

1. OVERVIEW

A. BACKGROUND

In 2004 the York County Emergency Management Agency (YCEMA) prepared a local hazard mitigation plan, in accordance with the Federal Disaster Mitigation Act of 2000. This update to the 2004 plan fulfills the Federal Emergency Management Agency (FEMA) requirement that local hazard mitigation plans be updated every five years.

Pursuant to §201.6 of the Interim Final Rule prepared by FEMA, York County, Maine, chose to do a multi-jurisdictional hazard mitigation plan for the county and its municipalities. The primary reasons for conducting this as a countywide plan were that the county possesses greater hazard mitigation resources than do many of its municipalities and that the hazards faced by its municipalities are similar.

The lead agency for this plan update is the YCEMA. YCEMA serves as the central coordinating agency for the 29 local EMAs in York County, and contributed considerable informational and professional resources to this plan update. To write this plan, YCEMA contracted the Southern Maine Regional Planning Commission (SMRPC), the council of governments that serves all of York County. SMRPC staff took responsibility for assembling, writing, and presenting the plan update, under the guidance of YCEMA.

In accordance with the state home rule laws, each of the 29 municipalities in the county has jurisdiction over all land use and planning regulations. Thus, this plan update is written with local interests in mind, and it is being presented to the legislative bodies of all 29 cities and towns for adoption.

The York County Hazard Mitigation Plan Update contains six sections:

1. Overview of Jurisdiction
2. Prerequisites for FEMA Review
3. Planning Process
4. Risk Assessment
5. Mitigation Strategies
6. Plan Maintenance Procedures

B. MAJOR FEATURES OF YORK COUNTY

Topography:

The town's topography, major physical features and soils were largely shaped by glaciers that receded from the area some 14,000 years ago. They created the County's hills, valleys, flatlands, rivers, lakes, streams, and wetlands, and helped to shape variations in soils types, vegetative

cover, groundwater characteristics, and the general suitability of areas for development and other land uses.

The entire east side of York County is bordered by the Atlantic Ocean. The Southern Maine coastline is famous for its ruggedness, sandy beaches, and scenic views resulting from many bays, harbors, promontories and rocky islands.

In the northern part the hills are numerous, several of which are near 1,000 feet in height. Mount Agamenticus, at around 600 feet high, is the greatest elevation near the coast. The rocks of the region are chiefly granitic; though at some points near the coast they are argillaceous. The soil of the southern and eastern parts of the county inclines to sandy loam, though clay and clayey and gravelly loam are frequent.

Major Water Bodies:

According to the U.S. Census Bureau, the county has a total area of 1,271 square miles, of which 991 square miles of it is land and 280 square miles of it (22.06%) is water.

The Saco River passes through the eastern section, and then forms its boundary line for some fifteen miles on the northeast. The Ossipee River continues this line ten miles or more further to the New Hampshire line. The Salmon Falls River forms the western boundary line for about thirty miles, and the Piscataqua continues it some ten miles further to the sea. The other considerable rivers are the Little Ossipee, Mousam, Kennebunk, Great Works, Little and York. In the northern part there are numerous ponds; Little Ossipee - somewhat north of the center of the county - being the largest, except Great East Pond, which is partly in New Hampshire.

Major Transportation Thoroughfares:

Below is a list of the major transportation highways in York County, and shown on Maps 1 and 2:

- A) Southern Coast Corridors
 - Portsmouth, NH/Kittery to Portland
(US 1, I-95, Eastern Trail, Guilford Rail Line/Amtrak)

- B) Coastal PACTS Corridors
 - Portland to Brunswick
(US 1, I-95, I-295, Rail)

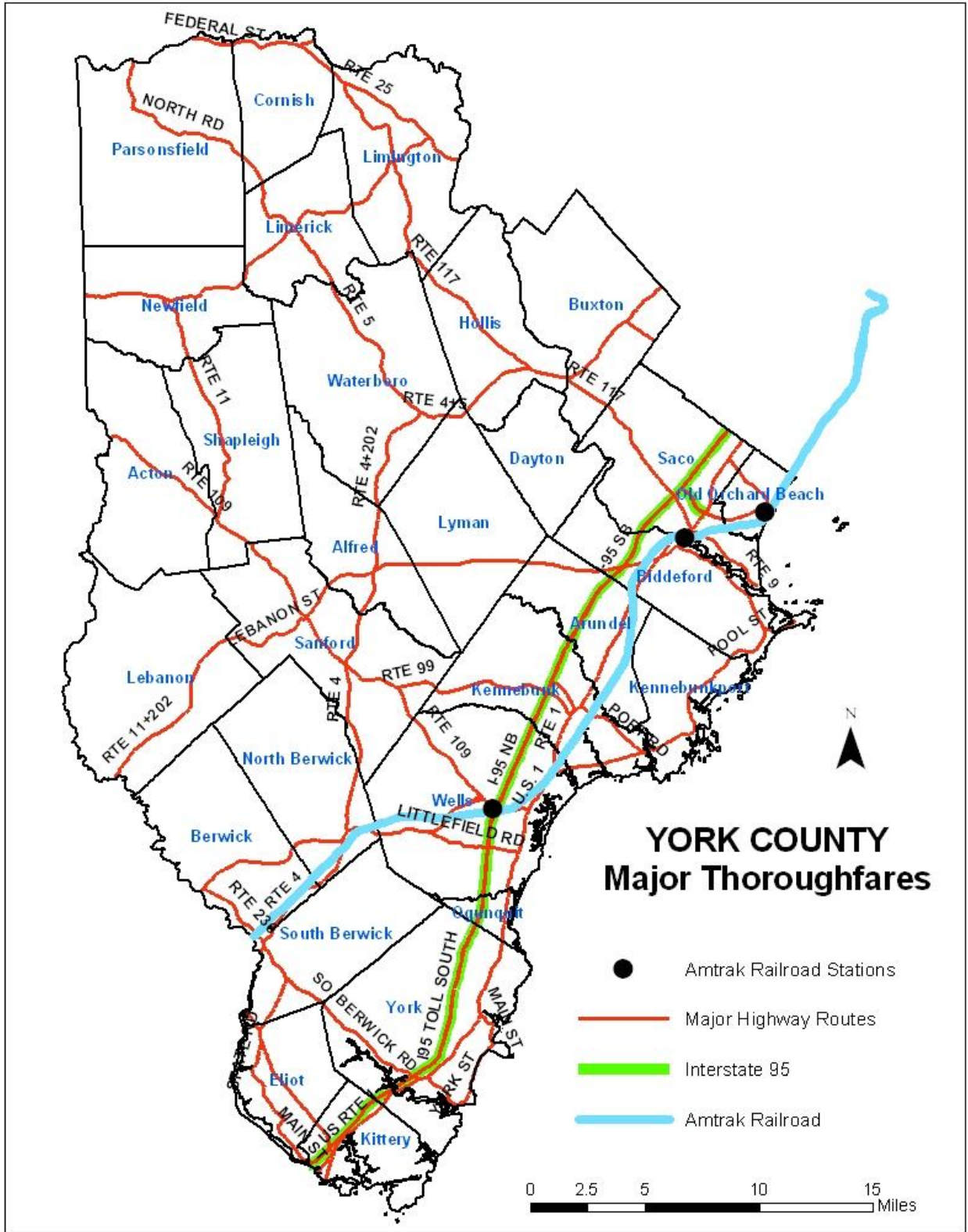
- C) Cumberland County Central Corridors
 - Portland to Lewiston
(I-95, Route 26, Route 100)

- D) York County Central Corridors
 - Northern York County to KACTS via Sanford
(Route 5, Route 202/4, Route 4, Route 236,
Route 11, Route 11A)

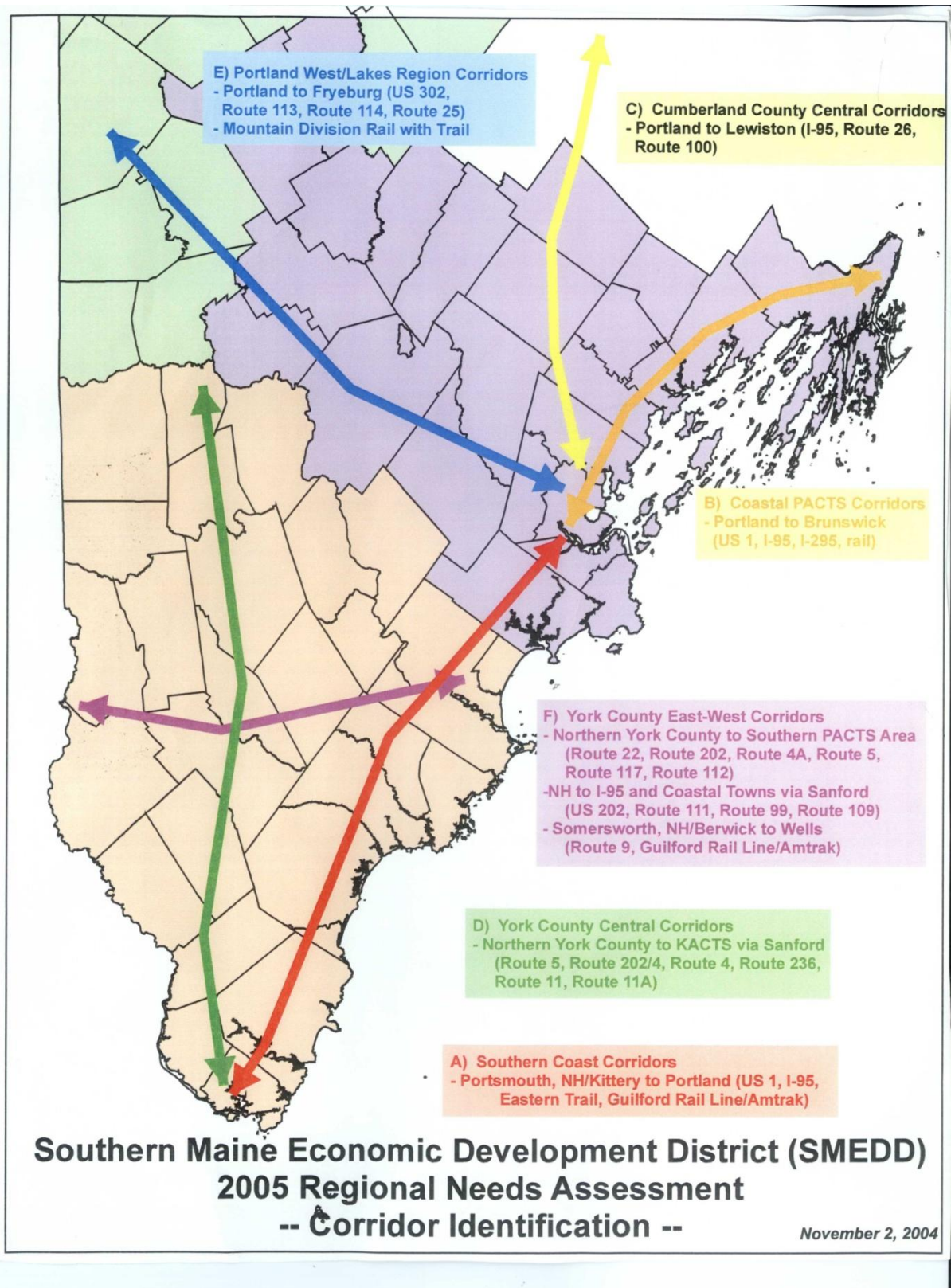
- E) Portland West/Lakes Region Corridors
 - Portland to Fryeburg
(US 302, Route 113, Route 114, Route 25)
 - Mountain Division Rail with Trail

- F) York County East-West Corridors
 - Northern York County to Southern PACTS Area
(Route 22, Route 202, Route 4A, Route 5,
Route 117, Route 112)
 - NH to I-95 and Coastal Towns via Sanford
(US 202, Route 111, Route 99, Route 109)
 - Somersworth, NH/Berwick to Wells
(Route 9, Guilford Rail Line/Amtrak)

The York County Community Action Transportation program serves county residents with alternate modes of transportation. Their fleet of vehicles includes busses, vans, trolleys, and automobiles. Their program includes both fixed route and requested services. All of their buses are wheelchair accessible, and they also provide door-to-door personalized assistance. Some typical destinations include Goodall Hospital, Southern Maine Medical Center, Biddeford Crossing Shopping Mall, and York County Community College.



Map 1



Map 2

Major Employment Centers and Employers

York County is also a major employment center. Around 65,000 people are employed in the county, with the largest concentrations in Biddeford, Sanford, Kittery and Saco. These four cities and towns together have 34,100 jobs or 52 percent of all jobs in the county. Banking, insurance, health services, manufacturing, marine-related industries are the major business sectors. There are just four large employers (more than 500 employees) in York County, with many smaller companies located throughout the region. The only operations employing more than 500 people at a single location are:

- Portsmouth Naval Shipyard (Kittery): 1,000 or more employees
- Pratt & Whitney (North Berwick): 1,000 or more employees
- Southern Maine Medical Center (Biddeford): 500-999 employees
- Goodall Hospital (Sanford): 500-999 employees
- York Hospital (York): 500-999 employees
- University of New England (Biddeford): 500-999 employees
- Interstate Brands (Biddeford): 500-999 employees

Climate and Geography

There are two different climates in York County. The northwest interior portion of the County is least affected by marine influences, and contains hilly and mountainous terrain. The southeast section of the County is most affected by the ocean but has minimal elevation changes and thus, minimal climatic impact from any topographic controls.

Precipitation and Temperature

The York County climate is influenced by the Atlantic Ocean. Average annual temperature is 46.6 °F, with July normally warmest (70.2 °F) and January coldest (21.5 °F.). Total annual precipitation averages 46.8 in, with September typically the driest and November the wettest month. These statistics may vary between the inland and coastal sections of the County.

Prevailing Winds

Most of the County is under northwest to west-northwest winds throughout much of the year, and particularly during the winter. The formation of a sea breeze especially occurs when regional winds are weak during the summer months. The sea breeze produces cool, refreshing temperatures during the summer along the coast, while remaining hotter and humid inland.

Topographic Features

The Southern Maine Coast is famous for its ruggedness and scenic views resulting from the many inlets, bays, harbors, promontories and rocky islands found along its entire length. Summer tourists flock to York County for the beautiful sandy beaches that run along its eastern shores.

The landscape in general is a direct result of glacial erosion and deposition from the large ice sheets that completely covered Maine about 14,000 years ago. A variety of glacial deposits cover the County providing a rich variety in overall landscape as well as abundant sand and gravel for construction material. These glacial deposits and erosion are also responsible for the many large lakes and ponds throughout the County. Extensive wetland areas that provide habitat

for many ecosystems are also a result of the past glaciations in combination with existing climatic conditions.

Sea Level Rise

Maine's coast has been and will continue to be profoundly affected by an increase in sea level. The Maine Geological Survey estimates that the ocean has risen about six (6) inches since 1900, and is currently rising at a rate of about 1/10 inch per year. The result has been increased flooding, erosion of coastal bluffs and landslides. The consensus of the scientific community, reflected in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) is that sea level will continue to rise at an accelerating rate through the year 2100.

No one knows for sure how high the sea will rise or how quickly it will occur, but the IPCC has prepared a range of scenarios based on a scientific analysis of a number of variables including glacial ice melt, thermal expansion of water due to global warming, and the melting of ice caps in Greenland and Antarctica. Based on the IPCC's projections, the Maine Geological Survey (MGS) is using for its studies a conservative, mid-range estimate of two (2) additional feet of sea level rise by the year 2100.

Along the Maine Coast, a sea level rise of one (1) foot means that a storm that had a 1% chance of occurring in any one year (the 100-year storm) at the original elevation will have a 10% chance of occurring in any one year (the 10-year storm) at the new elevation. As a result, more homes, businesses, public infrastructure such as roads, and entire communities will be subject to more devastating coastal floods on a more frequent basis. Based on MGS' inventory of coastal bluffs between York and Machias, about half the Maine Coast consists of unstable coastal bluffs less than 20 feet in height. Bluffs of the soft Presumpscot Formation mud erode at 1.6 to 3.3 feet/year, while bluffs of till, a stiff, stoney sediment, erode at about half that rate. Without expensive remediation, rising sea levels will likely increase the rate of erosion and threaten additional bluffs that are currently stable. Unstable coastal bluffs in excess of 20 feet in height will likely be subject to landslides on a more frequent basis. As a result, more homes, businesses and public infrastructure will be threatened with catastrophic loss

C. DEMOGRAPHICS

Located in the southwestern corner of Maine, York County is a large and diverse county. Its population of about 187,000 is scattered throughout 29 jurisdictions: 27 towns and the cities of Biddeford and Saco. This population level makes York County the second most populous in the state, trailing only neighboring Cumberland County.

The largest municipality in the county is the City of Biddeford, which has 20,942 residents according to 2000 Census data. The next largest municipalities are the Town of Sanford with a population of 20,806, and the City of Saco with 16,822 people. These three urban centers only account for around 30 percent of the county's total population, illustrating how population is scattered.

In addition to the population base York County also has a substantial population of seasonal residents and visitors who are drawn to the region's beaches, lakes and ponds in the summer

months. Since many of the hazards faced by the county are at their highest risk levels in the summer, having more people in the county during those months raises the risk exposure. In all, it is estimated that, during the peak of the tourist season in July and August there are about 119,000 additional people staying overnight in York County. Thus the total peak population of the county is around 305,000.

The total land area of York County is 990.8 square miles, with the individual municipalities ranging in size from 4.1 to 59 square miles. The county’s overall population density is 188.5 people per square mile. The density of individual municipalities is widely varied as well, ranging from very rural (as low as 27 people per square mile) to urban (as high as 1,200 people per square mile).

York County contains about 94,200 housing units, of which around 16,800 (18 percent) are seasonally occupied. The remaining 77,400 units comprise the year-round housing stock of the county. The following table summarizes population, density and housing for each of the communities in York County.

County Profile			
	York County	Maine	USA
Measure	2008*	2008*	2008*
Population	201,158	1,316,456	304,059,724
Total Housing Units	103,932	696,079	127,762,925
Total Households	81,028	544,101	112,386,298
Average Household Size	2.45	2.35	2.61
Median Household Income	54,463	46,807	52,029
Persons below Poverty	16,387	160,493	38,573,393
% of population under 5	7.6%	21.1%	21.0%
% of population 18 and over	8.0%	11.5%	11.5%
% of population 65 and over	7.6%	9.7%	9.8%
Persons Per Square Mile	204	43	87

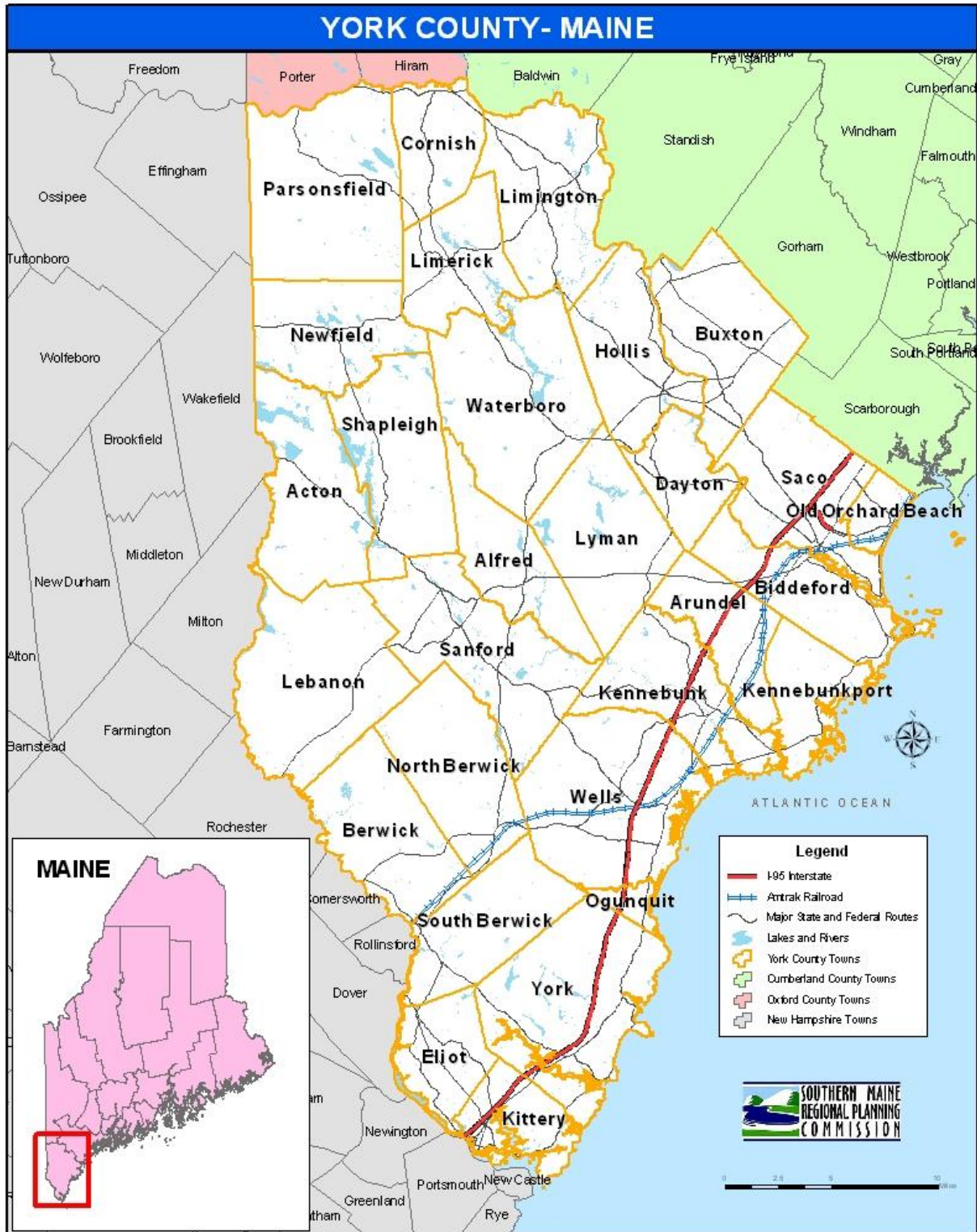
Municipal Population and Housing Data (2008 Census Estimates)

Municipality	Population (2008 est.)			Population Density			Housing Units (2006 est.***)		
	Year Round*	Seasonal**	Peak	Land Area (Sq. Mi.)	Per Sq. Mile	Per Unit	Total	Year Round	Seasonal
Acton	2,259	4,611	6,870	37.8	59.8	2.15	2,106	1,051	1,055
Alfred	2,858	512	3,370	27.2	105.1	2.47	1,265	1,158	107
Arundel	4,065	768	4,833	23.9	170.1	2.60	1,621	1,564	57
Berwick	7,542	429	7,971	37.1	203.3	2.74	2,855	2,748	107
Biddeford	21,435	3,179	24,614	30.0	714.5	2.37	10,056	9,028	1,028
Buxton	8,072	344	8,416	40.5	199.3	2.54	3,300	3,174	126
Cornish	1,385	489	1,874	22.1	62.7	2.39	658	579	79
Dayton	2,016	0	2,016	17.9	112.6	2.77	754	728	26
Eliot	6,304	417	6,721	19.7	320.0	2.49	2,639	2,528	111
Hollis	4,630	198	4,828	32.0	144.7	2.62	1,850	1,765	85
Kennebunk	11,448	5,777	17,225	35.1	326.2	2.46	5,557	4,656	901
Kennebunkport	3,984	8,573	12,557	20.6	193.4	2.12	2,852	1,880	972
Kittery	10,427	1,710	12,137	17.8	585.8	2.38	4,725	4,390	335
Lebanon	5,620	6,321	11,941	54.7	102.7	2.72	2,331	2,064	267
Limerick	2,578	1,450	4,028	27.1	95.1	2.37	1,530	1,088	442
Limington	3,876	616	4,492	42.0	92.3	2.84	1,576	1,363	213
Lyman	4,234	2,271	6,505	38.9	108.8	2.57	2,048	1,649	399
Newfield	1,499	1,776	3,275	32.3	46.4	2.23	1116	673	443
North Berwick	4,832	389	5,221	38.3	126.2	2.64	1,948	1,830	118
Ogunquit	1,263	10,324	11,587	4.1	308.0	1.57	2,251	805	1,446
Old Orchard Beach	9,395	33,856	43,251	7.4	1,269.6	1.96	6,721	4,793	1,928
Parsonfield	1,729	1,707	3,436	59.0	29.3	2.46	1073	703	370
Saco	18,125	3,950	22,075	38.5	470.8	2.41	8,156	7,513	643
Sanford	21,156	2,794	23,950	47.8	442.6	2.41	9,301	8,764	537
Shapleigh	2,522	3,783	6,305	38.7	65.2	2.30	1,999	1,098	901
South Berwick	7,156	129	7,285	32.2	222.2	2.70	2,736	2,647	89
Waterboro	7,317	3,307	10,624	55.5	131.8	2.65	3,376	2,759	617
Wells	9,895	23,647	33,542	57.7	171.5	2.14	8,525	4,619	3,906
York	14,064	20,761	34,825	54.9	256.2	2.46	8,573	5,719	2,854
County Total	201,686	144,089	345,775	990.8	203.6	2.42	103,498	83,336	20,162

* Year Round Population estimate produced by US Census Bureau

** Seasonal population estimates were last done by SMRPC in 1994. This report applies the same ratios to 2008 population.

*** Total and Year Round housing unit estimates produced by SMRPC for 2006.



Map 3