SRPC FISCAL YEAR '21
DATA SNAPSHOT

The Role of the Commission

Strafford Regional Planning Commission works with municipalities, statewide organizations and other partners to provide technical assistance with planning documents, outreach, projects and regulations. We create a space for our stakeholders to connect and share information, and we provide information to the public, offering opportunities for engagement with important planning projects.

We serve our communities in two additional designated roles, as a Metropolitan Planning Organization, and as an Economic Development District. We work closely with the NH Department of Transportation to implement data collection programs, assist and advocate for local transit agencies and municipal projects, and create long-range plans which address safety and quality of life. With guidance from our partners, we maintain a regional economic development strategy which includes economic trends and local priority projects. We also assist local communities with economic development strategies and facilitate regional discussion.

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Municipalities

Barrington	New Durham
Brookfield	Newmarket
Dover	Northwood
Durham	Nottingham
Farmington	Rochester
Lee	Rollinsford
Madbury	Somersworth
Middleton	Strafford
Milton	Wakefield

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Alaina Rogers
Natalie Moles
Megan Taylor-Fetter

TABLE OF CONTENTS

INTRODUCTION

Table of Contents

General Data Disclaimer

Data in this document are generally from ESRI, NH GRANIT, NHDOT, NHDES, NHOSI, NHES, US Census, USFWS, USGS, the 18 municipalities represented by SRPC, and other state, federal, or local entities. These agencies and organizations have derived this data using a variety of cited source materials, at different time frames, through different methodologies, with varying levels of accuracy. As such, errors are often inherent in data and should be used for planning purposes only. The presented data is sometimes only a subset of the original data. Please visit the original location of the data, contact the original host source, or contact SRPC for information on the full data set.
See the full data source list for information about each data source.

Data Collected by SRPC
Several data sets in this document are collected by SRPC staff on recurring basis. These data sets are collected and verified by staff before publication but may still be subject to error. Please contact SRPC if you notice any errors in data that was collected by staff.

Data from the US Census Bureau
Please see the Census Data Disclaimer for a detailed disclaimer for data obtained from the US Census Bureau.

Census Data Disclaimer

Much of the following demographic data comes from the US Census Bureau's American Community Survey (ACS). The ACS surveys a random selection of roughly 10,000 households in New Hampshire each year. The data is then made available for 1-year estimates (just the 10,000 households) and 5-year estimates (averages based on 5 years of data). All estimates in this document rely on the 5-year estimates and are thoroughly analyzed to ensure that the data is as reliable as possible.

Each of the tables and trend lines on the following pages are based on municipal, county, or state level data. The margin of error on data at the larger geographic levels tends to be smaller and the data more reliable.

Each of the following maps are estimated percentages, averages, or medians based on the Census tract or municipal levels. **Census tracts** are areas with populations between 1,200 and 8,000 people. The Census Bureau ideally aims for tracts to be around 4,000 people.

Two tests are performed to assess the validity and reliability of ACS data estimates for each geographic level:
1. Instances where an estimate's margin of error is larger than the estimate (i.e. an estimate of 429 people, with a margin of error of ±430) are removed because they are unreliable. This applies to both estimates expressed as a number or percentage.
2. The statistical significance of the sample size is determined as prescribed by the US Census Bureau. This test looks at whether the estimate is likely based on random chance. If the sample is determined to be statistically significant, then we are 90% confident that it is accurate. A lack of statistical significant does not mean that the data is inaccurate, so we do not discard the data if it fails this test unless the current year data seems to be inaccurate compared to the historic trend data.

If the data passes both checks, then we assume that it is accurate.
If the data passes the first check, but not the second, then we do not remove the data because it may be representative of the real-life situation.

Select data items are further analyzed to identify whether a geographic concentration exists. A tract has a concentration of a given population if the percent of people or households is more than one standard deviation from the regional percent.

Since this data is collected by the Census Bureau on an ongoing 5 year rolling basis, it is possible that not enough people were surveyed to truly represent the actual population and households in the tract.
In the maps, if a tract is marked as "Yes" for having a concentration then the data passed checks 1 and 2. If a tract is marked as "Maybe" tract passed check 1 but not 2.

Data Sources

State Data
New Hampshire Employment Security
- Short Term Employment Projections. 2016-2026, 2018-2028. Municipalities. https://www.nhes.nh.gov/elmi/products/proj.htm
- Employment Estimates. 2015. SRPC. Available to SRPC through an agreement with NHES
- Local Area Unemployment Statistics. New Hampshire Employment Security. 1991-2021. Counties, NH. https://www.nhes.nh.gov/elmi/statistics/laus-arch.htm

New Hampshire Department of Revenue. 2020 Annual Report. 2018-2021. Counties. https://www.revenue.nh.gov/publications/reports/documents/2020AnnualReportvF.pdf

New Hampshire Office of Strategic Initiatives data available from https://www.nh.gov/osi/data-center/index.htm
- County Population Projections, By Municipality. 2015-2040. Municipality.
- Housing and Household Data. 2000-2019. Municipality.
- Population Estimates for New Hampshire Cities and Towns. 2011-2019. Municipality.

New Hampshire Department of Environmental Services. Dams Inventory. 2019. SRPC. https://granit.unh.edu/

New Hampshire Department of Transportation
- NH State Crash Database. 2009-2019. SRPC. Available to SRPC through an agreement with NHDOT
- Pavement Conditions. 2016-2019. SRPC. https://www.nh.gov/dot/org/projectdevelopment/planning/gis-data-catalog/
- Quarterly GIS Data Snapshot. April 2020. Statewide. Available from ftp://pubftp.nh.gov/DOT/Planning%20and%20Community%20Assistance/Road%20Data/Quarterly_Data_Snapshots/

New Hampshire Housing Finance Authority
- Purchase Price Trends. 2019. SRPC. https://www.nhhfa.org/publications-data/housing-and-demographic-data/
- Rental Cost Trends. 2019. SRPC. https://www.nhhfa.org/publications-data/housing-and-demographic-data/

National Data
Department of Energy. Alternative Fuel Data Center. 2021. SRPC. https://afdc.energy.gov/

Federal Communications Commission. Fixed Broadband Deployment. 2019. SRPC Blocks. https://broadbandmap.fcc.gov/

Federal Highways Administration
- Freight Analysis Framework. 2015-2018, 2045. Statewide. https://ops.fhwa.dot.gov/freight/freight_analysis/faf/index.htm
- National Bridge Inventory. 2016-2020. Statewide. Available from https://www.fhwa.dot.gov/bridge/nbi.cfm

Federal Transit Administration. National Transit Database. 2010-2018. SRPC. https://www.transit.dot.gov/ntd

National Highway Transportation Safety Administration. Fatality Analysis Reporting System. 2009-2019. SRPC. https://www.nhtsa.gov/

Environmental Protection Agency. National Emission Inventory. 2017. Counties. https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data

Census Bureau
- Poverty Thresholds. 2019. US. https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html
- American Community Survey 5-Year Estimates (Tables B01001, B01002, B03002, B08201, B15003, B17021, B18101, B19083, B25010, B25044, C16002, C17002, S1901) 2009, 2014, 2019. Tract, County Subdivision, County, NH. https://data.census.gov/cedsci
- Decennial Census. 2010. Blocks. https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.2010.html

Census Bureau Center for Economic Studies
- Longitudinal Employer-Household Dynamics - Residence Area Characteristics.. 2018. Blocks. https://lehd.ces.census.gov/data/
- Longitudinal Employer-Household Dynamics - Workplace Area Characteristics. US Census Bureau Center for Economic Studies. 2018. Blocks. https://lehd.ces.census.gov/data/

Other Data
- Massachusetts Institute of Technology. Living Wage Calculator. 2019. Strafford County. https://livingwage.mit.edu/counties/33017
- Alliance for Community Transportation. Monthly Ridership Report (March 2021). 2019-2021. ACT Service Area. Available from ACT by request.
- Regional Integrated Transportation Information System. National Performance Management Research Data Set. 2017-2021. Statewide. https://npmrds.ritis.org/analytics/
- Rail Passengers Association. Ridership Statistics. 2013-2019. SRPC. https://www.railpassengers.org/tools-info/ridership-statistics/
- Cooperative Alliance for Seacoast Transportation. Fleet Inventory and Transit Routes. 2021. Received via email.
- University of New Hampshire Fleet Inventory and Transit Routes. 2021. Received via email.
- Wake, C., Knott, J., Lippmann, T., Stampone, M., Ballestero, T., Bjerklie, D., Burakowski, E., Glidden, S., Hosseini-Shakib, I., Jacobs, J. (2019). New Hampshire Coastal Flood Risk Summary – Part I: Science. Prepared for the New Hampshire Coastal Flood Risk Science and Technical Advisory Panel. Report published by the University of New Hampshire, Durham, NH.

Strafford Regional Planning Commission
- Bicycle Level of Traffic Stress. 2019. https://arcg.is/1umnWn0
- Building Permit Data. 2008-2019. https://srpc.maps.arcgis.com/apps/dashboards/874cf8c1e8dd4714af17c8d530433605
- SRPC SLR Database. SRPC. 2014. SRPC. Available from https://tinyurl.com/9bhwuyjx

Transportation Performance Measures

Federal Mandated Measures

In 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) required that transportation planning shift to a performance-based approach. It mandated that all Metropolitan Planning Organizations (MPOs) and state Departments of Transportation (DOTs) use performance measures to work towards specific goals and targets. There are several mandated measures that Strafford MPO is required to set targets for and seven regional performance measures that were developed collaboratively and adopted by the four MPOs in New Hampshire. More information about the performance measures can be found at www.partneringforperformancenh.org.

The snapshot contains the following mandated federal measures:

Safety
• Number of Fatalities
• Rate of Fatalities
• Number of Serious Injuries
• Rate of Serious Injuries
• Number of Non-Motorized Fatalities and Non-motorized Serious Injuries

Transit Asset Management
• Percent of revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB), by vehicle class
• Percent of non-revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB)
• Percent of facilities with a condition rating below 3.0 on the FTA TERM Scale

Infrastructure Conditions
• Percentage of the Non-interstate NHS in Good condition
• Percentage of the Non-interstate NHS in Poor condition
• Percentage of NHS bridges in Good condition
• Percentage of NHS bridges in Poor condition

Travel Time Reliability
• Percent of person-miles traveled on the non-Interstate NHS that are reliable

DEMOGRAPHICS

Table of Contents

Population Estimates and Projections

The NH OSI's State Data Center provides annual population estimates and 5-year population projections based on the US Census Bureau's decennial data and the building permit data collected by the NH Office of Strategic Initiatives (OSI). More information about building permits is available in the Economic Vitality section of the Data Snapshot. In the chart and table below, the data from 2000 and 2010 comes from the full decennial census conducted by the US Census Bureau. The 2011 - 2019 data is NH OSI's annual estimates based on 2010 Census data and the building permit data collected by NH OSI. The 2020 - 2045 data are projections by NH OSI based on the 2010 Census and 2015 OSI estimates and are available in 5-year increments (2020, 2025, 2030, 2035, 2040). SRPC uses the 2015, 2025, 2035, and 2045 for the Travel Demand Model, so the projections have been extended out an additional 5 years.
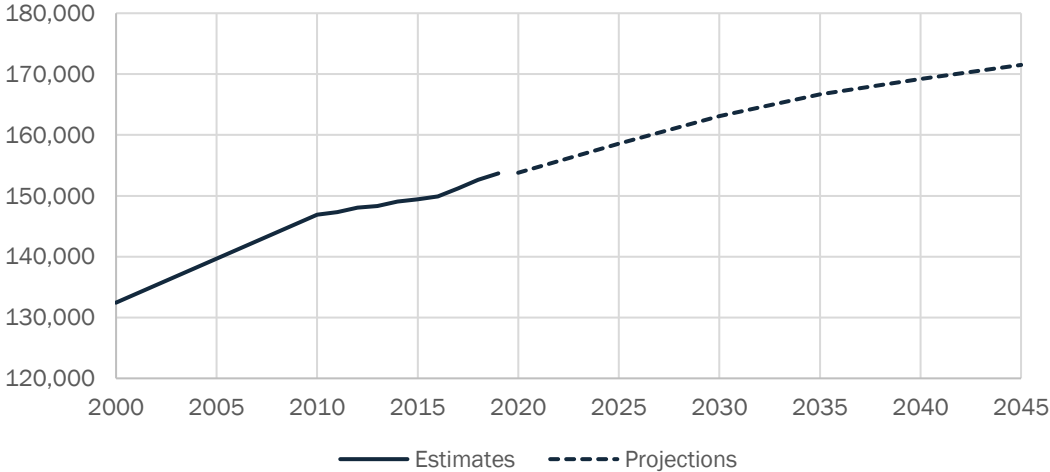
Municipality	Census		OSI Estimate		OSI Projections		
	2000	2010	2015	2019	2025	2035	2045
Barrington	7,475	8,576	8,806	9,123	9,592	10,115	10,465
Brookfield	604	712	708	735	738	759	758
Dover	26,884	29,987	30,524	31,795	32,535	34,309	35,494
Durham	12,664	14,638	16,009	16,085	18,498	19,506	20,180
Farmington	5,774	6,786	6,807	6,883	7,333	7,733	8,000
Lee	4,145	4,330	4,335	4,483	4,389	4,629	4,788
Madbury	1,509	1,771	1,791	1,846	1,943	2,049	2,120
Middleton	1,440	1,783	1,772	1,812	1,937	2,043	2,113
Milton	3,910	4,598	4,555	4,617	4,849	5,113	5,290
New Durham	2,220	2,638	2,604	2,641	2,776	2,927	3,028
Newmarket	8,027	8,936	9,170	9,460	9,877	10,224	10,229
Northwood	3,640	4,241	4,214	4,300	4,495	4,653	4,655
Nottingham	3,701	4,785	4,904	5,144	5,614	5,812	5,814
Rochester	28,461	29,752	29,875	30,992	30,359	32,014	33,119
Rollinsford	2,648	2,527	2,520	2,579	2,405	2,537	2,624
Somersworth	11,477	11,766	11,698	11,844	11,628	12,262	12,686
Strafford	3,626	3,991	4,046	4,179	4,267	4,500	4,655
Wakefield	4,252	5,078	5,065	5,141	5,329	5,480	5,469
Total RPC	132,457	146,895	149,403	153,659	158,566	166,666	171,487
Total EDD	117,089	128,933	131,115	134,755	138,580	145,977	150,789

Data Source: NH OSI
Data year: 2000-2010 (US Census), 2011-2019 (NH OSI Estimates), 2020-2045 (NH OSI Projections)
Coverage: SRPC

DEMOGRAPHICS

Age

This section discusses a range of age metrics including
- The median age,
- Age dependency,
- Children under 5 years old,
- Children under 18 years old,
- Adults between 18 and 24 years old, and
- Adults over 64 years old.

Percent of Population by Age (2019)

Legend: Under 10, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, Over 80

(Pie chart values: 10%, 13%, 17%, 12%, 12%, 15%, 12%, 6%, 3%)

The median age in Strafford County has stayed fairly level, only increasing 1.1 year over a decade. Carroll and Rockingham counties have aged significantly more at 6.1 and 4 years respectively.

The large student population in Durham makes the town by far the youngest in the region with a median age of 20.8. The next youngest community is Dover at 36.1. Wakefield is the oldest community in the region with a median age of 51.8.

Median Age

Legend: Strafford County, Rockingham County, Carroll County, Outlier (Durham), Oldest (Wakefield), Youngest (Dover)

Age Dependent Populations

Total: 32.96% (2009), 32.87% (2014), 33.41% (2019)
Adults over 65: 11.48% (2009), 12.88% (2014), 14.90% (2019)
Children under 18: 21.47% (2009), 19.98% (2014), 18.51% (2019)

Legend: Children under 18, Adults over 65, Total

The US Census Bureau defines age dependent populations as under 18 or over 65 in contrast to a presumed working age population of 18-65. This is a presumed classification and does not take into account actual employment status for any age group.

The population of children under 18 is decreasing as the population of older residents increases. The total age dependent population is not changing significantly.

Data Source: US Census Bureau ACS tables: B01001, B01002
Data year: 2005-2009, 2010-2014, 2015-2019 5-year estimate
Coverage: SRPC county subdivisions

DEMOGRAPHICS

Median Age

Legend

Median Age
- 20 - 30
- 31 - 40
- 41 - 50
- No Data

Data Disclaimer

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B01002
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

DEMOGRAPHICS

Children under 5 years old

Legend

Concentration
- ☐ Maybe
- ☐ Yes

Percent of population
- 0% - 2%
- 2.1% - 4%
- 4.1% - 6%
- 6.1% - 8%
- No Data

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

DEMOGRAPHICS

Children under 18 years old

Legend

Concentration
- Yes

Percent of population
- 3% - 5%
- 5.1% - 15%
- 15.1% - 20%
- 20.1% - 26%
- No Data

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

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See the topic overview page in the data snapshot for more information on this metric.

DEMOGRAPHICS

Adults 18 to 25 years old

Legend

Concentration
- ☐ Yes

Percent of Population
- ☐ 5% - 8%
- ☐ 8.1% - 15%
- ☐ 15.1% - 30%
- ☐ 30.1% - 88%

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B01001
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

Adults over 64 years old

Legend

Concentration
☐ Yes

Percent of Population
- 1% - 5%
- 5.1% - 15%
- 15.1% - 20%
- 20.1% - 26%

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B01001
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

DEMOGRAPHICS

Life Expectancy

Legend

Life Expectancy
- 75 - 80
- 80 - 85

Data Source: Center for Disease Control Small-Area Life Expectancy Estimates
Data year: 2015
Coverage: SRPC Tracts

DEMOGRAPHICS

Minority Population

While the region has become slightly more racially diverse, NH still has around 90% white population, by far among the highest in the country. Areas of concentrations are in the three cities (Rochester, Dover, and Somersworth) and Durham.

Notable minority populations in the region include the Indonesian population in and around Somersworth (approximately 3,000 people[1]) and non-white UNH students (approximately 2,000 students[2]).

Race and ethnicity minority population is measured as the total population that is <u>not</u> "Non-Hispanic, White Alone." The sample size in the ACS is very small, so the chart and map for minority population is only available for the total minority population at this time. More detailed analysis will be done when 2020 decennial Census data is available.

Minority Population

	2009	2014	2019
	7.12%	10.19%	10.63%

[1] https://www.unionleader.com/news/business/whats_working/somersworth-booming-with-more-confidence/article_b6433adf-afa0-5add-9055-8c4218113c62.html

[2] https://www.unh.edu/institutional-research/student-data

Data Source: US Census Bureau ACS table: B03002
Data year: 2005-2009, 2010-2014, 2015-2019 5-year estimates
Coverage: SRPC County Subdivisions

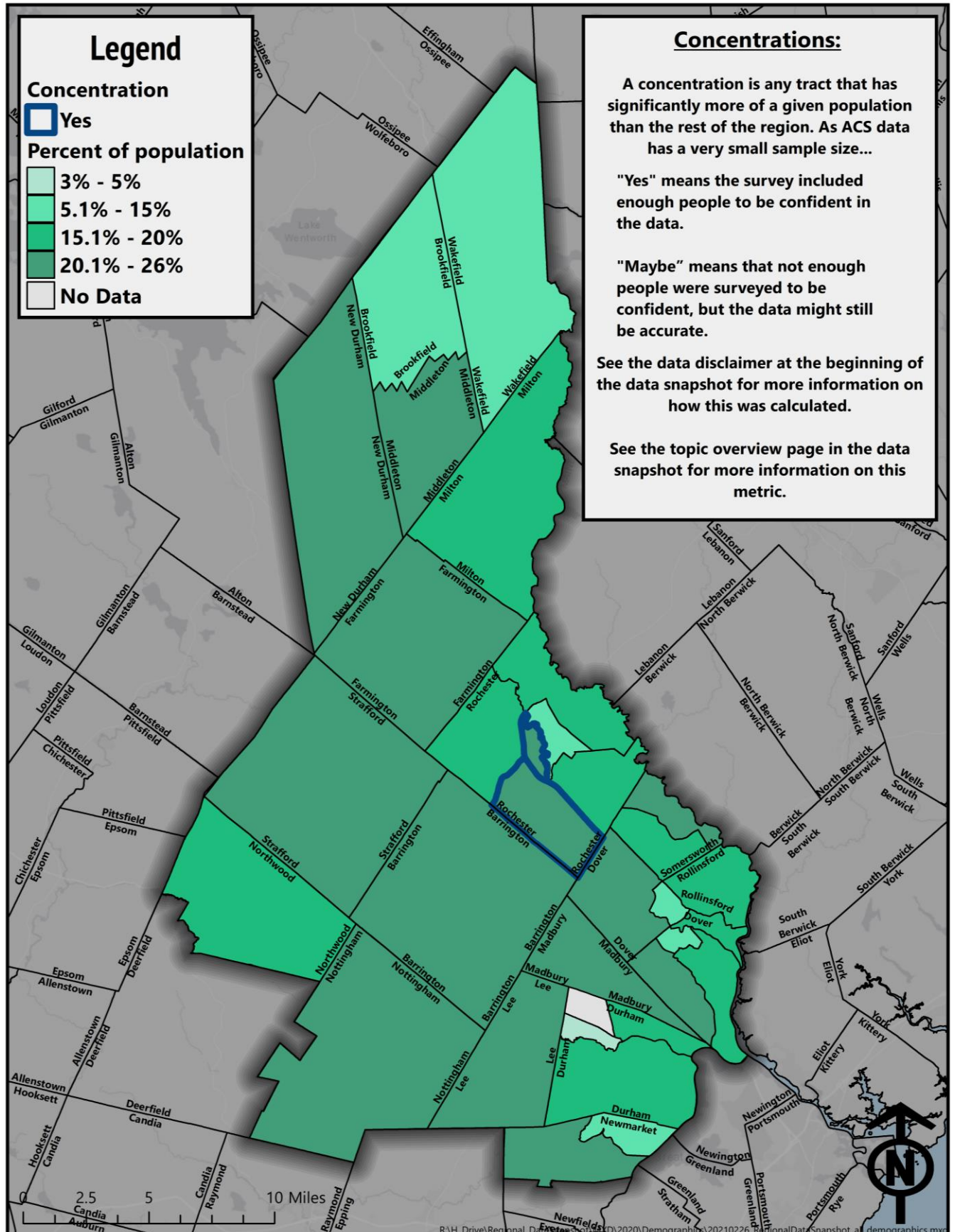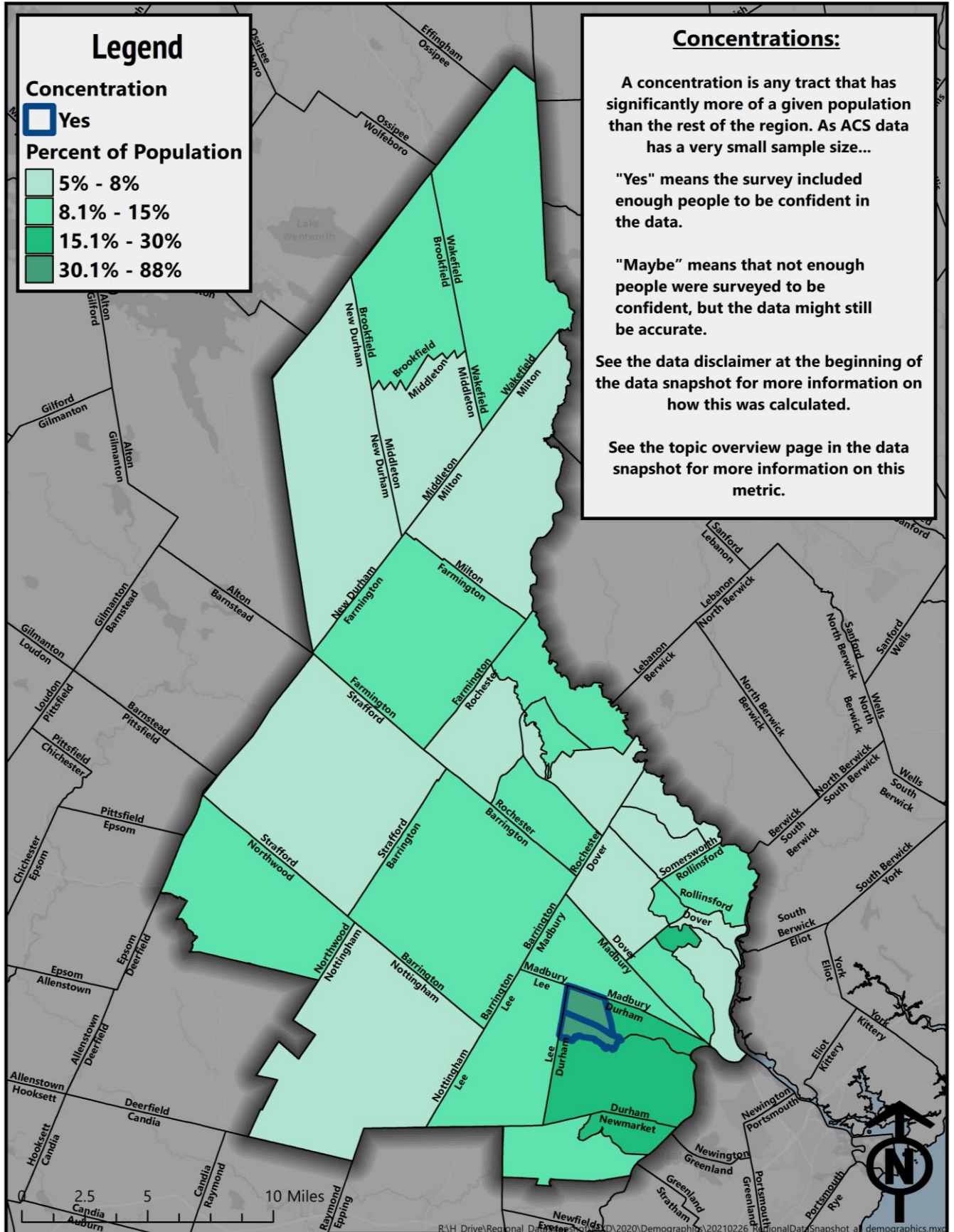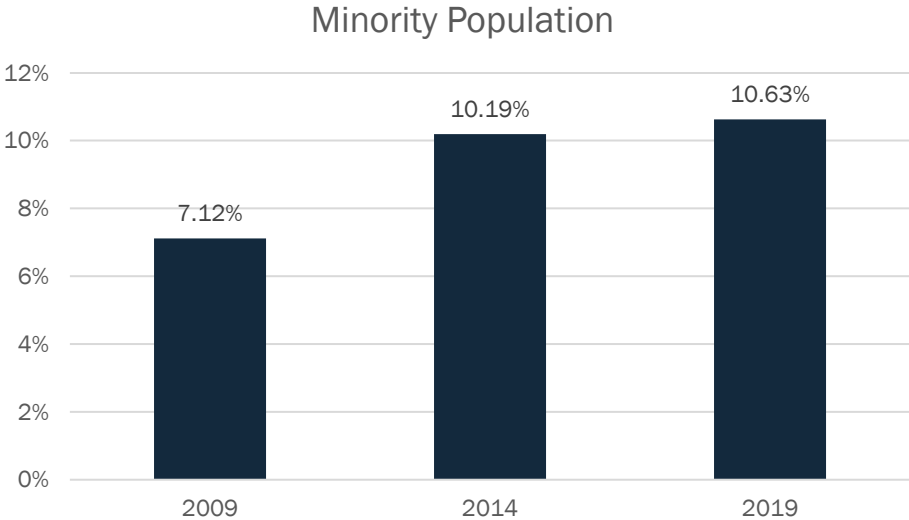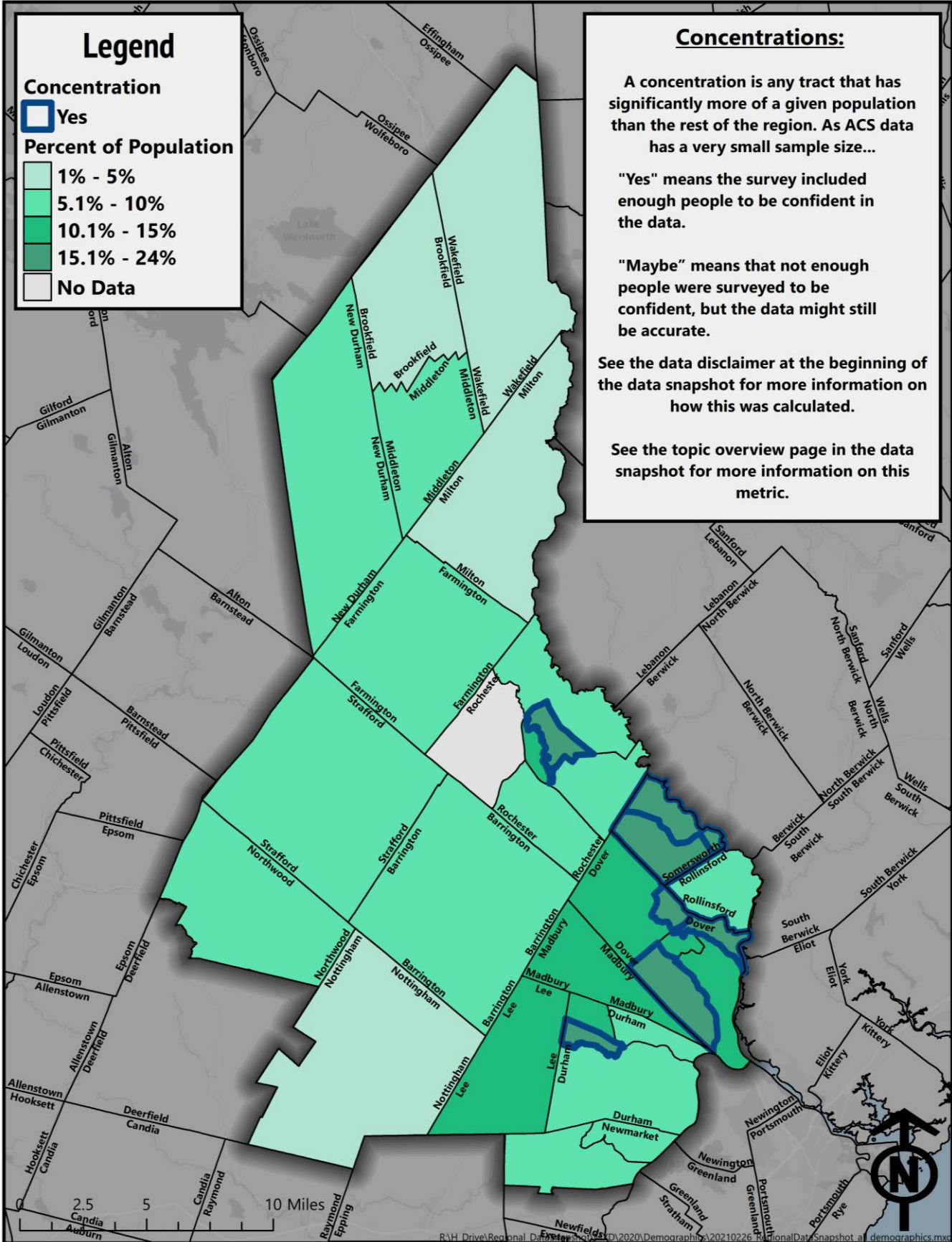DEMOGRAPHICS

Minority Population

Legend

Concentration
☐ Yes

Percent of Population
- ☐ 1% - 5%
- ☐ 5.1% - 10%
- ☐ 10.1% - 15%
- ☐ 15.1% - 24%
- ☐ No Data

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B03002
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

Sex

Disclaimer: The ACS survey only supplied two options for the choice of sex in the questionnaire, no other options were given. <u>The ACS survey only offered two options of sex.</u>

Since the ACS only surveys a small sample of housing units each year, data can be skewed by the housing units selected. As expected, the vast majority of tracts cluster around 50% and the variance in data is consistent with random population distribution or minor variation due to sample size.
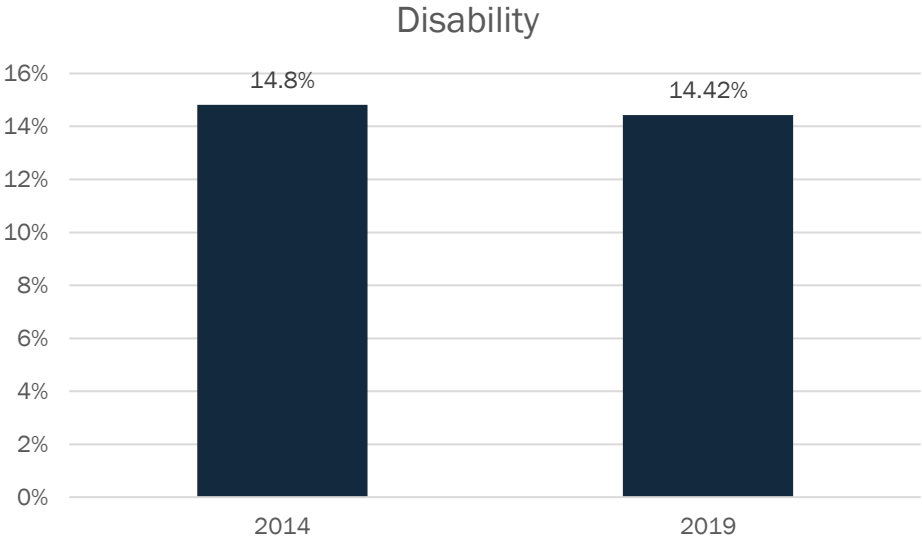
One of the four Census tracts in Durham is a clear outlier from this typical variation. The tract north of Main St and west of Madbury Rd appears to be 22% more female than male (i.e. 61% of tract residents are female and 39% are male). Closer inspection of that tract shows that about 4,500 of the roughly 5,100 residents of that tract are between the ages of 15 and 24. Of those 4,500 residents, about 61% were female.
This is driven by UNH students in the 15-24 year old age group. This trend is generally consistent with demographic data reported by UNH for the total student body (approximately 1,000 more female undergraduate students than male undergraduates). It therefore seems reasonable to assume that this Census tract skews more heavily female than male, and that this shift is driven primarily by UNH enrollment trends, but without a full Census it is hard to say definitively if the 22% is accurate in this tract. One cause for concern is that this tract alone appears to account for almost the entire 1000-student sex gap reported by UNH. It could be that 60% of the students on this side of Main St and Madbury Rd are in fact female, or ACS sampling methods could be artificially inflating the concentration of this tract if more female units were selected. Data from the 2020 Decennial Census and/or more detailed analysis of internal UNH enrollment data could be used to further analyze this trend if a precise ratio were deemed essential.

UNH Student data: https://www.unh.edu/institutional-research/student-data
Data Source: US Census Bureau ACS table: B01002
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

Margin of Population's Reported Sex

Legend

More Male
- 9%
- 3%
- 0%
- 3%
- 9%
- 25%

More Female

Data Disclaimer

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B01002
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

Disability

The percent of the population with a disability is calculated as the total population reporting any disability in a Census Bureau survey. While these numbers are around the same for 2014 (14.8%) and 2019 (14.42%), the disabled population is still expected to increase due to rising median age rates within our region, especially in northern parts of the region. As age dependency ratios skew to more elderly than children, disability rates are expected to increase as well.

As the sample size in the ACS is very small, the chart and map for disability is only available for the total population with a disability at this time.

Disability

	2014	2019
	14.8%	14.42%

(Bar chart showing disability percentages: 2014 = 14.8%, 2019 = 14.42%. Y-axis ranges from 0% to 16% in 2% increments.)

Data Source: US Census Bureau ACS table: B18101
Data year: 2010-2014 and 2015-2019 5-year estimates
Coverage: SRPC County Subdivisions

Disability

Legend

Concentration

☐ Yes

Percent of Population

- 4% - 10%
- 10.1% - 15%
- 15.1% - 20%
- 20.1% - 23%

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B18101
Data year: 2015-2019 5-year estimate
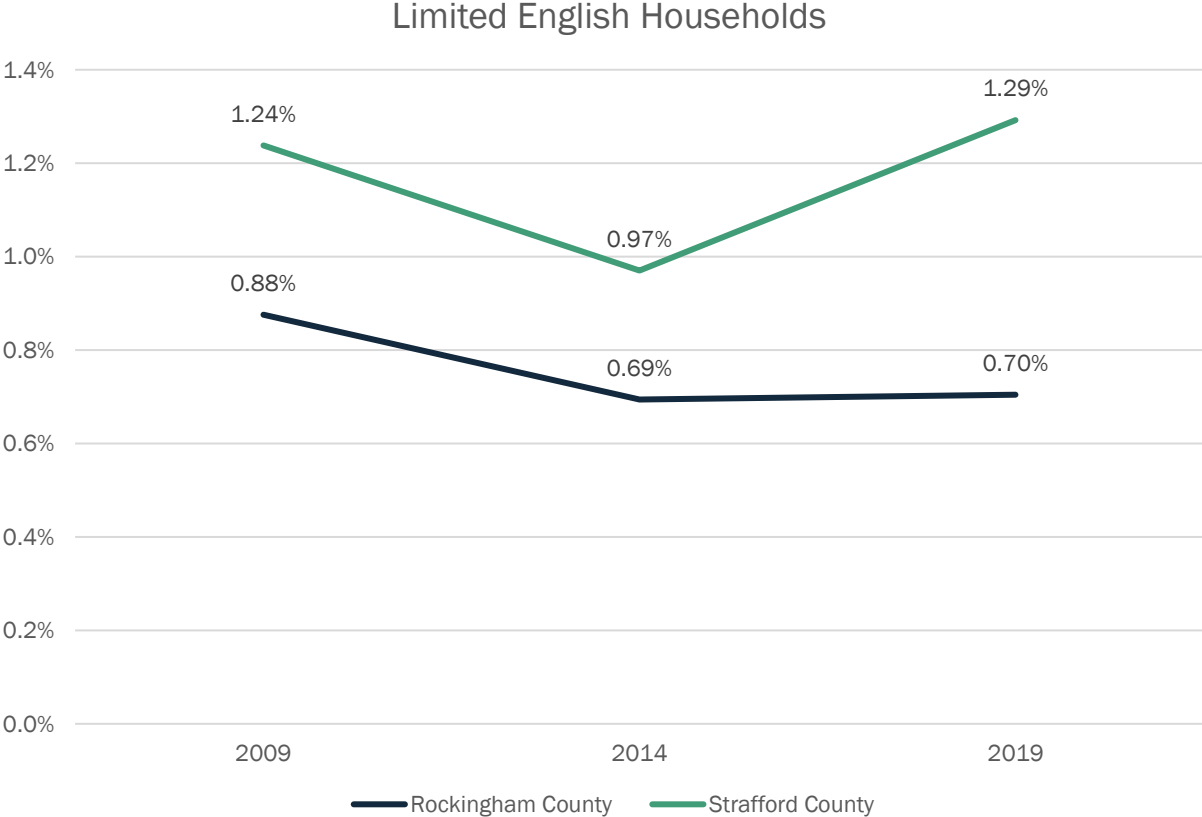Coverage: SRPC Tracts

21

Linguistically Isolated Households

A household in which there are no residents over the age of 14 who can speak English at least "Very Well" is considered linguistically isolated.

Town level ACS data indicates[1] that there are limited English households in Dover, Durham, and Somersworth. There may also be some limited English households in Lee and Newmarket.

A notable potentially linguistically isolated populations in the region include the Indonesian population in and around Somersworth (approximately 3,000 people[2]).

The data for this particular metric is very limited. The data was removed (as described in the Census Data Disclaimer) for almost all of the municipalities and tracts in the region. As a result, data for Strafford and Rockingham Counties are available in the chart below.
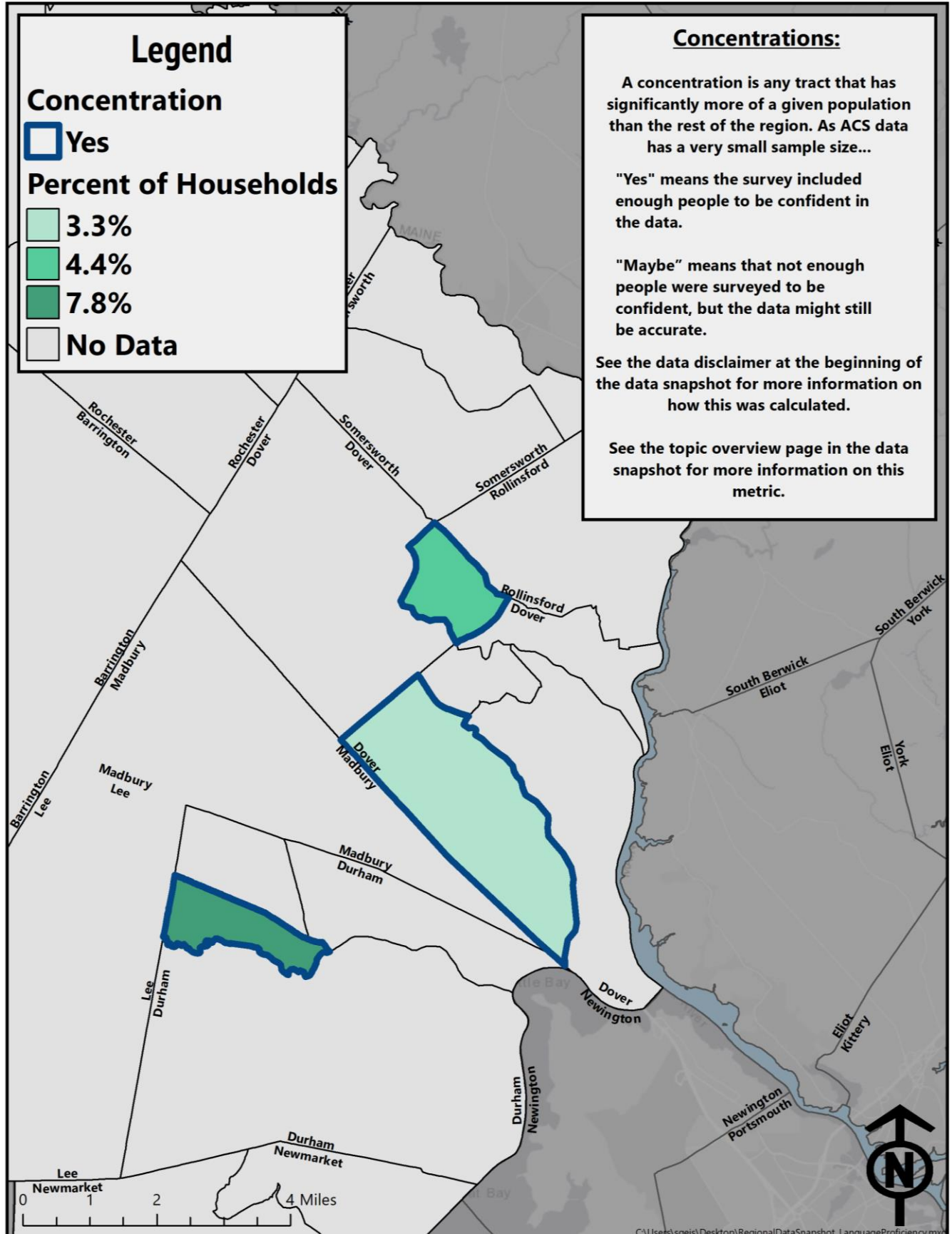
Limited English Households

Chart: Limited English Households. X-axis years 2009, 2014, 2019. Y-axis 0.0% to 1.4%.

Rockingham County: 2009 = 0.88%, 2014 = 0.69%, 2019 = 0.70%
Strafford County: 2009 = 1.24%, 2014 = 0.97%, 2019 = 1.29%

Legend: Rockingham County, Strafford County

[1] This assumption is based on the presence of two or more non-overlapping 5-year estimates (2005-2009, 2010-2014, and 2015-2019) that have estimates for with the margin of error does not exceed the estimate. Dover and Durham have statistically significant data in all three estimate years. Somersworth has two estimates with statistically significant data, and Lee and Newmarket each have one year.
[2] https://www.unionleader.com/news/business/whats_working/somersworth-booming-with-more-confidence/article_b6433adf-afa0-5add-9055-8c4218113c62.html

Data Source: US Census Bureau ACS table: C16002
Data year: 2005-2009, 2010-2014, 2015-2019 5-year estimates
Coverage: SRPC Tracts

Linguistically Isolated Households

Legend

Concentration

☐ Yes

Percent of Households

▨ 3.3%

▨ 4.4%

▨ 7.8%

☐ No Data

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: C16002
Data year: 2015-2019 5-year estimate
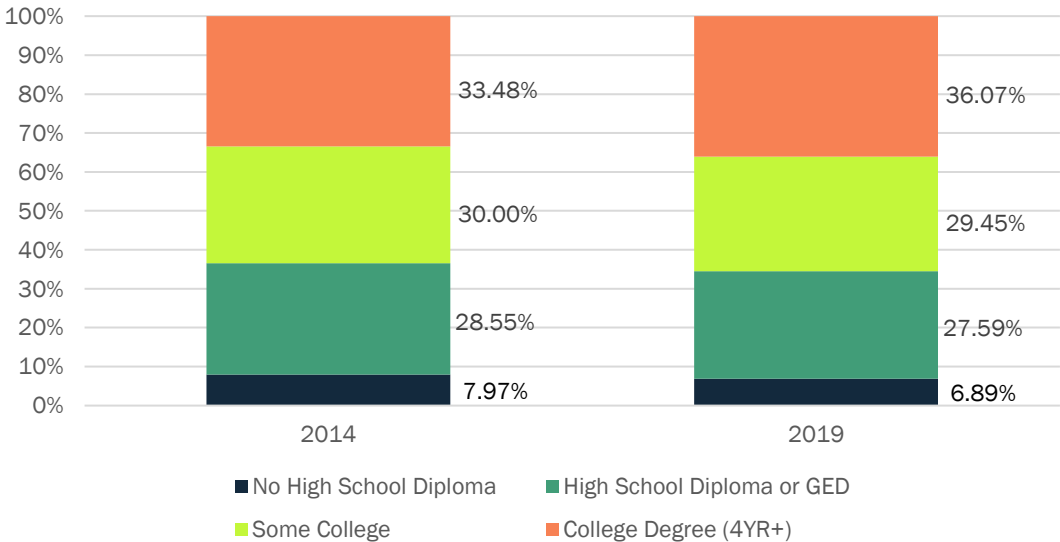Coverage: SRPC Tracts

DEMOGRAPHICS

Education Attainment

The education metrics are all based on the **population over 25 years old**. This captures the population old enough to have completed a 4-year degree. Each of these metrics represent the percent of the population by the highest level of educational attainment achieved.

The following maps and charts of educational attainment may not include all the 13,000+ UNH undergraduate students, as many of them are likely to be under 25 years old. See the Age section for maps of the children under 18 and the adults 18-24 years old. These maps show the distribution of children that may not have attained a high school diploma and adults that may still be in school.
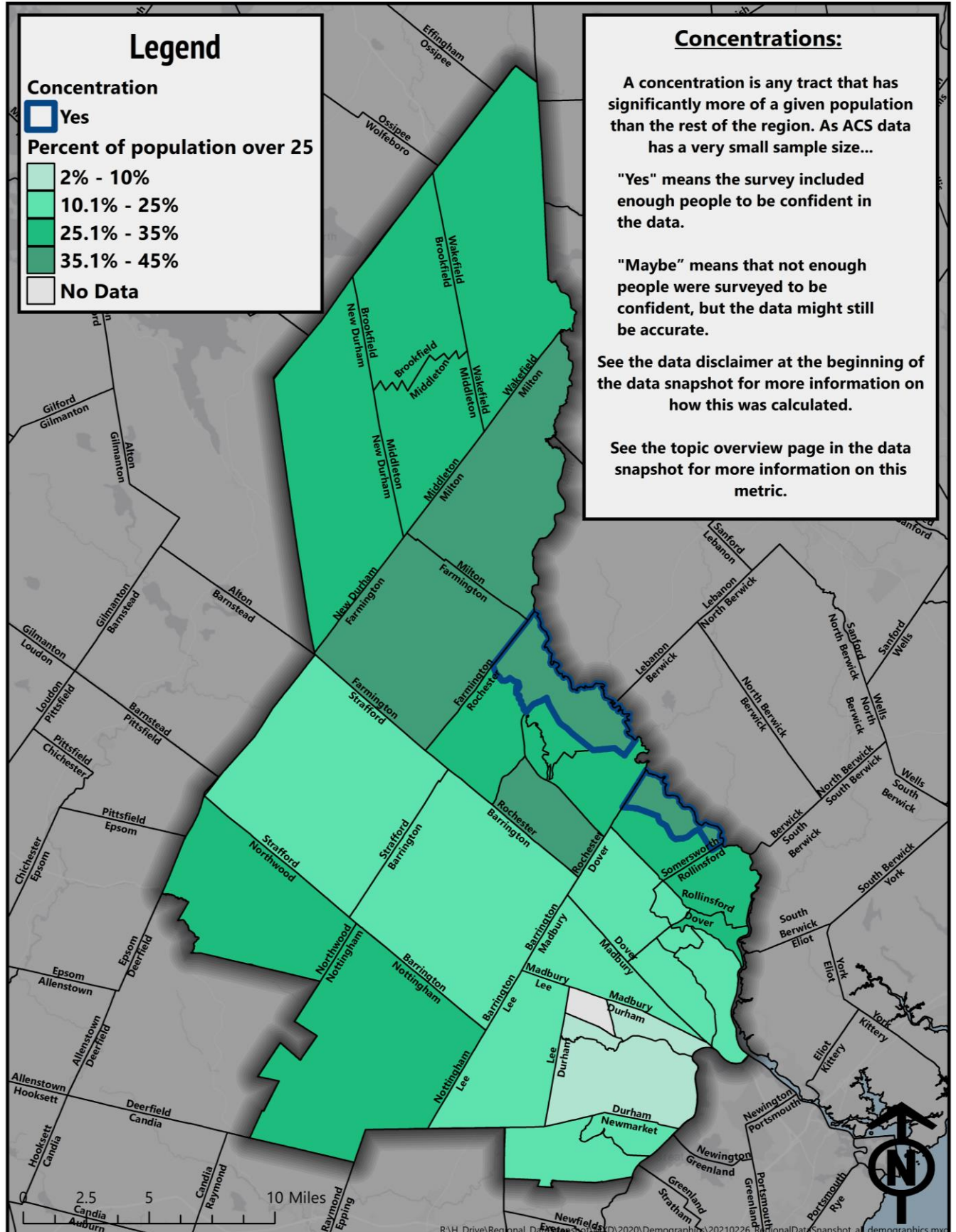
Definitions
• No High School Diploma includes all the education attainment categories from "no schooling completed" to "12th grade, no diploma."
• High School Diploma or GED includes high school graduates and anyone with a high school diploma equivalent.
• Some College includes anyone who has attended college at some point but has not completed a 4-year degree. Associates degrees and certificates are included here.
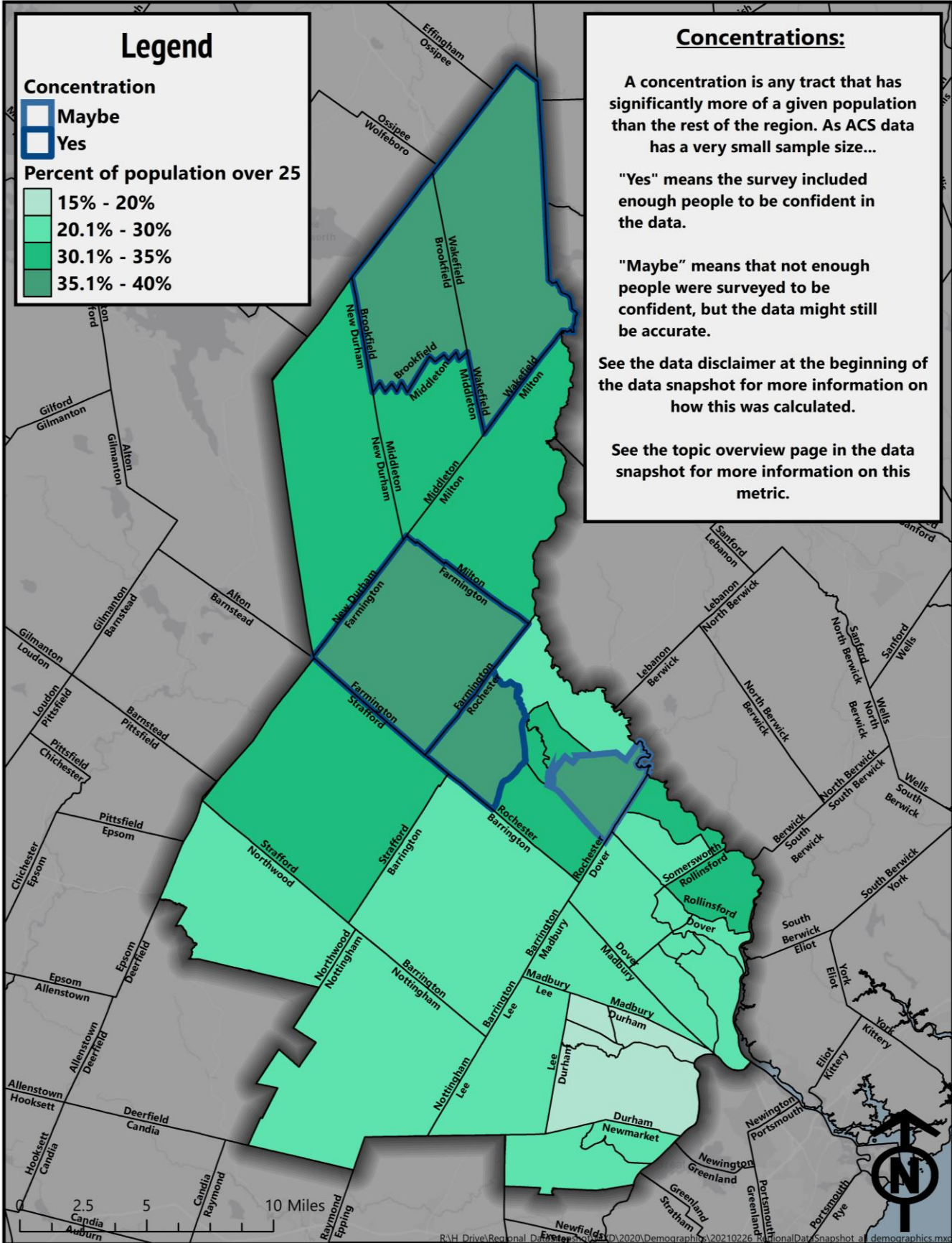• College Degree includes all 4+ year degrees, Masters, and Doctorates.

Data Source: US Census Bureau ACS table: B15003
Data year: 2010-2014 and 2015-2019 5-year estimate
Coverage: SRPC County Subdivision

Population <u>Over 25</u> w/ No HS Diploma

Legend

Concentration
- ☐ Maybe
- ☐ Yes

Percent of population over 25
- 0% - 4%
- 4.1% - 7%
- 7.1% - 10%
- 10.1% - 13%
- No Data

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B15003
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

Population Over 25 w/ HS Diploma or GED

Legend

Concentration

☐ Yes

Percent of population over 25

- 2% - 10%
- 10.1% - 25%
- 25.1% - 35%
- 35.1% - 45%
- No Data

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B15003
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

DEMOGRAPHICS

Population <u>Over 25</u> w/ Some College, Less Than a 4-Year Degree

Legend

Concentration
- Maybe
- Yes

Percent of population over 25
- 15% - 20%
- 20.1% - 30%
- 30.1% - 35%
- 35.1% - 40%

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B15003
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

DEMOGRAPHICS

Population <u>Over 25</u> w/ at least a 4-Year College Degree

Legend

Concentration

☐ Yes

Percent of population over 25

- 15% - 25%
- 25.1% - 45%
- 45.1% - 55%
- 55.1% - 77%

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B15003
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

DEMOGRAPHICS

Vehicle Access

In rural areas, personal vehicles are the dominant form of transportation and the transportation system has historically been built around the assumption that everyone has access to a car. Cost of housing forces many people to live well outside urbanized communities where employment is concentrated. This increases personal transportation costs and makes transit service more expensive and less efficient. Even inconsistent access to a vehicle can make it difficult or impossible for people to access housing, healthy food, employment, education, and healthcare.

Definitions
- "No vehicles" means that a household did not have any vehicles available. If these households are not near downtowns or transit routes, these residents may have limited access and mobility.
- "Less vehicles than people" means that the number of people in the household was higher than the number of vehicles available. This is not necessarily an access issue, as children under 16 cannot get licenses and do not need their own vehicle, but in households where there are more working adults than vehicles, it may limit access and mobility.
- "One car per person" means that the number of people and number of vehicles are equal. A single adult living alone who has a car or a family of four with four cars would both be included here.
- "More cars than people" means that the household reported having more vehicles than residents.
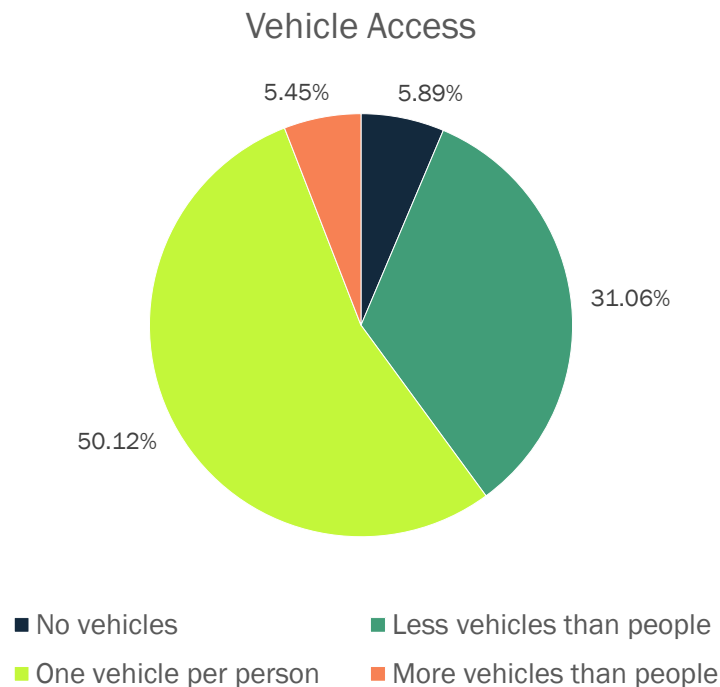
Vehicle Access

5.45%   5.89%

31.06%

50.12%

- ■ No vehicles
- ■ Less vehicles than people
- ■ One vehicle per person
- ■ More vehicles than people

Data Source: US Census Bureau ACS table: B08201
Data year: 2015-2019 5-year estimate
Coverage: SRPC County Subdivisions

Population with No Vehicle Access
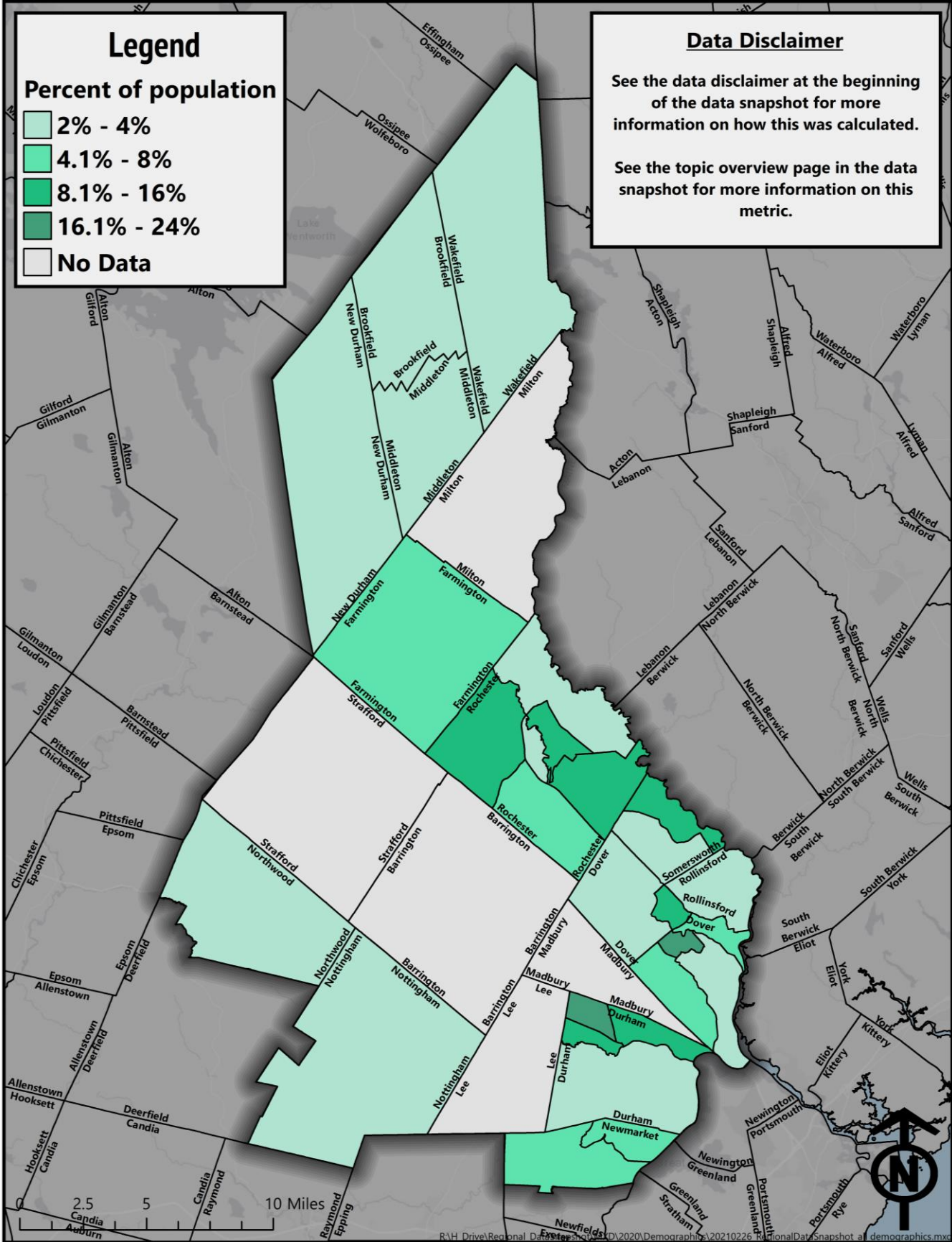
Legend

Percent of population
- 2% - 4%
- 4.1% - 8%
- 8.1% - 16%
- 16.1% - 24%
- No Data

Data Disclaimer

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B08201
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

ECONOMIC VITALITY

Table of Contents

Employment and the Labor Force

Within the SRPC region, there were over 54,000 jobs before the COVID-19 pandemic. The most common industry was the service-providing industry (77%) which includes educational services, retail, health care and social assistance, and food service. Health care was projected to see the most growth by 2028. The municipalities projected to grow the most by 2045 were Dover and Madbury (26% more jobs in each), Newmarket (24% more jobs), and Rochester (22% more jobs).

In 2018, 55.7% of the region's employees lived in the region, 29.2% lived in other parts of NH, 10.4% lived in Maine, and 3.2% lived in Massachusetts. However, only 40% of the region's employed residents were employed inside of the region, with about 47.5% commuting to other parts of NH.

The region has also observed growth in its labor force participation, which includes residents who are actively employed and residents who are unemployed but looking for work prior to the COVID-19 pandemic. Since 2010, the overall number of people employed in our region was increasing as the number of unemployed people and looking for work decreased.

The COVID-19 Pandemic has notably affected all of the metrics in this section. Workplace and business closures and quarantine regulations all had an influence on the region's employment trends. NH Employment Security publishes weekly data about the COVID-19 affected unemployment rates. SRPC staff are working on further analysis of this data and will be sharing it in late spring or early summer 2021.

This section looks at:
• Employment trends by industry and by town
• In—area efficiency
• Participation/unemployment rate
• Percent employees under 18
• Percent employees over 65

Employment by Industry

NH Employment Security provides employment by industry 10-year forecasts with updates every two years.
The latest projections are based on 2018 estimated employment.

Please note that these estimates and projections were developed prior to the COVID-19 pandemic and may not reflect current employment trends. It is worth noting these projections, as they show where the region was headed and may be indicative of the region's labor force skillset.

2018 Employment by Industry

5% 5% 13%

77%

- ■ Goods-Producing Industries
- ■ Service-Providing Industries
- ■ Government
- ■ Self-employed Workers
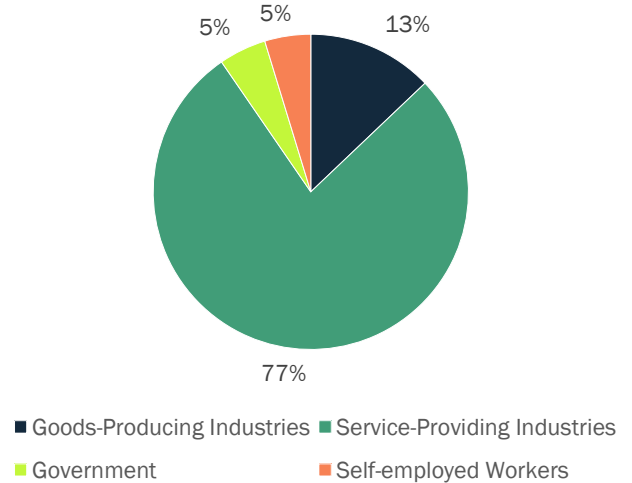
Industry Projections, 2018 to 2028 Industry Title	2018 Estimated	2028 Projected
Total Employment	55,617	59,235
Goods-Producing Industries	7,541	7,755
Agriculture, Forestry, Fishing and Hunting	160	169
Mining	21	21
Construction	1,785	2,005
Manufacturing	5,575	5,560
Service-Providing Industries	45,317	48,492
Utilities	n	n
Wholesale Trade	1,202	1,200
Retail Trade	7,401	7,441
Transportation and Warehousing	1,188	1,210
Information	639	634
Finance and Insurance	2,694	2,783
Real Estate and Rental and Leasing	428	457
Professional, Scientific, and Technical Services	3,009	3,693
Management of Companies and Enterprises	156	158
Administrative and Support and Waste Management Services	2,353	2,604
Educational Services	8,244	8,508
Health Care and Social Assistance	7,638	8,701
Arts, Entertainment, and Recreation	683	734
Accommodation and Food Services	4,902	5,393
Other Services (Except Government)	1,876	1,987
Government	2,845	2,932
Self-employed Workers	2,759	2,988
n = Employment data do not meet disclosure standards		

Data source: New Hampshire Employment Security
Data year: 2018-2028
Coverage: SRPC

ECONOMIC VITALITY

Employment Projections to 2045

NH Employment Security (NHES) projects employment for ten years biennially. SRPC's Travel Demand Model relies on population and employment projections for each scenario year. The current scenario years are 2015, 2025, 2035, and 2045. NHES and NH OSI projections are used for the model and extended out as needed for the scenario years. See the Demographics section for the Population Projections.

These projections show an increase in employment in all the municipalities in the region. Additionally, the region is projected to grow or stay about level (fewer than 5 jobs difference) in all industries except agriculture and communications.

Please note that these estimates and projections were developed prior to the COVID-19 pandemic and may not reflect current employment trends. It is worth noting these projections, as they show where the region was headed and may be indicative of the region's labor force skillset.

EDD denotes the Strafford Economic Development District, which excludes municipalities in Rockingham County.

Municipality	2015	2025	2035	2045
Barrington	1,911	2,017	2,140	2,272
Brookfield	14	15	16	17
Dover	18,192	19,581	21,212	23,029
Durham	6,728	7,069	7,462	7,883
Farmington	1,041	1,100	1,166	1,239
Lee	1,302	1,381	1,476	1,581
Madbury	275	296	321	348
Middleton	140	148	156	165
Milton	651	680	714	753
New Durham	238	251	266	283
Newmarket	1,468	1,570	1,690	1,824
Northwood	1,055	1,123	1,198	1,281
Nottingham	343	361	385	411
Rochester	12,373	13,183	14,140	15,198
Rollinsford	527	546	573	599
Somersworth	6,150	6,515	6,935	7,400
Strafford	372	392	415	441
Wakefield	973	1,026	1,089	1,158
Total (EDD)	50,887	54,200	58,081	62,366
Total (SRPC)	53,753	57,254	61,354	65,882

Industry (NAICS Sector)	2015	2025	2035	2045
Agriculture, Forestry, & Fishing (11)	136	133	129	126
Business, Legal, & Personal (54, 55, 56)	3,844	4,351	4,931	5,595
Communications (51)	997	963	932	906
Construction (23)	1,703	1,836	1,985	2,143
Eating & Drinking Establishments (72)	364	404	431	462
Educational Services (6)	8,331	8,718	9,124	9,551
Finance, Insurance, & Real Estate (52, 53)	4,298	4,569	4,861	5,170
Government (92)	2,218	2,314	2,416	2,524
Health Services (62)	2,923	3,351	3,851	4,424
Hotels & Lodging (72)	4,122	4,161	4,446	4,748
Manufacturing (31)	5,498	5,548	5,606	5,667
Mining (21)	32	33	33	37
Non-Classifiable (99)	3,046	3,270	3,516	3,776
Retail Trade (44)	6,952	7,338	7,743	8,174
Service (general) (71)	642	710	782	864
Social Services (62)	4,527	5,212	5,988	6,881
Transportation (48)	1,216	1,237	1,260	1,285
Utilities (22)	72	72	71	71
Wholesale Trade (42, 81)	2,832	3,034	3,249	3,478
Total	53,753	57,254	61,354	65,882

Data Source: NH Employment Security
Data year: 2015 Estimates, 2016-2028 Projections
Coverage: SRPC

ECONOMIC VITALITY

34

In-Area Labor Force Efficiency

The Longitudinal Employer-Household Dynamics (LEHD) dataset is collected by the US Census Bureau. One of the data products that comes from the LEHD is origin-destination employment statistics data (LODES). This data is available at the Census block level.

Caution: This data is based on jobs, so the total labor force represented in this data may be larger than the labor force referenced in other metrics. One person may hold multiple jobs at a time or within a reporting period, in which case that person would be represented in this data more than once.

Live in the region 45,679   30,457   24,217 **Work in the region**
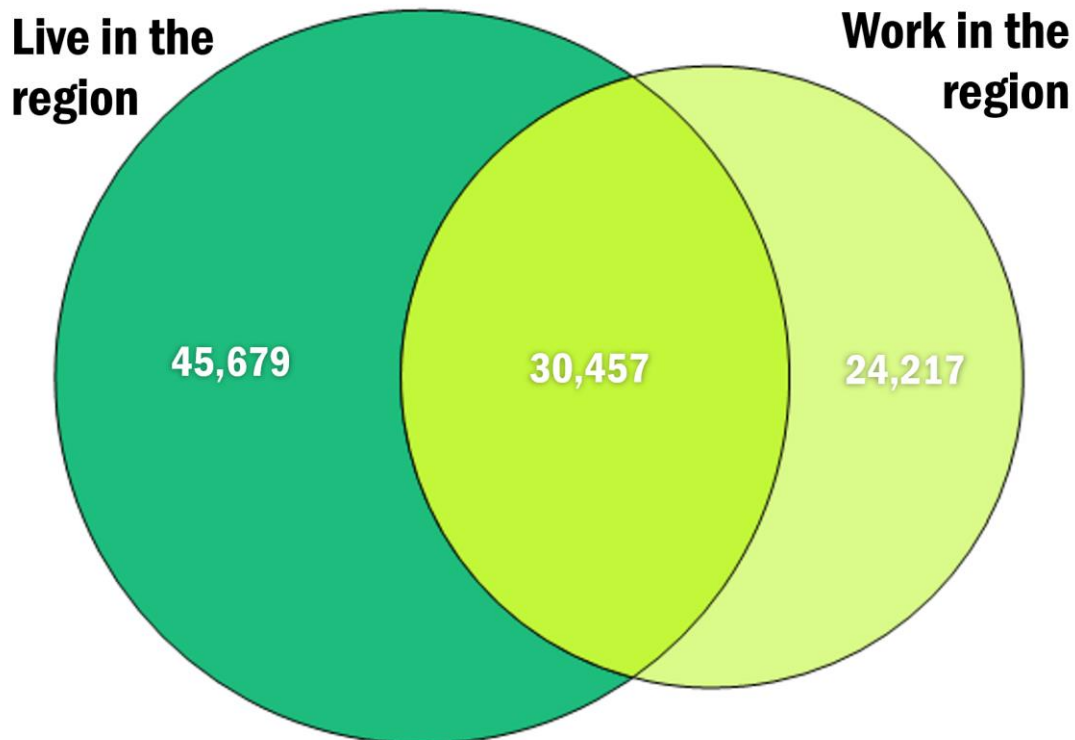
Labor Force Living in the region	76,136	100%
and working in the region	30,457	40%
but not working in the region	45,679	60%

	People who live in the region and work...		People who work in the region and live...	
In Region	30,457	40.00%		55.71%
Outside of the region	45,679	60.00%	24,217	44.29%
In NH	*36,134*	*47.46%*	*15,967*	*29.20%*
In MA	*5,791*	*7.61%*	*1,772*	*3.24%*
In ME	*3,133*	*4.12%*	*5,708*	*10.44%*
In Other States	*621*	*0.82%*	*770*	*1.41%*

Data source: Longitudinal Employer-Household Dynamics (LEHD)
Data years: 2018
Coverage: SRPC

Residential Location of People who Work in the Region
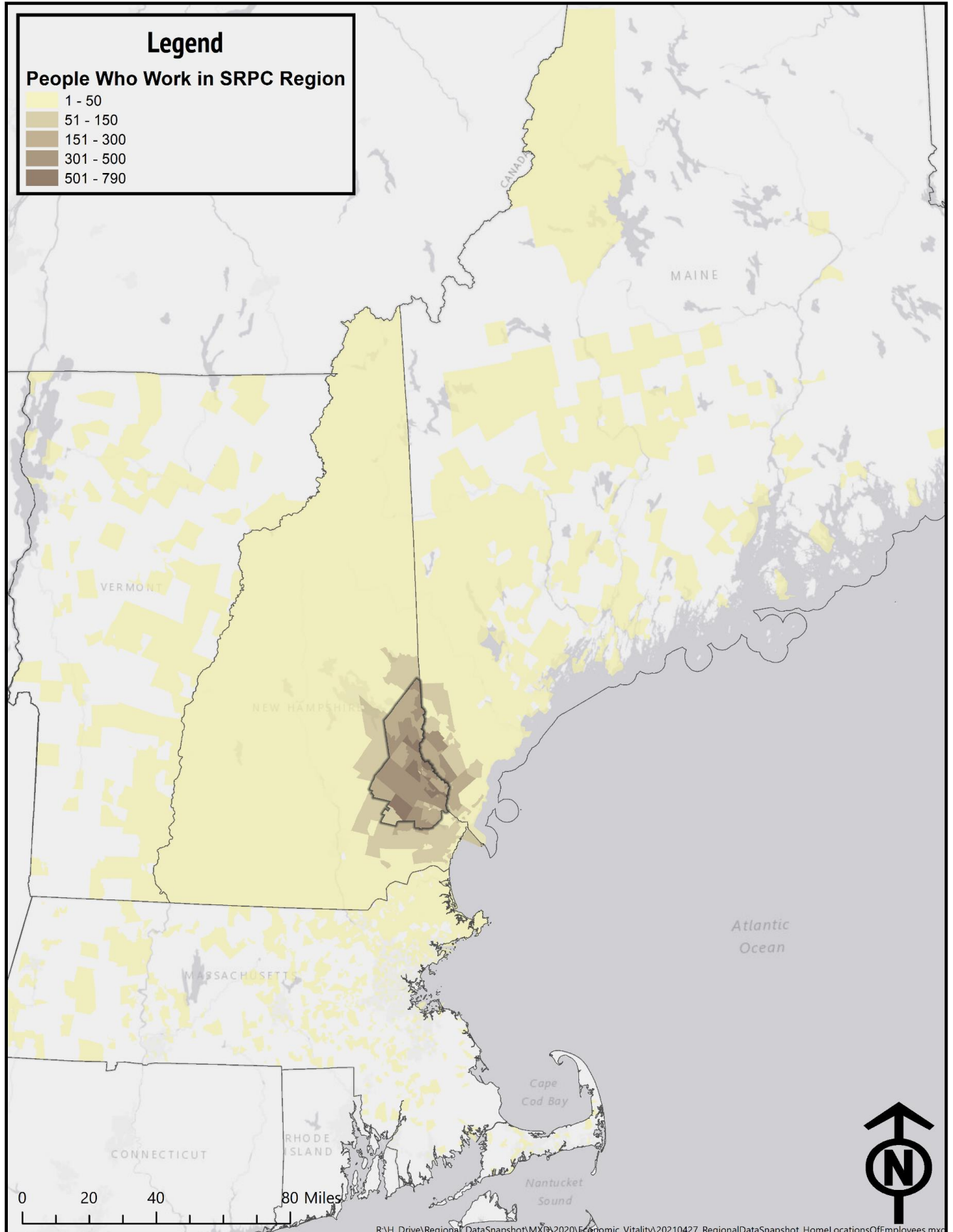
Legend

People Who Work in SRPC Region
- 1 – 50
- 51 – 150
- 151 – 300
- 301 – 500
- 501 – 790

ECONOMIC VITALITY

Data source: Longitudinal Employer-Household Dynamics (LEHD)
Data years: 2018
Coverage: SRPC

Employer Location of People who Live in the Region

Legend

People Who Live in SRPC Region

- 1 - 50
- 51 - 200
- 201 - 500
- 501 - 1500
- 1501 - 3271

ECONOMIC VITALITY

Data source: Longitudinal Employer-Household Dynamics (LEHD)
Data years: 2018
Coverage: SRPC
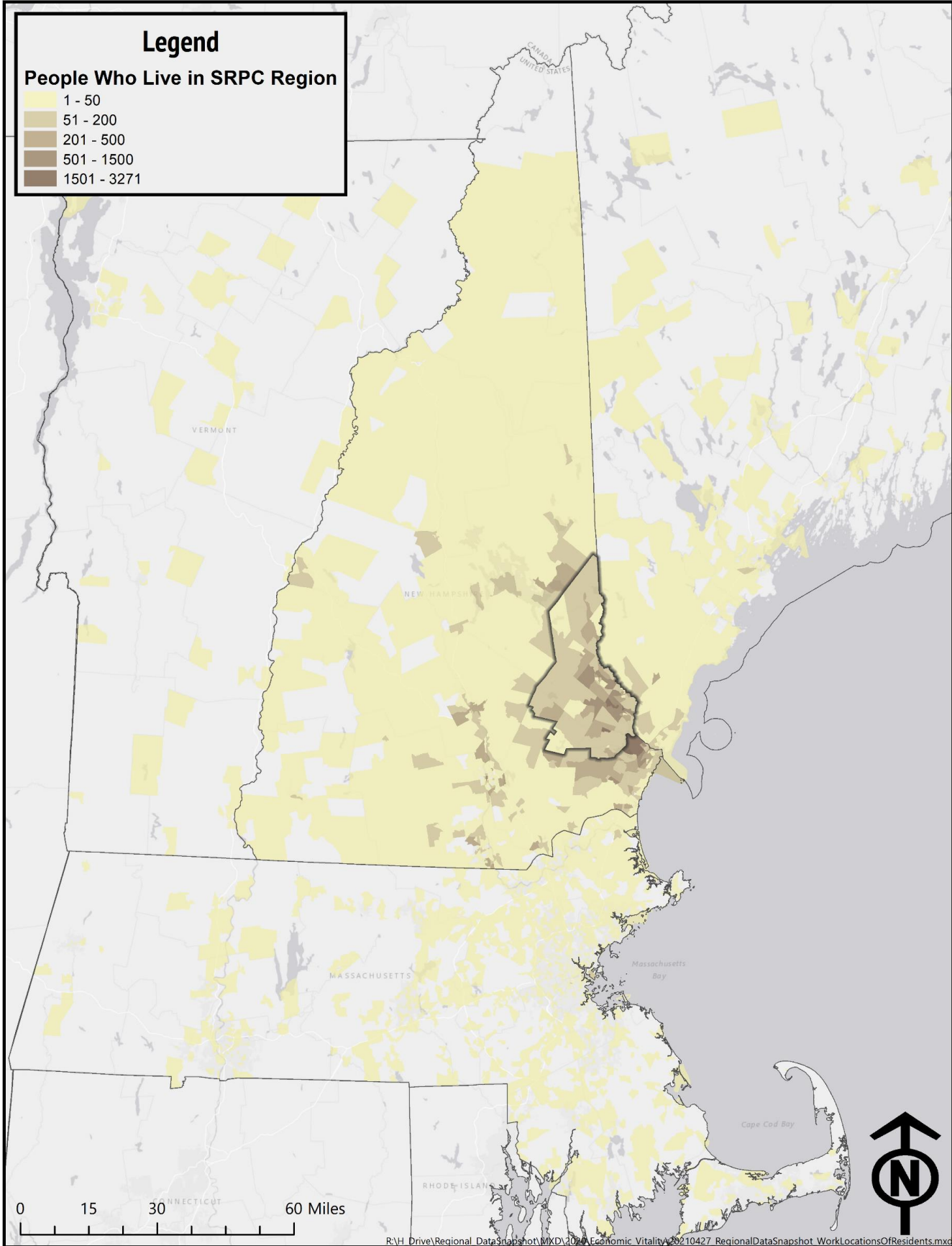
Labor Force Participation

This data is a summary of the total labor force which consists of people who are actively employed and unemployed but actively looking for work. LAUS does not include discouraged workers as unemployed.

This dataset does not have data for 2020 as of the creation of this page.

Labor force participation is used directly to determine the unemployment rate of the region. Below you can see that unemployment in recent years only rose during the late 2000s financial crisis. Up until 2020, you can see that unemployment was decreasing steadily while the labor force and the employed population grew at similar rates.

COVID-19 2020/2021 unemployment will be further examined as a part of an update to this document later this Spring.

SRPC Regional Employment 1991-2019

Legend: Employed — Unemployed — Civilian Labor Force
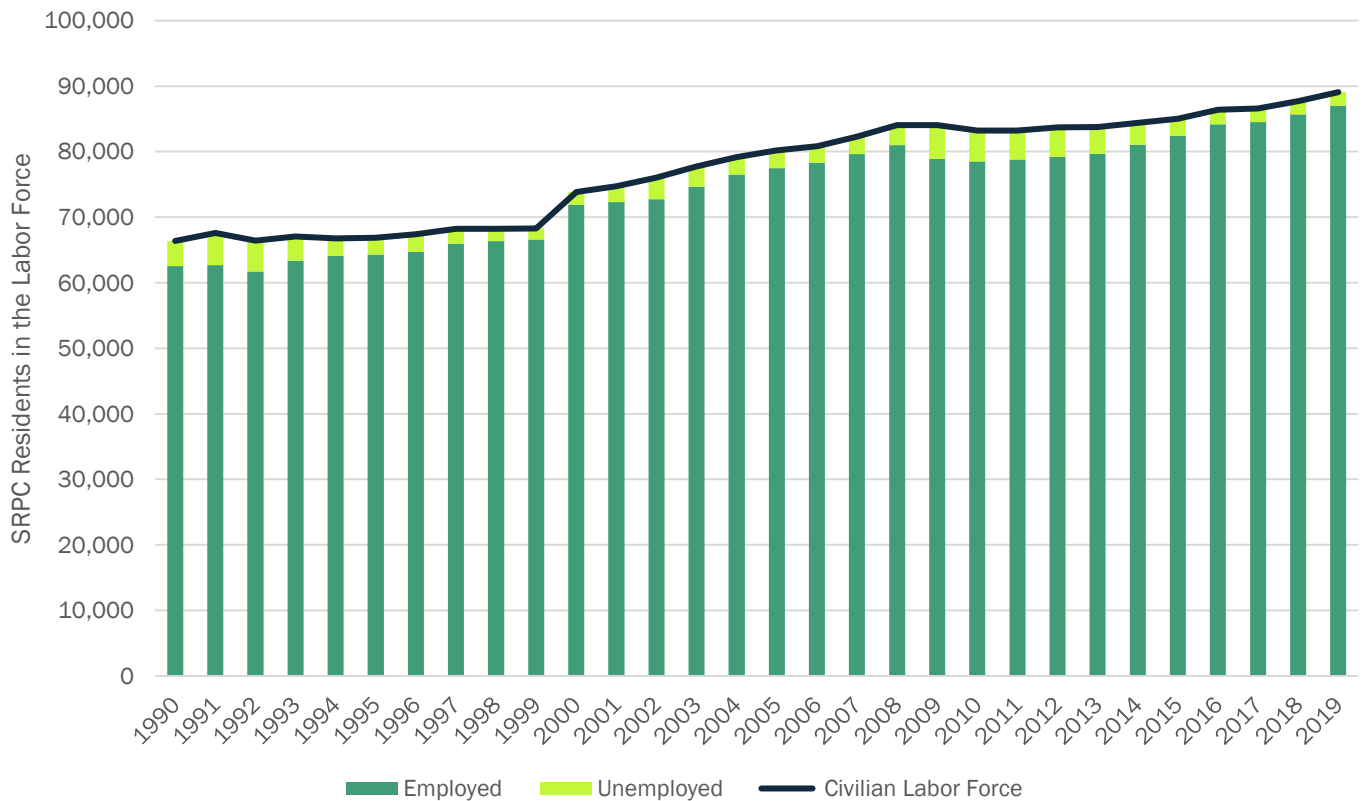
Data source: Local Area Unemployment Statistics (LAUS)
Data years:1991-2019
Coverage: SRPC

Percent of Employees under the age of 18

This data summarizes the percent of employed people who are under the age of 18 who were employed and earned a paycheck at the beginning of each quarter. For employees working between April and June (Q2), they would have to earn a paycheck at the beginning of April. Otherwise, the people hired in the mean-time will not be counted until they receive their paycheck at the beginning of July.

Employment of employees under 18 spikes yearly in Q3 (July-September) most likely due to seasonal positions being available along with high school students being out of school and available to work. This seasonal spike in Q3 is most noticeable in Carroll County due to the tourism demand of the summer, especially around the lakes. Rockingham County has a similar, though less pronounced spike in young employees in the summer months. Strafford County generally follows the state trend, a little below Rockingham and Carroll Counties.

Data for the rest of 2020 during the COVID-19 pandemic will likely show a decrease in this trend line as many of the seasonal attractions were either closed or operating at reduced capacity and staffing levels during the pandemic.
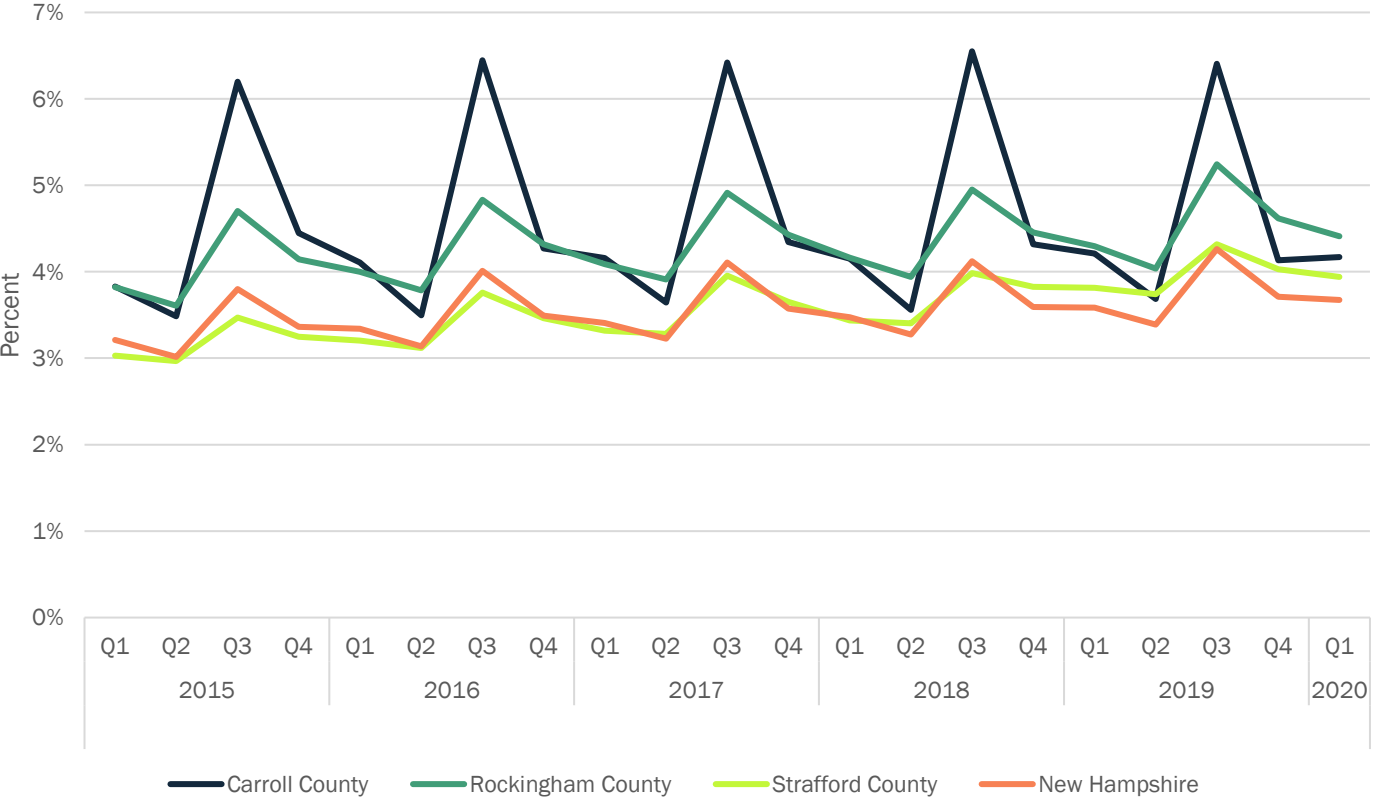
Data source: Local Area Unemployment Statistics (LAUS)
Data years:2015-2020
Coverage: SRPC Counties and State

Percent of Employees over the age of 65

This data summarizes the percent of employed people who are over the age of 65 who were employed and earned a paycheck at the beginning of each quarter. For employees working between April and June (Q2), they would have to earn a paycheck at the beginning of April. Otherwise, the people hired in the mean-time will not be counted until they receive their paycheck at the beginning of July.

The percent of the work force over the age of 65 is increasing statewide. Strafford and Rockingham Counties follow the state trend very closely, while Carroll county has a much higher percent of the workforce over the age of 65. This follows the trends in the age of the residents in the counties as well (see the Demographics section). Carroll County has a much larger percent of residents over 65 (26.7%) than the rest of the state (17.5%), so it makes sense that Carroll County's workforce would follow a similar trend.

Data for the rest of 2020 during the COVID-19 pandemic will likely show a decrease in this trend line as many businesses were either closed or operating at reduced capacity and staffing levels during the pandemic.
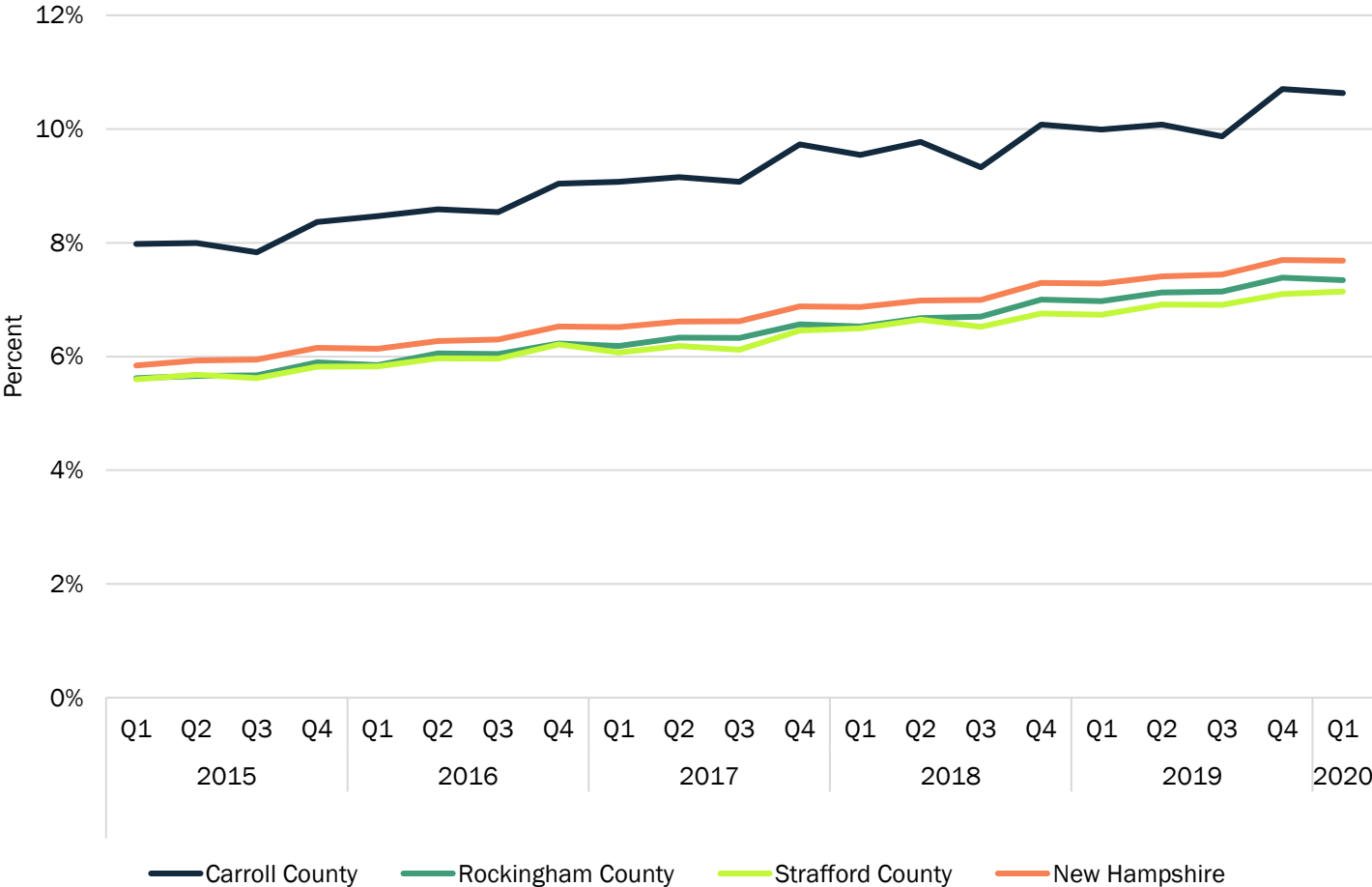
Data source: Local Area Unemployment Statistics (LAUS)
Data years:2015-2020
Coverage: SRPC Counties and State

Income

The income metrics in this section are specifically addressing the pre-pandemic situation in the region. Additionally, this data comes from the ACS and is subject to variability based on the sample size.

This section discusses a range of income metrics including:
- The percent of the population living in low-income households,
- The median household income,
- The percent of households in each defined income bracket, and
- Income inequality.

Low-income households are determined by the Census Bureau using poverty thresholds that the Bureau develops. More detail about these thresholds is available on the next page.

Income inequality is measured using the Gini Index. Details about the Gini Index and a summary table of each metric are available on the income inequality overview page.

The median household incomes for the state of New Hampshire and all three counties with SRPC communities are increasing. The median income in Strafford County is increasing at a rate higher than the state. The median income in Rockingham County is over $13K more than the state median and is also increasing at a higher rate.

Carroll County's median income is about $13K less than the state and increasing at about the same rate.

Median Household Income

$100,000
$90,000
$80,000
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0

$79,368
$65,986
$59,580
$52,393

$93,756
$76,768
$72,960
$63,153

2014   2019

— Carroll   — Rockingham   — Strafford   — New Hamsphire

Low Income

30%
25%
20%
15%
10%
5%
0%

22.8%   25.0%   19.7%

2009   2014   2019
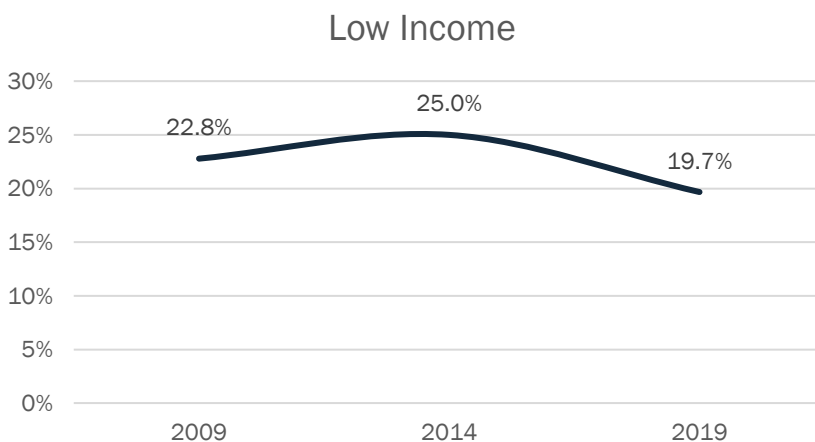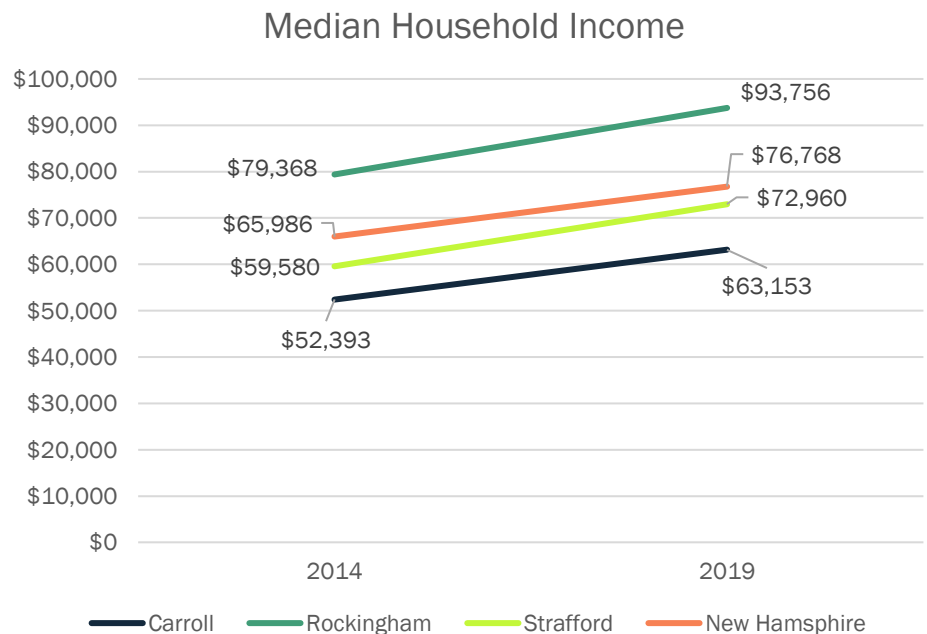
The low-income population is measured as the total population living in households where the household income is less than two times the federal poverty threshold determined by the US Census Bureau.

Data Source: US Census Bureau ACS tables: S1901, C17002
Data year: 2005-2009, 2010-2014, 2015-2019 5-year estimate
Coverage: SRPC County Subdivisions

41

ECONOMIC VITALITY

Poverty Thresholds

Each year the US Census Bureau calculates poverty thresholds based on a selection of household configurations. These assumptions are based on the age of the head of household and the presence of children. In addition to thresholds for each of the household configurations, they also develop a weighted threshold. The low-income population map in this section is based on the household configurations and household income. It is representative of the population living in households with incomes that are less than 2 times the poverty threshold for their household income configuration.

The table below shows the weighted average poverty threshold for the specified household size. The 2020 estimates are a preliminary number based on the Consumer Price Index for All Consumers[1].

Persons in household	2016 Threshold	2017 Threshold	2018 Threshold	2019 Threshold	2020 Estimates
1	$ 12,228	$ 12,488	$ 12,784	$ 13,011	$ 13,172
2	$ 15,569	$ 15,877	$ 16,247	$ 16,521	$ 16,725
3	$ 19,105	$ 19,515	$ 19,985	$ 20,335	$ 20,586
4	$ 24,563	$ 25,094	$ 25,701	$ 26,172	$ 26,495
5	$ 29,111	$ 29,714	$ 30,459	$ 31,021	$ 31,404
6	$ 32,928	$ 33,618	$ 34,533	$ 35,129	$ 35,562
7	$ 37,458	$ 38,173	$ 39,194	$ 40,016	$ 40,510
8	$ 41,781	$ 42,684	$ 43,602	$ 44,461	$ 45,010
9+	$ 49,721	$ 50,681	$ 51,393	$ 52,875	$ 53,527

[1]https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html

Low Income Population

Legend

Concentration
☐ Yes

Percent of population
- 8% - 15%
- 15.1% - 25%
- 25.1% - 40%
- 40.1% - 56%

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: C17002
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

ECONOMIC VITALITY

43

Median Household Income

Legend
- $40,000 - $60,000
- $60,001 - $80,000
- $80,001 - $100,000
- $100,001 - $130,000

Data Disclaimer

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: S1901
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

44
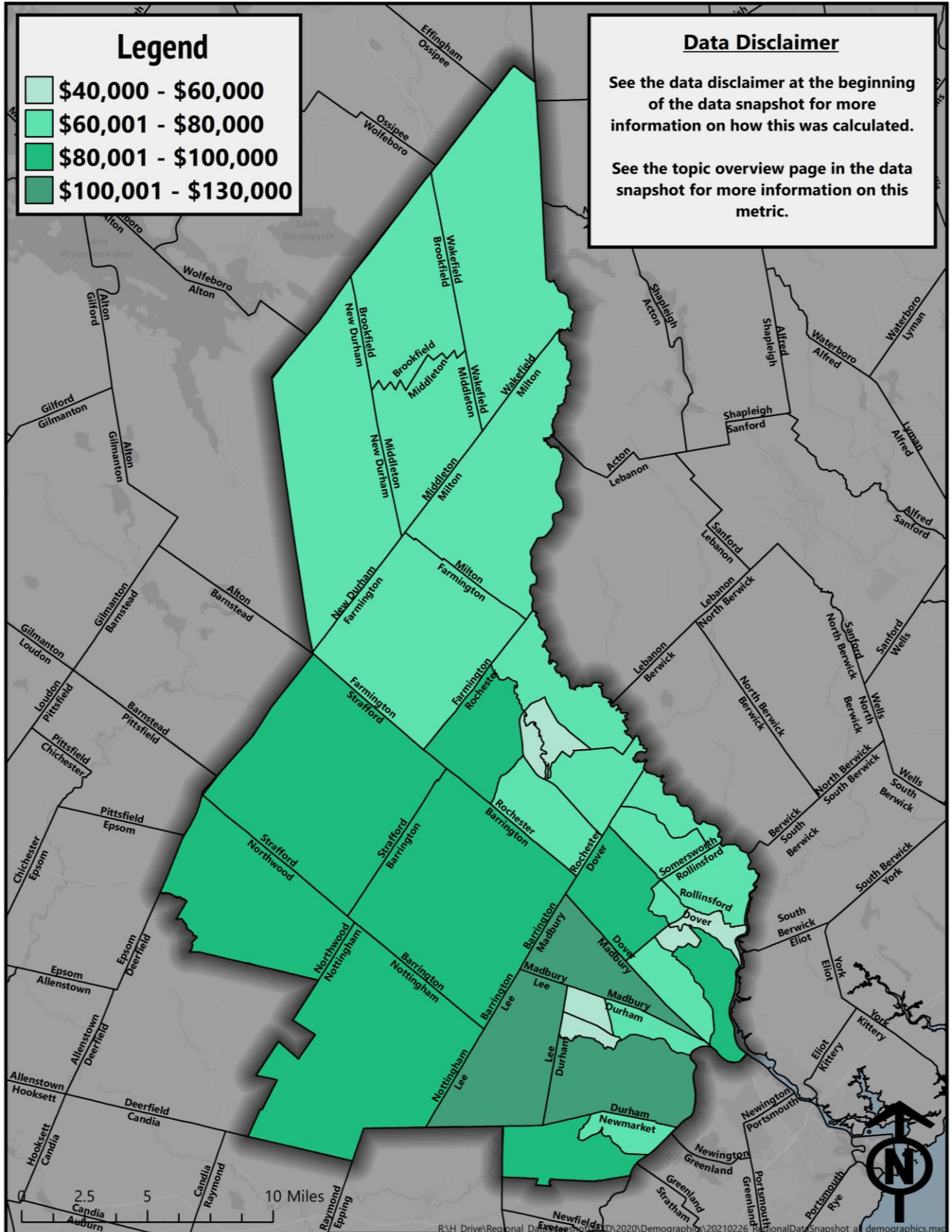
Households in Defined Income Brackets

The chart below shows the percent of households in each town within each income bracket. In addition, the median household income is displayed proportionately withing the corresponding income bracket. For example, in Durham the median household income is $81,995, which is about $7K above the low end of the $75K-$100K income bracket.
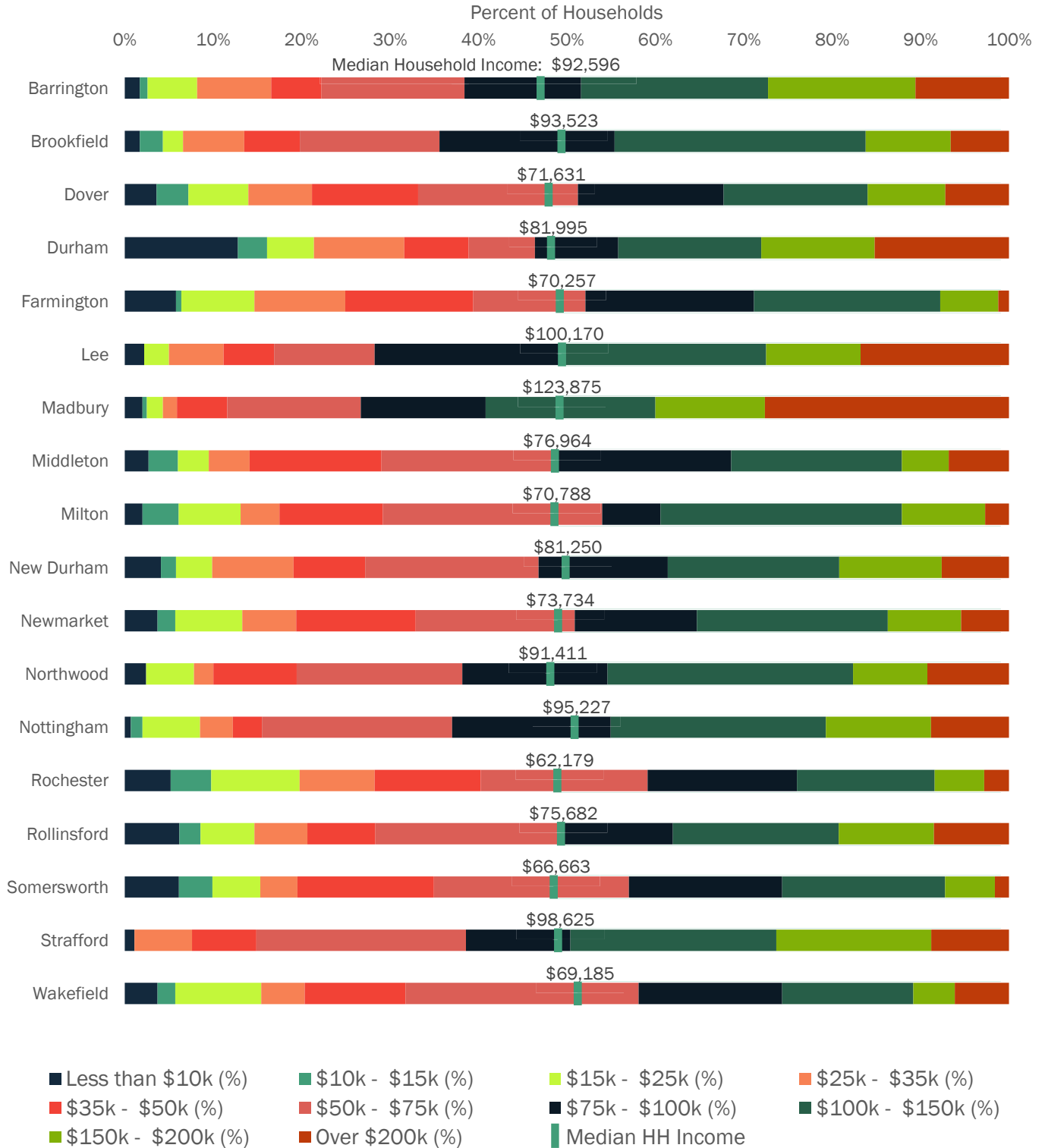
Percent of Households

Legend:
- Less than $10k (%)
- $10k - $15k (%)
- $15k - $25k (%)
- $25k - $35k (%)
- $35k - $50k (%)
- $50k - $75k (%)
- $75k - $100k (%)
- $100k - $150k (%)
- $150k - $200k (%)
- Over $200k (%)
- Median HH Income

Data Source: US Census Bureau ACS table: S1901
Data year: 2015-2019 5-year estimate
Coverage: SRPC County Subdivisions

ECONOMIC VITALITY

Income Inequality (Gini Index)

"The Gini Index is a summary measure of income inequality. The Gini coefficient incorporates the detailed shares data into a single statistic, which summarizes the dispersion of income across the entire income distribution. The Gini coefficient ranges from 0, indicating perfect equality (where everyone receives an equal share), to 1, perfect inequality (where only one recipient or group of recipients receives all the income). The Gini is based on the difference between the Lorenz curve (the observed cumulative income distribution) and the notion of a perfectly equal income distribution." – US Census Bureau[1]

As seen in the following map, Durham appears to have very high-income inequality due to the large low-income population from university students while also having an equally as large wealthy population as seen in the previous page. Towns like Madbury and Lee have low-income inequality due to their substantial wealthy populations (the 2 highest percentages in the region), and their small low-income populations.

The 2019 average Gini index for Strafford County was 0.43, and the 5 municipalities outside of Strafford County were 0.34-0.39. The national average is 0.48, meaning that our region has more income equality. Below is a summary of the counties' and towns' scores within our region.

Geography	Gini Index Score
United States	0.48
New Hampshire	0.44
Carroll County	0.44
Rockingham County	0.42
Strafford County	0.43

Municipality	Gini Index	Median Houshed Income	Percent of Low Income Households	Percent of Households Earning Over $200K
Barrington	0.40	$92,596	8.87%	10.60%
Brookfield	0.35	$93,523	12.70%	6.60%
Dover	0.44	$71,631	20.13%	7.20%
Durham	0.51	$81,995	34.24%	15.20%
Farmington	0.37	$70,257	26.96%	1.20%
Lee	0.36	$100,170	9.48%	16.80%
Madbury	0.38	$123,875	5.79%	27.60%
Middleton	0.37	$76,964	17.27%	6.80%
Milton	0.35	$70,788	17.62%	2.70%
New Durham	0.38	$81,250	14.70%	7.60%
Newmarket	0.39	$73,734	21.70%	5.40%
Northwood	0.34	$91,411	11.75%	9.20%
Nottingham	0.37	$95,227	10.71%	8.80%
Rochester	0.43	$62,179	28.95%	2.80%
Rollinsford	0.43	$75,682	14.96%	8.50%
Somersworth	0.37	$66,663	19.38%	1.60%
Strafford	0.35	$98,625	16.64%	8.80%
Wakefield	0.38	$69,185	21.75%	6.10%

[1] https://www.census.gov/topics/income-poverty/income-inequality/about/metrics/gini-index.html
Data Source: US Census Bureau ACS table: B19083
Data year: 2015-2019 5-year estimate
Coverage: SRPC Counties, County Subdivisions, and NH

Income Inequality (Gini Index)

Legend

- Low Income Inequality
- Slightly below regional average
- Slightly above regional average
- High Income Inequality

Data Disclaimer

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

Data Source: US Census Bureau ACS table: B19083
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

ECONOMIC VITALITY

Cost of Living

Cost of living includes a wide range of factors like transportation costs, housing costs, childcare, and healthcare.

Cost of living tends to increase as household income decreases. Lower income families may not be able to afford higher quality housing, which results in higher costs for heating. Transportation can also be a limiting factor. Jobs tend to be concentrated in urbanized communities where housing is more expensive. This may force lower income families to live farther from employment, increasing the cost of transportation. The long-term impacts of COVID-19 are uncertain, but existing equity challenges may increase.

This section looks at the estimated costs of living in Strafford County as a proxy for the region by looking at the income and expense estimates from the MIT Living Wage Calculator. The Living Wage Calculator estimates the salary required for each working adult in a household based on the number of children in the home and the basic needs of a household of that size. From these assumptions, the Living Wage Calculator produces two sets of salaries, a poverty salary which corresponds with the poverty thresholds defined by DHHS, and a living salary which allows the household to afford all of the expenses estimated for that family composition.

Assumptions
Adults:
- 1 Adult households – the adult works full time, 40 hours per week, 52 weeks per year
- 2 Adult household with one adult working - the working adult works full time, 40 hours per week, 52 weeks per year. The other adult provides childcare for any children in the home.
- 2 Adult household with both working – both adults work full time , 40 hours per week, 52 weeks per year.

Children:
- 1 Child households – the child is 4 years old
- 2 Children households - one child is 4 years old, and the other is 9 years old
- 3 Children households – one child is 4 years old, one child is 9 years old, and the other is 15 years old.

Living Wage vs Poverty Wage

The MIT Living Wage Calculator estimates the cost of living in a community and determines the necessary living wage and the poverty wage based on those costs. The data is available at the county level, so the data snapshot will focus on the Strafford County data.

The table below outlines the hourly wages and equivalent yearly salaries **per working adult** for various household types for the poverty wage and the living wage based on the following assumptions:
- An employed adult works 40 hour weeks, 52 weeks per year. In households with two adults, with one not employed, the adult who does not work provides childcare for any children in the home.
- For households with children, the first child present is assumed to be 4 years old, a second child is 9 years old, and a third child is 15 years old.

Household Type		Poverty Wage	Poverty Salary	Living Wage	Living Salary
1 Adult	0 Children	$ 6.00	$ 12,480.00	$ 13.05	$ 27,144.00
	1 Child	$ 8.13	$ 16,910.40	$ 26.41	$ 54,932.80
	2 Children	$ 10.25	$ 21,320.00	$ 30.67	$ 63,793.60
	3 Children	$ 12.38	$ 25,750.40	$ 37.93	$ 78,894.40
2 Adults (1 Working)	0 Children	$ 8.13	$ 16,910.40	$ 19.64	$ 40,851.20
	1 Child	$ 10.25	$ 21,320.00	$ 24.00	$ 49,920.00
	2 Children	$ 12.38	$ 25,750.40	$ 26.51	$ 55,140.80
	3 Children	$ 14.50	$ 30,160.00	$ 30.82	$ 64,105.60
2 Adults (both working)	0 Children	$ 4.06	$ 8,444.80	$ 9.82	$ 20,425.60
	1 Child	$ 5.13	$ 10,670.40	$ 14.51	$ 30,180.80
	2 Children	$ 6.19	$ 12,875.20	$ 16.65	$ 34,632.00
	3 Children	$ 7.25	$ 15,080.00	$ 19.69	$ 40,955.20

Data source: MIT Living Wage Calculator
Data years: 2019
Coverage: Strafford County, NH

ECONOMIC VITALITY

Typical Household Expenses

The MIT Living Wage Calculator estimates the cost of living in a community and determines the necessary living wage and the poverty wage based on those costs. The data is available at the county level, so the data snapshot will focus on the Strafford County data.

The table below outlines the estimated cost for six primary living expenses based on the following assumptions:
- An employed adult works 40 hour weeks, 52 weeks per year. In households with two adults, with one not employed, the adult who does not work provides childcare for any children in the home.
- For households with children, the first child present is assumed to be 4 years old, a second child is 9 years old, and a third child is 15 years old.

Household Type		Food	Child Care	Medical	Housing	Transportation	Other
1 Adult	0 Children	$3,495	$0	$2,634	$10,908	$3,899	$2,890
	1 Child	$5,163	$9,174	$7,526	$13,932	$7,602	$4,818
	2 Children	$7,760	$12,407	$7,237	$13,932	$9,644	$5,003
	3 Children	$10,292	$15,639	$7,358	$19,140	$10,506	$6,293
2 Adults (1 Working)	0 Children	$6,408	$0	$6,032	$10,992	$7,602	$4,818
	1 Child	$7,987	$0	$7,237	$13,932	$9,644	$5,003
	2 Children	$10,303	$0	$7,358	$13,932	$10,506	$6,293
	3 Children	$12,545	$0	$7,259	$19,140	$11,013	$6,296
2 Adults (both working)	0 Children	$6,408	$0	$6,032	$10,992	$7,602	$4,818
	1 Child	$7,987	$9,174	$7,237	$13,932	$9,644	$5,003
	2 Children	$10,303	$12,407	$7,358	$13,932	$10,506	$6,293
	3 Children	$12,545	$15,639	$7,259	$19,140	$11,013	$6,296

The table below outlines the required salary and tax assumptions. These salary and tax assumptions are associated with the costs of the table above. Tax assumptions are based on state and federal taxes and make certain assumptions for income and property taxes.

Household Type		Required annual income after taxes	Annual taxes	Required annual income before taxes
1 Adult	0 Children	$23,827	$3,324	$27,151
	1 Child	$48,214	$6,726	$54,940
	2 Children	$55,983	$7,810	$63,792
	3 Children	$69,228	$9,657	$78,885
2 Adults (1 Working)	0 Children	$35,852	$5,001	$40,854
	1 Child	$43,802	$6,110	$49,913
	2 Children	$48,392	$6,751	$55,143
	3 Children	$56,253	$7,847	$64,100
2 Adults (both working)	0 Children	$35,852	$5,001	$40,854
	1 Child	$52,976	$7,390	$60,367
	2 Children	$60,799	$8,481	$69,280
	3 Children	$71,892	$10,029	$81,921

Data source: MIT Living Wage Calculator
Data years: 2019
Coverage: Strafford County, NH

Meals and Rooms Tax Receipts

The Meals and Rooms (M&R) tax is a 9% tax on rooms and meals paid by the consumer and collected by operators of hotels, restaurants, food service, room rental, and motor vehicle rentals. New Hampshire Office of Strategic Initiatives (OSI) compiles tax data from the Department of Revenue Administration's monthly M&R tax report. This data is an important indicator of the hospitality industry, and in particular, the restaurants and hotels in the region.

Total Meals and Rooms Receipts by Quarter (Calendar Year)

Legend: Strafford, Carroll, Rockingham, Other Counties, NH
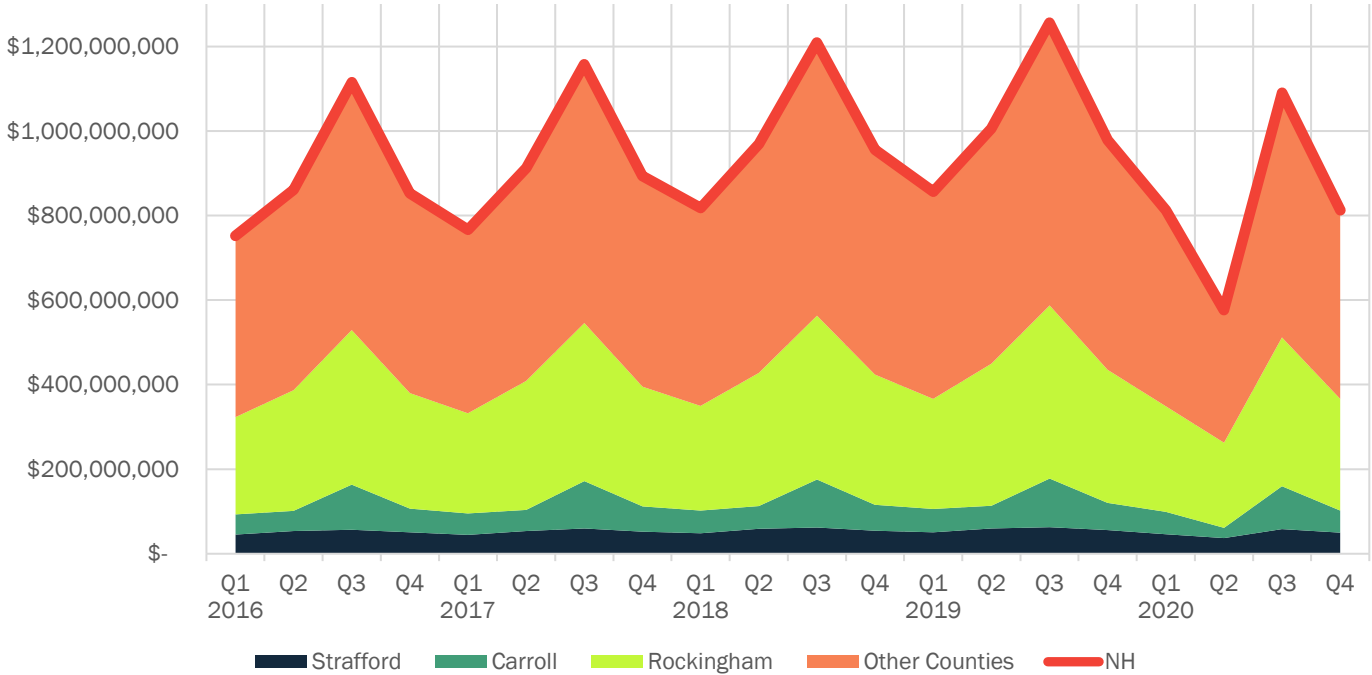
The annual M&R tax revenues have only decreased four times since 1975. Each of these has aligned with a recession. The 1973-1975 recession caused the largest decline in M&R tax revenue, and the 2020 COVID-19 shutdowns and subsequent recession is the second largest decrease for the M&R tax revenues.

NH Annual Percent Change in Meals & Rooms Tax

State Fiscal Year

Legend: Change from Prior Year, Rate from 5% to 6%, Rate from 6% to 7%, Rate from 7% to 8%, Rate from 8% to 9%

LIVABILITY AND QUALITY OF LIFE

Table of Contents

Housing Market

The availability, affordability, type, and quality of housing are significant factors for attracting and retaining a qualified workforce and attracting new businesses. Housing that meets the above criteria, available both for purchase and rent, allows people to live and work in the same community, attracts workforce and skilled labor, and makes communities more resilient and competitive, which are all crucial to supporting a region's economy.

The metrics in this section look at the diversity and availability of housing in the region by looking at
- The percent of housing units that are occupied by the homeowner or by renters,
- The affordability of purchasing a home,
- The affordability of renting a home, and
- The number of building permits issued.

The SRPC region has seen an increase in demand for housing, along with limited supply, which has caused rent and sale prices to soar over the past 20 years. In addition, the southern most communities have a high percentage of households that rent opposed to owning their own homes.

The COVID-19 pandemic has had notable impacts on these trends as well. With lower interest rates and the new-found ability to work from home, many people are looking to buy houses. As of this writing in April 2021, it is still too soon to tell what the long-term impacts will be.

In the chart to the right, we see a steadily decreasing average household size for the more urbanized counties while the rural and aging Carroll county has seen a more rapid decline.

Average Household Size by County
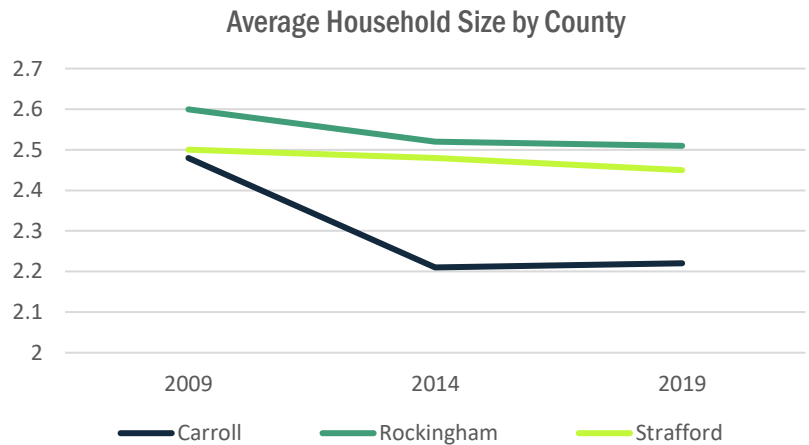
Data Disclaimers
The data used in this section comes from one of four sources.
1. US Census Bureau ACS data: For this data, please see the Census Data Disclaimer in the Demographics chapter of the document.
2. New Hampshire Housing Finance Authority (NHHFA): This data is collected, validated, and made available by the NHHFA. The purchase price and rental cost trend data is only available for the housing units that reported costs to NHHFA, and may not be representative of all units in the region.
3. NH Office of Strategic Initiatives Building Permit Database: NHOSI collects building permit data from every municipality in NH each year.
4. SRPC Building Permit Database: In addition to the data that NHOSI collects, SRPC collects additional information

LIVABILITY/QUALITY OF LIFE

53

Owner vs Renter Households

Household occupancy is broken into two types, renter occupied and owner occupied. The data below looks at occupied housing units and counts each unit in a multi-unit housing structure as a distinct household. UNH students living in on-campus dorms are not included, but off campus apartments are included.

In the chart below, the total width of the bar represents the total number of households in the municipality and the two colors represent the percent of the households that are owner or renter occupied.

The cities within our region have the highest number of renters while the rural areas are almost entirely owner-occupied homes. None of the municipalities have over 50% renter-occupied homes, however Dover, Newmarket, Somersworth, and Durham are very close to a 50-50 split.

There is more detailed information by census tract in the following maps.

Households by Occupant Type
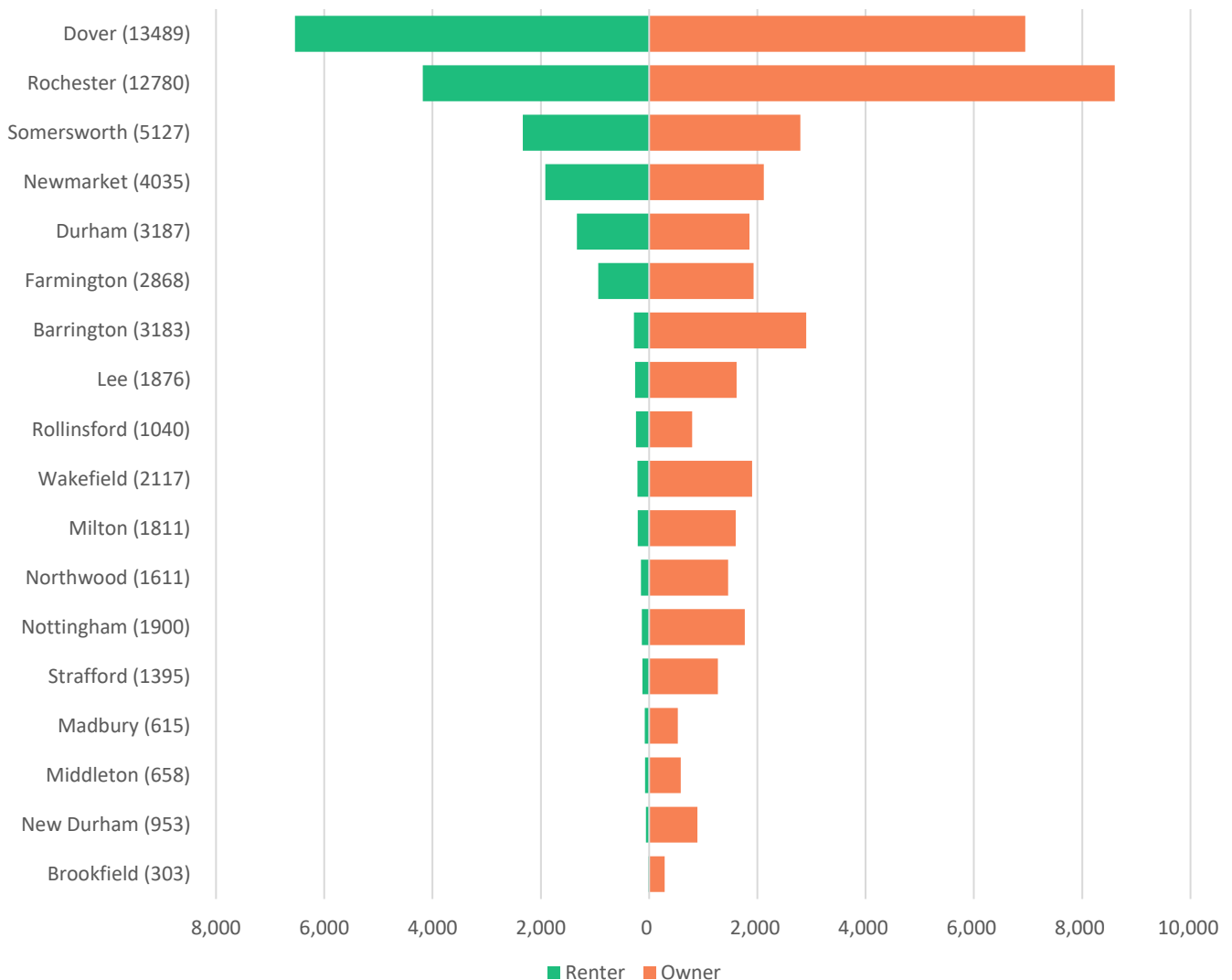
Municipality	Renter	Owner
Dover (13489)		
Rochester (12780)		
Somersworth (5127)		
Newmarket (4035)		
Durham (3187)		
Farmington (2868)		
Barrington (3183)		
Lee (1876)		
Rollinsford (1040)		
Wakefield (2117)		
Milton (1811)		
Northwood (1611)		
Nottingham (1900)		
Strafford (1395)		
Madbury (615)		
Middleton (658)		
New Durham (953)		
Brookfield (303)		

■ Renter ■ Owner

LIVABILITY/QUALITY OF LIFE

Margin of Household Occupancy by Type
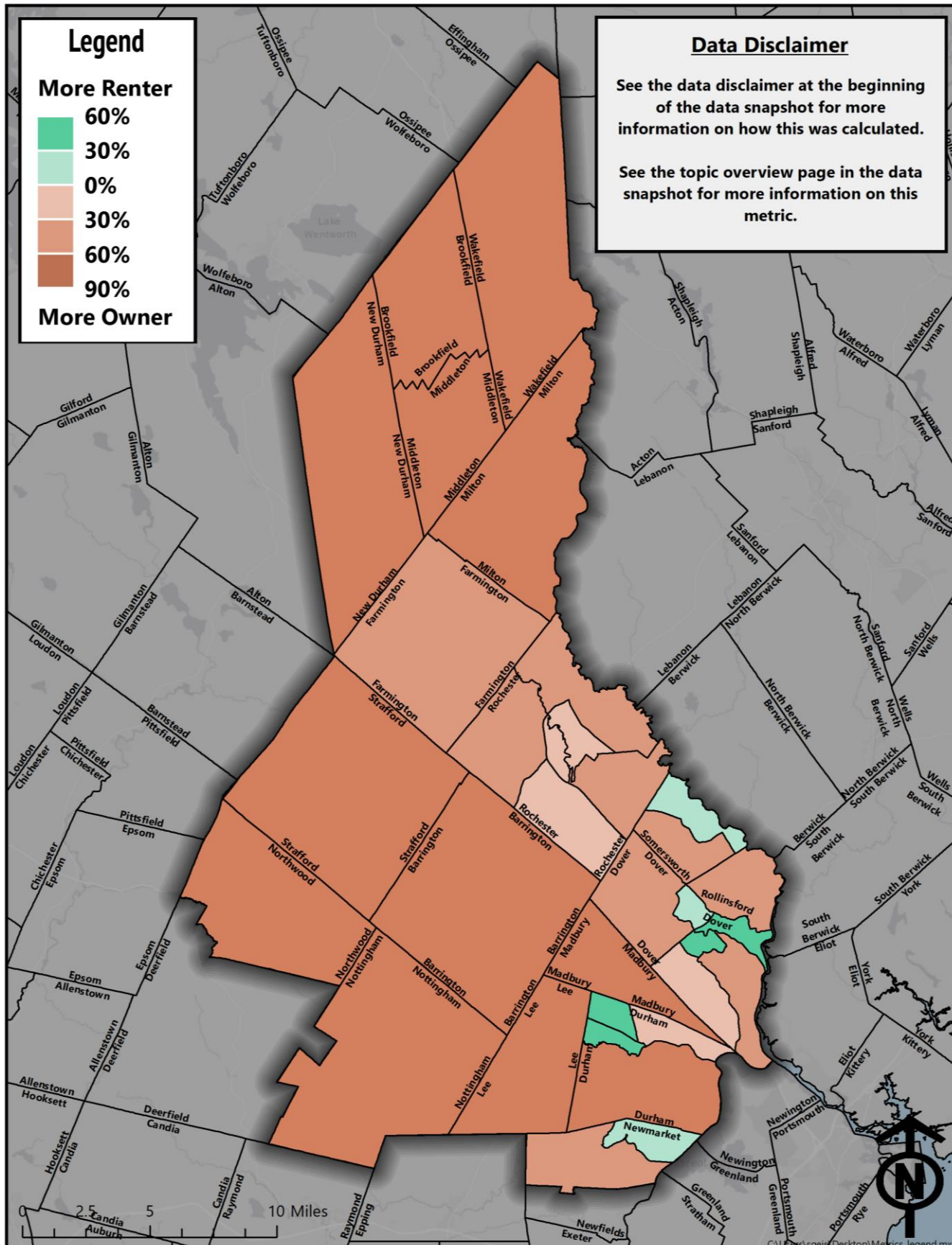
Legend

More Renter

- 60%
- 30%
- 0%
- 30%
- 60%
- 90%

More Owner

Data Disclaimer

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

LIVABILITY/QUALITY OF LIFE

Data Source: US Census Bureau ACS table: B25044
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

Percent of Households That Rent

Legend

Concentration
- ☐ Yes

Percent of Households
- ☐ 7% - 15%
- ☐ 15.1% - 35%
- ☐ 35.1% - 50%
- ☐ 50.1% - 75%
- ☐ No Data

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

LIVABILITY/QUALITY OF LIFE

56

Percent of Households That Own Their Home

Legend

Concentration
- ☐ Yes

Percent of Households
- ☐ 25% - 45%
- ☐ 45.1% - 65%
- ☐ 65.1% - 80%
- ☐ 80.1% - 93%
- ☐ No Data

Concentrations:

A concentration is any tract that has significantly more of a given population than the rest of the region. As ACS data has a very small sample size...

"Yes" means the survey included enough people to be confident in the data.

"Maybe" means that not enough people were surveyed to be confident, but the data might still be accurate.

See the data disclaimer at the beginning of the data snapshot for more information on how this was calculated.

See the topic overview page in the data snapshot for more information on this metric.

LIVABILITY/QUALITY OF LIFE

Data Source: US Census Bureau ACS table: B25044
Data year: 2015-2019 5-year estimate
Coverage: SRPC Tracts

Current Purchase Price Trends

These charts summarize the cost trends of housing for the SRPC Region. The New Hampshire Housing Finance Authority releases an annual report that contains housing data for each individual town and regional planning commission. These charts are for the whole SRPC region, but future analysis will include details of each town.

The median purchase price for the region will not match the individual communities. Durham's median purchase price for 2019 was about $120K over the regional median.

Median Purchase Price (in Thousands USD, 2019)

Legend: All Homes — Existing Homes — New Homes — Condominiums
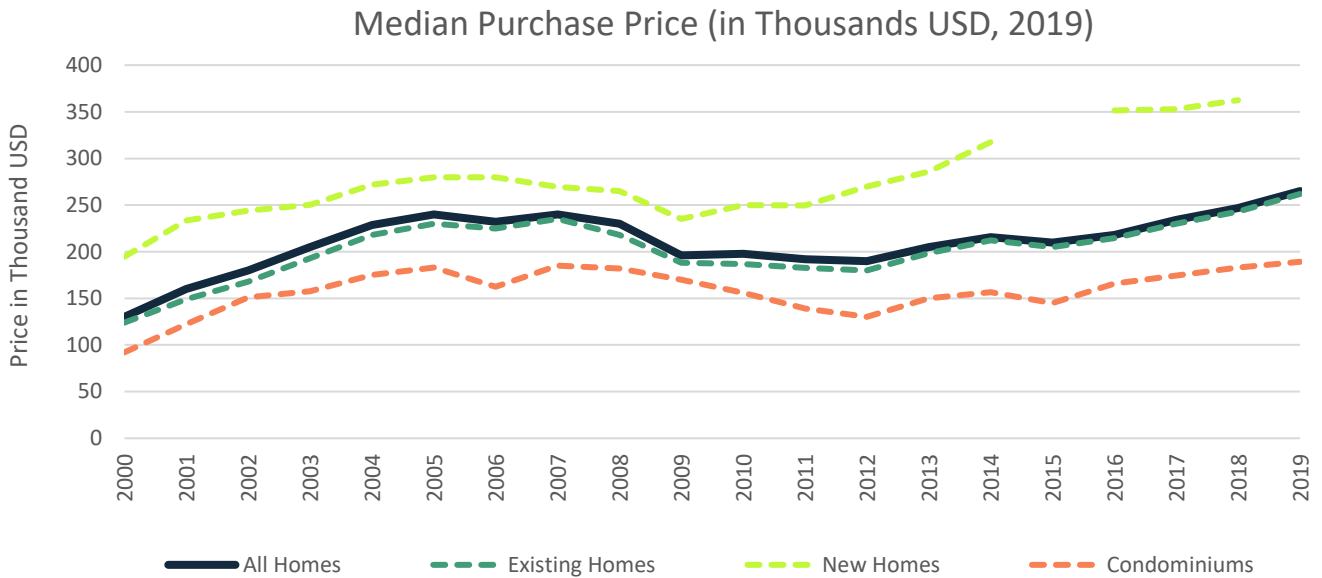
The frequency of a purchase price looks at the number of homes sold in the year at the specified price point. In the chart below, the prices listed represent the homes sold up to that price (the homes at the $50K mark are homes sold for $30K-$50K, not exactly $50K).

The affordable price comes from NHHFA and is defined in NH RSA674:58-61. SRPC uses the "Portsmouth-Rochester, NH" HUD Metropolitan Fair Market Area's 80% threshold for the affordable purchase price.
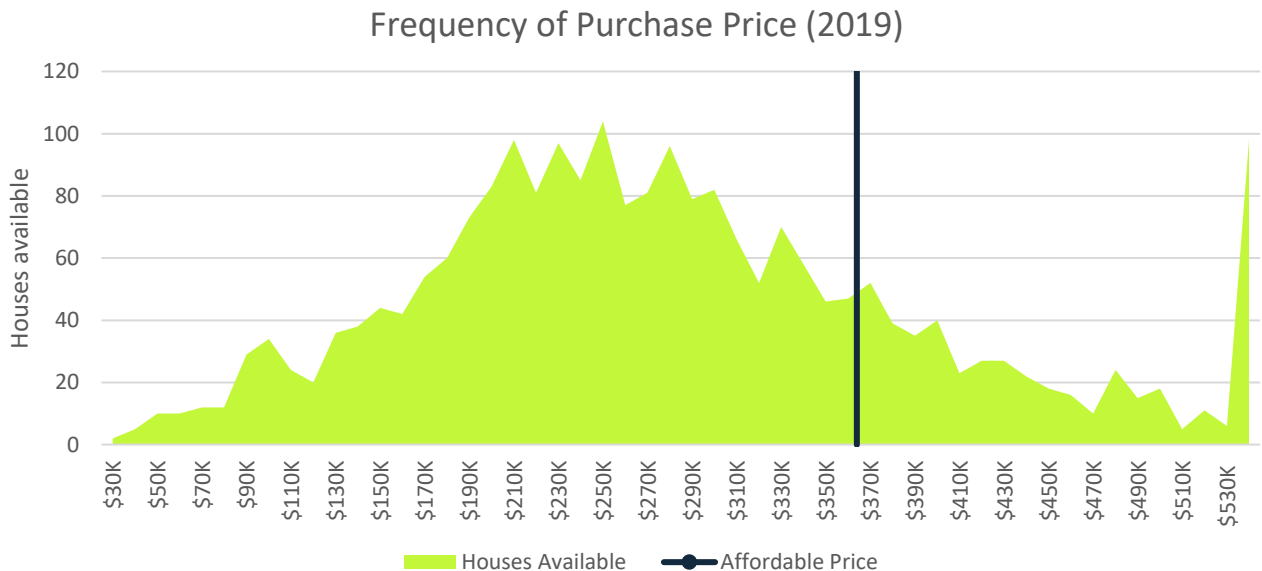
Frequency of Purchase Price (2019)

Legend: Houses Available — Affordable Price

https://www.nhhfa.org/wp-content/uploads/2020/04/Workforce_Housing_Purchase_Rent_Limits.pdf
Data source: NHHFA Purchase Price Trends
Data years: 2000-2019
Coverage: SRPC

LIVABILITY/QUALITY OF LIFE

58

Current Rental Price Trends

These charts summarize the cost trends of housing for the SRPC Region. The New Hampshire Housing Finance Authority releases an annual report that contains housing data for each individual town and regional planning commission. These charts are for the whole SRPC region, but future analysis will include details of each town.

The median rent price for the region will not match the individual communities. Newmarket's median rent price for 2019 was $1,481 per month, compared to the region's $1,279. Dover's 2-bedroom median rent was $1,563, while the region's 2-bedroom median was $1,396.

Median Rent Price (2019)
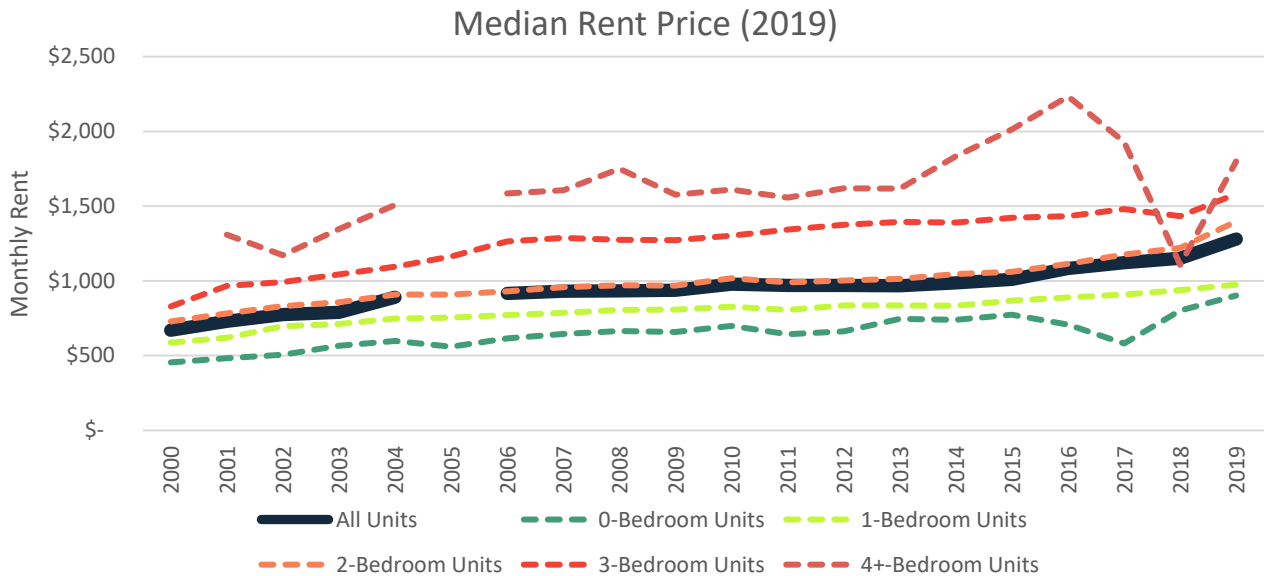
The frequency of a rental price looks at the number of units rented in the year at the specified price point. In the chart below, the prices listed represent the monthly rent up to that price (the homes at the $1,200 mark are units rented for $1,100-$1,200 per month, not exactly $1,200). This chart looks at all units, so keep in mind that many of the less expensive units are likely studios and 1-bedroom apartments. The affordable price comes from NHHFA and is defined in NH RSA 674:58-61. SRPC uses the "Portsmouth-Rochester, NH" HUD Metropolitan Fair Market Area's 60% threshold for the affordable rental price.
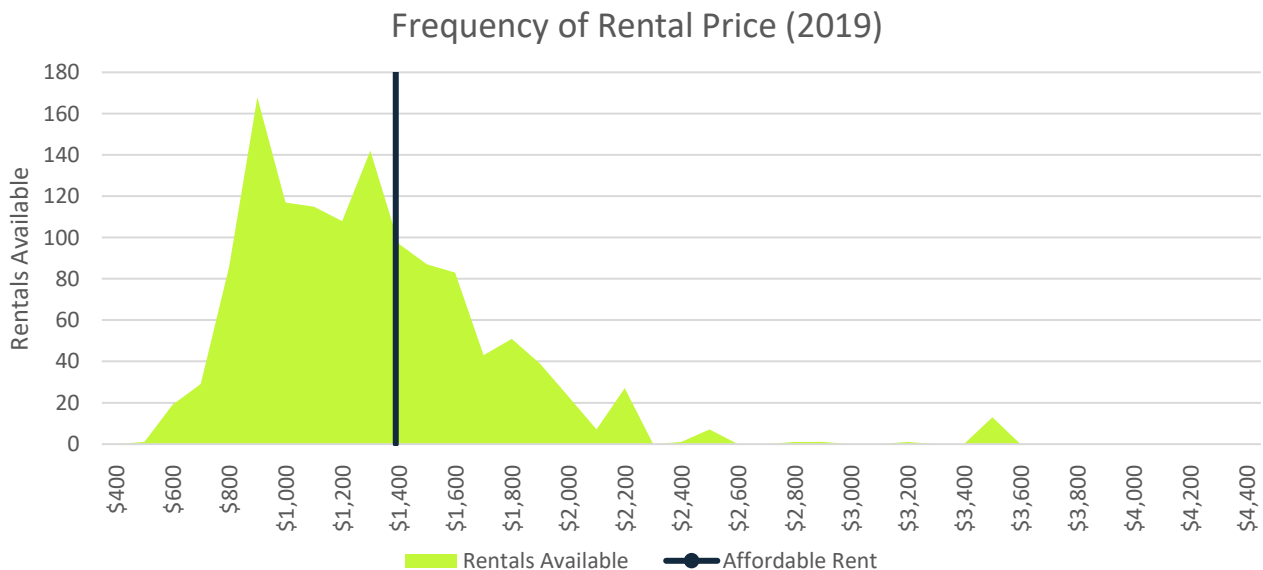
Frequency of Rental Price (2019)

https://www.nhhfa.org/wp-content/uploads/2020/04/Workforce_Housing_Purchase_Rent_Limits.pdf
Data source: NHHFA Rental Price Trends
Data years: 2000-2019
Coverage: SRPC

Building Permits

New Hampshire OSI (Office of Strategic Initiatives) collects residential unit information annually to update the meals and tax revenues for each municipality and to make a population estimate as well. OSI's data includes demolitions so the data below is the net change of housing units added each year. SRPC also collects this information on an annual basis but with much more detail for our 18 municipalities. OSI and SRPC measure the number of living units for residential permits including single family, multi-family, mixed use, and manufactured dwellings.

Residential Units Added to Strafford Region (2000-2019)
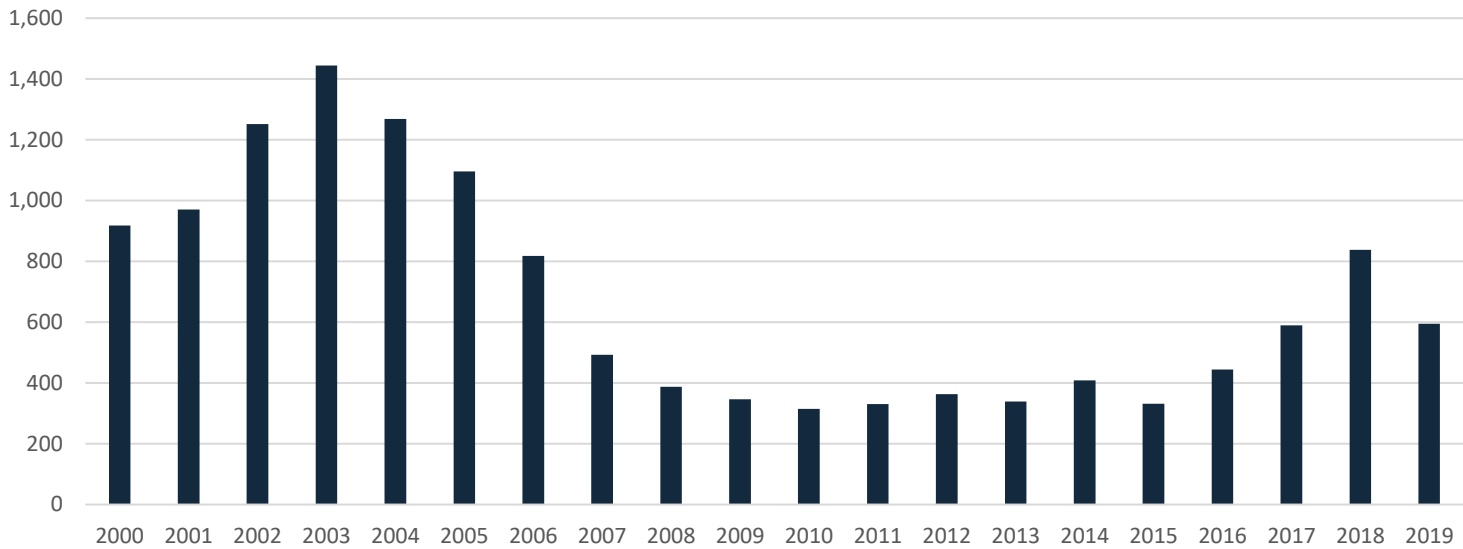
In addition to OSI's data, SRPC collects building permits for our 18 municipalities with more detail than OSI. This includes the non-residential permits such as industrial/commercial permits which SRPC did not collect this data prior to 2008. We measure the number of permits because square foot data is not collected as a part of our data request. These are not calculated with demolitions like OSI.

Non-Residential Permits in Strafford Region (2008-2019)
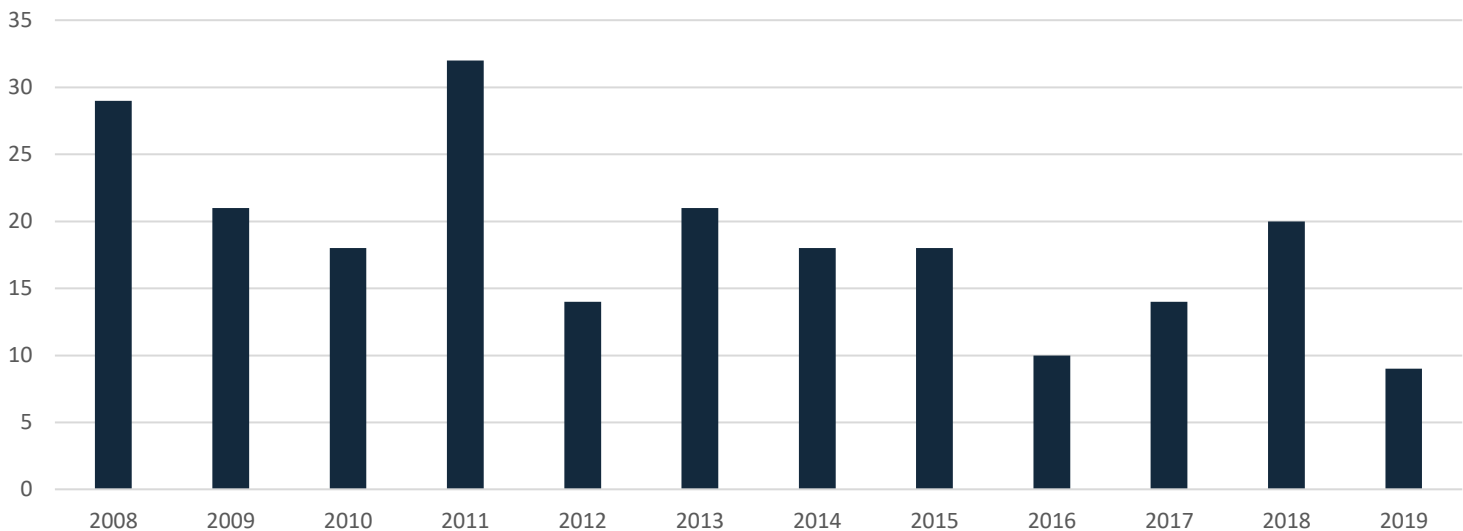
Data source: Chart 1: NH OSI (Office of Strategic Initiatives), Chart 2: SRPC
Data years: 2000-2019, 2008-2019
Coverage: SRPC

For Interactive Maps:
https://tinyurl.com/2ptxwrd2

Traffic Safety

The Federal Highway Administration (FHWA) implemented the final rule on the Highway Safety Improvement Program (HSIP) effective April 14, 2016. This regulation (23 CFR 490) requires that five safety related performance targets must be set and published annually by State DOTs by August 31st and MPOs within 180 days after the state targets are established. The federally required targets assess and report five factors related to highway safety:

1. **Number of Fatalities:** The total number of persons suffering fatal injuries in a motor vehicle crash during a calendar year.
2. **Rate of Fatalities:** The ratio of total number of fatalities to the number of vehicle miles traveled (VMT, in 100 Million VMT) in a calendar year.
3. **Number of Serious Injuries:** The total number of persons suffering at least one serious injury in a motor vehicle crash during a calendar year.
4. **Rate of Serious Injuries:** The ratio of total number of serious injuries to the number of VMT (in 100 Million VMT) in a calendar year.
5. **Number of Non-Motorized Fatalities and Non-motorized Serious Injuries:** The combined total number of non-motorized fatalities and non-motorized serious injuries involving a motor vehicle during a calendar year.

In addition to these five measures, SRPC also tracks the number of motorcycle fatalities.

Data Impacts in 2020
The 2020 calendar year saw significant impacts from the COVID-19 pandemic, especially in transportation. Traffic volumes for 2020 are still estimations and won't be finalized until April, however due to shutdowns in response to COVID-19, volumes were much lower in 2020 than in recent years. Despite the lower traffic volumes, the number of fatalities stayed consistent with 2019. If not for the reduction of traffic, the number of fatalities may have been higher in 2020. The long term impacts of the ongoing pandemic may affect the 2021 safety trends as well.

Data for the establishment of these measures is provided from three sources:
- <u>Fatality Analysis Reporting System (FARS)</u>: FARS Annual Report File or Final data is utilized to provide information on fatal crashes in the state.
- <u>State Motor Vehicle Crash Database:</u> Data collected and maintained by the NH Department of Safety is utilized to determine the number of serious injuries in the state. This is based on the Federal Model Minimum Uniform Crash Criteria (MMUCC, 4th Edition).
- <u>Highway Performance Monitoring System (HPMS)</u>: State Vehicle Miles Traveled (VMT) data is collected by the Department of Transportation and aggregated into a dataset for the state. VMT data can be calculated for MPO regions and individual communities. SRPC contributes roughly 9% of the statewide VMT.

NHDOT's Year-To-Date Fatality map can be found here:
https://www.nhtmc.com/Dashboard/Safety/.

Fatalities

The number of fatalities and the rate of fatalities per 100 million vehicle miles traveled (VMT) are two of the FHWA mandated performance measures defined in 23 CFR 490. SRPC is required to set annual targets by the end of February each year. So far, SRPC has supported the state targets set by NHDOT each year.

Fatal crashes in NH were down 30% in 2019. This is likely an anomaly in the state. Preliminary numbers for 2020 show 102 fatalities.

| YEAR | STATE | | SRPC | |
	Fatalities	5-year average	Fatalities	5-year average
2007	129	-	9	-
2008	138	-	18	-
2009	110	-	10	-
2010	128	-	10	-
2011	90	119	7	10.8
2012	108	114.8	9	10.8
2013	135	114.2	20	11.2
2014	95	111.2	11	11.4
2015	114	108.4	15	12.4
2016	136	117.6	17	14.4
2017	102	116.4	16	15.8
2018	147	118.8	15	14.8
2019	101	120	5	13.6
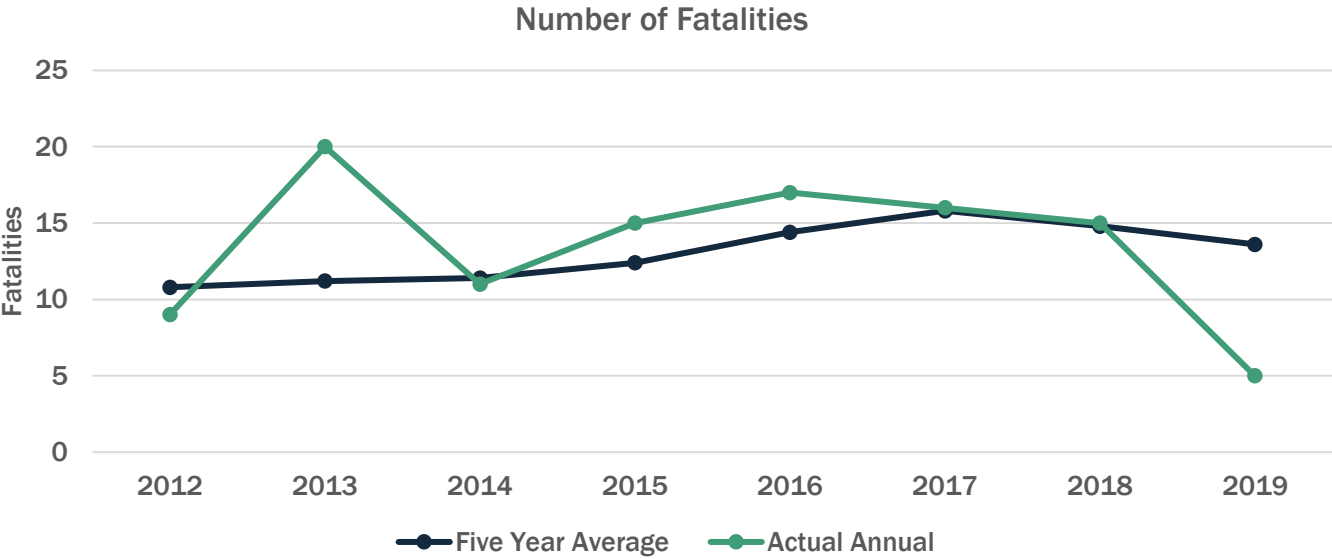
Number of Fatalities

Data source: Fatality Analysis Reporting System
Data years: 2007 - 2019
Coverage: SRPC

LIVABILITY/QUALITY OF LIFE

Fatalities (2009-2019)

Legend
● Fatal Crashes (2009-2019)
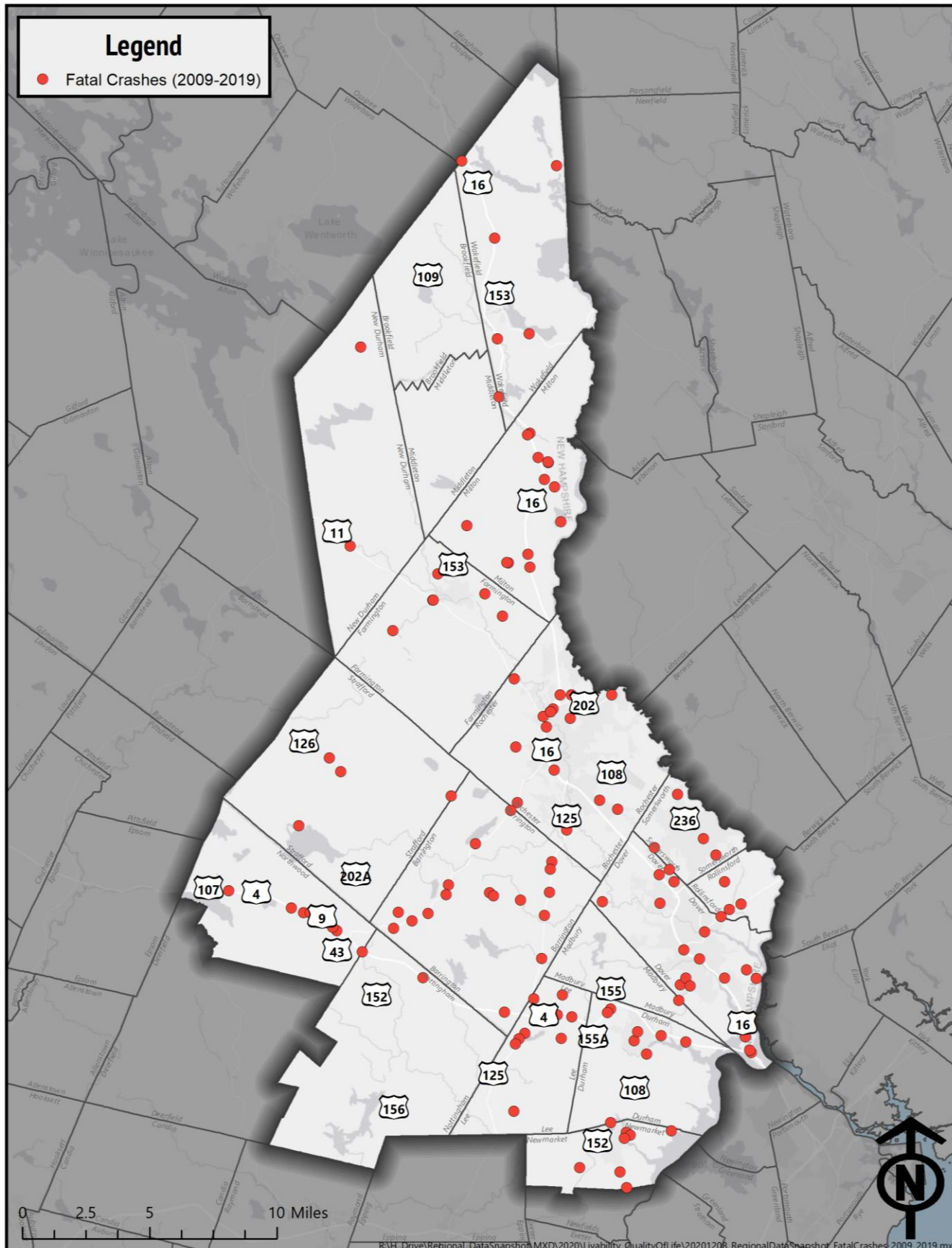
Data source: Fatality Analysis Reporting System
Data years: 2009 - 2019
Coverage: SRPC

Serious Injuries

The number of serious injuries and the rate of serious injuries per 100 million vehicle miles traveled (VMT) are two of the FHWA mandated performance measures defined in 23 CFR 490. SRPC is required to set annual targets by the end of February each year. So far, SRPC has supported the state targets set by NHDOT each year.

The New Hampshire Division of Motor Vehicles in the Department of Safety maintains a database of crashes in the state. This is the data source for the serious injury measures. A serious injury is one that is incapacitating. These include severe lacerations, broken or distorted limbs, skull fractures, crushed chest, internal injuries, unconsciousness, and any inability to leave the scene without assistance.

This data is collected on the scene of each crash by the responding police officers. These crash reports may be filled out on paper or electronically, and on varying versions of the form. The data is then sent to the state and manually entered into the database. Early versions of the data might be distributed, and updates did not necessarily make it to everyone with access to the data.

In 2017, the state launched a new database called VISION to house the crash data. VISION is a more consistent and comprehensive database that has improved the data management for the crash data. It is stricter in what is allowed to be reported as a serious injury, and allows for more seamless data distribution. As a result, there is a notable decrease in the serious injury totals in 2017 and 2018. It is assumed that this trend will continue.

Due to consistency and accuracy concerns with the data pre-2017, it is difficult to set real targets on the existing data that the MPOs have access to. The State sets targets based on the current data at DOS, but the data provided to the MPOs prior to 2017 show much higher injury numbers because the data is from a different version of the database. Therefore, the SRPC trend should decrease dramatically over the next 2-3 years once the 2016 data is no longer in the five-year rolling average, and the trend line should level off at a lower number.
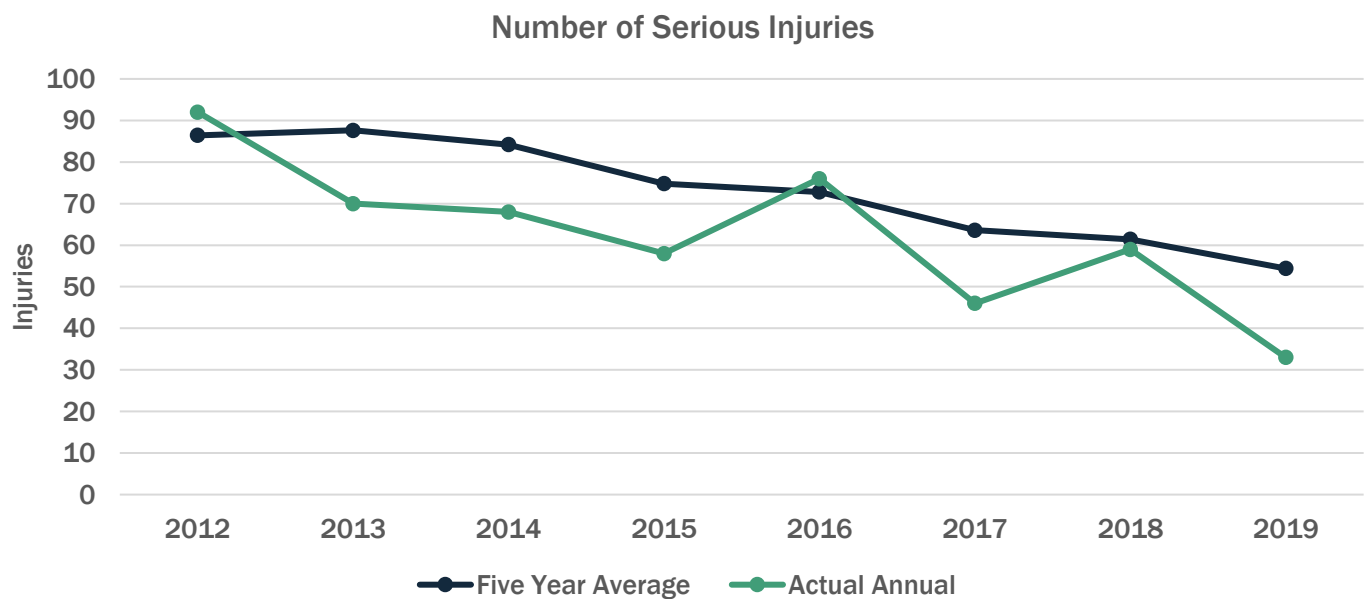
Number of Serious Injuries

Data source: New Hampshire Department of Transportation
Data years: 2007 - 2019
Coverage: SRPC

Serious Injuries (2009-2019)
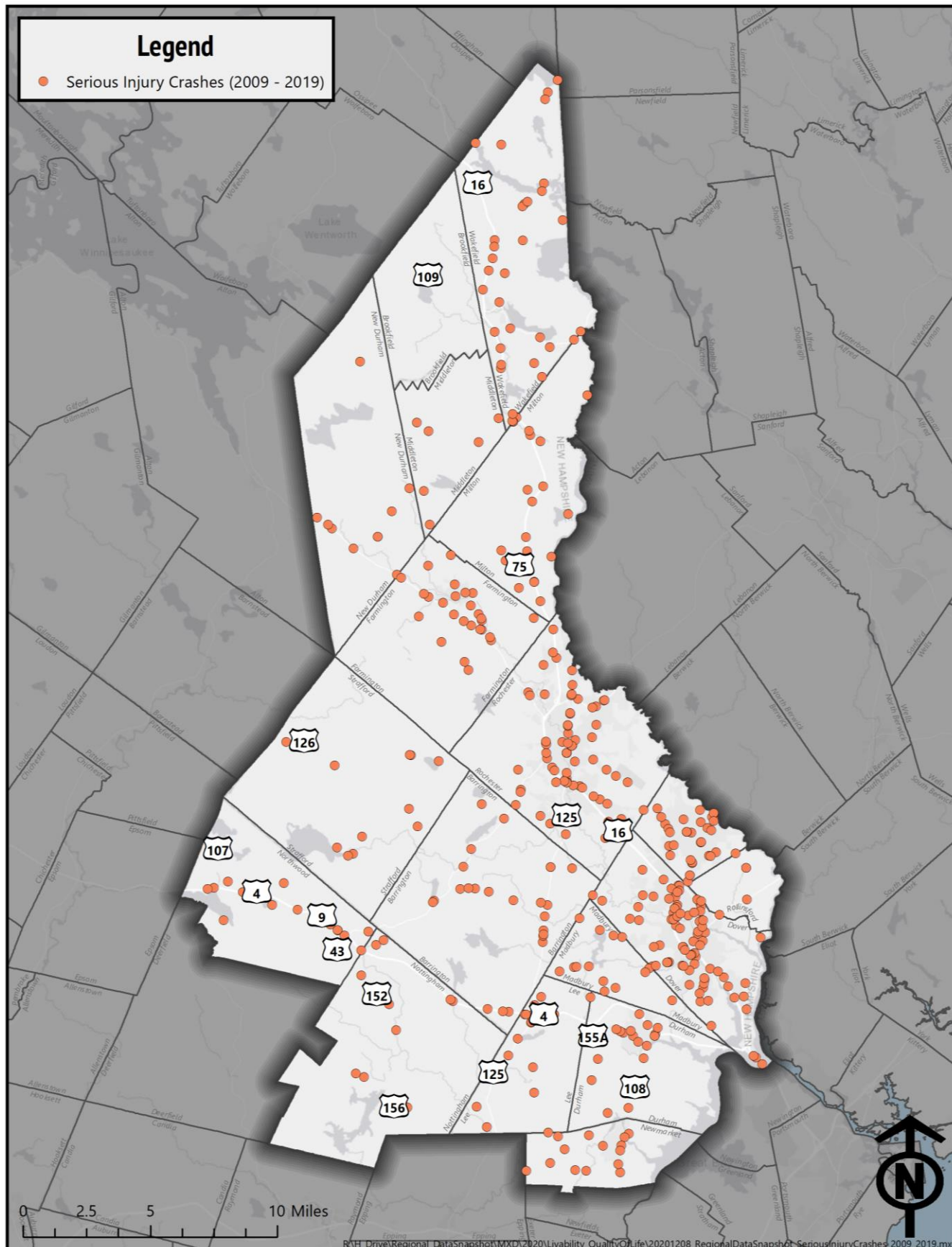
Legend

● Serious Injury Crashes (2009 - 2019)

Data source: New Hampshire Department of Transportation
Data years: 2007 - 2019
Coverage: SRPC

Rate of Fatalities and Serious Injuries

The rate of fatalities and the rate of serious injury measures combine their respective crash data with the vehicle miles traveled (VMT) data from the Highway Performance Monitoring System (HPMS). The NHDOT has calculated regional shares of VMT for the MPOs to use in these calculations.

The rate of fatalities is calculated by dividing the number of fatalities by the VMT. Similarly, the rate of serious injuries is calculated by dividing the serious injuries by the VMT. SRPC's rate of fatalities and rate of serious injuries are both generally a bit higher than the state rates. This is likely because on average, the regional share of VMT is less than the regional share of fatalities and serious injuries. 2019 data showed a decrease in VMT but the number of serious injuries did not fall as dramatically. This will result in a higher rate of serious injuries during this reporting period.

SRPC Average Annual Shares		
Fatalities	Serious Injuries	VMT
11%	11%	9%

$$\text{SRPC Rate} = \frac{11\% \; of \; state \; total \; people \; killed \; or \; injured}{9\% \; of \; state \; VMT}$$

Rate of Fatalities

Rate of Serious Injuries
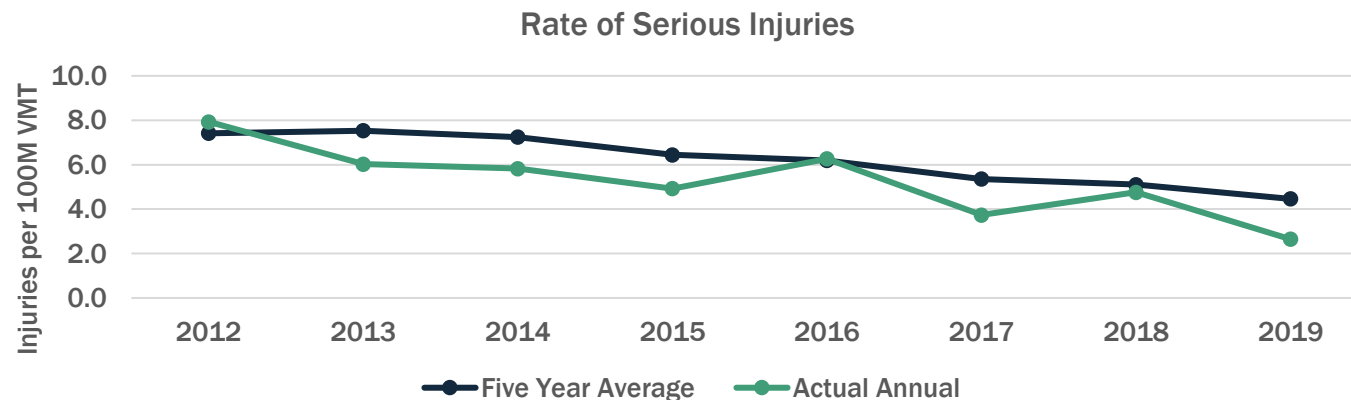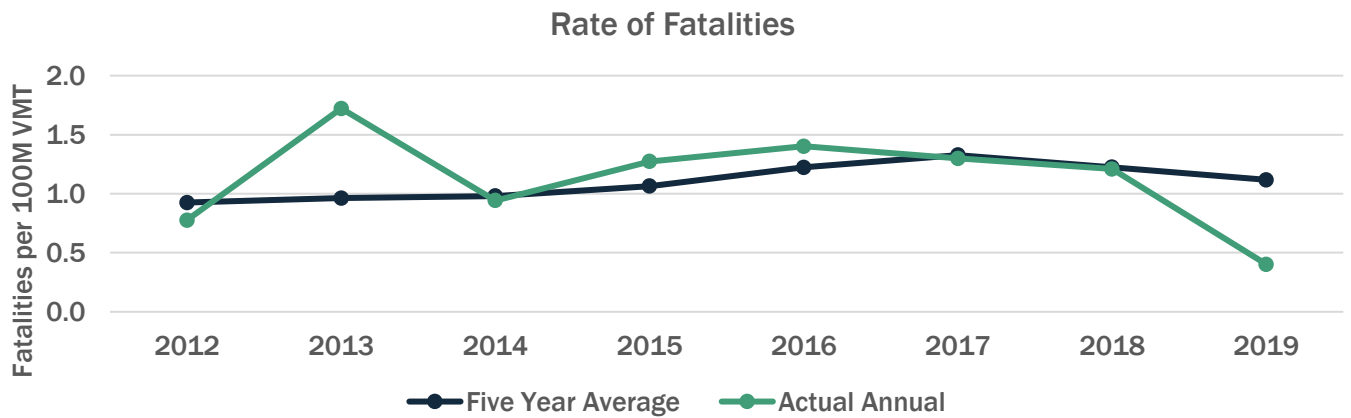
Non-Motorized Fatalities and Serious Injuries

The non-motorized fatalities and serious injuries measure is the sum of the individuals who were killed or seriously injured while outside of a motor vehicle. This measure includes pedestrians and bicyclists.

As with most crashes, the locations for non-motorized crashes are random. SRPC has seen anywhere from 0-33% of the statewide non-motorized fatalities and anywhere from 6-37% of the serious injuries since 2007. In 2016, SRPC had 3 non-motorized fatalities (21% of the state total that year), and 6 serious injuries (12% of the state total). In 2019, SRPC had 0 non-motorized fatalities and 2 (of the 30 statewide) serious injuries.

Year	Fatalities		Serious Injuries		Fatalities + Serious Injuries	
	State	SRPC	State	SRPC	State	SRPC
2012	10.2	1.8	40	5.4	50.2	7.2
2013	11.8	1.2	40.2	5.2	52	6.4
2014	13	1.2	40.4	4.8	53.4	6
2015	14	1.8	44.4	5.6	58.4	7.4
2016	16.2	2	43.4	7	59.6	9
2017	17.2	2.2	41.6	6	58.8	8.2
2018	16	2	40.4	7	56.4	9
2019	10	0	30	2	40	2

Number of Fatalities
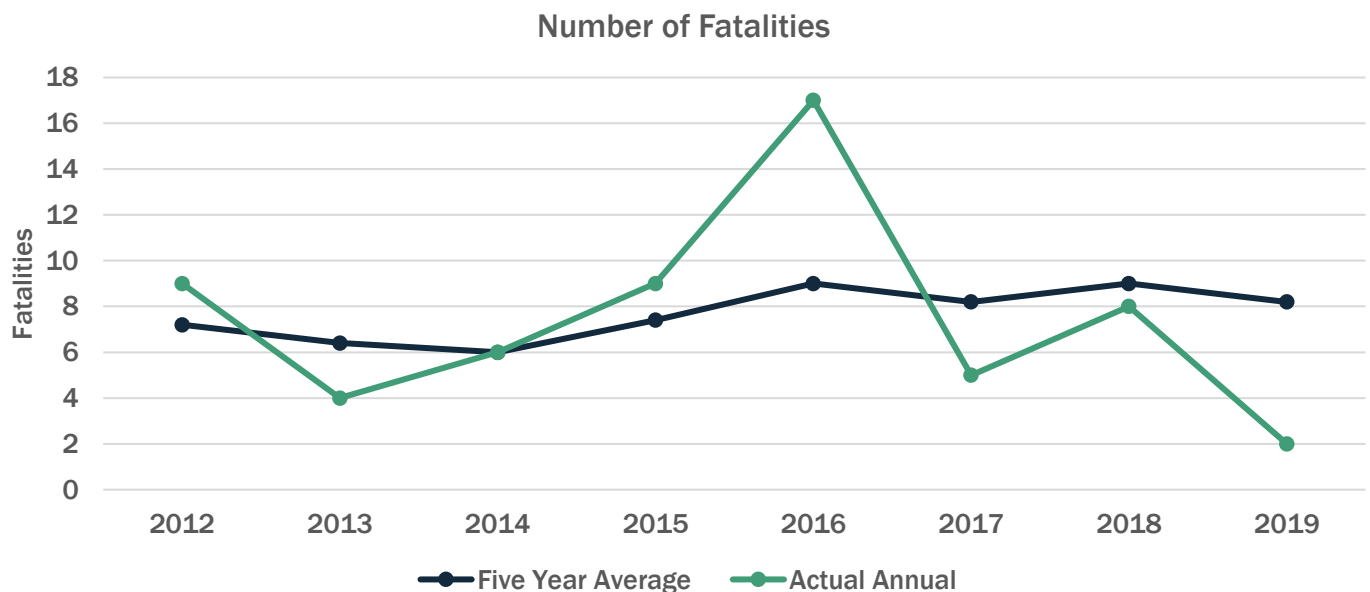
Data source: Fatality Analysis Reporting System and NHDOT
Data years: 2007 - 2019
Coverage: SRPC

LIVABILITY/QUALITY OF LIFE

Motorcycle Fatalities

Because of the popularity of motorcycles in New Hampshire, their safety is an important component of highway safety planning in New Hampshire. Home of Laconia Motorcycle Week, the world's oldest motorcycle rally, NH is one of the only states in the US that does not have a helmet law. A single crash in Randolph in 2019 left 7 motorcyclists dead and 3 injured. The locations of these crashes are largely random and behavior driven, so it is difficult to predict what may happen year to year.

Number of Motorcycle Fatalities

Data source: New Hampshire Department of Transportation
Data years: 2007 - 2019
Coverage: SRPC

Mobility/Accessibility

Table of Contents

Mobility/Accessibility

Table of Contents cont.

Infrastructure Conditions

Infrastructure can be categorized into two types: built infrastructure (structures such as roads, bridges, dams, railroads, utilities, etc.), and unbuilt infrastructure (facilities and systems such as emergency services, online systems used by government agencies and utility providers, social and economic systems, public health networks, etc.).

This section discusses a range of infrastructure metrics that assess the condition and operation of the structures and facilities in the region.
These structures include
- The condition of pavements and bridges,
- The reliability of travel on the National Highway System,
- The location and scale of dams, and
- The availability of high speed (broadband) internet.

Future updates to this document will expand on infrastructure that is not transportation focused.

The COVID-19 pandemic has highlighted the need to improve infrastructure for providing services to people via better online systems and more access to broadband internet. Schools, some jobs, and even healthcare migrated services to an online-only format starting in 2020. Equal access to such services may require high-speed internet in the future. It has also impacted the roads and highways. Fewer commuters on the roads, but an increase in delivery trucks from increased online shopping have caused a shift in the usual wear and tear on the roads. The increase in people staying home has also resulted in a decrease of usual revenue streams. Less commuting means less people paying tolls or buying gas. More meals at home means less Meals and Rentals tax revenue.

# Pavement Condition on the NHS

The National Highway System (NHS) includes interstate highways as well as other roads important to the nation's economy, defense, and mobility. NHS roads were designated by the U.S. Department of Transportation in cooperation with states, local officials, and metropolitan planning organizations (MPOs).

The pavement condition on the NHS is calculated as the percent of miles of NHS road by condition. This is one of the FHWA mandated performance measures from 23 CFR 490.

For the first iteration of target setting, the condition can be calculated by using the International Roughness Index (IRI), but starting in 2022, the pavement condition will consider the IRI, cracking, rutting (where the wheel path is a visible indent in the pavement), and faulting (misalignment in sections of pavement common on bridges and in concrete roads).

SRPC chose to support the state targets in 2018 when these targets were set. Targets will be reevaluated in 2022.

The chart below uses the IRI condition ratings for the NHS. An IRI of less than 5 is considered good, and an IRI over 170 is considered poor. Some segments in the 2016 and 2019 data seem to have faulty data that could not be evaluated.

Pavement Condition on the NHS

Legend: Good, Fair, Poor, Unknown
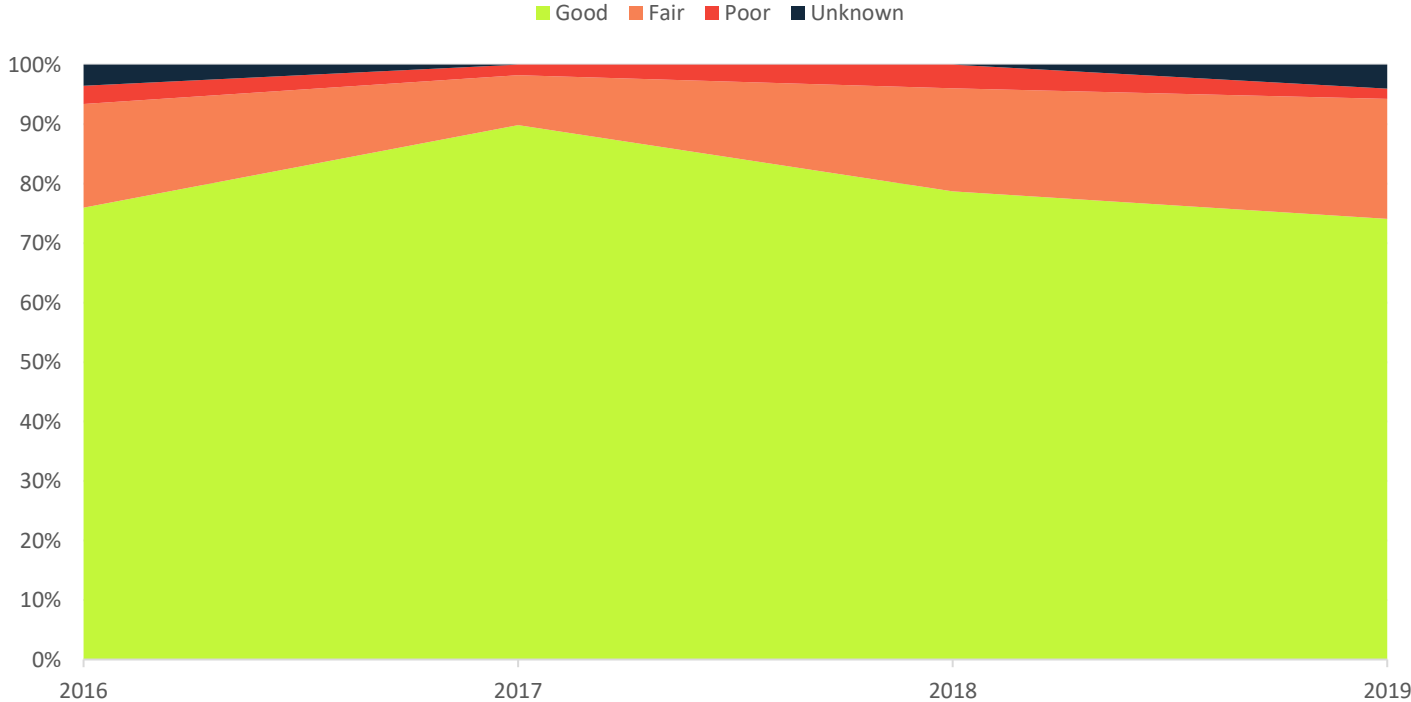
Data Source: NHDOT
Data Year: 2016-2019
Coverage: National Highway System Roads in region

Bridge Condition

There are two main bridge condition methodologies used by SRPC. One is prescribed by the FHWA in 23 CFR 490 as part of the federal transportation performance measures, and the other is defined by NHDOT and is used to prioritize bridge repairs and replacements.

The FHWA Bridge condition performance measures look at the condition of bridges on the National Highway System. These bridges are scored on the condition of their deck, superstructure, substructure, and culvert (if applicable). The lowest scoring of these conditions determines the overall rating of the bridge.
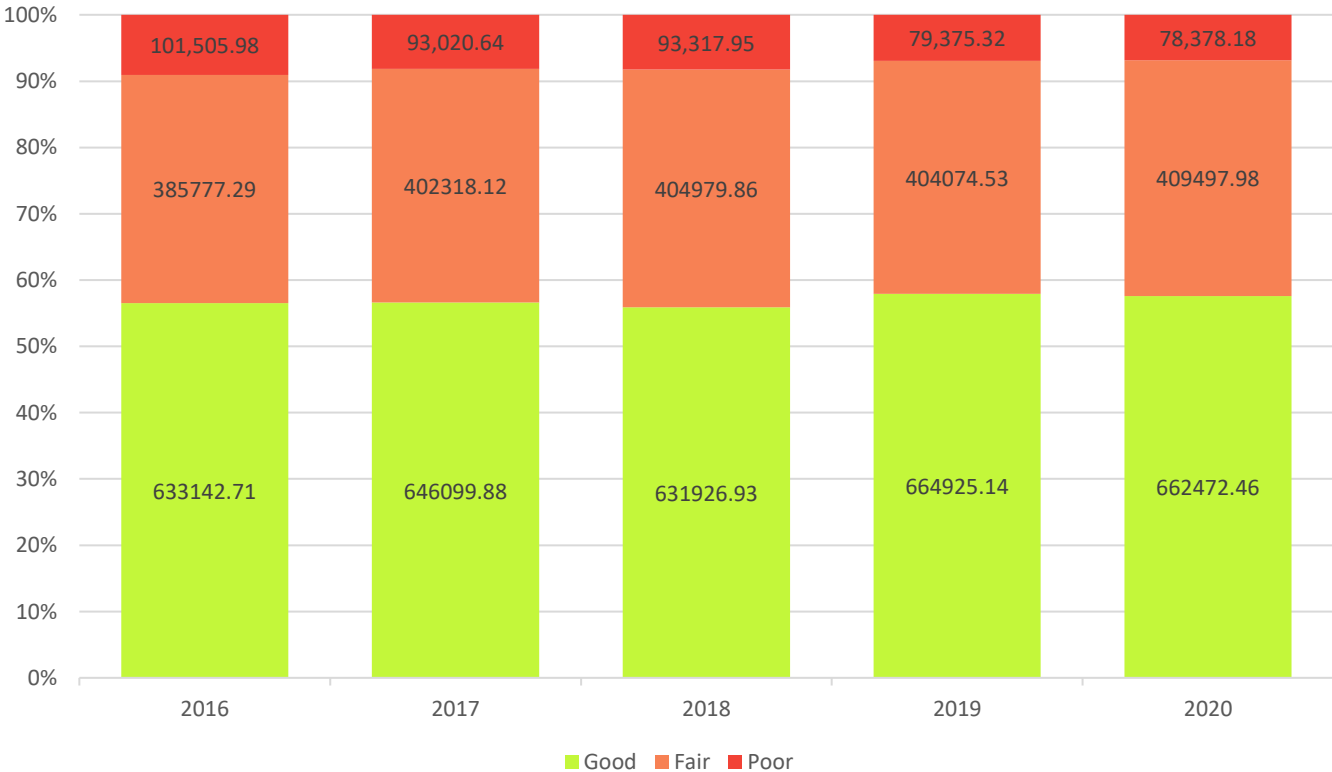
Red list bridges are defined by NHDOT to rank and prioritize bridge improvements. The red list instructs NHDOT on the frequency of inspections and the urgency of repairs. A state-owned red list bridge is inspected twice annually, a municipal owned red list bridge is inspected annually, and non-red list bridges are inspected biennially (RSA 234.2).

The chart on this page and the map on the next page use the FHWA bridge condition performance measures' analysis for all of the bridges[1] in the National Bridge Inventory in the region.
Other bridge condition metrics include:
- Bridge Condition on the NHS (the FHWA mandated performance measure),
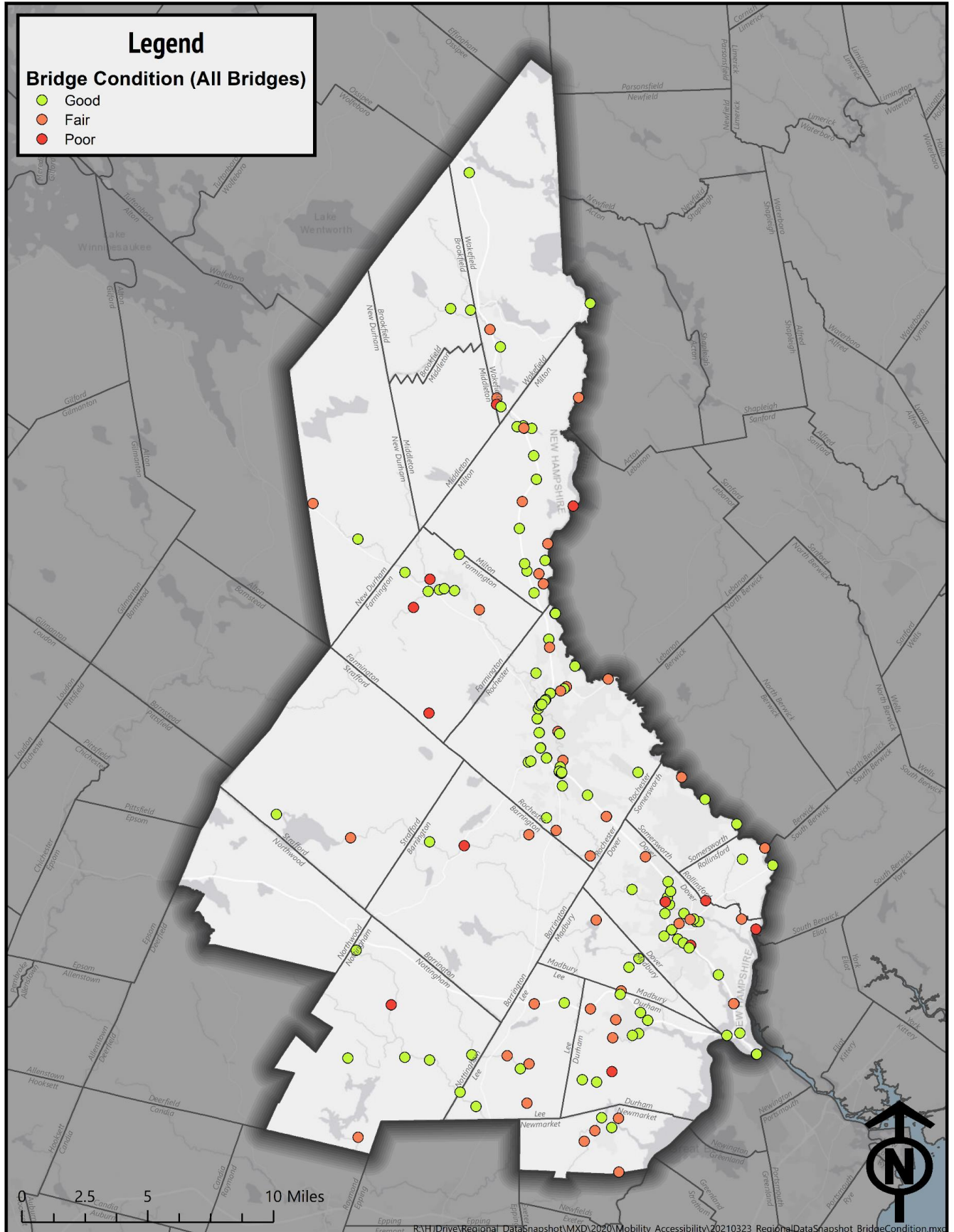- Red List Bridges (a state defined condition rating that NHDOT has been using for decades).

Bridge Condition by Deck Area (Square Feet)

Year	Poor	Fair	Good
2016	101,505.98	385777.29	633142.71
2017	93,020.64	402318.12	646099.88
2018	93,317.95	404979.86	631926.93
2019	79,375.32	404074.53	664925.14
2020	78,378.18	409497.98	662472.46

■ Good ■ Fair ■ Poor

[1] Bridges in the National Bridge Inventory are defined as bridges with a length of 20 feet or more. NHDOT uses a length of 10 feet for the state bridge inventory, so the Red List Bridge Metric may include bridges that are not included here.

Data Source: National Bridge Inventory
Data Year: 2020
Coverage: NH

Bridge Condition

Legend

Bridge Condition (All Bridges)
- Good
- Fair
- Poor

0   2.5   5   10 Miles

Data Source: National Bridge Inventory
Data year: 2020
Coverage: NH

MOBILITY/ACCESSIBILITY
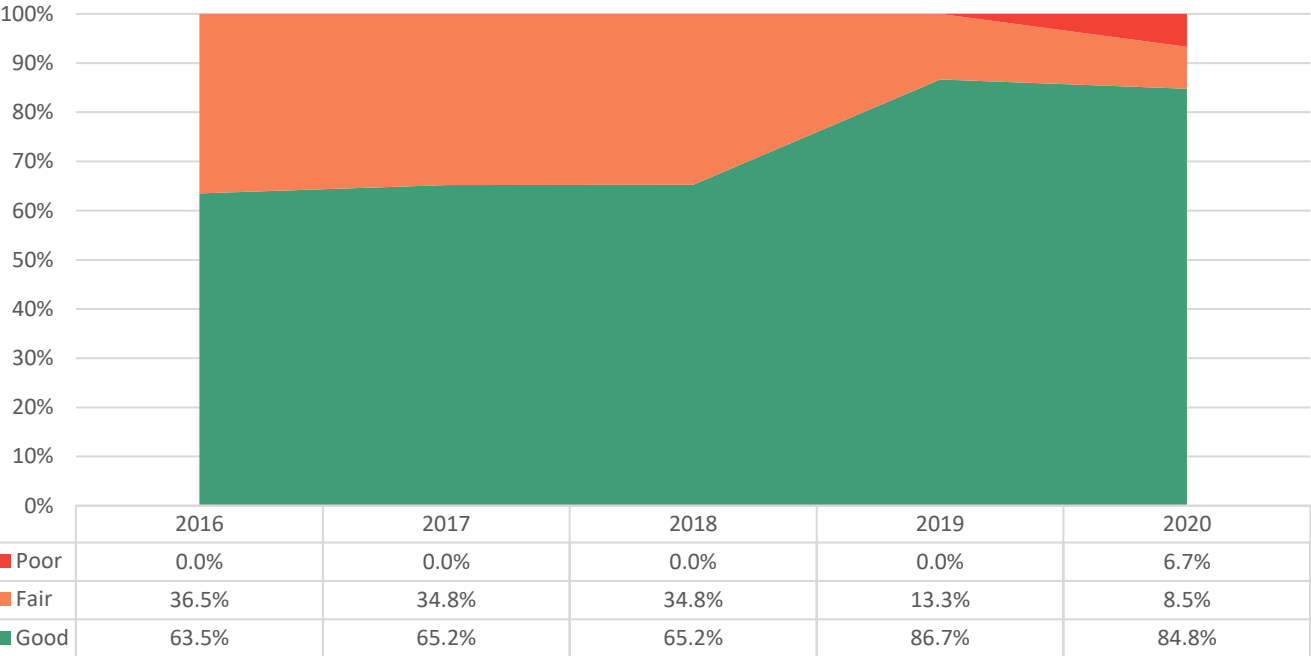
Bridge Condition on the NHS

The FHWA Bridge condition performance measures look at the condition of bridges on the National Highway System. These bridges are scored on the conditions of their deck, superstructure, substructure, and culvert (if applicable). The lowest scoring of these conditions determines the overall rating of the bridge.

In 2018, SRPC set targets based on 2015-2017 bridge conditions. The SRPC region was performing better than the state (57% good condition statewide compared to 65.2% in the region). As of 2020, SRPC is on track to meet the "Good Condition" target. The "Poor Condition" bridges have increased in the region, which may impact the state target.

SRPC will be evaluating the 2018 targets and setting new targets in 2022.

Condition	State Target	SRPC Target	2020 Status
Good	57.0%	Support State	On track
Poor	7.0%	Support State	On track

Bridge Condition on the NHS

	2016	2017	2018	2019	2020
■ Poor	0.0%	0.0%	0.0%	0.0%	6.7%
■ Fair	36.5%	34.8%	34.8%	13.3%	8.5%
■ Good	63.5%	65.2%	65.2%	86.7%	84.8%

Data Source: National Bridge Inventory
Data year: 2020
Coverage: NH

Bridge Condition on the NHS

Legend

Bridge Condition (NHS Bridges)
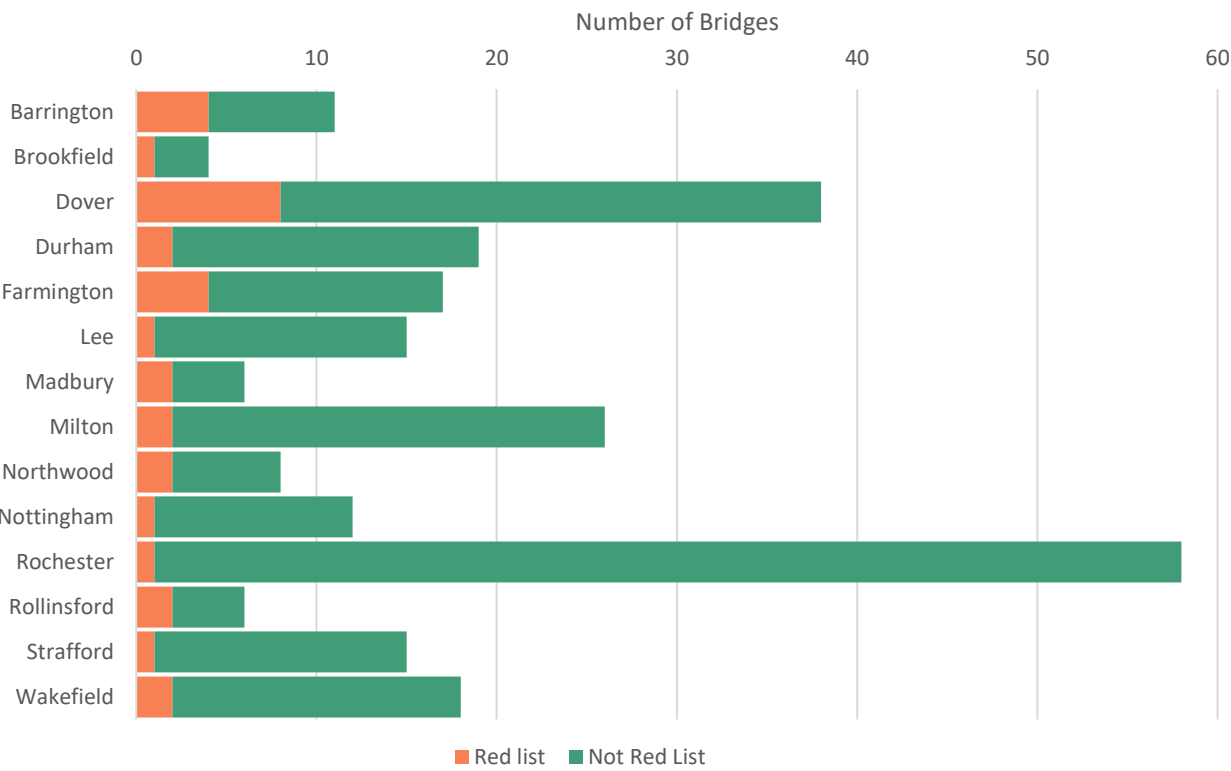- ● Good
- ● Fair
- ● Poor

0   2.5   5   10 Miles
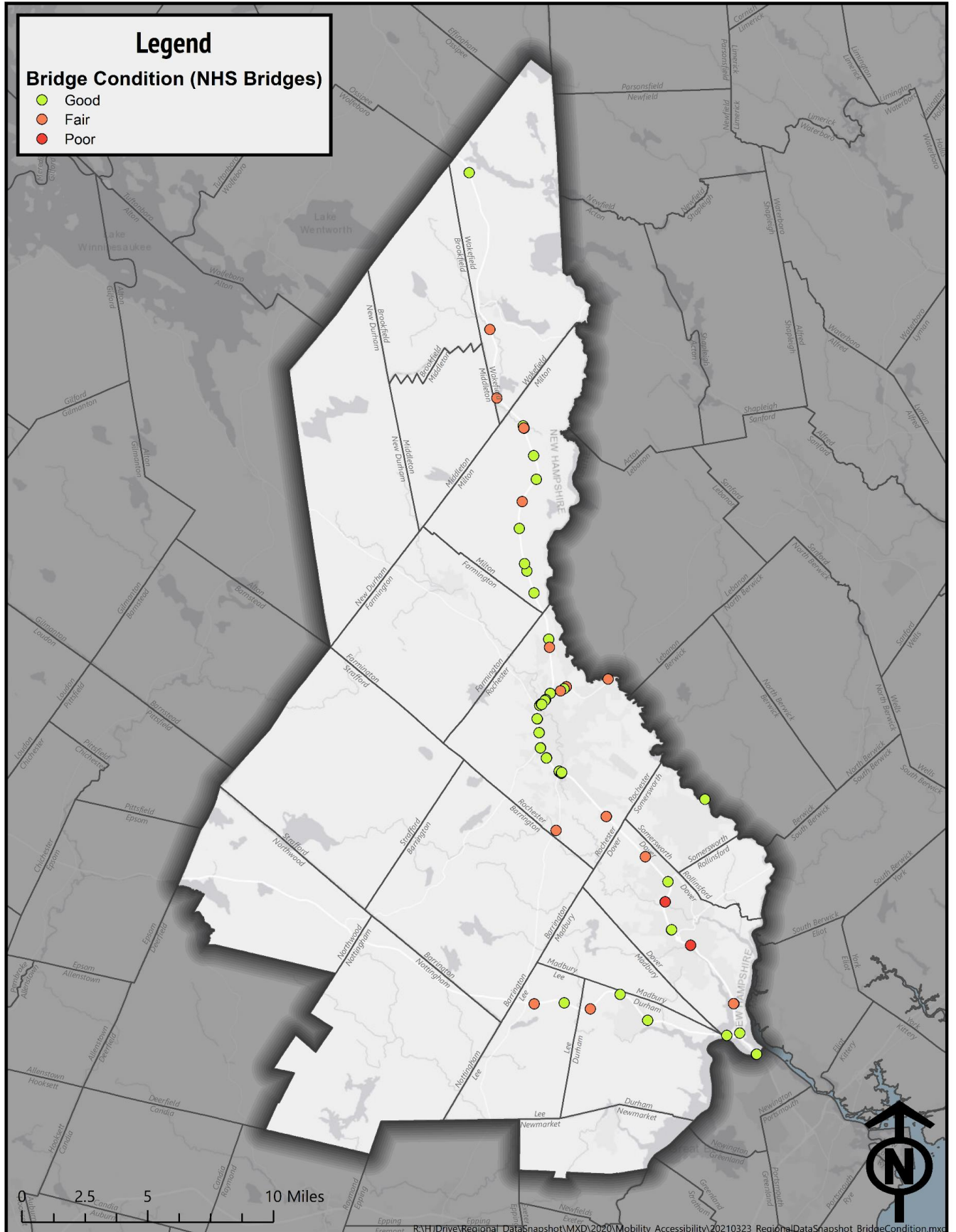
Data Source: National Bridge Inventory
Data year: 2020
Coverage: NH

Red List Bridges

Red list bridges are designated by NHDOT and used to rank and prioritize bridge improvements. The red list instructs NHDOT on the frequency of inspections and the urgency of repairs. A state-owned red list bridge is inspected twice annually, a municipal owned red list bridge is inspected annually, and non-red list bridges are inspected biennially (RSA 234.2). **NH RSA 234.2 defines a bridge as any span 10 feet or more, which is 10 feet shorter than the federal definition of a bridge. As a result, the data for this metric will show more bridges than other bridge metrics in this document.**

The chart below shows the number of bridges on and off the red list, and only for the towns that have bridges in the red list. Towns without red list bridges have been excluded.

The table on the next page lists the red list bridges and the features that are used to determine red list status.

Number of Bridges

	Red list	Not Red List
Barrington		
Brookfield		
Dover		
Durham		
Farmington		
Lee		
Madbury		
Milton		
Northwood		
Nottingham		
Rochester		
Rollinsford		
Strafford		
Wakefield		

Data Source: New Hampshire Department of Transportation Quarterly GIS Data Snapshot
Data year: 2020
Coverage: NH

Red List Bridges

Red List	Town Name	Road	Over	Year Built	Modified	Deck	Superstructure	Substructure	Culvert
Municipal	Brookfield	Mountain Road	Hanson Brook	1920		Fair	Fair	Serious	-
Municipal	Dover	Sixth Street	Blackwater Brook	1937		-	-	-	Poor
Municipal	Durham	Mill Road	Oyster River	1971		-	-	-	Poor
Municipal	Durham	Durham Point Road	Crommet Creek	1930	1970	Fair	Fair	Poor	-
Municipal	Farmington	Hornetown Road	Mad River	1984		Fair	Serious	Fair	-
Municipal	Farmington	River Road	Mad River	1986		Poor	Serious	Fair	-
Municipal	Farmington	Sheepboro Road	Berrys River	1983	2007	Satisfactory	Satisfactory	Poor	-
Municipal	Farmington	Spring Street	Cocheco River	1926		Poor	Satisfactory	Fair	-
Municipal	Madbury	Freshet Road	Johnson Creek	1974		-	-	-	Serious
Municipal	Madbury	Nute Road	Bellamy River	1960		-	-	-	Poor
Municipal	Milton	Townhouse Road	Northeast Pond	1948		Closed	Closed	Closed	-
Municipal	Milton	Winding Road	Lyman Brook	1995		Fair	Poor	Poor	-
Municipal	Northwood	Bow Lake Road	Sherburne Brook	1938		Serious	Serious	Serious	-
Municipal	Rollinsford	Old Mill Lane	Rollins Brook	1900		Poor	Critical	Serious	-
Municipal	Strafford	Barn Door Gap Road	Big River	1984		-	-	-	Serious
Municipal	Wakefield	Canal Road	Great East Lake Outlet	1920		Poor	Poor	Poor	-
Municipal	Wakefield	Maple Street	Branch River	1940	1972	Closed	Closed	Closed	-
State	Barrington	US 4	Oyster River	1980		-	-	-	Poor
State	Barrington	US 202	Isinglass River	1978		Good	Poor	Good	-
State	Dover	Gulf Rd	Salmon Falls River	1950	1982	Poor	Satisfactory	Poor	-
State	Dover	NH 16 NB	Cocheco River	1957	1991	Poor	Poor	Satisfactory	-
State	Dover	NH 16 NB	NH108, PanAm Railroad	1957	1999	Poor	Satisfactory	Satisfactory	-
State	Dover	NH 16 SB	Cocheco River	1957	1991	Poor	Satisfactory	Satisfactory	-
State	Dover	NH 16 SB	NH108, PanAm Railroad	1957	1999	Poor	Satisfactory	Satisfactory	-
State	Dover	General Sullivan Bridge	Little Bay	1934	1950	Closed	Closed	Closed	-
State	Lee	NH 125	Little River	1972		Satisfactory	Poor	Poor	-
State	Northwood	NH 107	Narrows Brook	1922	2000	Poor	Poor	Fair	-
State	Nottingham	NH 152	North River	1925	1970	Fair	Fair	Serious	-
State	Rollinsford	Oak St	PanAm Railroad	1890	1928	Poor	Serious	Fair	-

Data Source: New Hampshire Department of Transportation Quarterly GIS Data Snapshot
Data year: 2020
Coverage: NH

Red List Bridges

Legend

Red List Bridges by Owner
- ■ State
- ▲ Municipality
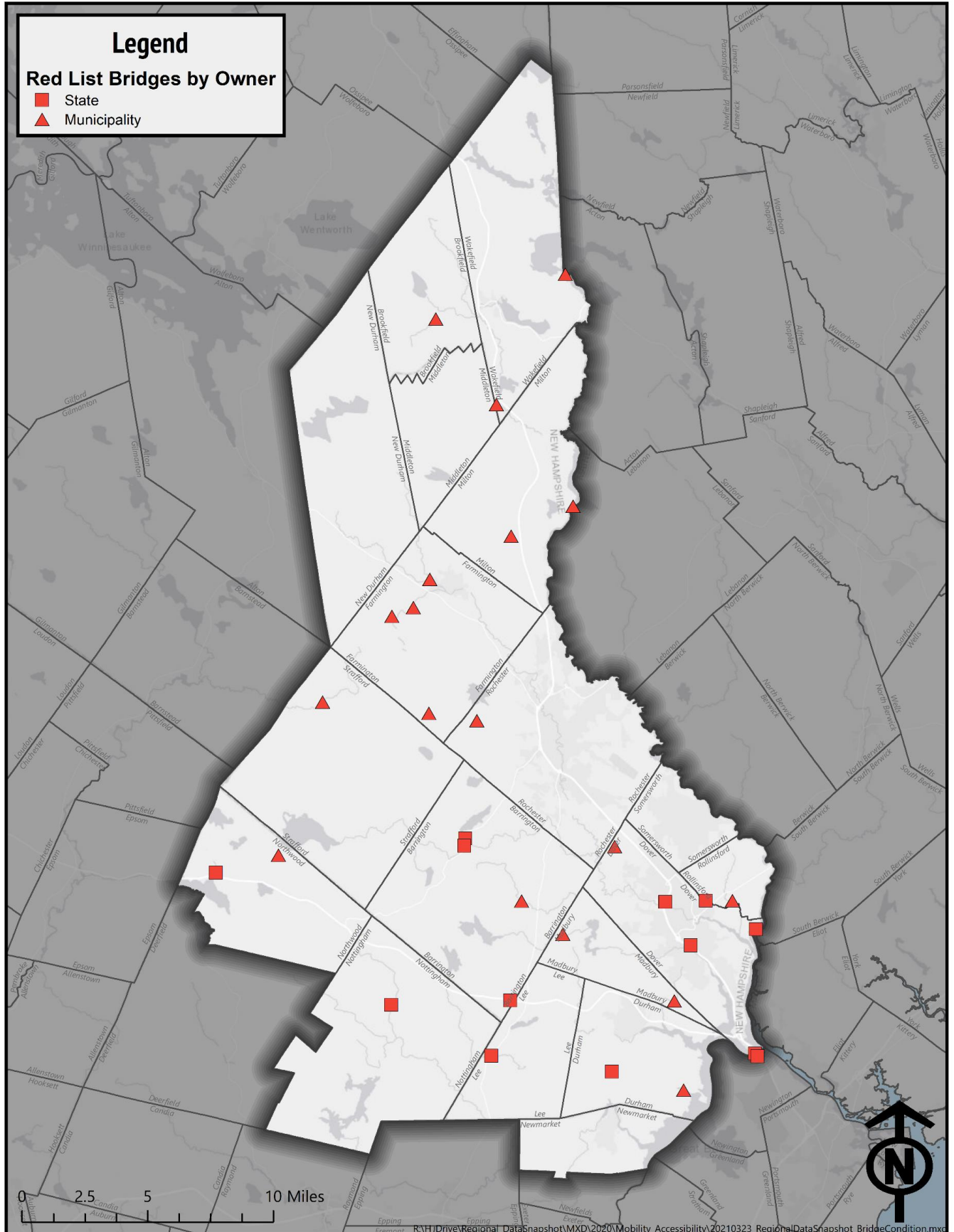
Data Source: New Hampshire Department of Transportation Quarterly GIS Data Snapshot
Data year: 2020
Coverage: NH

Travel Time Reliability on the Non-Interstate NHS

The Travel Time Reliability measure is defined as the "Percent of person-miles traveled on the non-Interstate NHS that are reliable." This is one of the performance measures required by FHWA in 23 CFR 490. SRPC set initial four-year targets in 2018 and will need to set new targets again in 2022.
In 2018, SRPC chose to support the state target. The state target was 85% reliable travel. This target was based on 2017 baseline data. In the Strafford Region, 98.4% of travel was reliable in 2017.

Reliability is not a measure of whether there is congestion, but rather a measure of the predictability of any congestion that exists. A road can be congested for an hour every weekday and still be "reliable" as long as drivers can know what time to leave to account for the congestion. If the congestion is unpredictable, then the road is not reliable.

Non-interstate NHS Travel Time Reliability
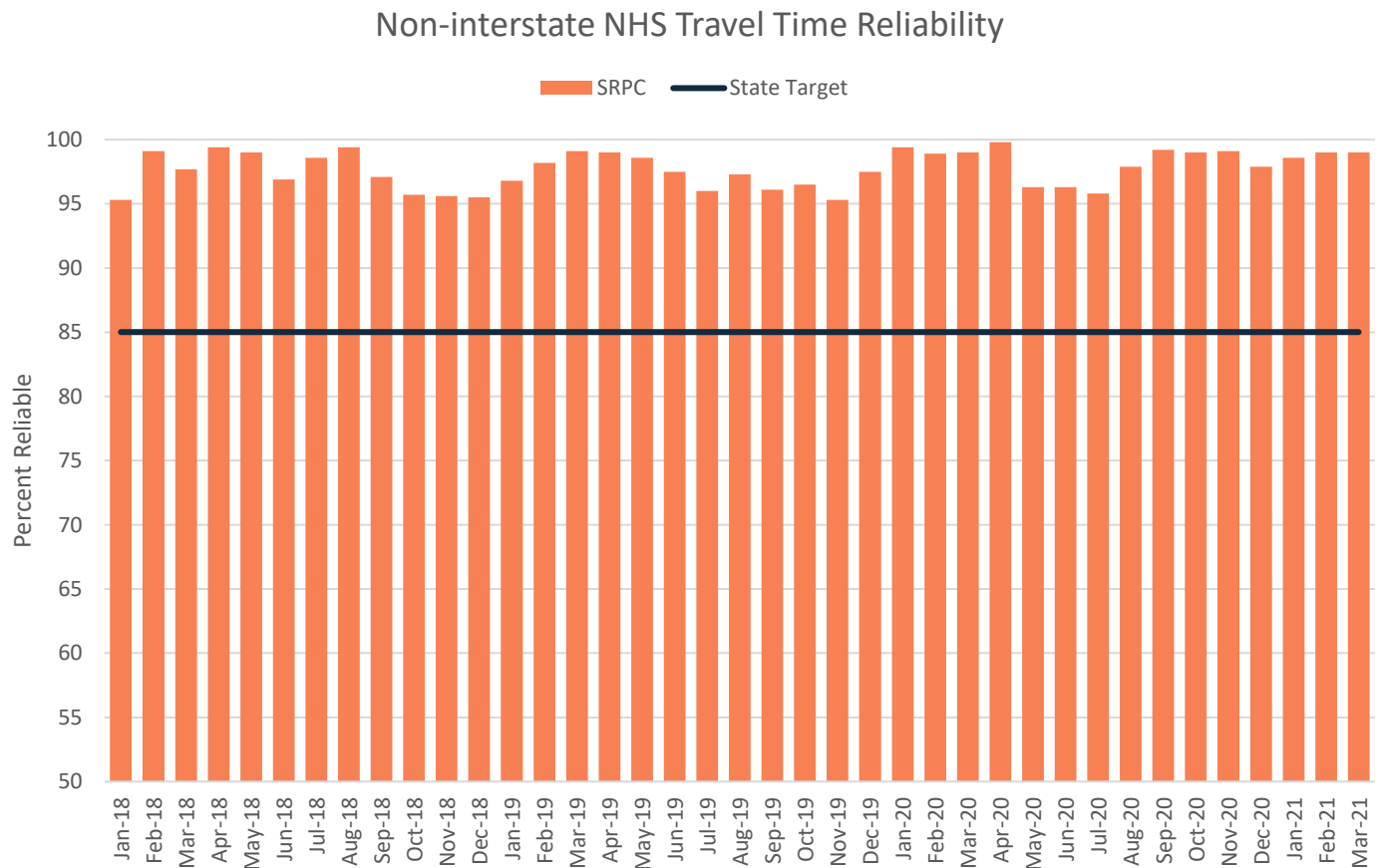
This is calculated by looking at 15-minute time bins and the speed at which traffic flows in all of that time bin in a month (i.e., all of the 9:00 AM-9:15 AM time bins on weekdays in April). If the speed is consistent, then the road is reliable. In the SRPC region, the NHS roads are between 95% and 100% reliable, meaning that for all of the time bins examined, the speeds are consistent 95%-100% of the time.

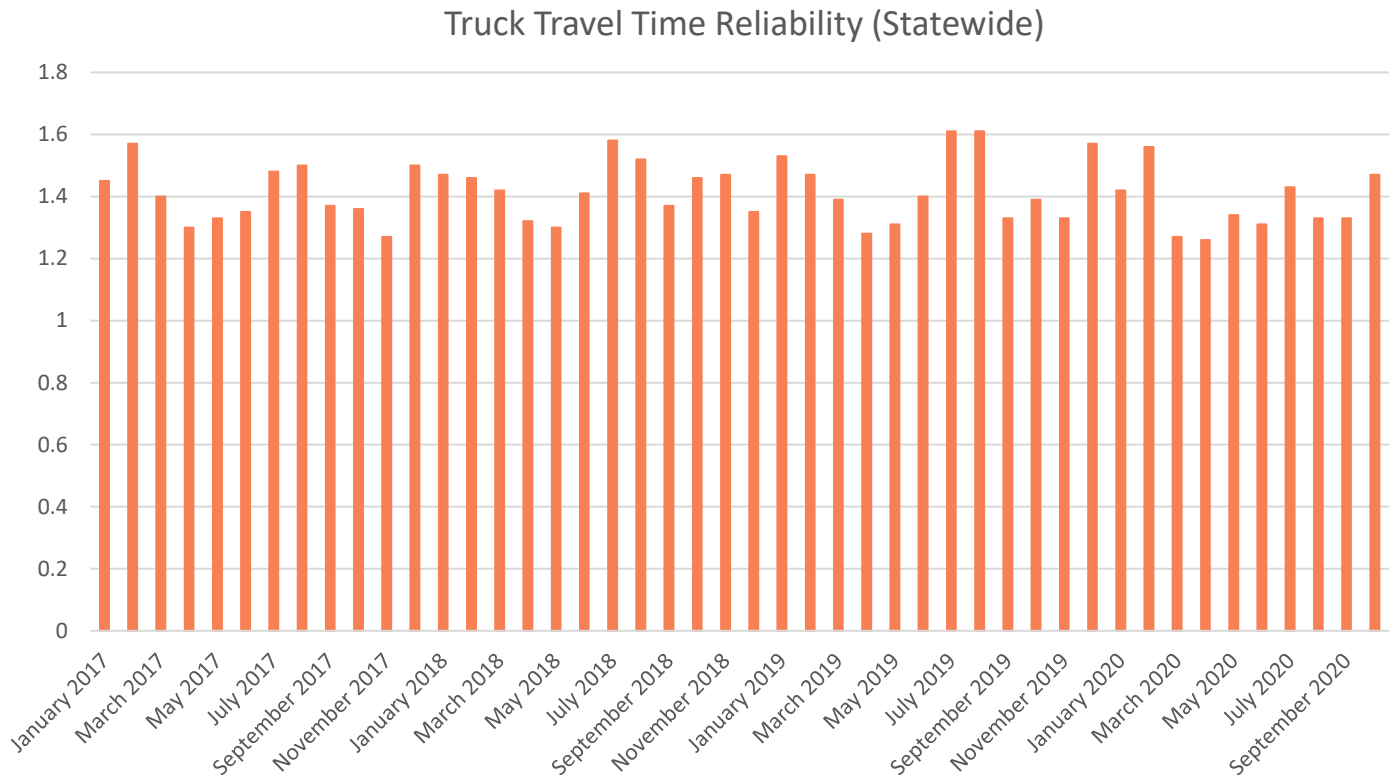Data Source: National Performance Management Research Data Set (NPMRDS)
Data Year: 2018-2021
Coverage: National Highway System Roads in region

80

Truck Travel Time Reliability on Interstates

The Truck Travel Time Reliability measure is defined as the "Percent of truck-miles traveled on the Interstate that are reliable." This is one of the performance measures required by FHWA in 23 CFR 490.
The performance measure looks at the interstates. Since SRPC does not have any Interstate highways, we are not required to set targets. We still track the statewide reliability as these conditions do have an impact on the region.

Reliability is not a measure of whether there is congestion, but rather a measure of the predictability of any congestion that exists. A road can be congested for an hour every weekday and still be "reliable" as long as drivers can know what time to leave to account for the congestion. If the congestion is unpredictable, then the road is not reliable.

Truck Travel Time Reliability (Statewide)

Data source: National Performance Management Research Data Set
Data years: 2017 - 2020
Coverage: Statewide

Active Dams by Hazard Classification

Dams are a critical component to the region's infrastructure. Dams are classified into 4 categories based on the amount of damage they could cause if they fail. Based on these classifications, 8% of the dams in the region are High Hazard Dams and would cause serious damage and potential loss of life if they were to fail. Another 15% of the dams are Significant Hazard Dams and would cause serious damage, but no loss of life. These dams are required to have Emergency Action Plans (RSA 482). In addition, these higher hazard dams are listed in their communities' Hazard Mitigation Plans.

More information about the classifications of dams can be found here:
https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/db-15.pdf

Hazard Classification	Hazard Description	Dams in the Region
High Hazard	Failure of the dam would likely result in loss of human life, destruction or damage to houses or interstates, or release hazardous waste.	22
Significant Hazard	Failure of the dam would result in destruction or damage to Class I or II roads, property, or damage to public health or environmental sites.	41
Low Hazard	Failure of the dam may result in some destruction or damage to property, including local or private roads.	183
Non-Menacing	Failure of the dam would not result in any destruction due to the size or location of the dam.	20

Number of High Hazard Dams	Municipalities
3	New Durham, Wakefield
2	Barrington, Dover, Middleton, Nottingham
1	Durham, Farmington, Madbury, Milton, Newmarket, Rochester, Somersworth, Strafford
None	Brookfield, Lee, Northwood, Rollinsford,

Top 4 Rivers within SRPC Region by Number of Dams					
Streams/ Rivers	Total Dams	High Hazard	Significant Hazard	Low Hazard	Non-Menace
Salmon Falls River	15	4	4	5	2
Cochecho River	8	2	2	3	1
Bellamy River	6	3	0	0	3
Lamprey River	4	1	1	1	1

Data Source: NHDES, GRANIT
Data Year: 2019
Coverage: SRPC region

Active Dams by Hazard Classification

Legend

Active Dam Classification
- 🔴 High Hazard
- 🟠 Significant Hazard
- 🟡 Low Hazard
- 🟢 Non-Menacing

0   2.5   5   10 Miles
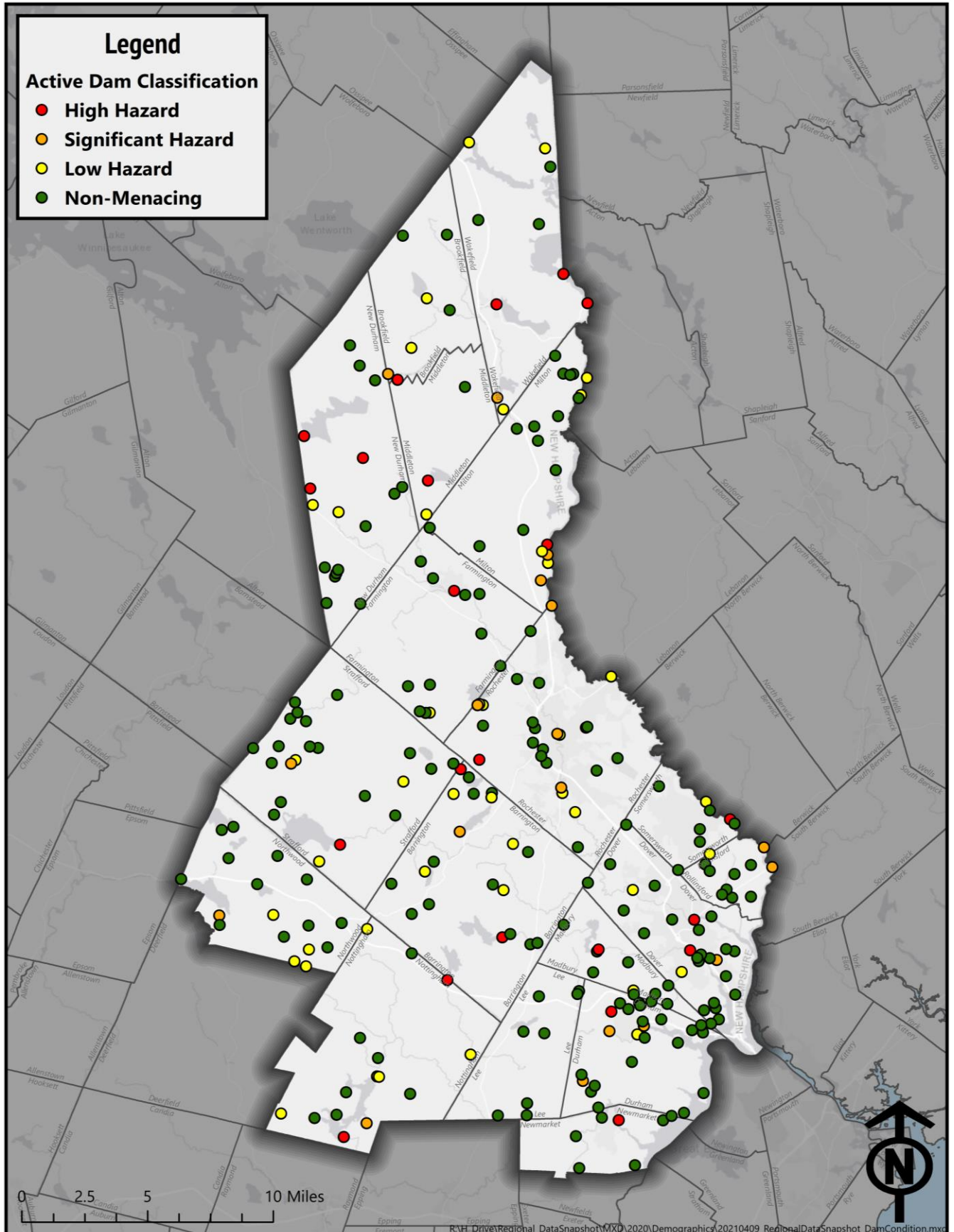
Data Source: NHDES, GRANIT
Data Year: 2019
Coverage: SRPC region

Broadband Access

Broadband, also called 'high-speed Internet,' is the umbrella term referring to Internet access that is always on and is significantly faster than dial-up Internet access. In 2015, the Federal Communication Commission (FCC) determined that an average household requires a minimum download speed of 25 Mbps and a minimum upload speed of 3 Mbps to allow for multiple users to have adequate speeds.

The importance of reliable high-speed internet has soared in 2020, as the COVID-19 pandemic has resulted in remote work, learning, and leisure. The internet is increasingly seen as an indispensable utility like electricity and running water, and COVID-19 has shown that access to it is an equity issue. Equity will be a planning focus area for SRPC over the next two years.

Broadband in the region is available via four transmission types: DSL, Cable, fiber optic, and satellite. The table below shows a brief comparison of the different technology types. The broadband information contained in this document is an oversimplification of the subject as a whole and requires further analysis in the future. Future analyses may include more in-depth assessment of the percent of households with access to broadband and more information about the limitations of each technology.
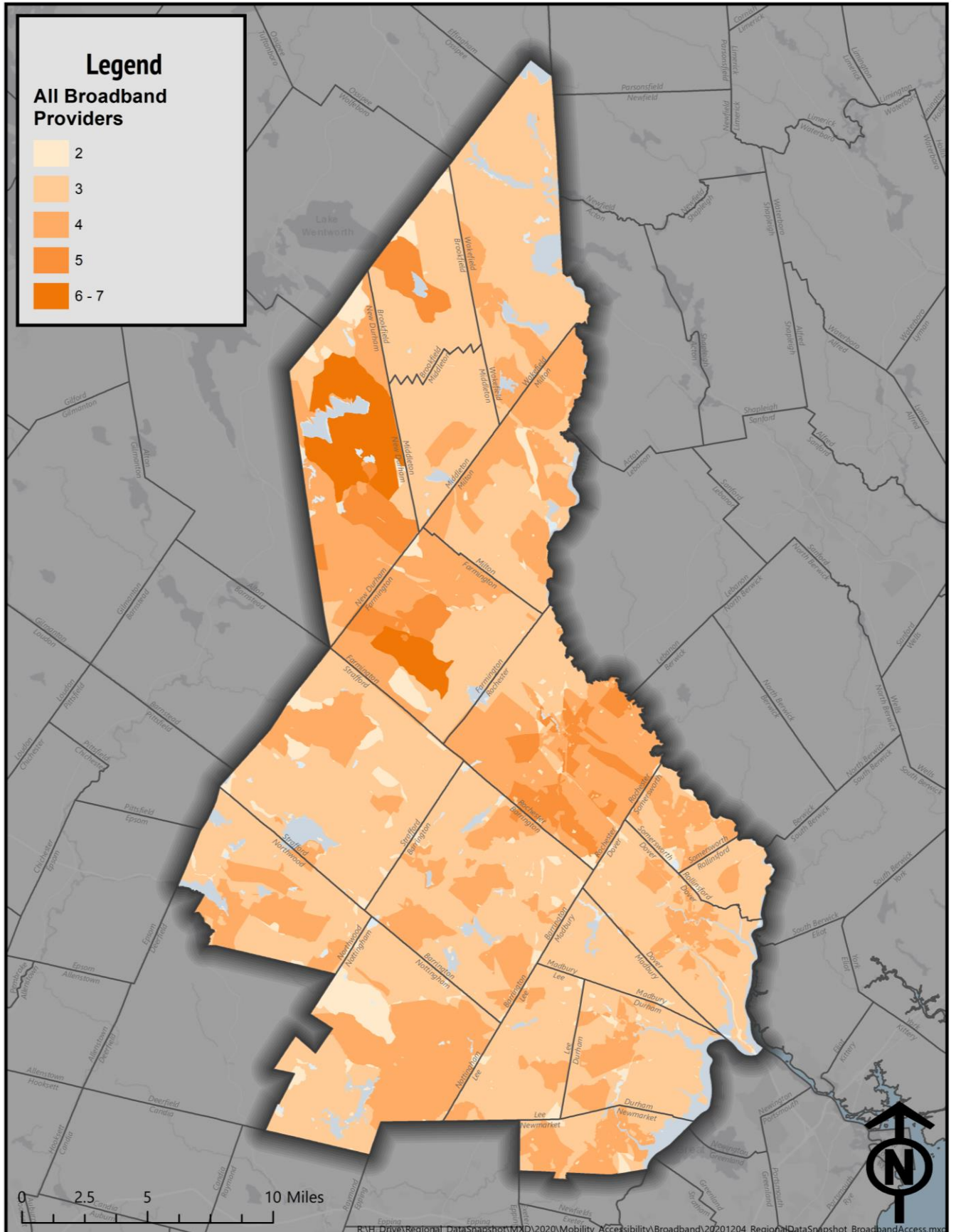
Technology	Transmission by	Speed	Price
Fiber Optic	Fiber/Optic (glass) cables	Fastest	$$
Cable	Same as Cable TV	Faster than DSL and Satellite	$$
Satellite	Satellites	Slower than Cable and Fiber	$$$$
DSL	Same as phone lines	Slowest of these four	$

The maps on the following pages show
• The total number of internet providers advertising broadband speeds,
• The number of internet providers advertising broadband speeds using Cable,
• The number of internet providers advertising broadband speeds using DSL,
• The number of internet providers advertising broadband speeds using Fiber Optic,
• The number of internet providers advertising broadband speeds using Satellite, and
• The number of internet providers advertising speeds under the threshold defined above.

Data source: FCC Fixed Broadband Deployment
Data years: June 2019
Coverage: SRPC Blocks

Total Number of Internet Providers with Broadband Speeds

Legend

All Broadband Providers

- 2
- 3
- 4
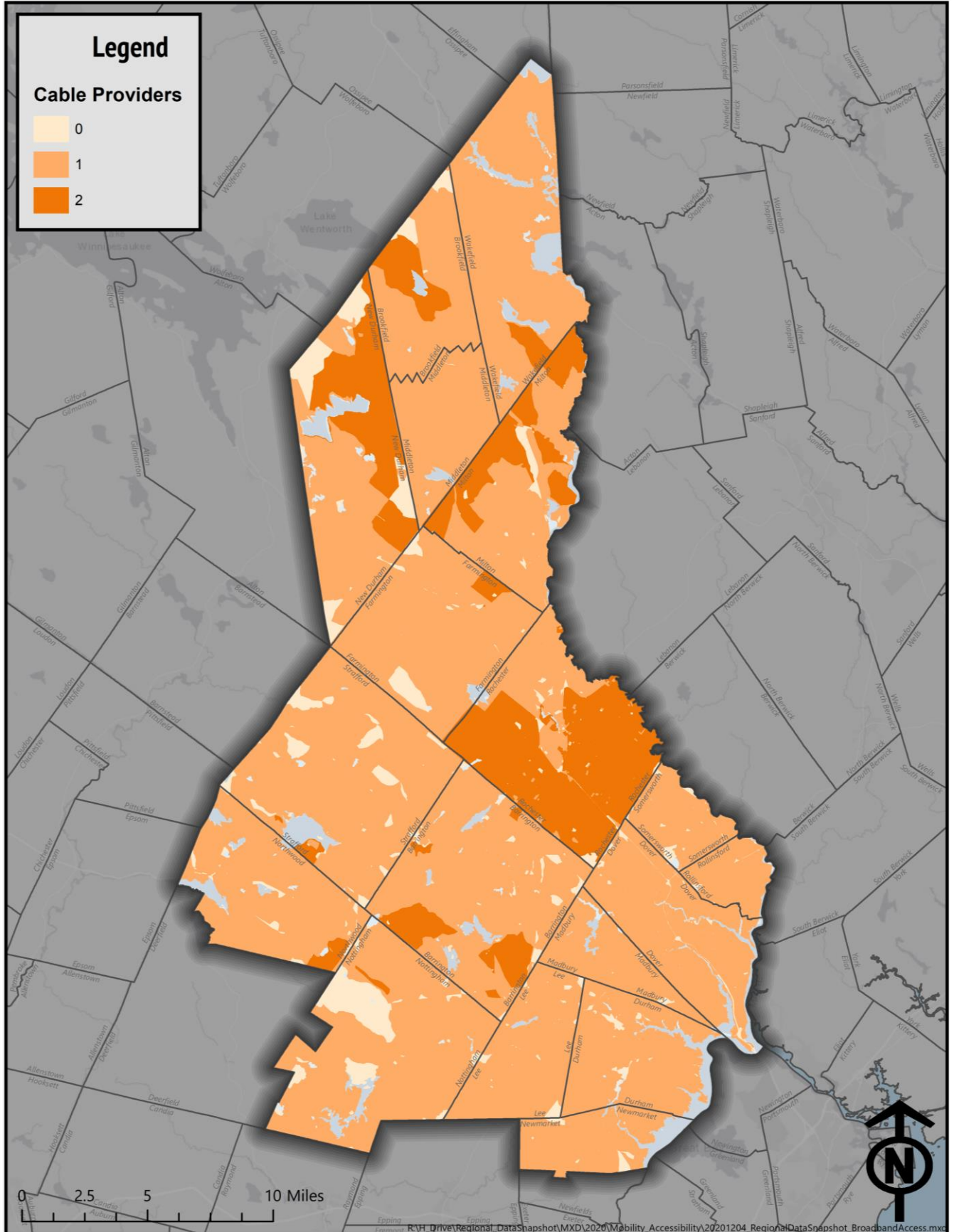- 5
- 6 - 7

0   2.5   5   10 Miles

Data source: FCC Fixed Broadband Deployment
Data years: June 2019
Coverage: SRPC Blocks

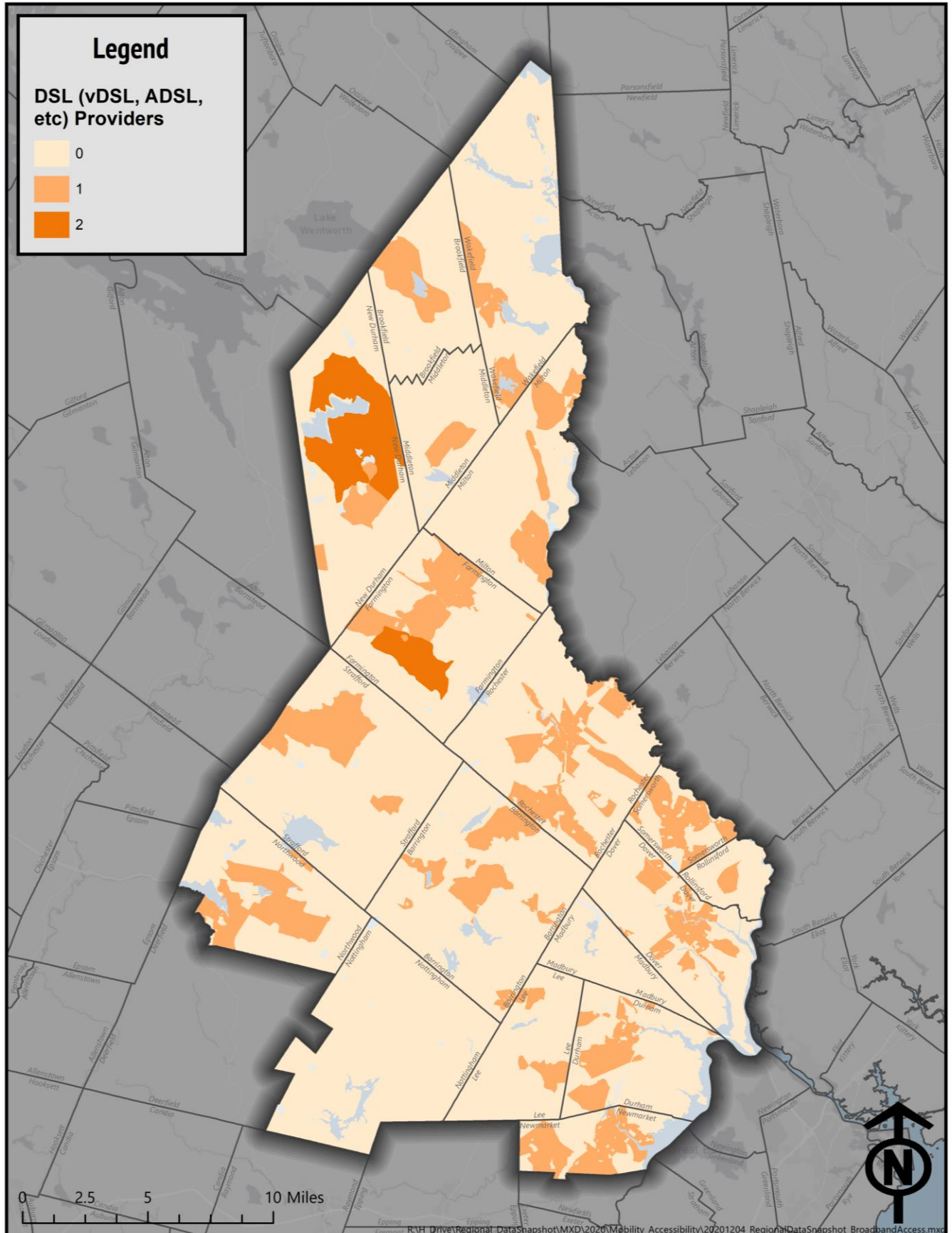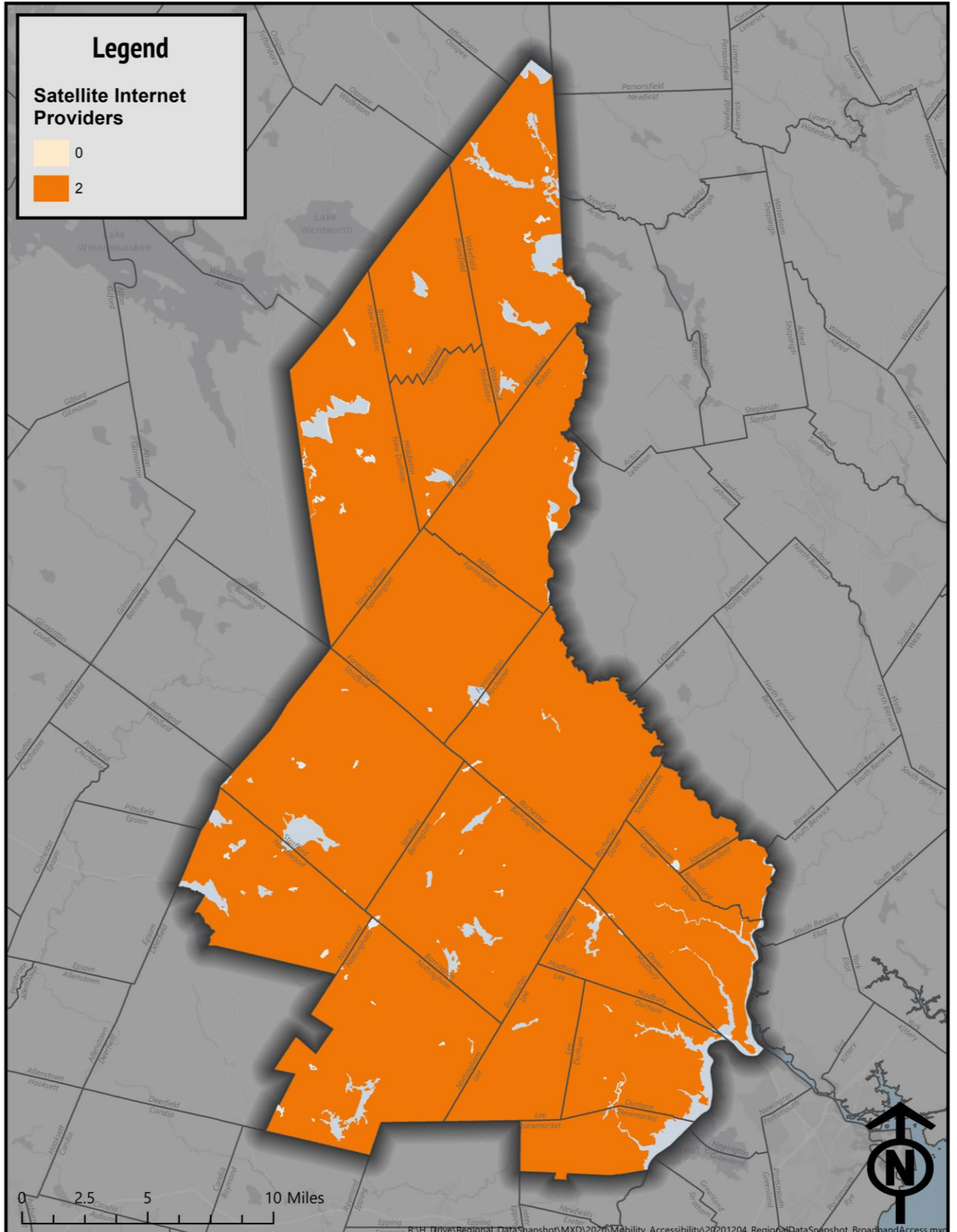# Number of Internet Providers with Broadband Speeds using Cable

Legend

Cable Providers

- 0
- 1
- 2

0   2.5   5   10 Miles

Data source: FCC Fixed Broadband Deployment
Data years: June 2019
Coverage: SRPC Blocks

Number of Internet Providers with Broadband Speeds using DSL

Legend

DSL (vDSL, ADSL, etc) Providers

- 0
- 1
- 2

Data source: FCC Fixed Broadband Deployment
Data years: June 2019
Coverage: SRPC Blocks

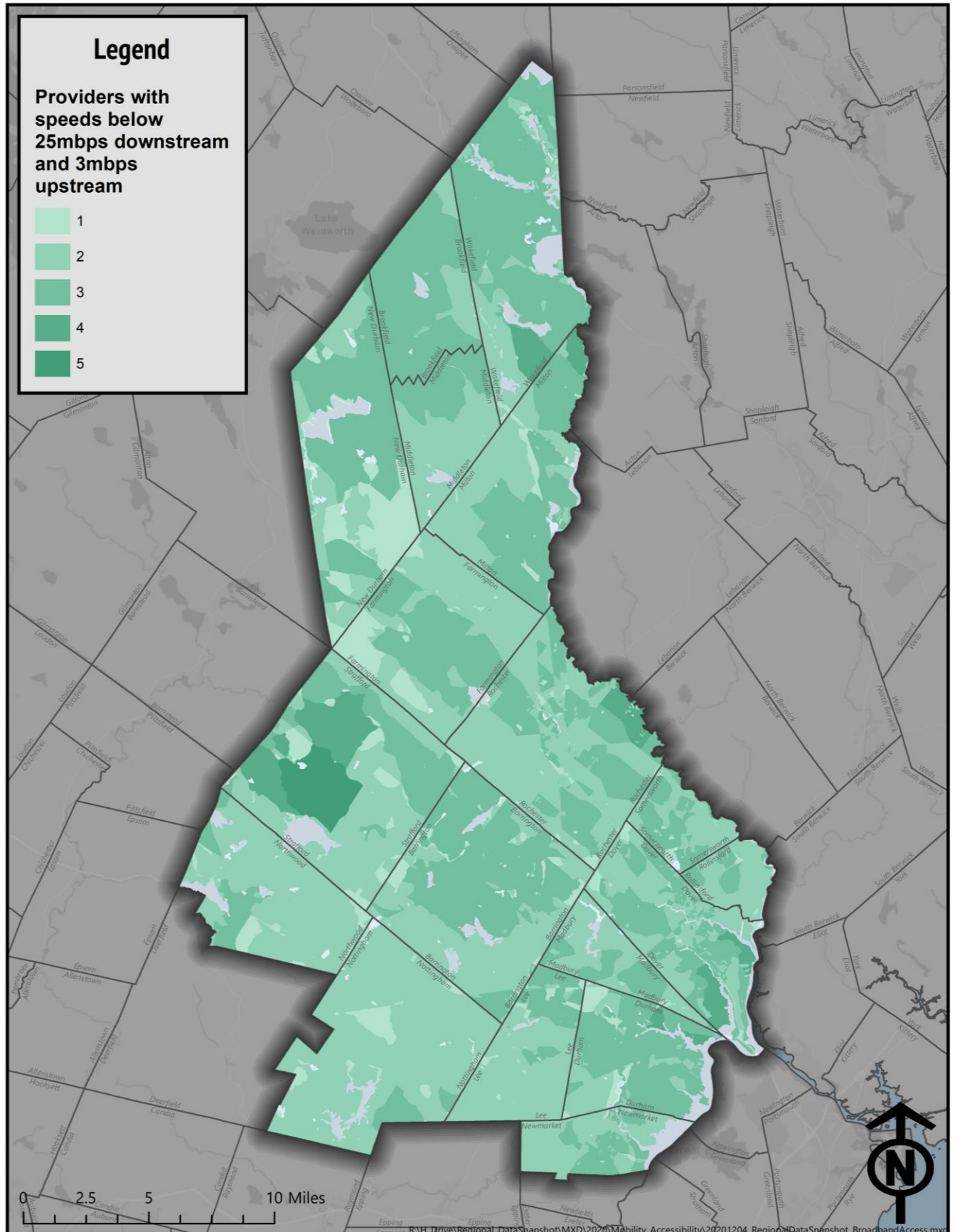# Number of Internet Providers with Broadband Speeds using Fiber

Legend

Fiber/Optical Internet Providers

- 0
- 1

0   2.5   5   10 Miles

Data source: FCC Fixed Broadband Deployment
Data years: June 2019
Coverage: SRPC Blocks

88

Number of Internet Providers with Broadband Speeds using Satellite

Legend

Satellite Internet Providers

- 0
- 2

0 2.5 5 10 Miles

Data source: FCC Fixed Broadband Deployment
Data years: June 2019
Coverage: SRPC Blocks

Number of Internet Providers <u>not Offering</u> Broadband Speeds

Legend

Providers with speeds below 25mbps downstream and 3mbps upstream

- 1
- 2
- 3
- 4
- 5

0   2.5   5   10 Miles

Data source: FCC Fixed Broadband Deployment
Data years: June 2019
Coverage: SRPC Blocks

Passenger Rail & Airports

The SRPC region has one passenger rail provider and one airport.

Airports
Skyhaven Airport in Rochester is a small regional airport, but runway expansion projects are increasing capacity. Due to constraints from other existing infrastructure, Skyhaven may not ever expand to a point where commercial airlines or freight are feasible, but small charter planes may be possible.
Other nearby airports include the Portsmouth International Airport at Pease (PSM) in Portsmouth, Boston Logan International Airport (BOS) in Boston, and Manchester-Boston Regional Airport (MHT) in Manchester.
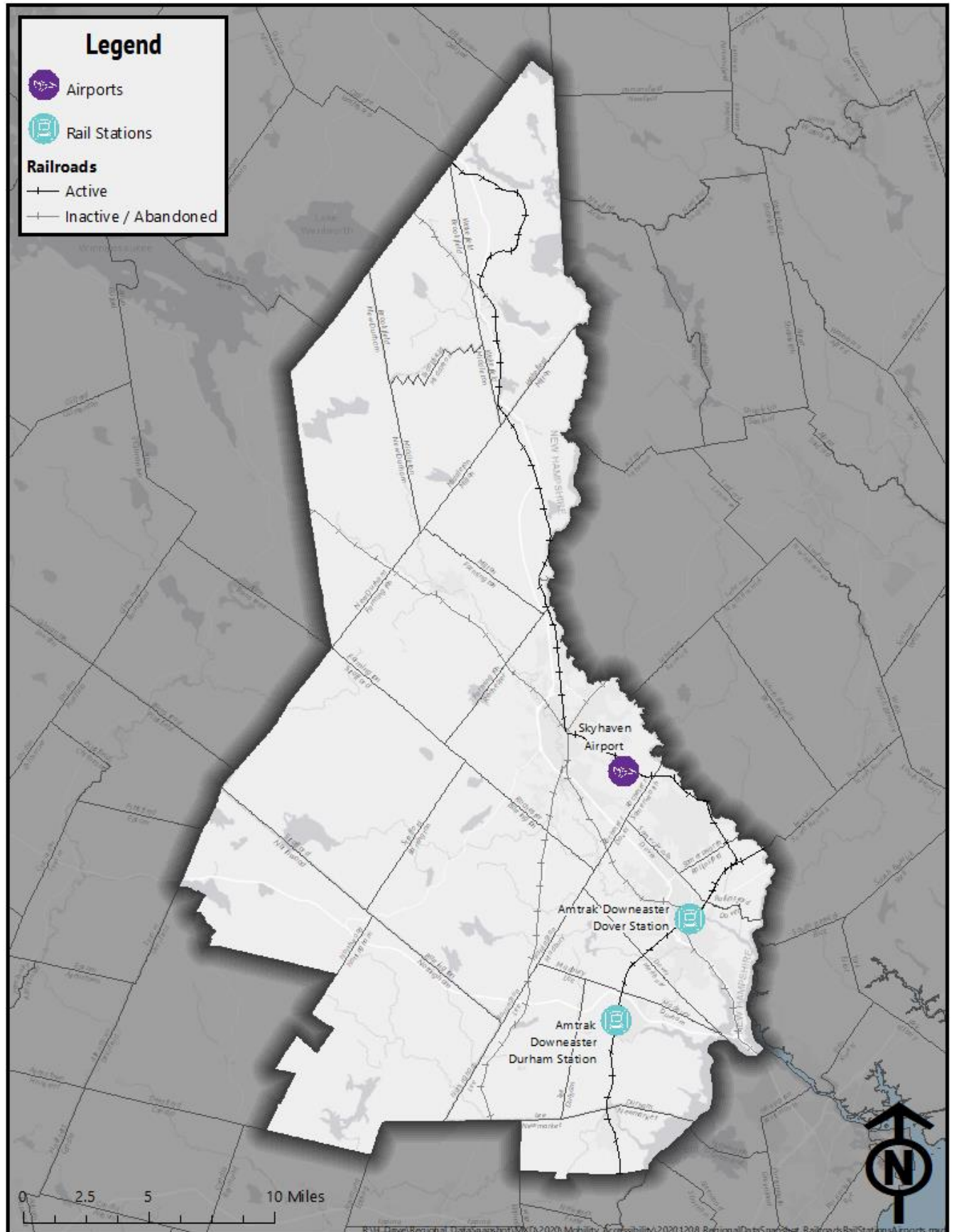
Railroads
There are two major railroads running through the region. PanAm currently owns the rail running through Newmarket, Durham, Dover, and Rollinsford (see note below). This line is used by Amtrak to provide the Downeaster line as well as by freight operators including New Hampshire Northcoast. The second railroad is owned by New Hampshire Northcoast and connects the PanAm line to Ossipee, NH through Somersworth, Rochester, Milton, and Wakefield. Information about rail freight can be found in the Freight section of this chapter.

The Amtrak Downeaster provides passenger rail service that runs from Brunswick Station, ME to Boston North Station, MA, with stops at the Dover Transportation Center and Durham UNH Station.
The Downeaster operates on tracks currently owned by PanAm (see note below). The PanAm tracks are shared with

Note: At the time of publication, PanAm was in the process of being acquired by CSX railways.

Railroads and Airports

Legend
- Airports
- Rail Stations

Railroads
- Active
- Inactive / Abandoned

Skyhaven Airport

Amtrak Downeaster Dover Station

Amtrak Downeaster Durham Station

0 2.5 5 10 Miles

Data source: NHDOT Transportation Snapshot
Data years: 2020
Coverage: SRPC

Passenger Rail Ridership

The Amtrak Downeaster is operated by the Northern New England Passenger Rail Authority (NNEPRA). The Downeaster runs between Brunswick ME and Boston, MA, with New Hampshire stops in Dover, Durham, and Exeter. The Downeaster is popular, but ridership is restricted by current track capacity. It is uncertain how COVID-19 will impact ridership in the future. People rode the Downeaster for employment and tourism, but if remote work becomes more prevalent, service and ridership could change.

NH Station Ridership

Legend: Dover, Durham, Exeter

Downeaster Total Ridership
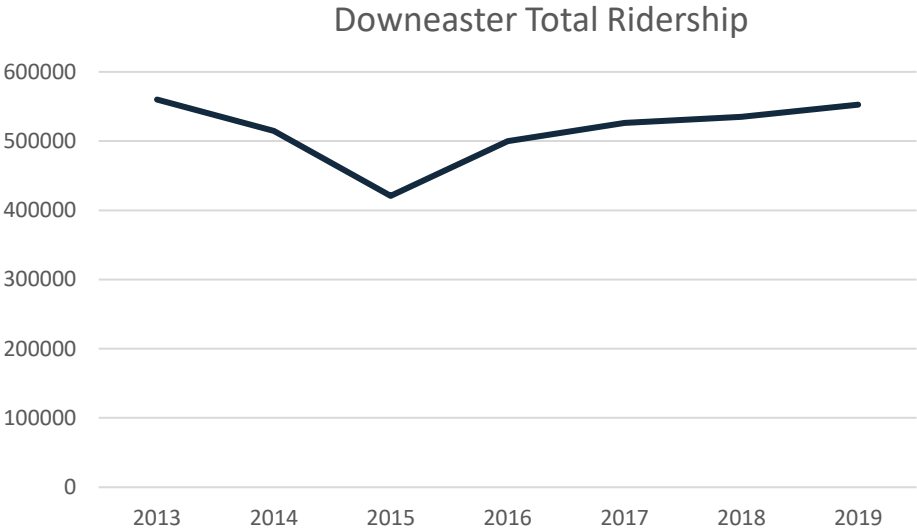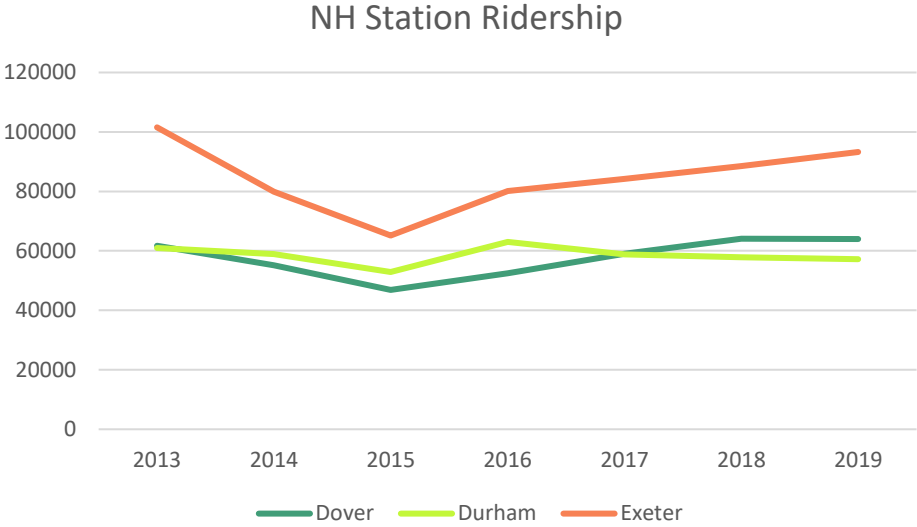
Data source: Rail Passengers Association
Data years: 2013-2019
Coverage: SRPC

Freight Commodities

The New Hampshire state freight plan was published in 2019 and identified several goals and objectives that MPOs can play a role in achieving. As part of the plan development process NHDOT and RPCs worked to identify candidates for critical freight corridors. The state plan divides these into critical urban and critical rural corridors. SRPC will be conducting corridor-based analysis of routes like NH125, US4, NH108, and NH16 which represent major routes for freight traffic. Tools like the travel demand model and travel time data will aid in this analysis.

This section comprises metrics related to:
• Rail Freight
• Domestic Freight Value & Weight
• Exports & Imports

NH State Freight Plan: https://www.nh.gov/dot/org/projectdevelopment/planning/freight-plan/documents/NH-Freight-Plan-FINAL-REPORT-Jan-2019.pdf
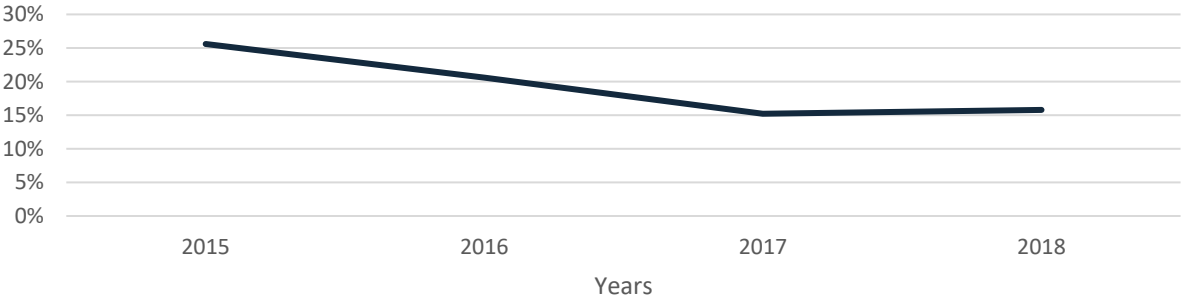
Rail Freight

New Hampshire Northcoast (NHN) has been moving freight by rail though the Strafford Region since 1986. Major commodities include moving aggregates for Boston Sand & Gravel and propane for Eastern Propane. NHN has made several repairs and upgrades to the 43 miles of track and siding it owns, but any expansion is limited by the capacity of track through Dover that is owned and operated by CSX and shared with the Amtrak Downeaster. In September of 2020, NHN received a $4.5 million grant to renovate and modernize its network of track and siding.

Rail Commodities

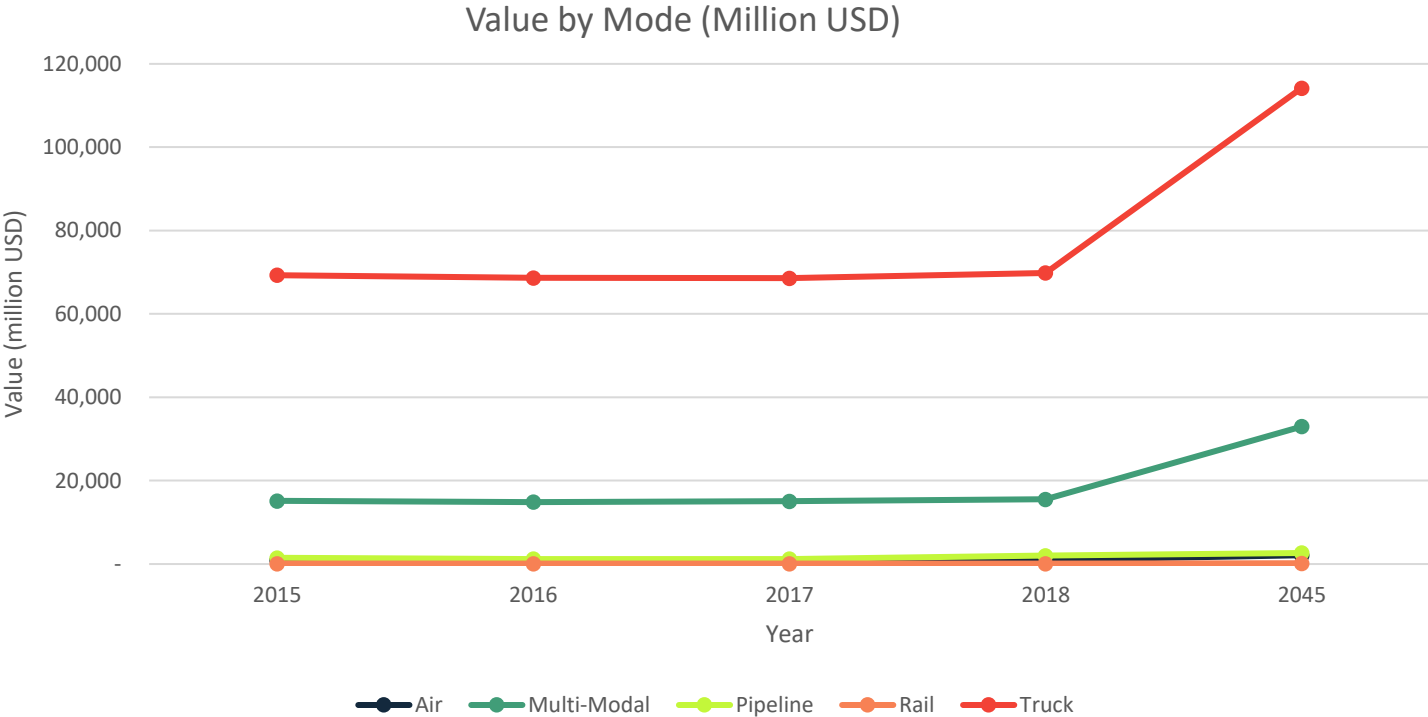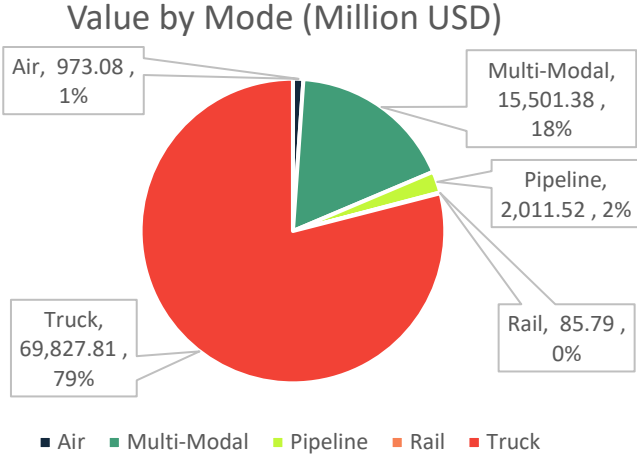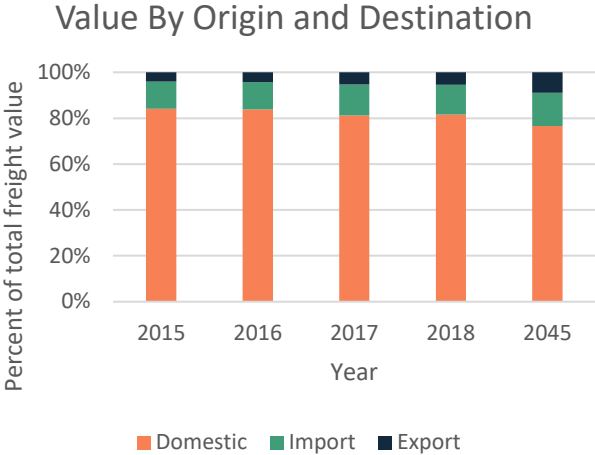Legend: Aggregates, Propane Gas, Steel, Waste Oil (recycled), ROCHESTER
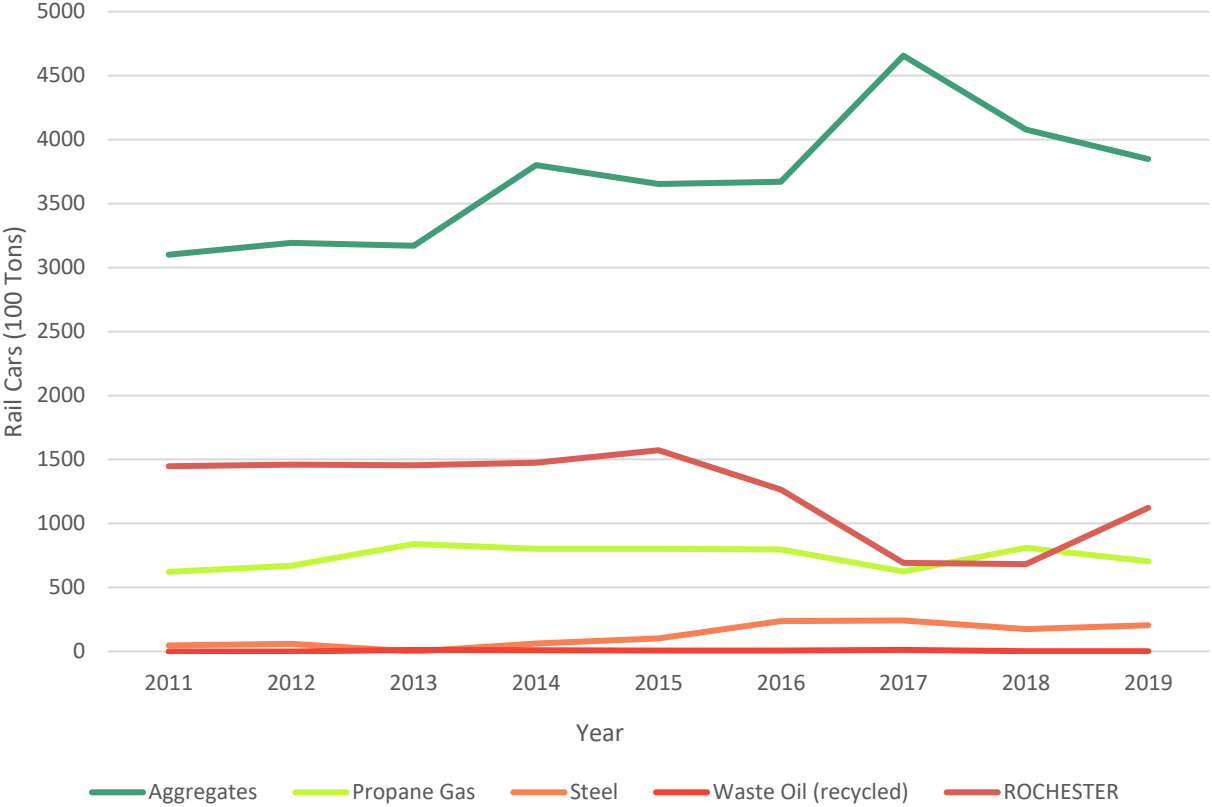
NHN Share of NH Total Rail Freight

Data source: New Hampshire Northcoast, Freight Analysis Framework
Data years: 2011-2019
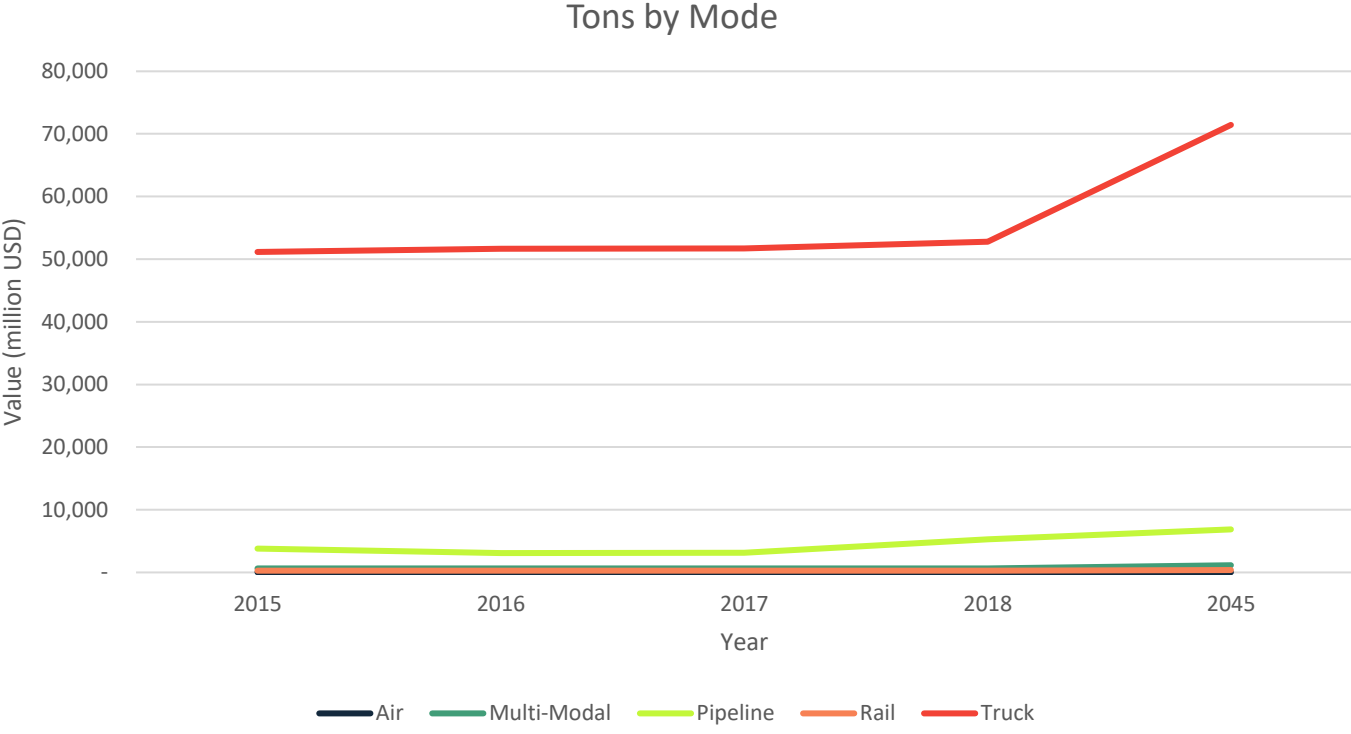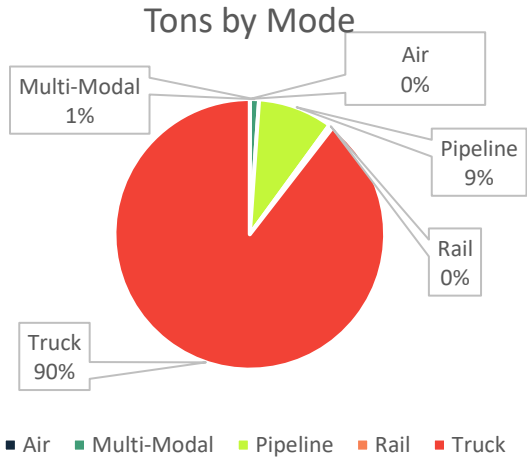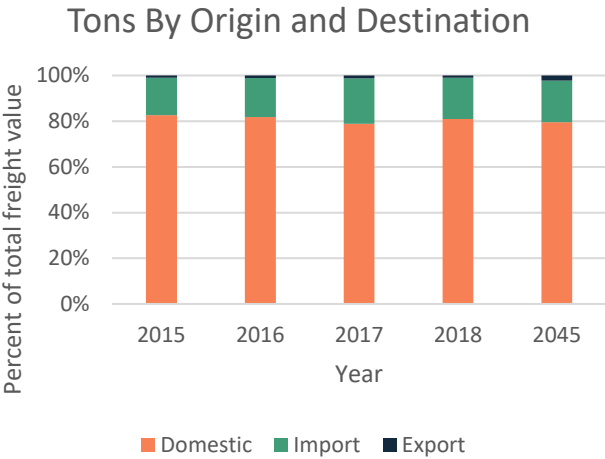Coverage: SRPC

Domestic Freight Value

Much of the freight value in NH is freight that is passing through the state. Freight rail is limited in New Hampshire and trucks are the dominant mode for freight movement. The COVID-19 pandemic had a strong influence on the future of freight as demand for door-to-door shipments increased dramatically. The long-term implications are uncertain, but regional planning will need to consider the potential for continued demand for this kind of shipping and impacts to the transportation network.

Value By Origin and Destination

Legend: Domestic, Import, Export

Value by Mode (Million USD)

Air, 973.08, 1%
Multi-Modal, 15,501.38, 18%
Pipeline, 2,011.52, 2%
Rail, 85.79, 0%
Truck, 69,827.81, 79%

Legend: Air, Multi-Modal, Pipeline, Rail, Truck

Value by Mode (Million USD)

Legend: Air, Multi-Modal, Pipeline, Rail, Truck

Data source: Freight Analysis Framework
Data years: 2015, 2016, 2017, 2018, 2045 (projected)
Coverage: Statewide

Domestic Freight Weight

Trucks carry 90% of freight in New Hampshire. This is an important factor because heavier vehicles cause the greatest amount of damage to roadways and contribute to maintenance costs. Large trucks start on high-volume routes that are rated for heavy loads but may also travel on secondary roads. Trucks that are diverted onto small local roads (due to a crash or other unforeseen event) can cause significant damage to pavement.

Tons By Origin and Destination
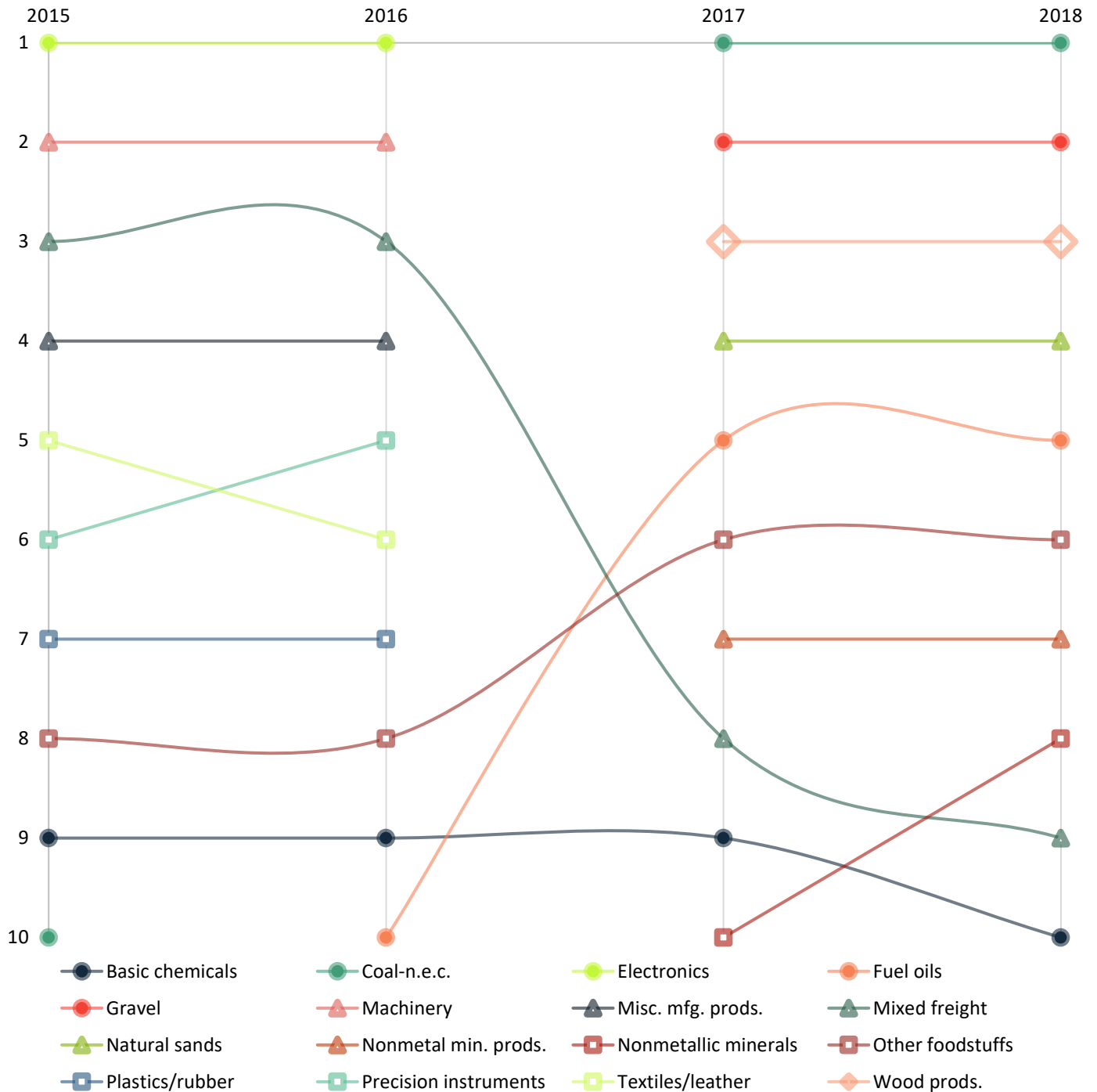

Tons by Mode

Tons by Mode

Data source: Freight Analysis Framework
Data years: 2015, 2016, 2017, 2018, 2045 (projected)
Coverage: Statewide

Top Exports

New Hampshire exports a wide range of freight products. The volume of commodities varies greatly from year-to-year depending on changes in markets. The chart below shows the top 10 commodities from 2015-2018.

Note: Coal-n.e.c. stands for coal "not elsewhere classified". This includes a range of products like Calcined petroleum coke, fireplace logs made from coal, and fuel briquettes.

Legend:
- Basic chemicals
- Coal-n.e.c.
- Electronics
- Fuel oils
- Gravel
- Machinery
- Misc. mfg. prods.
- Mixed freight
- Natural sands
- Nonmetal min. prods.
- Nonmetallic minerals
- Other foodstuffs
- Plastics/rubber
- Precision instruments
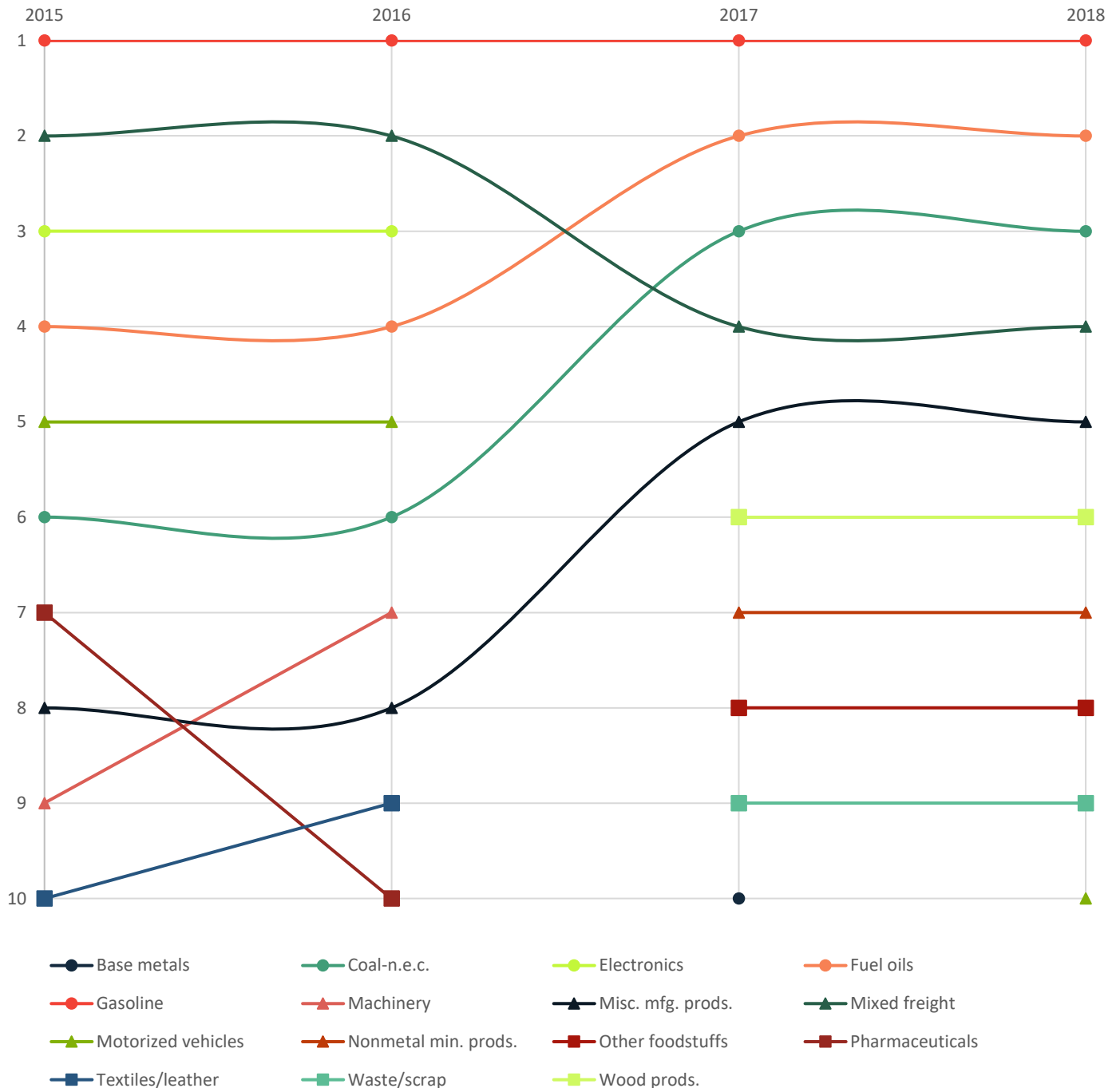- Textiles/leather
- Wood prods.

Data source: Freight Analysis Framework
Data years: 2015, 2016, 2017, 2018
Coverage: Statewide

Top Imports

Similar to exports, market demands influence the volume of various imports. Half of all private homes in New Hampshire use oil for heating. 85% of that home heating oil comes through the Sprague and Irving terminals on the Piscataqua River in Newington (source: NH State Freight Plan). The chart below shows the top 10 commodities from 2015-2018.

Note: Coal n.e.c stands for coal "not elsewhere classified". This includes a range of products like Calcined petroleum coke, fireplace logs made from coal, and fuel briquettes.

Legend:
- Base metals
- Coal-n.e.c.
- Electronics
- Fuel oils
- Gasoline
- Machinery
- Misc. mfg. prods.
- Mixed freight
- Motorized vehicles
- Nonmetal min. prods.
- Other foodstuffs
- Pharmaceuticals
- Textiles/leather
- Waste/scrap
- Wood prods.

NH State Freight Plan: https://www.nh.gov/dot/org/projectdevelopment/planning/freight-plan/documents/NH-Freight-Plan-FINAL-REPORT-Jan-2019.pdf
Data source: Freight Analysis Framework
Data years: 2015, 2016, 2017, 2018
Coverage: Statewide

Public Transit

Public transit is a critical component of the transportation system. The Strafford and Rockingham regions have the richest multi-modal mix in the state: fixed route and demand response bus service, passenger rail, inter-city bus, and a regional airport. Public transit is important for workforce mobility, reducing congestion on roads, and ensuring mobility for a wide range of residents.

This section describes fixed route and demand response bus service. Fixed route service is transit service available on a consistent and recurring schedule with stops at consistent locations along defined routes. Fixed route service is provided by the Cooperative Alliance for Seacoast Transportation (COAST) and UNH Wildcat Transit. Wildcat transit is focused on transportation for UNH students, faculty, and staff. People ride COAST primarily for employment, healthcare, and shopping.
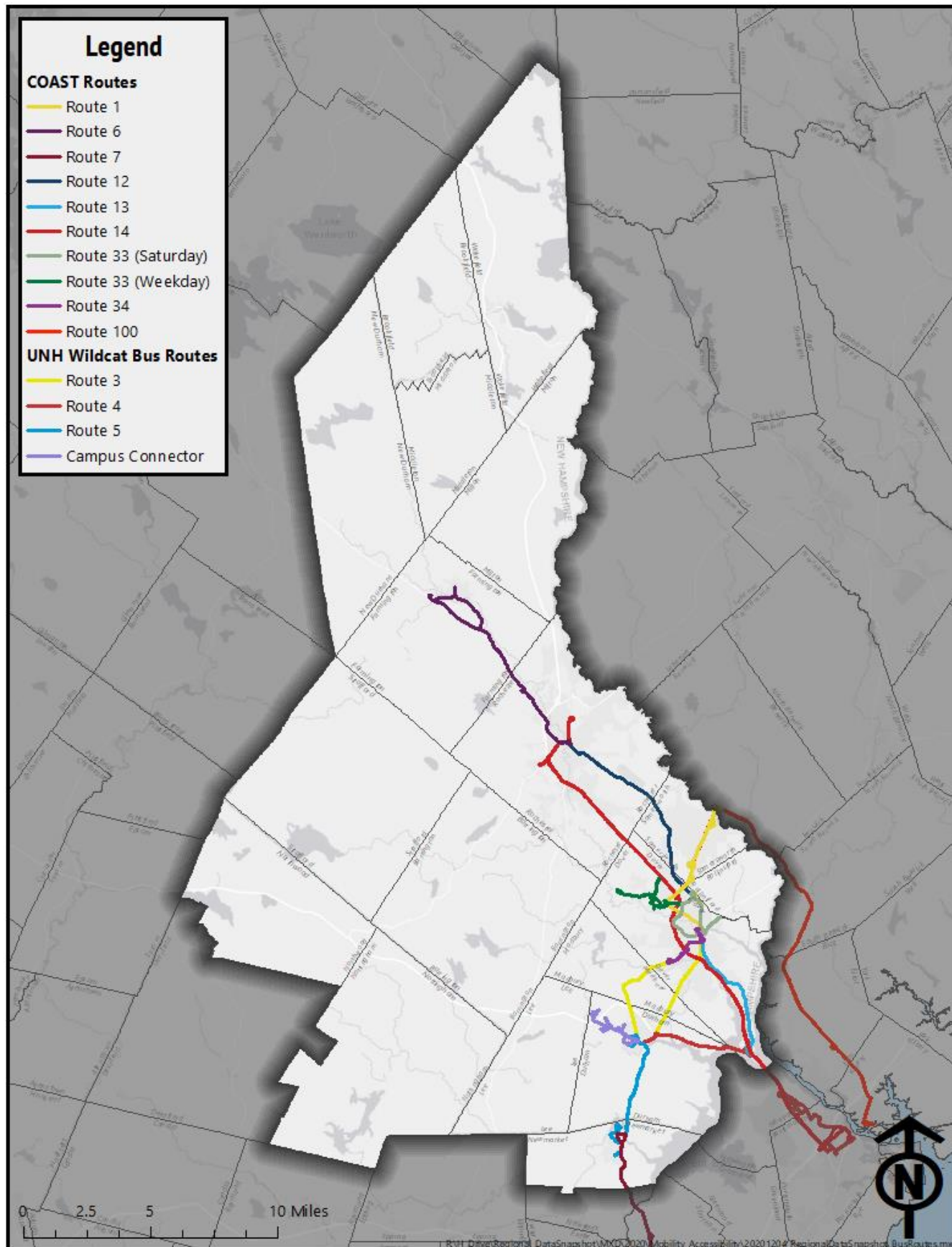
Demand response service serves seniors and people with disabilities, so it plays a critical role in people's health and wellbeing as those populations rise. Demand response services are provided by COAST and several individual transportation providers in southeast NH. Some providers focus on transportation for non-emergency medical appointments, others (like Meals on Wheels) focus on nutrition and social events. In southeast NH, many of these services are coordinated through the Alliance for Community Transportation (ACT).

In New Hampshire, the extent and frequency of public transit service is limited by a lack of state funding for the operation of public transit, which is the most expensive part of a transit agency's budget.

This section covers metrics related to:
- Transit Routes and Ridership
- Access to fixed route transit
- The condition of transit fleet vehicles

Transit Routes

Legend

COAST Routes
- Route 1
- Route 6
- Route 7
- Route 12
- Route 13
- Route 14
- Route 33 (Saturday)
- Route 33 (Weekday)
- Route 34
- Route 100

UNH Wildcat Bus Routes
- Route 3
- Route 4
- Route 5
- Campus Connector

Data source: COAST and UNH Wildcat Bus Routes
Data years: 2020
Coverage: SRPC

Fixed Route Transit Ridership

Fixed route service is transit service available on a consistent and recurring schedule with stops at consistent locations along defined routes. Ridership on **COAST** has been consistent from year to year. UNH has been building student housing close to campus, which has caused an overall decrease in the ridership on their regional fixed route service. COAST shut down for several weeks early in the COVID-19 pandemic but ridership has been steadily returning to pre-pandemic levels. In June of 2020, COAST launched a new route system that increased the efficiency of routes and made better use of the Spaulding turnpike.
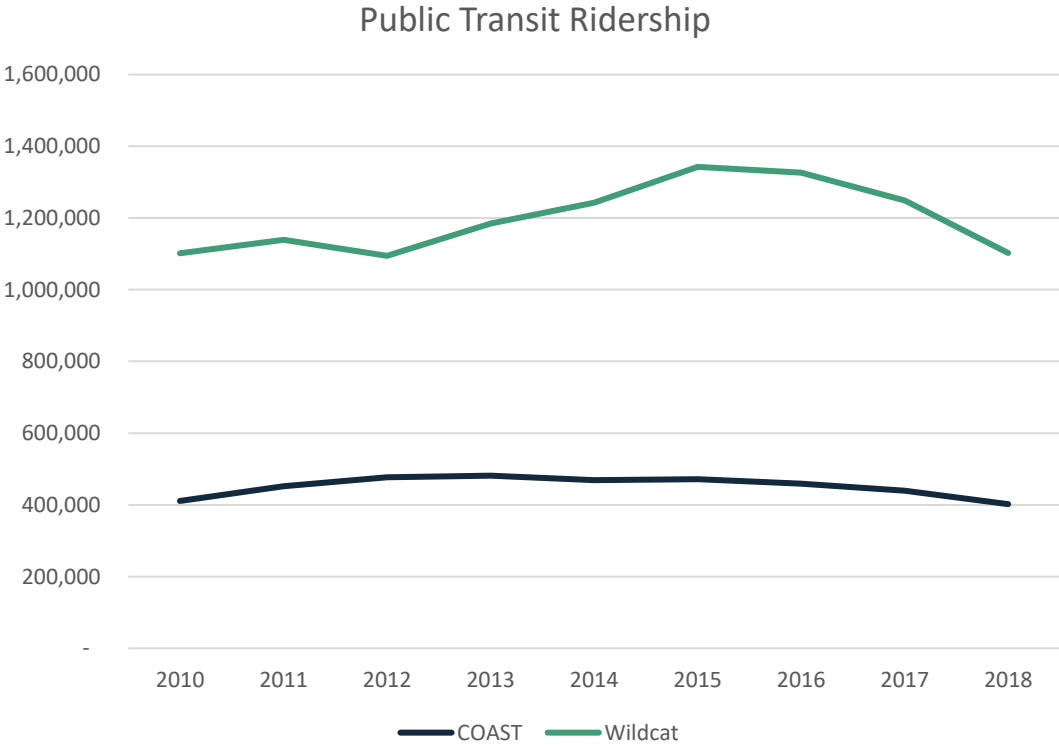
Public Transit Ridership

COAST reports ridership data to FTA on a monthly basis. The chart below compares 2017-2019 monthly averages to the 2020 actual ridership to illustrate the impact of the COVID-19 pandemic on public transit ridership.
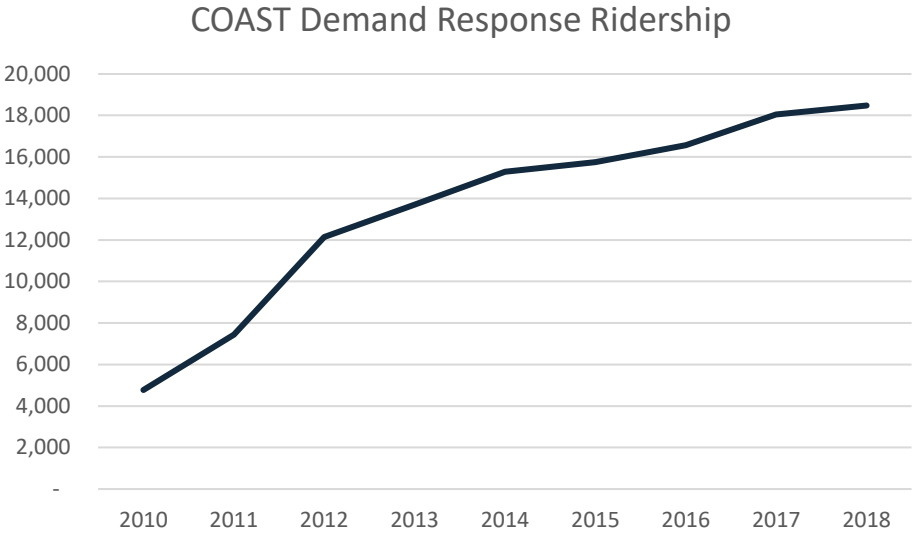
2017-2019 Month Average vs 2020
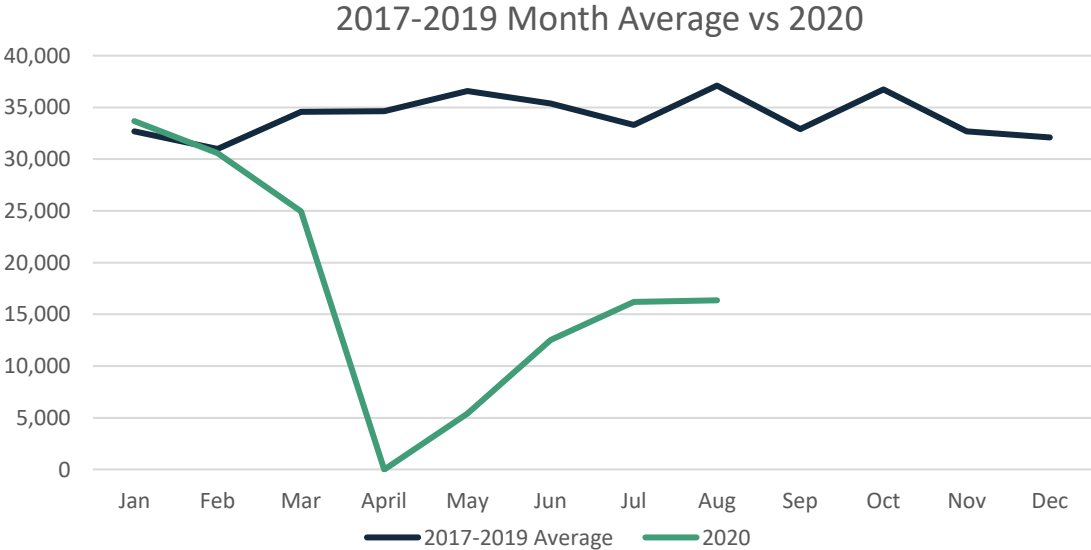
Data source: FTA National Transit Database
Data years: 2010-2018
Coverage: SRPC

Demand Response Transit Ridership

COAST provides door-to-door service for people who live within ½ mile of a bus stop but are unable to reach it due to a disability. Demand for this service has risen sharply for the past decade and will continue to rise with senior populations. This type of service is also the most expensive for COAST and represents an increasing proportion of their budget.

COAST Demand Response Ridership

COAST reports ridership data to FTA on a monthly basis. The chart below compares 2017-2019 monthly averages to the 2020 actual ridership to illustrate the impact of the COVID-19 pandemic on public transit ridership.

2017-2019 Monthly Average vs 2020

Data source: FTA National Transit Database
**Data years: 2010-2018**
Coverage: SRPC
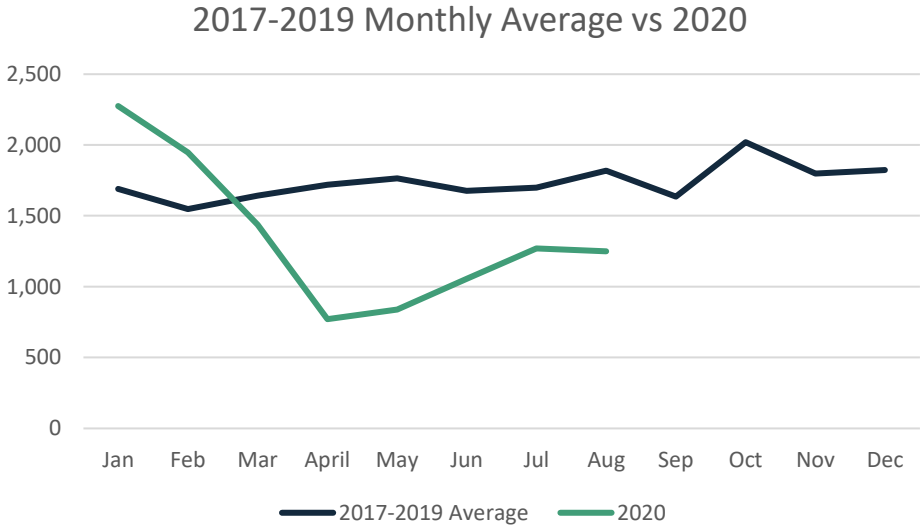
ACT Ridership

The Alliance for Community Transportation (ACT) is a state-designated Regional Coordination Council (RCC) which coordinates community transportation services for seniors and people with disabilities in southeast NH. ACT operates a regional call center to schedule rides with various transportation providers according to clients' needs.

ACT coordinates rides provided by a variety of providers and serves communities in the SRPC and RPC regions. As a result, not all of the rides in the chart below occurred in the SRPC region. The chart below shows ridership by owner of the vehicle providing the ride.

See the Coordinated Public Transit and Human Services Transportation Plan for more information about ACT: http://strafford.org/transportation/coordinatedplan.php.

Ridership by Owner
February 2019 – February 2021
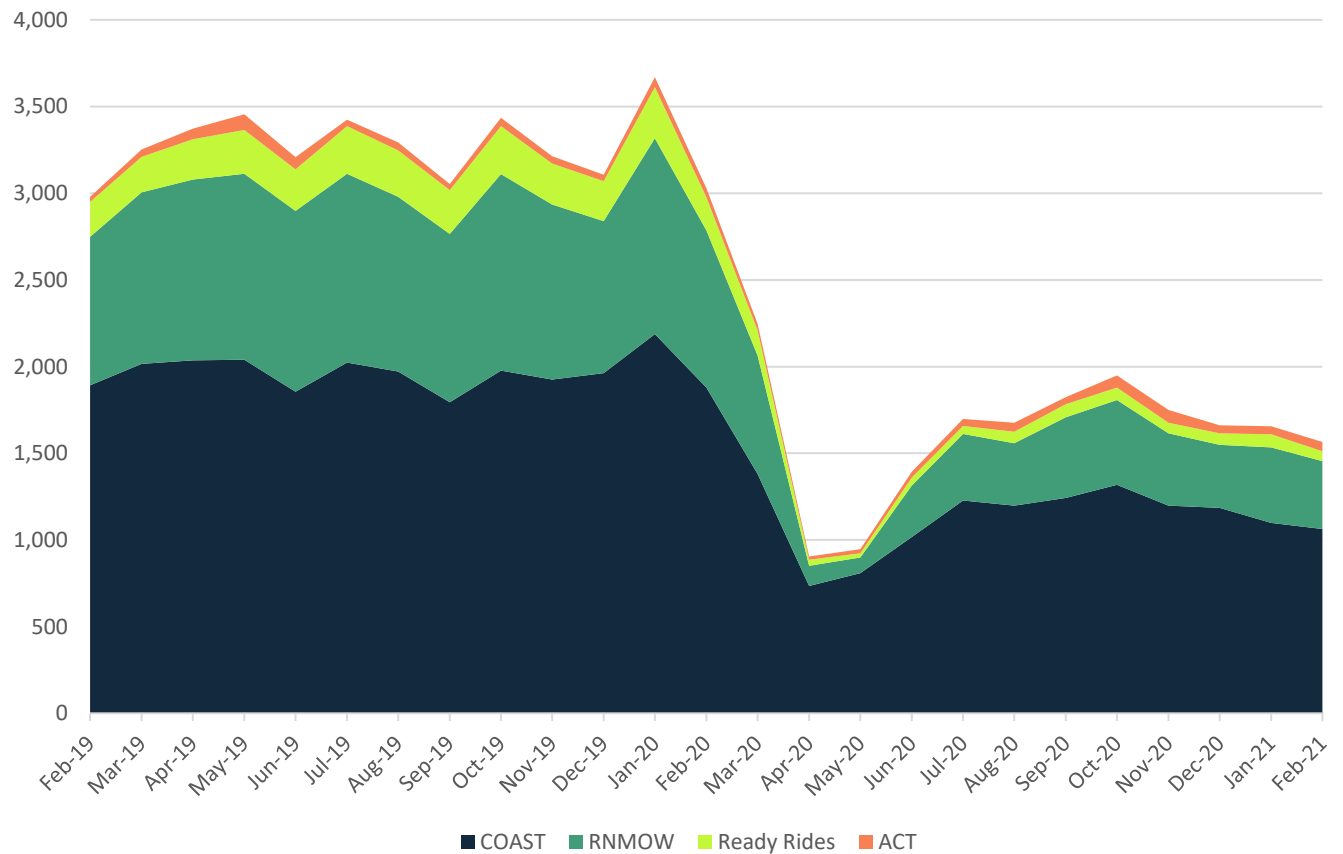
RNMOW stands for Rockingham Nutrition Meals on Wheels.

Data Source: Alliance for Community Transportation Monthly Ridership Report (March 2021)
Data year: 2019-2021
Coverage: ACT Service Area

Access to Transit

This metric encompasses the percentage of the population and jobs with access to public transit. Having "access to" public transit means that the person or job is located within a ¼ or ½ mile radius of a fixed route transit stop. ¼ and ½ mile are commonly used as the "walkable" distances where people are willing to walk to the bus. As houses and jobs start getting further from the bus stop, fewer and fewer people will be willing to walk to the bus (Transportation Research Board Report 165[1] goes into more detail about this).

Future updates to this metric will compare same-year transit routes and population data, but due to the major route changes in COAST's network in June 2020, this year compares the most recent population data (2019) and employment data (2018) to the current Transit Routes (2020). To account for this discrepancy, the total numbers have been rounded to the nearest 100 people or jobs, and the percentages have been rounded to the nearest ¼ of a percent. All numbers are approximate.

	Located within....	
	1/4 mile	1/2 mile
Total Population	52,600	71,300
Living below the poverty line	*11.50%*	*11.00%*
Total Jobs	25,700	34,200
Paying less than $1250/Month	*22.75%*	*22.75%*
Paying between $1250 and $3333/Month	*28.25%*	*29.00%*

[1] http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_165ch-04.pdf

Data Source: ACS Table B17021, COAST, Wildcat Transit
Data year: 2019, 2020
Coverage: SRPC

Population Below Poverty Level with Access to Transit

Legend

Low Income Population

- 0% - 5%
- 5.01% - 10%
- 10.01% - 20%
- 20.01% - 30%
- 30.01% - 66.41%
- Areas outside public transit OR a census block without residents
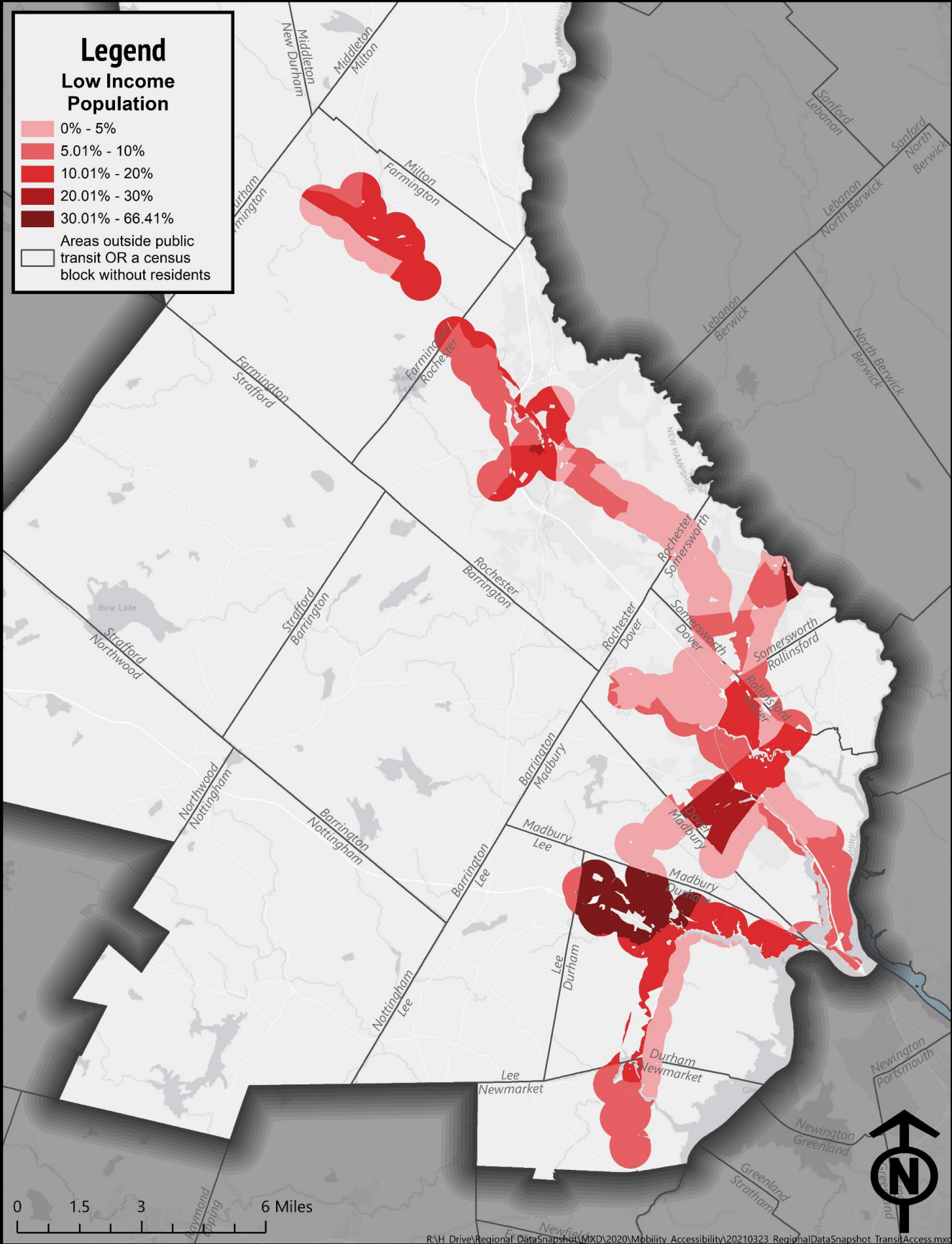
Data Source: ACS Table B17021, COAST, Wildcat Transit
Data year: 2019, 2020
Coverage: SRPC

Transit Vehicles Beyond Their Useful Life

This is a performance measure defined by FTA in 49 USC 625 Subpart D. Transit Agencies are required to set targets every year and MPO's are required to set targets when updating the Metropolitan Transportation Plan. Since the transit agencies manage their own asset procurement, SRPC sets targets that reflect the targets set by the transit agencies.

The data for this measure comes from the COAST and Wildcat Transit asset inventories. Note that transit fleets require replacement throughout the year so annual targets may not be representative of the current fleet makeup.

Definitions
A Useful Life Benchmark (ULB) is the expected lifespan of a vehicle and it varies by vehicle type and use. This ULB is used along with the year of manufacture to determine approximately how long before a vehicle may need to be replaced.
The FTA TERM Scale is a series of criteria for assessing the condition of non-vehicle assets owned by transit agencies. These include storage and maintenance facilities, parking lots, and others. The TERM scale is a scale from 1-5, where 1 is poor and 5 is Excellent.

Asset Category	Performance Measure	Asset Class	Current
Rolling Stock (Age)	Percent of revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB), by vehicle class	Cutaway	19%
		Van	14%
		Bus	36%
		Over-the-road Bus	None
		Minivan	0%
Equipment (Age)	Percent of non-revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB)	All vehicles	43%
Facilities (Condition)	Percent of facilities with a condition rating below 3.0 on the FTA TERM Scale	Passenger	0%
		Administrative	0%
		Maintenance	33%
		Storage	NA

Data Source: COAST, Wildcat Transit
Data Year: 2021
Coverage: Entire fleet of the transit agencies

Remaining Useful Life of Transit Fleet

This metric looks at the current age and expected useful life of each transit vehicle. Three averages are calculated

- For the buses that have exceeded their ULB, the average number of years they have exceeded it by.
- For the buses that have some remaining years before reaching their ULB, the average number of years remaining.
- For all buses in the fleet, the average years over or under the ULB.

The data for this measure comes from the COAST and Wildcat Transit asset inventories.

Definitions
A Useful Life Benchmark (ULB) is the expected lifespan of a vehicle and it varies by vehicle type and use. This ULB is used along with the year of manufacture to determine approximately how long before a vehicle may need to be replaced.

Category	Class	Average Years Beyond ULB (for vehicles exceeding their ULB)	Average Years Remaining (for vehicles not exceeding their ULB)	Average Years Remaining for all vehicles
Rolling Stock	Cutaway	-3.7	3.8	2.4
	Van	-2.0	4.2	3.3
	Bus	-2.3	4.4	2.0
	Over-the-road Bus	None	None	None
	Minivan	None	2	2
Equipment	All vehicles	-5	1	-1.6

Age of the Transit Fleet
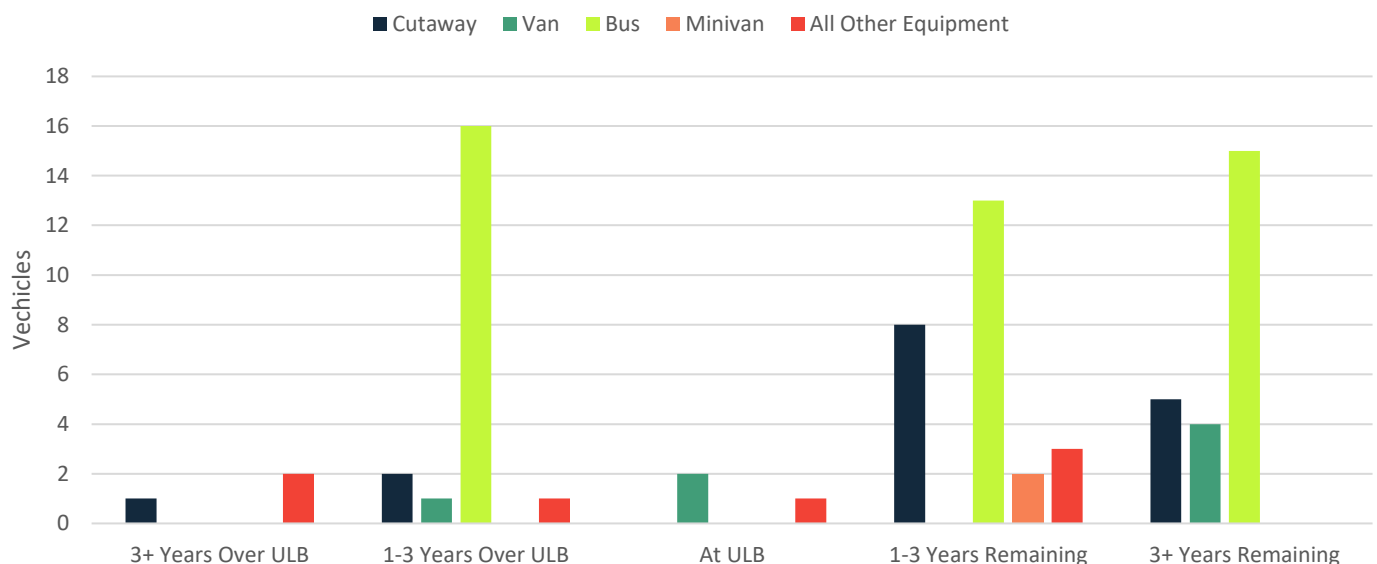
Data Source: COAST, Wildcat Transit
Data Year: 2021
Coverage: Entire fleet of the transit agencies

Transit Fleet Using Alternative Fuels

The data for this measure comes from the COAST and Wildcat Transit asset inventories. 72.5% of the rolling stock vehicles in the COAST and Wildcat fleets use either 20% Bio-Diesel or Compressed Natural Gas (CNG). 46% of the buses in the combined fleets use bio-diesel and 26% use CNG. Almost all of Wildcat's fleet uses either bio-diesel or CNG, while COAST's fleet is about 50% bio-diesel.

These alternative fuels come from dedicated fueling stations. Wildcat Transit has dedicated CNG and bio-diesel facilities in Durham and COAST has a dedicated bio-diesel facility in Dover.

COAST regularly assesses the feasibility of converting to alternative fuel options like electric, but the technology for electric buses has not reached a point where they are a feasible option. In 2019, the longest-range electric bus models could run 225 miles on one charge without on-board charging or HVAC on. COAST's routes can range from 200-440 miles a day, meaning that some of these routes would not be possible for a single bus without an on-board charger.

In 2020, Wildcat Transit received a grant through the Congestion Mitigation & Air Quality Improvement Program (CMAQ) to purchase two more CNG heavy duty buses.

Category	Class	Percent Using Biodiesel	Percent using CNG
Rolling Stock	Cutaway	0%	38%
	Van	0%	0%
	Bus	73%	27%
	Over-the-road Bus	None	None
	Minivan	0%	0%
Equipment	All vehicles	14%	14%

Data Source: COAST, Wildcat Transit
Data Year: 2021
Coverage: Entire fleet of the transit agencies

Active Transportation

This section looks at where the road network supports active transportation (e.g. walking and biking). Currently SRPC has data on the bicycle level of traffic stress (BLTS) for the region's road network. BLTS uses a four-level scale to assess road segments based on different types of bicyclists' presumed comfort level near motor vehicle traffic. For instance, a road with a separated path dedicated to pedestrians and cyclists would have the lowest level of stress, while a high-speed road with no shoulders and lots of traffic would be the highest level of stress.

SRPC is currently collecting data on the extent and condition of sidewalks, which will be included in the snapshot in the future.

Bicycle Level of Traffic Stress

LTS Rating	LTS Rating Description	Population Class
LTS 1	**Lowest stress**; suitable for all riders	Kids and Beginners
LTS 2	**Lower stress**; suitable for adults with some experience	Willing but Wary Riders
LTS 3	**Moderate stress**; suitable for those who ride regularly	Comfortably Confident Riders
LTS 4	**High stress**; suitable for experienced riders with tolerance to high speeds and traffic	Exposure-Experienced Riders
LTS 5	**Bicycles prohibited**	

Miles of Road by LTS Score

- LTS 1 — 420.04
- LTS 2 — 488.17
- LTS 3 — 206.60
- LTS 4 — 167.93
- LTS 5 — 67.67

Bicycle Level of Traffic Stress

LTS Rating	LTS Rating Description	Population Class
LTS 1	**Lowest stress**; suitable for all riders	Kids and Beginners
LTS 2	**Lower stress**; suitable for adults with some experience	Willing but Wary Riders
LTS 3	**Moderate stress**; suitable for those who ride regularly	Comfortably Confident Riders
LTS 4	**High stress**; suitable for experienced riders with tolerance to high speeds and traffic	Exposure-Experienced Riders
LTS 5	**Bicycles prohibited**	

0   2.5   5   10 Miles

R:\H_Drive\Regional_DataSnapshot\MXD\2020\Mobility_Accessibility\20210120-RegionalDataSnapshot_BicycleLevelofTrafficStress.mxd

Data source: Bicycle Level of Traffic Stress
Data years: 2019
Coverage: SRPC

Road Classification Systems

The maps and data below provide information about the types and extent of roads that make up the transportation network in the Strafford region. Different classification systems are used to describe segments of road based on factors like capacity, ownership, and maintenance responsibility.

The three main classification systems used in New Hampshire are the Functional System (defined by FHWA), the Legislative Class (defined by NH RSA 229.5), and Tiers (used by NHDOT to define roads eligible for different paving programs).
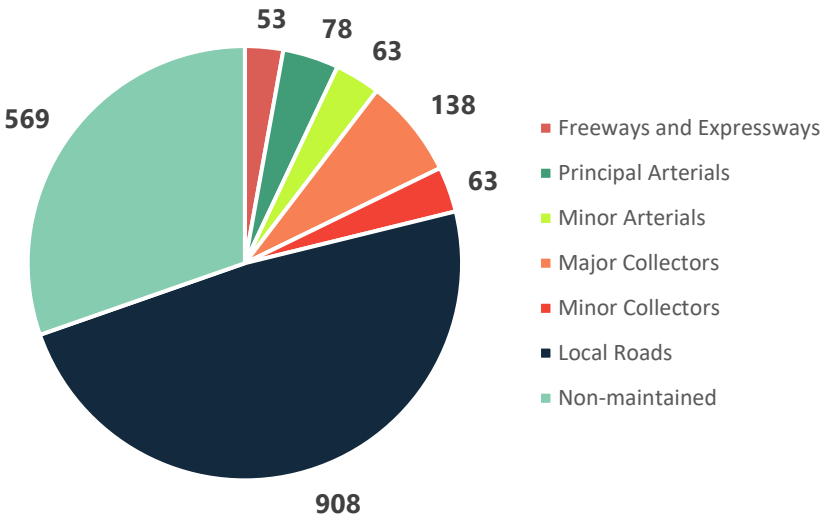
Functional Class

The Federal Highway Administration (FHWA) uses the highway functional classification system (functional class) to define a road's role in the roadway network. Functional class implies expectations on speed limits, capacity, and impact on land use and future development. It is also used in determining federal funding categories that can be applied to the road, and what the minimum lane requirements are for that road. Functional class breaks roads into three major categories: Arterial, Collector, and Local.

This is the system used for determining federal funding that a road may receive.

Functional Class	Speed Limit	Daily Traffic	Distance Served	Significance
Arterial	High	High	Long	Statewide
Collector	Medium	Medium	Medium	Medium
Local	Low	Low	Short	Local

Centerline Miles of Road by Functional System

- Freeways and Expressways
- Principal Arterials
- Minor Arterials
- Major Collectors
- Minor Collectors
- Local Roads
- Non-maintained

Functional System			Examples in the Region	Miles
Arterials	Principal	Interstate	*None*	0
		Other freeways and expressways	NH-16	53
		Other principal arterials	NH-125	78
	Minor		Portland St (Rochester)	63
Collectors	Major		Washington St (Dover)	138
	Minor		NH-155	63
Local Roads				908
Private Roads/Non-maintained				569

Data source: NHDOT Road Layer
Data years: 2020
Coverage: SRPC

Functional Class

Legend
- **Principal Arterial**
- **Minor Arterial**
- **Collector**
- **Local**
- **Non-maintained**

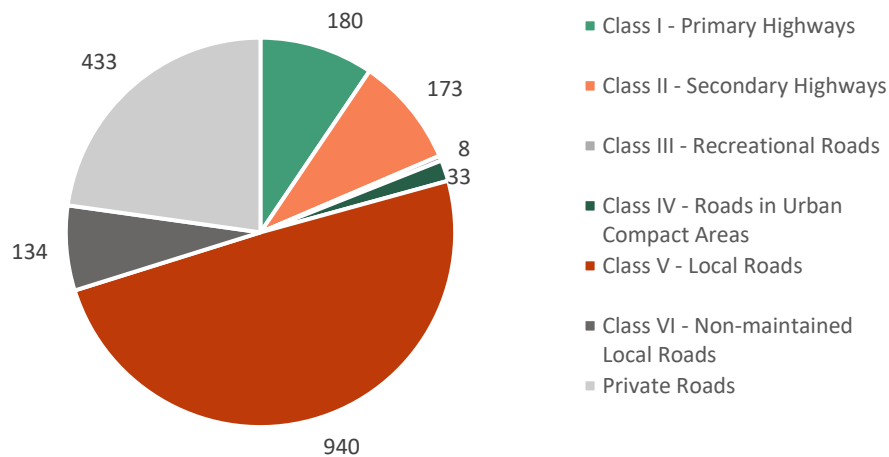0   2.5   5   10 Miles

MOBILITY/ACCESSIBILITY
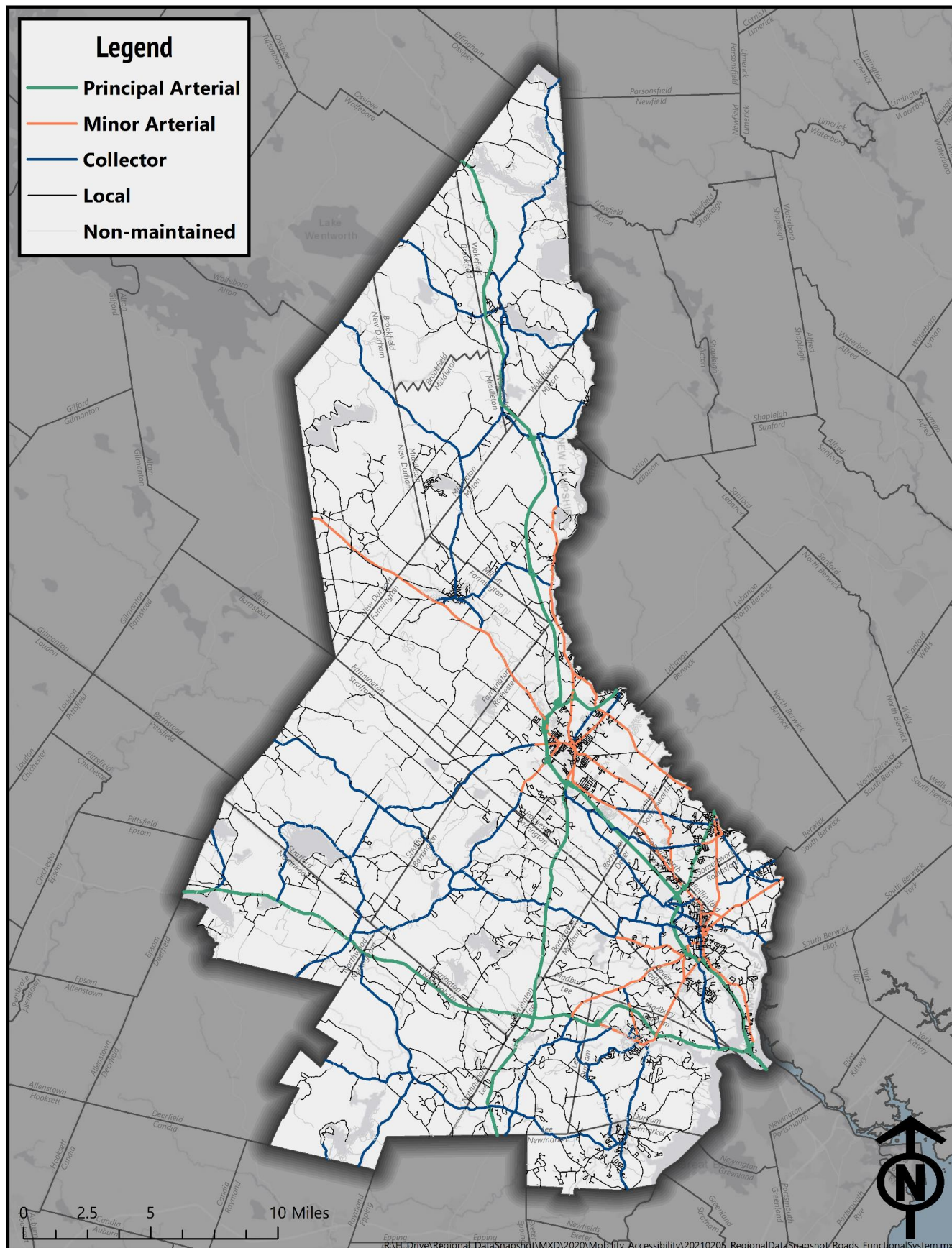
Legislative Class

The New Hampshire Legislative Classification System groups roads into seven different classes. These legislative classes indicate ownership and maintenance responsibility. This system is entirely separate from the Federal Highway Functional Class system. This system is defined in NH RSA 229.5.
Legislative class indicates ownership and maintenance responsibility

Class	Ownership	Maintenance Responsibility
I	State	State
IIa	State	State
IIb	State	Municipal
III	State	State
IV	Municipal	Municipal
V	Municipal	Municipal
VI	Municipal	Not maintained
VII	Federal	Federal

Centerline Miles by Legislative Class

- Class I - Primary Highways
- Class II - Secondary Highways
- Class III - Recreational Roads
- Class IV - Roads in Urban Compact Areas
- Class V - Local Roads
- Class VI - Non-maintained Local Roads
- Private Roads

Data source: NHDOT Road Layer
Data years: 2020
Coverage: SRPC

Legislative Class

Legend

- **Class I - Primary Highways** (green)
- **Class II - Secondary Highways** (orange)
- **Class III - Recreational Roads** (light orange)
- **Class IV - Compact Roads** (blue)
- **Class V - Local Roads** (black)
- **Class VI - Non-maintained** (light gray)
- **Private** (gray)

0   2.5   5   10 Miles

MOBILITY/ACCESSIBILITY
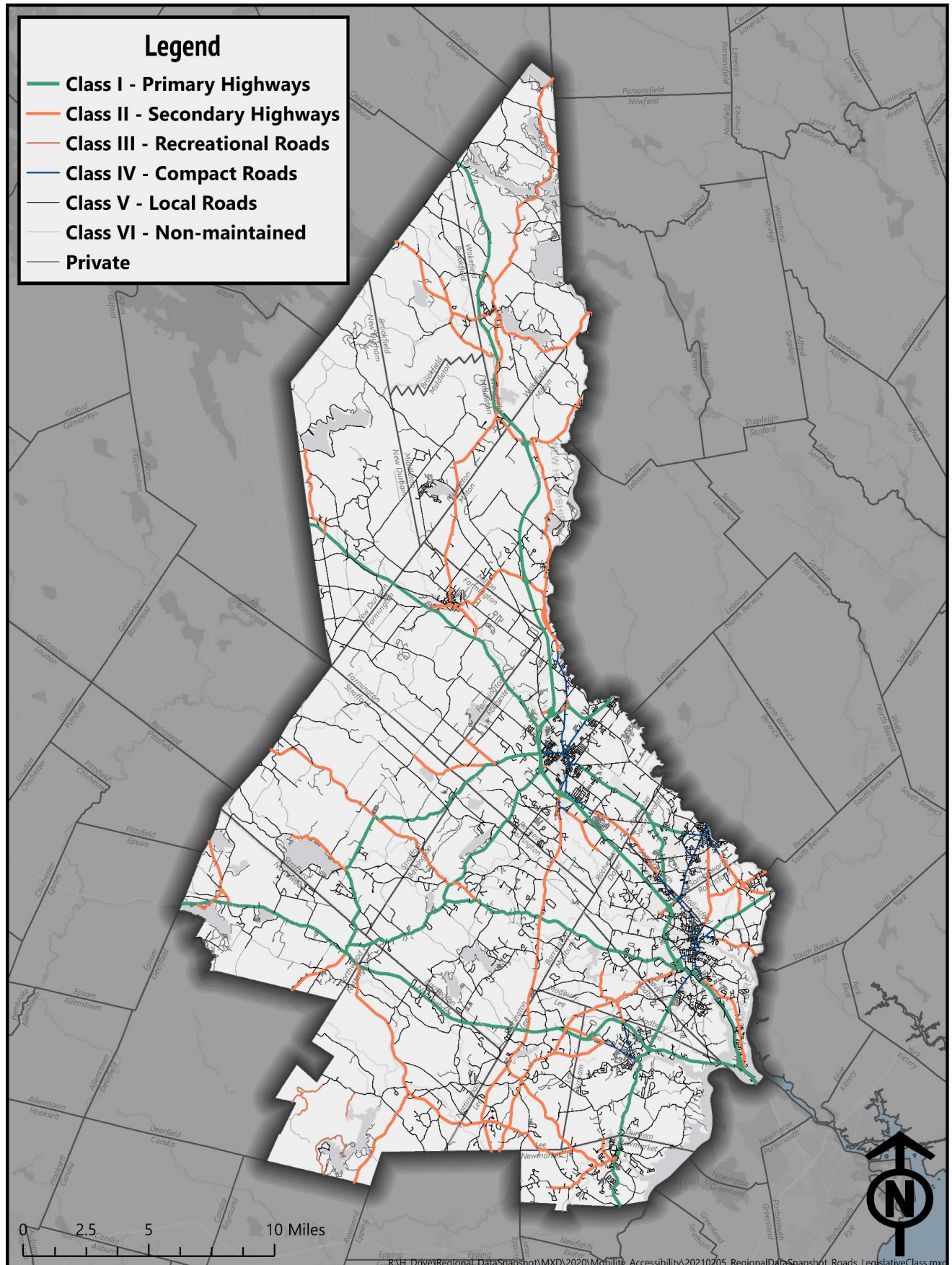
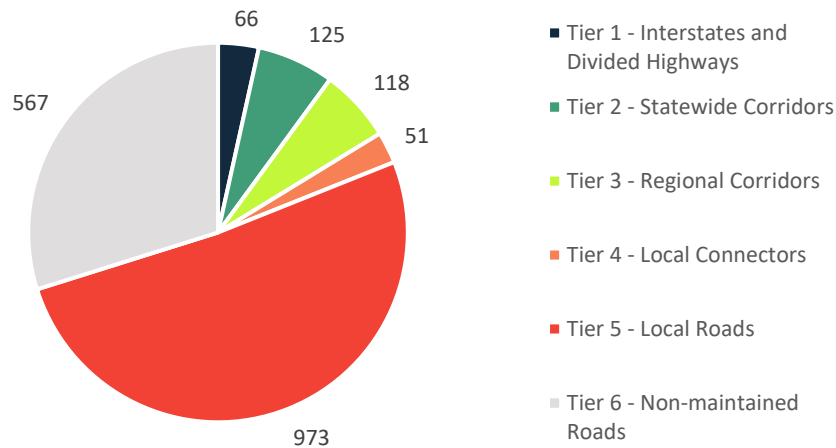**Data source:** NHDOT Road Layer
Data years: 2020
Coverage: SRPC

Tier

NHDOT uses a 6 Tier system to group roads by similarities in the number of users and the level of mobility. This is the system used in the statewide pavement programs. Below you will find the characteristics of each tier and how many centerline miles are within each category in the SRPC region.

	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Tier 6
Description	Interstates, Turnpikes, & Divided Highways	Other Statewide corridors	Regional corridors	Local Connectors	Local Roads	Off Network (State owned parking lots)
Significance	Statewide	Statewide	Regional	Regional	Local	N/A
Speed Limit	50 mph +	40 – 55 mph	40 – 45 mph	30 – 40 mph	35 mph or less	N/A
Average Daily Traffic	Highest	High	Moderate	Low	Lowest	N/A
Connectivity	State to state	State to state	Access to Tiers 1 & 2	Access to Tier 3	Access to destination	N/A
Distances served	Longest	Long	Medium	Short	Shortest	N/A

Centerline Miles of Road by Tier

- Tier 1 - Interstates and Divided Highways
- Tier 2 - Statewide Corridors
- Tier 3 - Regional Corridors
- Tier 4 - Local Connectors
- Tier 5 - Local Roads
- Tier 6 - Non-maintained Roads

Data source: NHDOT Road Layer
Data years: 2020
Coverage: SRPC

Tier

Legend

—— Turnpikes and divided highways
—— Other statewide corridors
—— Regional Corridors
—— Local connectors
—— Local roads
—— Non-maintained

0   2.5   5   10 Miles

Data source: NHDOT Road Layer
Data years: 2020
Coverage: SRPC

MOBILITY/ACCESSIBILITY

RESILIENCY
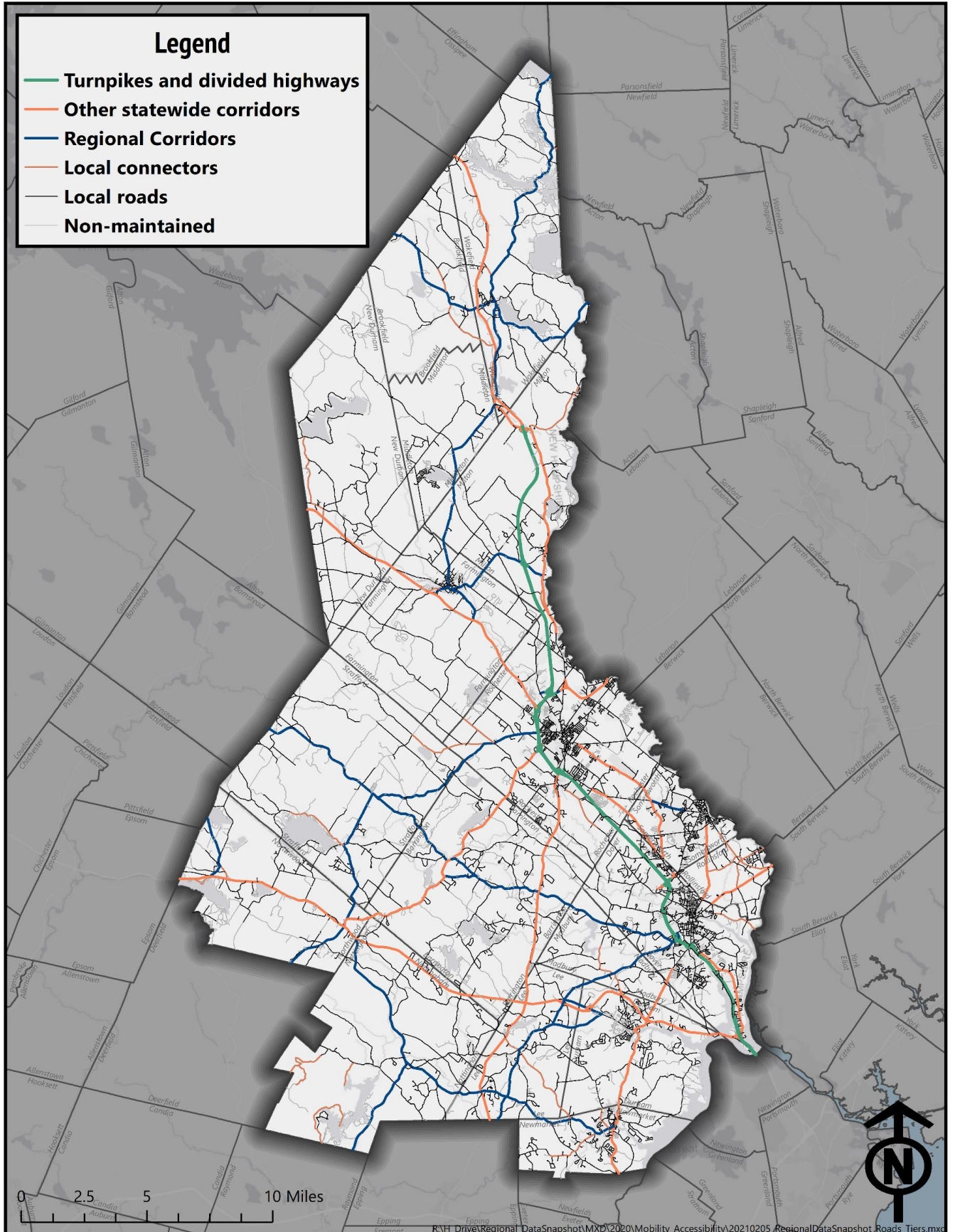
Table of Contents

Transportation-Related Emissions

Transportation accounts for nearly 30 percent of total greenhouse gas emissions in the U.S. (source: EPA). Cleaner fuels, more efficient engines, and better emission controls on vehicles have helped reduce emissions but the number of miles driven each year also keeps increasing. In New Hampshire, transportation emissions are the largest source of air pollution (source: NHDES). One of the clearest examples of this air pollution is ground-level ozone, or smog, which is a hazard for people with vulnerable respiratory systems (seniors, young children, and people with conditions like asthma). New Hampshire is within federal limits for air pollutants, but SRPC will continue finding ways to reduce transportation sources of air pollution.

Alternative Fueling Stations are becoming more prevalent across the United States. The fastest growing alternative fuel for transportation is unquestionably electric charging. On June 28, 2016, Volkswagen entered into an agreement in the form of a Partial Consent Degree to address the 2.0 liter vehicles on the road and the associated environmental consequences resulting from the past and future excess emissions from these vehicles. The agreement, finalized in October 2016, requires that Volkswagen Invest $2,000,000,000 over a period of up to 10 years ($1.2 billion in areas outside of California) on actions to support increased use of technology for Zero Emission Vehicles. New Hampshire's allocation of the environmental mitigation trust is approximately $30.9 million.

On May 30, 2018, New Hampshire Senate Bill 517 (SB 517) was passed establishing the Electric Vehicle Charging Stations Infrastructure Commission to make recommendations on various policies, programs and initiatives related to the use and support of zero emission vehicles in New Hampshire.

While the SRPC region does not have as much as California, charging stations should start to be more common at common rest areas and retail spaces in the coming years. Car manufacturers like Tesla are starting to ramp up production hitting new records each quarter as they continue to build their Giga-factories so the demand across the nation will expand for these stations to be more available. Currently however, across the Northeast, supply is currently exceeding demand.

In January 2017, FHWA published a final rule defining a set of performance measures for state DOTs and MPOs. There were two performance measures that were related to emissions:
1. Percent Change in Tailpipe CO_2 Emissions on the NHS (Repealed May 2018),
2. Total Emissions Reduction.

The Tailpipe CO2 measure was repealed in 2018, and the total emissions reduction measure only applies to urbanized areas with over 1 Million people that are in non-attainment or maintenance for one of the applicable emissions. SRPC is not required to set targets for either of these measures, however we still track it in the On-Road Greenhouse Gas Emissions per Capita metric. This metric estimates the emissions likely to be produced per capita as a result of using the fuel purchased in the region.

COVID-19 Note: Although we do not have data for 2020, it is expected that 2020 will be an outlier in the data due to there being nearly 30% less traffic at times during the pandemic along with the switch to online schooling/telework.

EPA: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions
NHDES: https://www.des.nh.gov/climate-and-sustainability/transportation

Alternative Fuels

Adoption of alternative transportation fuels is growing in the SRPC region. That growth is largely due to rapidly improving technology, incentives from the NH Electric Coop, State goals (NH Senate Bill 517), and local priorities. Typically, electric and propane are the most common alternative fuel station types.

The stations below were collected using US Department of Energy's Alternative Fuels Data Center (AFDC). The AFDC is a national dataset that tracks and maps alternative fueling stations across the country. There has been a large increase in electric vehicle charging stations across the country in the past few years, likely due in part to the $2 billion that Electrify America is using to enhance the nation's clean emissions infrastructure as part of the 2016 Volkswagen emission settlement.

Charging rates vary by station "Level" and planning is required to install stations at appropriate locations. Expansion of public vehicle charging will require public investment and broad-scale upgrades of electric infrastructure. Most electric stations in the SRPC region are Level 2, except for a DC Fast Charging (Level 3) station in Rochester which is only for Tesla vehicles. See the table below for the differences between each level.

COVID-19 note: While some states began lifting coronavirus restrictions towards the end of Q2, the pandemic continued to impact the electric vehicle (EV) market. Compared to the first five months of 2019, U.S. EV sales were down by 20% at the end of May; in May alone, U.S. EV sales were down by 54% compared with May 2019 sales (Atlas Public Policy 2020a). Furthermore, several automakers, such as Ford, Tesla, and Rivian, have postponed the release of some new EV models.

Charging Station Levels	Voltage	Drive distance per hour of charging	Application	Unit Cost	Installation Cost
Level 1	120V	2-5	At-home charging ($$)	$300 to $1,500	$0 to $3,000
Level 2	240V	10-20	Employment centers ($$$)	$400 to $6,500	$600 to $12,700
DC Fast Chargers (Level 3)	480V	60-80	Commercial centers ($$$$$)	$10,000 to $40,000	$4,000 to $51,000

Alternative Fuel Type	Station Name	City	Access
Biodiesel	University of New Hampshire	Durham	Private - Government only
Compressed Natural Gas	Waste Management	Rochester	Private
Electric	Somersworth Nissan	Somersworth	Public - Call ahead
Electric	Somersworth Nissan	Somersworth	Private
Electric	Pettee Brook RD Parking Lot	Durham	Public
Electric	Myhre Equine Clinic	Rochester	Public
Electric	The Garrison Hotel (Tesla)	Dover	Public
Electric	Orchard Street Parking Garage (Tesla)	Dover	Public
Electric	Hilltop Chevrolet	Somersworth	Public - Call ahead
Electric	Hannaford Supermarket (Tesla Supercharger)	Rochester	Public
Electric	Stone Church Music Club	Newmarket	Public
Electric	Emery Farm Market & Cafe	Durham	Public
Propane	Proulx Oil & Propane Inc	Newmarket	Public
Propane	U-Haul	Rochester	Public
Propane	Eastern Propane	Rochester	Private
Propane	Eastern Propane	Rochester	Private
Propane	PIP Rental and Storage	Farmington	Public

Charging cost source: https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf
Data Source: US Department of Energy
Data year: 2021 Coverage: National

On-Road GHG Emissions per Capita

"The National Emissions Inventory (NEI) is a comprehensive and detailed estimate of air emissions of criteria pollutants, criteria precursors, and hazardous air pollutants from air emissions sources. The NEI is released every three years based primarily upon data provided by State, Local, and Tribal air agencies for sources in their jurisdictions and supplemented by data developed by the US EPA. The NEI is built using the Emissions Inventory System (EIS) first to collect the data from State, Local, and Tribal air agencies and then to blend that data with other data sources." – EPA National Emissions Inventory

NEI on-road sources include emissions from on-road vehicles that use gasoline, diesel, and other fuels. These sources include light duty and heavy-duty vehicle emissions from operation on roads, highway ramps, and during idling.

The NEI data is available at the county level and is representative of the fuel purchased in each of the three counties.

Mobile On-Road GHG Emissions (Tons per person)
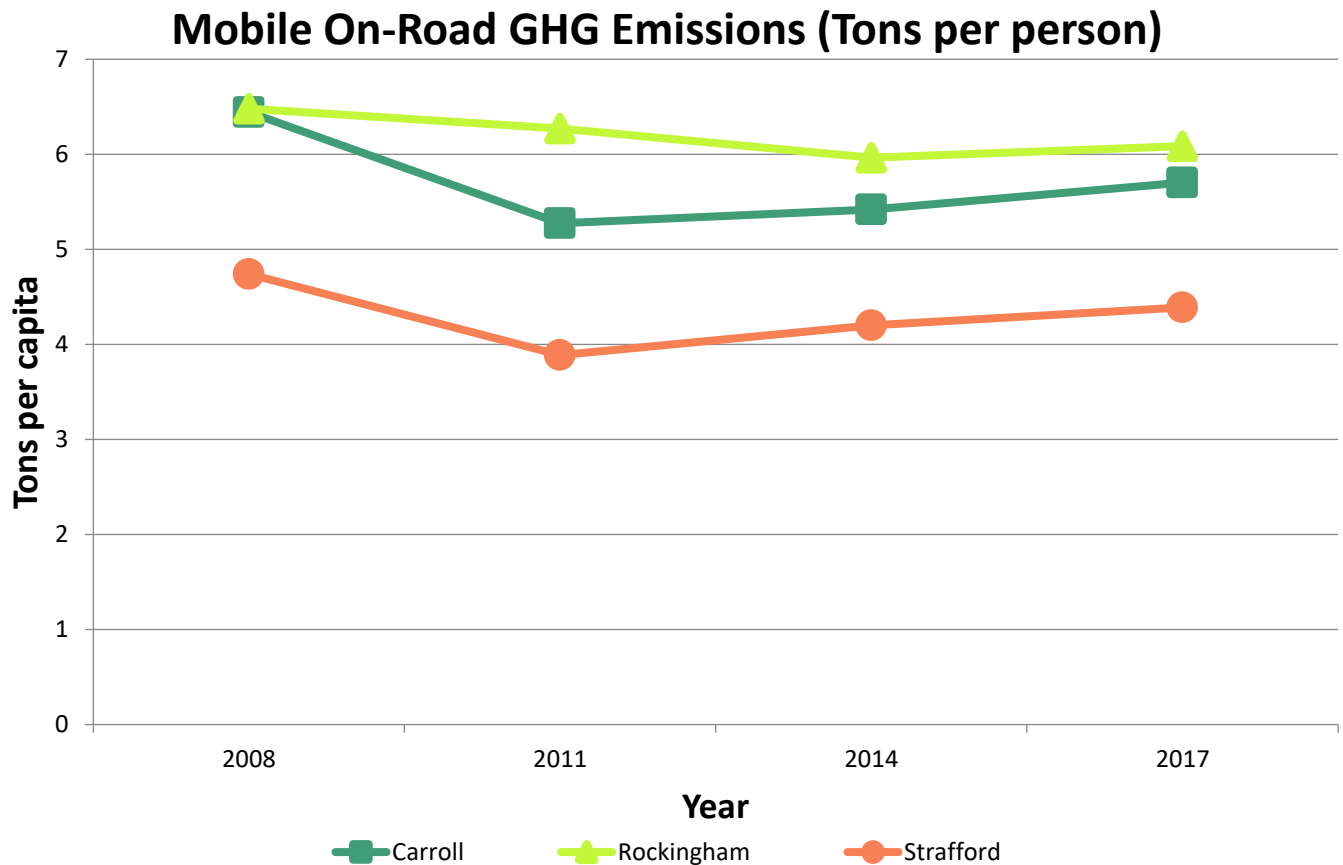
Data Source: EPA National Emissions Inventory, NH OSI Population Estimates
Data year: 2017
Coverage: Counties

Sea Level Rise and Flooding

This section includes results from climate change that could impact our coastal communities and flood zones including:
- Projected Sea Level Rise (year 2100)
- 2014 Impacted Infrastructure within Sea Level Rise Scenarios
- Extreme Precipitation
- High Tide Flooding Frequency

Regional climate research is being led by scientists at the University of New Hampshire. Their primary findings can be found in the *New Hampshire Coastal Flood Risk Summary Part 1: Science*.

Sea levels are rising around the world. This is an obvious concern for coastal communities, but inland communities need to plan for impacts as well. Between 2010 and 2050, high tide flooding is expected to double and eventually exist daily at Hampton beach by 2100. This high tides threaten groundwater that could be at risk of salt-water contamination that could put a tremendous amount of coastal drinking water at risk.
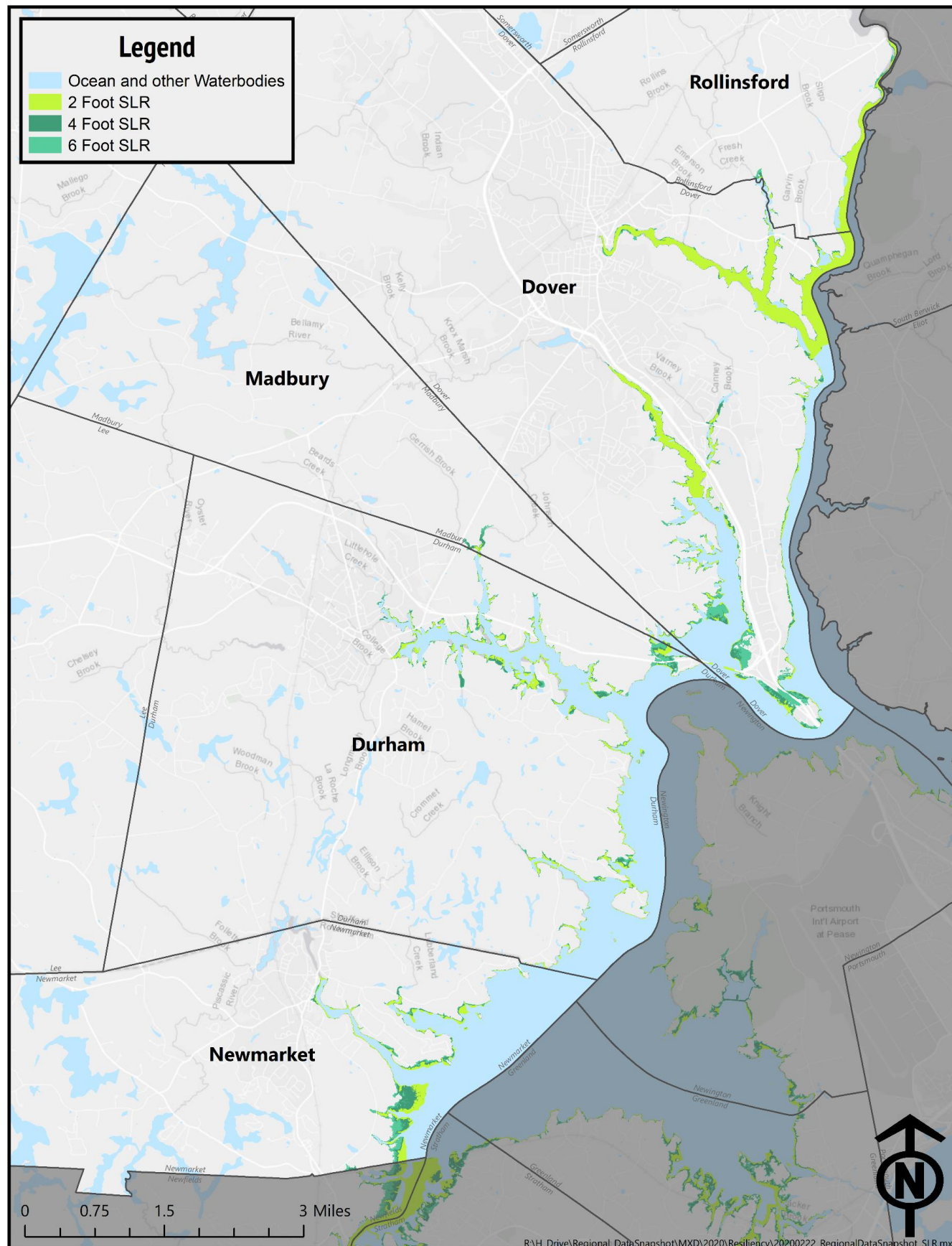
40 percent of the U.S. population lives in coastal counties where population density is over five times greater than the U.S. average (Source: NOAA). As sea levels rise, displaced people will be forced to move inland. SRPC worked on a project called "C-RISE" in 2014 to analyze how sea level rise could impact our coastal communities in the medium to long term. Sea level rise combined with larger, more frequent storms represent a present danger, so SRPC is focused on helping communities mitigate and adapt to climate change.

Another regional impact of climate change is more frequent storms that drop more rain. This trend is projected to increase. Inland and coastal flooding threatens roads and bridges, stormwater systems, homes, and other critical facilities.

Our climate is changing, and action must be taken to avoid the worst impacts to civilization. Transportation is responsible for 30 percent of the greenhouse gas emissions that are driving climate change. SRPC plays a role in reducing dependance on personal vehicles and making communities more walkable so people can make in-town trips by bicycle or foot.

NOAA Article: What percentage of the American population lives near the coast?
New Hampshire Coastal Flood Risk Summary Part 1:
Sciencehttps://scholars.unh.edu/cgi/viewcontent.cgi?article=1209&context=ersc

Projected Sea Level Rise (2100)

Legend

- Ocean and other Waterbodies
- 2 Foot SLR
- 4 Foot SLR
- 6 Foot SLR

Rollinsford

Dover

Madbury

Durham

Newmarket

0   0.75   1.5   3 Miles

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Data Source: SRPC
Data Year: 2014
Coverage: SRPC

For Interactive Maps:
https://tinyurl.com/9bhwuyjx

Projected Sea Level Rise (Storm Surge) (2100)
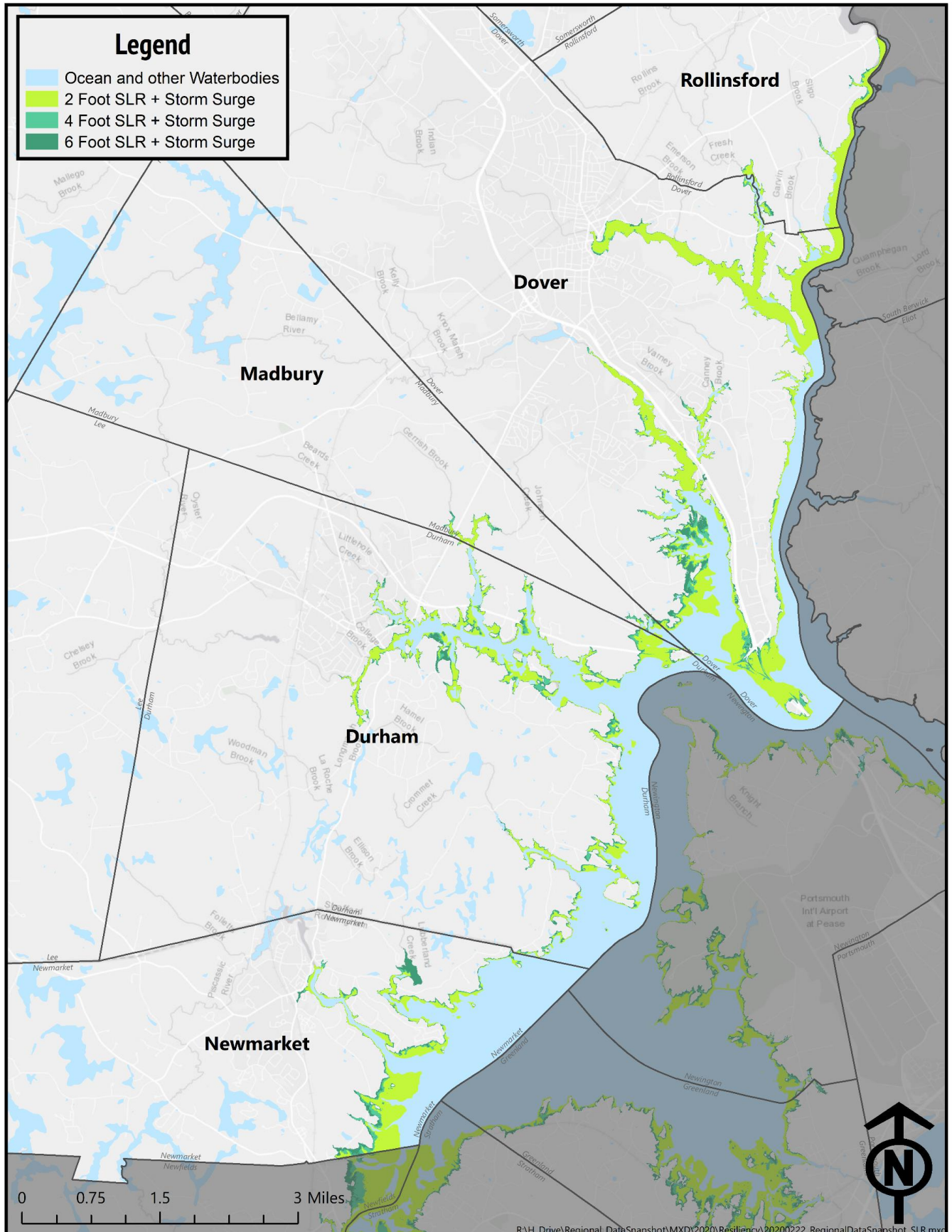
RESILIENCY

Legend
- Ocean and other Waterbodies
- 2 Foot SLR + Storm Surge
- 4 Foot SLR + Storm Surge
- 6 Foot SLR + Storm Surge

Rollinsford

Dover

Madbury

Durham

Newmarket

0   0.75   1.5   3 Miles

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Data Source: SRPC
Data Year: 2014
Coverage: SRPC

For Interactive Maps:
https://tinyurl.com/9bhwuyjx

126

2014 Impacted Infrastructure within Sea Level Rise Scenarios

The Sea Level Rise (SLR) scenarios below look at 3 different levels of green-house gas emissions that would lead to either 1.7, 4, or 6.3 feet of sea level rise by 2100. This data was created in 2014 and was supplemented by the "C-Rise" project that SRPC did in 2016. Each of these data points are summaries of 5 municipalities within our region (Dover, Durham, Madbury, Newmarket, and Rollinsford). UNH did a separate analysis for climate modeling in 2018 with 4 different sea level scenarios as a matter of probability. (See at "High Tide Flooding frequency" section) A **storm surge** is defined as a 100-year flood, not that this means it will only happen every 100 years, just that it has a 1% chance of flooding every year and is typically used by the National Flood Insurance Program to regulate insurance policies. For example, we had two 100-year floods in 12 months in NH between the Mother' Day Flood of 2006 and the Patriot's day Flood of 2007. Each of these storms brought tremendous damage to the SRPC region. 100-year floods are becoming more regular with longer, more powerful precipitation events projected in the future. In the maps on the following pages, Dover point, Coastal Great Bay, and the Oyster/Bellamy river are anticipated to have significant flooding impact their coasts.

	Sea Level Rise			Sea Level Rise + Storm Surge		
Scenarios	1.7 feet	4.0 feet	6.3 feet	1.7 feet	4.0 feet	6.3 feet
Homes	3	25	92	192	212	212
Bridges	17	18	18	18	18	20
Miles of Roads	0.32	1.29	3.3	7.96	8.05	8.05
Critical Facilities	0	2	3	3	3	3

Infrastructure Definitions:

Homes are identified as structures that are occupied, including apartment buildings, single family homes, and mobile homes.
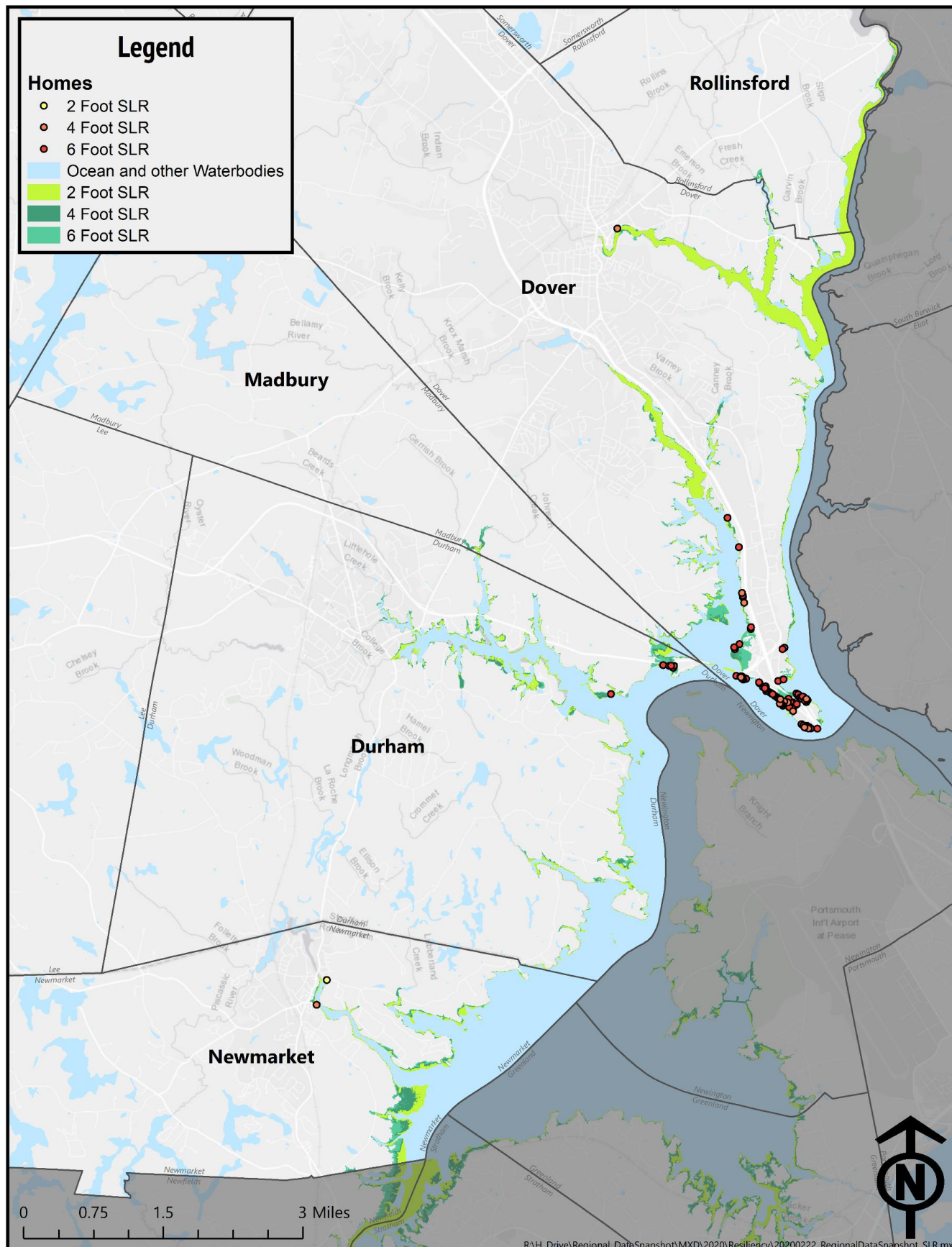
Bridges and **Roads** come from NHDOT infrastructure data. Road are measured in centerline miles.

Critical Facilities are identified as all manmade structures or other improvements that, because of their function, size, service area, or uniqueness, have the potential to cause serious bodily harm, extensive property damage, or disruption of vital socioeconomic activities if they are destroyed, damaged, or if their functionality is impaired. These facilities include all public and private facilities that a community considers essential for the delivery of vital services for the protection of the community, such as emergency operations centers, shelters, or utilities. (FEMA)

Critical Facilities	Municipality	SLR Scenario	SLR + storm surge Scenario
Primary Sewer Lift Station	Durham	6.3 feet	1.7 feet
Riverwalk Park	Newmarket	4 feet	1.7 feet
Creighton Street Pump Station	Newmarket	4 feet	1.7 feet

Data Source: SRPC
Data Year: 2014
Coverage: Dover, Durham, Madbury, Newmarket, and Rollinsford

RESILIENCY

Affected Homes within SLR Scenarios

Legend

Homes
- ○ 2 Foot SLR
- ● 4 Foot SLR
- ● 6 Foot SLR
- Ocean and other Waterbodies
- 2 Foot SLR
- 4 Foot SLR
- 6 Foot SLR

Rollinsford

Dover

Madbury

Durham

Newmarket

0   0.75   1.5   3 Miles

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Data Source: SRPC
Data Year: 2014
Coverage: Dover, Durham, Madbury, Newmarket, and Rollinsford

For Interactive Maps:
https://tinyurl.com/9bhwuyjx

RESILIENCY

128

Affected Homes within SLR + Storm Surge Scenarios
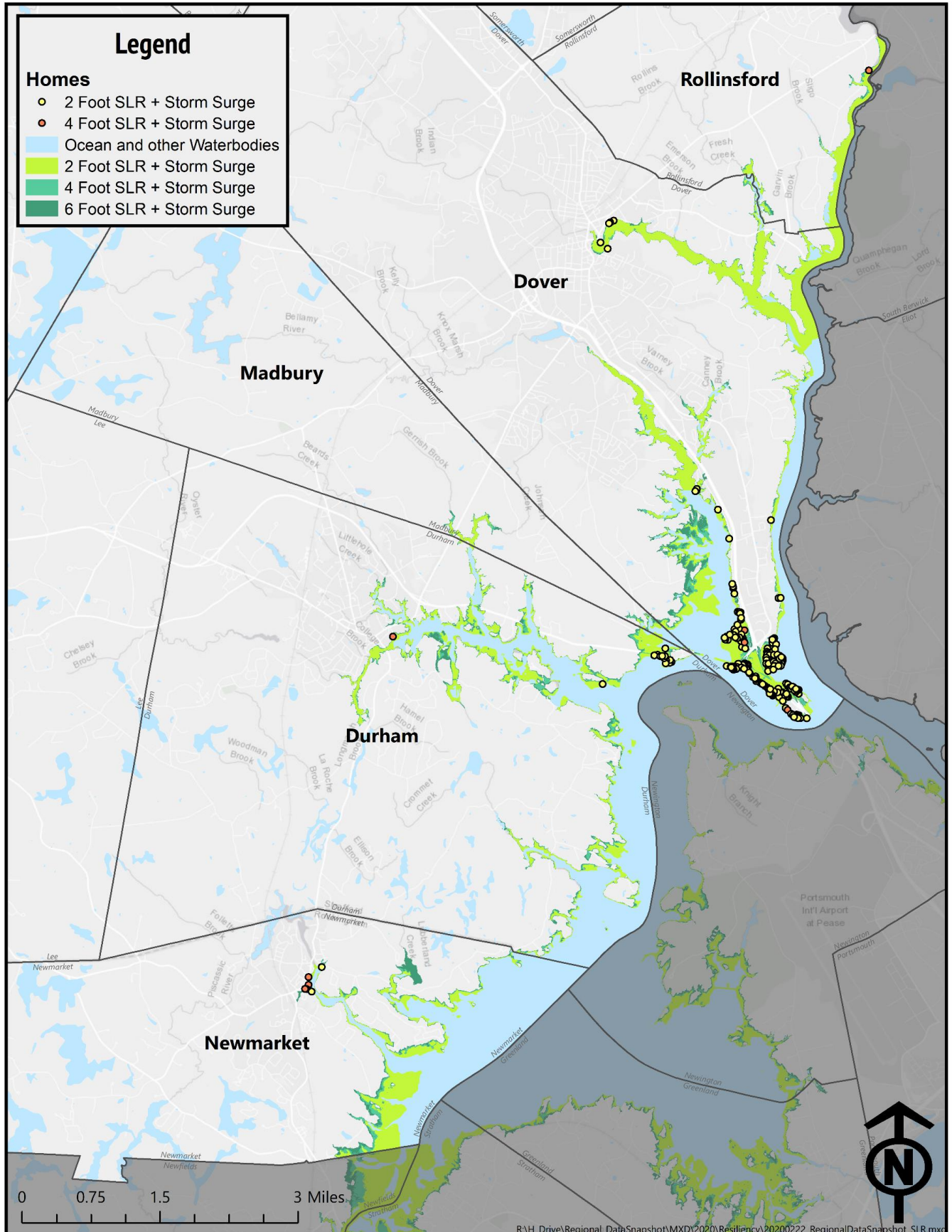
Legend

Homes
- ○ 2 Foot SLR + Storm Surge
- ○ 4 Foot SLR + Storm Surge
- Ocean and other Waterbodies
- 2 Foot SLR + Storm Surge
- 4 Foot SLR + Storm Surge
- 6 Foot SLR + Storm Surge

Data Source: SRPC
Data Year: 2014
Coverage: Dover, Durham, Madbury, Newmarket, and Rollinsford

For Interactive Maps:
https://tinyurl.com/9bhwuyjx

RESILIENCY

Bridges within Sea Level Rise Scenarios
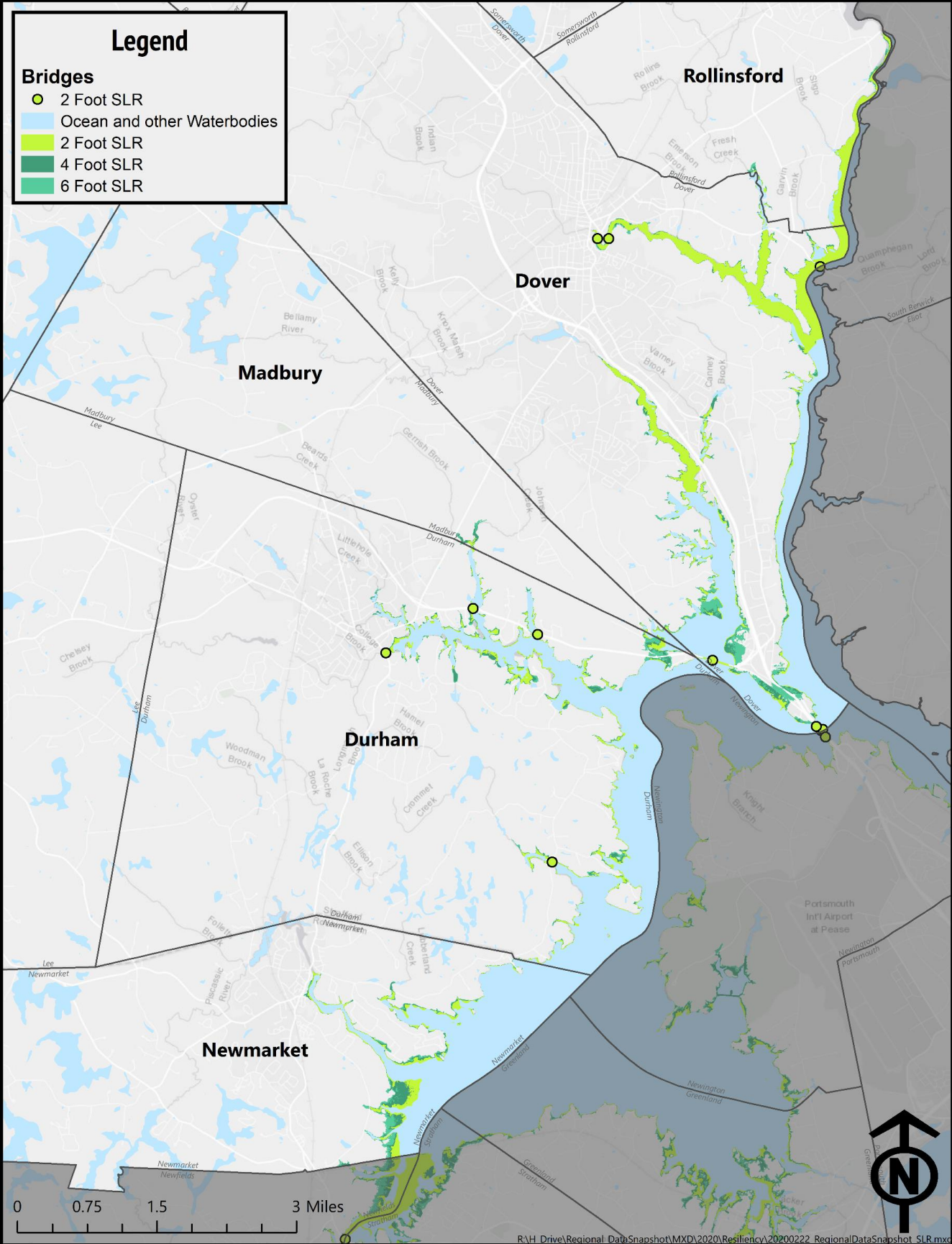
Legend

Bridges
- ○ 2 Foot SLR
- Ocean and other Waterbodies
- 2 Foot SLR
- 4 Foot SLR
- 6 Foot SLR

Data Source: SRPC
Data Year: 2014
Coverage: Dover, Durham, Madbury, Newmarket, and Rollinsford

For Interactive Maps:
https://tinyurl.com/9bhwuyjx

Roads within Sea Level Rise Scenarios

Legend

Roads
- 2 Foot SLR
- 4 Foot SLR
- 6 Foot SLR
- Ocean and other Waterbodies
- 2 Foot SLR
- 4 Foot SLR
- 6 Foot SLR

Rollinsford

Dover

Madbury

Durham

Newmarket

0   0.75   1.5   3 Miles

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Data Source: SRPC
Data Year: 2014
Coverage: Dover, Durham, Madbury, Newmarket, and Rollinsford

For Interactive Maps:
https://tinyurl.com/9bhwuyjx

131
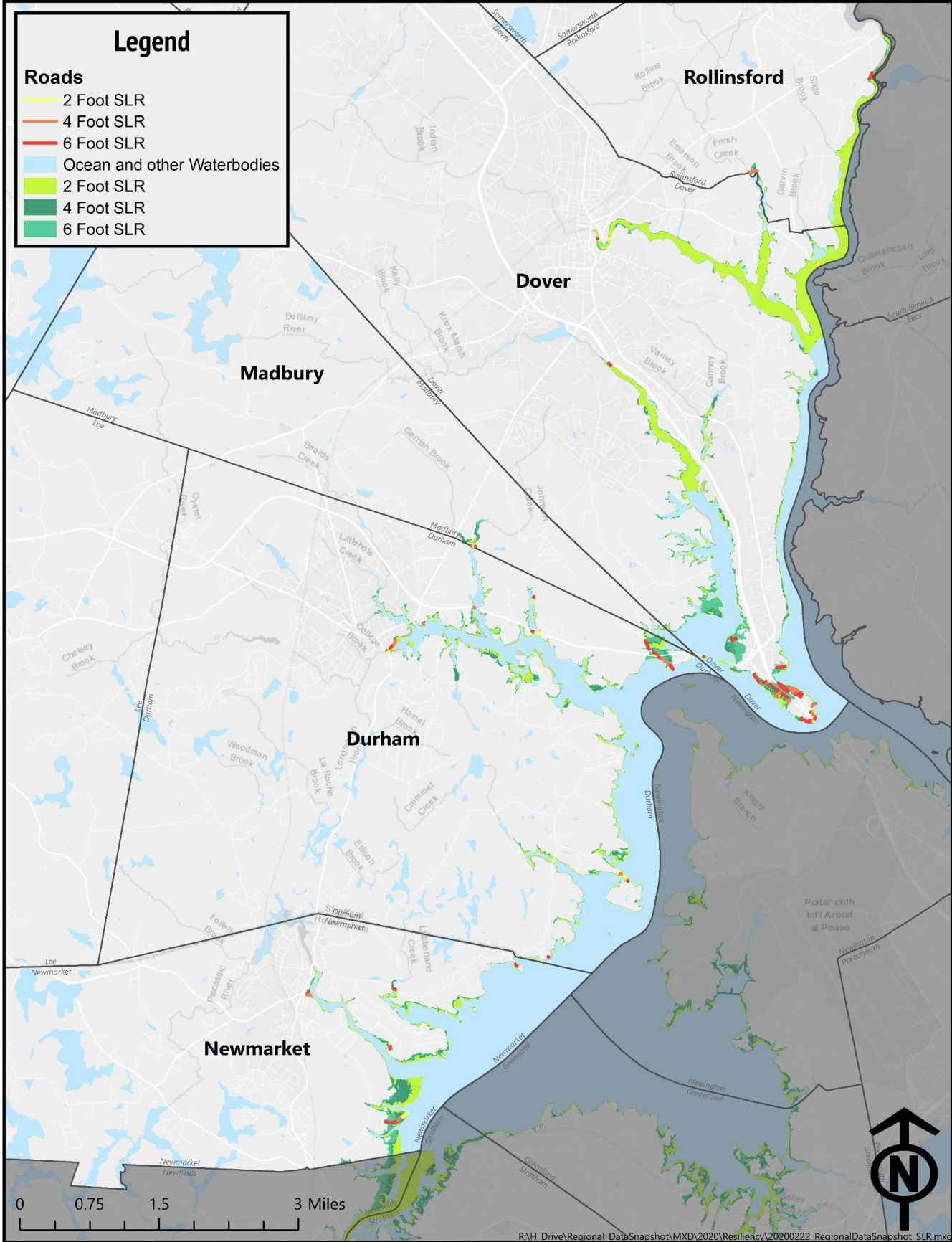
Roads within Sea Level Rise Scenarios + Storm Surge Scenarios
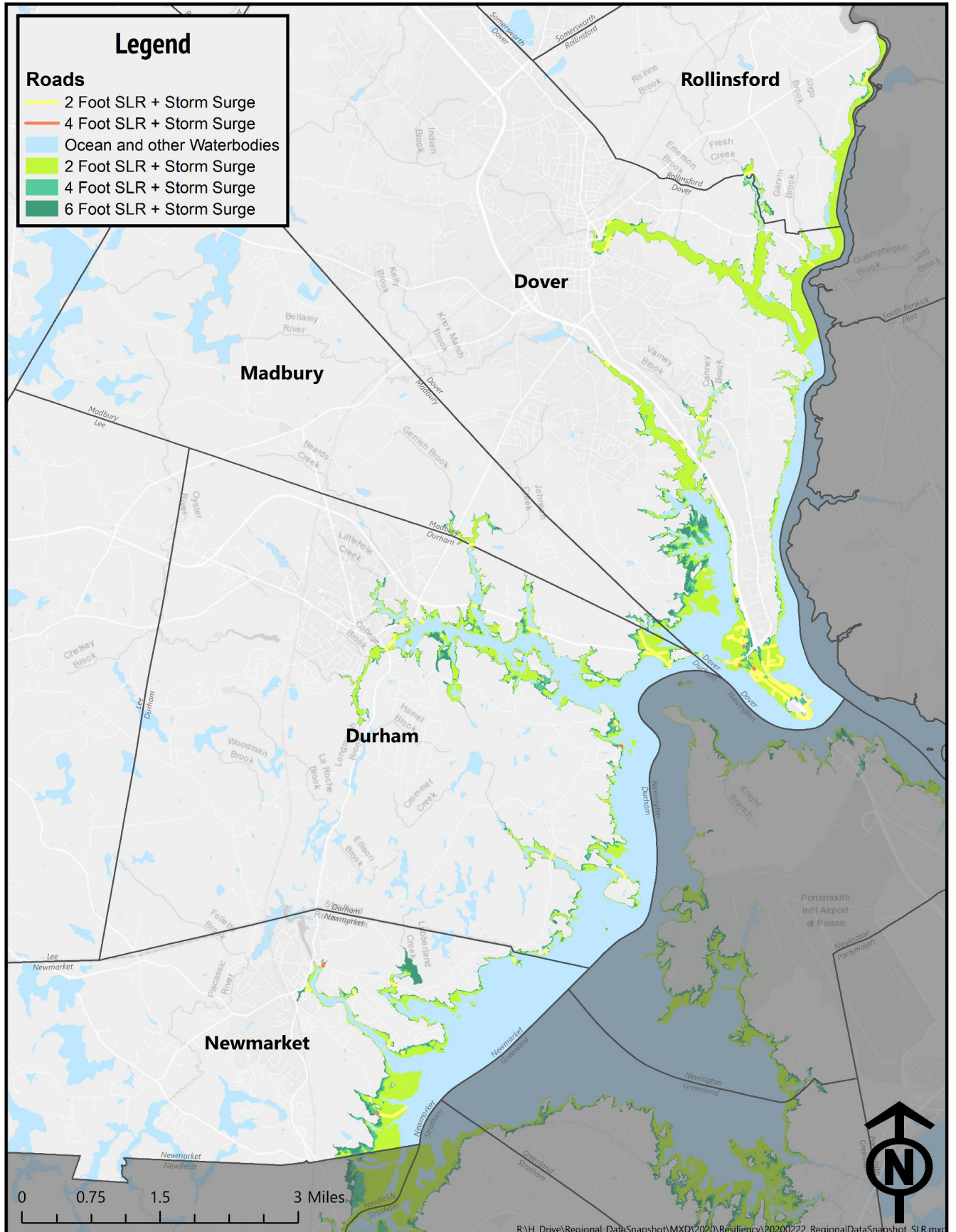
Legend

Roads
- 2 Foot SLR + Storm Surge
- 4 Foot SLR + Storm Surge
- Ocean and other Waterbodies
- 2 Foot SLR + Storm Surge
- 4 Foot SLR + Storm Surge
- 6 Foot SLR + Storm Surge

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Data Source: SRPC
Data Year: 2014
Coverage: Dover, Durham, Madbury, Newmarket, and Rollinsford

For Interactive Maps:
https://tinyurl.com/9bhwuyjx

Extreme Precipitation

In 2019 a group of scientists at the University of New Hampshire wrote a report on the effects of global climate change to our local weather over the next 80 years. One of the weather station locations for this analysis was in Durham, NH, the site of UNH. Representative Concentration Pathways(RCP) are a collection of 4 different global greenhouse gas concentration scenarios that consider melting ice sheets and industrial trends as well. For precipitation, UNH only looked at the 2 most likely of the 4 scenarios. Upon further analysis, it appears under either RCP 4.5(Assuming carbon emissions begin to stabilize and then slowly decline after 2050) or RCP 8.5(Assuming carbon emissions continue to grow through the end of the century due to continued burning of fossil fuels and high population growth) that precipitation events will be longer and carry more water.

| | Historical (1980-2009) | Change from historical (+ or -) | | | | | |
| | | Short Term (2010-2039) | | Medium Term (2040-2069) | | Long Term (2070-2099) | |
		RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5
Durham, NH (Precipitation in Inches)							
Annual	43.51	1.41 (3%)	1.49 (3%)	2.35 (5%)	3.07 (7%)	3.07 (7%)	4.79 (11%)
Winter	10.56	0.64 (6%)	0.47 (5%)	0.81 (8%)	1.4 (13%)	1.44 (14%)	2.34 (22%)
Spring	11.05	0.32 (4%)	0.57 (5%)	0.74 (7%)	1.03 (9%)	0.84 (8%)	1.78 (16%)
Summer	9.88	0.38 (4%)	0.38 (4%)	0.65 (4%)	0.35 (4%)	0.69 (7%)	0.46 (5%)
Fall	12.03	0.08 (1%)	0.07 (1%)	0.14 (1%)	0.29 (2%)	0.1 (1%)	0.21 (2%)
PMAX	2.27	0.19 (9%)	0.21 (9%)	0.24 (10%)	0.37 (16%)	0.35 (15%)	0.54 (24%)
Extreme Precipitation in events per year							
1" in 24 hours	6.5	0.7 (11%)	0.8 (12%)	1.2 (18%)	1.6 (24%)	1.5 (23%)	2.5 (38%)
Extreme Precipitation in events per decade							
2" in 24 hours	8	1.2 (15%)	1 (13%)	2 (25%)	3.5 (44%)	3.2 (40%)	5.8 (73%)
4" in 48 hours	3	1.2 (38%)	1.5 (52%)	1.8 (60%)	2.6 (93%)	2.1 (69%)	4.4 (154%)

https://scholars.unh.edu/cgi/viewcontent.cgi?article=1209&context=ersc
Data source: UNH New Hampshire Coastal Flood Risk Summary
Data years: 2019
Coverage: Durham, NH

High Tide Flooding Frequency

As relative sea level rise continues in coastal New Hampshire, the frequency of high tide flooding will also increase (Sweet et al. 2018). For example, under the Intermediate Global mean sea level rise (GMSLR) scenario of 3.3 feet (from Sweet et al., 2017b), high tide flood frequencies will increase to 132±26 days per year by 2050 in the Northeast US. High tide is predicted to reach or exceed 10 feet above Mean Lower-Low Water a total of 56 times in 2019 according to NOAA. For reference, water levels of 10 feet, 11 feet, 12 feet, and 13 feet correspond with Hampton's threshold for "taking action" on minor flooding, moderate flooding, and major flooding, respectively, as defined by the National Weather Service.

Sea Level Rise Scenario	High Tide Flood Frequency	Year
Current (Hampton, NH)	56 (not including storms)	2019
3.3 feet (GMSLR) NE US	132+/-26 days per year	2050
3.3 feet (GMSLR) NE US	Daily (365 days)	2100

"A separate analysis found that under a 3.9 feet of SLR scenario by the end of the century, 40% of all East Coast communities will be chronically inundated (defined as flooding that occurs 26 times per year) (Spanger-Siegfried et al., 2017)"
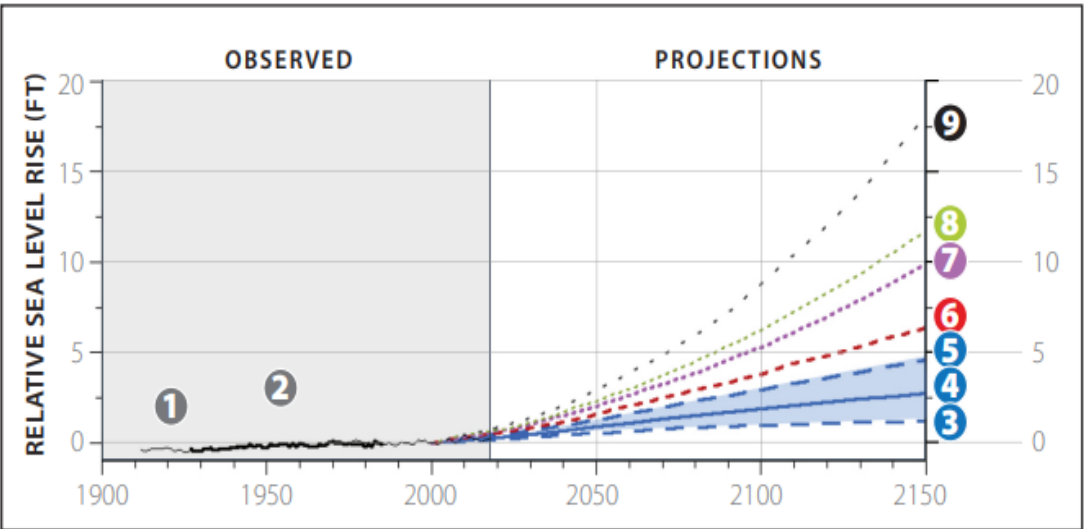
Figure 4.5. Observed and Projected Relative Sea-Level Rise for Seavey Island Tide Gauge K14 Projections | Stabilized Greenhouse Gas Concentrations (RCP 4.5).

1. Historical data for Portland, ME (1912-2018; thin black line)
2. Historical data for Seavey Island, ME (1927-1986; thick black line)
3. Lower end of "likely range"
4. Central estimate
5. Upper end of "likely range"
6. 1-in-20 chance estimate
7. 1-in-100 chance estimate
8. 1-in-200 chance estimate
9. 1-in-1000 chance estimate

The graph above was UNH's approach to sea level rise calculations by examining the probabilities of each of these sea level rise scenarios rather than having 3 concrete scenarios. It is also indicative of the continuous change in the research field, where they analyze several possible scenarios to account for the complex changes in our planet's climate. This analysis also goes 50 years further than the "C-rise" project that SRPC did in 2016.

https://scholars.unh.edu/cgi/viewcontent.cgi?article=1209&context=ersc
Page 16, 19-20
Data source: UNH New Hampshire Coastal Flood Risk Summary
Data years: 2019
Coverage: SRPC region