Collaborative Service Delivery Models for Fire/Emergency Medical Services Programming

Cumberland County, Maine

April 2024

DYNAMIX CONSULTING GROUP

Contents

Executive Summary

Background

On November 3, 2022, Cumberland County, Maine, contracted Dynamix Consulting Group to Develop Collaborative Service Delivery Models for Fire/EMS Programming in Cumberland County. The project team was tasked with identifying areas of duplication that can be reduced through consolidation efforts and potential service improvements that can be accomplished with specific deliverables: General Partnering Strategies, Options for Shared Services, Recommendations, and a Plan of Implementation.

Summary Findings

The exercise of coordinating the efforts of the 31 fire departments within Cumberland County made this project a challenge. It is the opinion of Dynamix Consulting Group that while there is an appetite for increased collaboration of the fire departments within the county, such efforts will only be successful if the local communities ask and empower the county to lead future collaborative efforts and if such efforts will decrease rather than increase the workload of the local fire chiefs. Many fire chiefs within Cumberland County operate with limited command staff and limited bandwidth to take on additional or coordinate countywide projects.

Dynamix Consulting Group conducted approximately two dozen virtual and in-person interviews, meetings, and surveys to gather information from key stakeholders to provide context for the recommendations identified within this study. This included four Fire Chief Listening Sessions and four City/Town Manager listening sessions. The purpose of these meetings was to gain an understanding of the current issues, concerns, and opinions related to the service delivery system. General topics discussed during each interview included:

- Perceived strengths and weaknesses of the current arrangement.
- Identified strengths and weaknesses of the current arrangement.
- Opportunities for enhancements to the current arrangement.
- Future challenges that may warrant attention.

Dynamix Consulting Group's interviews with the stakeholders included a cross-section of town and city managers, fire chiefs, and elected and selected appointed officials from Cumberland County across various communities within the County. Overall, there was a 57% participation rate among the Fire Chiefs and Town Managers in the 180 different opportunities for engagement. This further illustrates the need for the local communities to ask and empower the county to lead future collaborative efforts.

Opportunities for Engagement

Opportunities for Engagement	Total Number of Possible Participants	Actual Number of Participants	Participation %
Submit General Fire Department Data	31	18	58%
Attend 1 of 4 Fire Chief Meetings	31	20	65%
Attend 1 of 4 City/Town Manager Meetings	28	5	18%
Submit Staffing Data	31	24	77%
Participate in the Fire Chief Survey	31	18	58%
Participate in the Town Manager Survey	28	17	60%
Total	180	102	57%

Next Steps

Short and Mid-Term Strategies vary in complexity and financial impacts. While future drivers of service demand are considered, these recommendations tend to be based on an organization's current conditions and strategic objectives obtainable in less than one year and mid-term strategies between one and three years.

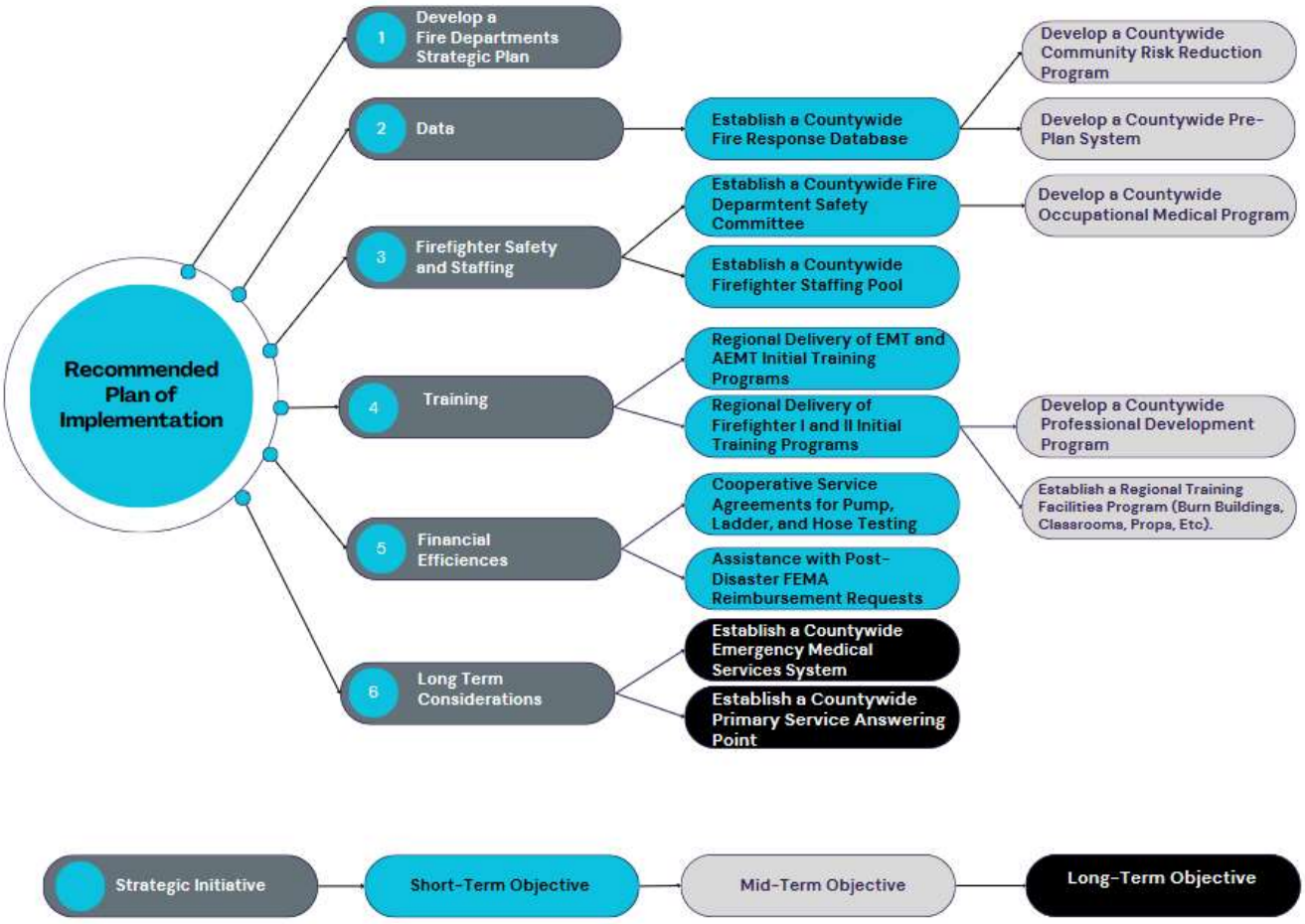
Long-Term Strategies are typically associated with timeframes over three years. Future drivers of increased service demand are often critical to consider when identifying long-term strategies. These recommendations vary in complexity and financial impact.

The following illustration is Dynamix Consulting Group’s recommended Implementation Plan. Dynamix Consulting Group has listed six strategic initiatives in order of priority. Within each initiative are recommended short-, mid-, or long-term objectives.

The first priority listed by Dynamix Consulting Group is to develop a countywide Fire Department Strategic Plan. Cumberland County should facilitate a Strategic Plan to allow its stakeholder groups to consider the Dynamix Consulting Group recommendations and then prioritize and implement the goals and objectives recommended in this report based on available resources. The strategic planning process would ideally result in a three-to-five-year work plan that will guide the work effort of all of the fire departments in the county toward a common set of goals and objectives.

Organizations that do not engage in the strategic planning process often fail to benefit from the evaluation and planning process. The recommendations contained within this report will do little more than exist in the report if not prioritized, assigned to specific individuals for oversight, and then implemented.

Recommended Plan of Implementation



Acknowledgments

Cumberland County

Dynamix Consulting Group would like to thank the elected and appointed officials of Cumberland County, the members of the Fire and Emergency Medical Services (EMS) Departments in Cumberland County, and, specifically, County Manager James Gailey and Director of Public Affairs Travis Kennedy for their assistance with this project. The Cumberland County Collaborative Service Delivery Models for Fire/EMS Programming would not have been possible without their cooperation and support.

Dynamix Consulting Group

The Dynamix Consulting Group Project Team for the Cumberland County Collaborative Service Delivery Models for Fire/Emergency Medical Services Programming included:

Mary-Ellen Harper
Stuart McCutcheon
Heather Burford
Hugh O'Callaghan
David Schmidt
Dr. Raphael Barishansky
Michael Perruccio
Scott Martus

Methodology

Using organizational, operational, staffing, and geographic information system (GIS) models, this evaluation provides a comprehensive appraisal of the fire service provided by municipalities within Cumberland County as found upon Dynamix Consulting Group's completion of fieldwork and data collection in October 2023.

Dynamix Consulting Group based this evaluation on data provided by Cumberland County, data provided by the fire and emergency service organizations within the County, and data collected during fieldwork. The information was then compared to a combination of the National Fire Protection Association Standards, Maine Laws, Insurance Services Offices requirements, accepted best practices within the emergency services community, and the experience of the Dynamix Consulting Group.

National Fire Protection Association Standards

The National Fire Protection Association (NFPA) is an industry trade association that develops and provides standards and codes for fire departments and emergency medical services for local governments. NFPA Standards are national consensus standards, and while they are not law, they are considered best practice standards for the fire service.

Maine Occupational Safety and Health Administration

State Plans are Occupational Safety and Health Administration (OSHA) approved workplace safety and health programs operated by individual states or US territories. In the US, 22 State Plans cover the private sector, State, and local government workers, and seven State Plans cover only State and local government workers. OSHA monitors state plans to ensure they are at least as effective as OSHA in protecting workers and preventing work-related injuries, illnesses, and deaths.

The Maine State Plan has adopted OSHA's occupational safety and health standards. They generally follow but are not necessarily identical to OSHA standards. Maine has a unique respiratory protection standard and a Video Display Terminal standard. The Maine Occupational Safety and Health (MEOSH) Program is part of the Maine Department of Labor Bureau of Labor Standards.

OSHA Proposes Major Changes to Regulations for the Fire Service[1]

As the fire departments in Cumberland County plan for the future provision of fire and EMS delivery, it must be considered that OSHA has unveiled a proposed overhaul of 29 CFR 1910.156, the Fire Brigade Standard. Enacted in 1980 and not updated since the Fire Brigade Standard has had a rather minimal impact on the fire service in recent history. The comment period for the proposed changes ends on May 6, 2024. The proposed changes, if approved, will have a significant impact on fire and EMS delivery.

[1] https://www.firelawblog.com/2024/02/15/osha-unveils-major-changes-it-proposes-for-the-fire-service/

The first change is that the Code of Federal Regulations (CFR) 1910.156 would be renamed from *Fire Brigades* to *Emergency Response*. The proposed changes ground the revised OSHA Regulations in NFPA standards, with 21 standards being incorporated in whole or in part, and 14 other standards contributing to the new requirements to varying degrees.

The changes include removing a very important provision – the two-in two-out requirement for structural firefighters – that is currently in 1910.134, the Respiratory Protection Standard, and incorporating it into the revised 1910.156. That provision, which changed OSHA's traditional one-out standard applicable to general industry, to the current two-in-two-out for structural firefighters, was precedent-setting when it was adopted in 1998.

The complete draft of proposed changes is available at https://www.osha.gov/laws-regs/federalregister/2024-02-05.

Insurance Services Offices

The Insurance Services Office (ISO) is a data analytics organization that provides insurance carriers with a classification rating of a local community's fire protection. The Property Protection Class (PPC®) score or rating classifies communities based upon an overall scale of 1 (best protection) to 10 (no protection) and assesses all areas related to fire protection. These areas are divided into four major categories, which include emergency dispatch and communications (10% of the rating), water supply system and distribution capabilities (40%), the fire department (50%), and Community Risk Reduction efforts (an additional 5.5% credit is available above 100%). ISO requirements are not law, but compliance (or lack thereof) with ISO requirements will directly impact a community's fire protection rating.

Organizational Overview: Cumberland County

This study is designed to consider the unique needs and opportunities of the 28 communities within the borders of Cumberland County; it is not a study of the County itself as a single entity. However, for regional context, the following information is a summary of data for those communities collectively.

Characteristics

Cumberland County, located in southeast Maine, has a total area of 1,217 square miles, of which 835 square miles is land and 382 square miles (31%) is water. The County is bordered to the southeast by Casco Bay, to the southwest by York County, to the north by Oxford and Androscoggin Counties, and to the northeast by Sagadahoc County. Several islands in Casco Bay fall under the boundaries of Cumberland County, and Sebago Lake dominates the center of the County. The lake is the deepest and second-largest body of water in the State of Main. Sebago Lake supplies water to most homes and businesses within Cumberland County. The principal waterways within the County are the Fore River, the Presumpscot River, and the Royal River.

Cumberland County is comprised of three cities and 25 towns. Portland is the largest city in the County and the State and served as the state capital between 1820 and 1832.

Cumberland County Cities and Towns

Cumberland County Cities		
Portland	South Portland	Westbrook
Cumberland County Towns		
Baldwin	Frye Island	Pownal
Bridgton	Gorham	Raymond
Brunswick	Gray	Scarborough
Cape Elizabeth	Harpswell	Sebago
Casco	Harrison	Standish
Chebeague Island	Long Island	Windham
Cumberland	Naples	Yarmouth
Falmouth	New Gloucester	
Freeport	North Yarmouth	

Cumberland County is home to 244 properties and districts listed on the National Register, including 12 National Historic Landmarks and 14 places of Statewide significance. Historic places include Bailey Island Cobwork Bridge in Harpswell, Battery Steele in Portland, Camp Hammond in Yarmouth, Abyssinian Meeting House in Portland, and Academy Building in Gorham. Parks in Cumberland County include Sebago Lake, Bradbury Mountain, Crescent Beach, Wolf Neck Woods, Two Lights, and Scarborough Beach State Parks.

Cumberland County is Maine's economic and industrial center, benefiting from the resources of the Port of Portland and the Maine Mall. The area has shifted over the years to a more service-based economy, while technology, manufacturing, and education remain vital to the economy. Cumberland County is home to various companies, including Texas Instruments, IDEXX Laboratories, WEX LLC, Unum Provident, and LL Bean. Cumberland County is part of the Portland–South Portland, ME Metropolitan Statistical Area.

Demographics

Population

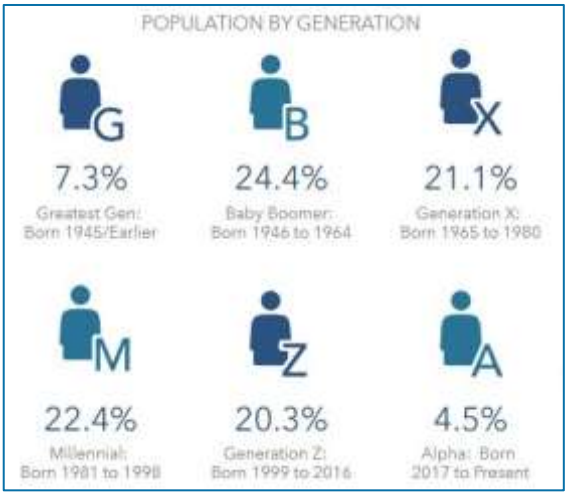
Unless otherwise noted, this report's demographic information is sourced from the Environmental Systems Research Institute (ESRI). Cumberland County is the most populous County in the state, with an estimated population of 302,496. The County's residents comprise about 20% of the State's population while occupying only 4% of the land mass. This number is approximately 6.9% higher than the 2010 U.S. Census, and women account for 51.2% of the population. Ninety-one percent of the population identifies as white, 3.7% as Black or African American, and 2.5% as Hispanic or Latino.

The Diversity Index is a continuum that ranges from 0 (no diversity) to 100 (complete diversity), and Cumberland County's Diversity Index is 21. Within the County are 127,265 households, with an average family size of 2.30 individuals, smaller than the national average of 3.13 individuals. Cumberland County has a land population density of 362 people per square mile. In comparison, the State of Maine has a population density of 41.3 people per square mile, making it the least densely populated state east of the Mississippi River.

Age

The median age in Cumberland County is 43.4 years, lower than the State of Maine average of 44.8 years and higher than the United States median age of 38.1 years. The number of residents over 65 years old in Cumberland County is 59,459, representing approximately 20% of the total population within the County. This compares to 21.8% in the State of Maine and 17.3% in the United States. Baby Boomers, born between 1946 and 1964, comprise the most significant percentage (24.4%) of residents in Cumberland County. Born between 1981 and 1998, Millennials make up the second most significant percentage of residents at 22.4%. Nearly 56% of all Cumberland County residents are 58 or older.

Disabilities, Physical Fitness, & Insurance



Disabilities can relate to physical mobility, sensory, intellectual, developmental, cognitive, or mental challenges. A total of 26,461 households in Cumberland County identify as having at least one member with a disability. This represents 20.8% of households within the County.

Approximately one-third of adults within the County say they exercise at home two or more times per week, and 15. 78% say they exercise at a club two or more times per week. These numbers exceed the national average of just one in five Americans who exercise on the same schedule.

An estimated 5.83% of the population of Cumberland County reports having no insurance, and more than half of those are between the ages of 35 and 64. This is lower than the national rate of 10.2%. Most individuals within Cumberland County report receiving health insurance through their employer.

Education

Four percent of the adult population of Cumberland County report not having earned a high-school diploma. This compares to 8.9% of all United States adults. Twenty-two percent of the County's residents report being high-school graduates or equivalent, and 25% report having some college education. Additionally, 50% report attaining a bachelor's degree or higher. This is higher than the 33.6% for the State of Maine and 33.7% for the United States.

Employment

The unadjusted unemployment rate for August 2023 for Cumberland County was 2.2%, slightly lower than the 2.5% for the State of Maine and 3.2% for the United States. Among those employed, 72.2% identify as working in "white collar jobs." White-collar jobs are salaried employees whose duties do not require wearing work clothes or protective clothing. Comparatively, 14.7% of Cumberland County's population identify as working "blue-collar" jobs. Blue-collar jobs usually include hourly employees wearing work clothes or protective clothing. An additional 13.1% of the working population of Cumberland County identifies as being employed in the service industry.

Cumberland County commuters drive alone to and from work, 76.8% of the time, and 7% spend seven or more hours commuting per week. A total of 8,553 households in Cumberland County report that they do not have transportation. Cumberland has 14,042 businesses employing 197,591 employees, and the daytime population increases to 321,818. Cumberland County is part of the Portland–South Portland, Maine Metropolitan Statistical Area.

Income & Housing

The median household income in Cumberland County is $76,604. This is higher than the median household income for the State of Maine at $75,160 and higher than that of the United States at $69,021. Cumberland County has a per capita income of $43,854 and a median net worth of $209,626. Households earning between $50,000 - $75,000 annually and $100,000 - $150,000 represent the largest groups within the County. There are 11,841 households living below the poverty line, representing 9.3% of the total households in the community.

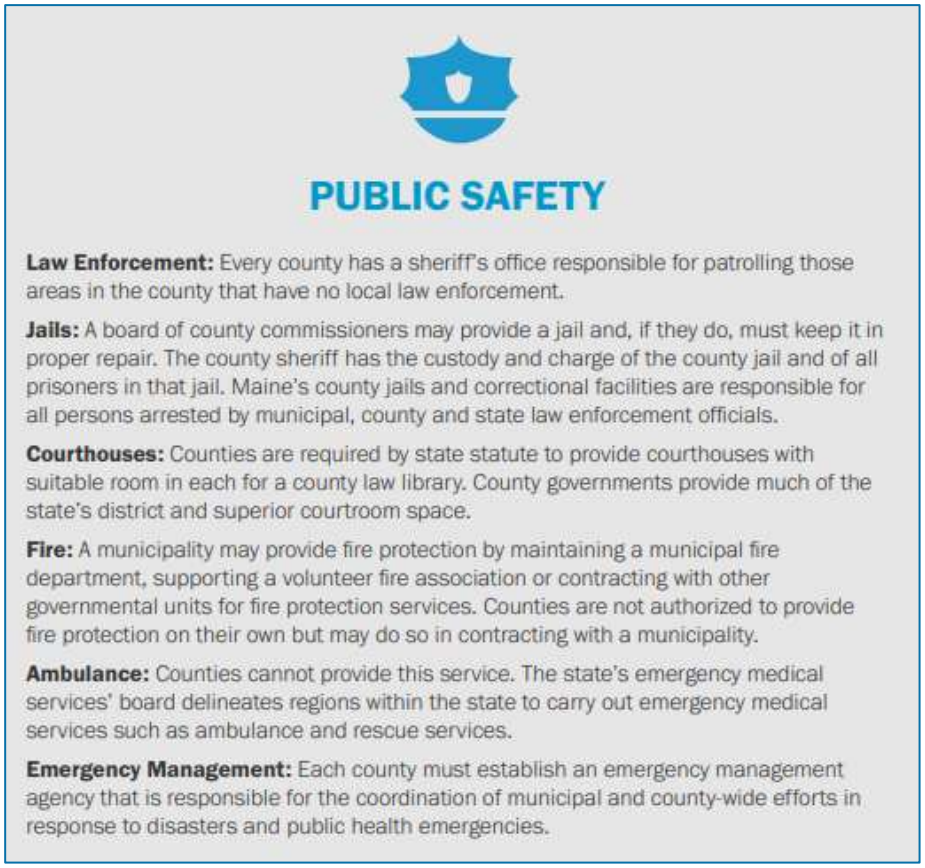
Sixty-eight percent of Cumberland County residents own their homes, while 31.2% rent. The median home value in the County is $322,496, and an average of $11,973 is spent on mortgages and basics annually. The average percent of income paid on mortgages is 17.7%. Approximately 25% of the homes and residential units within the County were built before 1939, about 50% were built between 1970, and more than 90% were built before 2010.

Governance

Cumberland County is an agency of the State of Maine. It is vested with all rights and powers of local self-government as provided by the US Constitution, the Constitution and laws of Maine, and the Cumberland County Charter. The County operates under a home rule charter that employs a Commission-Manager form of government. The Cumberland County Commission is a five-member elected body forming the legislative branch of the government, with each commissioner serving a separate district within the County. The Board of Commissioners is ultimately responsible for the fiscal operations and policy decisions affecting the County government. The County Manager is responsible for the day-to-day administrative operations of Cumberland County government and all its departments, agencies, and staff.

Cumberland County maintains several vital offices and departments, including Community Development, Cross Insurance Arena, District Attorney Office, Emergency Management Agency, Facilities, Finance and Treasurer Office, Human Resources, Information Technology, Probate Court, Public Health, Regional Assessing, Regional Communications Center (Regional 911), Registry of Deeds, and the District Attorney's Office.

The Cumberland County Sheriff is elected countywide and oversees the Cumberland County Sheriff's Office and the Cumberland County Jail. School districts are established at the local municipal or regional level, and there are 22 schools serving students within Cumberland County.



By State Statute, Maine counties are not authorized to provide fire protection on their own but may do so by contracting with municipalities should the need exist.

Management Components

Overview

Historically, the need to protect residents from the ravages of fire was the responsibility of neighbors helping neighbors in times of crises. As cities and towns throughout Cumberland County grew in population and complexity, so too did the need for more formalized fire protection and emergency medical services.

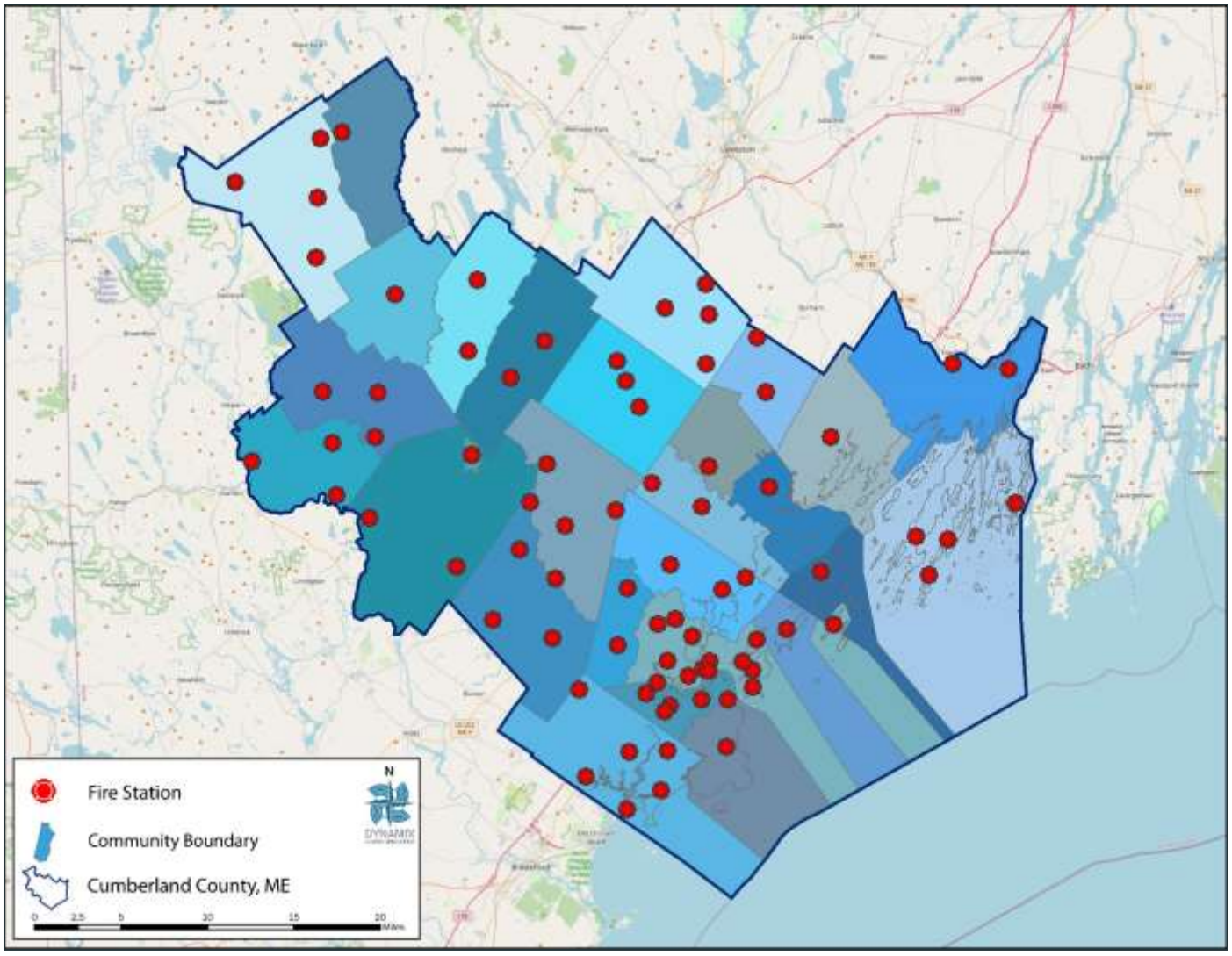
Individual cities and towns within Cumberland County are responsible for providing fire protection and EMS services to their citizens. Communities provide these services in various ways, including maintaining municipal fire rescue departments, supporting volunteer fire associations, or contracting with other governmental or private sector entities for fire protection and EMS services.

Today, 31 individual departments provide fire and EMS services to the residents of Cumberland County. The type of department varies greatly from community to community based on the size, composition, and service delivery demands of the residents. Within Cumberland County, there are a variety of department types, including all volunteer departments, departments that maintain on-call and per diem employees, and departments that are staffed by full-time paid members 24 hours per day, seven days per week.

Fire Department/Agency
1. Baldwin Fire Department
2. Bridgton Fire Department
3. Brunswick Fire Department
4. Cape Elizabeth Fire & Rescue
5. Casco Fire Rescue
6. Chebeague Island Fire & Rescue
7. Cumberland Fire Department
8. Cundy's Harbor Volunteer Fire Department
9. Falmouth Fire Rescue
10. Freeport Fire Department
11. Frye Island Fire Department
12. Gorham Fire Rescue Department
13. Gray Fire Rescue
14. Harpswell Department of Safety & Emergency Services
15. Harpswell Neck Fire Rescue
16. Harrison Fire Rescue
17. Long Island Fire & Rescue
18. Naples Fire Department
19. New Gloucester Fire Rescue
20. North Yarmouth Fire Rescue
21. Orr's and Bailey Islands Fire Department
22. Portland Fire Department
23. Pownal Fire & Rescue Department
24. Raymond Fire Rescue
25. Scarborough Fire Department
26. Sebago Fire Department
27. South Portland Fire Department
28. Standish Fire-EMS
29. Westbrook Fire Department
30. Windham Fire-Rescue
31. Yarmouth Fire Department

The 31 fire departments are geographically distributed throughout Cumberland County.

Cumberland County Fire Stations



Critical Issues

Dynamix Consulting Group conducted four separate Listening Sessions with the Fire Chiefs and four separate Listening Sessions with the Town Managers. Staffing was an overwhelmingly critical issue for most of the listening session participants.

Firefighters in Cumberland County are classified as volunteers, live-in students, call, per diem, or full-time. Some fire departments are staffed entirely by one classification of firefighters. In contrast, other fire departments have two or more different firefighter classifications active within their organization. While the specific needs vary by fire department and the classification of their firefighters, the following issues related to staffing (listed alphabetically) were identified as priorities during all of the listening sessions:

Critical Issues
Compensation / Standardized Pay Program
Health and Safety
On-boarding
Professional Development
Recruitment
Retention
Staffing pool of per diem firefighters
Training, Certification, and Testing

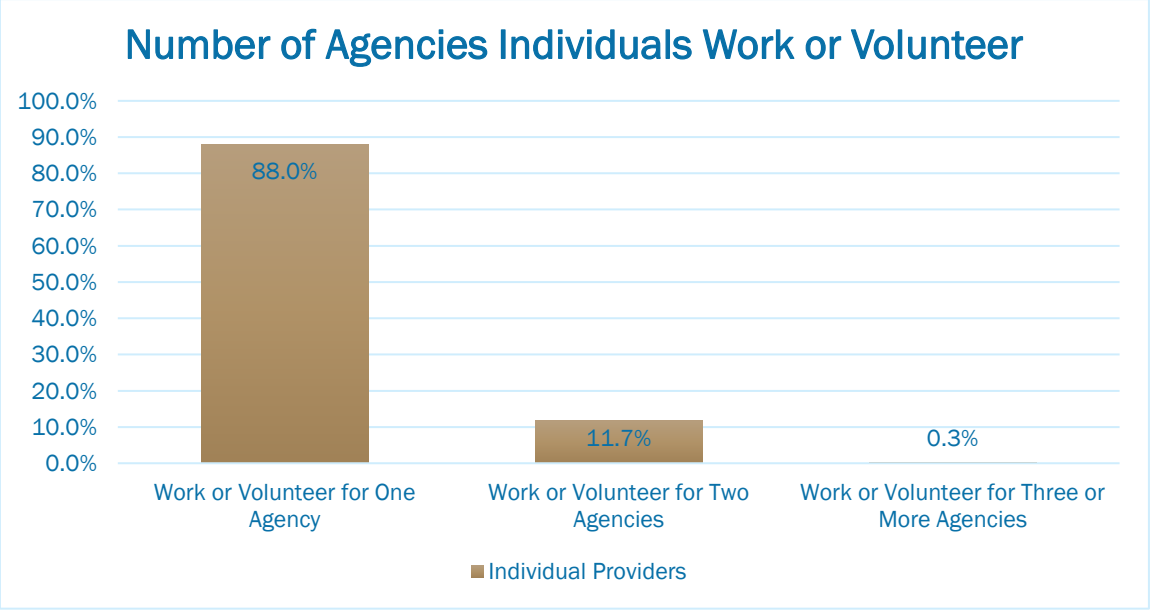
Staffing and Personnel Management

Staffing Analysis

Dynamix Consulting Group invited the 31 individually recognized fire, fire rescue, and emergency medical services departments within Cumberland County to provide essential data regarding staffing details and pay rates. This data was requested secondary to the initial organizational information sought at the beginning of the study from each agency and included the following:

- Department Name
- Member Last & First Name
- Year of Birth
- Employment/Position Status: Full-Time, Part-Time, Per Diem, Call Company
- Training/Certification Level
- Rank/Position Held
- Rate of Pay as of July 1, 2023

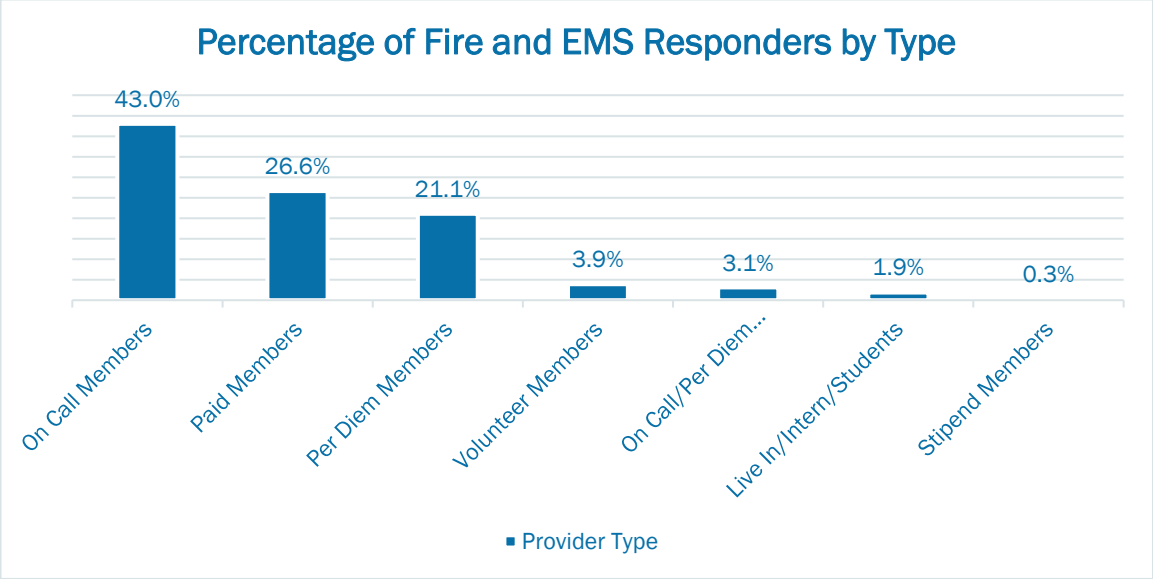
Twenty-four of the 31 departments provided some or all the data requested. Information was gathered on 1,213 members, representing approximately 72.6% of the total number of fire and EMS providers serving in Cumberland County. Within the data set, 11.7% of the workforce reported working for two different fire or EMS departments within Cumberland County, and four individuals reported working for three or more departments within the County.



Types of Fire & EMS Providers

Per the data collected, over 95% of the reporting fire and EMS providers in Cumberland County are financially compensated for some or all work performed within their departments. Only two of the reporting departments identified themselves as strictly volunteer departments whose members participate without compensation.

Survey respondents were asked to identify individual department members' status (full-time, per diem, volunteer). The largest category of members identified were “on-call” members, which includes “on-call,” “call company,” “call member,” “call fire,” “call fire police,” and “call EMT/paramedic.” A call firefighter is a firefighter who is paid on a per-call basis, meaning a member is only paid when they respond to an emergency call. Call firefighters are typically members of a volunteer or combination (paid and volunteer) fire department and receive some pay for their work. Nearly 42% of the survey respondents identified as on-call members, while 21% were per-diem members. It is estimated that 34% of all fire and EMS providers within Cumberland County are classified as full-time paid members.

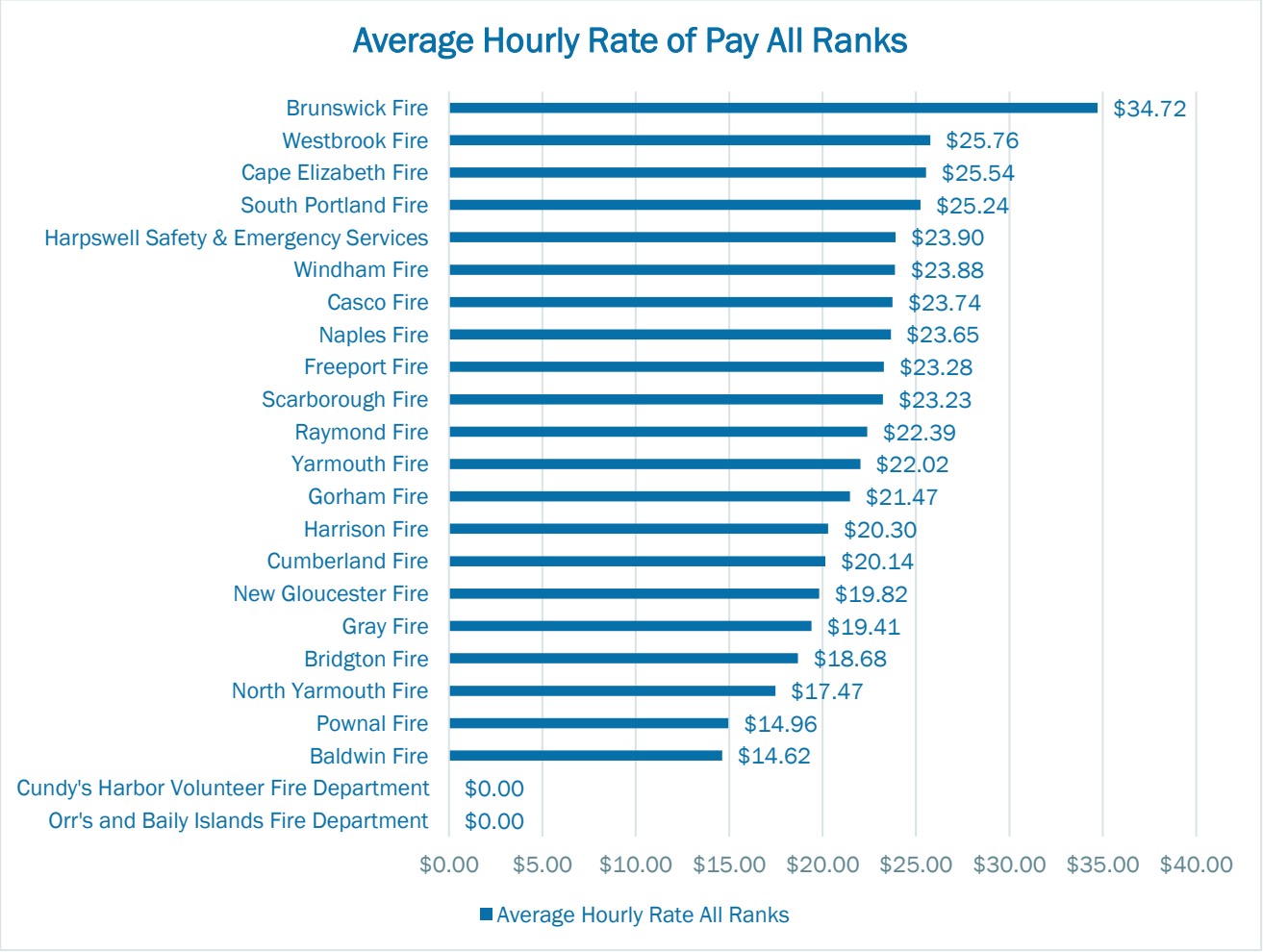


Average Rates of Pay

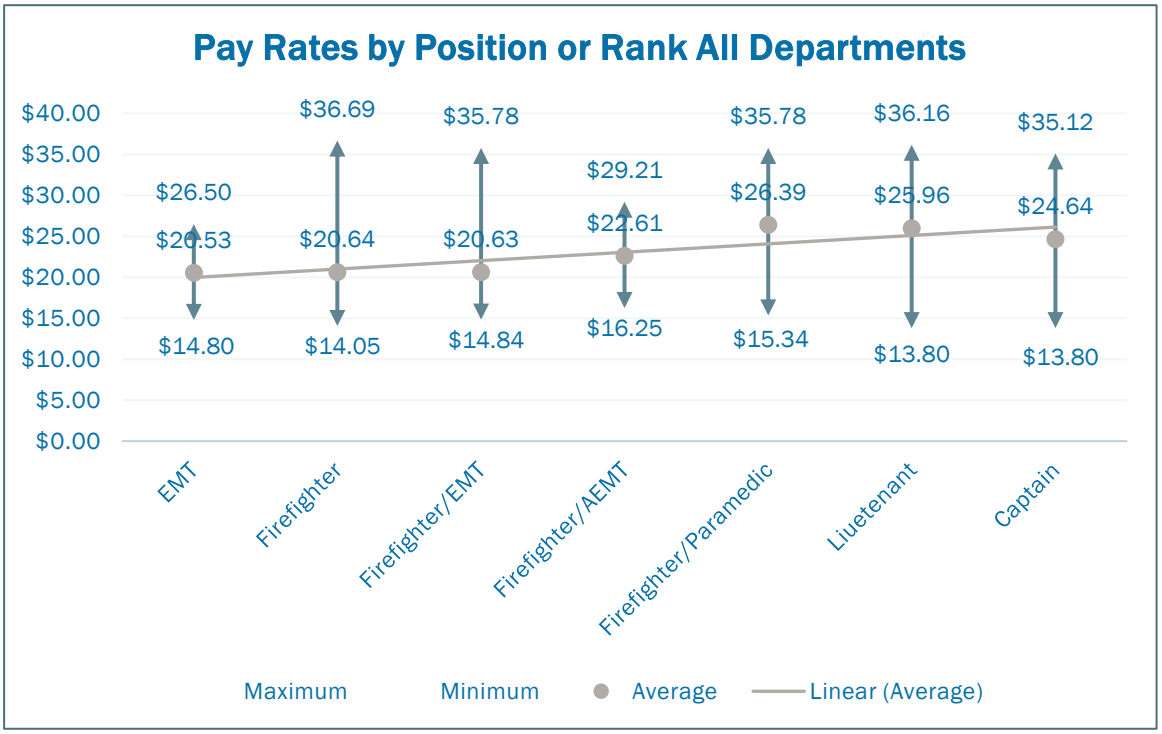
Hourly rates of pay for fire and EMS personnel within Cumberland County vary greatly depending on department, rank or position, longevity, and contractual obligations. Additionally, as these numbers were voluntarily self-reported, it is difficult to determine whether they represent actual base pay or include additional incentives added to the base pay. Challenges such as this make it difficult to provide a clear and consistent comparison; however, this information provides a starting point for discussion and potentially reveals consistency issues that could be addressed in the future.

Of the 24 departments responding to the survey, hourly pay rates were collected on 1,057 individual members, representing approximately 65% of all fire and EMS providers in Cumberland County.

Hourly pay rates for all positions within the County range from $13.80 to $55.24. The lowest hourly pay rate documented matches the State of Maine's minimum wage. According to the Maine Department of Labor, the minimum wage under the State of Maine labor laws sets the minimum hourly rate for public and private employees at $13.80 per hour.



Although exceptions exist across the County, lower hourly rates of pay (less than $17) were generally associated with probationary members, student, live-in, or intern members, and some fire police members (typically non-structural firefighters responsible for support operations such as traffic control). Higher hourly pay rates (greater than $30) were generally associated with firefighter/paramedic positions, higher ranking line officers, and administrative officers, including fire captain, deputy chief, assistant chief, and chief positions.



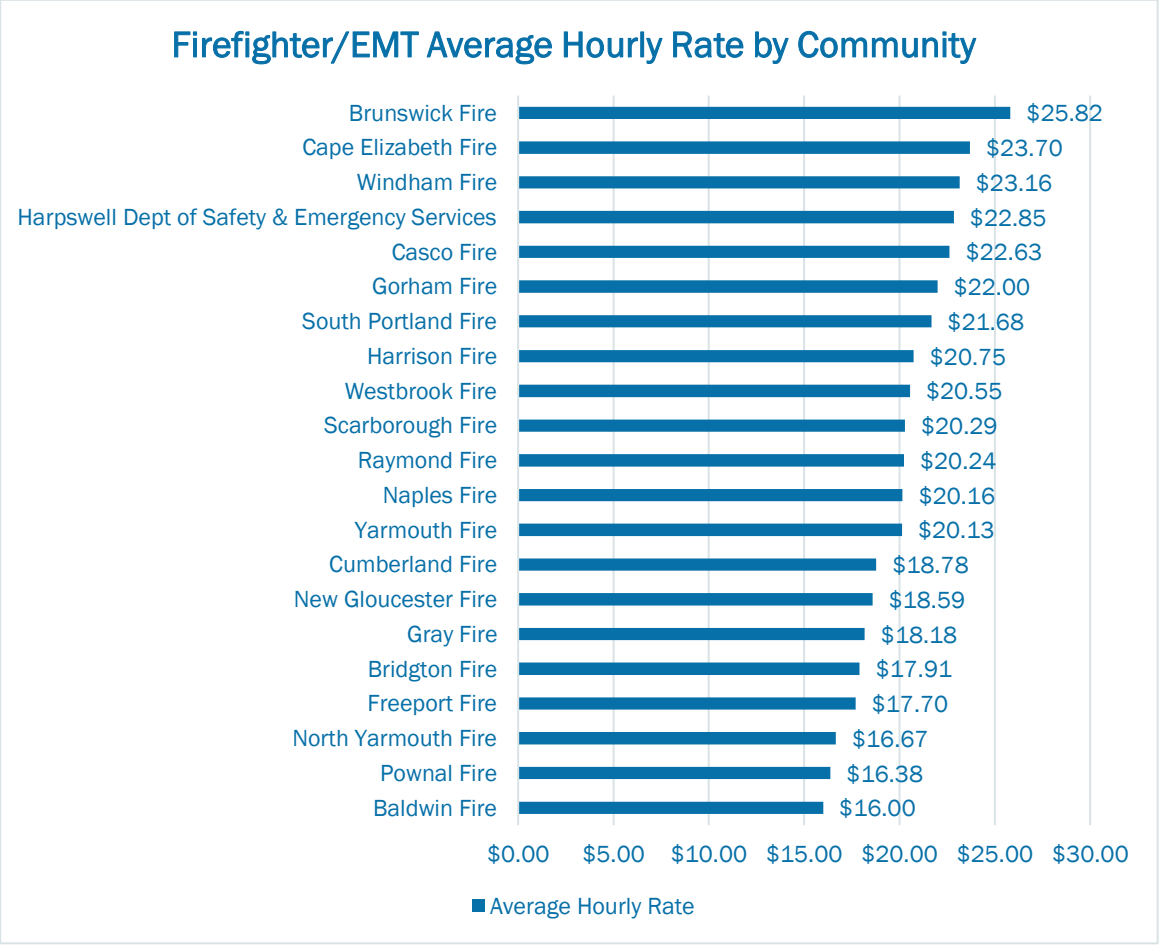
Rates of Pay by Position or Rank

Across the County, the average hourly rate of pay for the position of firefighter/paramedic is highest among line personnel. This is not unexpected as there is great demand for personnel trained to the paramedic level who are also qualified as structural firefighters. In most communities, EMS calls for service account for 75% to 85% of overall call volume, and the need for paramedic-level trained EMS providers has grown as EMS call volume has increased. Competition for recruiting and retaining fully trained firefighter/paramedics has driven compensation rates higher and, in some cases, higher than the average line officer hourly rates. Since dual-department employment is common within Cumberland County, pay rates for the most valued positions must remain competitive for a department to retain its members to meet its community's service delivery demands.

Rates of Pay by Geography

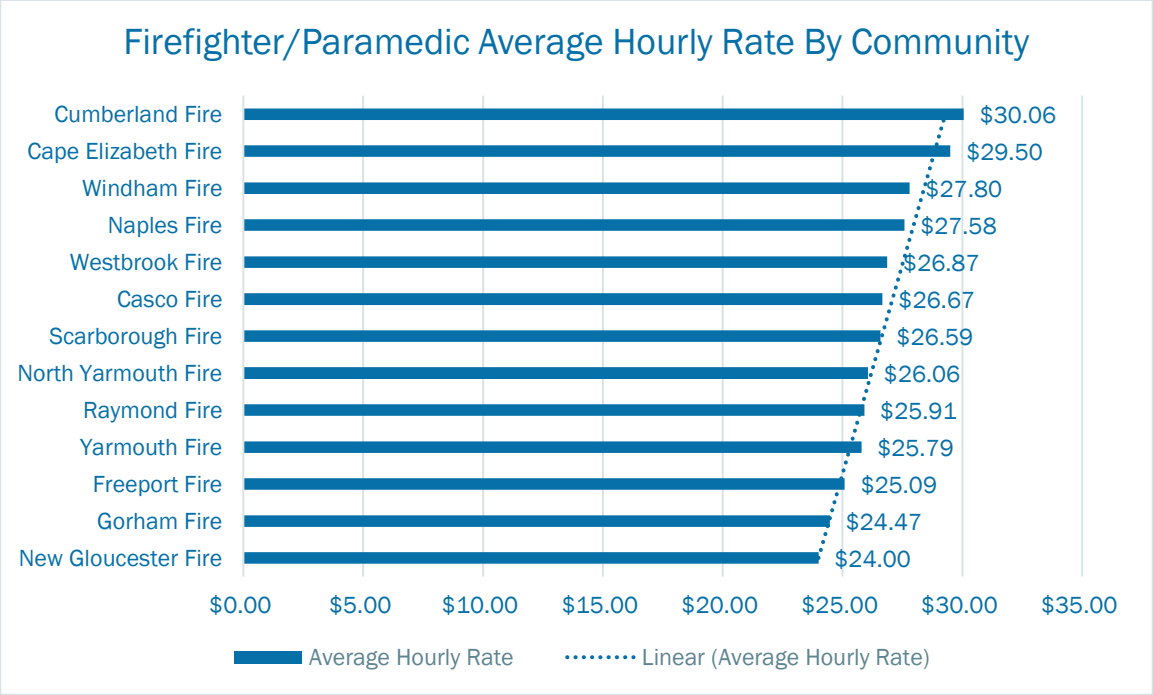
Pay rates for some positions vary considerably by department, which may be attributed to the type of department, demand for services or call volume, and, in many cases, location or proximity to the coast and the City of Portland. Higher costs of living in highly sought-after coastal communities and metropolitan areas often drive wages higher. Additionally, some fire departments within Cumberland County serve island communities with limited access and resources. Chebeague Island, Long Island, and Orr's Island are examples of geographically isolated response areas, which may impact workers' hourly pay rates in many fields.

The average firefighter/EMT hourly rates are higher in the coastal towns of Brunswick, Cape Elizabeth, and Harpswell and in the communities immediately surrounding the City of Portland, including Windham, South Portland, and Gorham.



Communities farther from the shoreline and the City of Portland have lower average hourly rates for firefighters/EMTs. Baldwin, Pownal, Bridgton, and Gray are all examples of communities where hourly rates decrease as distance from the shore and the City of Portland increases. Within the communities providing data for this portion of the study, there is a 38% ($9.82/hour) difference in the average hourly rate for firefighter/EMTs between the highest-paying and lowest-paying departments.

The situation is slightly different for the position of firefighter/paramedic across the County. Whereas firefighter/paramedic has the highest average pay of all line positions, there seems to be less association with proximity to either the coast or the City of Portland. In the case of firefighter/paramedics, there is only a 20% ($6.06/hour) difference in the average hourly pay rate between the highest-paying and lowest-paying departments. Communities throughout Cumberland County are not only paying firefighter/paramedics a higher average hourly rate of pay, but pay between communities is more consistent. As a reminder, 24 of the 31 departments provided data for this portion of the study.

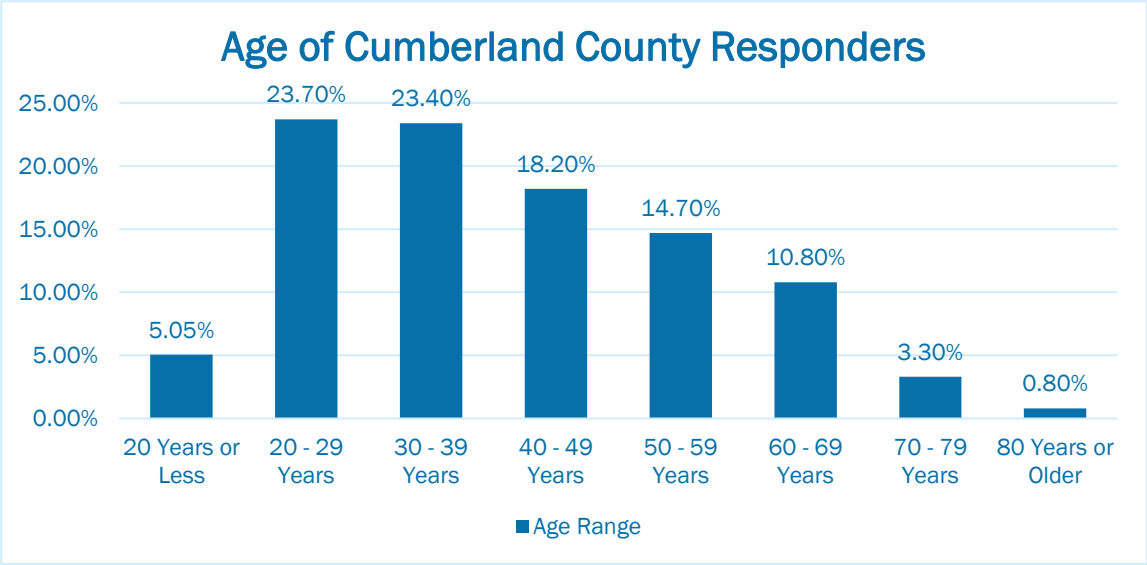


Age of Cumberland County Responders

The National Fire Protection Association (NFPA) periodically completes an overview of local and municipal fire departments in the United States. Surveys are distributed to fire departments across the county, and the data analyzed includes a count of firefighters, fire departments, apparatus, and fire stations. Based on the data reported by the fire departments that responded to the 2020 national fire experience survey, NFPA is confident that the actual number of career firefighters falls between 353,000 and 375,600. The actual number of volunteer firefighters falls between 655,800 and 698,000.

Of the 1,041,200 firefighters reported across the United States, the age group accounting for the largest share of firefighters was the 30 to 39-year-old group (27% of all firefighters). Age group patterns did vary somewhat by the size of the population protected. Departments that protected fewer than 25,000 people and were primarily comprised of volunteers tended to have higher proportions of firefighters in the under-30 age group. Departments that protected 25,000 people or more were primarily comprised of career firefighters and had higher proportions of firefighters in the 30 to 39 and 40 to 49 age groups. Departments protecting fewer than 2,500 people had the highest percentage of firefighters aged 50 and older (34%).

The age of Cumberland County fire and EMS personnel varies slightly from the US averages. The largest age group within the County is 20 to 29 years of age, and responders under 40 represent 47.1% of all providers. Cumberland County has a higher average number of members under the age of 20 years compared to the national average, and this may, in part, be due to the robust intern and live-in student firefighter programs within the County.



Capital Assets and Capital Improvements

Facilities

Thirteen of the 31 fire departments in Cumberland County provided information about their fire stations for this project. Two of the thirteen fire departments that supplied information about their fire stations chose only to share pictures of their stations, so those facilities are not included in this analysis. Dynamix Consulting Group notes that slightly more than one-third (35%) of the fire departments in the county are included in the review of fire stations.

Dynamix Consulting Group asked each Fire Chief to categorize their fire stations according to the following criteria:

Fire Station Condition Classifications

Excellent	Like new conditions. No visible structural defects. The facility is clean and well-maintained. The interior layout is conducive to function with no unnecessary impediments to the apparatus bays or offices. No significant defect history. Building design and construction match the building's purposes. Age is typically less than ten years.
Good	The exterior has a good appearance with minor or no defects. Clean lines, good workflow design, and only minor wear on the building interior. The roof and apparatus apron are in good working order, absent any significant full-thickness cracks, crumbling of the apron surface, or visible roof patches or leaks. Building design and construction match the building's purposes. Age is typically less than 20 years.
Fair	The building appears structurally sound with a weathered appearance and minor to moderate non-structural defects. The interior condition shows normal wear and tear but flows effectively to the apparatus bay or offices. Mechanical systems are in working order. Building design and construction may not match the building's purposes well. Shows increasing age-related maintenance but with no critical defects. Age is typically 30 years or more.
Poor	The building appears cosmetically weathered and worn with potential structural defects, although not imminently dangerous or unsafe. Large, multiple full-thickness cracks and crumbling concrete on the apron may exist. The roof has evidence of leaking or multiple repairs. The interior is poorly maintained or shows signs of advanced deterioration with moderate to significant non-structural defects. Problematic age-related maintenance or major defects are evident. It may not be well suited to its intended purpose. Age is typically greater than 40 years.

The following is a list of fire stations from the fire departments that chose to share their facility information for this project. The stations are listed in alphabetical order by fire department.

Cumberland County Fire Stations

Fire Department	Station Name	Station Address	Year of Construction	Condition	Apparatus	Minimum Staffing	Notes
Cape Elizabeth	Cape Cottage Station	550 Shore Road	1935/1960	Fair	Engine 61 Forestry 64	2	Back-In Bays No Exercise Facility No Shower Facilities No Sprinklers No BioHazard Decontamination / Disposal
Cape Elizabeth	Town Center Station	2 Jordan Way	1960/2000	Fair	Ladder 65 Engine 62 Engine 63 Ambulance 61 Ambulance 62	4	Back-In Bays No Apparatus Exhaust Systems
Casco	Central Station	637 Meadow Road, Casco	1977-1979				
Casco	Company 2	20 Brown Ave, Casco	1990				No Designated Sleeping Quarters
Falmouth	Central Station	8 Bucknam Road	1976/2008	Good	Ambulance 2 Ambulance 3 Engine 2 Tower 2	5	Back-In Bays No Exercise Facility No Electronic Security Access

Fire Department	Station Name	Station Address	Year of Construction	Condition	Apparatus	Minimum Staffing	Notes
Falmouth	Foreside Station	287 Foreside Road	1951/1991	Fair	• Engine 1 • Utility 5 • Utility 6	0	• Back-In Bays • No Exercise Facility • No BioHazard Decontamination / Disposal • No Electronic Security Access
Falmouth	West Station	5 Winn Road	1980	Fair	• Ambulance 4 • Engine 4 • Tank 4 • Utility 4		• Back-In Bays • No Exercise Facility • No BioHazard Decontamination / Disposal • No Electronic Security Access
New Gloucester	Central Station	611 Lewiston Road, New Gloucester	2009	Good	• Utility 1 • Ambulance 1 • Engine 2 • Engine 3 • Tank 1 & 2	2	• No Electronic Security Access
North Yarmouth	Central Station	463 Walnut Hill Road, North Yarmouth	1969/1979/ 1990	Poor	• Engine 52 • Engine 51 • Tank 53 • Ambulance 56 • Brush 57 • Service 54 • UTV-58 • UTV Trailer 20-58 • Car-1	0 – Volunteer	• Back-In Bays • No Sprinklers • No Electronic Security Access • No Apparatus Exhaust Systems

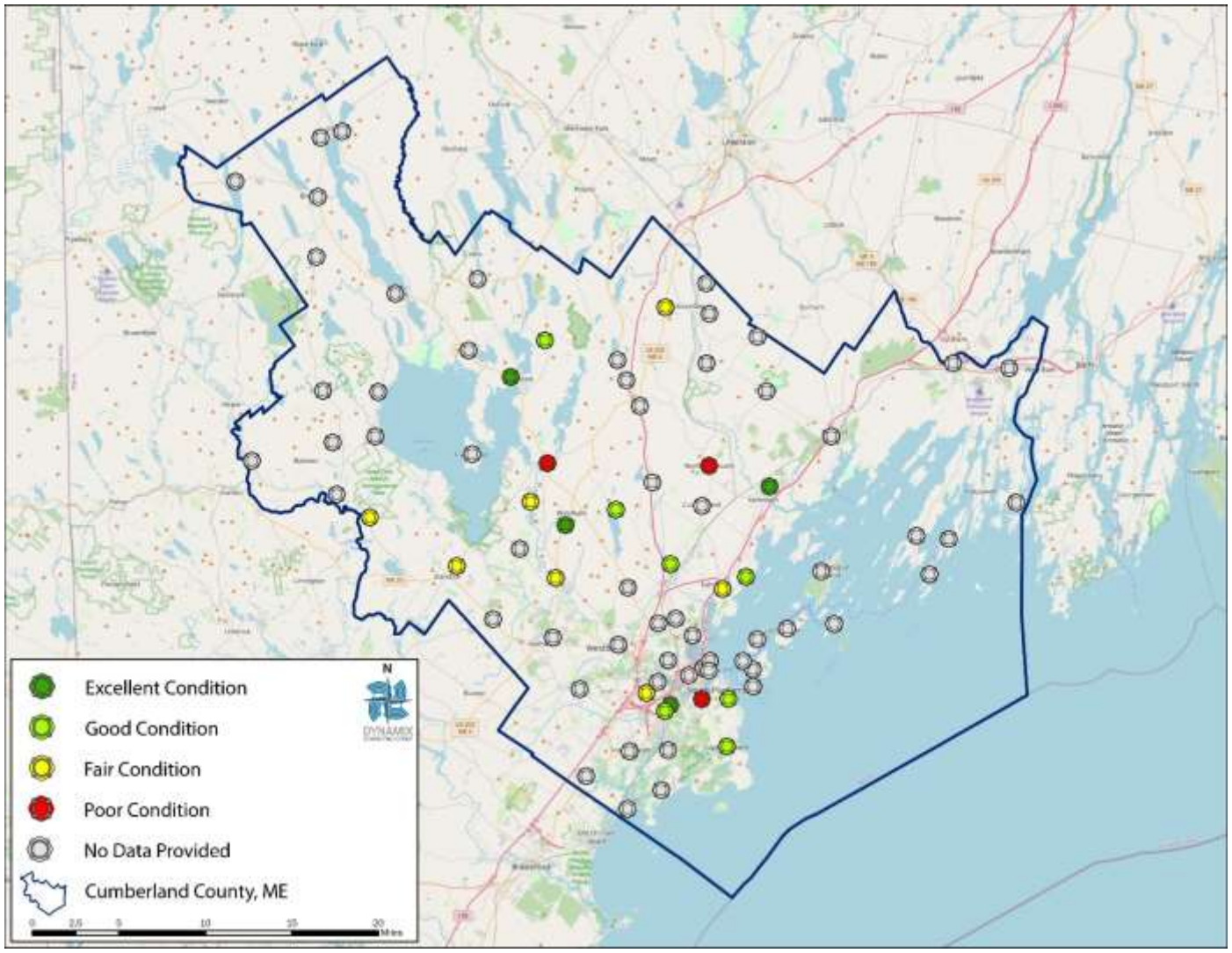
Fire Department	Station Name	Station Address	Year of Construction	Condition	Apparatus	Minimum Staffing	Notes
Raymond	Central	1443 Roosevelt Trail	2002	Excellent	Engine 1 Rescue 1 Rescue 2 Tank 2 Forestry 5 Service truck Boats		No Smoke Detection
Raymond	East	381 Webbs Mills Road	More than 30 years old	Fair	Engine 2 Tank 1 Utility 7		Back-In Bays Sprinklers in Living Quarters Only
South Portland	Cash Corner	360 Main Street	2021	Excellent	Ladder 45 Ambulance 43 Rescue 45 Ladder 41 Engine 46	Call Company	Back-In Bays
South Portland	Central	684 Broadway	1952	Poor	Engine 48 Ambulance 41 Car 2 Car 49 Ambulance 44	7	Back-In Bays No Sprinklers No BioHazard Decontamination / Disposal
South Portland	Western Avenue	34 James Bakka Drive	2004	Good	Engine 44 Ambulance 42 Engine 41 Haz Mat 402	5	

Fire Department	Station Name	Station Address	Year of Construction	Condition	Apparatus	Minimum Staffing	Notes
South Portland	Willard Street	20 Pillsbury Street	1949	Fair	Engine 42 Ladder 42	0 – Call Company	No Exercise Facility No Sprinklers No BioHazard Decontamination / Disposal
Standish	Central Station	175 Northeast Road, Standish	2000	Good	Rescue 1 Utility 5 Engine 21 Tank 12 Truck 10		Back-In Bays No Smoke Detection
Standish	Station 3	870 Boundary Road, Steep Falls	1980	Good	Rescue 3 Engine 3 Tank 3 Forestry 3		Back-In Bays No Exercise Facility No BioHazard Decontamination / Disposal No Electronic Security Access
Standish Shared with Gorham	Station 4	2 Standish Neck Road, Gorham		Good	Engine 4 Gorham Tank 4	0 – Volunteer	Back-In Bays No Exercise Facility No Sprinklers No Smoke Detection No Apparatus Exhaust System
Windham	Central Station / Windham Public Safety Building	375 Gray Road Windham	1990/2022	Excellent	Ambulance 20 Ambulance 23 Squad 27 Tank 28 Utility 214	3	Back-In Bays

Fire Department	Station Name	Station Address	Year of Construction	Condition	Apparatus	Minimum Staffing	Notes
Windham	East Station	45 Falmouth Road, Windham	1992	Fair	• Engine 25 • Brush 29	0 - Call Company: Live In College Students	• Back-In Bays • No Exercise Facility No Electronic Security Access
Windham	North Station	718 Roosevelt Trail Windham	1973	Poor	• Ambulance 22 • Ladder 24 • Engine 26 • Utility 212 • Traffic 215	2	• Back-In Bays • No Exercise Facility • No BioHazard Decontamination / Disposal
Windham Shared with Gorham	South Station	33 Main Street, Windham	2002/2016	Good	• Ladder 21 • Utility 213 • Gorham Engine 1 • Gorham Haz Mat 1 • Engine 217	0 - Call Company	• Back-In Bays No Exercise Facility
Yarmouth	North Road	178 North Road, Yarmouth	2021	Excellent	• Engine 82 • Tank 83 • Tower 84 • Ambulance 85 • Ambulance 86	4	

The following map illustrates the location and condition of the fire stations in Cumberland County.

Condition of Fire Stations



Back-In Bays

Many of the fire stations in Cumberland County have "back-in bays." The lack of drive-throughs at these facilities constitutes a safety concern, as many firefighter injuries and accidents occur when backing emergency vehicles into the bays. Dynamix Consulting Group notes that personnel at the stations use "back in" procedures; however, drive-through bays are the recommended configuration. For all future buildings that will house apparatus, the fire departments should consider a design that allows for drive-through bays that are large enough to accommodate all frontline and reserve apparatus.

No Exercise Facility

Section 11.3.1 of NFPA 1500, t*he Standard on Fire Department Occupational Safety, Health, and Wellness Program,* requires "The fire department shall establish and provide a health and fitness program that meets the requirements of NFPA 1583 to enable members to develop and maintain a level of fitness that allows them to perform their assigned functions safely. While it is understood that the standard does not require an exercise facility in each station, Dynamix Consulting Group notes that such a facility would make it more convenient for on-duty firefighters and off-duty volunteer firefighters to exercise regularly.

No Shower Facilities

While it is understood that many of the fire stations in Cumberland County were built only to house fire apparatus during a time when fire departments relied entirely on volunteer firefighters, the changing needs of the fire service have resulted in changing staffing configurations. Nationally, the fire service is seeing a decline in volunteerism. For this reason, renovations to existing fire stations and plans for new fire stations should include designated shower facilities to accommodate full-time firefighters if the fire departments, at some point, staff their fire stations twenty-four hours a day.

No Smoke Detection

Section 10.1.3.1 of 2021 NFPA 1500 requires that "Approved smoke detectors shall be installed outside every sleeping area in the immediate vicinity of the bedrooms and on all levels of the station, including basements. All fire departments in Cumberland County should ensure that adequate smoke detection is installed in all their fire stations.

No Sprinklers

As noted above, not all of the fire stations in Cumberland County are entirely sprinkled. NFPA 1: *Fire Code* requires that "New buildings housing emergency fire, rescue, or ambulance services shall be protected throughout by approved supervised automatic sprinkler systems." The requirement for sprinkler protection protects the emergency services personnel occupying the facility. It reduces the risk of disrupting emergency services to the community because of a fire. While not required by the code for existing buildings, Dynamix Consulting Group recommends that the fire departments consider installing fire sprinkler systems in all existing fire stations – beyond just the sleeping quarters - for the safety of the firefighters who occupy the stations, as well as to demonstrate to the community the importance of automatic fire sprinkler systems.

No BioHazard Decontamination / Disposal

Section 10.1.2 of 2021 NFPA 1500 requires that "Fire departments shall provide facilities for disinfecting, cleaning, and storage in accordance with NFPA 1581. Future fire station renovations and construction designs should include BioHazard Decontamination and Disposal facilities.

No Apparatus Exhaust Systems

Dynamix Consulting Group noted that there are fire stations in Cumberland County that do not have a vehicle exhaust system. Diesel engine exhaust emissions in fire stations expose firefighters to health risks, including certain types of cancers as well as pulmonary and cardiac diseases. Section 10.1.5* of 2021 NFPA 1500 requires "The fire department shall prevent exposure to firefighters and contamination of living and sleeping areas from exhaust emissions through the use of direct or source capture systems. All fire departments in Cumberland County should ensure that apparatus exhaust systems are installed in all of their fire stations.

No Designated Sleeping Quarters

While it is understood that many of the fire stations in Cumberland County were built only to house fire apparatus during a time when fire departments relied entirely on volunteer firefighters, the changing needs of the fire service have resulted in changing staffing configurations. Nationally, the fire service is seeing a decline in volunteerism. For this reason, renovations to existing fire stations and plans for new fire stations should include designated sleeping quarters to accommodate full-time firefighters if the fire departments, at some point, staff their fire stations twenty-four hours a day.

No Electronic Security Access

Fire stations were historically places where residents and visitors from the community accessed any part of a fire station with very few limitations. Unfortunately, the current social environment requires emergency service providers to implement specific security measures limiting and controlling access to fire-rescue facilities. The need to protect firefighters drives the control of limited access, installation of expensive equipment, and protection of sensitive data from access by individuals desiring to harm the community. Fire departments in the county should consider installing electronic access control systems that monitor who enters and exits the buildings and allow the department to turn off access to individuals as needed in all facilities.

Apparatus/Vehicles

Twelve of the 31 fire departments in Cumberland County provided information about their fire apparatus for this project. Three of the twelve fire departments that supplied information about their apparatus chose only to share pictures of their apparatus, so those vehicles are not included in this analysis. Dynamix Consulting Group notes that less than one-third (29%) of the fire departments in the county are included in the review of fire apparatus.

In evaluating any fleet, leadership must consider a variety of factors in determining the department's operational capabilities. These considerations include age, cost of operation (i.e., repair costs), and out-of-service time. As with any mechanical device, a fire apparatus possesses a finite life. Fire departments typically classify emergency response as either being frontline or reserve. When a frontline apparatus reaches a certain age or wear and tear threshold or begins to require increasing maintenance costs, it is either moved to reserve status or decommissioned. The decision to move an apparatus to reserve status or decommission is a local decision, and no definitive industry standards or fixed rules exist. However, Annex D of NFPA 1901: *Standard for Automotive Apparatus* (2016) suggests the following:

It is recommended that apparatus more than 15 years old should that have been properly maintained and that are still in serviceable condition be placed in reserve status; be upgraded in accordance with NFPA 1912[2]; and incorporate as many features as possible of the current fire apparatus Standard (see Section D.3). This will ensure that, while the apparatus might not totally comply with the current editions of the automotive fire apparatus standards, many of the improvements and upgrades required by the current editions of the standards are available to the firefighters who use their apparatus.

Apparatus not manufactured to the applicable NFPA fire apparatus standards or that are over 25 years old should be replaced.

[2] *Standard for Apparatus Refurbishment*

Pumper, Rescues, and Aerial Trucks

2024 NFPA 1900, Standard *for Aircraft Rescue and Firefighting Vehicles, Automotive Fire Apparatus, Wildland Fire Apparatus, and Automotive Ambulances offers* the following definitions for Pumpers, Rescues, and Ladder Trucks:

Pumper: Fire Apparatus with a permanently mounted fire pump of at least 750 gallons per minute capacity, water tank, and hose body whose primary purpose is to combat structural and associated fires.

Aerial Fire Apparatus: A vehicle equipped with an aerial ladder, elevating platform, or water tower designed and equipped to support firefighting and rescue operations by positioning personnel, handing materials, providing continuous egress, or discharging water at positions elevated from the ground.

Rescue Trucks: Rescue Trucks are categorized by NFPA 1901 as Special Service Vehicles. This is a multipurpose vehicle that primarily provides support services at emergency scenes.

Pumpers, Aerial Fire Apparatus, and Rescue Trucks are grouped because they comprise the primary response for fire suppression within Cumberland County.

The following is a list of the Pumpers, Rescues, and Aerial Trucks from the fire departments that chose to share their fire apparatus information for this project. The vehicles are listed in alphabetical order by fire department.

Pumpers, Rescues, and Aerial Trucks

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
1. Cape Elizabeth	Engine 61	Pumper	E-One	2022	Excellent
2. Cape Elizabeth	Engine 62	Pumper	E-One	2004	Very Good
3. Cape Elizabeth	Engine 63	Pumper	E-One	1999	Good
4. Cape Elizabeth	Ladder Truck 65	Aerial	E-One	2019	Excellent
5. Casco	E12	Pumper	Spartan	2000	
6. Casco	E14	Pumper	Pierce	2008	
7. Casco	T11	Pumper	Freightliner/Midwest	2016	
8. Cundy's Harbor	Engine 5	Pumper			
9. Falmouth	Engine 1	Pumper	Sutphen	2011	Good
10. Falmouth	Engine 2	Pumper	Sutphen	2013	Good
11. Falmouth	Engine 4	Pumper	Sutphen	2017	Excellent
12. Gray	Engine 41	Pumper	Ferrara Ignitor	2014	Very Good
13. Gray	Engine 42	Pumper	Ferrara Intruder	2008	Good
14. Gray	Rescue 47	Rescue	Ferrara Intruder	2010	Good
15. Gray	Truck 44	Aerial	Apollo	2019	Excellent
16. Naples	Engine 3	Pumper	Rosenbauer	2008	
17. Naples	Engine 4	Pumper	Central States	1999	
18. Naples	Engine 5	Pumper	Pierce	1998	

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
19. Naples	Ladder Truck 9	Aerial	Pierce	2009	
20. New Gloucester	Engine 3	Pumper	Pierce	2004	Good
21. New Gloucester	Squad 1	Rescue	Peterbilt	1999	Poor
22. North Yarmouth	E-51	Pumper	Pierce	2004	Poor
23. North Yarmouth	E-52	Pumper	Emergency One	2012	Good
24. Portland	E 12	Pumper	Pierce	2004	
25. Portland	E 14	Pumper	Mack	1981	
26. Portland	E 15	Pumper	Pierce		
27. Portland	E 16	Pumper	Ford F350 Salisbury	1988	
28. Portland	E 17	Pumper	Pierce Arrow	1992	
29. Portland	Engine 11	Pumper	Pierce	2020	
30. Portland	Engine 2	Pumper	Seagrave	2011	
31. Portland	Engine 5	Pumper	Pierce	2022	
32. Portland	Engine 6	Pumper	Pierce	2022	
33. Portland	Engine 7	Pumper	Pierce Saber	1999	
34. Portland	Engine 9	Pumper	Seagrave	2011	
35. Portland	Ladder Truck 1	Aerial	Seagrave	2017	
36. Portland	Ladder Truck 3	Aerial	Pierce		
37. Portland	Ladder Truck 4	Aerial	Pierce	2000/2020	
38. Portland	Ladder Truck 5	Aerial	Seagrave	2013	
39. Portland	Ladder Truck 6	Aerial	Pierce	2011	
40. Portland	Rescue 1	Rescue	Pierce Enforcer	2019	
41. Portland	Rescue 2	Rescue	Chevrolet	2007	
42. Raymond	Squad 8	Rescue		1996	Very Good
43. South Portland	E-41	Pumper	E-One	2005	Good
44. South Portland	E-42	Pumper	Hackney	2003	Fair
45. South Portland	L-41	Aerial	E-One	1991	Fair
46. South Portland	L-42	Aerial	Pierce	1996	Fair
47. South Portland	L-45	Aerial	Pierce	2019	Good
48. South Portland	R-45	Rescue	Ford Spencer	2015	Good
49. Standish	Engine 21	Pumper	E-One	2014	Good

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
50. Standish	Engine 4	Pumper	E-One	2016	Good
51. Standish	Truck 10	Ladder Truck	E-One	2001	Good
52. Westbrook	Squad 1	Rescue		2006	
53. Windham	Engine 21	Pumper	E-One	2014	Good
54. Windham	Engine 4	Pumper	E-One	2016	Good
55. Windham	Ladder Truck 21	Ladder Truck	Ferrara	2000	Fair
56. Windham	Ladder Truck 24	Ladder Truck	E-One	2004	Good
57. Windham	Squad 27	Rescue /Pumper	E-One	2021	New
58. Windham	Truck 10	Ladder Truck	E-One	2001	Good
59. New Gloucester	Engine 2	Pumper	Ferrara	2012	Good
60. Orr's Bailey Island	Engine 3	Pumper			
61. Orr's Bailey Island	Engine 1	Pumper			
62. Portland	E 13	Pumper	E-One Cyclone	1996	
63. Raymond	Engine 1	Pumper	E-One	2003	Good
64. Raymond	Utility 7	Pumper		2003	Good
65. Raymond	Engine 2	Pumper	Pierce	2015	Excellent
66. South Portland	E-46	Pumper	Ferrara	2002	Good
67. South Portland	E-48	Pumper	Pierce	2013	Good
68. South Portland	E-44	Pumper	Pierce	2017	Good
69. Westbrook	Engine 1	Pumper		1996	
70. Westbrook	Engine 2	Pumper		2015	
71. Westbrook	Engine 3	Pumper		2020	
72. Westbrook	Engine 4	Pumper		2023	
73. Windham	Engine 25	Pumper	Ferrara	1999	Fair
74. Windham	Engine 217	Pumper	E-One	2006	Fair
75. Windham	Engine 26	Pumper	Pierce	2016	Good
76. Raymond	Squad 38	Pumper Squad		2024	New
77. Standish	Engine 3	Rescue/Pumper	E-One	2005	Ok
78. Windham	Engine 3	Rescue/Pumper	E-One	2005	Ok
79. Cundy's Harbor	Tank 5	Pumper/Tanker			

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
80. Orr's Bailey Island	Tank 3	Pumper/Tanker			
81. Standish	Tank 12	Tanker/ Pumper	Pierce	2017	Good
82. Raymond	Tank 1	Tanker/Pumper	KME	1999	Good
83. Raymond	Tank 2	Tanker/pumper	Metalfab	2018	Excellent
84. Windham	Tank 28	Tanker/Pumper	E-One	2008	Good
85. Windham	Tank 12	Tanker/Pumper	Pierce	2017	Good
86. Gray	Tank 45	Tanker	E-One	2009	Very Good
87. Naples	Tank 1	Tanker	Kenworth	2002	
88. New Gloucester	Tank 1	Tanker	Peterbilt	1994	Good
89. New Gloucester	Tank 2	Tanker	Freightliner	2001	Good
90. Portland	Tank 15	Tanker	Mack Midliner	1990	
91. Standish	Tank 3	Tanker	Central States	1997	
92. Windham	Tank 3	Tanker	Kenworth	1997	
93. Falmouth	Tank 4	Tanker	Autocar	1992	Good

Ambulances

NFPA 1900 defines an ambulance as "A vehicle used for out-of-hospital medical care and patient transport that provides a driver's compartment; a patient compartment to accommodate an emergency medical services provider (EMSP) and at least one patient located on the primary cot positioned so that the primary patient can be given emergency care during transit; equipment and supplies for emergency care at the scene, as well as during transport; safety, comfort, and avoidance of aggravation of the patient's injury or illness; two-way radio communication, and audible and visual traffic warning devices."

The following is a list of Ambulances from the fire departments that chose to share their fire apparatus information for this project. The vehicles are listed in alphabetical order by fire department.

Ambulances

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
1. Cape Elizabeth	Ambulance 61	Ambulance	Horton	2019	Excellent
2. Cape Elizabeth	Ambulance 62	Ambulance	Horton	2011	Very Good
3. Casco	Ambulance 1	Ambulance	Ford/Horton	2018	
4. Casco	Ambulance 2	Ambulance	Ford/Horton	2020	
5. Casco	Ambulance 3	Ambulance	Chevy/Horton	2016	
6. Cundy's Harbor	Rescue 5	Ambulance			
7. Falmouth	A-2	Ambulance	Ford	2022	Excellent

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
8. Falmouth	A-3	Ambulance	Chevrolet	2013	Good
9. Falmouth	A-4	Ambulance	Ford	2018	Excellent
10. Gray	Ambulance 48	Ambulance	Ford Braun	2021	Excellent
11. Gray	Ambulance 49	Ambulance	Ford Braun	2021	Excellent
12. Naples	Rescue 7	Ambulance	Road Rescue	2016	
13. Naples	Rescue 8	Ambulance	Ford Braun	2020	
14. New Gloucester	Ambulance 1	Ambulance	PL Custom	2013	Fair
15. North Yarmouth	Ambulance 56	Ambulance	PL Custom	2015	Good
16. Orr's Bailey Island	Rescue 3	Ambulance			
17. Portland	Medium 3	Ambulance	Ford E450	2019	
18. Portland	Medium 4	Ambulance	Ford F550	2022	
19. Portland	Medium 5	Ambulance	Ford E450	2019	
20. Portland	Medium 6	Ambulance	Ford F550	2022	
21. Portland	Medium 8	Ambulance	Ford E450	2018	
22. Portland	Medium 9	Ambulance	Ford E450	2019	
23. Portland	Medic 1	Ambulance	Ford E450	2022	
24. Raymond	Rescue 1	Ambulance	PL Custom	2014	Excellent
25. Raymond	Rescue 2	Ambulance	Braun	2018	Excellent
26. South Portland	A-41	Ambulance	Ford Braun	2019	Good
27. South Portland	A-42	Ambulance	Chevrolet Braun	2016	Fair
28. South Portland	A-43	Ambulance	Chevrolet Braun Express	2014	Fair
29. South Portland	A-44	Ambulance	Ford Braun	2010	Fair
30. Standish	Rescue 1	Ambulance	Ford Wheeled Coach	2019	Good
31. Standish	Rescue 2	Ambulance	PL Custom	2016	Good
32. Standish	Rescue 3	Ambulance	PL Custom	2022	Excellent
33. Westbrook	Ambulance	Ambulance		2018	
34. Westbrook	Ambulance	Ambulance		2023	
35. Westbrook	Ambulance 12-1	Ambulance		2023	
36. Westbrook	Ambulance 13-1	Ambulance		2023	
37. Windham	Ambulance 20	Ambulance	Ford Braun	2022	New
38. Windham	Ambulance 22	Ambulance	Ford Braun	2023	New/

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
					Remount
39. Windham	Ambulance 23	Ambulance	Ford Braun	2017	Fair
40. Windham	Rescue 1	Ambulance	Ford E-450	2019	Good
41. Windham	Rescue 2	Ambulance	Ford	2016	Good
42. Windham	Rescue 3	Ambulance	Dodge	2022	New

Special Service Vehicles

NFPA 1900 defines Special Service Vehicles as multipurpose vehicles primarily providing emergency support services. Specialty services vehicles can include forestry trucks, boos, utility vehicles, all-terrain vehicles, and trailers.

The following is a list of Special Service Vehicles from the fire departments that chose to share their fire apparatus information for this project. The vehicles are listed in alphabetical order by fire department.

Special Service Vehicles

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
1. Cape Elizabeth	Forestry 64	Forestry Truck	Ford	2007	Very Good
2. Cape Elizabeth	Marine 68	Boat	Milpro	2017	Excellent
3. Cape Elizabeth	Service 610	Utility Vehicle	GMC	2006	Good
4. Cape Elizabeth	Support 608	Utility Vehicle	Chevrolet	2002	Good
5. Casco	ATV	ATV	Polaris Ranger	2014	
6. Casco	F15	Utility Vehicle	GMC Kodiak	2006	
7. Casco	M18	Boat	Naiad	1994	
8. Casco	SQ18	Utility Vehicle	E-ONE	2022	
9. Casco	TRL	Trailer		2013	
10. Casco	U10	Utility Vehicle	Ford F-250	2022	
11. Cundy's Harbor	Squad 5	Utility Vehicle			
12. Falmouth	Marine 7	Boat			
13. Falmouth	MCI Trailer	Trailer			
14. Falmouth	Traffic Control Trailer	Trailer			
15. Falmouth	Utility 5	ATV	Kubota	2019	Excellent
16. Falmouth	Utility 6	Utility Vehicle	Ford	2019	Excellent
17. Falmouth	Utility 4	Utility Vehicle	GMC	2016	Excellent
18. Gray	Utility 46	Utility Vehicle	Ford	2021	Excellent
19. Naples	ATV	ATV	John Deere	2012	

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
20. Naples	Forestry 6	Forestry Truck	Ford	2012	
21. Naples	Marine 2	Boat	Safe boat	2004	
22. Naples	Marine 4	Boat			
23. Naples	Utility 12	Utility Vehicle	Chevy	1994	
24. New Gloucester	Utility 1	Utility Vehicle	Chevrolet	2020	Excellent
25. North Yarmouth	ATV 58	ATV			
26. North Yarmouth	Forestry 57	Forestry Truck	Fire Trucks	2013	Good
27. North Yarmouth	Service 54	Utility Truck	Ford	2019	Good
28. North Yarmouth	Trailer 58-20	Trailer			
29. Orr's Bailey Island	Forestry 3	Forestry Truck			
30. Orr's Bailey Island	Squad 3	Utility Vehicle			
31. Portland	F 13	ATV	Kawasaki Mule		
32. Portland	Gator	ATV	John Deere	2004	
33. Portland	Gator	ATV		2011	
34. Portland	Haz Mat Decon	Trailer	Alco	2022	
35. Portland	HazMat 1	HazMat	Chevrolet	2005	
36. Portland	Marine 1	Boat		2009	
37. Portland	Marine 2	Boat		1993	
38. Portland	Marine 3	Boat		2005	
39. Portland	MC 12	Utility Truck	Ford Braun Express	2014	
40. Portland	Mc 13	Utility Truck	Chevrolet Braun Express	2017	
41. Portland	MC 15	Utility Truck	Chevrolet Braun Express	2017	
42. Portland	Red 2	ARFF	Ford	2011	
43. Portland	Red 3	ARFF	Rosenbauer Panther	2019	
44. Portland	Red 4	ARFF	Oshkosh	2000	
45. Portland	Tac 1	Tactical	Chevrolet	2005	
46. Portland	Tech Rescue	Trailer	Alco	2022	
47. Portland	Truck 15	Utility Vehicle	Chevrolet	1987	
48. Portland	U 14	Golf Cart	Golf Cart	2008	
49. Portland	U 15	ATV	Kawasaki Mule	2004	

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
50. Portland	U 16	Golf Cart	Yamaha	1992	
51. Raymond	CAFS Trailer	Trailer			
52. Raymond	Forestry 5	Utility Vehicle	Chevy	2016	
53. Raymond	Forestry Trailer	Trailer			Good
54. Raymond	Marine 1	Boat	Ambar	2004	Excellent
55. Raymond	Marine 2	Boat	Whaler		Very Good
56. Raymond	Service Truck 1	Utility Vehicle	Ford	2015	
57. Raymond	Spill Trailer	Trailer			Good
58. South Portland	FT-1	Trailer			
59. South Portland	Gator 5	ATV			
60. South Portland	Gator 8	ATV			
61. South Portland	HazMat 401	Trailer			
62. South Portland	HazMat 402	Trailer			
63. South Portland	M-48	Boat	VIKING	2012	Good
64. South Portland	PM-402	Utility Vehicle	GMC	2007	Good
65. South Portland	ST411	Utility Vehicle	GMC	2102	Fair
66. South Portland	ST412	Utility Vehicle	FORD	2017	Good
67. South Portland	ST413	Utility Vehicle	FORD	2019	Good
68. Standish	ATV	ATV	Polaris Ranger	2022	Excellent
69. Standish	Forestry 3	Forestry Truck		1993	Fair
70. Standish	Marine 4	Boat			
71. Standish	Marine 6	Boat			
72. Standish	Squad 6	Water Rescue		2006	
73. Standish	Utility 5	Forestry Truck	CTE	2017	Good
74. Westbrook	Traffic 5	Traffic		2,002	
75. Westbrook	Unit 6	Utility Vehicle		2,021	
76. Westbrook	Unit 7	Utility Vehicle		2,002	
77. Windham	Forestry 29	Forestry Truck	Werner	2019	Good
78. Windham	Forestry 3	Forestry Truck		1993	Ok
79. Windham	Marine 218	Boat	Starcraft		Good
80. Windham	Marine 219	Boat		2013	Good

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
81. Windham	Traffic 215	Utility Vehicle	Ford	2012	Good
82. Windham	Utility 212	Utility Vehicle	Ford F250	2022	New
83. Windham	Utility 213	Utility Vehicle	Chevy 2500	2012	Fair
84. Windham	Utility 214	Utility Vehicle	Chevy 2500	2012	Good
85. Windham	Utility 5	Forestry Truck	Ford F-550	2017	Good

Staff Vehicles

In addition to the previously listed fire apparatus, the fire departments in Cumberland County use staff vehicles for functions relative to emergency response, administration, fire prevention, and other operations.

The following is a list of Staff Vehicles from the fire departments that chose to share their fire apparatus information for this project. The vehicles are listed in alphabetical order by fire department.

Staff Vehicles

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
1. Cape Elizabeth	Car 601	Staff Vehicle	Chevrolet	2015	Very Good
2. Casco	C 2	Staff Vehicle			
3. Casco	C 3	Staff Vehicle			
4. Casco	C 4	Staff Vehicle			
5. Casco	C 5	Staff Vehicle			
6. Casco	C 6	Staff Vehicle			
7. Casco	C 7	Staff Vehicle			
8. Casco	Car 1	Staff Vehicle	Ford Explorer	2021	
9. Falmouth	Unit 1	Staff Vehicle	Explorer, Ford	2020	Excellent
10. Falmouth	Unit 2	Staff Vehicle	Explorer, Ford	2016	Excellent
11. Falmouth	Unit 3	Staff Vehicle	Explorer, Ford	2017	Excellent
12. Falmouth	Unit 8	Staff Vehicle	Tahoe, Chevrolet	2015	Excellent
13. Falmouth	Unit 9	Staff Vehicle	Kona, Hyundai	2021	Excellent
14. Gray	Car 1	Staff Vehicle	Ford Interceptor	2017	Excellent
15. Gray	Car 2	Staff Vehicle	Ford Interceptor	2022	Excellent
16. Harpswell	Harpswell 101	Staff Vehicle	Chevrolet Tahoe	2015	Fair
17. Naples	Car 1	Staff Vehicle	Ford	2010	
18. North Yarmouth	Car 1	Staff Vehicle	Ford		
19. Portland	C 1	Staff Vehicle	Ford Interceptor	2019	
20. Portland	C 2	Staff Vehicle	Ford Interceptor	2019	
21. Portland	C 3	Staff Vehicle	Ford Interceptor	2020	
22. Portland	C 40	Staff Vehicle	Ford Interceptor	2017	

Department	Radio Call Sign	Apparatus Type	Manufacturer	Year	Condition
23. Portland	C 41	Staff Vehicle	Ford Interceptor	2017	
24. Portland	C 42	Staff Vehicle	Chevrolet Suburban	2005	
25. Portland	C 5	Staff Vehicle	Ford Expedition	2019	
26. Portland	C 55	Staff Vehicle	Ford Interceptor	2015	
27. Portland	C 6	Staff Vehicle	Ford Interceptor	2015	
28. Portland	C 7	Staff Vehicle	Ford Interceptor	2015	
29. Portland	C 9	Staff Vehicle	Ford Interceptor	2017	
30. Portland	St 1	Staff Vehicle	Ford F250	2020	
31. Portland	ST 4	Staff Vehicle	Ford F550		
32. Portland	ST 7	Staff Vehicle	Chevrolet Suburban	2006	
33. Portland	Training	Staff Vehicle			
34. Portland	Unit 62	Staff Vehicle	Ford	1995	
35. Portland	Unit 63	Staff Vehicle	GMC	2006	
36. Portland	Unit 81	Staff Vehicle	Ford E350	2015	
37. Raymond	301	Staff Vehicle	Ford Explorer	2022	New
38. Raymond	302	Staff Vehicle	Chevy Tahoe		Good
39. Raymond	Inspector 1	Staff Vehicle	Ford Explorer		Good
40. South Portland	CAR 41	Staff Vehicle	Chevrolet	2020	Good
41. South Portland	CAR 42	Staff Vehicle	Ford	2020	Good
42. South Portland	CAR 44	Staff Vehicle	Chevrolet	2021	Good
43. South Portland	CAR 45	Staff Vehicle	Chevrolet	2008	Fair
44. South Portland	CAR 49	Staff Vehicle	Chevrolet	2013	Good
45. Standish	Assistant Chief	Staff Vehicle	Ford Explorer	2020	Good
46. Standish	Chief	Staff Vehicle	Chevrolet Tahoe	2016	Good
47. Westbrook	Car 1	Staff Vehicle		2,021	
48. Westbrook	Car 2	Staff Vehicle		2,016	
49. Westbrook	Car 3	Staff Vehicle		2,006	
50. Westbrook	Car 4	Staff Vehicle		2,015	
51. Windham	Chief 201	Staff Vehicle	Ford Interceptor	2018	Good
52. Windham	Chief 202	Staff Vehicle	Ford Interceptor	2016	Good
53. Windham	Chief 203	Staff Vehicle	Ford Interceptor	2016	Fair
54. Windham	Unit 216	Staff Vehicle	Ford Interceptor	2013	Fair

Provision of Emergency Services

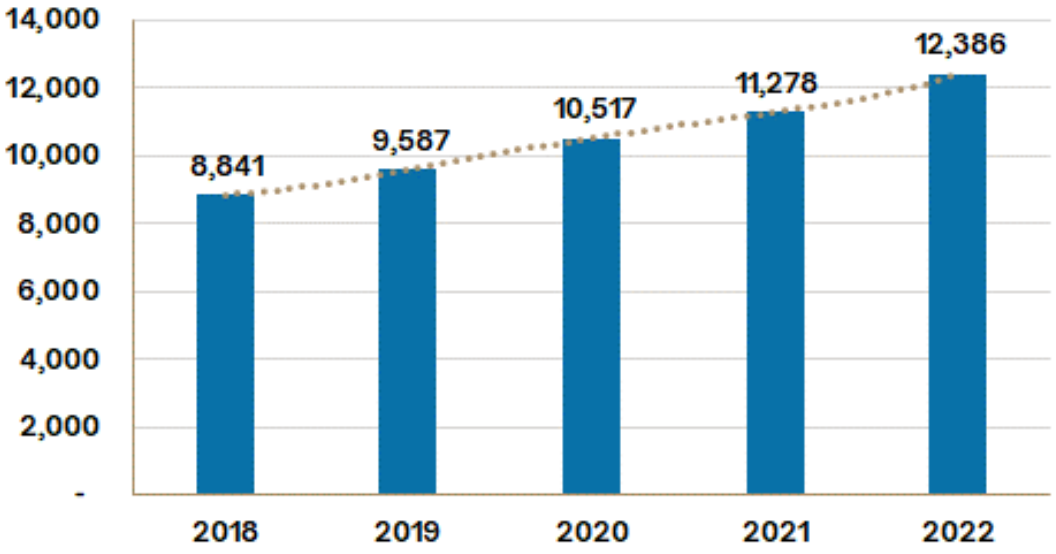
Cumberland County Regional Communication Center Service Delivery Study

The demand for services drives the Cumberland County Regional Communication Center's (CCRCC) goal to provide emergency and non-emergency dispatching services for many public safety agencies within Cumberland County. It serves as the Public Safety Answering Point (PSAP) for 19 of the 28 communities within the County. How CCRCC deploys fire department resources should be reflective of the types of incidents to which the departments respond and the relative frequency of occurrence of these incident types.

Trends in the data provided can provide insights into how service demand may change year to year and the major categories of incident types. Knowing when high-demand periods occur will assist many of the Cumberland County fire departments in determining whether staffing levels are sufficient for that demand and scheduling additional duties such as training, fire safety inspections, and vehicle maintenance.

To conduct this assessment, managers of multiple data sources, including the State of Maine, were solicited for response data; however, Cumberland County has multiple emergency communications centers, and varying levels of participation occurred. Additionally, data from several sources was limited and difficult to coalesce into a workable format or manipulate to produce meaningful results. Because of this, the data below is used as a representative sample as it was the most complete and detailed dataset. This dataset contained responses from 44 of the 56 communities in Cumberland County.

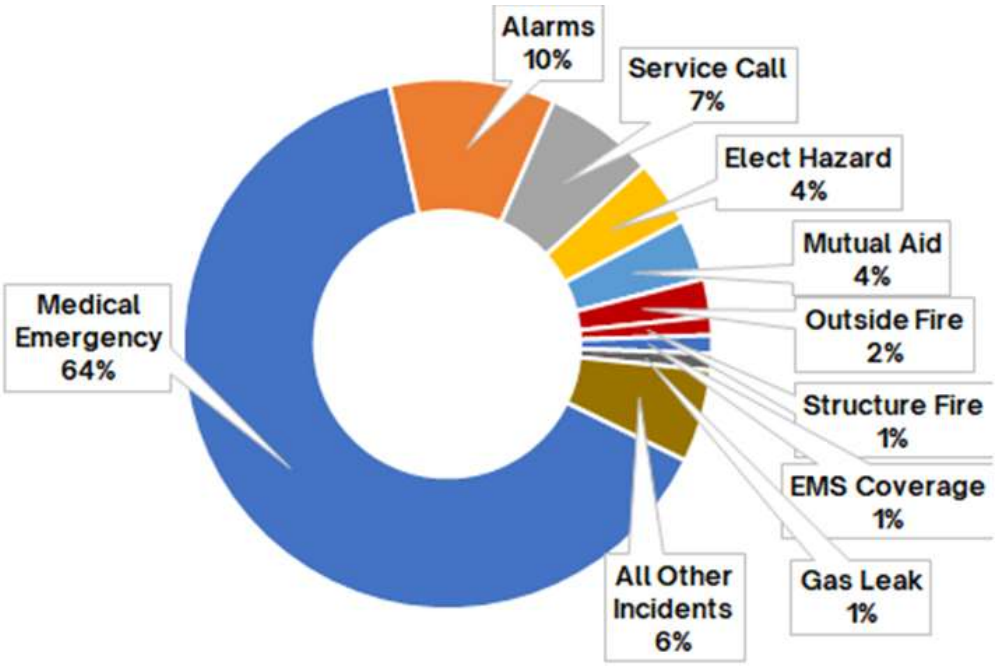
Using Records Management System (RMS) data provided by Cumberland County, the average annual overall increase in incident volume for the five-year study period is nearly nine percent (8.9%), and the overall increase in volume between 2018 and 2022 is more than 40 percent (40.7%). The annual increases each year ranged between 7.6% and 9.9 percent.



Annual Incident Totals

Similar to other PSAPs, CCRCC sees more than 64% of their calls for service related to medical emergencies/incidents. Alarms come in the next highest at 10%. The category of All Other Incidents represents their lower volume of incidents. It should be noted that low volume does not mean low acuity or low risk. Examples include fires, mental health, and back county search and rescue incidents.

Service Demand Call Frequency



During the five years, from January 1, 2018, through December 31, 2022, CCRCC dispatched resources to 56 different communities. The Town of Windham was the largest recipient, with just over nineteen percent of the calls for service (19.2%) dispatched in their community.

Incident Volume by Community
2018-2022

Community	% of Incidents
Windham	19.2%
Gorham	16.0%
Standish	9.6%
Gray	8.5%
Cumberland	5.5%
Harpswell	4.9%
Naples	4.9%
Raymond	4.9%
Casco	4.6%
New Gloucester	4.1%
North Yarmouth	2.6%
Bridgton	2.2%
Harrison	2.2%
Sebago	2.0%
Baldwin	1.80%
Westbrook	1.0%
* Limington	0.9%
Pownal	0.9%
Chebeague	0.7%
* Buxton	0.6%
Falmouth	0.5%
Yarmouth	0.4%
Scarborough	0.4%
Long Island	0.4%
Portland	0.3%
Frye Island	0.3%
* Cornish	0.1%
* Hiram	0.1%
Brunswick	0.1%
* Auburn	0.1%
* Poland	0.1%
* Hollis	0.1%
Freeport	0.1%
* Biddeford	0.1%

* Outside of Cumberland County

During the five years, from January 1, 2018, through December 31, 2022, CCRCC handled 53 different types of incidents. The most common incident dispatched was a medical emergency at 64.3%, followed by fire alarm dispatches at 10.1%.

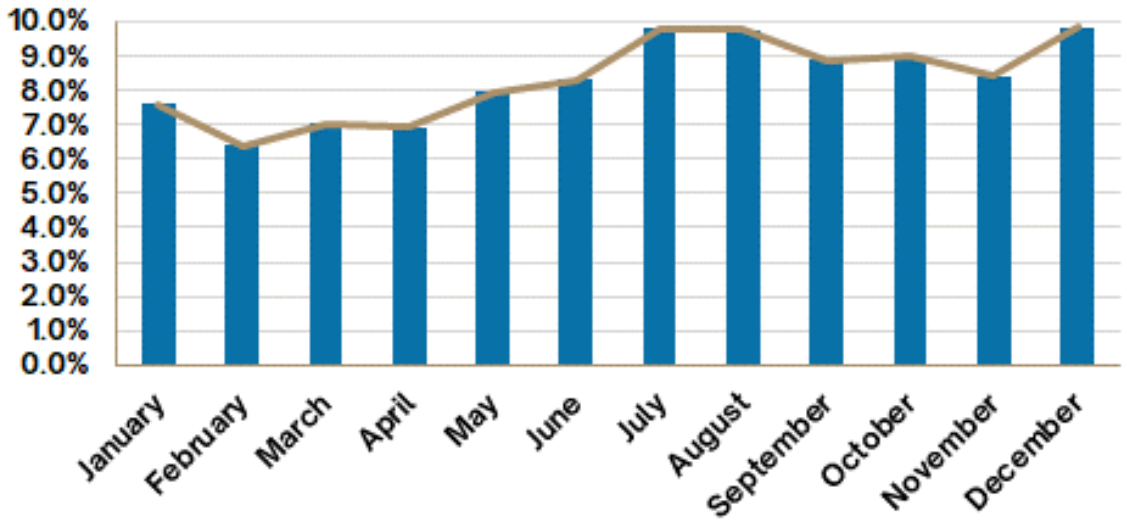
Incident Description by Volume 2018-2022					
Incident Description	# of Calls	% of Total	Incident Description	# of Calls	% of Total
Medical Emer	33,809	64.3%	EMD	34	0.1%
Alarms	5,309	10.1%	Explosion	33	0.1%
Service Call	3,542	6.7%	Road Closure	27	0.1%
Elect Haz	2,104	4.0%	Wilderness	24	0.0%
Mutual Aid	1,960	3.7%	Extrication	17	0.0%
Outside Fire	1,210	2.3%	HAZMAT	17	0.0%
Structure Fire	596	1.1%	Port Big Box	13	0.0%
EMS Coverage	586	1.1%	Lightning	11	0.0%
Gas Leak	531	1.0%	911 Cell Hangup	10	0.0%
Smoke Invest	405	0.8%	Traffic Hazard	10	0.0%
Accident	333	0.6%	Information	7	0.0%
Pmed Intrcpt	290	0.6%	Marine Fire	4	0.0%
Inspection	286	0.5%	Confined Space	3	0.0%
EFD	270	0.5%	Portland 3rd	3	0.0%
Hosp Diversion	239	0.5%	Aircraft	2	0.0%
Odor	220	0.4%	CCRCC Evac	2	0.0%
Vehicle Fire	146	0.3%	Backcountry	1	0.0%
Fuel Spill	140	0.3%	IMAT	1	0.0%
Assist Law	89	0.2%	Lockout	1	0.0%
Citizen Assist	80	0.2%	Mental Health	1	0.0%
Watercraft	58	0.1%	Suicide Attempt	1	0.0%
Assist EMS	51	0.1%	Tank Fire	1	0.0%
Water Rescue	48	0.1%	Train Fire	1	0.0%
Brush Fire	45	0.1%	Weather	1	0.0%
Elevator	37	0.1%	**Total**	**52,609**	**100.00%**

Temporal Variation

Understanding when increases or decreases in service demand are most likely to occur will provide CCRCC with insights into when to anticipate higher or lower levels of service demand and to staff accordingly. By examining demand patterns by month, day, and hour, temporal patterns emerge as to when the greatest demand levels occur. First, temporal variation by month is illustrated.

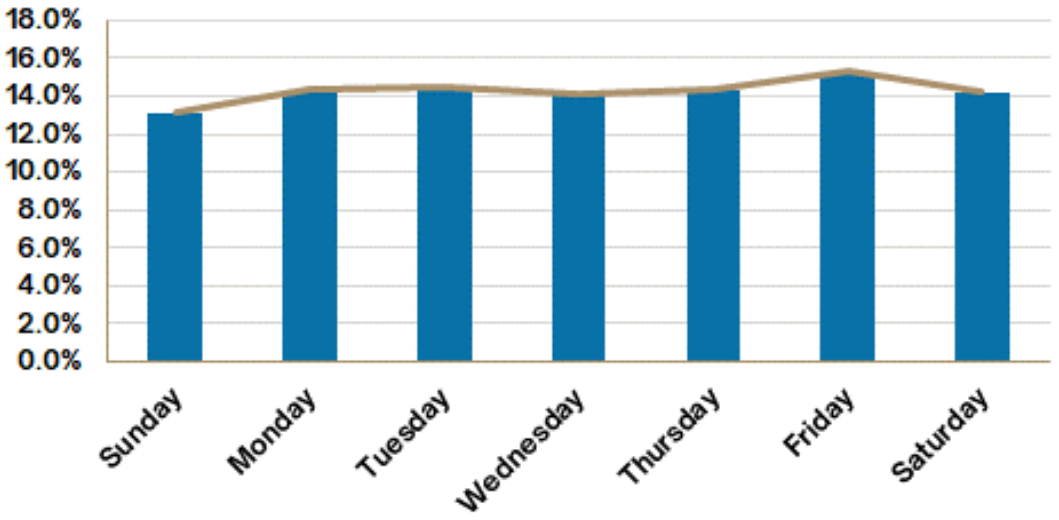
Demand for service by month shows a steady increase in volume beginning in late Spring (May), with only a slight drop in September and October. Their busiest month is December, at just under ten percent (9.9%).

Service Demand by Month
2018-2022



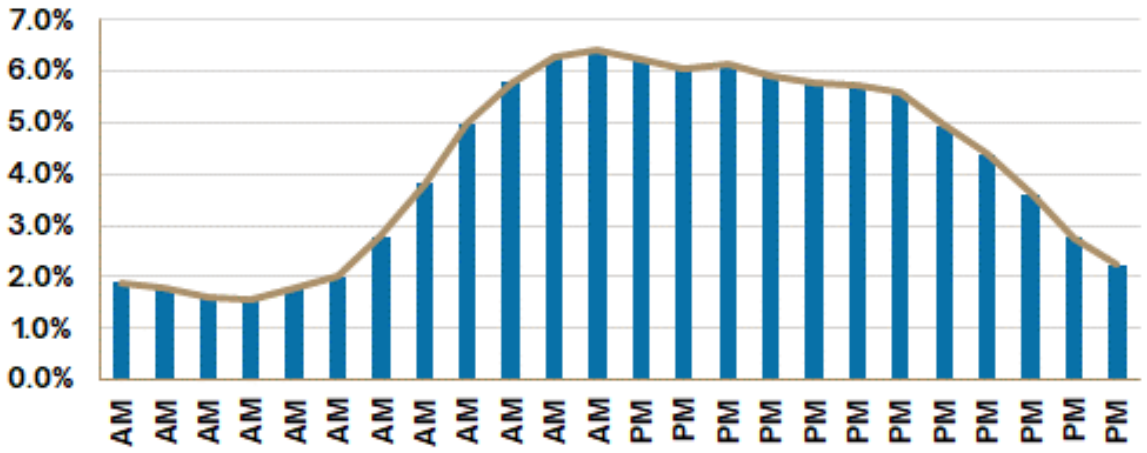
Demand by day of the week displays a typical pattern of service, having an overall sustained increase for days during the work week and a reduction on the weekends.

Service Demand by Day
2018-2022



The demand by the hour of day also follows the typical pattern of demand increasing at the beginning of the day, reaching its peak during the midday and early afternoon, then decreasing throughout the night, with 1 a.m. to 5 a.m. being the hours of lowest demand.

Service Demand by Hour
2018-2022

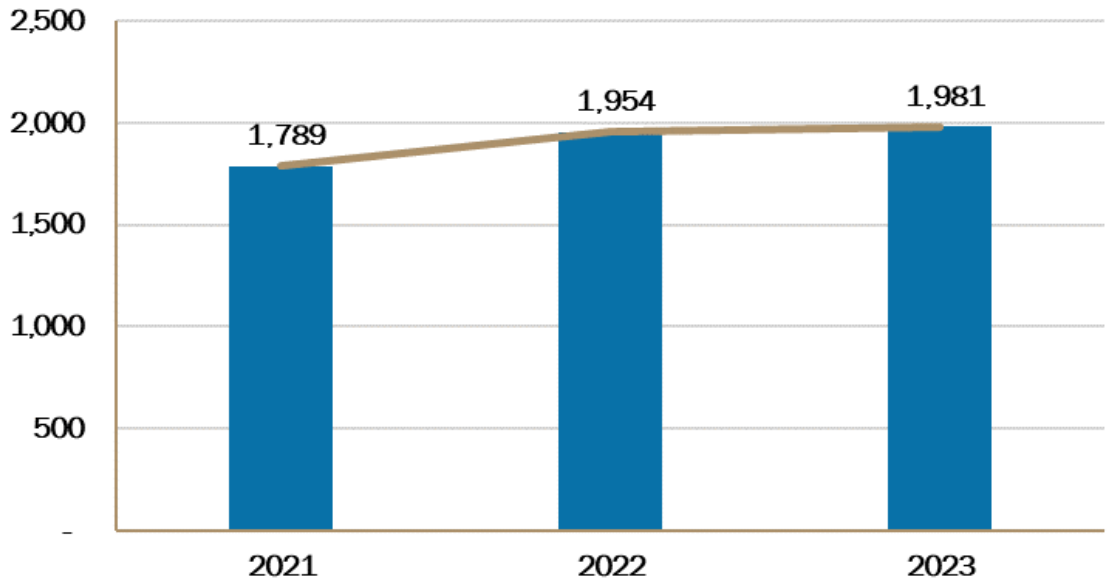


To provide additional insight and analysis, other participating agencies that dispatch fire rescue services within Cumberland County were asked to provide incident data. The next three sections represent cooperating agencies, the City of Falmouth, Cumberland County Emergency Management Agency, and Cumberland County Sheriff's Office.

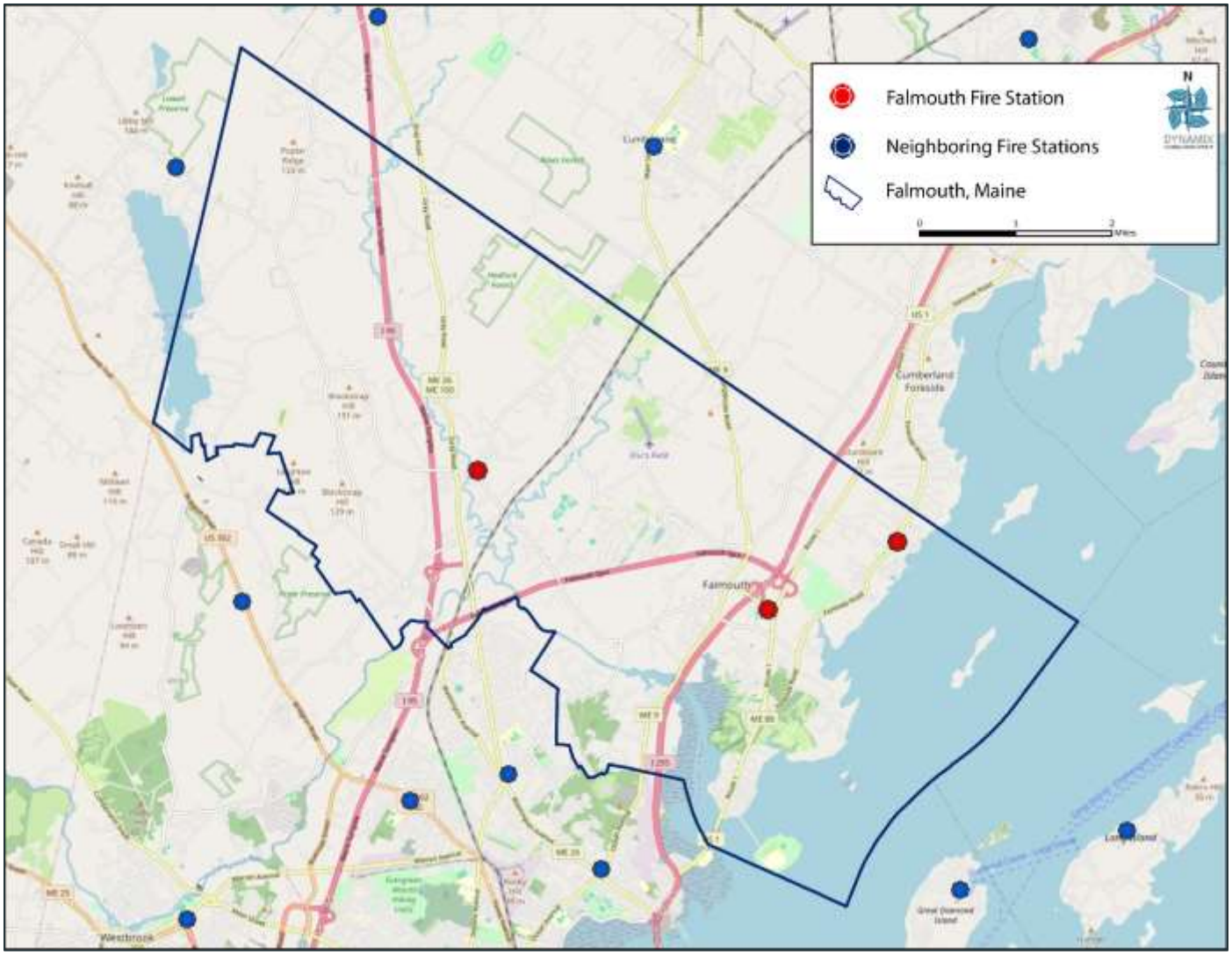
City of Falmouth Service Delivery Study

Annual call volume within the City of Falmouth has increased year-over-year since 2021. Although these increases do not represent a significant rise, the trend toward increased future demand is present.

Annual Call Volume

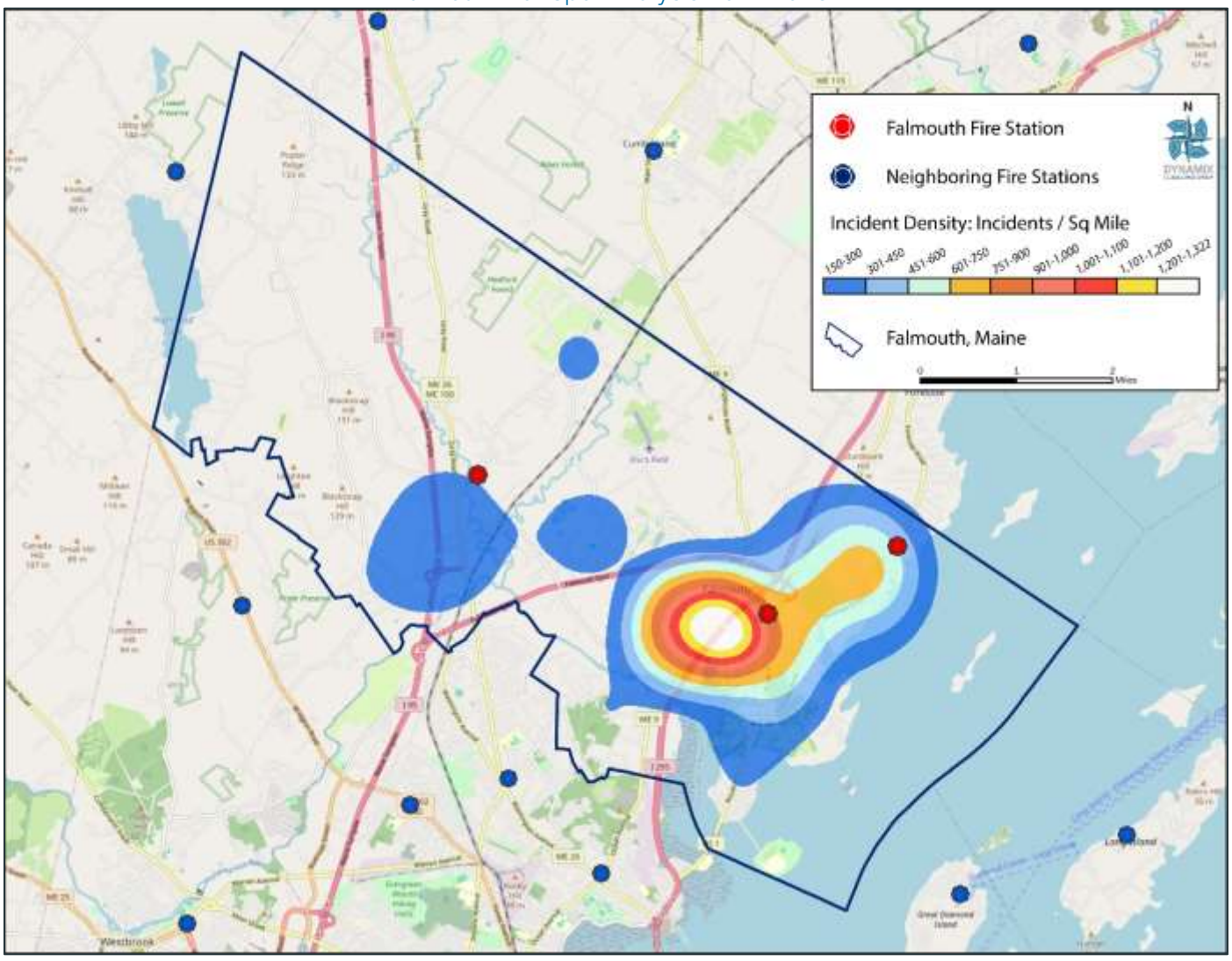


Falmouth Service Area Overview



The next figure provides an analysis of incident density using fire rescue response data from 2019 through 2023. This analysis, commonly referred to as Hot Spot Mapping, calculates areas of greatest demand based on the density of incidents within an area. This analysis does not indicate how many calls actually occurred within each ring but instead provides a way to compare each area to one another. In this analysis, each ring is calculated to display incidents per square mile and provides a range of how densely located calls for service were to each other.

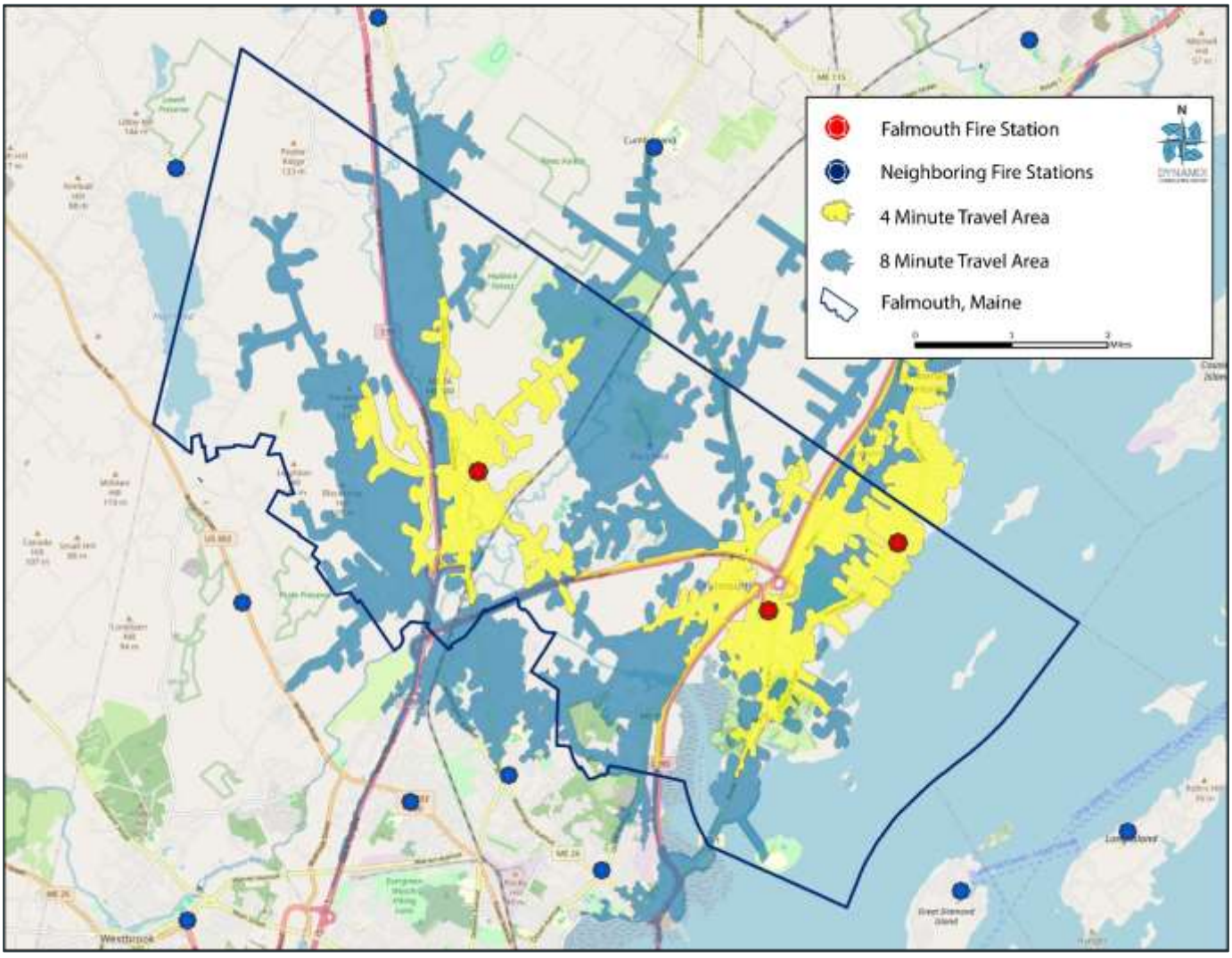
Falmouth Hot Spot Analysis 2021-2023



NFPA 1710 Criteria

NFPA is an industry trade association that develops and provides standards and codes for fire department and emergency medical services for use by local governments. One of these standards, NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, serves as a national consensus standard for career fire department performance, operations, and safety. Within this standard, a travel time of 240 seconds, or 4 minutes, is identified as the benchmark for career departments to reach emergency calls within their jurisdiction with the first arriving unit. Additionally, the balance of the response (called the effective response force) is required to arrive at the incident within 480 seconds, or 8 minutes. The following map provides a synopsis of the Falmouth Fire Department's ability to meet these standards based on predicted travel times using historical traffic data from Esri for traffic patterns at 8 a.m. on Monday mornings. Unshaded pockets indicate that the area falls outside of the model's maximum extension from the road network.

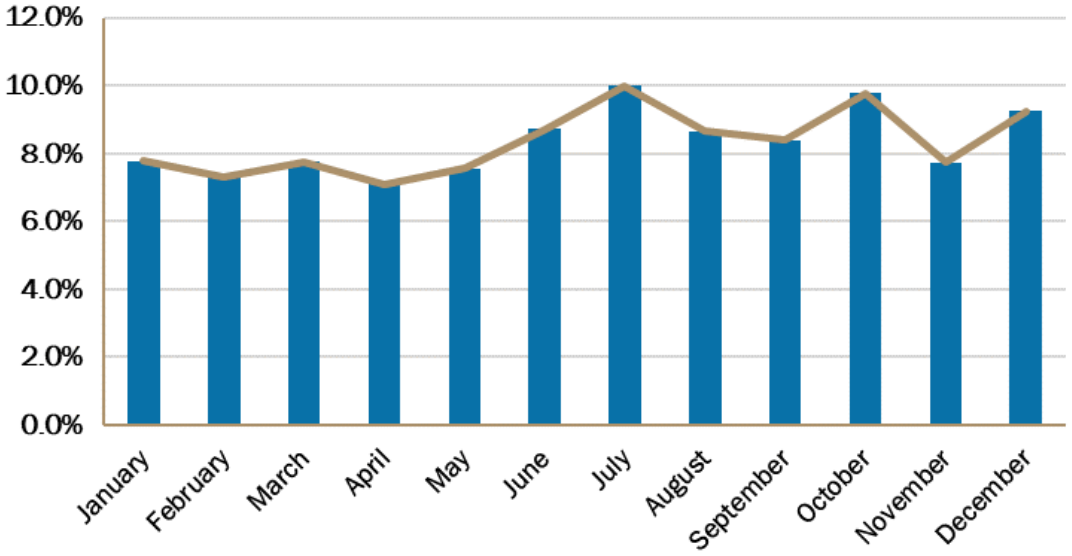
Predicted 4 & 8 Minute Travel Time



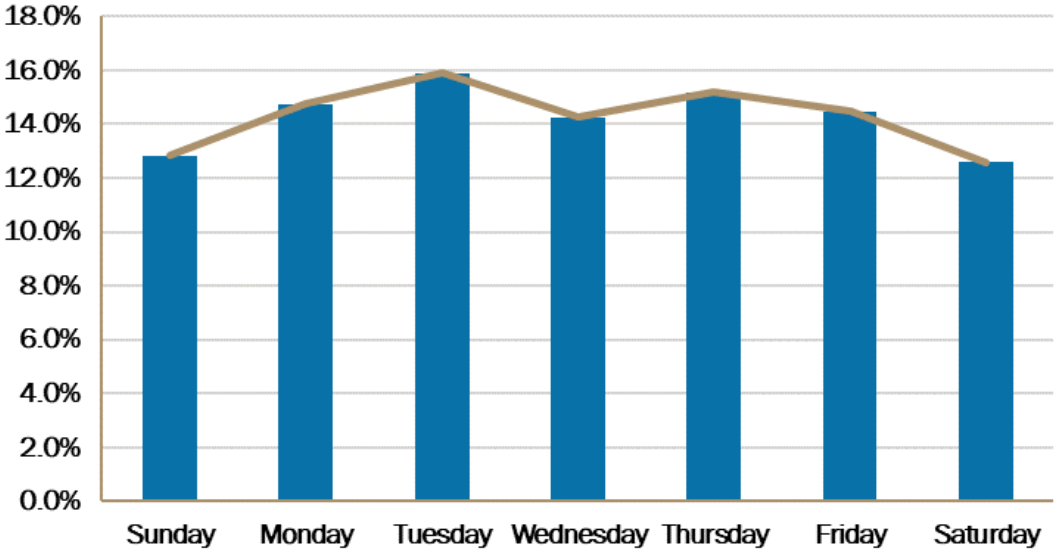
Temporal Variation

Demands for service by month, day, and hour illustrate similar trends to previously displayed data. Overall, demand is greatest during the workweek, during daytime hours, and peaks in the latter half of the year.

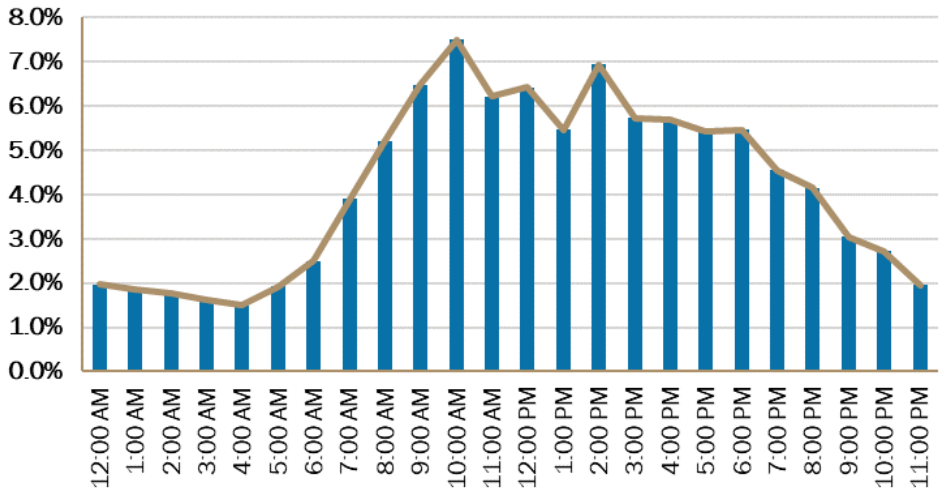
Demand by Month
2021-2023



Demand by Day
2021-2023



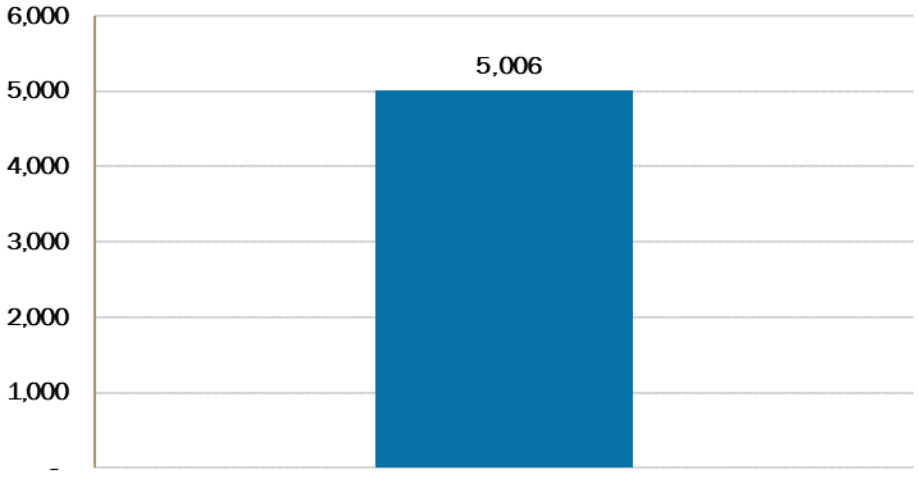
Demand by Hour
2021-2023



Cumberland County Emergency Management Agency/Westbrook Service Delivery Study

Annual call volume within the City of Westbrook was 5,006 calls for service in 2023.

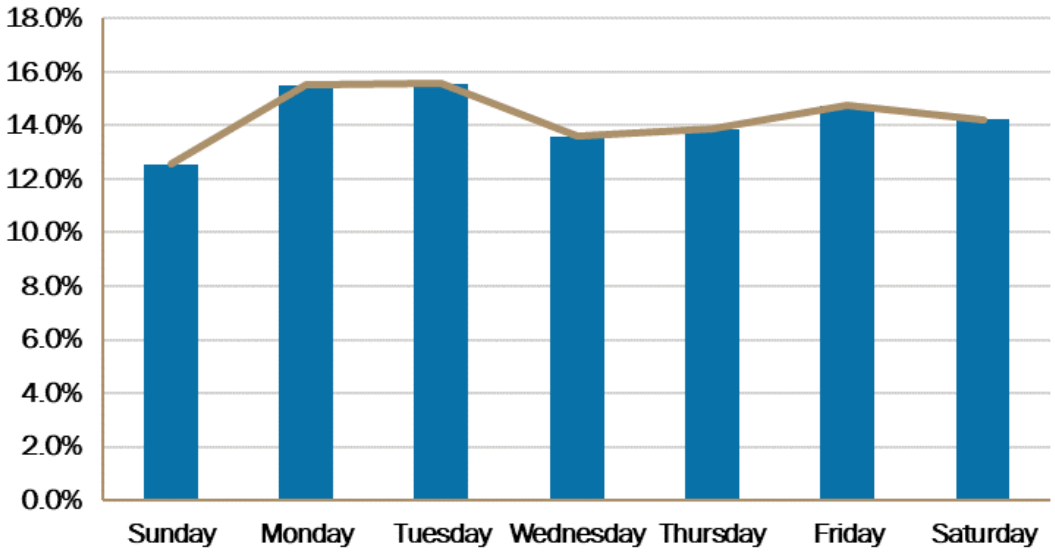
Service Demand
2023



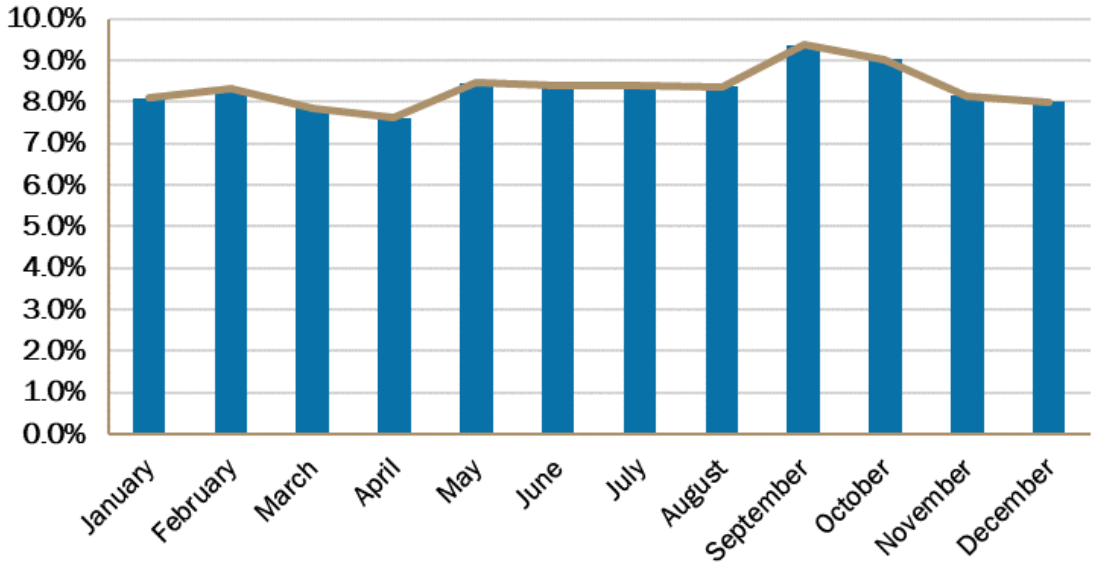
Temporal Variation

Demands for service by month, day, and hour illustrate similar trends to previously displayed data. However, demand is greatest during the beginning of the workweek and daytime hours.

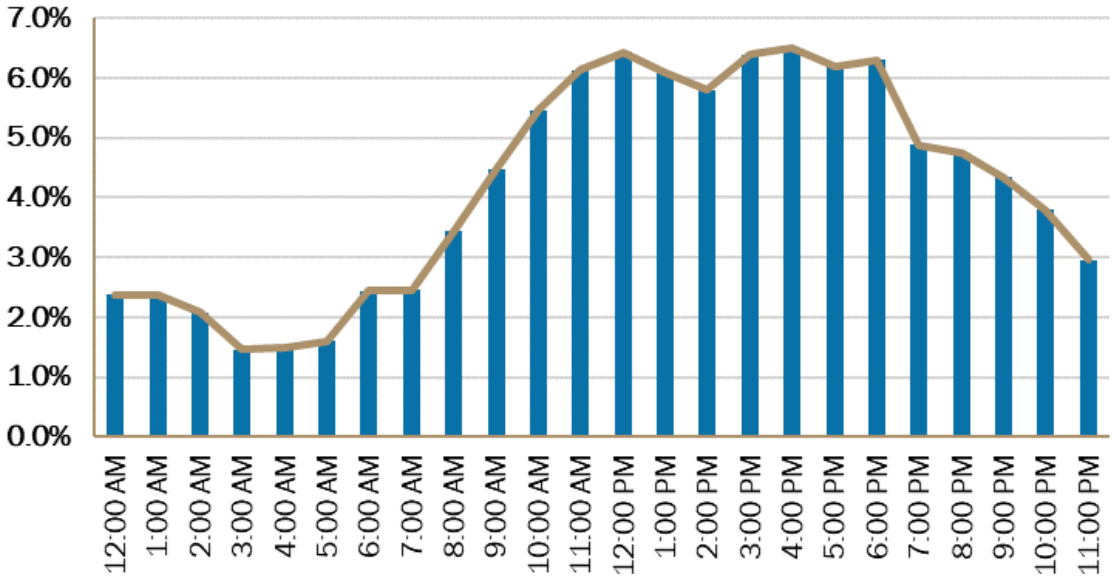
Demand by Day
2023



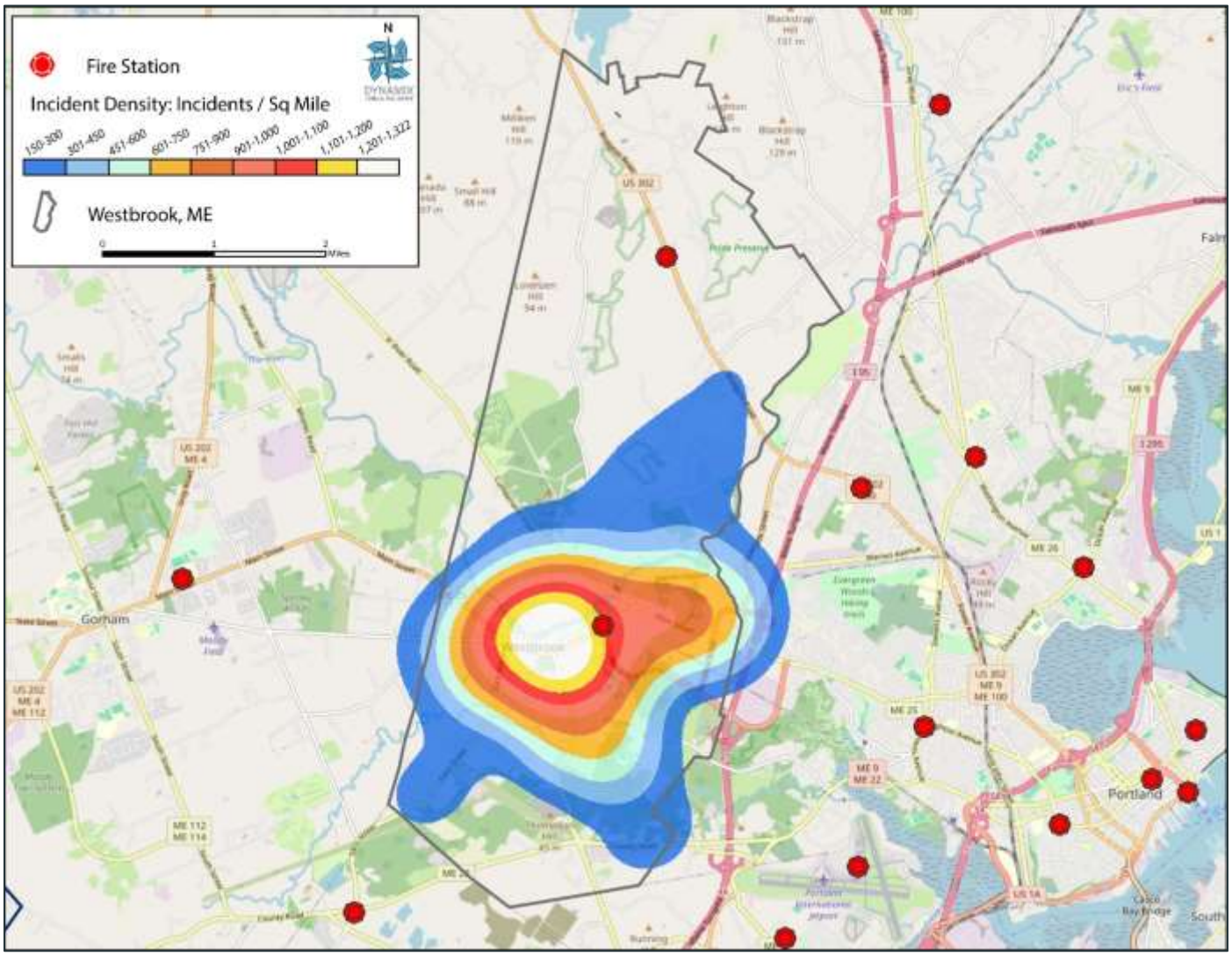
Demand by Month
2023



Demand by Hour
2023



Westbrook Hot Spot Analysis
2023

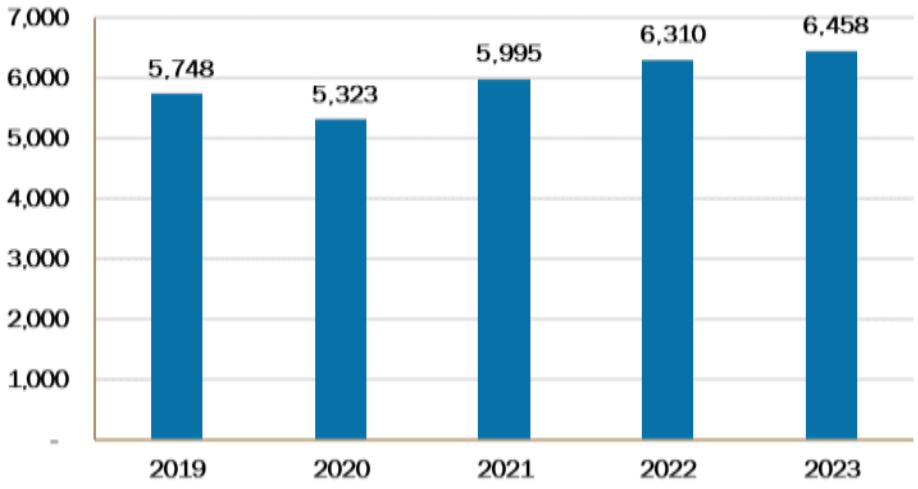


The hot spot analysis indicates that the majority of activity exists in Westbrook's core and radiates out towards the center of the city.

Cumberland County Sheriff's Office Service Delivery Study

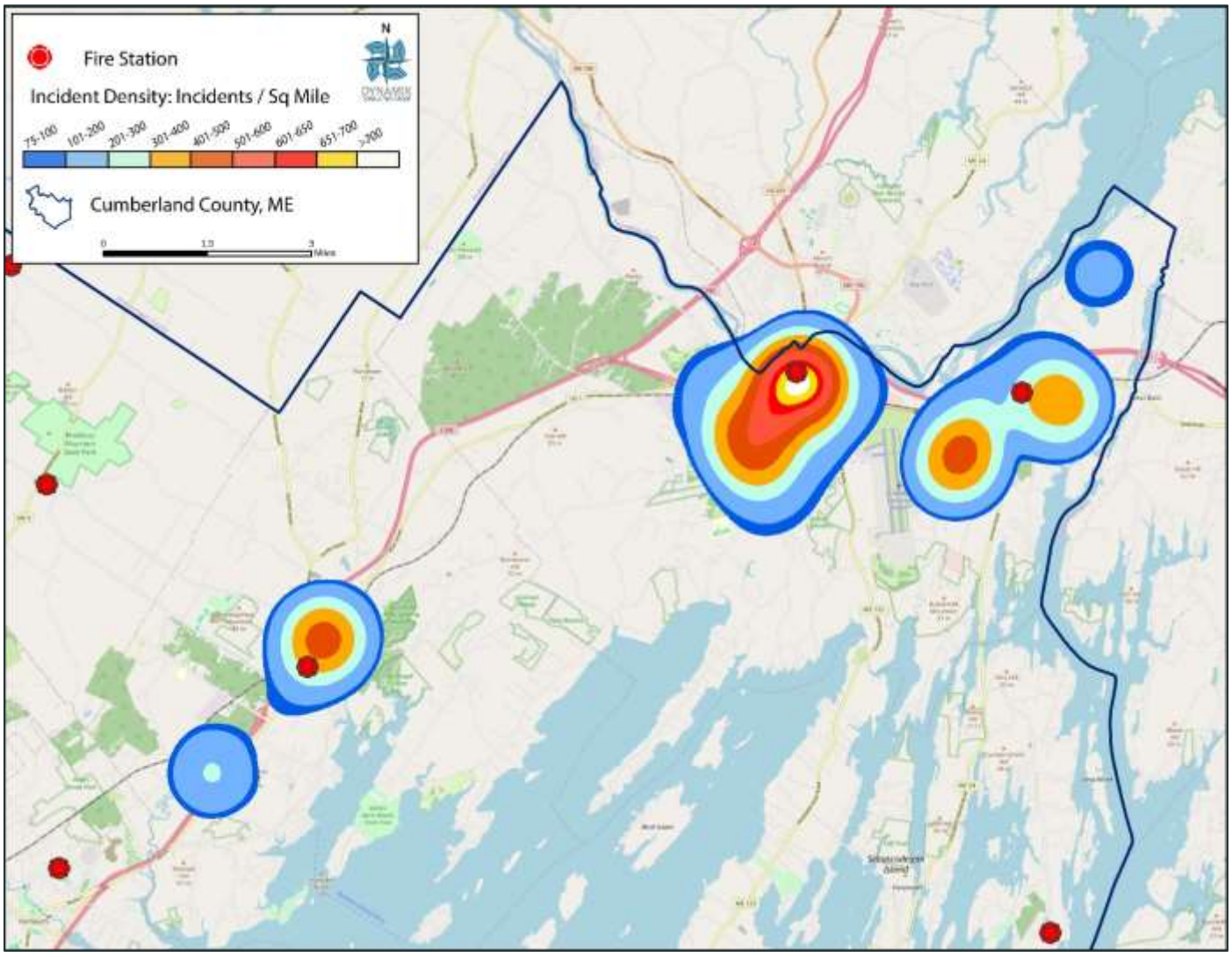
Annual call volume within the Town of Brunswick has increased year-over-year since 2020. Although these increases do not represent a significant rise, the trend toward increased future demand is present.

CCSO / Brunswick Annual Service Demand
2019-2023



Data from the Cumberland County Sheriff's Office indicate that the concentration of service demand activity occurs near and around current fire station locations.

Brunswick Hot Spot Analysis 2019-2023



This concludes the additional data section, all information moving forward portrays Cumberland County as a single entity.

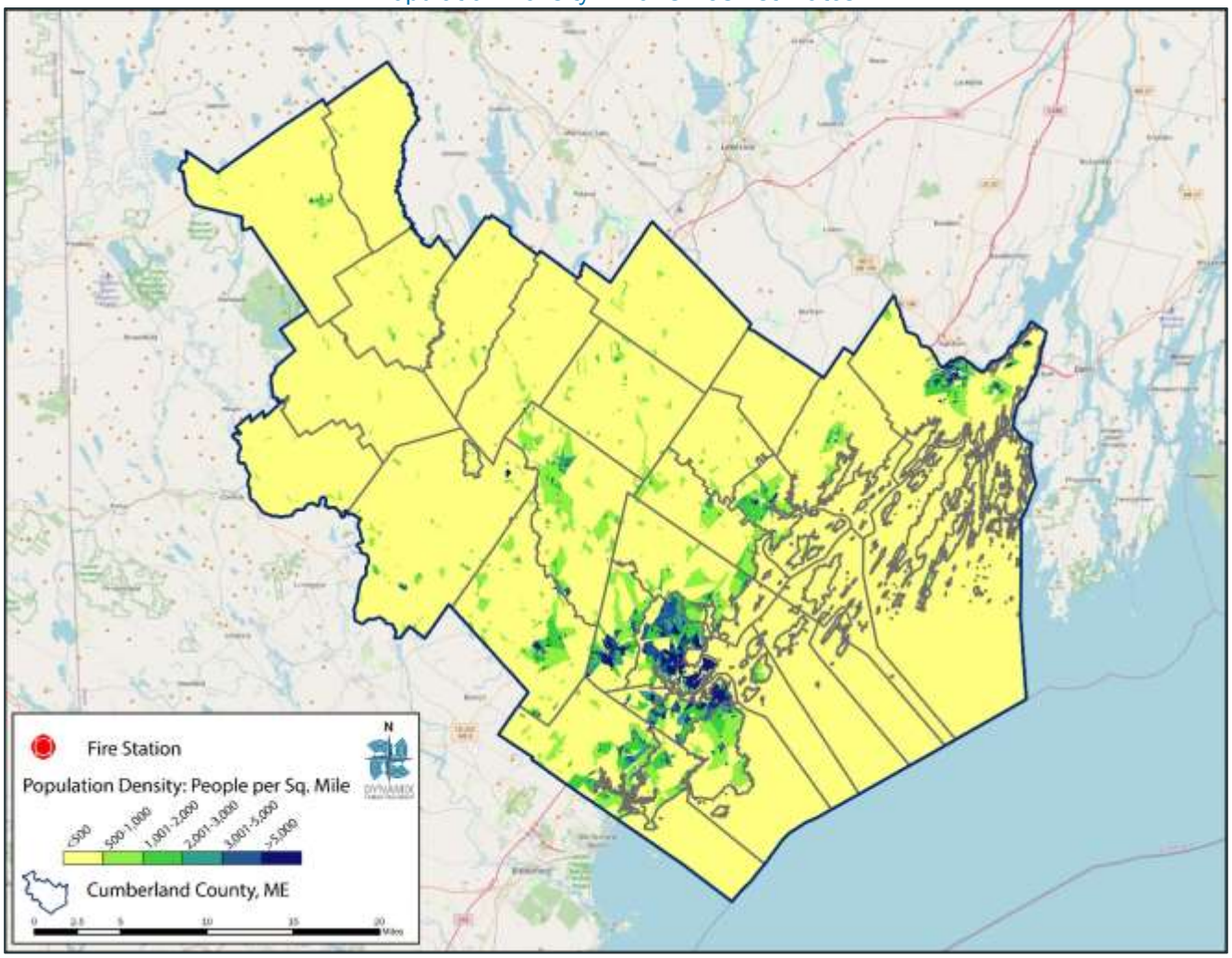
Cumberland County Resource Distribution Analysis

The following narratives portray Cumberland County as a single entity for purposes of data analysis.

Population Density and Geographical Demand

One of the best predictors of service demand is population density. It stands to reason that more people concentrated in a given area will result in higher demand. While the specific demographics of a population can also affect the frequency of service requests, understanding the distribution of population densities is a fundamental element of developing an optimized deployment strategy. For incidents such as fires or major medical events such as cardiac arrest or severe traumatic injuries, the speed at which first-due resources can reach the scene will dramatically affect the responder's ability to resolve the event with a positive outcome. First depicted is the population density of Cumberland County by US Census Blocks using 2023 American Community Survey (ACS) estimates.

Population Density – 2023 ACS Estimates



While dense population centers surround the Portland area, most of Cumberland County is rural, with less than 500 people per square mile.

Resource Distribution Study

The distribution of available resources is one of the key methods to providing higher levels of service to the greatest number of residents possible. This section contains an evaluation of the county using industry standards with a gap analysis performed. The primary industry standard for evaluating and benchmarking fire department performance is NFPA 1710. While other entities provide fire department performance evaluations, such as ISO, NFPA 1710 remains the standard on which these evaluations are based. However, ISO often provides rules of thumb for agencies that cannot complete GIS evaluations, but these rules of thumb are based on typical suburban and urban performance using NFPA 1710. As this is a global study of Cumberland County and only one standard can be used, NFPA 1710 was selected for consistency in reporting; however, it is recognized that several volunteer and combination departments exist within Cumberland County.

NFPA Criteria

The National Fire Protection Association (NFPA) is an industry trade association that develops and provides standards and codes for fire departments and emergency medical services for local governments. Of these standards, NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, serves as a national consensus standard for career fire department performance, operations, and safety. The standard identifies a travel time of 240 seconds, or 4 minutes, as the benchmark for career departments to reach emergency calls within their jurisdiction with the first arriving unit. Additionally, the standard requires the balance of the response (called the effective response force) to arrive at the incident within 480 seconds or 8 minutes.

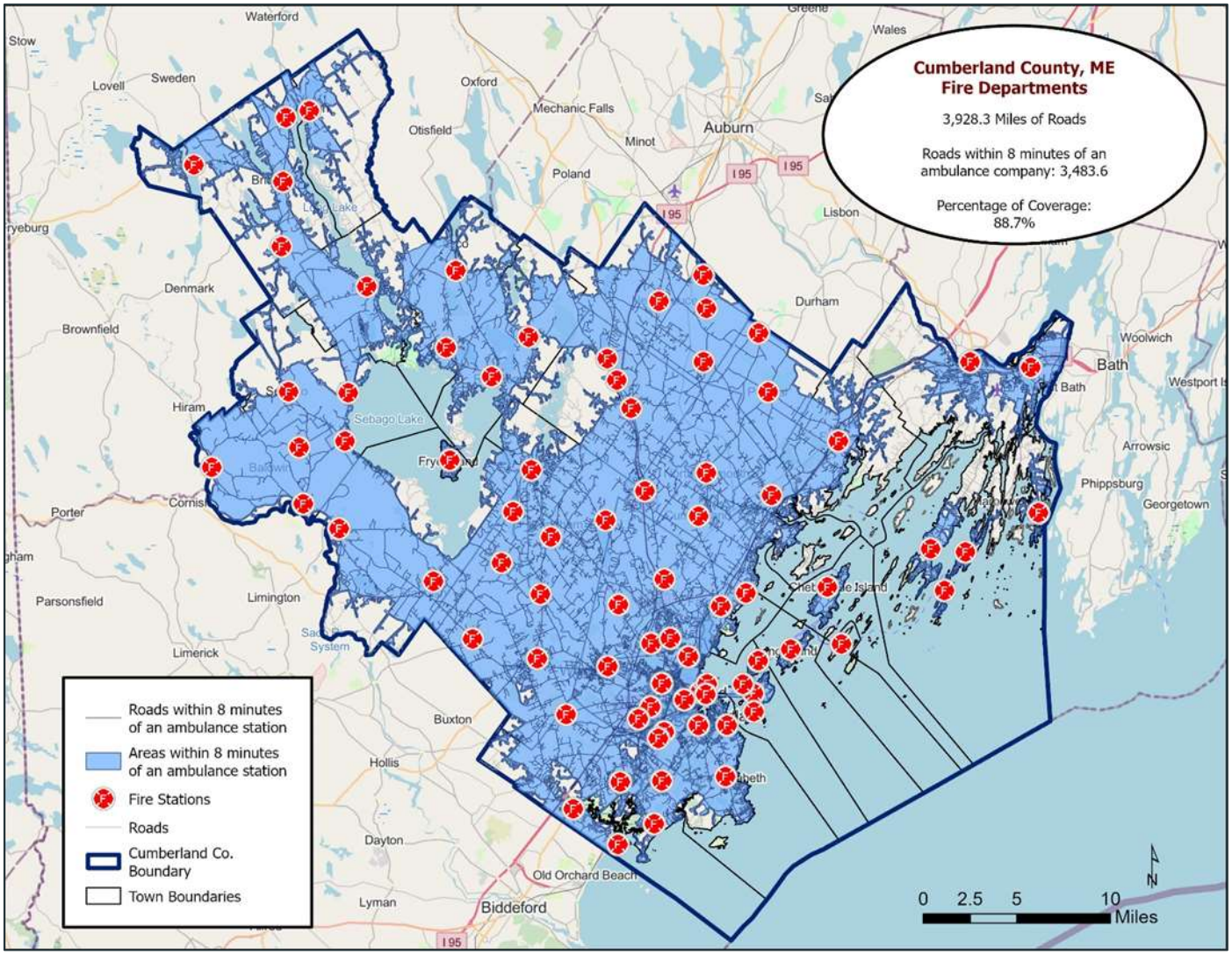
NFPA 1720: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer and Combination Fire Departments* serves as a national consensus standard for volunteer and career fire department performance, operations, and safety. Below is a synopsis of NFPA 1720 performance standards.

NFPA 1720 Table 4.3.2 Staffing and Response Time

Demand Zone	Demographics	Minimum Staff to Respond	Response Time (minutes)	Meets Objective
Urban Area	> 1,000 people/mi²	15	9	90%
Suburban Area	500–1,000 people/mi²	10	10	80%
Rural Area	< 500 people/mi²	6	14	80%
Remote Area	Travel distance ≥ 8 mi	4	Directly dependent on travel distance	90%
Special Risks	Determined by AHJ	Determined by AHJ based on risk	Determined by AHJ	90%

The following map provides a synopsis of Cumberland County fire departments' ability to meet these standards based on predicted travel times using historical traffic data from Esri for traffic patterns at 8 a.m. on Monday mornings. Unshaded pockets indicate that the area falls outside the model's maximum extension from the road network.

NFPA 8-Minute Travel



Given the current deployment model within Cumberland County and the large coverage area, it is predicted that 88.7% of the county lies within an 8-minute travel time of a fire station.

ISO Response Performance

The Insurance Services Office (ISO) uses a classification rating system that assesses communities' fire protection. The Property Protection Class (PPC®) score is a comprehensive rating system that classifies communities on a scale of 1 to 10, with 1 being the best protection and 10 having no protection. The rating system evaluates four key areas: emergency dispatch and communications (10% of the rating), water supply system and distribution capabilities (40%), fire department (50%), and community risk reduction efforts (an additional 5.5% credit is available above 100%).

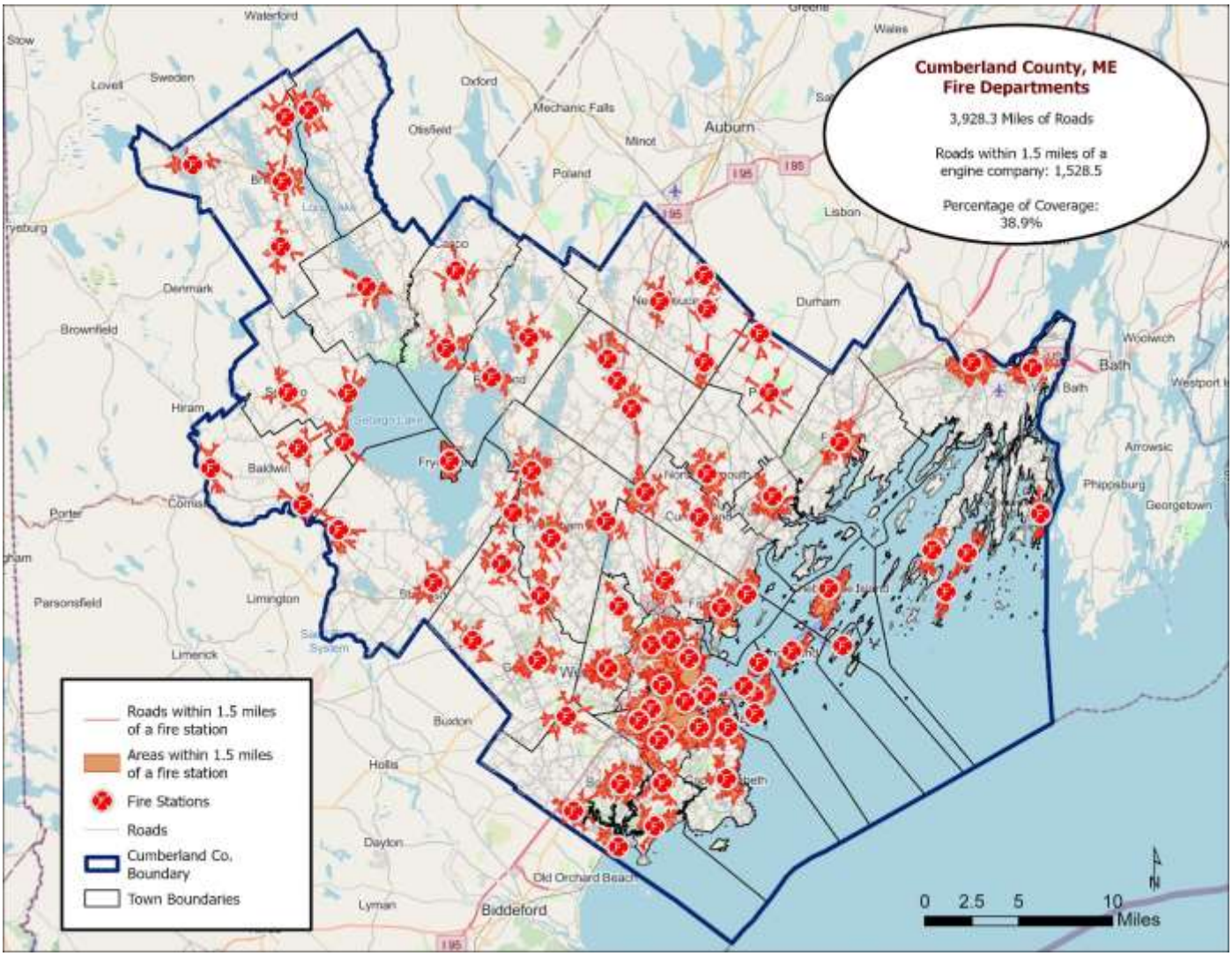
ISO's new rating system provides insurance carriers with a detailed report of a community's fire protection capabilities. The report includes an overall score and detailed information on the four key areas. This information helps insurance carriers determine insurance premiums for properties in a particular community.

The PPC® rating system is a standard approach to assessing fire protection capabilities. It provides insurance carriers with a comprehensive understanding of a community's fire protection capabilities. Additionally, it provides communities with valuable information on areas where improvements can be made to enhance their fire protection capabilities.

Engine Company Performance

According to the analysis, a crucial aspect of a jurisdiction's PPC® score is how many structures protected by the fire department are located within a 1.5-mile service area of a fire station. This is because ISO estimates a 4-minute travel time for first responders, as required by NFPA 1710, using the 1.5 road-mile standards. ISO does not differentiate between career and volunteer departments during their assessment. Based on the ISO engine company travel criteria, the map shows that only 12.3% of Cumberland County falls within this 1.5-mile distance.

ISO 1.5 Mile Engine Company Travel

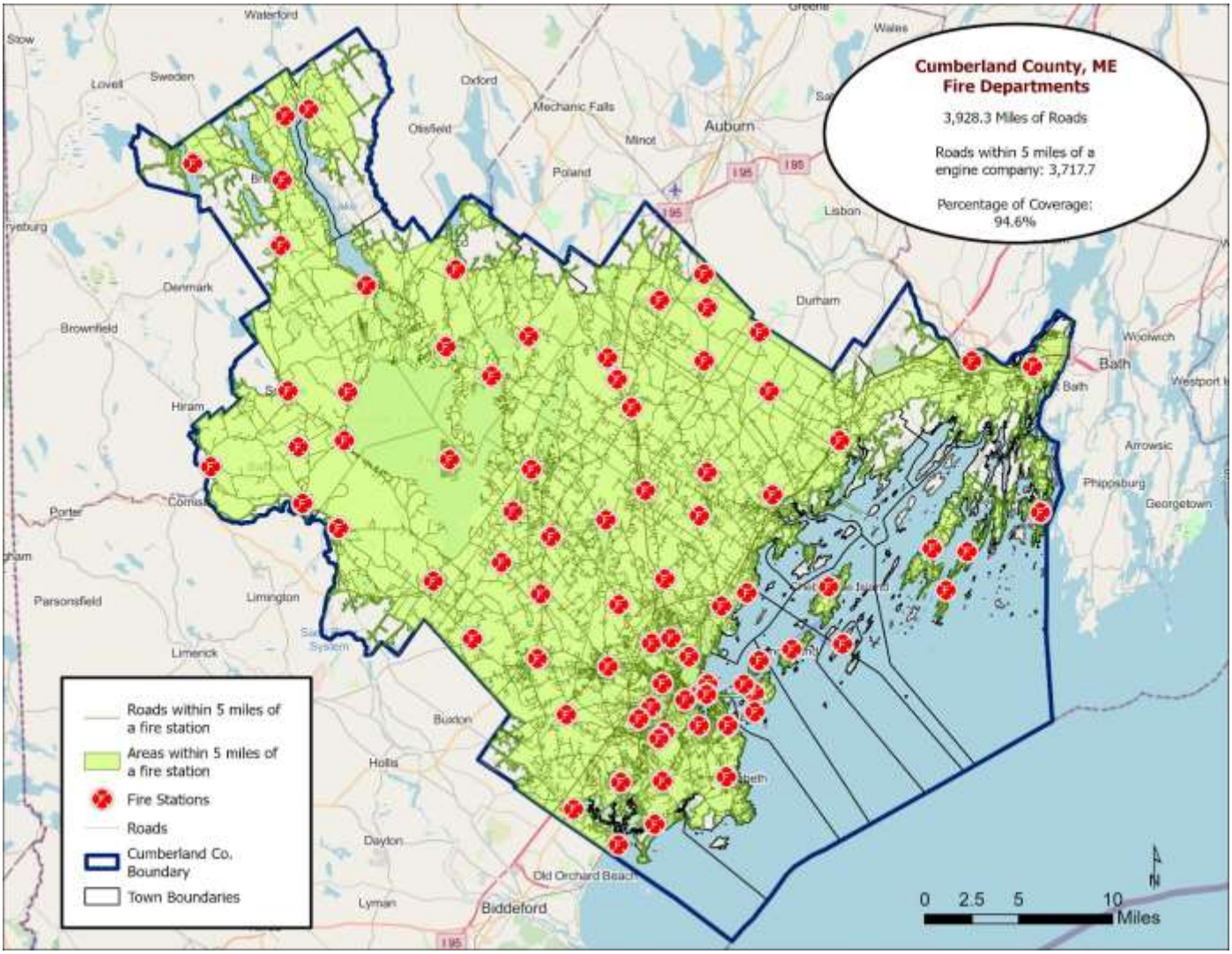


Based upon a 1.5-mile travel from each fire station, the county has coverage for 38.9% of its road base overall. While the ratings are based on individual departments and their respective service areas, this map estimates engine company coverage countywide.

ISO Fire Station Coverage

To receive a PPC® rating that indicates fire coverage is available from ISO, structures must generally be located within 5 miles of a fire station. Areas outside 5 miles are subject to receiving a PPC® rating of 10, meaning no fire department coverage is available. For Cumberland County, all areas are within a five-mile travel from a fire station and are eligible for an ISO fire protection rating. Note that individual service areas evaluate actual assessments, and this map represents countywide coverage.

ISO 5-Mile Fire Station Coverage



Countywide, the current deployment model provides coverage to 94.6% of the county's road base.

Response Reliability Study

No matter how many fire stations or apparatus are positioned within a community, if crews are committed to other tasks, incidents, or otherwise unavailable, an emergency response could be delayed or not occur at all. Resource reliability is evaluated using several metrics to establish a global perspective on Cumberland County's ability to provide sufficient responding resources to meet service demand within the county. When all units are available and in quarters, supplying sufficient resources is typically not a problem; however, when multiple calls occur simultaneously, units are committed to incidents for extended periods, or when insufficient resources exist to mitigate an emergency, further preparation and planning safely and effectively must be completed.

This evaluation of concurrent incident county is from CCRCC's perspective. This does not represent concurrent calls for a single fire department or community.

Call Concurrency

Call concurrency compares how often multiple calls occur and places additional demand on system resources. A concurrent call occurs when an available unit is dispatched to a separate incident before the first committed unit clears the scene and becomes available. When two incidents coincide, a third incident is dispatched, three concurrent calls are present, and so on. While this analysis presents all fire resources countywide, it is understood that individual departments will experience higher or lower values based upon their individual demand; however, for mutual aid or high-risk incidents requiring multiple resources, this is instructive regarding the overall availability of fire units within Cumberland County.

Call concurrency provides data points as the percentage of time single or multiple events are presented as single, two, or three, etcetera. By monitoring this metric, administrators can determine if on-duty resources are sufficient to meet demand and how this changes over time.

Concurrency	
Single Incident	18.83%
2	27.07%
3	18.34%
4	10.38%
5	5.10%
6	2.51%
7 or more	6.50%

While a global perspective on call concurrency is difficult to draw meaningful conclusions from, nearly 80% of the time, multiple calls are occurring within the county. This can affect a department's ability to send or receive mutual aid or to muster sufficient resources on moderate to high-risk incidents.

Performance Summary

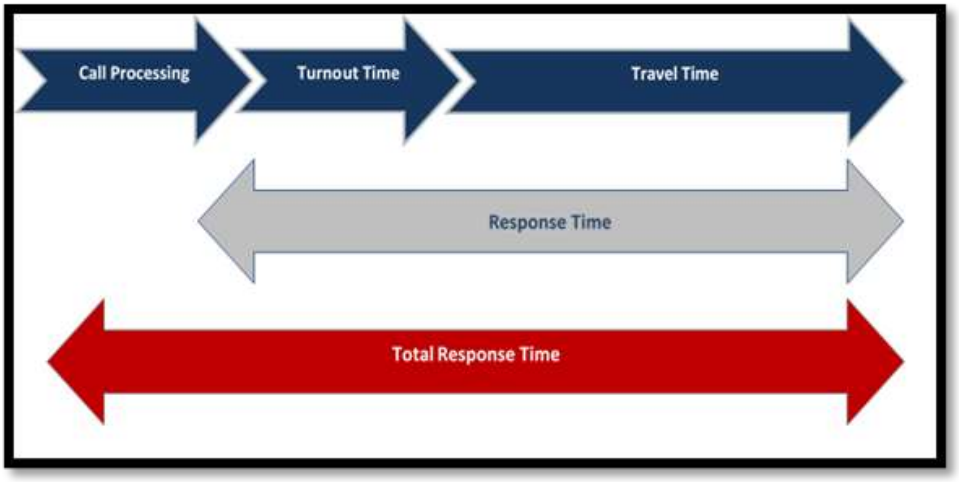
The most visible element of a fire department is its response performance. How quickly units arrive on the scene and how efficiently they resolve an emergency are typically the only interactions most residents will have with the fire department. To evaluate the Department's system performance, NFPA 1710 is the applicable standard for career fire departments.

Response time performance is comprised of the following components:

- **Call-Processing Time:** The amount of time between answering a call by the 911 Primary Public Safety Answering Point, or dispatch center, and dispatching of resources.
- **Turnout Time:** The time interval between response unit notification of the incident and apparatus response.
- **Travel Time:** The amount of time the responding unit actually spends on the road traveling to the incident until arrival at the scene. This is a function of speed and distance.
- **Response Time:** This time calculation is from the time of dispatching the fire department to the arrival of the first apparatus. Response Time equals the sum of "Turnout Time" and "Travel Time."
- **Total Response Time:** This is the most apparent time to the caller requesting emergency services. Total response time is the amount of time that occurs from the time they place the emergency call until the units arrive. This time often includes factors both within and outside the fire department's control, particularly when another agency provides dispatch services.

Tracking the individual components of response time will enable Cumberland County to identify deficiencies and areas for improvement. Once the current performance for Call Processing, Turnout Time, and Travel Time are understood, this information can be used to develop response goals and standards that are both relevant and achievable. Fire service best practices recommend that fire service organizations monitor and report the components of Total Response Time.

The Time Continuum is comprised of the three elements described above—Call Processing, Turnout Time, and Travel Time. Response Time is a combination of Turnout and Travel Time, and Total Response Time is the sum of all the times starting with the Call-Processing Time, Turnout Time, and Travel Time. The components of the Response Time Continuum will each be discussed in further detail in the following sections, and results will be provided where data is available.



Historically, fire rescue service providers have used the performance measurement of average response to describe the levels of performance. The average is a commonly used descriptive statistic, also called the mean of a data set. Averages may not accurately reflect the performance of the entire data set because data outliers can significantly skew averages, especially in small data sets. One extremely good or bad value can skew the "average" for the entire data set. Percentile measurements are a better measure of performance since they show that most of the data set has achieved a particular level of performance. The 90th percentile means that 90% of responses were equal to or better than the performance identified and that the other 10% are data outliers, inaccurate data, or situations outside of normal operations that delayed performance. This can be compared to the desired performance objective to determine the degree of success in achieving the goal.

An important consideration when evaluating fractile performance is that the results of each category are not additive, meaning that the sum of two or more constituent metrics cannot be simply added together to find the sum. This is because each dataset is discrete and, as such, must be observed individually, particularly when data quality is an issue. If a metric, such as response time, possesses the majority of its data points, while turnout time is not accurately documented, a significant difference can exist between the response time calculated using the fractile descriptive and the sum of turnout time and travel.

In evaluating the various response time components using the fractile analysis method, each component must be evaluated and quantified separately, as the available data—and the quality of the data may vary significantly.

To provide an analysis of performance for emergency calls within Cumberland County, the following assumptions occur:

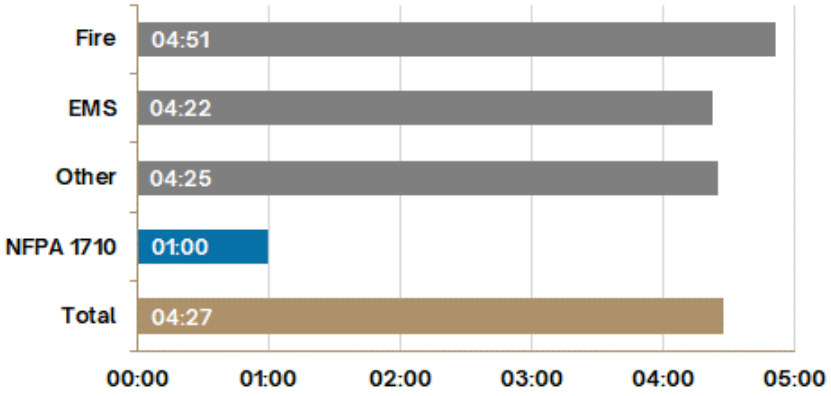
- Non-emergency incident types were removed
- Mutual and auto aid given were removed
- Other aid given were removed
- NFIRS call types within the 500, 600, 800, and 900 series were removed
- Cells containing zeros or no value were removed

Additional limitations within the data included limited data points for analysis. For the data evaluated, only call processing could be produced.

Call Processing Time

The industry standard for call processing (or alarm handling) is NFPA 1221: Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems. This standard provides for communication centers to have processing times of not more than 60 seconds 90% of the time. For special operations, calls requiring translation, or other factors described in the standard, times should not exceed 90 seconds at the 90th percentile. The CCRCC handles this component of the process. Dynamix Consulting Group recommends that individual fire departments actively work with their respective communications center to ensure compliance with NFPA 1221.

Call Processing Performance



The call processing times listed above are for specific incident types that are typically considered emergency incidents. Fire is represented by the CAD incident type "FI Structure," EMS is represented by the CAD incident type "FI Medical Emergency," and other as "FI Alarms."

Turnout Time Performance

The second component of the response continuum, and one directly affected by response personnel, is turnout performance. Turnout is the time it takes personnel to receive the dispatch information, move to the appropriate apparatus, and begin responding to the incident.

In career fire stations, companies should turn out within 60 seconds at the 90th percentile for most emergencies and 80 seconds for fires and special operations incidents. In combination and volunteer-staffed stations, NFPA 1720 calls for a 90th percentile turnout performance of 90 seconds for fire and special operations calls. For unstaffed stations, the AHJ determines the turnout time goal.

At the time of the study, specific data required to calculate this metric were not available.

Travel Time Performance

The third component of the response continuum is travel time. It is important to understand that travel time is not specifically a factor of speed as much as it is the result of the proper placement of fire stations from which emergency responses begin. Travel time is the amount of time between when the apparatus departs for the call and when it arrives on the scene. The measurement for NFPA 1710 is at the 90th percentile. NFPA 1720 has no requirements for travel time; however, without an understanding of travel time performance, it can be challenging to determine whether projected and actual performance is on par with one another. Traffic congestion, construction, and the condition of the road network are all potential factors in delaying a response.

At the time of the study, specific data required to calculate this metric were not available.

Response Time Performance

Response time is the amount of time from initial notification to the fire department until the first unit arrives on the scene. NFPA 1710 does not have a standard for response time; however, it can be inferred by turnout and travel requirements. NFPA 1720 specifically addresses this metric and is a combination of turnout and travel time where, in an urban setting, 15 firefighters arrive on scene within 9 minutes of initial notification 90% of the time for hazards such as fires. For EMS and other responses, the AHJ establishes the goal. This is nearly identical to NFPA 1710 requirements.

Response time performance is the calculation of the difference between the initial notification time and the arrival time.

At the time of the study, specific data required to calculate this metric were not available.

Total Response Time Performance

The culmination of the Response Time Continuum is total response time. When citizens call for emergency assistance, this metric represents what they experience as they place the call and wait for help to arrive. Total response time is the amount of time that elapsed from when the call was initiated at the communications center until the first emergency unit arrived on the scene. Neither NFPA 1710 nor NFPA 1720 provide a standard for this metric; however, this is the metric that describes what the person in the emergency is experiencing.

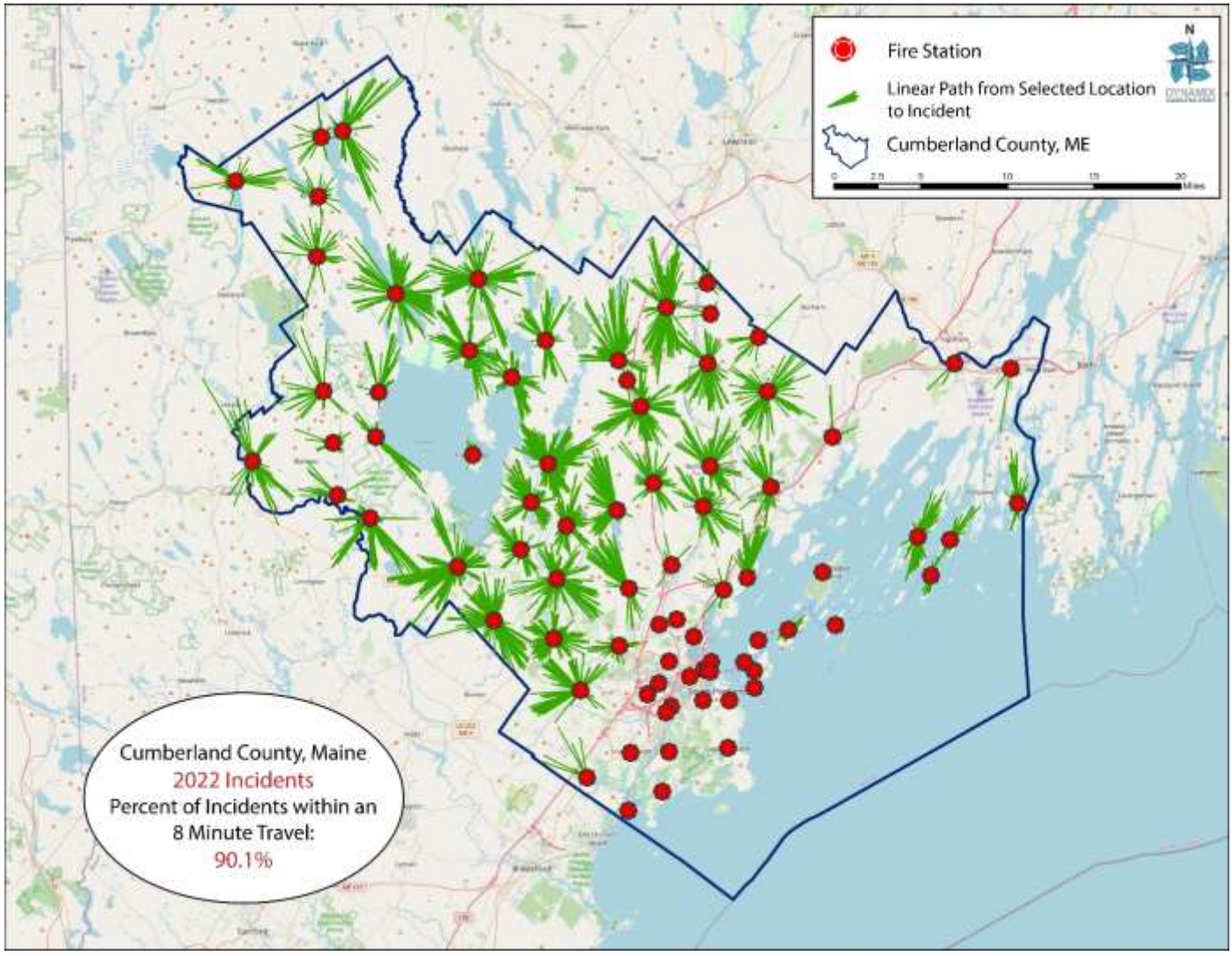
At the time of the study, specific data required to calculate this metric were not available.

Station Optimization Analysis

GIS software was used to describe the number of emergency calls occurring in 2022 within 8 minutes of a fire station to provide additional information for Cumberland County regarding opportunities for collaboration and deployment effectiveness. The purpose for selecting 8 minutes is based on the rural nature of Cumberland County, with EMS representing the majority of service demand. NFPA 1710 standards seek to have an ambulance on the scene within an 8-minute travel time to EMS emergencies 90% of the time. Due to a lack of data, the City of Portland and areas south were excluded from this assessment.

First, a baseline assessment was conducted as a comparison.

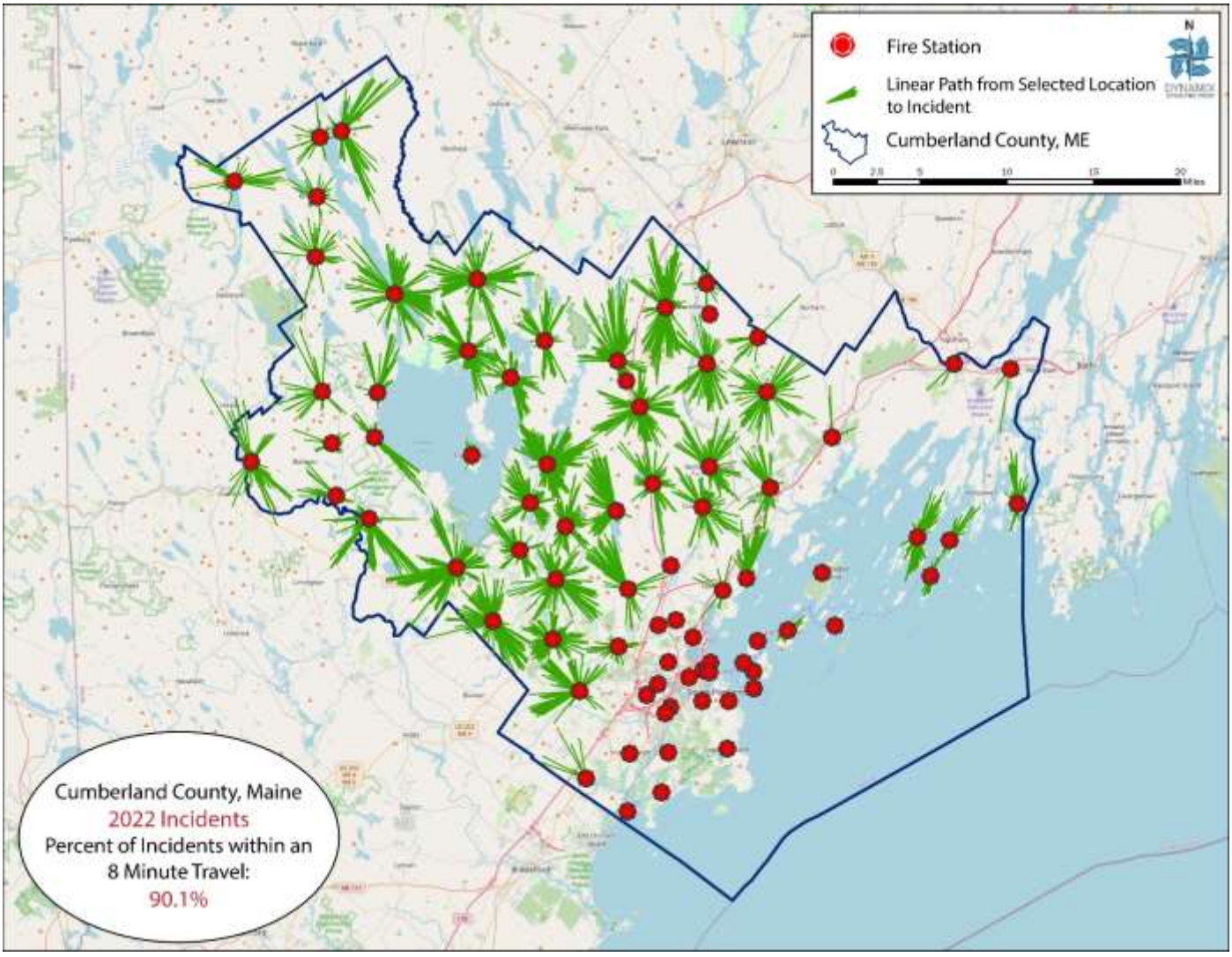
Baseline Assessment 8 Minute Travel – 2022 Emergency Incidents



In the county's current deployment model, 90.1% of all emergency incidents occurring in 2022 were located within an 8-minute travel time of a fire station. While it is understood that not all resources provide EMS, and many of the stations are not staffed, this model's purpose is to evaluate the distribution of fire stations to identify potential collaborative efforts.

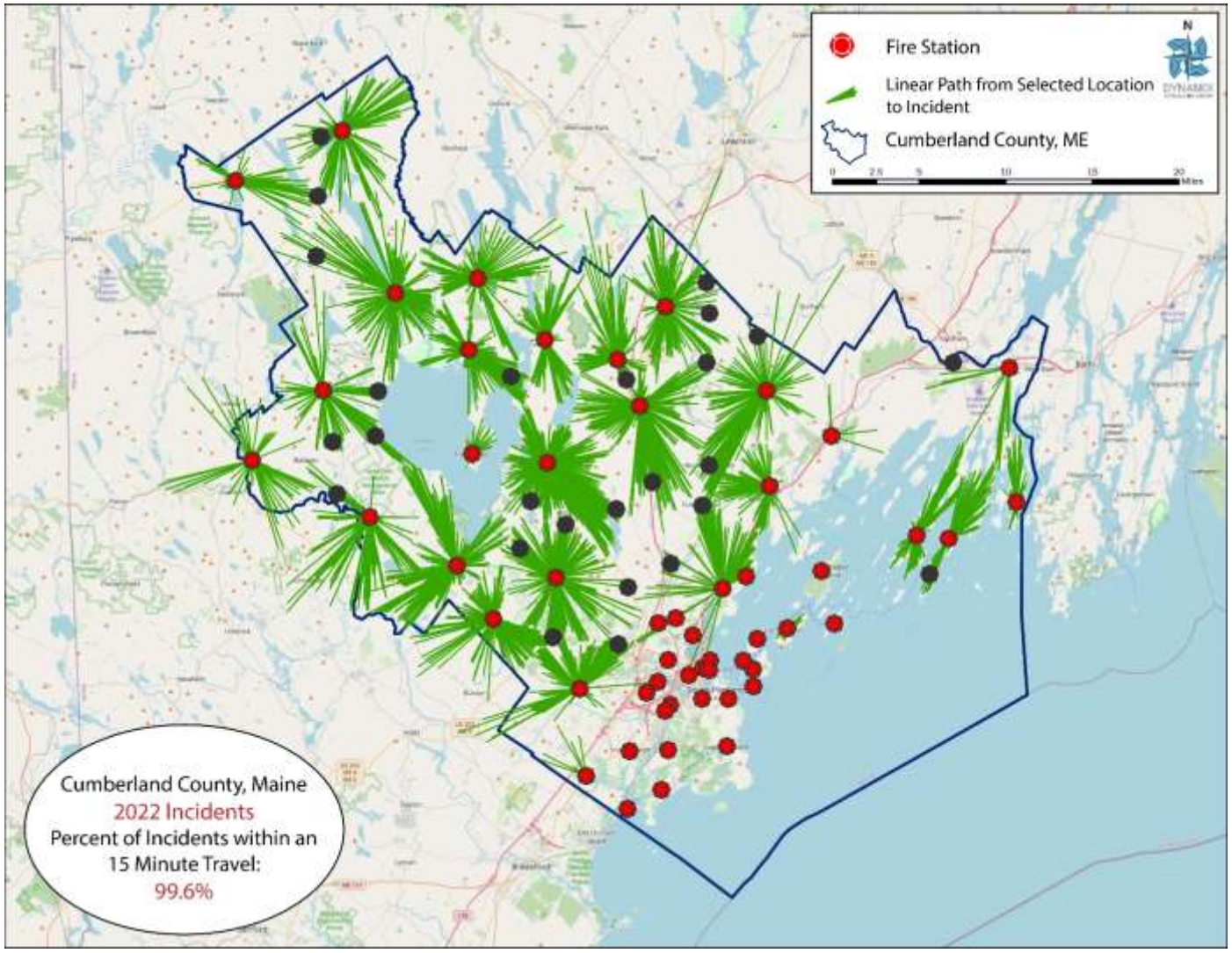
Next, an analysis was conducted to determine the minimum number of stations required to service the demand within Cumberland County with an eight-minute travel time. Based on the distribution of fire stations within the County, the model reached an identical conclusion with the current configuration as the results were identical and all stations remained.

Station Optimization – Minimum Number of Stations with an 8 Minute Travel - 2022



Finally, given the rural nature of most areas under evaluation, the same analysis was completed using a 15-minute travel time.

Station Optimization – Minimum Number of Stations with an 8 Minute Travel - 2022



Using a 15-minute travel time, only 28 of the 55 fire stations were selected, with 99.6% of incidents occurring with a 15-minute travel time; however, performance is significantly reduced to achieve this gain in coverage.

Fire station coverage within Cumberland County appears to provide excellent performance when measured at an eight-minute travel time. During optimization, the model agreed with the current deployment model for the most effective coverage of the county. When performance objectives are degraded, some opportunity for consolidation exists, resulting in an increase in performance; however, as public safety organizations serve the public, efficiency is not the primary object of the services provided. Overall, the fire departments within Cumberland County appear to be well located and evenly distributed based upon an eight-minute travel time.

Emergency Medical Services Support and System Oversight

Hospital Effects on EMS System Design

When gauging the capabilities and efficiencies of a high-performance EMS system, the destinations of the patients needing access play a crucial role. An EMS system is designed to transport patients to the most appropriate facility for their condition and ensure that calls for service continue to be answered during the individual transports. Knowing where the hospitals are, what their capabilities are, and what their sizes are is important for EMS managers for several reasons:

- Response Times: EMS Systems need to be built, taking into consideration the locations of hospitals so resources can be deployed and understanding what effect transport to specific locations will have on the rest of the system's response times. This can be estimated by looking at data reported from the services, giving the average number of specific dispositions of patients for each service.
- Patient Care: Different hospitals have different levels of equipment and expertise. Using the data from the previous bullet, EMS System design should consider the potential barriers for transport to specific destinations, how likely or common it is for some regions of the County to need to have patients transported for specific dispositions, and what resources are available to overcome barriers to expedient transport such as flight.
- Hospital Capacity: In an area like Cumberland Country, with its population and density, the capacity of a hospital becomes more relevant for the capacity of specialized service lines within the facility. Things such as surgical capacity, intensive care unit capacity, heart and vascular care size, and even the number of radiology devices could play a role in EMS system design. In more densely populated areas, the basic number of hospital beds could be a strong consideration.

Hospitals in Cumberland County

Cumberland County has a total of 916 in-patient hospital beds, with over 87% of those beds being located amongst two hospitals located in Portland. Maine Medical Center, which is part of a larger health system named Maine Health, has 637 beds, while Northern Light Mercy Hospital has 161 beds. The remaining two hospitals, making up 78 beds, are in Brunswick, Mid-Coast Hospital, and Bridgton, Bridgton Hospital. The latter hospitals are over 30 miles from the larger facilities in Portland. There are three hospitals outside the county limits that are options for patient transport, making up 581 total beds. Cumberland County has more hospital beds per 1000 residents than the rest of the County. However, with the majority of those beds being located in a single area of the County, any EMS system design should consider hospitals located outside of the County but within close proximity to the limits.

- Maine Medical Center: Maine Medical Center is in the center of Portland, just off I-295. A member of Maine Health System, Maine Medical is the largest and most comprehensive hospital convenient to EMS responders in Cumberland County. Maine Medical Center is a teaching hospital and has 637 in-patient beds. It is twice the size of the next largest hospital, which is located outside the County. The hospital is a Level 1 Trauma Center, provides accredited comprehensive stroke care, and houses a standalone children's hospital named after Barbara Bush. There is a newborn intensive care unit and high-risk OB/GYN services available. It also maintains Maine's only pediatric emergency department.

- St Mary's Regional Medical Center: Part of Covenant Healthcare System and enjoying a partnership with Maine Health, St. Mary's Regional Hospital is in Lewiston, Maine, 25 miles from the center of Cumberland County. Lewiston borders the county on the northeast and heads up the coastline. It is a Level 2 Trauma Center and provides critical care and intensive care services. It has a cardiac care program, including angioplasty. While St Mary's provides stroke care, it is not a certified comprehensive stroke center.
- Northern Light Mercy Hospital: Northern Light Mercy is part of the Northern Light Health System. Northern Light Mercy is a 161-bed hospital on the banks of the Fore River in Portland. It has a full emergency room with a Level 2 Trauma designation. It is part of the Maine Trauma System and has a shared services agreement with Maine Medical, just 1.9 miles away. Northern Light Mercy does have a stroke program with neurosurgery services. It also has a 24-hour birthing center.
- Southern Maine Health Care-Biddeford: Southern Maine HC Biddeford resides outside Cumberland County in Biddeford, Maine. It is 29 miles from the center of the County and borders the southern part of Cumberland, moving along the coast. The hospital is directly off of I-95. It has 150 beds, a 24-hour emergency room, and is a Level 1 Trauma Center. It provides non-comprehensive stroke care, OB/GYN with birthing center, and heart and vascular services, including surgery and angioplasty.
- Mid Coast Hospital: Also a member of Maine Health, Mid Coast Hospital is located in Brunswick in the northeast corner of the County. A 93-bed facility, Mid Coast is a Level 2 Trauma Center with a 24-hour emergency department. Mid Coast provides cardiac care, including angioplasty, as well as a full neurology spectrum for stroke and seizure patients. Mid Coast has a women's health center which provides acute surgical care and a birthing center.

With most of the comprehensive and progressive healthcare being located inside the city limits of Portland, the county houses unique challenges in not only distance by mileage but also terrain, as well as patients being further from Portland. All but one of the available full-service hospitals are along the coast on the far eastern side of the County. There are no full-service hospitals on the northwest side of the County past Sebago Lake. Limited access highways are not abundant in much of the County, and when combined with harsh northern New England weather, response and return times for EMS assets can be extended.

Support Programs

Public Safety Answering Points

A Public Safety Answering Point (PSAP) is a facility operated on a 24-hour basis that is assigned the responsibility of receiving 9-1-1 calls. When appropriate, the PSAP will directly dispatch emergency services or, through transfer routing or relay routing, pass 9-1-1 calls to public or private safety agencies.

Each PSAP has between two and 13 Answering Position Units (APUs) that receive wireline and wireless 9-1-1 emergency calls. The APU displays a wireline caller's name, address, and callback number. In the case of a wireless caller, the system displays the address of the wireless tower that delivered the call, the caller's cell phone number, and possibly the caller's approximate location. The equipment also handles calls from Voice over Internet Providers (VoIP) callers and Text to 9-1-1. Currently, there are 25 PSAPs in the State of Maine.[3]

There are five separate PSAPs within Cumberland County. They are as follows.

PSAPs in Cumberland County
1. Brunswick
2. Cumberland County Regional Communications Center
3. Portland
4. Scarborough
5. Westbrook

[3] https://www.maine.gov/maine911/psap-training

Cumberland County Regional Communications Center

The Cumberland County Regional Communications Center (CCRCC) is a public safety emergency communications center. The CCRCC provides emergency and non-emergency dispatching services for many public safety agencies within Cumberland County and serves as the PSAP for 19 of the 28 communities within the County. As the PSAP for those communities, the CCRCC receives all 9-1-1 phone calls for the following communities:

Communities Served by the CCRCC
1. Baldwin
2. Bridgton
3. Casco
4. Chebeague Island
5. Cumberland
6. Frye Island
7. Gorham
8. Gray
9. Harpswell
10. Harrison
11. Long Island
12. Naples
13. New Gloucester
14. North Yarmouth
15. Pownal
16. Raymond
17. Sebago
18. Standish
19. Windham

Public Education Team

CCRCC has a Public Education Team comprised of professional staff members who travel to many of Cumberland County's schools, community fairs, businesses, hospitals, and other public events to help educate the public on 9-1-1. The goal of the Public Education Program is to successfully teach children and adults what to do if they have an emergency and need to call 9-1-1. The Public Education Program includes a 9-1-1 Simulator experience designed for kindergarten through fourth-grade children.

The Public Education Team has recently started attending local job fairs to help recruit those who may have an interest in a career in the field of public safety.

Emergency Management Agency

Emergency management is the managerial function that creates the framework within which communities reduce vulnerability to hazards and cope with disasters. In Maine, emergency management is coordinated regionally by Emergency Management Agencies (EMAs) in each of the state's 16 counties. County Directors are appointed by their respective County Commissioners and funded partly by the County and partly by federal funds provided through the Maine Emergency Management Agency.

The Cumberland County Emergency Management Agency (CCEMA) provides comprehensive disaster management services to Cumberland County's communities. CCEMA supports the communities in Cumberland County before, during, and after large-scale disasters.

Before a disaster, CCEMA supports communities with planning for an event and mitigating its impacts.

During a disaster, CCEMA provides a vital "surge capacity" to specialized, leading agencies, typically fire and police departments. CCEMA also provides planning, logistical, and organizational expertise to manage the complexity of a significant event.

After a disaster, CCEMA is a conduit for the recovery and rebuilding process by connecting towns and the public to State and Federal resources.

Public Health

Cumberland County Public Health Department brings people, organizations, and communities together to promote well-being and protect the health of people and the communities where they live, learn, work, and play. According

According to the 2022-2025 Cumberland County Community Health Improvement Plan, "Despite being rich with mainstream health care service providers and programs addressing specific health problems, Cumberland County has a limited public health infrastructure to address inequities systematically. To support a more comprehensive public health infrastructure, the Cumberland County Government recently created a Public Health Department and hired its first director to create and manage a public health department and develop a 4–5-year work plan. The following are Cumberland County Public Health's Public Health Programs.

Public Health Programs
Behavioral Public Health
Opioid Settlement Funds
Chronic Disease Prevention
Tobacco Prevention
Substance Use Prevention
Healthy Eating and Living
Oral Health
Violence Intervention Partnership

Literature Review

Fire departments face numerous challenges, from declining volunteer rates in the volunteer fire service to revenue shortfalls and increased fundraising demands to maintain costs among full-time, combination, and volunteer fire departments. Regional efforts in fire departments and emergency medical services agencies can be both cost-efficient and provide seamless services to multiple areas across the United States[4]. Regional efforts often allow more departments to access limited resources – such as training initiatives, medical direction, and administrative support - with reduced financial outlay.

A literature review aims to collect relevant, timely research on a chosen topic, which is then synthesized into a cohesive summary of existing knowledge in the field. The following literature review was conducted on regional and collaborative fire and EMS deployment models to provide Cumberland County stakeholders with an understanding of some proven successful models for other fire departments in the United States.

Berkshire County 911 Dispatch (Massachusetts)

Before March of 2006, emergency 911 dispatch service for the 20 towns in Berkshire County operated out of a room in the basement of the Superior Court building, using anything but the latest technology. The system had once operated under the direction of the county commissioners. However, with the phase-out of county government in Massachusetts, the Berkshire County Sheriff offered to take it over.

The system now serves 23 towns, some outside Berkshire County, and it is the backup system for nine other municipalities, including the city of Pittsfield.

State and federal grants made building the new facility possible, but the day-to-day operational costs are provided by the charging of assessment fees by the Sheriff's Office to the 23 communities the service covers; these are based on population. The largest reported costs are software upgrades and maintenance of phone lines and other technology. Other expenses include personnel, dispatcher training, and recertification.

This regional system of 911 dispatch also generates substantial savings. The towns share just one set of personnel and operating costs, and they benefit from shared capital costs as opposed to having to acquire and continuously upgrade multiple sets of expensive technology.

[4] CENTRAL WASHINGTON COUNTY FIRE REGIONALIZATION STUDY JULY 2021 Central Washington County Fire Regionalization Study (southstrabane.com)

Kansas City Regional 911 System (Kansas and Missouri)

The Mid-America Regional Council (MARC) coordinates the Kansas City Regional 911 System, which handles approximately 1.5 million emergency calls annually. Representatives of local governments serving on committees and task forces help coordinate regional system activities and work to accomplish specific strategy plan goals. Forty-two public safety answering points (PSAPs) in eleven counties support the system. These counties include Atchison, Johnson, Leavenworth, Linn, Miami, and Wyandotte counties in Kansas and Cass, Clay, Jackson, Platte, and Ray in Missouri.

MARC is a nonprofit association of city and county governments and the metropolitan planning organization for the bistate Kansas City region. A Board of Directors governs it, consisting of locally elected officials serving nine counties and 119 cities. MARC provides a forum for the region to work together to advance social, economic, and environmental progress.

As a voluntary association of local governments, MARC convenes partners and coordinates planning efforts on a wide range of issues that are important to communities in the metro, including aging services, early learning, health care, community development, homeland security, emergency services, the regional 911 system and much more. MARC has no taxation or regulatory authority.

Federal, state, and private grants, local contributions, and earned income fund MARC. A significant portion of MARC's budget is passed through to local governments and other agencies for programs and services.

McCook Community Paramedicine program (Nebraska)

McCook (pop. 7,526) is a rural community located in southwest Nebraska. In 2015, leaders of McCook's Community Hospital, which serves approximately 30,000 people in McCook and surrounding areas, saw an opportunity to partner with the local fire department and primary care clinic on a community paramedicine initiative.

In 2015, representatives from the hospital, primary care clinic, and fire department in rural McCook gathered to discuss community paramedicine with the overarching goal of enhancing patient care in ways that reduce ambulance transports, emergency room visits, and hospital readmissions. Less than a year later, the McCook Community Paramedicine program was up and running. Launched in January 2016, the program expands the role of paramedics to provide free health services and safety assessments to recently hospitalized patients after they return home. Funded through a grant from the Community Hospital Health Foundation, the program served the health needs of more than 30 individuals within its first year and a half.

- The overall goals of the Community Paramedicine program are:
- Improve safe care transitions upon a patient's return home
- Minimize medical crises through pre-emergent care
- Improve overall health, knowledge, and compliance of program participants within their own homes
- Increase trust in the local healthcare system
- Decrease the overall cost of care by reducing EMS transports, ER visits, and readmission

The program was funded by an initial $10,000 grant from the Community Hospital Health Foundation to cover mileage, supplies, and incidentals supplied in $5,000 increments, one in 2015 and one in 2017.

Municipal Emergency Services Authority of Lancaster County (Pennsylvania)

The Municipal Emergency Services Authority (MESA) of Lancaster County has been created and incorporated to administer Emergency Medical Services jointly with the Boroughs of Elizabethtown and Marietta and the Townships of Conoy, East Donegal, Elizabeth, Mount Joy, Penn, and West Donegal, all in Lancaster County. MESA has been created under the Pennsylvania Municipality Authorities Act. The path to forming the authority began in 2018 when municipalities in northwest Lancaster County were at a crossroads with the future of emergency services at risk. Many EMS agencies across Pennsylvania struggled to maintain services in the face of soaring costs, funding shortfalls, and staffing challenges.

As opposed to generating operating revenue through municipal and membership contributions, the Authority will set a reasonable and uniform annual fee for property owners. The Authority would charge a reasonable and uniform fee to property owners or the participating municipality (depending on the municipality's arrangement with the Authority). The fee is estimated between $70-$85 per residential housing unit.

The Authority Board will determine actual fees once the Authority is formed. Separate tiers would be set for commercial and institutional properties. Residents of municipalities served by the Authority will not receive residual bills if their insurance pays toward an ambulance bill. Residents will receive 50% off their ambulance bill if they have no insurance or if their entire ambulance bill went toward their insurance deductible. The authority board, which oversees the authority, includes one representative from the founding municipalities and will determine services and fees, which are expected to range from $55 to $85.

Rivers Edge Volunteer Fire Department (Pennsylvania)

In 2019, Braddock and Rankin, adjacent municipalities in rural Allegheny County, consolidated their volunteer fire departments to create a new company named the Rivers Edge Volunteer Fire Department. The Pennsylvania Department of Community and Economic Development (DCED) offered financial support through its Municipal Assistance Program, providing approximately $55,000 for professional legal services and the rebranding of equipment and uniforms. The financial support covered over 50% of the overall project cost of $93,000.

The success of the consolidation was attributed to strong leadership, the steering committee, and perseverance. The internal meetings of both departments were emotionally charged. However, the leadership and the steering committee were vital to continuing the conversation and moving forward with the consolidation. Perseverance was also noted as crucial to the process. Several departments were initially interested in joining the regionalization effort but did not ultimately join Braddock and Rankin. Undeterred, the two municipalities continued to pursue the consolidation while leaving the door open for collaboration in the future.

Some of the many fire departments in Cumberland County may be thinking about consolidation, and it is good to have a road map to success for these efforts. While many successful regionalized and combination departments operating in municipalities often possess considerably greater financial assets, the municipalities involved in the Rivers Edge consolidation provide a model for the numerous municipalities in Cumberland County with similar financial means[5].

[5] DEVELOPING COLLABORATIVE CAPACITY TO ENHANCE MUNICIPAL-LEVEL FIRE SERVICES IN ALLEGHENY COUNTY developing_collaborative_capacity_fire.pdf (pitt.edu)

South King County Fire Training Consortium (Washington State)

The South King County Fire Training Consortium is the training division for ten fire agencies in King County, south of Seattle, Washington. The Consortium combines resources and training officers from member agencies in a single training office to provide regionally consistent training to area firefighters. By sharing a single consistent training curriculum, departments accomplish more annual training, reduce costs, and eliminate duplication of training development efforts.

The South King County Fire Training Consortium includes:

- Puget Sound Fire
- Tukwila Fire Department
- Renton Regional Fire Authority
- Fire District #20 (Skyway)
- Fire District #2 (Burien/Normandy Park/North Highline)
- Valley Regional Fire Authority
- Fire District #28 (Enumclaw)
- Vashon Island Fire and Rescue
- King County International Airport/Boeing Field ARFF Division
- Mountain View Fire and Rescue
- Eastside Fire and Rescue
- Snoqualmie Fire Department
- South King Fire and Rescue
- King County Medic One

This combination of training resources allows member departments to reduce training costs by eliminating redundancy. Included in the annual per-cap cost to participate in the South King County Fire Training Consortium are the following:

- The ability to document all training for all members (career and volunteer) in the online Learning Management System (LMS).
- Provide new firefighter certifications, company officer-led training, and online training assignments for individual firefighters to complete.

Southeastern Minnesota Emergency Medical Services (Minnesota)

The Southeastern Minnesota Emergency Medical Services covers 11 counties in southeastern Minnesota, including the City of Rochester. This regional EMS program is overseen by a "joint powers board" of local elected leaders and emergency response experts.

The Medical Direction Consortium (MDC) was created in 1994 by a group of EMS providers and physicians to address the problem of Medical Direction for rural BLS Ambulance services and First Responders. The MDC provides each EMS service that joins with quality Continuing Education and Variance training that is provided to each agency at their monthly meetings five times per year. The training consists of a short educational lecture on the subject, a written exam to verify the provider's understanding of the subject, and "hands-on" skill training (depending on the topic) with the equipment or procedures discussed at the training session. Each service is assigned a Physician Medical Director and 2 Instructors who act as the physicians' liaison. Each service is also provided with a copy of all medical guidelines, training modules, and exams. The instructors for this program are highly qualified and experienced Nurses, Paramedics, or EMTs and have been assigned to the service based on the level of care the service provides.

The MDC also provides the following services:

Standardized triage, treatment, and transportation guidelines

- The most current information on procedures and medical findings is provided by our staff of highly qualified Physician Medical Directors.
- Consultation services on new equipment purchases and upgrading the level of care.
- Assistance in understanding and complying with State/ Federal, OSHA, and HIPAA regulations.
- Guidance in the development of an internal Quality Assurance plan
- Access to the latest information on State/National issues that affect provider safety and patient care issues.

The utilization of a medical directors' consortium could be implemented through one of the hospitals in the Cumberland County area or potentially a consortium of said hospitals. The benefits of this type of consortium would be both financial and in terms of improving clinical outcomes and implementing quality improvement programs.

Treasure Valley Emergency Medical Service System (Idaho)

Treasure Valley Emergency Medical Service System (TVEMSS) is a regional consortium comprised of eight local EMS agencies that have joined to form the Treasure Valley EMS System.

Six of these agencies are under one EMS license, and they include:

- Canyon County Paramedics
- Nampa Fire
- Calwell Fire
- Middleton Fire
- Melba Q.R.U.
- Wilder Fire.

Two agencies are affiliated with TVEMSS but retain their own license, and they are Homedale Ambulance and Kuna Fire.

TVEMSS has a joint powers board and a medical director. The joint powers board, representing licensed member organizations and independent-member organizations, operates and governs the system while the medical director provides uniform medical oversight. Together, the joint powers board and medical director oversee system accountability. This organized coordination is designed to ensure that an appropriate level of care is delivered.

The consortium's goal is to pool resources and make decisions for resource allocation, communications, medical direction, and education, and improve continuity of care on scenes and overall treatment as well as patient outcomes. A recent challenge for the joint powers board was the development of a system-wide comprehensive data-driven system. Each participating organization previously used an individualized data system that was not necessarily compatible with other data systems, making the data difficult to merge. A task force has been established to identify and address those issues and ensure the data system can track each patient from the first point of contact to the hospital.

Future Service Delivery Models

Cooperation Versus Collaboration

The American fire and EMS services have a long history of cooperating with others. The act of working together for a common purpose or benefit is the cornerstone of community safety. Still, cooperation can sometimes mean having independent goals with agreements not to interfere with each other. On the other hand, collaboration is the process of shared creation, creating a united effort towards a common goal. True collaboration increases efficiency and effectiveness, promotes communication, improves data, and allows organizations to evolve faster by bringing stakeholders together who share and build off collective creativity.

The 31 fire and EMS departments within Cumberland County routinely cooperate to deliver public safety services across the County. In many cases, there are examples of true collaboration among some departments. What began as individual departments providing services to more isolated communities with abundant resources has developed into a system where communities intertwine, demand and complexity of services have increased, and competition for resources is great. More collaboration is necessary amongst the 31 fire departments in Cumberland County to ensure the future success of fire and EMS services.

Recommendations for Potential Collaboration and Shared Services

This section provides ideas for consideration above and beyond those identified as the top stakeholder priorities later in this report.

The following recommendations are based on data provided by Cumberland County, the fire departments within the County, and data collected during fieldwork by Dynamix Consulting Group. The information was then compared to a combination of the Maine Laws, Insurance Services Offices requirements, National Fire Protection Association standards, accepted best practices within the emergency services community, and the experience of the Dynamix Consulting Group.

1. Establish a Countywide Fire Response Database.

Data was a challenge for this project. The quality and quantity of available response data varied widely throughout the county. While all of the fire departments in Cumberland County export their response data to the State of Maine, the data captured by the state and available to review by the county as a whole is very limited. The Cumberland County response data report provided to Dynamix Consulting Group from the Maine Office of the State Fire Marshal included only "incident" data (time of first unit dispatch, time of first arrival, and time of last unit cleared). It did not include any apparatus information, such as the unit number and unique times (dispatch, enroute, or on the scene) that would allow for an in-depth evaluation of the service delivery across the county.

In her 2021 article, *The Importance of Data to the Fire Service,* U.S. Fire Administrator Dr. Lori Moore-Merrell offered the following insight:

Fire and emergency services departments should prepare for increasing data integration into everyday activities. Leaders must gain greater data acuity for responsible decision-making. Fire chiefs must ensure that they allocate financial resources for personnel and technological capability for data capture, management, protection, governance, analysis, and intelligence translation. Firefighters must become increasingly data literate, to understand the value of accurate data entry and report writing.

Because the importance of using data is no longer a question, the major challenge that departments face is how to process more data faster—for preparedness, prevention, operational insights, and firefighter safety and well-being.

While interest in a countywide fire response database was expressed during some of the listening sessions facilitated by Dynamix Consulting Group for this project, it was not identified as one of the top priorities by the fire chiefs and town and city managers. For this reason, the countywide fire response database is listed in this section as a Dynamix Consulting Group recommendation.

Dynamix Consulting Group suggests that capturing detailed data in a countywide database would be a solid first step toward improving the ability of the fire departments within Cumberland County to develop programs to respond to the needs of the community, set performance standards, plan to add resources as the demand for service grows and to have the data that is required to consistently to win grant funding.

Dynamix Consulting Group understands that not all of the 31 departments within the county will choose to use the same software program for their fire reports. However, if there is consensus among a majority of the departments on a preferred system, those who chose to use a different system could still be invited to export their data into the countywide database.

2. Develop a Countywide Community Risk Reduction Program.

This recommendation immediately follows the recommended countywide fire response database because accurate data is required to identify and prioritize the risk reduction needs within Cumberland County.

The fire departments in Cumberland County should consider developing a formal Community Risk Assessment and Community Risk Reduction Program. These programs aim to determine what risks exist in the community, the required resources (personnel and equipment) to respond to these risks, and what educational or enforcement efforts will reduce the number of emergency calls for service. Potential needs for programs such as community paramedicine or increased fire prevention efforts would be identified during this process.

Interviews with representatives of the various fire departments within Cumberland County consistently revealed that the fire departments desired a countywide approach to community risk reduction so long as it didn't limit the efforts of any of the local fire departments. Specific requests included having the annual countywide community risk reduction messages and providing educational materials.

The "Five E's" of Community Risk Reduction

National best practices suggest that Community Risk Reduction Programs should include the Five E's of Emergency Response: Education, Enforcement, Engineering, Economic Incentives, and Emergency Response.[6]

Education can influence behavior by increasing awareness and providing information and knowledge to produce a desired behavior.

Engineering applies to changes in the physical environment. Modifying a product or environment to prevent or mitigate injury, death, or destruction of property is an engineering tactic. Changes are often the result of advances in technology.

Enforcement applies to reducing risks (hazards) through the legislative process of strengthening and adopting applicable laws. This includes enforcing those laws through various inspection programs or methods and, in some cases, imposing penalties for non-compliance.

Economic Incentives encourage or influence individuals and organizations to make certain choices or behave in specific ways. Incentives can impact behavior either negatively or positively. Negative financial incentives result in monetary punishment for "inappropriate" behavior or making certain choices. Fines, citations, and tickets are examples of negative incentives intended to discourage people from choosing unsafe behaviors.

Positive economic incentives reward people for behaving in a particular manner or making certain choices. Free smoke alarms are one example. Sales, coupons, and discounts are examples of persuading people to do business. In some communities, local governments use positive incentives by offering a one-time reduction in property taxes for retrofitting a home with a fire sprinkler system.

Emergency Response is the deployment of fire departments, EMS providers, and law enforcement agencies to mitigate risk. A community must consider the ability to provide adequate emergency services when developing a Community Risk Reduction Plan. Communities can only mitigate some risks by enhancing current capabilities or by adding new emergency response resources.

The most effective risk-reduction strategies apply a broad-based approach utilizing a combination of prevention and mitigation strategies. Using multiple interventions can prevent incidents from occurring, and when prevention fails, it can reduce or mitigate the impact of an event.

[6] http://riskreduction.strategicfire.org/develop-mitigation-strategies-tactics/strategies-tactics/

3. Develop a Countywide Pre-Plan System.

This recommendation also follows the recommended countywide fire response database because the countywide database would provide all fire departments in the county with access to all pre-plans.

Pre-plan efforts throughout the county vary in the percentage of occupancies that have been pre-planned, level of detail, and frequency of updates. NFPA 1620 is the fire service industry standard for the development and use of pre-incident plans and should be used as a reference. Once pre-incident plans are established or updated, training should be provided to all personnel who may respond to an incident at those locations. In addition, pre-incident plans and drawings should be incorporated into dispatch procedures.

A standardized countywide pre-plan system would be especially beneficial for firefighters responding to mutual aid in a community other than where they usually operate.

4. Establish a Countywide Fire Department Safety Committee.

This recommendation also follows the recommended countywide fire response database because a countywide database of firefighter injuries and "near miss" injuries can help fire department leaders identify and address safety-related trends within the county.

NFPA 1500: *Standard on Fire Department Occupational Safety and Health Program* is the industry standard for developing and administering a fire department safety program. Dynamix Consulting Group strongly encourages the fire departments in Cumberland County to ensure all safety committee activities align with Chapter 4 of NFPA 1500. To be effective, safety committees must be diverse in their representation from across the department, ensuring representation by shift, rank, function, and interest and including representation from non-uniformed staff members as well.

The safety committee should meet monthly and include in its mission raising awareness and modifying member behaviors that will result in a safe work environment. Additionally, the committee should review all accidents, injuries, near-miss incidents, and workplace safety suggestions. The committee should analyze the information and report its findings to the Fire Chiefs. In contrast to being reactionary through the development of additional rules, Dynamix Consulting Group recommends that the committee should work to implement member safety education programs and encourage members' safety self-awareness. The committee should maintain regular and open meeting times and locations and record minutes of the meetings for posting for all department members to review.

5. Establish a Countywide Occupational Medical Program.

Cumberland County would benefit from establishing a countywide comprehensive medical program that includes regular medical evaluations for all firefighters. NFPA 1582 guides such programs. The industry's best practice for medical and physical examinations is to provide annual physicals.

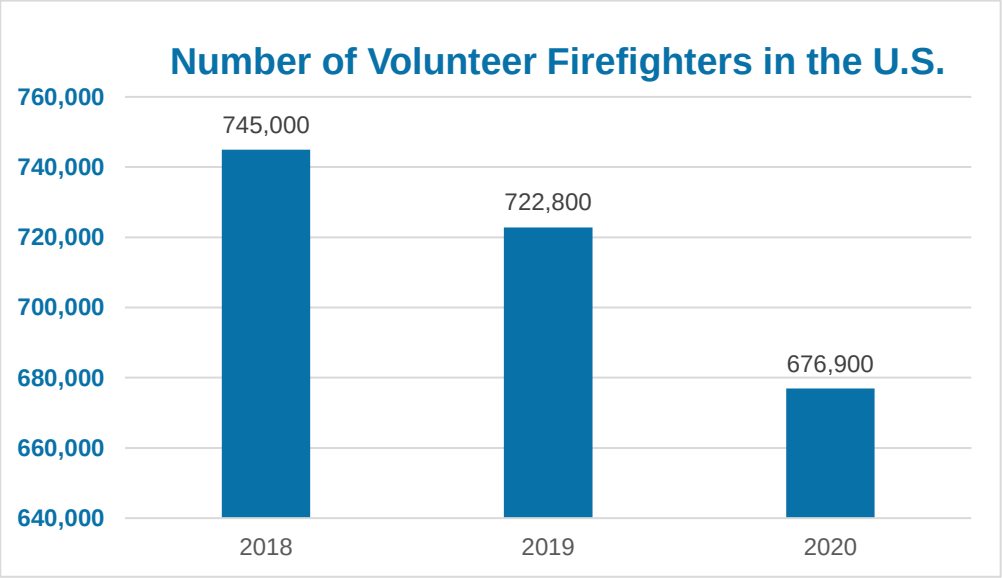
As the fire departments in Cumberland County currently rely on each other to provide mutual aid assistance and may someday choose to share a pool of firefighters to staff open shifts, it would make sense that all firefighters in the county be medically cleared by the same standard.

6. Establish a Countywide Firefighter Staffing Pool.

While there was interest in a countywide firefighter staffing pool expressed during some of the listening sessions facilitated by Dynamix Consulting Group for this project, it was not identified as one of the top priorities by the Fire Chiefs and Town and City Managers. For this reason, the countywide staffing pool is listed in this section as a Dynamix Consulting Group recommendation.

There is still a reliance on volunteer firefighters within Cumberland County. According to the NFPA U.S. Fire Department Profile 2020, there were an estimated 1,041,200 career and volunteer firefighters in the United States in 2020. There were 364,300 career firefighters in 2020, representing an increase of 2 percent from the previous year. In addition, there were 676,900 volunteer firefighters, representing a 6 percent decrease from the previous year and the lowest number of volunteer firefighters reported over the years.[7]

NFPA further reported that the number of volunteer firefighters declined in the late 1980s and 1990s, each time returning to the same level soon after. From 2005 through 2009, the number of volunteer firefighters was stable at a level slightly higher than any previously recorded other than in 1995. After a dip in 2010 through 2011, the number of volunteers appeared to increase and was in the range of 783,300 to 814,850, an increase of 4 percent. In 2018, the number of volunteer firefighters increased to 745,000 but dropped in 2019 to 722,800 and in 2020 to 676,900.



NFPA further noted that volunteer firefighter tenure periods show that more than two of every five (43 percent) volunteers have more than ten years of active service. Almost two-thirds (64 percent) of volunteer firefighters have more than five years of active service. This indicates that new volunteer applicants are less likely to remain active volunteers.

[7] https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/osfdprofile.pdf

The national trend of a decrease in volunteer firefighters establishes the expectation that Cumberland County will have an increased reliance on paid firefighters in the future; however, fire departments across the county, including within Cumberland County, are also struggling to recruit paid firefighters. In October 2023, New Center Maine published the article F*ire Departments Across Maine Lack Full Time Employees Amid High Demand*[8]in which Brunswick Fire Chief Ken Brilliant was quoted "We already had a small applicant pool, and now it's even smaller since we are all vying for the same people."

Dynamix Consulting Group suggests there may be value in a shared pool of firefighters within Cumberland County - particularly for per diem firefighters. Establishing a single pool of firefighters will put fire chiefs in touch with a larger number of firefighters than are likely on the roster within their own fire department, thereby increasing the chances of filling vacant shifts.

7. Establish a Countywide Fire Department Professional Development Program.

While there was interest in a countywide fire department professional development program expressed during some of the listening sessions facilitated by Dynamix Consulting Group for this project, it was not identified as one of the top priorities by the Fire Chiefs and Town and City Managers. For this reason, the countywide fire department professional development program is listed in this section as a Dynamix Consulting Group recommendation.

Dynamix Consulting Group suggests that all of the fire departments in Cumberland County would benefit from developing employees' "soft skills" as part of a countywide professional development program. While it is essential for a fire officer to have "hard skills" that are measurable, such as raising a ladder in a specified period of time, these activities comprise only a tiny part of an officer's job. A much more significant part of an officer's job includes tasks such as motivating employees to do something they may not want to do – whether it is a patient who does not want to go to a hospital or a crew that does not want to complete a specific training evolution because it is hot outside. These tasks require "soft skills" such as personality traits and characteristics rooted in behavior, attitude, and values. Leadership, emotional intelligence, and the ability to communicate both orally and in writing should all be included in a fire department professional development program.

[8] https://www.newscentermaine.com/article/news/local/public-safety/local-fire-departments-across-maine-lack-full-time-employees-first-responders-jobs-public-safety/97-d3ef0ff9-a8f6-40af-a3b9-bd06d00f8577

8. Establish a Countywide Primary Service Answering Point

Currently, there are 25 PSAPs in the State of Maine.[9] There are five separate PSAPs within Cumberland County. They are as follows.

PSAPs in Cumberland County
1. Brunswick
2. Cumberland County Regional Communications Center
3. Portland
4. Scarborough
5. Westbrook

The consolidation of PSAPS within Cumberland County could realize operational and financial efficiencies. PSAP consolidation could also assist with staffing public safety dispatcher challenges that exist across the nation and in Maine. In August of 2023, as a direct result of staffing shortages, 9-1-1 calls in Kox County, Maine, had to be sent to the Waldo County Regional Communications Center. Those dispatchers then sent a computerized message to Knox dispatchers, who then had to alert local emergency crews. This scenario created concern about the potential for the delayed dispatch of resources within the community.

As the volume of emergency calls continues to rise year by year, adequate staffing is one of the most significant issues facing nearly half of all emergency call centers across the country, according to a 2023 study jointly conducted by the International Academies of Emergency Dispatch® (IAED™) and the National Association of State 911 Administrators (NASNA).[10] The study further stated that between 2019 and 2022, one in four jobs at public safety communications centers were vacant. “An alarming number of 911 centers are experiencing their own workforce emergencies,” said Harriet Rennie-Brown, Executive Director of NASNA. “Better workforce recruitment, retention, and support are crucial to the quality of the 911 emergency services we all rely on.”

9. Establish a Countywide Emergency Medical Services System

An online search of challenges facing EMS agencies nationwide reveals a consistent theme of staffing shortages, wage issues, and longer wait times for patients activating local 911 systems. Nearly every industry has dealt with staffing shortages since the start of the pandemic. However, few occupations have been hit harder than the EMS industry, where, for many, low wages are forcing EMTs out of their jobs. The national median average for EMTs is $17.05 per hour, which translates into $35,470 annually. The Bureau of Labor Statistics lists it as one of the lowest-paying jobs in health care. Low pay was the primary reason roughly one-third of all EMTs quit in 2021.

A 2022 American Ambulance Association study of employee turnover found that 39% of part-time EMT and 55% of part-time paramedic positions went unfilled because of a lack of qualified candidates. American Ambulance Association president Shawn Baird reports that the turnover rates for EMS providers are at a crisis level. “It's an absolute crisis. We have continual paramedics hitting the exit doors and leaving the field," said Baird. He added that Medicaid's reimbursement for non-emergency transports keeps wages low.

Last year, the turnover rate for full-time emergency medical technicians, known as EMTs, was 36%, and for full-time paramedics, it was 27%, according to an American Ambulance Association survey. The turnover rate includes

[9] https://www.maine.gov/maine911/psap-training

[10] https://www.emergencydispatch.org/in-the-news/press-releases/64632133-7f9f-4d77-8013-d59c445fdb88

resignations and firings, but nearly all EMTs and paramedics who left did so voluntarily. The survey found that over one-third of new hires don't last through their first year. A federal study projected a need for 40,000 more full-time emergency medical personnel from 2016 to 2030.

The National Association of Emergency Medical Technicians (NAEMT) conducted the first-of-a-kind national survey of EMS agencies seeking information about the current state of EMS in the U.S. The results from the study were so compelling that NAEMT partnered with the International City/County Management Association, the Center for Public Safety Management, and the Public Consulting Group to conduct a national webinar on the topic for EMS leaders, public officials, and regulators. The webinar included panelists from every facet of EMS delivery: public and private EMS providers, billing agencies, physicians, and consultants assisting cities and counties experiencing EMS delivery challenges in their communities. According to the study, workforce shortages, skyrocketing costs, supply chain disruptions, and decreasing fee-for-service revenue have put EMS agencies in critical condition.

Initiatives Launched

States also are studying how to maintain EMS systems.

- A commission in Maine issued a 51-page report in December that recommends the state spend $70 million annually for five years to avert an emergency medical crisis that stems partly from a lack of volunteers.
- The Colorado legislature, noting that some Coloradans "no longer have access to a Colorado-based emergency medical services system, and other Colorado communities are at risk of losing" theirs, set up a task force to study long-term EMS sustainability.
- Many states are rethinking how they recruit and retain paid and volunteer EMS workers to reduce longer 911 call wait times and the closure of ambulance services. According to the National Conference of State Legislatures, nearly 40 state legislatures and Washington, D.C., considered bills in 2022 related to various aspects of emergency medical services.
- One idea is to expand the EMS workforce pool by age. As states felt the workforce pinch and began looking for younger clinicians, the National Registry of Emergency Medical Technicians, which tests and certifies EMTs, 2019 eliminated any age requirement for certification. It had been 18.
    - At least six states have lowered the minimum age for EMT training to 16 or 17, according to NCSL.
    - New Jersey, for example, allows 16-year-olds to enroll in training with parental consent.
    - Indiana passed a law last year to enable retired emergency service personnel and some students to qualify for temporary licenses.
    - Louisiana is among the states offering high school EMS training classes. The Jump Start program started in 2015 and, by 2019, had led to the state licensing of 2,000 emergency medical responders, who have completed the first level of training and can provide immediate life-saving care until EMTs arrive on the scene. The program has also trained dozens of licensed EMTs, who can drive and care for patients in the ambulance, according to a report by the Louisiana Bureau of EMS.

- Texas found that in the first eight months of 2021, only 27% of state-licensed emergency medical services personnel submitted the required patient care record for patients who received care in an ambulance. This indicates that more than 70% of licensed EMS professionals were not working in ambulances, said the Texas EMS Alliance, which represents EMS agencies in the state. Texas Gov. Greg Abbott signed a $21.7 million measure in November 2021, funded by federal COVID-19 relief funds, to expand awareness of EMS careers, provide tuition scholarships for EMS training, and ramp up other recruitment and retention efforts.
- In New Hampshire, State Senator Suzanne Prentiss, a paramedic, suggested to state Commissioner of Safety Robert Quinn that he convene an ad-hoc committee to study the EMS workforce and other issues, and he did. Among the committee's dozens of recommendations: End New Hampshire's requirement that EMS workers be U.S. citizens, develop a plan to recruit people of more diversity in race, ethnicity, and gender, and develop a more active social presence. "Be more inclusive — that's what we need to do," Prentiss said in an interview. "Entire groups of people just don't see themselves in these roles and don't know how to get into the profession. We can do better in New Hampshire."

As we look to plan for and deliver a sustainable, collaborative model for EMS service delivery in Cumberland County, we must examine the potential for a countywide approach to EMS service delivery.

The delivery of EMS is complex and will require significant planning to obtain the required state approvals, a QA/QI plan, medical direction from a physician to carry and administer medications, and the development of a system to bill patients and their insurance companies for services. To better understand the myriad specifics of EMS agency licensure, below is a review of applicable state statutes and regulations (referred to as Rules).

Chapter 3 of the Maine Emergency Medical Services Systems Rules provides us with the following relevant information:

§2. License Factors - a ground ambulance service license or a non-transporting service license is issued for a specific:

1. Service Type (a non-transporting service or an ambulance service)

2. License Level (E.M.R., E.M.T., AEMT or Paramedic level)

3. Permit Level (E.M.T., AEMT or Paramedic level)

§2, subsection 4, titled Ownership, states:

Upon request of the Board, an applicant for, or licensee of, a ground ambulance service or non-transporting service license must provide the Board with the identity and legal status (e.g., municipality, corporation, limited liability company, sole proprietorship) of the person or entity that holds, or is making application for the license.

§2 subsection 5, titled Service Area, states:

The service area consists of the primary response area, which is any area to which the service is routinely made available when called by the public to respond to medical emergencies. In defining a primary response area, a service will be expected to meet reasonable standards in regard to distance and response times to emergency scenes.

Maine E.M.S. will determine if such standards are met using the following criteria:

1. Dispatch time/availability of ambulance and crew;

2. Response times;

3. Organized/coordinated dispatch;

4. Public perception;

5. Emergency responses across jurisdictions/public safety implications;

6. Impact on patient care

In addition, §5 under Licensing Standards states:

An application will not be accepted as complete unless it includes all materials required to be evaluated for licensure. To obtain a new license, a service applicant must:

A. Apply on forms available from Maine E.M.S.

B. Submit a fee of $100.00

C. Demonstrate to Maine E.M.S. that:

1. The applicant has placed a notice, approved by Maine E.M.S., in the most widely circulated newspaper(s) serving the proposed primary service area(s).

The notice must state:

(a) The name and legal status of the entity making the application

(b) The name of the proposed service;

(c) The type of service proposed;

(d) The proposed license level to be provided;

(e) The names of the municipalities within the primary response area of the proposed service;

(f) That the public is invited to make comment to Maine E.M.S. regarding the proposed application, and that comments must be received by Maine E.M.S. within 30 calendar days after the date of the notice's publication; and,

(g) The current mailing address of the Maine E.M.S. office.

2. The applicant possesses the equipment required by these Rules for the type of service and license level proposed.

3. The applicant can provide personnel required by these Rules for the type of service and license level proposed.

4. The applicant, if applying for a license that includes a primary service area, has made adequate arrangements for full-time dispatch.

5. The applicant possesses two-way radio communications equipment and frequencies for the proposed type of service, including, but not limited to, the hospital-ambulance frequencies utilized in the service area(s) pursuant to these Rules and the designated Maine E.M.S. statewide frequency "155.385."

6. If the application is for a new service or a change of service ownership, the applicant, if an individual is of good character, and if a partnership or corporation, its partners or principal officers are of good character. Four character references, written within the past year, must be submitted as a condition of meeting this requirement; none may be from a relative or employee of the applicant.

7. If the application is for a non-transporting service, the non-transporting service has either (1) entered into written agreements with the ambulance services which will transport its patients, guaranteeing continuity of care for the patient and simultaneous dispatch of the non-transporting and ambulance services, or (2) otherwise addresses these concerns in a plan approved by Maine E.M.S. which includes as a component a written agreement of this nature with at least one ambulance service. (a) An ambulance service is not required to approve or enter into a written agreement with a non-transporting EMS service.

8. The applicant has established a service-level Quality Assurance/Quality Improvement Committee (for approval under 32 MRS §92-A) or has identified a Board-approved Quality Assurance/Quality Improvement committee in which the service will participate and has submitted a quality assurance plan that is subject to Maine E.M.S. approval.

9. The applicant meets the quality assurance/quality improvement requirements of Chapter 18 of these Rules.

10. The applicant has designated a service director, who shall act as the point of contact for the service.

11. The applicant has designated a person who serves as the training and education point of contact for the service.

12. The applicant has identified the designated infection control officer for the proposed service. Pursuant to 42 USC §300ff-136, each employer of emergency response employees in the State of Maine must have a designated infection control officer (I.C.O.) for the purposes of receiving notifications and responses and making requests under 42 USC Chapter 6A, Subchapter XXIV, Part G. The licensee shall provide the ICO name and contact information to Maine Emergency Medical Services, and promptly notify Maine E.M.S. of any changes in ICO during the term of its license. Maine E.M.S. will provide this information to the Department of Health and Human Services, Maine Center for Disease Control, Division of Infectious Disease.

13. The applicant, if applying for a license or permit to the Advanced EMT (AEMT) or Paramedic levels, has a service-specific medical director, effective January 1, 2022.

14. If the applicant lists a service-level medical director, the application must include a medical director agreement.

15. The applicant has, in the case of a proposed service requesting a license or permit to administer drugs/medications, entered into a written contract with a single hospital that has a pharmacy, several hospitals with either individual or central supply points, or some other source approved by the Board which will provide a system of control and accountability of drugs/medications pursuant to these Rules.

16. If the applicant intends to provide Paramedic Inter-Facility Transfers (PIFT), a separate application must be submitted to and approved by Maine E.M.S. before the service performs such transfers. Personnel providing PIFT treatment on behalf of the service must successfully complete a Maine EMS-approved PIFT course prior to performing such treatment.

17. The applicant has submitted a safety program that addresses its patients, personnel, and the general public during operations

As indicated above, in Maine, an EMS agency *does* have to indicate a primary service area in which they accept responsibility for covering all emergency medical calls for service. Still, there is *currently* no certificate of need (CON) type process for EMS. There is a statute – specifically, 32 MRS § 86 (1) A - that states:

The board shall adopt rules and protocols to evaluate the need for any new ambulance service in this State before granting a license under this subsection, including rules that provide an appeal process for any decision made by the board. Rules adopted pursuant to this paragraph are routine technical rules pursuant to Title 5, chapter 375, subchapter 2-A.

However, there are currently not any rules in place that define the process. The Board has a standing Rules Committee, but no rules related to this provision have been drafted or put forth for public comment or hearing to date.

10. Develop a countywide Fire Department Strategic Plan.

Dynamix Consulting Group recognizes that this report contains many recommendations that cannot all be implemented simultaneously. Cumberland County should facilitate a Strategic Plan to consider, prioritize, and implement the goals and objectives recommended in this report.

The strategic planning process would ideally result in a three-to-five-year work plan that will guide the work effort of all of the fire departments in the county toward a common set of goals and objectives. The process should include representation from every major interest group. A successful strategic planning process will result in a plan for Cumberland County and its 31 fire departments to systematically implement the recommendations in this report.

Organizations that do not engage in the strategic planning process often fail to benefit from the evaluation and planning process. The recommendations contained within this report will do little more than exist in the report if not prioritized, assigned to specific individuals for oversight, and then implemented.

Partnering Strategies

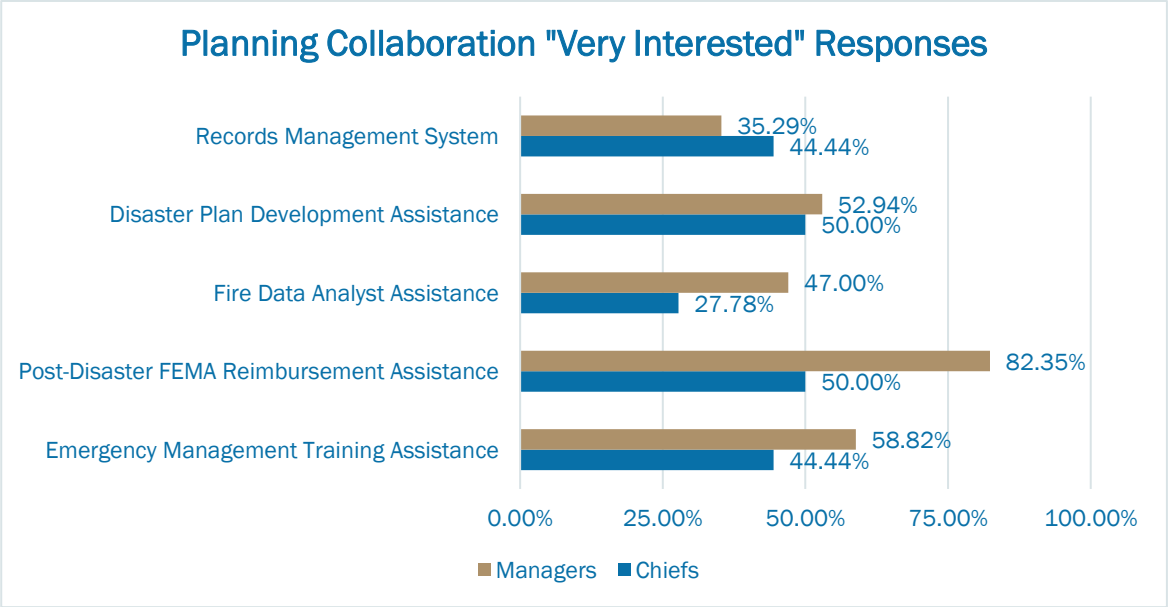
Dynamix Consulting Group created a survey designed to help identify interest levels for collaboration in specific focus areas pertaining to fire and EMS service delivery. A 35-question survey was distributed to two key groups of stakeholders: city and town managers (managers) and fire and EMS chiefs (chiefs).

Seventeen of the 28 managers completed the survey, and 18 of the 31 chiefs completed it. The survey endeavored to gage collaboration interest in six areas:

Potential Areas of Collaboration	Specific Area of Focus for Countywide Effort
Planning	▫ Records Management System ▫ Disaster Plan Development Assistance ▫ Fire Data Analyst Assistance ▫ Post-Disaster FEMA Reimbursement Assistance ▫ Emergency Management Training Assistance
Logistics	▫ Regional Cache of Spare Firefighting Gear ▫ Joint Supply Purchasing ▫ Cooperative Service Agreements
Human Resources	▫ Infection Control Officer ▫ Fire Marshal and Fire Inspectors Shared ▫ Grant writer ▫ Fire Administrator Countywide ▫ Fire Training Coordinator ▫ Fleet Mechanic Shared ▫ Juvenile Fire Setter Program Coordinator ▫ Community Risk Reduction (CRR) Coordinator
Recruitment & Retention	▫ Recruitment Assistance/Recruitment Coordinator ▫ Hiring and Onboarding New Employees from the Candidate List ▫ Pool of Per-Diem/Call Firefighters ▫ Standardized Firefighter Pay Program ▫ Fire Explorer Program ▫ Expansion of Southern Maine Community College Firefighter Live-In Program
Training	▫ Regional Fire Training Center ▫ Regional Delivery of Firefighter I & II ▫ Regional Delivery of Initial Paramedic Training ▫ Regional Delivery of Initial EMT and AEMT Training
Operations	▫ Single 911 Public Safety Answering Point ▫ Countywide Radio System ▫ Closest Unit Dispatch ▫ Paramedic Fly-Car System ▫ Countywide EMS Division ▫ Community Paramedicine ▫ Standardized Operating Procedures

Planning Collaboration

Emergency services planning within any community involves the participation of many if not all, departments and agencies within a jurisdiction. The actions taken in the initial minutes of an emergency are critical, and prompt actions and warnings can save lives, minimize physical property damage, and provide for better resilience. Establishing systems to help prepare, develop, and train for emergencies at a regional or county level is often a concern for town and city managers and fire and EMS chiefs alike. Five survey questions were posed to help measure stakeholders' interest in planning collaboration.

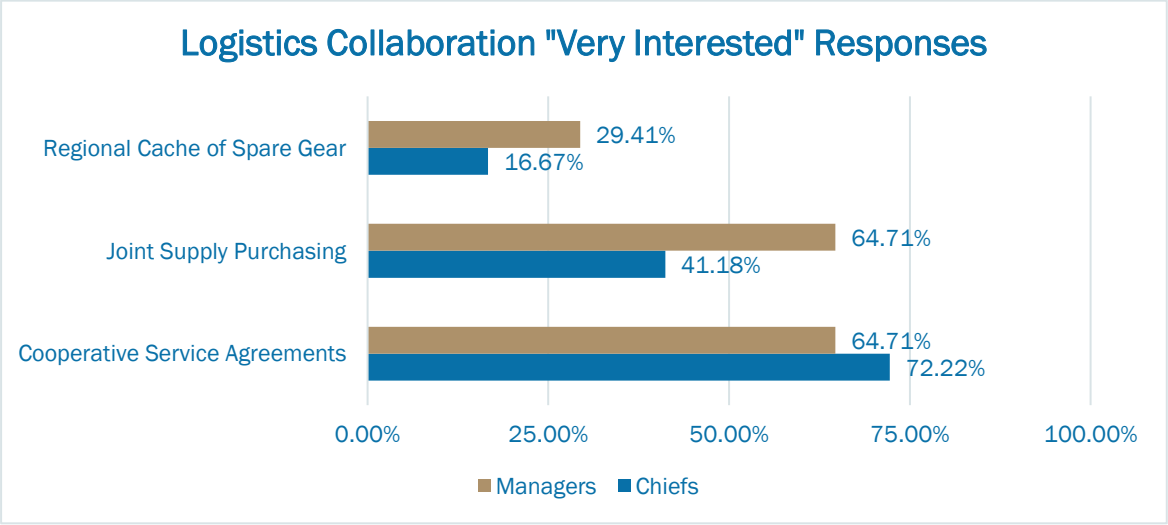


Planning Collaboration Survey Observations

- Managers reported being "very interested" more often than fire chiefs in the various areas of planning identified throughout the survey.
- A slightly higher percentage of fire chiefs are "very interested" in a countywide Records Management System (RMS). Still, several managers commented in the survey that they did not fully understand RMS as it pertains to the fire service, and they would defer the decision to their fire chiefs. Additionally, 58.82% of managers reported being "possibly interested" in collaboration with an RMS.
- Managers overwhelmingly responded to being "very interested" in collaborating countywide in post-disaster FEMA reimbursement. Typically, this responsibility falls to entities within a town or city outside of the fire department, and strain on these departments is often the concern of managers.

Logistics Collaboration

Local government agencies are sharing resources and using cooperative purchasing and services agreements more than ever. Shared resources and collaborative purchasing can reduce redundancy, save time and money, and ensure the best product and best practices are gained. Managers and fire chiefs were asked to indicate their interest in three critical areas of logistics.

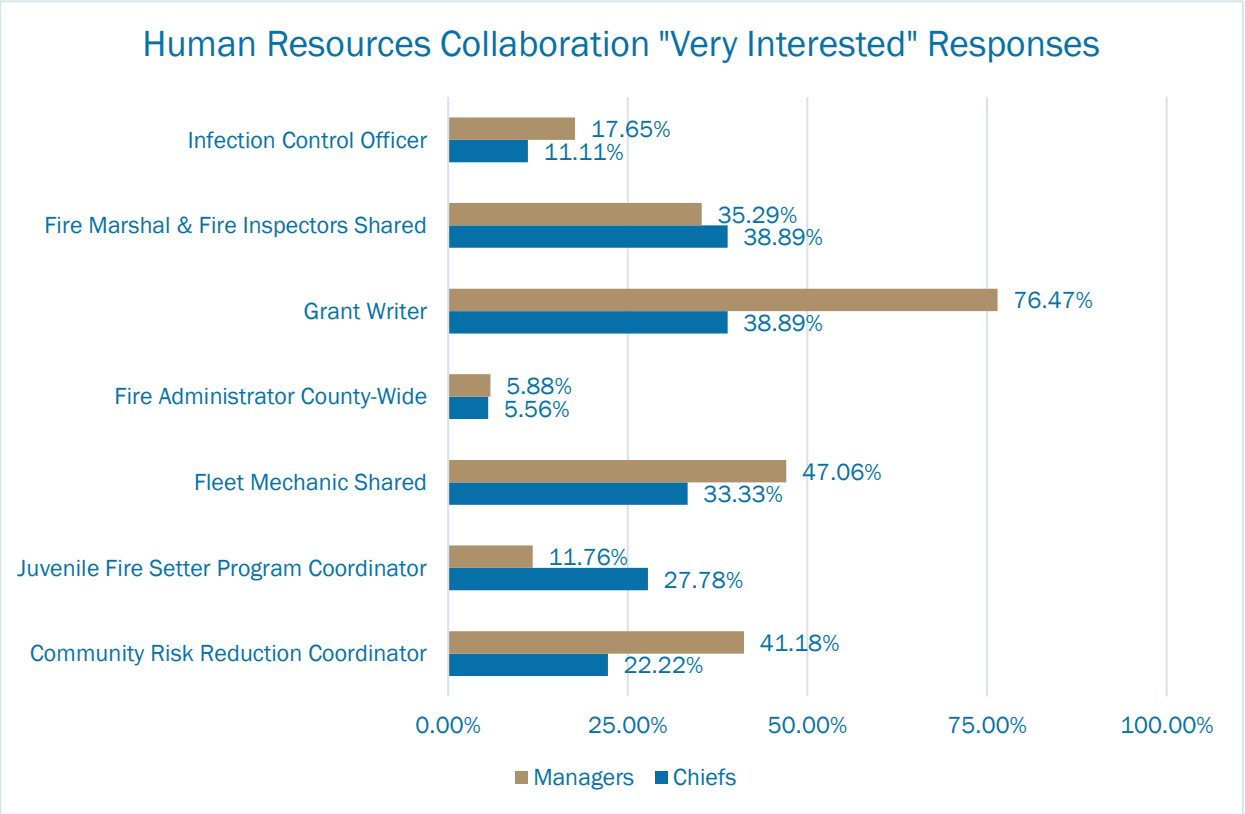


Logistics Collaboration Survey Observations

- More managers were “very interested” in a regional collection area for spare structural firefighting gear than fire chiefs. Only 16.67% of fire chiefs indicated they were “very interested” in this collaboration area, while over 22% indicated they were “not interested” at all.
- Nearly 65% of managers (compared to 41.18% of fire chiefs) are “very interested” in joint purchasing of all types of supplies, including office supplies, building supplies, firefighting gear, and vehicles. The remainder of the managers indicated that they were “possibly interested,” and no manager selected “not interested.” Nearly 12% of fire chiefs indicated that they were “not interested” in collaborative purchasing of supplies.
- Fire chiefs are overwhelmingly “very interested” in collaborating countywide on cooperative service agreements for pump testing, ladder testing, and hose testing. These activities are required by NFPA standards, are time and personnel-consuming, and can be draining on department funds.

Human Resources Collaboration

Throughout the County, there are opportunities for departments to improve operations and services by sharing specific positions on a regional level. Although there are benefits to having positions such as grant writers and community risk reduction coordinators, most departments cannot support these positions full-time. Instead, responsibility for this work falls on administrative officers or interested line personnel who complete the work above and beyond their regular job tasks. Seven survey questions were posed to gauge interest in shared human resource positions across the County.



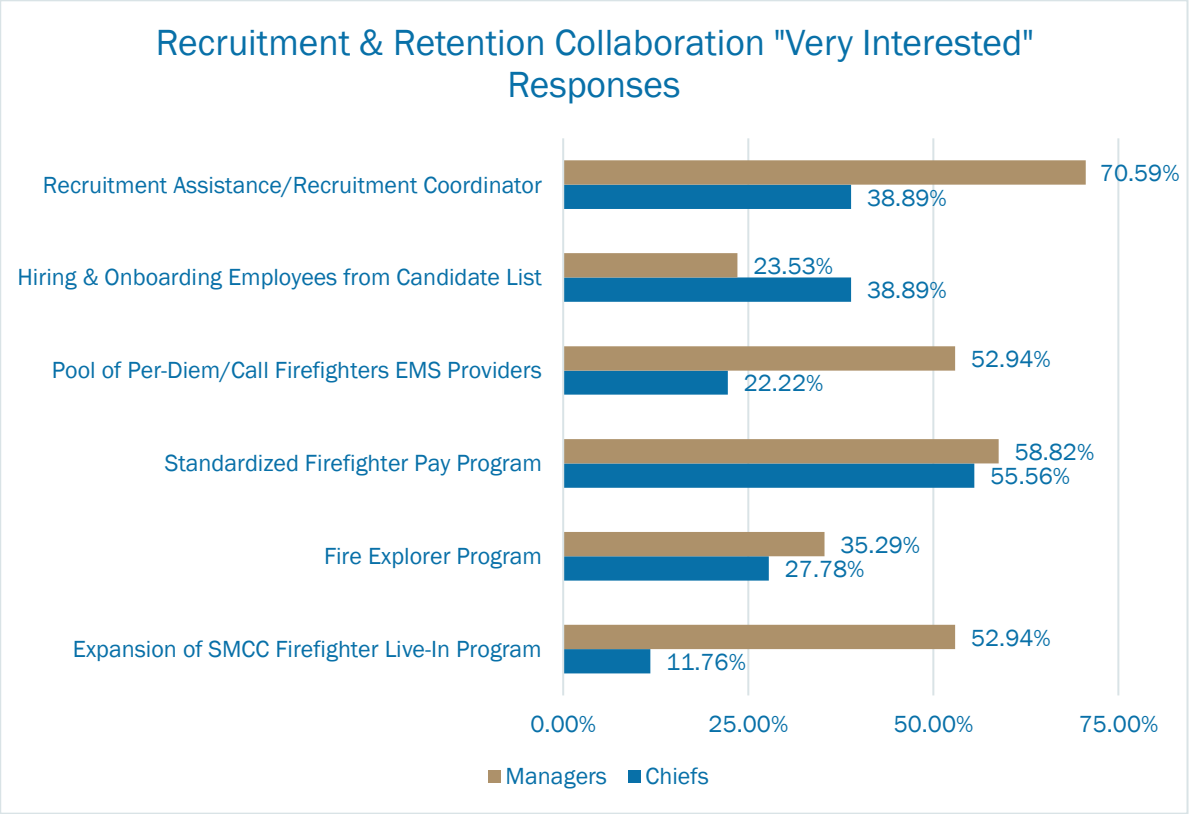
Human Resources Collaboration Survey Observations

- While few managers and chiefs indicated being “very interested” in collaborating with having a shared Infection Control Officers, 76% of managers and 67% of chiefs responded they were “possibly interested” in the position.
- Stakeholders were asked if they would be interested in having regional fire marshals or fire inspectors assist with completing high-risk occupancy inspections. Although both stakeholder groups chose “very interested” with similar percentages, more than 33% of chiefs indicated they were “not interested.”
- Many more managers than chiefs are interested in collaborating with a grant writer, and although all managers were either “very interested” or “possibly interested” in the position, 16.67% of chiefs indicated they were “not interested.”
- Both groups ' interest in a countywide Fire Administrator was somewhat similar, with most respondents indicating they were “possibly interested.”
- Managers and chiefs responded similarly when asked whether they would be interested in collaborating on a shared vehicle mechanic or shared contract for vehicle services.
- A greater percentage of chiefs were “very interested” in collaborating on a juvenile fire setter program coordinator. Based on comments from managers, this may be based on program unfamiliarity by some managers. Both groups expressed similar overall interest in collaborating on the position.

- Most managers and chiefs expressed interest in collaborating on a Community Risk Reduction Coordinator. However, manager interest was slightly higher, and three of the 18 fire chiefs indicated no interest in the position.

Recruitment & Retention Collaboration

Recruitment and retention challenges continue to plague Fire and EMS departments across the country, and the post-COVID approach to work is further challenging communities to attract and hire qualified employees. Frequently, departments compete for the same candidate as positions often go unfilled, and organizations work harder to retain the trained and experienced people they have. Within Cumberland County, competition for qualified or 'qualified-capable' candidates is great. 'Qualified-capable candidates are candidates who are not fully certified but willing and capable of obtaining required certifications with the support of an employer. Collaborative efforts to recruit and retain employees on a countywide basis may benefit the entire system. The stakeholder survey posed six questions to managers and chiefs specific to recruitment and retention efforts of collaboration.

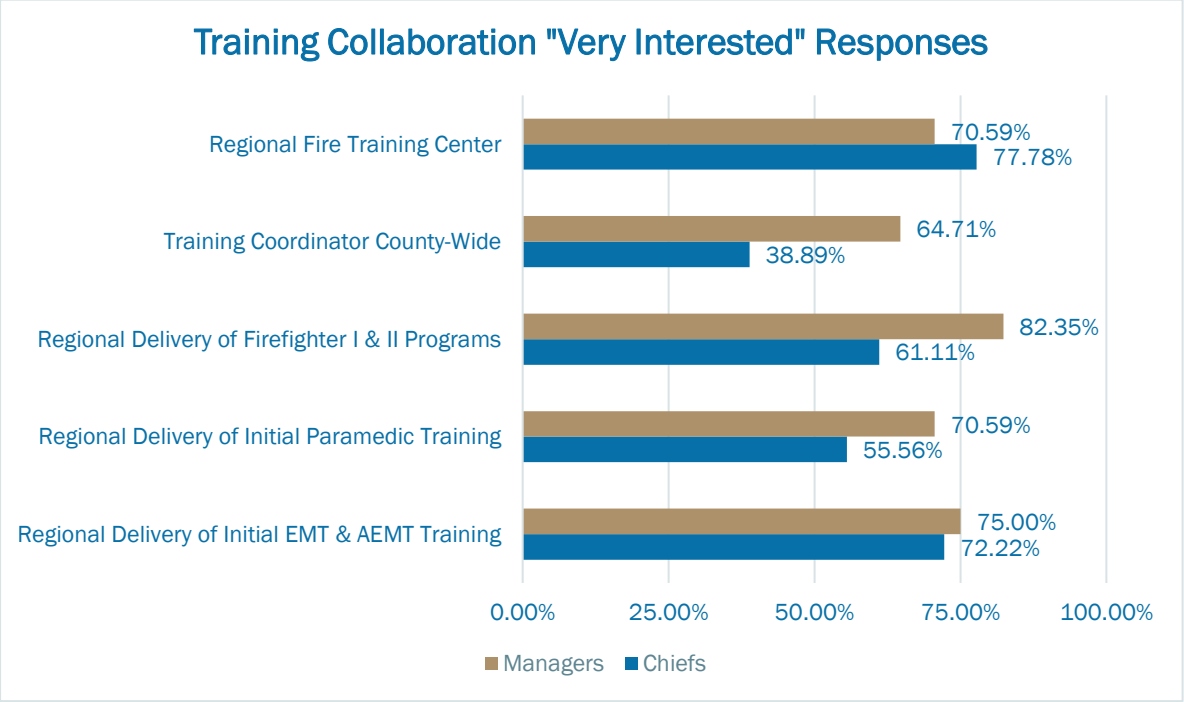


Recruitment & Retention Collaboration Survey Observations

- Over 70% of managers are “very interested” in a collaborative effort to recruit new employees. In contrast, just under 40% of chiefs feel the same way. Eleven percent of chiefs indicated they were “not interested” in the effort.
- More chiefs than managers are interested in collaborating to hire and onboard new employees from an approved hiring list. However, nearly 65% of managers indicated they were “possibly interested” in the collaboration.
- Managers are more interested in collaborating in a countywide pool of per-diem and on-call firefighters that departments could pull from on an as-needed basis, whereas 22.22% of chiefs indicated no interest in this collaboration.
- Managers and chiefs agree that a standardized firefighter pay program administered countywide would greatly interest them. Both groups of stakeholders recognize that pay differences between departments as one of the challenges with recruiting and retaining employees.
- Both stakeholder groups have similar interest levels in a countywide fire explorer program, yet managers are far more interested in collaborating countywide for the expansion of the firefighter live-in program currently offered by Southern Maine Community College.

Training Collaboration

The training arena is a natural area to consider for collaboration as all departments face similar training challenges within their organizations. Initial fire and EMS training programs are time- and personnel-consuming undertakings that require a minimum number of students to make the effort worthwhile, while annual required refresher training on various fire and EMS topics can be a challenge to schedule. Additionally, many training topics, such as rapid intervention training and hazardous materials response training, are better presented with larger groups of students to help facilitate hands-on evolutions. The survey included five questions geared to identify interest in collaborating in training.

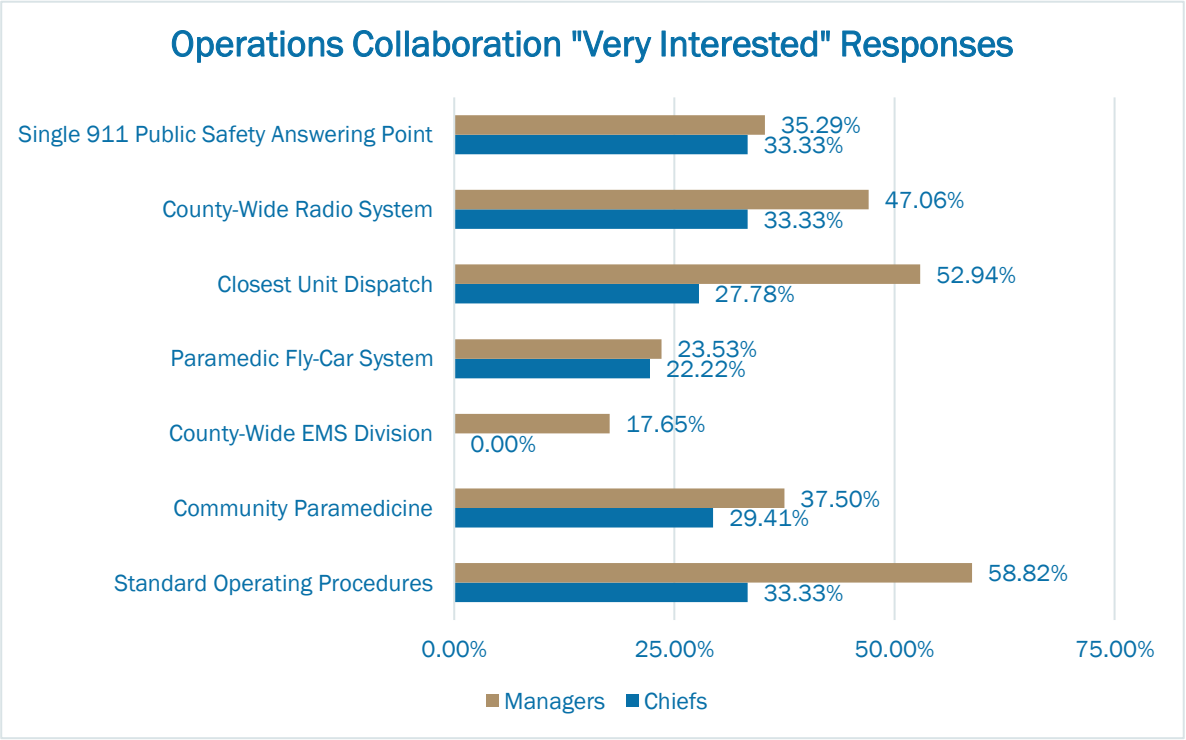


Training Collaboration Survey Observations

- Survey results show managers and chiefs are “very interested” in various training collaboration efforts at similar rates. This category shows the most similarity between the two groups.
- Both groups are equally “very interested” in a regional fire training center and have similar interests in the regional delivery of initial fire and EMS training programs.
- While more managers are “very interested” in a countywide training coordinator, 44.44% of chiefs indicated they were “possibly interested.”

Operations Collaboration

Cumberland County is comprised of 31 fire and EMS departments providing like services to the residents and visitors throughout the County. Departments respond to and mitigate emergency incidents in similar ways, and departments often work together at incidents without concern for town or city boundaries. Operations are what the customers see and experience in the field, the various services and systems established to mitigate emergency incidents. Countywide collaboration within the realm of operations can significantly improve service delivery and enhance relationships between departments. The survey included seven questions geared towards identifying interest in collaborating in various areas of operations.



Operations Collaboration Survey Observations

- Managers and chiefs share similar interest levels for a countywide, single 911 Public Safety Answering Point and for a Community Paramedicine program.
- A higher percentage of managers than fire chiefs are “very interested” in exploring collaboration efforts for a countywide radio system. Whereas all managers were either “possibly interested” or “very interested,” 33% of chiefs indicated they were “not interested” in a countywide radio system.
- Managers and chiefs both express interest (at varying levels) in the practice of dispatching the closest available appropriate resource to emergency incidents, but both groups have concerns over functionality and costs. Survey comments captured by both groups indicate that more information and discussion are needed.
- Implementing a paramedic fly car system countywide generated interest from several managers and chiefs. Still, some managers commented that they were unfamiliar with such systems and could not express their level of interest.
- Only 16.67% of chiefs indicated any interest in making EMS a separate countywide division run by the County. In comparison, more than 72% of chiefs indicated they were “not interested” in collaborating in this area. Managers had more interest, with 17.65% indicating they were “very interested” and 52.94% indicating they were “possibly interested.”
- One hundred percent of managers indicated some interest in collaborating to have a set of standardized policies that could be adopted by local departments, compared to 83.33% of chiefs. Almost 17% of chiefs indicated they were “not interested” in standardized policies, and some concern was expressed about the challenges of implementing such a system with the different unions.

Recommended Plan of Implementation

The recommended Plan of Implementation was developed by establishing the overall top ten priorities of each of the Fire Chiefs and the City and Town Manager stakeholder groups, identifying the priorities that both stakeholder groups shared, and then overlaying the Dynamix Consulting Group recommendations.

Collaboration Priorities

Fire Chiefs

Using the survey results that were detailed in the Partnering Strategies section of this report, Dynamix Consulting Group calculated the top ten priorities of the Fire Chiefs using the following scoring system:

- 1 Point for every fire chief who was "Very Interested" in the initiative.
- 1/2 Point for every fire chief who was "Possibly Interested in the initiative.
- 0 Points for every fire chief who was "Not Interested" in the initiative.

Priority	Score
1. Regional training facility or facilities, including burn buildings, classrooms, and props	15.5
2. Regional delivery of EMT and AEMT initial training programs	15
3. Cooperative service agreements for pump, ladder, and hose testing	14.5
4. Regional delivery of Firefighter I and II initial training programs	13.5
5. Regional delivery of Paramedic initial training programs	13
6. Assistance with Post-Disaster FEMA Reimbursement Requests	13
7. Standardized Firefighter Pay Program to avoid "nickel chasing" and ensure consistent pay in neighboring departments	13
8. Fire Department Records Management System purchased by the county available to every municipality to establish a countywide dataset	12
9. Assistance with developing disaster plans that local municipalities can adopt	12
10. Assistance with Emergency Management Training Exercises	12

City and Town Managers

Using the survey results that were detailed in the Partnering Strategies section of this report, Dynamix Consulting Group calculated the top ten priorities of the City and Town Managers using the following scoring system:

- 1 Point for every manager who was "Very Interested" in the initiative.
- 1/2 Point for every manager who was "Possibly Interested in the initiative.
- 0 Points for every manager who was "Not Interested" in the initiative.

Priority	Score
1. Regional delivery of Firefighter I and II initial training programs	15.5
2. Assistance with Post-Disaster FEMA Reimbursement Requests	15.5
3. Grants Writer / Coordinator	15
4. Regional training facility or facilities, including burn buildings, classrooms, and props	14.5
5. Community Paramedicine Program	14.5
6. Recruitment assistance, possibly a recruitment coordinator	14.5
7. Community Paramedicine Program	14
8. Regional delivery of EMT and AEMT initial training programs	14
9. Joint purchasing on everything from paper towels and office supplies to gear to fire apparatus	14
10. Cooperative service agreements for pump, ladder, and hose testing	14

Priorities Shared by the Fire Chiefs and City and Town Managers

The following were identified among the top ten priorities of both the Fire Chief and City and Town Manager stakeholder groups:

Priority	Chiefs	Managers	Total
1. Regional training facility or facilities, including burn buildings, classrooms, and props	15.5	14.5	**30**
2. Cooperative service agreements for pump, ladder, and hose testing	14.5	15	**29.5**
3. Regional delivery of EMT and AEMT initial training programs	15	14	**29**
4. Regional delivery of Firefighter I and II initial training programs	13.5	15.5	**29**
5. Assistance with Post-Disaster FEMA Reimbursement Requests	13	15.5	**28.5**

Implementation Schedule

The following illustration is Dynamix Consulting Group's recommended Implementation Schedule. Dynamix Consulting Group has listed six strategic initiatives in order of priority. Within each initiative are recommended short-, mid-, or long-term objectives.

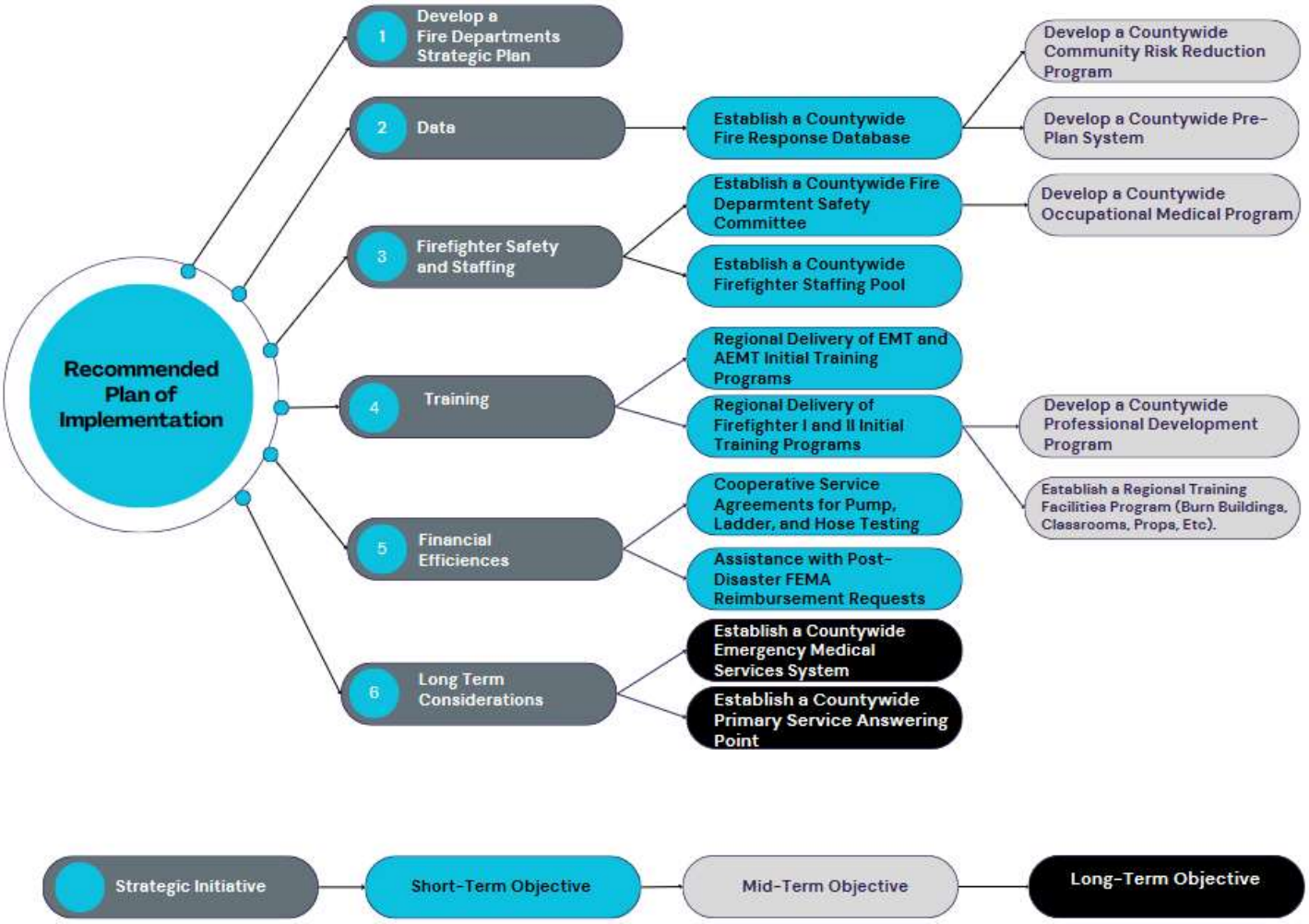
Short and Mid-Term Strategies vary in complexity and financial impacts. While future drivers of service demand are considered, these recommendations tend to be based on an organization's current conditions and strategic objectives obtainable in less than one year and mid-term strategies between one and three years.

Long-Term strategies are typically associated with timeframes over three years. Future drivers of increased service demand are often critical components to be considered when identifying long-term strategies. These recommendations vary in complexity and financial impact.

The first priority listed by Dynamix Consulting Group is to develop a Fire Departments Strategic Plan. Cumberland County should facilitate a Strategic Plan to allow its stakeholder groups to consider the Dynamix Consulting Group recommendations and then prioritize and implement the goals and objectives recommended in this report based on available resources. The strategic planning process would ideally result in a three-to-five-year work plan that will guide the work effort of all of the fire departments in the county toward a common set of goals and objectives.

Organizations that do not engage in the strategic planning process often fail to benefit from the evaluation and planning process. The recommendations contained within this report will do little more than exist in the report if not prioritized, assigned to specific individuals for oversight, and then implemented.

Recommended Plan of Implementation



Conclusion

Dynamix Consulting Group sincerely hopes that the information in this report serves to its fullest extent and that the emergency services provided within Cumberland County will improve by its implementation.

DYNAMIX
CONSULTING GROUP

Dynamix Consulting Group
PO Box 68 Lake Alfred, FL 33850
Mary-Ellen Harper
860.729.8247 | Mary-Ellen@DynamixConsultingGroup.com
Stuart McCutcheon
863.662.1474 | Stuart@DynamixConsultingGroup.com