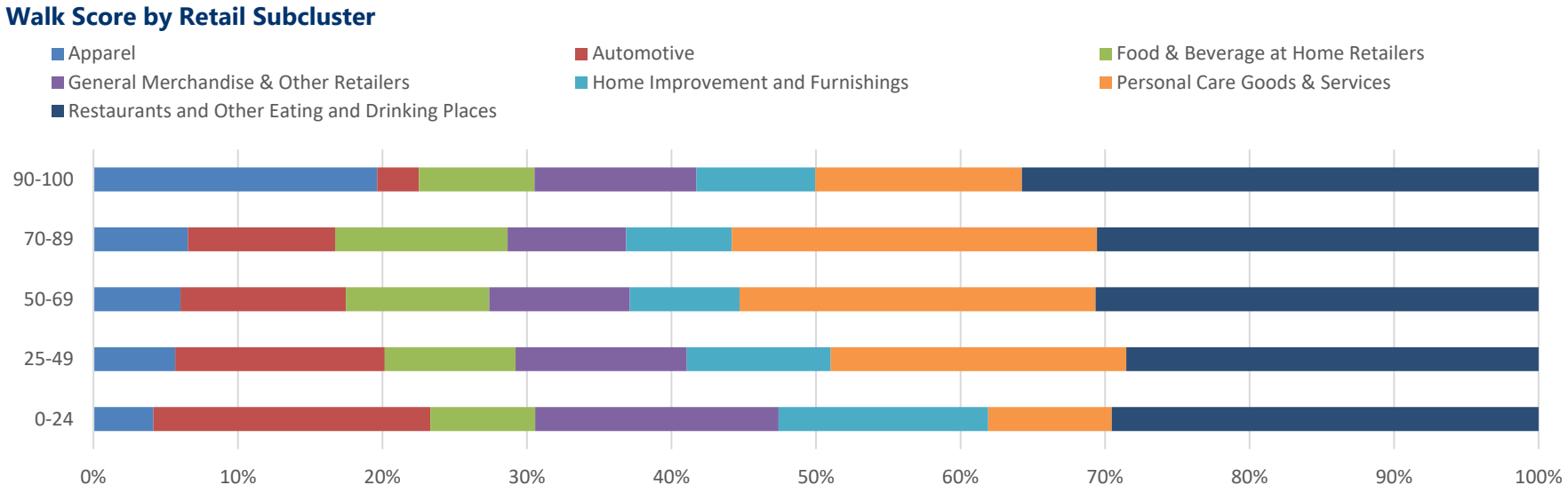
90-100



Source: Walk Score (2023)

Walk Score by Retail Subcluster

Retail subclusters are distributed differently by neighborhood typology/Walk Score range. Notably, the Apparel retailers represent the most significant share of tenants in urban districts (Walk Score range 90-100), as they rely on incidental foot traffic and comparison shopping behaviors to generate enough revenue. Conversely, Automotive retailers are most prevalent in the least walkable districts (Walk Score range 0-24). Restaurants and Other Eating and Drinking Places represent the largest share across all neighborhood typologies. Food & Beverage at Home Retailers represent the second largest share in suburban and exurban communities, typically home to more residential populations and strip center retail development that often houses supermarkets. Note, Food & Beverage at Home Retailers occupy larger spaces than other retail subclusters, other than big box stores. Therefore, retailers in that subcluster account for the greatest share of space.

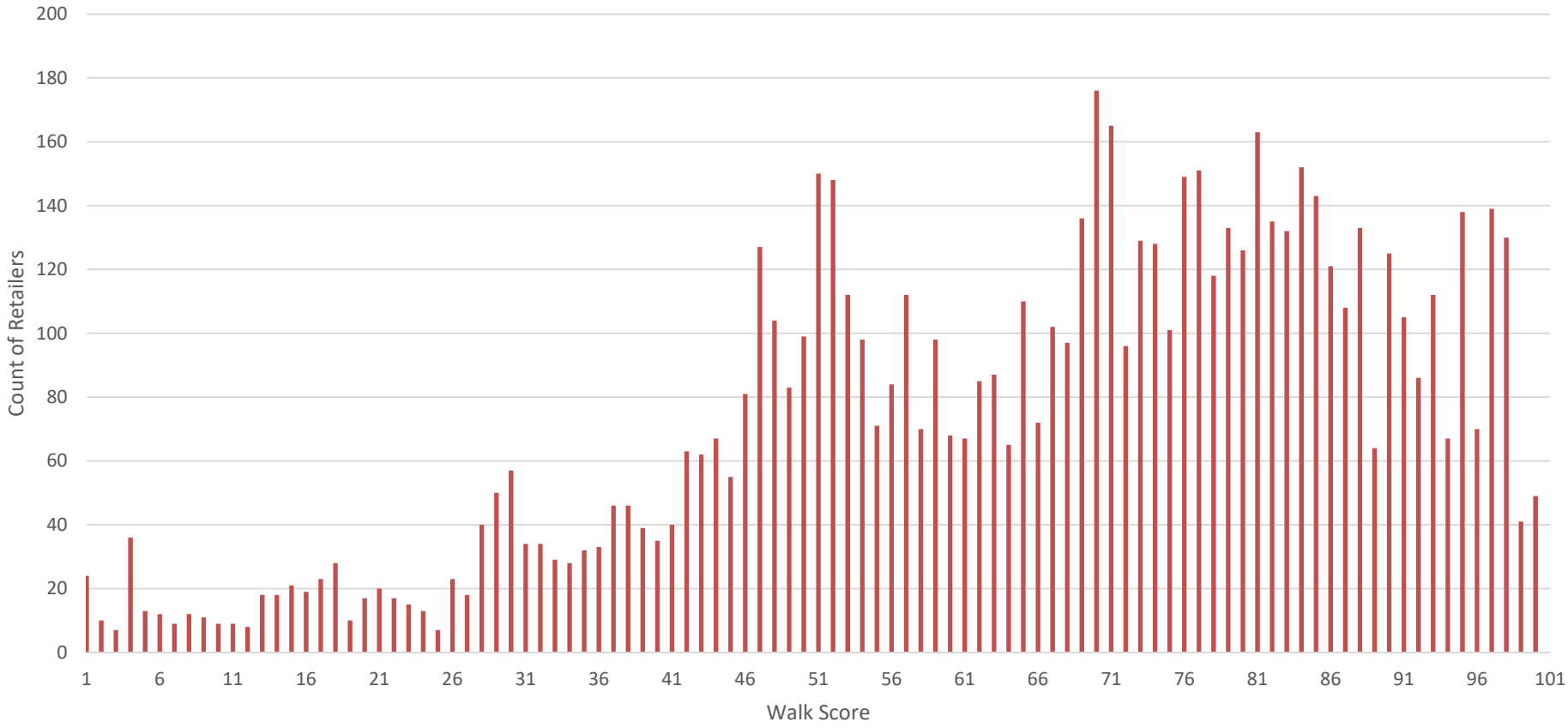


Source: Walk Score,; U.S. Economic Classification Policy Committee, &Access/Camoin (202

Walk Score Distribution

Overall, retailers occupy spaces in the suburban and urban/suburban neighborhood typologies, often surrounded by single-family residential development. Businesses that occupy spaces with lower Walk Scores in rural geographies are often located at crossroads or within parks or other environmental assets.

Walk Score Distribution by Retail Location



Source: Walk Score (2023)

Farmers Markets

Building upon Rhode Island's agricultural and fishing industry, farmers markets provide goods communities need and serve as placemaking assets when open. The markets often operate through the summer and fall months, with only one open year-round, Smithfield Farmers Market. The table below outlines farmers markets throughout the state.

Farmer's Markets in Rhode Island

Market Name	Town/City	Days of Operation	Duration	Season	Accepted Nutrition Programs
Armory Park Farmers Market	Providence	Thursday	3:30PM - 7:00PM	June 3 - Oct. 28	SNAP, WIC, & Bonus Bucks
Block Island Farmers Market	Block Island	Saturday	9:00AM - 11:30AM	June 12 - Oct. 9	
Block Island Farmers Market	Block Island	Wednesday	9:00AM - 11:30AM	June 16 - Oct. 6	
Bristol Farmers Market	Bristol	Saturday	9:00AM - 12:30PM	May 15 - Oct. 30	SNAP, WIC, & Bonus Bucks
Broad Street Farmers Market	Providence	Saturday	8:00AM - 12:00PM	June 19 - Oct. 30	SNAP, WIC, & Bonus Bucks
Burrillville Farmers Market	Burrillville	Saturday	9:30AM - 12:30PM	June 5 - Sep. 25	SNAP, WIC, & Bonus Bucks
Central Falls Farmers Market	Central Falls	Tuesday	3:00PM - 6:00PM	July 6 - Oct. 26	SNAP, WIC, & Bonus Bucks
Charlestown Farmers Market	Charlestown	Friday	9:30AM - 1:00PM	June 25 - Sep. 3	WIC
Coventry Farmers Market	Coventry	Saturday	10:00AM - 2:00PM	May 1 - Nov. 6	
Cranston Farmers Market	Cranston	Thursday	5:00PM - 7:00PM	June 24 - Oct. 7	SNAP, WIC & Bonus Bucks
East Providence Farmers Market	E. Providence	Thursday	4:00PM - 7:00PM	June 24 - Sep. 9	SNAP, WIC, & Bonus Bucks
Fishermen's Memorial Farmers Market	Narragansett	Sunday	9:00AM - 1:00PM	May 30 - Oct 31	WIC
Goddard Park Farmers Market	Warwick	Friday	9:00AM - 1:00PM	May 28 - Oct. 29	SNAP, WIC, & Bonus Bucks
Greene Farmers Market	Coventry	Tuesday	4:00PM - 6:00PM	June 1 - Oct. 5	
Hope Street Farmers Market	Providence	Saturday	9:00AM - 1:00PM	May 1 - Oct. 30	SNAP, WIC, & Bonus Bucks
Jamestown Farmers Market	Jamestown	Monday	2:30AM - 6:30PM	June 28 - Sep. 20	
Neutaconkanut Park Farmers Market	Providence	Monday	3:00PM - 6:00PM	July 5 - Oct. 25	SNAP, WIC, & Bonus Bucks
Newport Aquidneck Growers Market	Newport	Saturday	9:00AM - 1:00PM	May 1 - Oct. 30	SNAP, WIC, & Bonus Bucks
Newport Aquidneck Growers Market	Newport	Wednesday	2:00PM - 6:00PM	May 19 - Oct 27	SNAP, WIC, & Bonus Bucks
Pawtuxet Village Farmers Market	Cranston	Saturday	9:00AM - 12:00PM	May 1 - Oct. 30	SNAP, WIC, & Bonus Bucks
Sankofa Farmers Market	Providence	Wednesday	2:00PM - 6:00PM	June 23 - Oct. 27	SNAP, WIC, & Bonus Bucks
Saunderstown Coastal Growers Market	Saunderstown	Saturday	8:30AM - 12:30PM	May 15 - Oct. 30	WIC
Scituate Farmers Market	Scituate	Saturday	9:00AM - 12:00PM	May 22 - Oct. 2	WIC
Sims Market	Providence	Saturday	9:00AM - 1:00PM	Year-Round	SNAP, WIC, & Bonus Bucks
Smithfield Farmers Market	Smithfield	Sunday	10:00AM - 2:00PM	June 13 - Oct. 10	WIC
South Kingstown Farmers Market	S. Kingstown	Saturday	8:30AM - 12:30PM	April 24 - Oct. 31	SNAP, WIC, & Bonus Bucks
Tiverton Farmers Market	Tiverton	Tuesday	2:00PM - 5:30PM	May 4 - Oct 26	
Wakefield Farmers Market	Wakefield	Tuesday	2:00PM - 6:00PM	May 4 - Oct 26	
Warren Schoolyard Market	Warren	Wednesday	4:00PM - 7:00PM	June 16 - Oct. 13	SNAP, WIC, & Bonus Bucks
Warwick Farmers Market	Warwick	Thursday	3:00PM - 6:00PM	June 24 - Oct. 7	SNAP & Bonus Bucks
West Kingston Farmers Market	West Kingston	Friday	3:30PM - 7:30PM	May 7 - Oct. 29	WIC
West Warwick Farmers Market	West Warwick	Wednesday	3:00PM - 6:00PM	July 7 - Oct. 27	SNAP, WIC, & Bonus Bucks
Westerly Farmers Market	Westerly	Thursday	10:00AM - 1:00PM	June 17 - Sep. 16	SNAP, WIC, & Bonus Bucks
Woonsocket Farmers Market	Woonsocket	Tuesday	3:00PM - 6:00PM	July 5 - Oct. 26	SNAP, WIC, & Bonus Bucks

Source: Department of Environmental Services (2023)

TOURISM INDUSTRY CLUSTER ANALYSIS

The Tourism cluster consists of operators serving and/or catering to visitors at a given destination, including both leisure and business travel.

It should be noted that many establishments categorized in the Retail Industry Cluster also cater to tourists and other visitors to the state. Restaurants in particular stand out as spanning both sectors.

Major Products and Services

- Tourist transportation
- Travel agencies
- Tour operators
- Outdoor recreation
- Casinos and gambling
- Amusements
- Lodging
- Restaurants*

** Restaurants are categorized in the Retail cluster for the purposes of this analysis.*

National Outlook[5]

Domestic leisure travel was a bright spot during the pandemic.

- Tourism providers have increasingly relied on domestic leisure travelers since 2020, as international and business travel continue to lag.
- Pent-up demand for travel in 2021 and 2022 benefited industry performance, as consumers sought to travel after spending much of 2020 in their homes.
- Surging inflation, including rising gas prices, have overtaken COVID-19 as consumers' top concern regarding their travel plans. Higher prices are now causing travelers to scale back their plans and go shorter distances.

Economic stabilization in the United States and abroad will benefit the tourism industry.

- The strength of the value of the US dollar relative to major trading partners is expected to decline, making traveling within the United States relatively more affordable for international visitors, enticing greater numbers of foreign tourists.
- Surging inflation and an increasingly negative consumer outlook regarding the economy are likely to decelerate demand for the industry, especially in the near term.

Emerging international economies are driving growth in business and leisure travel.

- Emerging economies in East Asia and South America will likely drive growth. For example, Mexico, South Korea, and Argentina have benefited from rising disposable income, spurring demand from leisure and business travelers.

[5] National Outlook sourced from IBISWorld, a leading industry research and analysis provider.

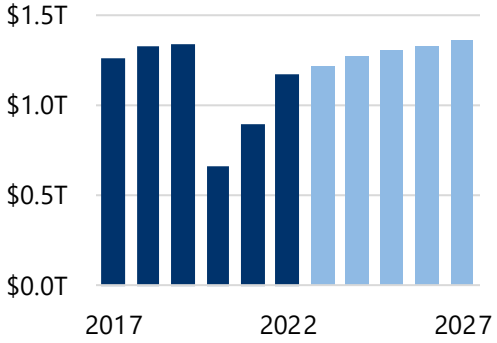
- European economies are forecast to stagnate or grow marginally, hindering demand from this region. Similarly, travel from Canada is expected to decrease slightly, predominantly due to rising consumer debt and volatile commodity prices, which have dampened consumer sentiment.

Technology and digital marketing will provide a boon and bust to industry performance.

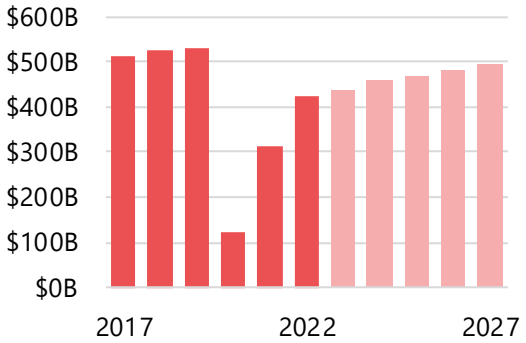
- Major operators are expected to acquire global, regional, and local websites to improve revenue and profit performance and capture a larger share of this growing area. This trend will likely result in a need for far fewer travel and customer service agents and brick-and-mortar establishments, particularly independent ones, as online travel information, booking, and payment increasingly become the norm.
- The progressive aging of the population may also lead to increased demand for newer forms of purpose-built accommodations for a longer stay, as well as new RV parks in major tourist regions.

Tourism - US Industry Performance

Industry Revenue in 2022: $1.2T
Historic Annual Growth 2017-22: -1.6%
Forecast Annual Growth 2022-27: 3.1%



Industry Value Added in 2022: $422B
Historic Annual Growth 2017-22: -3.8%
Forecast Annual Growth 2022-27: 3.1%



Source: IBISWorld

Supply Chain

SUPPLYING INDUSTRIES
Restaurant & Hotel Equipment & Furnishings Wholesaling
Transportation Equipment
Construction
Food Wholesaling
Advertising
Computer Software

TOURISM CLUSTER

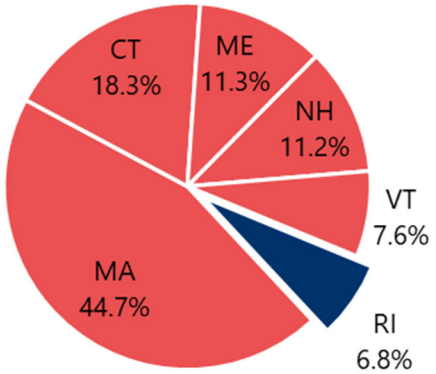
BUYING INDUSTRIES
Consumers
Business Travelers
Convention & Visitor Bureaus

Rhode Island Cluster Performance

Rhode Island's Tourism cluster constitutes about 6.8% of New England jobs in the cluster (compared to the state's 6.6% share of all jobs economy-wide), the lowest share of all states. With a location quotient of 1.04, the presence of the cluster in Rhode Island is on par with the nation overall. Job losses in the cluster have been substantial over the last five years (2017-2022), decreasing by nearly 13% (compared to a slight decline economy-wide), about average for New England and more substantial than declines experienced at the national level.

Average earnings for tourism jobs in Rhode Island ($42,500) are consistent with the national average ($41,800) but 6% below the New England average of $45,300.

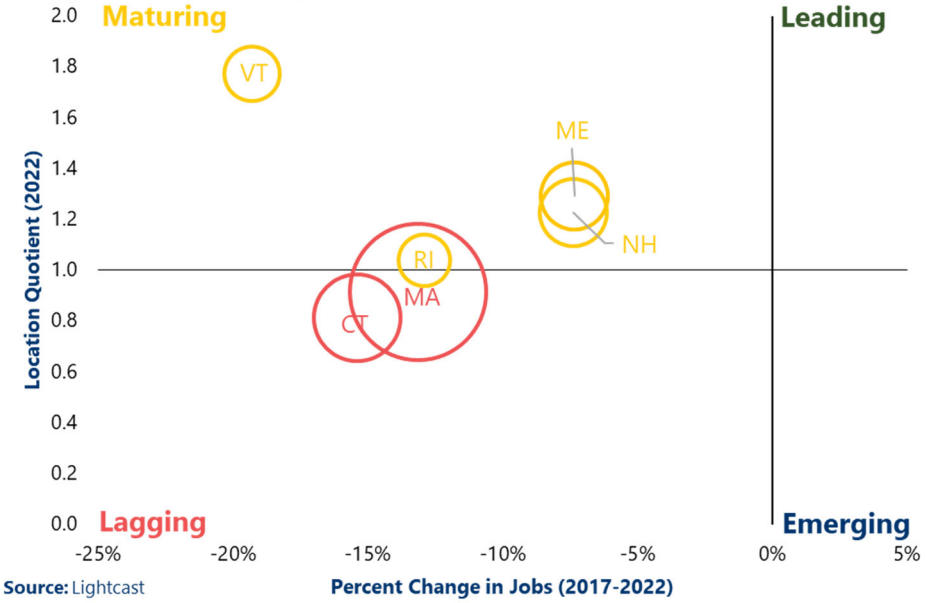
New England Tourism Cluster Jobs by State, 2022



Source: Lightcast

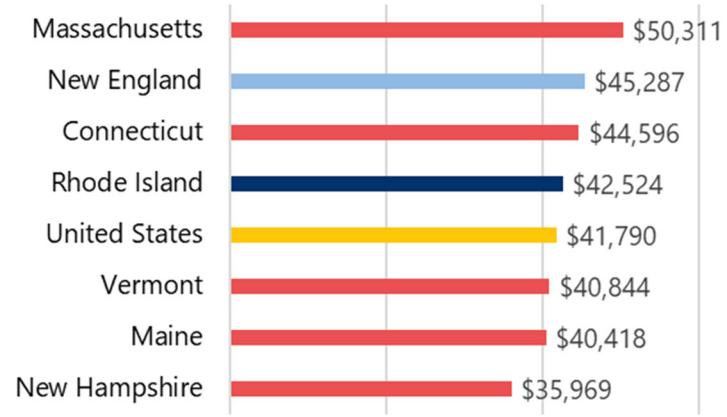
Key Metrics for Tourism Cluster, New England States

Bubble size indicates 2022 job count



Source: Lightcast

Average Earnings per Job, Tourism Cluster



Source: Lightcast

Tourism Cluster Economic Performance Comparison, New England States and US

NAICS	2022 Jobs	Cluster Share of Total Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Cluster Share of Total GRP
Rhode Island	11,837	2.2%	(1,753)	-12.9%	1.04	948	$42,524	821	$974.9M	1.5%
Connecticut	31,741	1.7%	(5,771)	-15.4%	0.81	(3,020)	$44,596	2,001	$2,543.4M	0.9%
Maine	19,613	2.7%	(1,552)	-7.3%	1.29	305	$40,418	1,695	$1,567.9M	2.0%
Massachusetts	77,558	1.9%	(11,711)	-13.1%	0.92	1,474	$50,311	4,185	$7,121.8M	1.1%
New Hampshire	19,455	2.6%	(1,550)	-7.4%	1.23	(171)	$35,969	1,285	$1,348.1M	1.4%
Vermont	13,119	3.8%	(3,134)	-19.3%	1.77	(1,114)	$40,844	708	$1,111.0M	3.0%
New England	173,323	2.1%	(25,471)	-12.8%	1.00	(1,578)	$45,287	10,694	$14,667.0M	1.2%
United States	3,540,150	2.1%	(449,563)	-11.3%	1.00	-	$41,790	184,655	$287,616.2M	1.3%

Source: Lightcast

Tourism Subclusters

The Tourism cluster consists of four subclusters: Lodging, Recreation, Transportation, and Travel Services.

Lodging

The Lodging subsector is the largest sector by employment, making up 46.4% of jobs and 60% of gross regional product (GRP) in the Tourism cluster. Despite considerable declines in hotel and motel employment between 2017-2022, the subsector saw a net gain of 767 jobs (+16.2%) over this period due to the opening of Bally's Twin River Casino Resort in Lincoln and the Tiverton Casino Hotel, both in 2018 (categorized as casino hotels). Rhode Island's concentration of lodging is on par with the national average.

Recreation

The Recreation subsector is a close second in terms of total employment, making up 46.2% of Tourism cluster jobs. This sector experienced significant job declines in the Casinos (except Casino Hotels) and Other Gambling subsectors, driven by the closure of the Newport Grand casino. Rhode Island has an especially high concentration of marinas (location quotient of 6.07). Other outdoor recreation opportunities show strength, including Golf Courses and Marinas. Both accounting for more than 5% of the cluster's employment and a location quotient higher than 1. Other outdoor recreation aspects of the Tourism economy are more difficult to quantify since they are not necessarily creating direct jobs, such as trails, beaches, cycling, and other. While the impact cannot be captured in an analysis like this, outdoor recreation assets are directly related to creating the type of place that people want to visit and live.

Transportation

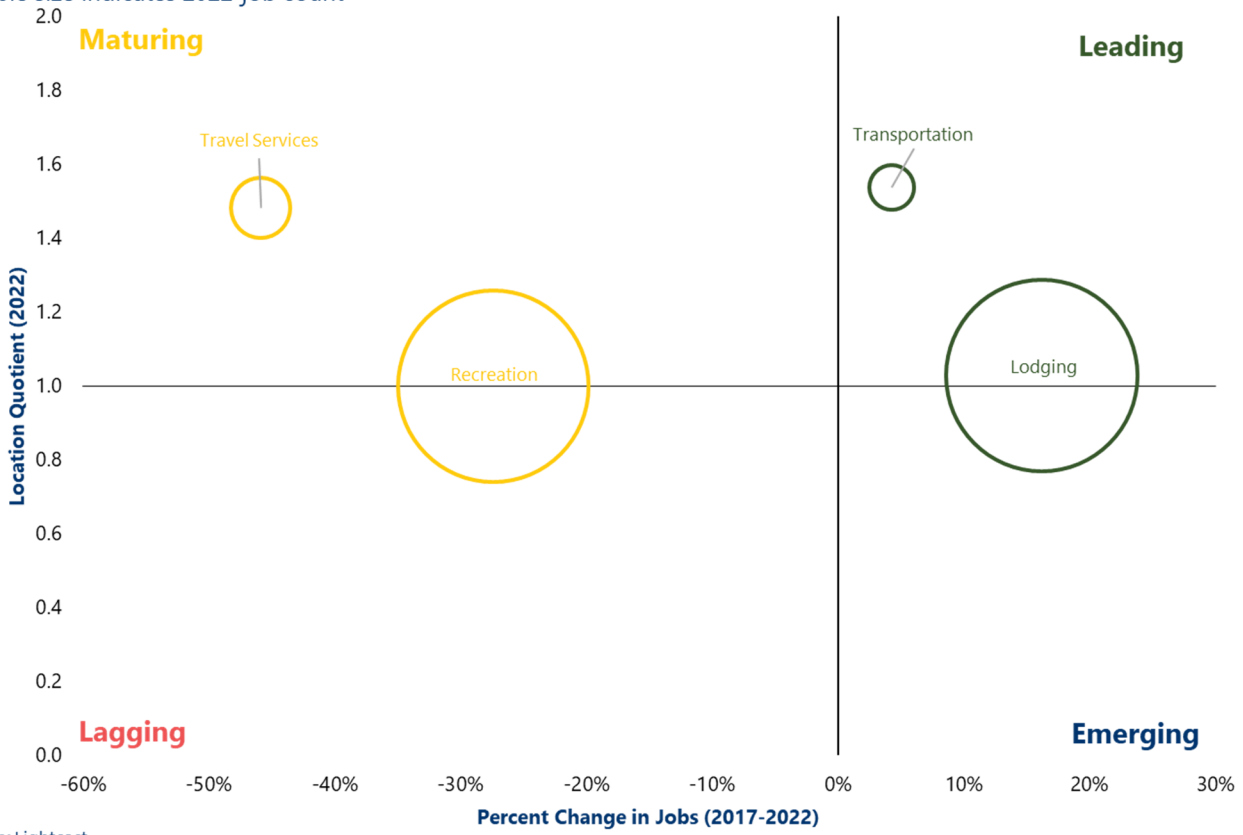
Transportation is a small subsector (about 300 jobs making up 2.7% of total subsector employment) consisting of passenger transportation via water, scenic and sightseeing transportation, and support activities. The subsector grew slightly over the last five years.

Travel Services

Travel Services includes travel agencies, tour operators, and convention and visitors bureaus, all of which experienced a significant decline between 2017 and 2022, shrinking by nearly half (-45.9%). While the subsector makes up only 4.7% of cluster employment, it has a relatively high concentration within the state (location quotient of 1.48).

Key Metrics by Tourism Subcluster, Rhode Island

Bubble size indicates 2022 job count



Source: Lightcast

Rhode Island Tourism Cluster Economic Performance Metrics

NAICS	Description	2022 Jobs	Share of Cluster Jobs	Change in Jobs, 2017-2022	Pct. Change in Jobs, 2017-2022	2022 Location Quotient	Compet-itive Effect	Avg. Earnings Per Job	2022 Payrolled Business Locations	2022 GRP	Share of Cluster GRP
Lodging											
721110	Hotels (except Casino Hotels) and Motels	3,759	31.8%	(659)	-14.9%	0.87	338	$48,779	152	$435.7M	44.7%
721120	Casino Hotels	1,457	12.3%	1,457	-	2.01	2,647	$31,832	3	$101.3M	10.4%
721191	Bed-and-Breakfast Inns	194	1.6%	(30)	-13.2%	4.17	(14)	$49,667	40	$36.5M	3.7%
721211	RV (Recreational Vehicle) Parks and Campgrounds	75	0.6%	(3)	-3.5%	0.64	(26)	$47,193	15	$10.2M	1.0%
721214	Recreational and Vacation Camps (except Campgrounds)	12	0.1%	1	4.9%	0.11	(3)	$36,563	4	$1.2M	0.1%
Subtotal, Lodging		**5,498**	**46.4%**	**767**	**16.2%**	**1.03**	**2,943**	**$44,270**	**214**	**$584.8M**	**60.0%**
Recreation											
713110	Amusement and Theme Parks	64	0.5%	30	88.3%	0.11	50	$71,735	3	$8.5M	0.9%
713120	Amusement Arcades	60	0.5%	32	110.1%	0.64	48	$30,815	13	$4.4M	0.5%
713210	Casinos (except Casino Hotels)	-	0.0%	(1,136)	-100.0%	-	(749)	$0	-	$0.0M	0.0%
713290	Other Gambling Industries	31	0.3%	(791)	-96.2%	0.22	(927)	$83,202	7	$17.3M	1.8%
713910	Golf Courses and Country Clubs	1,531	12.9%	91	6.3%	1.22	75	$41,841	55	$90.0M	9.2%
713920	Skiing Facilities	73	0.6%	(26)	-26.2%	0.58	(20)	$20,125	1	$1.9M	0.2%
713930	Marinas	802	6.8%	35	4.6%	6.07	(84)	$57,315	71	$66.6M	6.8%
713940	Fitness and Recreational Sports Centers	1,707	14.4%	(288)	-14.4%	0.85	(136)	$25,474	198	$59.6M	6.1%
713950	Bowling Centers	304	2.6%	(15)	-4.8%	1.45	30	$31,331	13	$13.0M	1.3%
713990	All Other Amusement and Recreation Industries	890	7.5%	8	0.9%	1.24	(38)	$33,308	87	$44.0M	4.5%
Subtotal, Recreation		**5,464**	**46.2%**	**(2,061)**	**-27.4%**	**1.00**	**(1,753)**	**$37,199**	**447**	**$305.4M**	**31.3%**
Transportation											
483112	Deep Sea Passenger Transportation	5	0.0%	(33)	-87.7%	0.12	(48)	$138,568	2	$1.3M	0.1%
483114	Coastal and Great Lakes Passenger Transportation	30	0.3%	(51)	-62.6%	2.09	(26)	$98,839	4	$5.5M	0.6%
483212	Inland Water Passenger Transportation	106	0.9%	79	284.6%	8.44	119	$68,439	5	$12.9M	1.3%
487110	Scenic and Sightseeing Transportation, Land	33	0.3%	7	26.8%	1.00	23	$37,953	6	$1.5M	0.1%
487210	Scenic and Sightseeing Transportation, Water	145	1.2%	12	8.9%	2.36	(3)	$60,317	45	$11.0M	1.1%
488999	All Other Support Activities for Transportation	-	0.0%	-	-	-	-	$0	-	$0.0M	0.0%
Subtotal, Transportation		**319**	**2.7%**	**13**	**4.3%**	**1.54**	**66**	**$65,508**	**61**	**$32.2M**	**3.3%**
Travel Services											
561510	Travel Agencies	198	1.7%	(185)	-48.3%	0.68	(127)	$57,449	72	$20.8M	2.1%
561520	Tour Operators	323	2.7%	(253)	-43.9%	5.19	(151)	$68,377	24	$28.7M	2.9%
561591	Convention and Visitors Bureaus	36	0.3%	(34)	-48.5%	1.49	(29)	$66,783	4	$3.1M	0.3%
Subtotal, Travel Services		**556**	**4.7%**	**(471)**	**-45.9%**	**1.48**	**(308)**	**$64,392**	**99**	**$52.6M**	**5.4%**
Total, Rhode Island		**11,837**	**100.0%**	**(1,753)**	**-12.9%**	**1.04**	**948**	**$42,524**	**821**	**$974.9M**	**100.0%**

Source: Lightcast

Tourism Occupations

The top 30 Tourism cluster occupations make up about three quarters of all cluster jobs. The rate of growth of jobs in these occupations within Rhode Island has tracked employment economy-wide, registering a slight decline. As with the Retail cluster, occupations in this cluster typically have low barriers to entry, with 11 of the 30 requiring no formal educational credential, and another 16 requiring only a high school diploma. Rhode Island is a net exporter of labor in all but five of the top 30 Tourism occupations, meaning there are more resident workers than in-state jobs.

Rhode Island Tourism Cluster, Top 30 Occupations

SOC	Description	2022 Jobs, Cluster	2022 Jobs, All Industries	Cluster Share of Occupation	Occupation Share of Cluster	Change in Jobs, 2017-2022*	Pct. Change in Jobs, 2017-2022*	Resident Workers per Job*	2022 Location Quotient*	Median Hourly Earnings*	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
37-2012	Maids and Housekeeping Cleaners	1,336	4,488	30%	11%	(849)	-16%	1.00	0.95	$14.52	No formal educ. credential	None	Short-term on-the-job training
39-3091	Amusement and Recreation Attendants	959	1,264	76%	8%	309	32%	0.92	1.24	$14.03	No formal educ. credential	None	Short-term on-the-job training
39-9031	Exercise Trainers and Group Fitness Instructors	782	1,319	59%	7%	301	30%	1.03	1.31	$18.49	HS diploma or equivalent	None	Short-term on-the-job training
43-4081	Hotel, Motel, and Resort Desk Clerks	655	693	95%	6%	66	11%	1.01	0.81	$13.99	HS diploma or equivalent	None	Short-term on-the-job training
37-3011	Landscaping and Groundskeeping Workers	605	5,432	11%	5%	115	2%	1.04	1.31	$18.23	No formal educ. credential	None	Short-term on-the-job training
35-3031	Waiters and Waitresses	500	7,628	7%	4%	(2,419)	-24%	1.07	1.14	$12.56	No formal educ. credential	None	Short-term on-the-job training
49-9071	Maintenance and Repair Workers, General	443	5,269	8%	4%	436	9%	1.02	0.99	$22.95	HS diploma or equivalent	None	Moderate-term on-the-job training
35-2014	Cooks, Restaurant	351	6,961	5%	3%	2,080	43%	1.02	1.52	$14.57	No formal educ. credential	Less than 5 years	Moderate-term on-the-job training
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	253	7,581	3%	2%	(515)	-6%	1.07	0.96	$14.44	No formal educ. credential	None	Short-term on-the-job training
35-3011	Bartenders	236	2,931	8%	2%	(801)	-21%	1.02	1.57	$13.41	No formal educ. credential	None	Short-term on-the-job training
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	206	2,139	10%	2%	164	8%	0.99	1.71	$11.56	No formal educ. credential	None	Short-term on-the-job training
43-4171	Receptionists and Information Clerks	201	4,732	4%	2%	361	8%	0.97	1.38	$17.62	HS diploma or equivalent	None	Short-term on-the-job training
11-1021	General and Operations Managers	192	6,860	3%	2%	1,240	22%	1.32	0.65	$57.20	Bachelor's degree	5 years or more	None
43-4051	Customer Service Representatives	189	10,221	2%	2%	1,261	14%	1.02	1.08	$18.21	HS diploma or equivalent	None	Short-term on-the-job training

Rhode Island Tourism Cluster, Top 30 Occupations (Cont'd)

SOC	Description	2022 Jobs, Cluster	2022 Jobs, All Industries	Cluster Share of Occupation	Occupation Share of Cluster	Change in Jobs, 2017-2022*	Pct. Change in Jobs, 2017-2022*	Resident Workers per Job*	2022 Location Quotient*	Median Hourly Earnings*	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
33-9032	Security Guards	164	3,460	5%	1%	73	2%	1.10	0.94	$16.79	HS diploma or equivalent	None	Short-term on-the-job training
27-2022	Coaches and Scouts	153	1,175	13%	1%	(197)	-14%	1.02	1.37	$23.40	Bachelor's degree	None	None
51-6011	Laundry and Dry-Cleaning Workers	147	1,068	14%	1%	(216)	-17%	0.97	1.84	$14.15	No formal educ. credential	None	Short-term on-the-job training
2623113	Lodging Managers	146	158	93%	1%	0	0%	1.06	0.93	$31.69	HS diploma or equivalent	Less than 5 years	None
39-3011	Gambling Dealers	142	150	95%	1%	5	4%	1.07	0.59	$11.99	HS diploma or equivalent	None	Short-term on-the-job training
41-2031	Retail Salespersons	138	12,384	1%	1%	(488)	-4%	1.16	0.96	$14.17	No formal educ. credential	None	Short-term on-the-job training
43-1011	First-Line Supervisors of Office and Administrative Support Workers	130	4,214	3%	1%	(692)	-14%	1.11	0.84	$29.72	HS diploma or equivalent	Less than 5 years	None
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	126	798	16%	1%	75	10%	1.05	1.12	$22.74	HS diploma or equivalent	Less than 5 years	None
43-9061	Office Clerks, General	125	10,020	1%	1%	(1,984)	-17%	1.01	1.08	$21.03	HS diploma or equivalent	None	Short-term on-the-job training
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	122	2,938	4%	1%	361	14%	1.08	0.80	$29.98	HS diploma or equivalent	None	Moderate-term on-the-job training
39-9032	Recreation Workers	121	821	15%	1%	(204)	-20%	1.11	0.88	$14.57	HS diploma or equivalent	None	Short-term on-the-job training
43-3031	Bookkeeping, Accounting, and Auditing Clerks	120	5,289	2%	1%	(1,302)	-20%	1.07	0.94	$22.91	Some college, no degree	None	Moderate-term on-the-job training
41-2011	Cashiers	115	11,311	1%	1%	(1,619)	-13%	1.11	1.03	$13.70	No formal educ. credential	None	Short-term on-the-job training
39-1013	First-Line Supervisors of Gambling Services Workers	112	112	100%	1%	79	238%	0.98	1.54	$29.02	HS diploma or equivalent	Less than 5 years	None
35-1011	Chefs and Head Cooks	110	918	12%	1%	400	77%	1.05	1.62	$29.95	HS diploma or equivalent	5 years or more	None
39-1014	First-Line Supervisors of Entertainment and Recreation Workers, Except Gambling Services	109	258	42%	1%	(96)	-27%	1.06	1.02	$29.62	HS diploma or equivalent	Less than 5 years	None
Total		**8,989**	**122,591**	**7%**	**76%**	**(4,053)**	**-3%**	**1.07**					

*Metrics are for each occupation across all industries economy-wide, and not specific to the individual cluster

Source: Lightcast 2023.1

RETAIL BUILDING TYPOLOGIES

RETAIL BUILDINGS

- RETAIL PROPERTY: A Retail property's primary intended use is to promote, distribute or sell products and services to the general public. It will often be in high traffic or easily accessible areas. Retail buildings are configured for the display of merchandise or the interaction of company sales personnel with others. Retail buildings can be used for various sales opportunities, including, but not limited to, stand-alone (convenience stores to department stores), store fronts, strip centers (no anchors), neighborhood, community, regional, and super-regional malls, power centers, factory outlet centers, and fashion or specialty centers.
- COMMUNITY CENTER: Typically offers a wider range of apparel and other soft goods than neighborhood centers. Among the more common anchors are supermarkets, super drugstores, and discount department stores. Community center tenants sometimes contain value-oriented big-box category dominant retailers selling such items as apparel, home improvement/furnishings, toys, electronics, or sporting goods. The center is usually configured in a straight line, such as a strip, or may be laid out in an "L" or "U" shape, depending on the site and design. Of all the center types, community centers encompass the widest range of formats. For example, certain centers that are anchored by a large discount department store often have a discount focus. Others with a high percentage of square footage allocated to off-price retailers can be termed as off-price centers. The size of such a center ranges from 100,000 to 350,000 square feet.
- LIFESTYLE CENTER: An upscale, specialty retail, main street concept shopping center. An open center, usually without anchors, about 300,000 SF GLA or larger, located near affluent neighborhoods, includes upscale retail, trendy restaurants, and entertainment retail. Nicely landscaped with convenient parking located close to the stores.
- NEIGHBORHOOD CENTER: Provides for the sales of convenience goods (food, drugs, etc.) and personal services (laundry, dry cleaning, etc.) for day-to-day living needs of the immediate neighborhood with a supermarket being the principal tenant. In theory, the typical GLA is 50,000 square feet. In practice, the GLA may range from 30,000 to 100,000 square feet.
- POWER CENTER: The center typically consists of several freestanding (unconnected) anchors and only a minimum amount of small specialty tenants. 250,000 -- 600,000 SF. A Power Center is dominated by several large anchors, including discount department stores, off-price stores, warehouse clubs, or "category killers," i.e., stores that offer tremendous selection in a particular merchandise category at low prices.
- REGIONAL MALL: Provides shopping goods, general merchandise, apparel, and furniture, and home furnishings in full depth and variety. It is built around the full-line department store with a minimum GLA of 100,000 square feet, as the major drawing power. For even greater comparative shopping, two, three, or more department stores may be included. In theory a regional center has a GLA of 400,000 square feet and may range from

300,000 to more than 1,000,000 square feet. Regional centers in excess of 750,000 square feet GLA with three or more department stores are considered Super Regional.

- STRIP CENTER: A strip center is an attached row of stores or service outlets managed as a coherent retail entity, with on-site parking usually located in front of the stores. Open canopies may connect the storefronts, but a strip center does not have enclosed walkways linking the stores. A strip center may be configured in a straight line or have an "L" or "U" shape.

NON-RETAIL BUILDINGS

- HOSPITALITY: This type of property includes all types of lodging facilities including hotels and motels. Hotels are facilities that offer lodging accommodations and a wide range of other services, e.g., restaurants, casinos, convention facilities, meeting rooms, recreational facilities, and commercial shops. These facilities can be labeled Resort, Mixed Use, Luxury, Full Service, Extended Stay, Convention, Apartment, All Suite, etc. Motels are single buildings or group of buildings typically located on or near a highway and are designed to serve the needs of travelers by offering lodging and parking; may also provide other services and amenities, e.g., telephones, food and beverages, meeting and banquet rooms, recreational areas, swimming pool, shops.
- INDUSTRIAL: A type of building(s) adapted for a combination of uses such as assemblage, processing, and/or manufacturing products from raw materials or fabricated parts. Additional uses include warehousing, distribution, and maintenance facilities. Self-storage facilities are also tracked as an industrial type, but CoStar does not list such space for lease in the database.
- MULTI-FAMILY (Apartments): Structure(s) typically containing five or more dwelling units that may also include common areas and facilities, e.g., entrances, lobby, elevators or stairs, mechanical space, walks, grounds, recreational facilities, and parking both covered and open.
- OFFICE: The primary intended use of an office building is to house employees of companies that produce a product or service primarily for support services such as administration, accounting, marketing, information processing and dissemination, consulting, human resources management, financial and insurance services, educational and medical services, and other professional services. Office buildings are characterized by work efficient floor plans, work areas, comfortable heating and cooling, cabling for phones and computers, and other conveniences that allow people to conduct business. The interior finish and the structural design of the building supports the activities of the employees. Office buildings are typically configured for high density use, with a ratio of people to square footage in the 150 to 300 or more range and less than 25% of the demised floor space allocated to industrial or retail use. Some physical characteristics of a building may assist in classifying the property as "office" if the property's use is not apparent.

APPENDIX B: DATA SOURCES

Lightcast (formerly Emsi Burning Glass) is a global leader in labor market analytics, offering a data platform that gives a comprehensive, nuanced, and up-to-date picture of labor markets at all scales from national to local. Key components of the platform include traditional labor market information, job postings analytics, talent profile data, compensation data, and skills analytics. Lightcast integrates government data with information from online job postings, talent profiles, and resumes to produce timely intelligence on the state of the labor market. Job and compensation data is available by industry, occupation, educational program, and skill type. Click to learn more.

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Walk Score measures the walkability of any address using a patented system. For each address, Walk Score analyzes hundreds of walking routes to nearby amenities. Points are awarded based on the distance to amenities in each category. Amenities within a 5 minute walk (.25 miles) are given maximum points. A decay function is used to give points to more distant amenities, with no points given after a 30 minute walk. Walk Score also measures pedestrian friendliness by analyzing population density and road metrics such as block length and intersection density. Data sources include Google, Factual, Great Schools, Open Street Map, the U.S. Census, Localeze, and places added by the Walk Score user community.

Since its founding in 1987, the **CoStar Group** has assembled an unparalleled library of building- and deal-level commercial and multifamily real estate information. Each day, more than 1,400 researchers, located in offices across the United States, Canada, the United Kingdom, and Europe canvass tens of thousands of space listings, lease deals, and transactions, while field research teams systematically document and photograph every building and construction project from specialized cars and aircraft equipped with military-grade surveillance technology. Each day, more than 4 million apartment rent observations flow into CoStar datasets via the firm's ILS and marketing services, including Apartments.com, ApartmentFinder.com, ForRent.com, and LoopNet. And STR collects high-frequency data for more than 60,000 hotels around the world.

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