SWANSBORO FIRE DEPARTMENT

COMMUNITY RISK ASSESSMENT – STANDARDS OF COVER

Swansboro Fire Department

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2024

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Introduction

The Swansboro Fire Department (SFD) is dedicated to enhancing the quality of life in our community through proactive risk reduction, response readiness, and a steadfast commitment to excellence in all our endeavors. To demonstrate the dedication of SFD to obtain this "excellence," SFD volunteered to assist in the BETA testing for the Community Risk Assessment and Standards of Cover (CRA/SOC) Certificate Program through the Center for Public Safety Excellence (CPSE), which aligns with the framework set forth by the Commission on Fire Accreditation International (CFAI). The CRA/SOC is designed to identify and communicate the results of a comprehensive community risk assessment, pinpointing vulnerabilities to both life and property within our area. As community risks are identified, the department's capacity to address these risks must be evaluated to ensure our services meet the needs of Swansboro’s residents. Completing this task requires an extensive community analysis and a detailed evaluation of our findings.

This document represents extensive research into the Swansboro community and evaluates the current performance levels across all service areas provided by the Swansboro Fire Department. The report includes an overview of the community served, the services offered by the fire department, an all-hazard risk assessment, current deployment and performance data, critical tasking for effective response force determinations, and a plan for maintaining and enhancing response capabilities. This living document will be reviewed and updated annually to ensure the department's performance is accurately identified and understood, enabling continuous improvement in our service to the community.

Community Organization

The Town of Swansboro, North Carolina, formally established its incorporated municipal government in 1783. This incorporation was a significant milestone in the town's history, providing a structured framework for local governance and enabling the community to manage its affairs more effectively. Swansboro's incorporation marked the transition from a loosely organized settlement to a recognized municipality with defined legal and

administrative powers. The incorporation process involved the establishment of a town charter, which outlined the governance structure, including the roles and responsibilities of elected officials, the creation of local ordinances, and the provision of essential services to residents. The early governance of Swansboro was characterized by a focus on managing the town's economic activities, particularly those related to its thriving shipbuilding and maritime trade. The town government worked to facilitate commerce, maintain infrastructure, and ensure the safety and well-being of its citizens. This period saw the establishment of local regulations and the development of public services such as road maintenance, public safety, and sanitation.

As tourism emerged as a significant industry, the municipal government took proactive steps to preserve Swansboro's historical sites and natural beauty. Establishing zoning laws and development regulations helped maintain the town’s character and prevent overdevelopment. The government also focused on enhancing community amenities, including parks, recreational facilities, and cultural events, to improve the quality of life for residents and visitors alike.

In recent decades, Swansboro’s incorporated municipal government has continued to prioritize sustainable development and community engagement. Initiatives to protect the environment, such as conserving the White Oak River and surrounding coastal areas, reflect the town’s commitment to balancing growth with ecological stewardship. The Town actively seeks input from residents through public forums and community planning sessions, ensuring that the community's voices are heard and considered in decision-making processes.

History of the Community

Founded in 1783, The Town of Swansboro, known as the “Friendly City by the Sea,” is a small community alongside the White Oak River and Intracoastal Waterway in the Northeastern corner of Onslow County, North Carolina. The current incorporated City Limits consist of approximately 2.421 square miles and have a permanent population of 3,744. While growing, Swansboro retains its quiet appeal, picturesque waterfront, and hometown feel enriched with historic colonial landmarks and natural resources. The town is named after Samuel Swann, a significant figure in North Carolina's colonial

government who played a crucial role in the area's early development. Swansboro's strategic location along the White Oak River made it an ideal site for shipbuilding and maritime trade, laying the foundation for its early economic growth.

In the 18th and 19th centuries, Swansboro thrived as a shipbuilding center. The town's shipyards produced a variety of vessels, contributing to local and regional trade. This period also saw the growth of other industries, such as lumber and naval stores, further bolstered the town's economy. Swansboro's port became a bustling hub, facilitating the exchange of goods and fostering connections with other coastal communities.

The Civil War challenged Swansboro, as it did many Southern towns. The Union Navy's blockade of Southern ports disrupted trade, and the town faced economic hardships. However, Swansboro recovered in the post-war period, gradually rebuilding its economy and infrastructure.

Figure 1: Swansboro Land and Lumber Company Circa 1900

The 20th century marked significant changes for Swansboro. The town's economy began to diversify beyond shipbuilding and maritime industries. Tourism emerged as a key sector, driven by Swansboro's scenic waterfront, historic charm, and recreational opportunities. Establishing nearby military bases, such as Camp Lejeune, also contributed to the town's growth, bringing in new residents and stimulating local businesses.

Swansboro has maintained a strong sense of community and a commitment to preserving its historical heritage. The historic downtown area, with its well-preserved 19th-century buildings, is a testament to the town's rich past. Festivals, events, and cultural activities celebrate Swansboro's history and foster community spirit.

Swansboro has experienced steady growth in recent decades, with new residential developments and businesses enhancing the town's appeal. Efforts to protect the natural environment, including preserving the White Oak River and surrounding coastal areas, reflect the community's dedication to sustainable development.

Today, Swansboro is known for its picturesque waterfront, vibrant community life, and a blend of historical and modern amenities. The town continues to honor its maritime roots while embracing a future of growth and innovation. Swansboro is a dynamic community that values its past while looking forward to continued prosperity and development.

Organization Chart

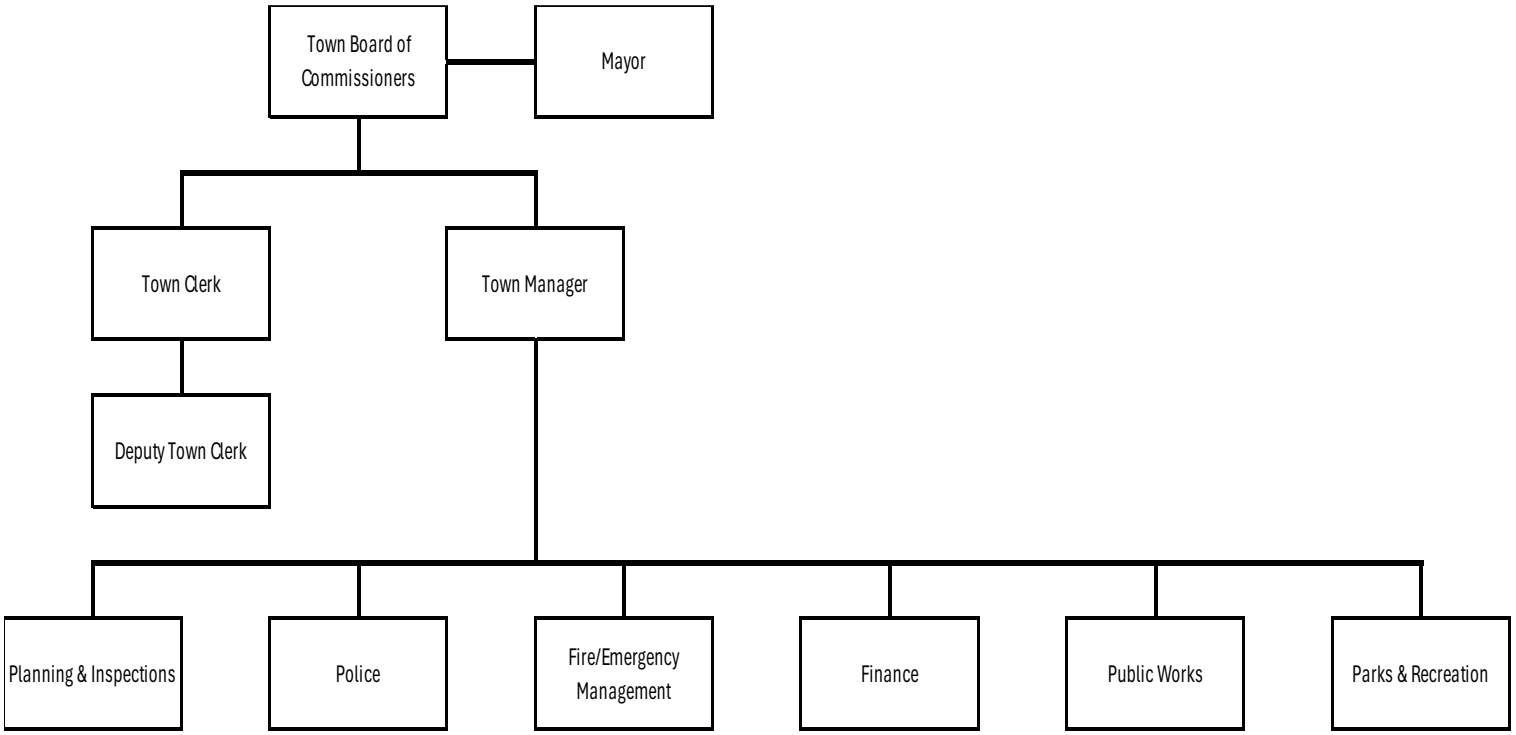


Figure 2: Town Organizational Chart

Governance / Organization

The Town of Swansboro operates under a Manager-Council form of government with an elected mayor. In this system, the town council, composed of elected officials, is the legislative body responsible for establishing ordinances and the town budget. The mayor, also elected by the citizens, acts as the ceremonial head of the town and presides over council meetings, providing leadership and representing Swansboro in official capacities. A town manager appointed by the council oversees the day-to-day operations of municipal services, including oversight of the 6 division heads.

Agency Legal Establishment

While the original Swansboro Fire Department was established within the original Town Charter in 1783, the department truly defined today was established in 1942. The department, which was solely volunteer, began to transition into a town department in 1990 upon completing the current fire station at 609 West Corbett Ave. In 2009, the Town hired the first paid personnel to supplement the volunteer members during normal business hours when they were not always available to answer calls. Over time, growth of the district size, call volume, training standards, and technological advancements drove the need for more consistent staffing to maintain a standard of coverage. Thus, the fire station was renovated to accommodate overnight shifts and full-time personnel. In 2017, the Town of Swansboro Fire Department began providing 24-hour, 365-day coverage to the citizens.

Today, the Town of Swansboro Fire Department is committed to refining the quality of life throughout the community by delivering an all-hazards approach. The department serves a primary response district totaling 9.491 square miles, with a permanent population of 5,603. The district consists of the incorporated Town Limits of Swansboro – the Swansboro Fire District, and the contracted unincorporated district of Onslow County – the White Oak River Fire District. The department holds the Insurance Services Office (ISO), Public Protection Class (PPC) rating of 4/9e. The department comprises 43 personnel and maintains numerous services and programs to foster a safer community for citizens, businesses, and guests.

Community Financial

The financial basis of the Town of Swansboro is rooted in sound fiscal management and diverse revenue streams that support the town's operations, services, and development projects. The town's financial strategy focuses on sustainability, accountability, and strategic investment to ensure long-term economic stability and growth. Swansboro’s primary financial basis components include property taxes, sales taxes, service fees, grants, and prudent financial planning. Property taxes are a significant source of revenue for Swansboro. These taxes are levied on real estate and personal property

within the town's boundaries. The revenue from property taxes funds essential services such as public safety, infrastructure maintenance, and community services.

Swansboro employs robust financial planning practices to ensure fiscal responsibility and transparency. The town prepares an annual budget that outlines expected revenues and expenditures, aligning financial resources with strategic priorities. Regular financial audits and reviews are conducted to maintain accountability and transparency in the town's financial operations.

Swansboro's financial strategy emphasizes long-term sustainability. This includes proactive debt management, strategic capital investments, and continuous evaluation of revenue sources and expenditure patterns. The town aims to maintain financial health and support ongoing community development by balancing current needs with future growth. Diverse revenue streams, prudent expenditure management, strategic financial planning, and a commitment to transparency and accountability characterize the financial basis of the Town of Swansboro. These elements work together to ensure the town's fiscal stability and support its mission to enhance the quality of life for all residents.

Community Boundaries

The Town of Swansboro is located in Onslow County on the southeastern coast of North Carolina. Positioned where the White Oak River converges with the Intracoastal Waterway and flows into the Atlantic Ocean, Swansboro offers a scenic waterfront setting central to its identity and charm. The town's incorporated area

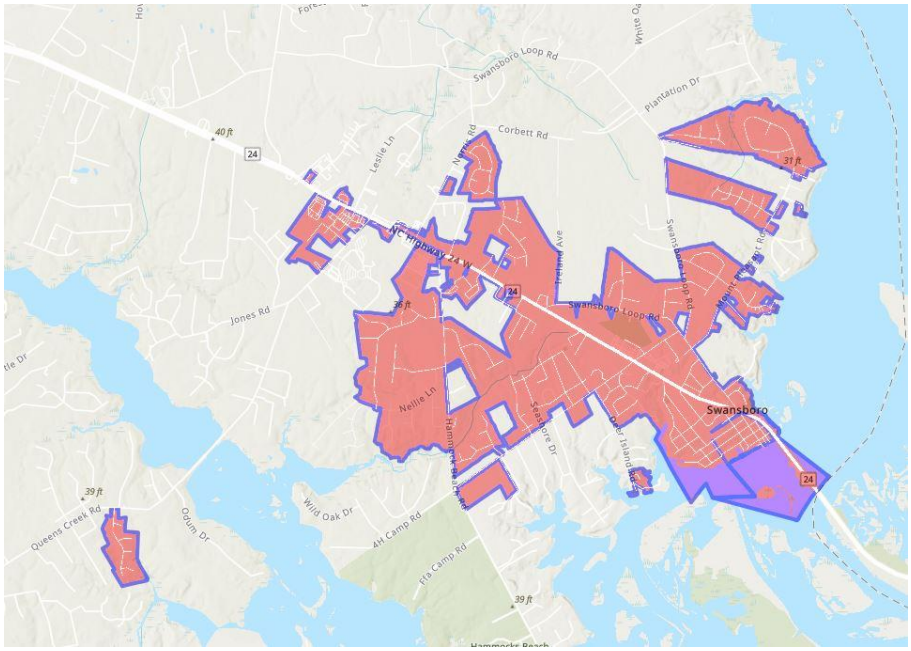


Figure 3: Incorporated City Limits

includes a mix of historic downtown districts, residential neighborhoods, and natural landscapes.

Swansboro's boundaries are defined to the north by the White Oak River, which provides a natural border and a gateway to various water-based activities. The town's limits to the east extend towards the Bogue Sound and the Intracoastal Waterway, which separate Swansboro from the barrier islands and the Atlantic Ocean beyond. The southern boundary is roughly delineated by the areas along NC Highway 24, a major thoroughfare that connects Swansboro to the nearby cities of Jacksonville and Morehead City. To the west, the incorporated area stretches towards the Croatan National Forest, offering a blend of urban and natural environments. The town's location enhances its scenic beauty and positions it as a hub for tourism, commerce, and outdoor recreation, with easy access to coastal and inland attractions. Swansboro's boundaries encompass diverse landscapes, from its vibrant waterfront and historic downtown to its suburban developments and preserved natural areas. This contributes to its appeal as a desirable place to live and visit.

Critical Infrastructure

Stormwater Management

The Town of Swansboro's Stormwater Management program is a critical component of the town's infrastructure. It is designed to manage and mitigate the impact of stormwater runoff effectively. The program focuses on preventing flooding, reducing pollution, and protecting the local waterways. The Public Works department plays a crucial role in this program, actively clearing and maintaining all essential components such as storm drains, culverts, and retention ponds. Regular maintenance ensures these systems function efficiently, particularly during heavy rainfall, safeguarding the community and the environment. The Public Works department reviews all proposed projects for the Town to ensure that all appropriate standards are met before approval to begin is provided.

Utility (Water, Sewer, Power)

Critical utility infrastructure ensures the reliable delivery of essential services such as power, water, and sewer to the Swansboro Area. Electrical power in the town is supplied

by two services: Jones-Onslow Electric Membership Corporation (JOEMC) and Duke Energy, depending on the specific area. The Onslow Water and Sewer Authority (ONWASA) provides comprehensive water and sewer services, maintaining the town's water quality and sanitation standards.

Communications

Swansboro's critical communication infrastructure ensures seamless connectivity and reliable communication for residents and emergency services. Spectrum and Bright Speed are the town's primary internet suppliers, with Spectrum beginning to introduce fiber optic service for enhanced speed and reliability. Cellular coverage in

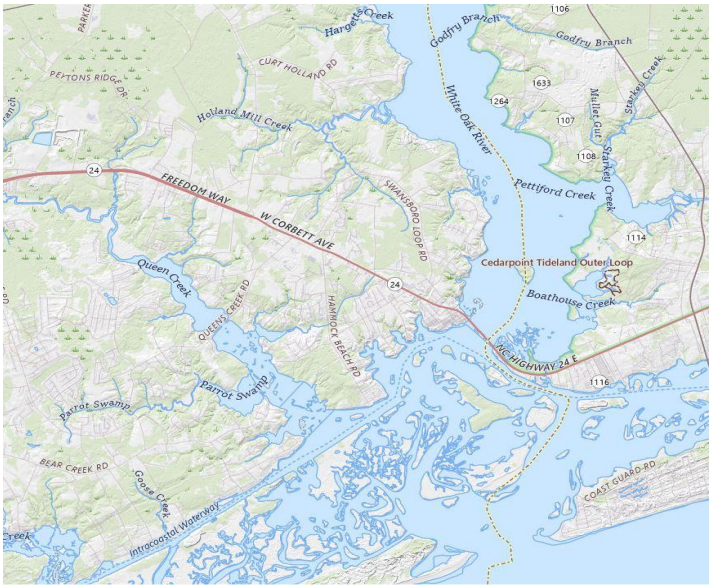


Figure 4: Town of Swansboro Transit Network (Road and Waterways)

Swansboro is comprehensive, with all major networks—such as AT&T, Verizon, T-Mobile, and others—offering extensive service across the area. For emergency services, radio communication is facilitated by the Onslow County 800 MHz system, ensuring clear and dependable communication during critical situations. As an added layer of security, the NC VIPER (Voice Interoperability Plan for Emergency Responders) system serves as a backup, guaranteeing uninterrupted communication for emergency responders.

Transit

Swansboro's critical community infrastructure is anchored by a well-developed network of roadways and waterways that facilitate efficient transit and connectivity. The town is serviced by major roadways, including North Carolina Highway 24 (West Corbett Ave), which serves as a vital artery linking Swansboro to neighboring communities and providing essential routes for emergency response, commerce, and daily commutes.

The significant waterways, such as the Intracoastal Waterway and the White Oak River, complement the road network. These waterways support local recreational boating and fishing activities and are crucial in commercial transport and emergency response capabilities. These transit routes ensure that Swansboro remains accessible, connected, and capable of supporting routine and critical transportation needs.

Recreational

The Town of Swansboro has developed a significant recreation infrastructure network, which includes a blend of historic areas, parks, open spaces, trails, and greenways that enhance the community's quality of life. The town's historic areas, such as the charming downtown district, offer a glimpse into Swansboro's rich cultural heritage, drawing residents and visitors alike. Parks and open spaces, including the scenic Swansboro Municipal Park and waterfront locations, provide venues for outdoor activities, sports, and family gatherings. An extensive network of trails and greenways, like the Swansboro Bicentennial Park Trail and the Hammocks Beach State Park trails, invites residents to enjoy walking, biking, and connecting with nature. This comprehensive recreation infrastructure supports a vibrant, active lifestyle and fosters a strong sense of community while preserving Swansboro's natural beauty and historic charm.

Geography

The Town of Swansboro is geographically situated along the southeastern coast of North Carolina, where the White Oak River meets the Intracoastal Waterway. This prime location endows the town with a rich tapestry of coastal features, including estuaries, marshlands, and pristine waterfronts. The geography is marked by a blend of serene riverbanks, tidal creeks, and expansive water views, enhancing the town's natural beauty and supporting a vibrant ecosystem. The coastal plain setting provides a relatively flat terrain, interspersed with flourishing greenery and maritime forests. Swansboro's proximity to the Atlantic Ocean offers easy access to beaches and coastal activities, making it a sought-after destination for residents and visitors. This unique geographical setting fosters a strong connection to the water, shaping the town's culture, economy, and lifestyle.

Geology

The Town of Swansboro is underlain by a distinctive geological framework characteristic of the southeastern coastal plain. The region is predominantly composed of sedimentary formations, with layers of sand, silt, clay, and gravel deposited over millions of years by ancient rivers and shifting sea levels. This sedimentary base is interspersed with shell fragments and marine fossils, reflecting its historical proximity to marine environments. The town's geology also includes sections of marl, a calcium-rich mixture of clay and limestone, contributing to the fertile soils found in the area. These geological features influence the local topography, creating a flat landscape with subtle undulations. The porous nature of the sandy soils enhances drainage but also necessitates careful stormwater management. Overall, Swansboro's geology shapes its physical landscape, impacts its natural resources, and plays a vital role in its environmental and developmental planning.

Topography

The Town of Swansboro features a diverse and picturesque topography that significantly contributes to its charm and character. The town is situated along the coast, characterized by a mix of flat, low-lying areas and gently rolling terrain. The proximity to the White Oak River and the Intracoastal Waterway shapes much of the local landscape, creating a network of scenic waterways, marshes, and estuaries. These coastal features are complemented by lush green areas and wooded sections that provide a natural buffer and enhance the town's aesthetic appeal. The waterfront views, parks, and subtle elevation changes make Swansboro a visually appealing and geographically unique community.

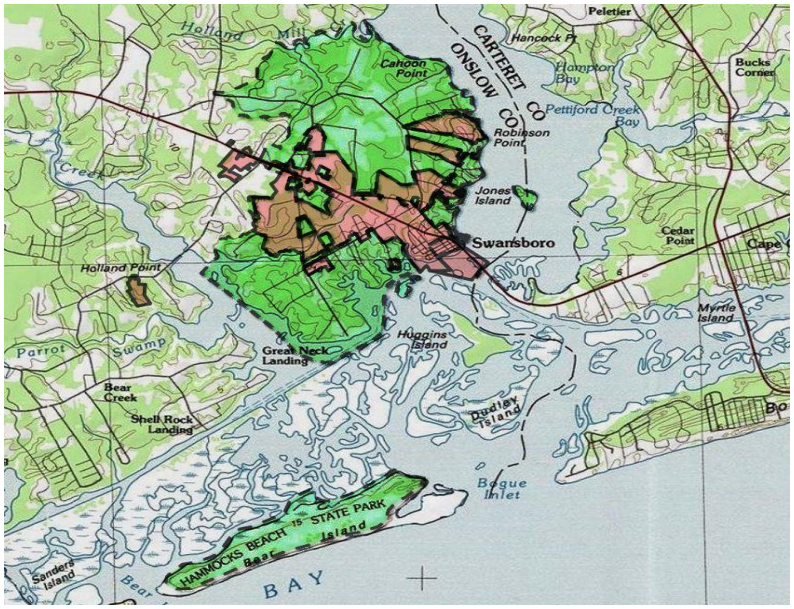


Figure 5: Swansboro Area Topography

Climate

Swansboro experiences a humid subtropical climate, which is characteristic of the southeastern United States. Summers are typically hot and humid, with average high

temperatures in the upper 80s to low 90s Fahrenheit (around 30-35°C), often moderated by cooling sea breezes from the nearby Atlantic Ocean. Winters are mild, with average highs in the 50s and 60s Fahrenheit (10-20°C), occasionally dipping below freezing. The town is exposed annually to the Atlantic hurricane season, which runs from June 1st to November 30th each year. Swansboro's coastal location makes it susceptible to tropical storms and hurricanes that may bring heavy rainfall, strong winds, and storm surges. Preparedness and resilience against these natural elements are crucial for the community, with measures in place to mitigate potential impacts on infrastructure and residents.

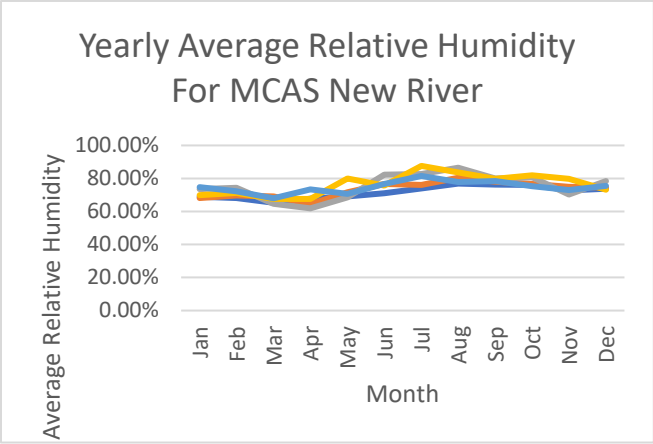


Figure 6: Annual Humidity

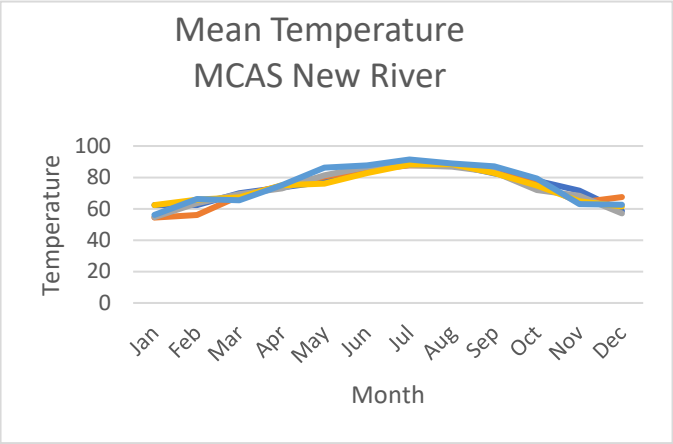


Figure 7:Annual Temperature

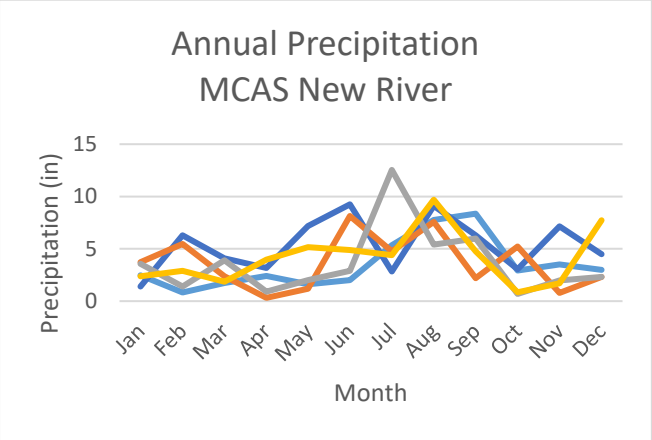


Figure 9: Annual Precipitation

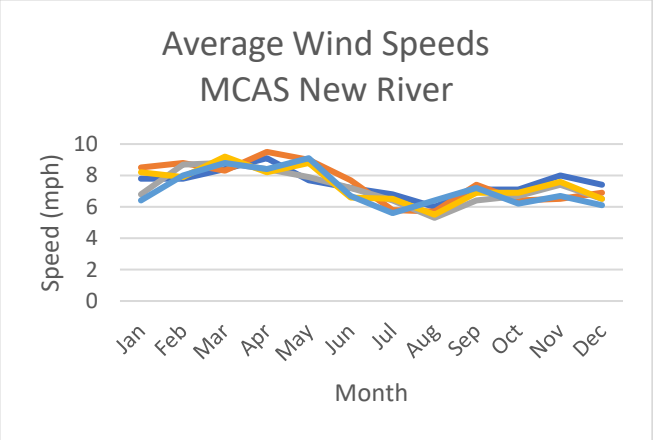


Figure 8: Annual Wind Speeds

Physiography

Swansboro lies within the Atlantic Coastal Plain, known for its flat topography and diverse coastal features. The town is nestled along the banks of the White Oak River, near where it meets the Intracoastal Waterway, providing residents and visitors with scenic waterfront views and access to maritime activities. The surrounding area is predominantly characterized by low-lying terrain, marshlands, and estuaries, which support a rich marine and bird life biodiversity. Swansboro's physiography also includes pockets of maritime forests and sandy soils, contributing to its natural beauty and ecological diversity. This coastal plain setting influences the town's environment and shapes its culture, recreation opportunities, and economic activities, making Swansboro a unique and appealing destination along the North Carolina coast.

Community Population

The Town of Swansboro has experienced steady population growth in recent years, reflecting its appeal as a desirable residential community. As of the latest estimates, Swansboro's population has surpassed 3,744 (2020 Census), with projections indicating continued expansion and the White Oak Fire district population rising to an estimated 1,859. The permanent growth can be attributed to several factors, including its scenic waterfront location, proximity to employment opportunities in nearby metropolitan areas like Jacksonville and Wilmington, and the town's charming historic district, which

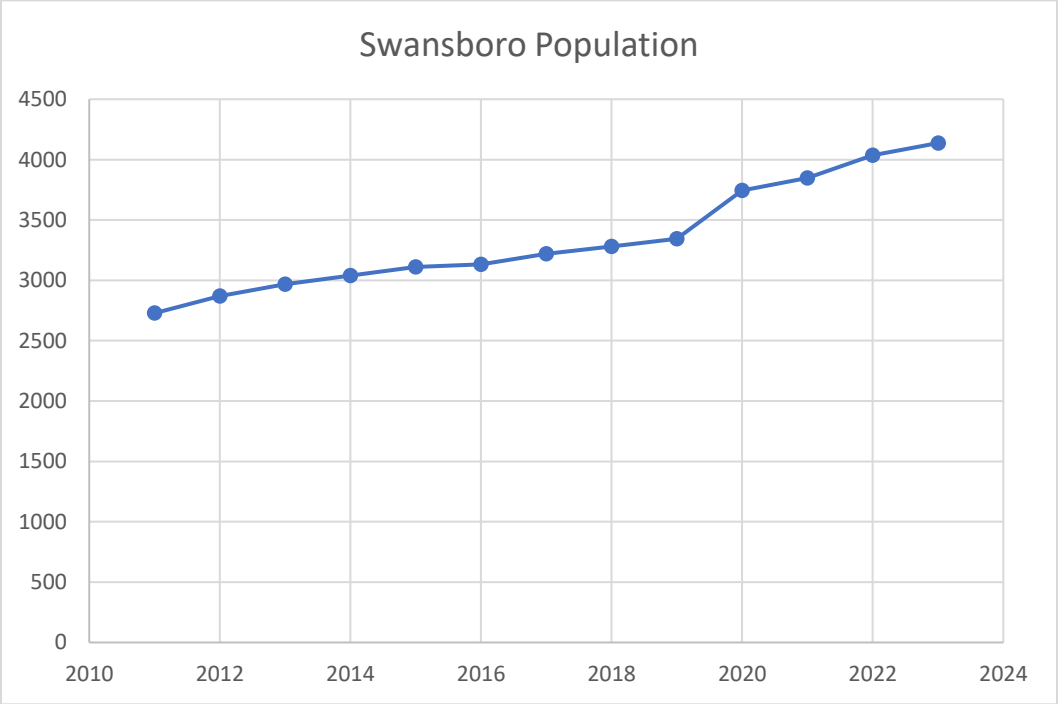


Figure 10: Swansboro Population Growth

attracts new residents seeking a coastal lifestyle with a small-town ambiance. The population growth in Swansboro has been accompanied by thoughtful planning initiatives to accommodate increased housing demands while preserving the town's natural beauty and community character. Local amenities such as parks, recreational facilities, and cultural attractions further enhance Swansboro's appeal, catering to residents of all ages. As Swansboro continues to evolve, careful growth management ensures sustainable development that enhances the quality of life for current and future generations in this thriving coastal community.

The primary response district also experiences a significant seasonal and transient population influx due to its close proximity to the pristine North Carolina coastline and two military installations, Marine Corps Camp Lejeune and Air Station Cherry Point.

Population Density

Swansboro is characterized by a moderate population density that reflects its blend of residential neighborhoods, commercial areas, and natural landscapes. The town's population density varies across parts of its incorporated limits and surrounding unincorporated areas of Onslow County. The population density is higher in the more urbanized areas, such as the historic downtown district and newer residential developments, supporting a mix of housing types and amenities.

Conversely, the unincorporated areas outside Swansboro's city limits, classified under rural response Zone 17B, feature lower population densities

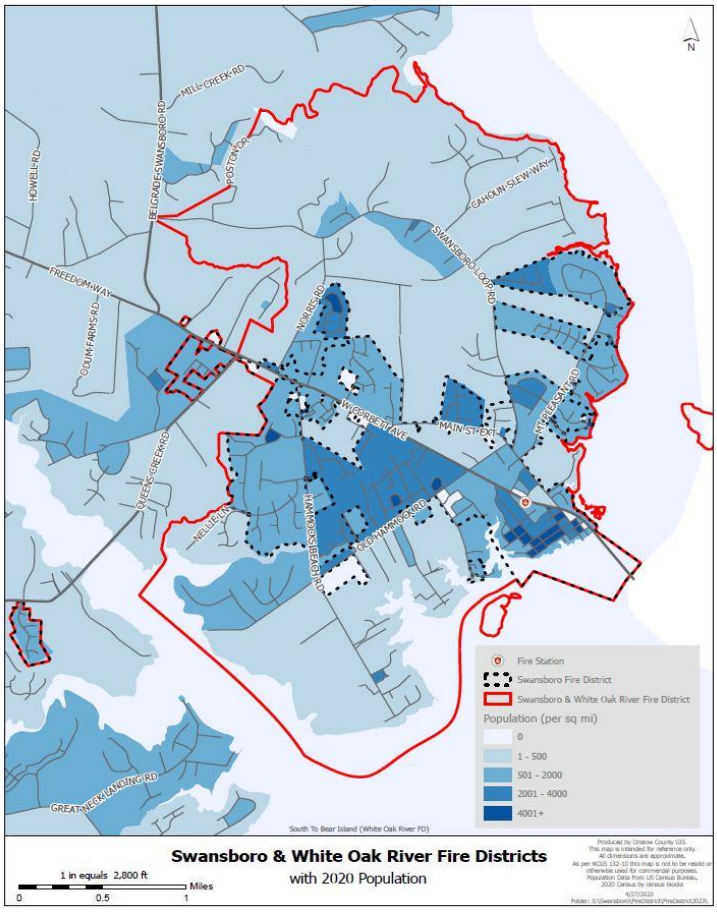


Figure 11: Swansboro Area Population Density

due to larger lot sizes and more spread-out housing. The rural setting offers residents a quieter lifestyle with more open space and natural surroundings.

Overall, Swansboro's population density balances urban convenience and rural tranquility, catering to a diverse community with varying preferences for residential living. The town’s spatial diversity enhances its appeal, providing options for residents to enjoy the coastal lifestyle amidst a setting that ranges from vibrant neighborhoods to serene countryside.

Community Demographic Features

The Town of Swansboro proudly embraces its diverse population, a testament to its welcoming and inclusive community spirit. A charming coastal town is home to a rich tapestry of residents, from retirees enjoying their golden years to young families contributing to the vibrant local fabric. Swansboro boasts an employment rate of 51.9%, indicating active engagement in the workforce among its residents. With a median household income of $105,779, Swansboro residents enjoy a comfortable standard of living.

Swansboro offers a variety of housing options, from historic homes reflecting the town’s rich past to modern developments that cater to contemporary living standards. The high median household income supports a market for quality housing, ensuring that residents enjoy comfortable and well-maintained living spaces. The town’s commitment to maintaining its small-town feel while supporting growth and development ensures a high quality of life for all its residents.

Community Land Use and Zoning

The Town of Swansboro is committed to fostering controlled and thoughtful growth that balances our charming small-town feel with the necessity of preparing for a prosperous and resilient future. Recognizing that our 2009 Land Use Plan (LUP) no longer fully supported smart land use decisions, Swansboro officials embarked on an update to key components of the plan in 2019, particularly the Future Land Use Map. Additionally, in response to the severe impacts of Hurricane Florence in 2018 and the increasing frequency and intensity of hurricanes, Swansboro coordinated this update with a focused plan to identify land areas and critical infrastructure vulnerable to future

flooding. A dual approach aimed to enhance the town's resilience to natural disasters and the impacts of climate change, ensuring that future development aligns with the need to preserve natural resources and protect vulnerable properties.

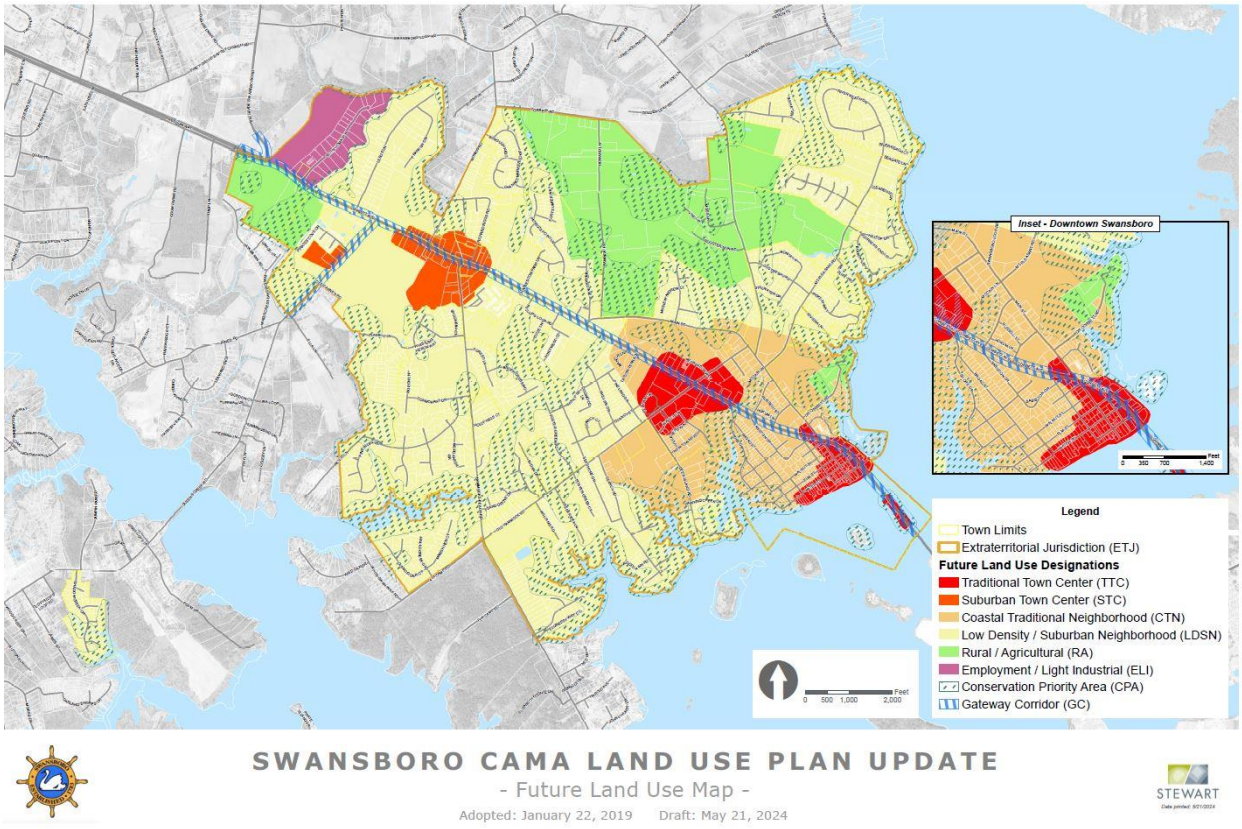


Figure 13: Town of Swansboro CAMA Land Use Plan (2024 - Update)

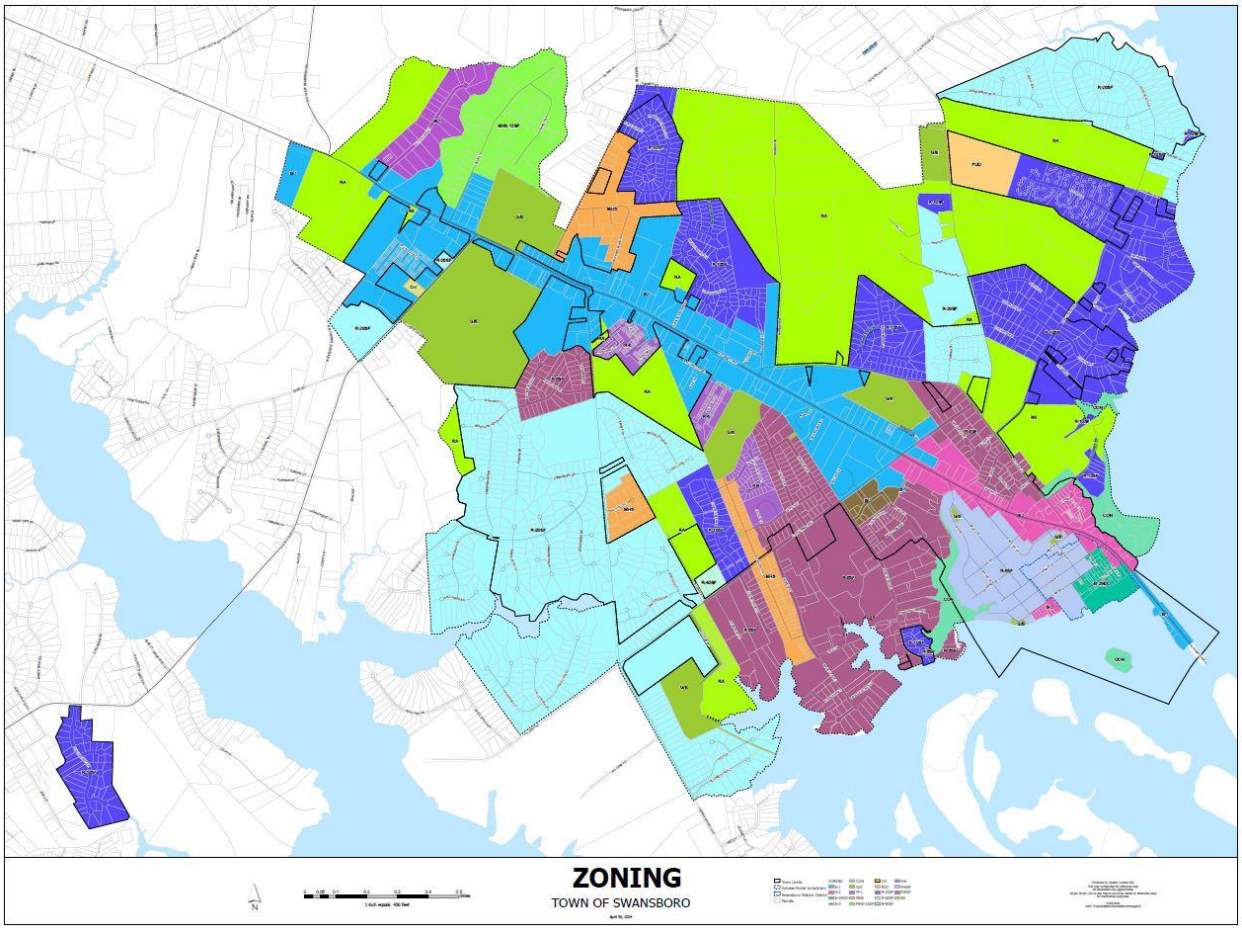


Figure 14: Town of Swansboro Zoning (2024 - Update)

Community Planning Zones

The SFD has implemented distinct "planning zones" to address the varying needs across its response districts effectively. Zone 17A encompasses the incorporated city limits of Swansboro, focusing on areas with higher population density and diverse infrastructure requirements. This zone includes residential, commercial, and municipal properties where rapid response times and specialized suburban firefighting techniques are crucial.

Conversely, Zone 17B covers the unincorporated areas of Onslow County surrounding Swansboro, characterized primarily by rural landscapes and dispersed residential properties. This zone presents unique challenges, such as longer travel distances, limited hydrant access, and a higher prevalence of wildland and agricultural fires. SFD's approach in Zone 17B emphasizes rural firefighting tactics, including water shuttle

operations and wilderness rescue capabilities, to effectively serve the community's needs in these less densely populated areas.

By delineating these planning zones, SFD can work toward optimizing emergency response strategies, resource allocation, and training programs to cater to the distinct requirements of both suburban and rural environments within Swansboro and its surrounding areas.

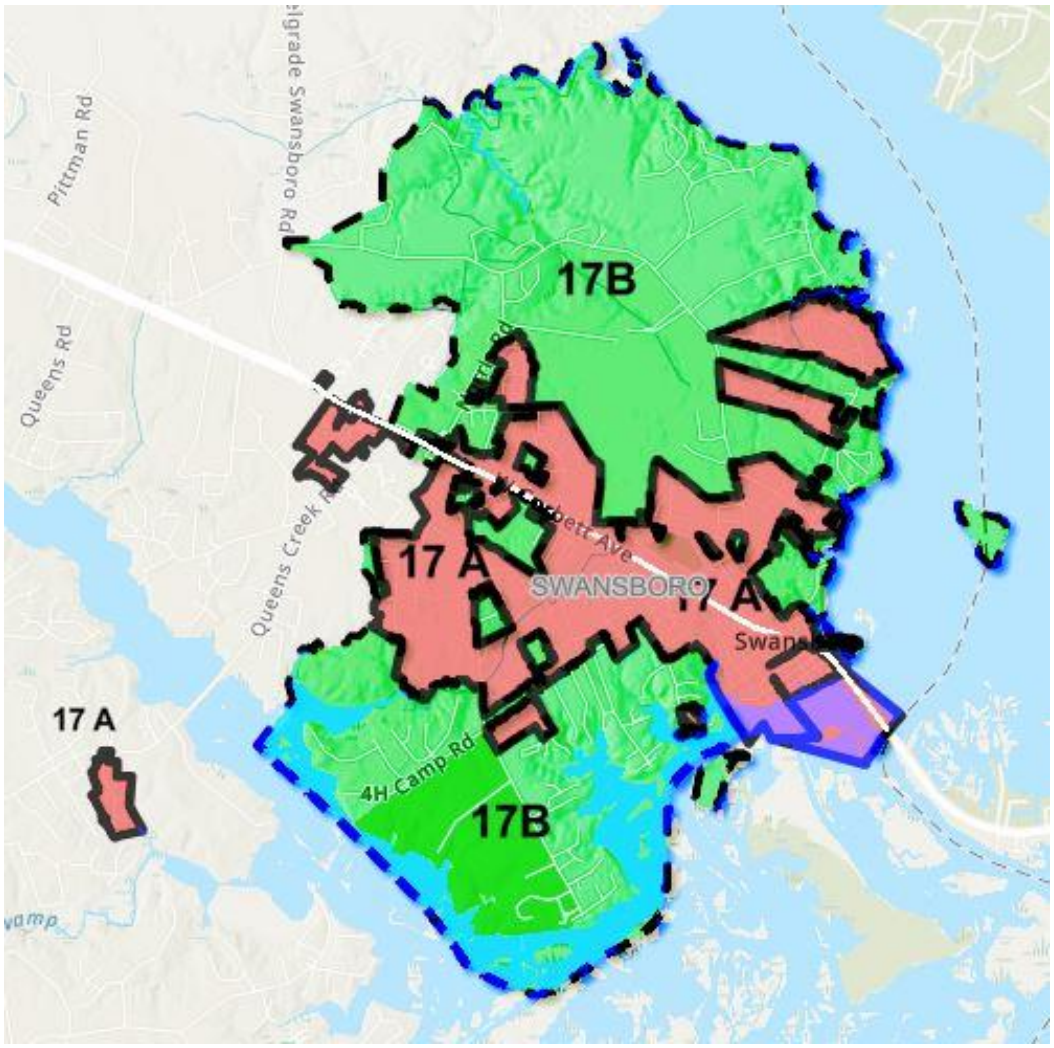


Figure 15: SFD Planning Zones

History of the Agency

Major Historical Milestones of the Department

December 26, 1783 – The Swansboro Fire Department was first established in concurrence with the establishment of the Town's municipal corporation.

1942 – The department was officially chartered and established in 1942, relocating the fire station to 6th Street. The Town of Swansboro Public Works Department currently occupies the building today.

1944 – The first "fire truck", a 1943 Dodge Pickup, was acquired. The truck carried firefighting equipment and a small water tank.

April 3, 1946 – During the Town Council meeting, Councilmen Casper and Henry Tolson proposed a resolution to create a fire zone for the Town of Swansboro. The two councilmen and Fire Chief John Bell were tasked with defining the fire zone, known today as the Town of Swansboro's Primary Fire District.

> *"Fire Zone: All buildings and territory beginning at the Waterfront on Water Street, continuing down Water Street to Broad Street, Broad Street to the Waterfront at Casper's store, meandering the Waterfront to Cross Highway Bridge to the beginning of Waterfront at Water Street."*

May 1, 1946 – The sitting Board of Commissioners appointed Fire Chief John Bell as the Fire Inspector to enforce the adopted fire ordinances the State of North Carolina outlined.

August 1989 – The current Fire Station at 609 West Corbett Ave was constructed.

1990 – The department transitioned as an entity of the Town of Swansboro, though it remained the Swansboro Volunteer Fire Department.

2009 – The first paid personnel were hired to provide coverage during normal workday hours and supplement the volunteer staff.

2017 – An addition to the current facility was constructed to accommodate personnel sleeping quarters, allowing for 24-hour staffing.

2023 – The Department is a division of the Town of Swansboro, consisting of (3) Full-Time Command, (9) Full-Time Operational, (21) Part-Time, and (11) Volunteer personnel.

Current Legal Boundary of Service Area

Primary Response Area

The SFD operates within two primary response districts. The first district encompasses 2.421 square miles within the incorporated city limits of Swansboro, known as the Swansboro Fire District. The second district covers 7.07 square miles of unincorporated area in Onslow County along the White Oak River, known as the White Oak River Fire District. Together, these districts total 9.491 square miles in area. The SFD proudly extends its services to the unincorporated area of Onslow County through a formal agreement with the county government. As the sole municipal fire department in Onslow County to contract services beyond its incorporated city limits, SFD plays a vital role in ensuring the safety and well-being of residents and properties in these areas.

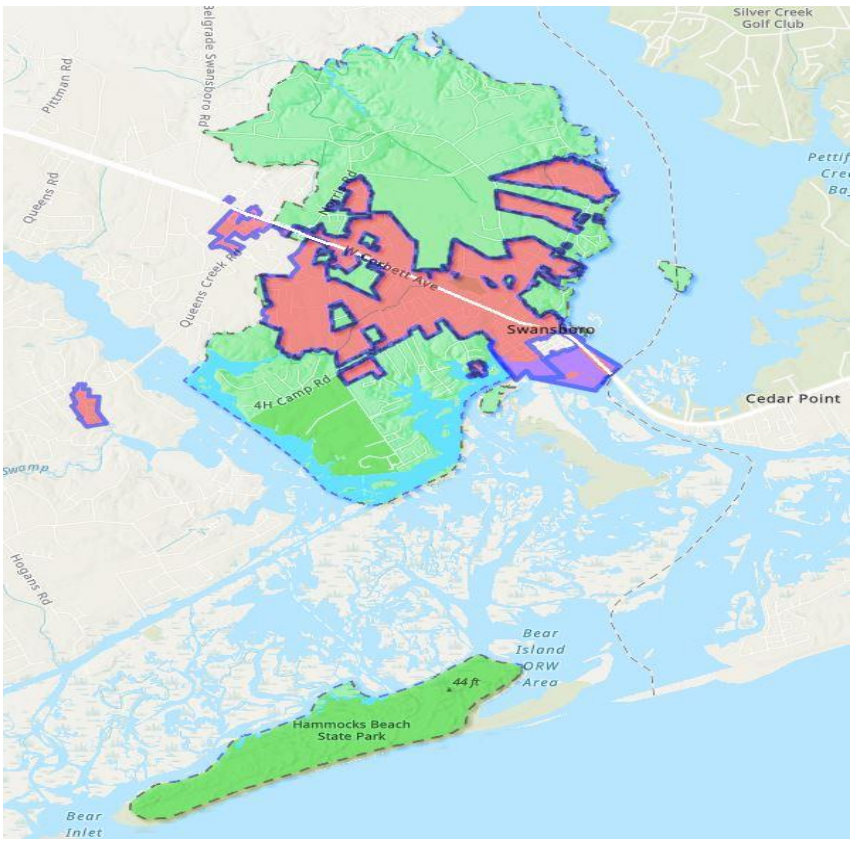


Figure 16: SFD Primary Response Area

Secondary Response Area

The SFD extends its emergency response capabilities through robust mutual and automatic aid agreements with several neighboring fire departments and emergency services providers. These partnerships include Onslow County Fire Rescue {Northeast Onslow}, Hubert Volunteer Fire Department, Western Carteret Fire and EMS, Emerald Isle Fire Department, and Camp Lejeune Fire and Emergency Services. These collaborative efforts ensure that the SFD can efficiently and effectively respond to emergencies within its primary districts and in numerous secondary response areas across the region, enhancing overall public safety and emergency response readiness.

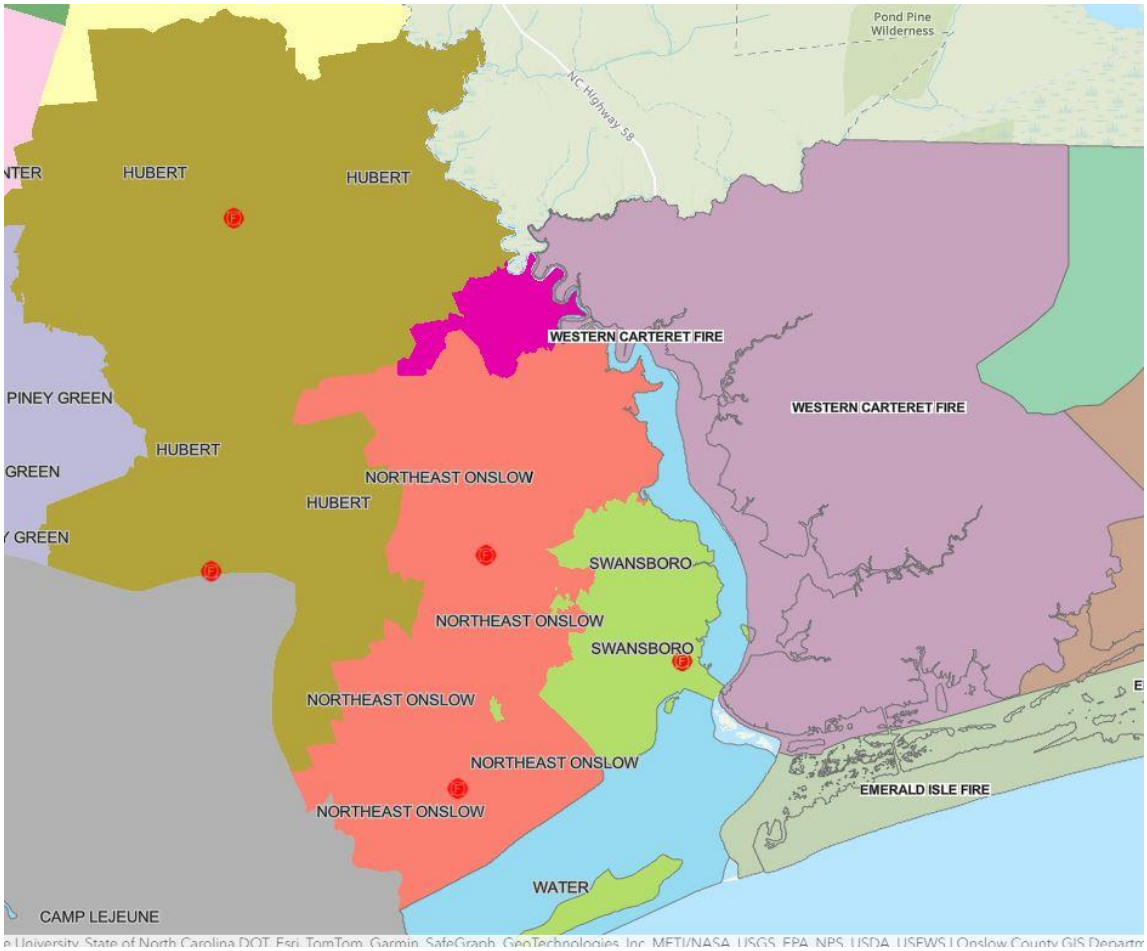
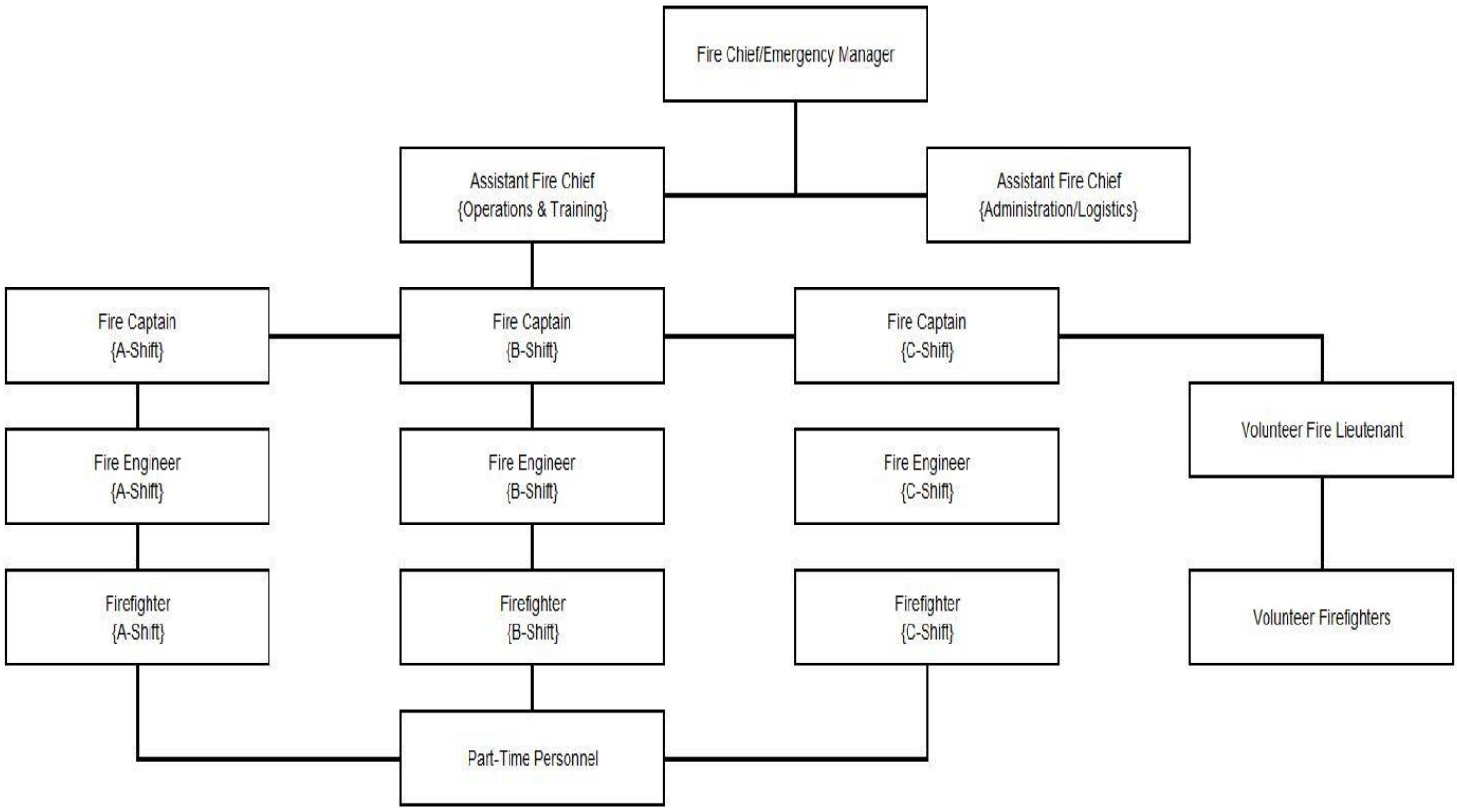


Figure 17: SFD Secondary Response Area

Current Organization, Divisions, Programs, and Services

The SFD operates under a structured organizational framework to ensure efficient emergency response and community service. At its core, the department is led by a Fire Chief who oversees the complete department operations, strategic planning, and resource allocation. The department is divided into specialized divisions, including Operations/Training and Administration/Logistics, each headed by an Assistant Chief. The agency provides round-the-clock coverage through three different shifts. Each shift is organized by a company officer (fire captain), firefighters, and volunteers. Personnel are provided ancillary responsibilities that promote efficiency throughout each service delivery program.



Current Descriptions of Levels of Service with Delivery Programs

Fire Suppression Program

The SFD is dedicated to providing excellent fire suppression services, ensuring the safety and well-being of our community. Our fire suppression program is designed to respond effectively to various fire types, including small grass, large woods, vehicle, and structural fires. Each type of fire requires a tailored response strategy, and the SFD is equipped with the resources and trained personnel to handle diverse incidents. The fire suppression program is further strengthened through collaboration with numerous surrounding agencies. Inter-agency coordination, through mutual and automatic agreements, enhances our ability to manage and mitigate fire incidents effectively.

Emergency Medical Services Program

The SFD is committed to the safety and well-being of the Town of Swansboro through a comprehensive range of emergency services. While Emergency Medical Services (EMS) are primarily provided by Onslow County EMS (OCEMS), SFD is crucial in delivering immediate care through its first responder program at the Emergency Medical Technician—Basic Level. OCEMS is the primary provider of EMS in Swansboro and is responsible for transporting patients to appropriate medical facilities. On August 6, 2024, SFD received the preliminary approval to advance from the Emergency Medical Technician (EMT) Level to the Paramedic level of care. The benchmark date to begin these services was set for January 4, 2025.

Figure 18: Onslow County Emergency Services - EMS Provider Patch

Technical Rescue Program

The SFD specializes in providing Technical Rescuer services specifically for Vehicle Machinery Rescue. This specialized service ensures that SFD is equipped and trained to handle complex rescues involving vehicles and machinery, delivering expert

assistance during critical incidents. However, recognizing the importance of comprehensive rescue capabilities, Swansboro has an automatic aid agreement with Camp Lejeune Fire and Emergency Services. This agreement automatically dispatches Camp Lejeune Fire and Emergency Services to any rescue event defined beyond our capabilities within the agency's primary response area, ensuring that adequate resources and expertise are readily available.

Hazardous Materials Program

The SFD provides hazardous materials services only at the operations level, equipped and trained only to handle initial containment and control of hazardous materials incidents. SFD can effectively manage and mitigate emergencies related to smaller-scale hazardous materials within the community. However, recognizing the potential severity and complexity of larger HazMat events, Swansboro has an agreement with Camp Lejeune Fire and Emergency Services. Under this agreement, Camp Lejeune Fire and Emergency Services automatically responds to any large hazardous materials event dispatched within Swansboro districts.

Wildland Fire Services

SFD collaborates closely with the North Carolina Forestry Service, specifically the Onslow County Ranger, to ensure comprehensive response and management of wildland fire incidents. While SFD provides an initial response to wildland fires, focusing on containment and structural protection during large-scale incidents, the North Carolina Forestry Service plays a pivotal role in managing and extinguishing these fires on a broader scale. The partnership ensures that Swansboro benefits from the specialized expertise,

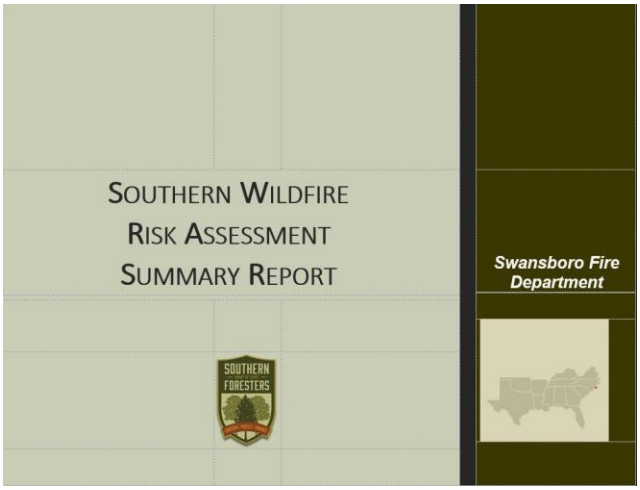


Figure 19: Wildfire Risk Assessment Summary for Community Wildfire Protection Plan

equipment, and resources of the forestry service, enhancing the effectiveness of wildfire suppression efforts.

In addition to reactive firefighting measures, SFD and the North Carolina Forestry Service adopt a proactive approach through the Community Wildfire Protection Plan (CWPP). The plan involves collaborative efforts to mitigate wildfire risks, including fuel reduction, defensible space creation, and community education initiatives. By implementing these proactive measures, Swansboro and the forestry service work together to enhance community safety, protect natural resources, and minimize the impact of wildfires on residents and their properties.

Fire Prevention

In Swansboro, joint efforts from the Inspections and Fire departments play a critical role in ensuring the safety and compliance of all occupancies within the town. Annually, these departments conduct thorough business inspections across various establishments. These inspections ensure high fire safety standards, building code adherence, and overall occupant well-being. A fire inspection is mandatory for new occupancies or businesses seeking to establish themselves in Swansboro before receiving a business permit. This requirement ensures that all newly established businesses have adequate fire prevention measures and emergency protocols. It underscores the town's commitment to safeguarding public safety and minimizing fire hazards in commercial environments. New residential constructions and homes undergo fire protection review and inspections before obtaining a Certificate of Occupancy (CO). A cornerstone of Swansboro's approach to fire safety is its proactive stance on life safety efforts, including comprehensive plan reviews for new construction, renovations, and alterations to existing structures. By scrutinizing building plans and designs early in the process, the town can identify potential fire safety risks and implement necessary improvements or modifications.

Community Risk Reduction

SFD aims to be at the forefront of community risk reduction efforts, fostering a culture of safety and preparedness through proactive initiatives and community engagement. The dedicated partnership between SFD and its residents is central to these efforts,

exemplifying a shared commitment to enhancing the community's fire prevention and safety measures.

At the heart of SFD's outreach strategy is Riggs, the trained fire prevention dog and beloved fire safety ambassador. With his friendly demeanor and specialized training, Riggs plays a pivotal role in engaging the public, especially children and families, in fire safety education programs. Whether participating in school visits, community events, or public demonstrations, Riggs captivates audiences and reinforces crucial fire safety messages memorably and effectively.

Figure 20: Riggs at the Community Touch-a-Truck Event

SFD's community risk reduction efforts extend beyond traditional outreach activities. The department collaborates with local schools, businesses, and community organizations to conduct fire safety education, emergency preparedness discussions, and hands-on training sessions. These initiatives empower residents with the knowledge and skills to prevent fires, respond effectively during emergencies, and safeguard their homes and neighborhoods.

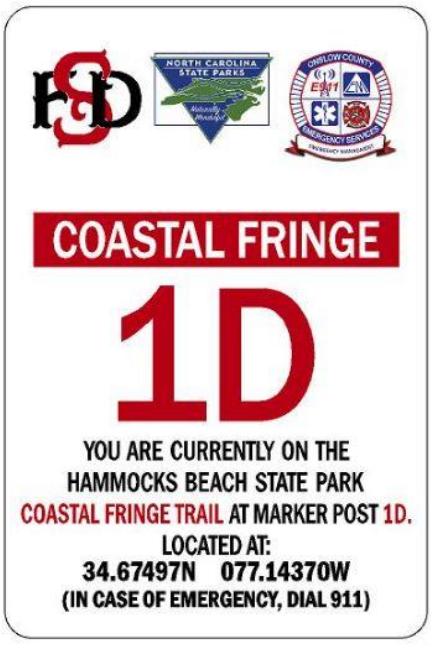


Figure 21: Joint Trail Marker Program with NC Parks, Onslow EM, and SFD.

SFD is also committed to enhancing children's and families' well-being by actively participating in educational programs, advocacy campaigns, and community outreach initiatives. By joining forces with Carteret Safe Kids, SFD aims to raise awareness about crucial safety practices, provide resources for child injury prevention, and empower caregivers with knowledge that promotes a safe and secure environment for our youngest residents. With Carteret Safe Kids, SFD aims to foster a safety culture, reduce preventable injuries, and ensure that Swansboro remains a supportive and protective community for all families.

Domestic Preparedness & Emergency Management

The SFD collaborates closely with Onslow County Emergency Management to sustain a vigorous Domestic Preparedness and Emergency Management program that ensures the community's safety and resilience. Collaboration is integral to Swansboro's comprehensive approach to emergency preparedness, encompassing proactive planning, effective response coordination, and continuous readiness initiatives.

SFD is pivotal in managing the Town of Swansboro's emergency operations, with the Fire Chief as the designated Town Emergency Manager. Under the Fire Chief's leadership, SFD oversees developing, implementing, and maintaining the town's Emergency Operations Plan (EOP). The All-Hazards plan is a strategic framework for coordinating emergency response efforts, managing resources, and safeguarding residents and property during crises. The coordination between SFD and Onslow County Emergency Management extends beyond planning and includes joint training exercises, preventative measures, and public education campaigns to enhance community preparedness. These initiatives ensure that emergency responders, local officials, and residents are well-equipped to mitigate risks, respond effectively to emergencies, and facilitate swift recovery efforts.

Figure 22: Onslow County Emergency Management Patch - Domestic Preparedness & Emergency Management Partner

Fire Investigations

The Swansboro Fire Department's fire investigation program is dedicated to thorough and precise investigations of fire incidents within our jurisdiction. Our team includes newly trained personnel certified as Fire Investigation Technicians, ensuring that we maintain a high standard of investigative expertise. For complex cases involving significant property loss, juvenile firesetters, or fatalities, we collaborate closely with the

Onslow County Fire Marshal's office and utilize additional resources from the North Carolina Office of State Fire Marshal (NCOSFM), the North Carolina State Bureau of Investigation (NC SBI), and the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF). In instances where arson is suspected, the investigation is referred to these agencies due to our limited capabilities and resources, ensuring a comprehensive and effective investigative process.

Current Deployment and Coverage Areas

Response Areas

The SFD proudly provides fire protection and emergency services across a diverse area, including the Town of Swansboro Fire District, the incorporated City Limits, and the unincorporated White Oak Fire District in Onslow County. The Swansboro area encompasses approximately 2.421 square miles with a population of 3,744 residents,

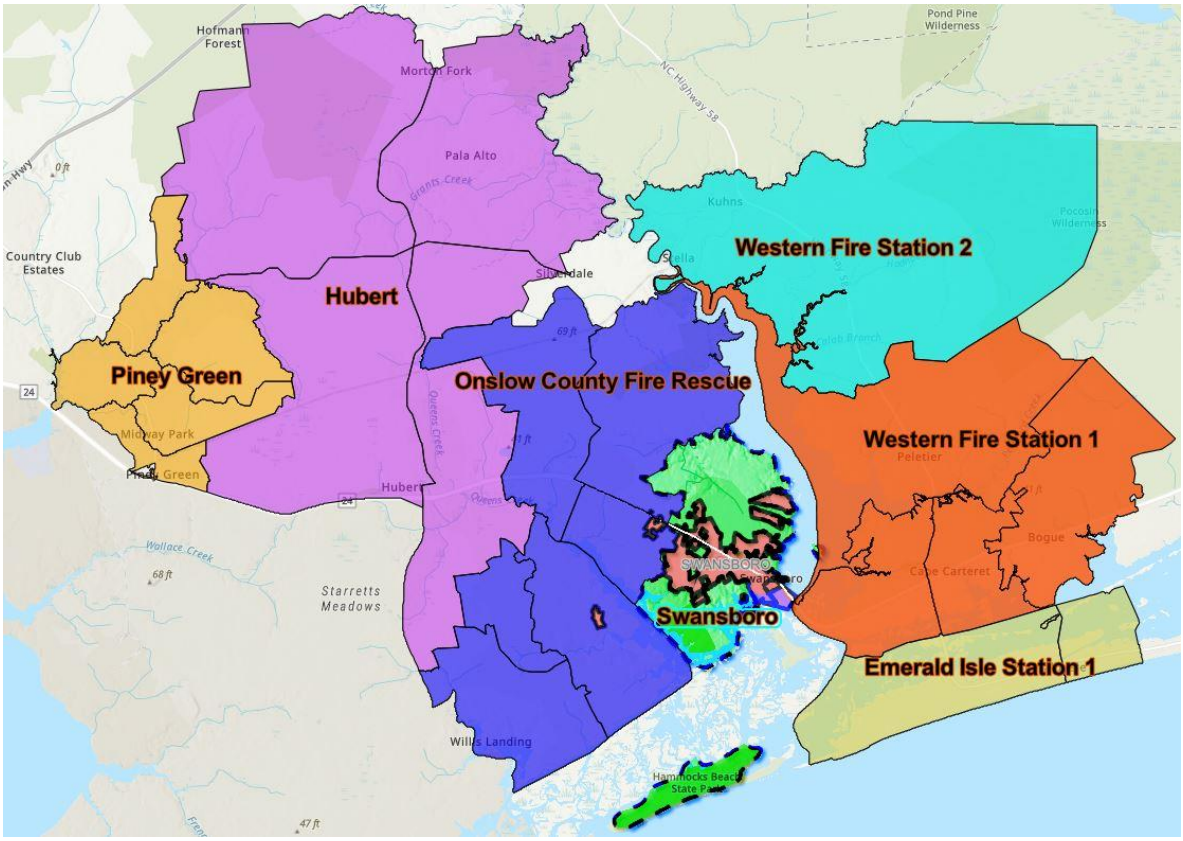


Figure 23: Swansboro Fire Department Response Areas (Primary & Secondary)

while the White Oak area spans 7.07 square miles and serves an approximate population of 1,859. The geographical makeup of the Swansboro Fire District is a

rural/suburban area, with the White Oak District being extremely rural. The diverse characteristics are further challenged by primary volunteer agencies providing aid. To address the challenges, the SFD provides services with the following assets.

Fire Stations (Points of Service Delivery)

The SFD is a single-station agency located at 609 West Corbett Avenue, adjacent to the Town's administrative complex. Originally constructed in 1989, the station underwent significant renovations in 2017 to enhance its facilities, including modern sleeping areas to accommodate firefighters during extended shifts. SFD is actively searching for a new site to relocate its Public Safety Building, which houses the Town's Police, Fire, and Emergency Operations Center (EOC). The SFD is Onslow County Fire Station 17, with an FDID of 06717.

Swansboro Public Safety Building
(Fire, Police, and Emergency Operations Center)
Station 17
609 West Corbett Avenue
Swansboro, North Carolina 28584

Figure 24: Swansboro Public Safety Facility

Apparatus

SFD employs a versatile fire apparatus fleet to effectively respond to various community emergencies. SFD remains committed to ensuring its fleet is ready to respond swiftly and effectively to protect the lives and property of residents in Swansboro and surrounding areas.

Table 1: SFD Apparatus

Unit	Year	Make/Model	Pump Size	Tank Capacity	Functionality
Squad 17	2017	Spartan/Toyne	1500	1000	Rescue Engine
Engine 17	2001	International/E-One	1250	1000	Standard Engine
Truck 17	2004	E-One/Typhoon	1250	300	75’ Quint
Tanker 17	2009	Rosenbauer/International	1250	2000	Tanker
Utility 17	2010	Chevrolet Silverado	-	-	Pickup Truck
Marine 17	2001	21’ Carolina Skiff	-	-	Flatbottom Boat
Car 1			-	-	Chief’s Vehicle
Car 2	2021	Dodge Ram 1500	-	-	Chief’s Vehicle
Car 3			-	-	Chief’s Vehicle

Minimum Deployment of Resources

The SFD is staffed by full-time, part-time, and volunteer personnel. Full-time personnel are divided into three shifts, working a 48-hour rotation with a 96-hour break. Each shift is comprised of 3 personnel consisting of a Fire Captain (shift operations), a Driver Operator (Engineer, Senior Firefighter, or Firefighter II), and one firefighter (Firefighter II

or Firefighter I). The minimum daily staffing is three personnel, reliant on automatic and mutual aid agreements to obtain our effective response force. The part-time personnel supplement staffing shortages and provide extra staffing when funding is available. Volunteer personnel can supplement vacancies if qualified; otherwise, provide ancillary staffing to increase available personnel. Volunteer personnel not residing in our immediate response district must provide 48 hours of duty monthly and maintain the appropriate training hour requirements. Chief officers (Car 1, Car 2, and Car 3) work a typical business day, responding to after-hours incidents as necessary.

Onslow County is a primarily volunteer-based fire service. The SFD has established aid agreements with numerous departments to increase a definitive response force standard, though volunteer availability from numerous initial alarm agencies varies based on availability. The SFD has progressively approached staffing shortfalls by moving to a minimum staffing of 4 personnel starting July 1, 2024. Additionally, the Fire Chief and Assistant Fire Chiefs augment positions by responding to incidents during normal hours and after-hours response. In August 2023, the SFD transitioned from the Onslow County Standard 4-station alarm for structural-related incidents to a 5-station first alarm in the Swansboro Fire District (17A) and a 7-station first alarm in the rural White Oak Fire District (17B) – focusing on water supply.

Finally, Onslow County dispatches units based on stations rather than units. Thus, the pre-coordination of units between agency chiefs is required. However, this is again affected by the availability of other agencies' personnel and their ability to drive or operate apparatus.

Summary of Community Response History

Call Volume Breakdown – NFIRS Type

The following figure depicts the annual call volume for the Town of Swansboro Fire Department over three years, from 2021 to 2023. Overall, service requests continue to rise as the town progresses and grows in size and population.

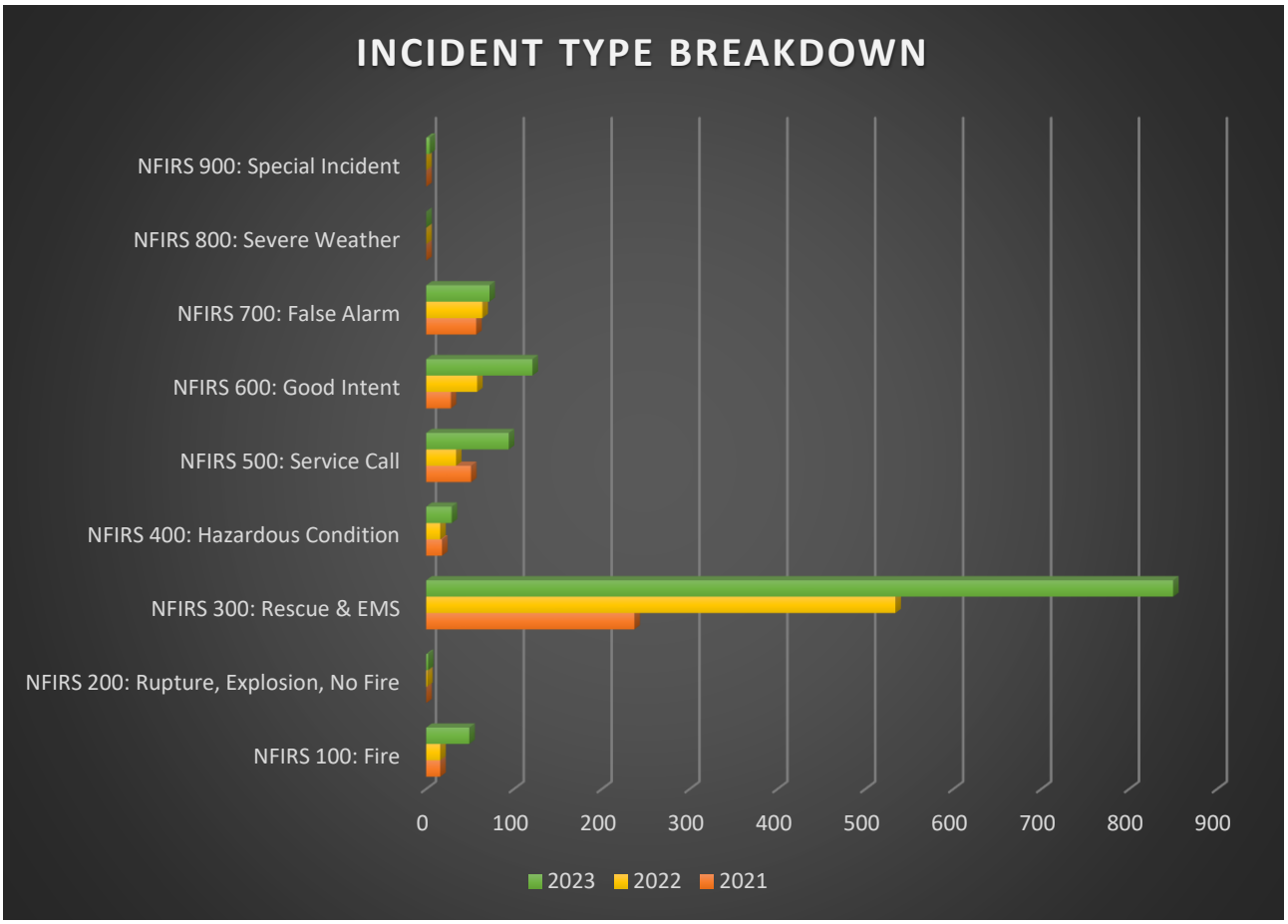


Figure 25: Incident Type Breakdown (2021-2023)

Call Volume Breakdown – Aid Given or Received

The following figure identifies the value of incidents in which interagency aid was provided by or for the SFD, whether dispatched initially (Automatic Aid) or requested after (Mutual Aid).

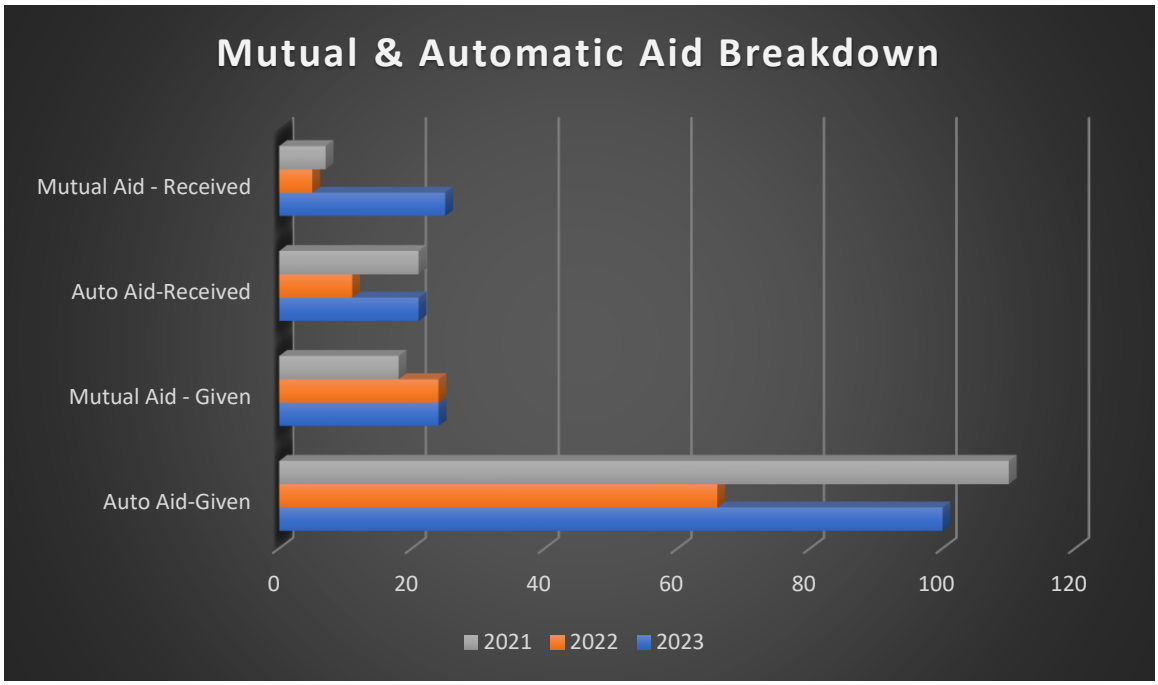


Figure 26: Incident Breakdown - Aid Type (2021-2023)

Community Risk Assessment and Risk Levels

Risk Assessment Methodology

Risk assessment methodology is structured to identify, analyze, and evaluate risks associated with any activity or decision. A Community Risk Assessment (CRA) aims to evaluate the community's risk before developing and implementing community risk reduction (CRR) plans and programs to reduce, mitigate, or eliminate the community's risk (NFPA, 2020). The CRA is an analysis or evaluation of a community's fire and non-fire hazards and threats, considering all pertinent facts that increase or decrease risk to define standards of cover (Center for Public Safety Excellence, 2016). Overall, the CRA process is a systematic approach that identifies, assesses, categorizes, and classifies the probabilities, consequences, and impacts of all hazard risks in the area of jurisdiction and designs and manages the optimal delivery system for the mitigation of those risks (Center for Public Safety Excellence, 2016). Utilizing this methodology helps to understand potential risks comprehensively, enabling communities to prioritize and address their unique safety challenges effectively.

How a community allocates its resources profoundly influences the capacity and capability of a fire department's response, significantly affecting its vulnerability to fires and other emergencies. A community that invests in a strong firefighting force is less likely to experience severe consequences from large fires than one with limited resources. The geographical positioning of initial response units, or Resource Distribution, is typically measured by the response time from fixed locations such as fire stations. The concentration of those resources pertains to the spacing of multiple units and their ability to assemble an Effective Response Force (ERF) with designated timeframes to manage emergencies.

Before 2023, the SFD did not utilize a formal risk assessment methodology, and data was not effectively captured to identify systemic shortfalls. In April 2023, under new leadership, the agency began the transition to assess the service being provided and amplify the data-driven alterations to instill a continuous improvement culture moving forward. The agency transitioned report management systems in July 2023, allowing for improved data management and analysis built upon a formal foundation of growth.

Probability, Consequence, and Impact of Event Risk - Methodology

The Swansboro Fire Department (SFD) has selected to employ two risk assessment methodologies to assess risks from various hazards. We have initiated the Risk Assessment Fire Evaluation and Rating (RAFER) score to evaluate fire suppression risk for commercial, mixed-use, and multi-residential occupancies. The RAFER score is designed to develop a community profile by rating and ranking specific property hazards within a jurisdictional response area. Originally developed as part of the Federal Emergency Management Agency's (FEMA) Risk, Hazard, and Value Evaluation (RHAVE), the RAFER score has been adopted by multiple agencies as a proven methodology for the objective classification of community risk throughout the United States.

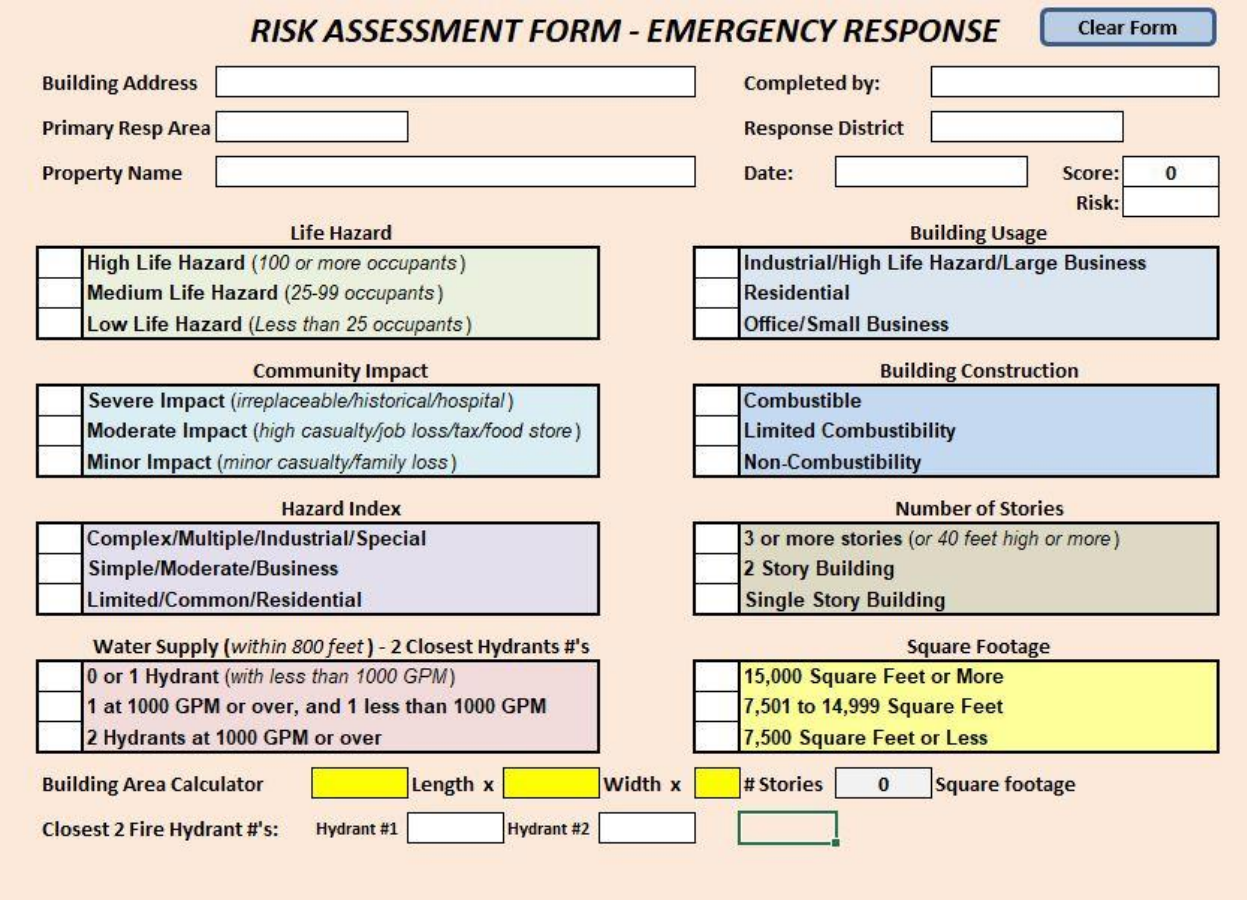


Figure 27: RAFER Assessment Form

The RAFER score allows the SFD to systematically group structures into one of three risk categories represented by the following values.

Table 2: SFD RAFER RISK CLASSIFICATION

RAFER SCORE	
High Risk	19 – 24
Moderate Risk	12 – 18
Low Risk	8 – 11

The SFD has also initiated the three-axis model to comprehensively assess fire and non-fire risks. The three-axis model uses Probability, Consequence, and Impact to create an inclusive model of risks. Probability evaluates the likelihood of specific incidents occurring based on historical data. Consequence measures the potential losses to the community, including impacts on human life, finances, and emotional well-being. Impact on the department assesses how incidents affect SFD's operational capability and deployment readiness, influencing overall response effectiveness. Each factor is assigned a numeric score ranging from 2 to 10, reflecting the severity and potential impact of identified risks. Moving forward, the SFD is transitioning to the OVAP Risk Classifications as our new RMS system integrates the OVAP into the pre-planning function.

Three-Axis Scoring Classifications

Probability

Table 3: Probability Scoring

Score	Threat Definition
2	Occurs Rarely {Annually}
4	Occurs Occasionally {Quarterly}
6	Occurs Frequently {Monthly}
8	Occurs Frequently {Weekly}
10	Occurs Daily

Consequence

Table 4: Consequence Scoring

Score	Threat Definition
2	Little to No Loss
4	Minor Loss
6	Moderate Loss
8	Significant Loss
10	Catastrophic Loss

Score	Life Loss	Financial Loss	Emotional Loss
2	No Loss of Life	< $50,000	Isolated Emotional Incident
4	Potential Life Loss (1 – 3)	$50,000 - $500,000	Short-Lived (1 – 3 Days)
6	Potential Life Loss (4 – 12)	$500,000 - $1,000,000	Meaningful (1 Week)
8	Potential Life Loss (13 – 20)	$1,000,000 - $2,500,000	Lasting (≤ 1 Year)
10	Potential Life Loss (>20)	>$2,500,000	Culture Change (> 1 Year)

The singular consequence score is calculated by assigning a numerical value, derived from 100%, to each loss factor (Life, Financial, and Emotional). Doing so allows for calculating a consequence value utilizing the following formula.

C = L(0.6) + F(0.3) + E(0.1)

C = Consequence

L = Life Loss {60%}

F = Financial Loss {30%}

E = Emotional Loss {10%}

Agency Impact

Table 5: Impact Scoring

Score	Threat Definition
2	≤ 3 Personnel {Single Unit Response}
4	4 – 6 Personnel {Two Unit Response}
6	7 – 10 Personnel {Three or More Companies – Automatic or Mutual Aid}
8	11 – 14 Personnel {Three or More Companies – Automatic or Mutual Aid}
10	≥ 15 Personnel {Requires Automatic and Mutual Aid}

To obtain an objective mathematical calculation of these factors, SFD utilizes a modified Heron's Formula to determine the surface area of the risk triangle. The calculated surface area provides a quantifiable risk category score for pre-determined jurisdictional parameters, allowing for a precise and comprehensive risk assessment (Center for Public Safety Excellence, 2020). By integrating this approach, SFD directs all potential hazards to be objectively analyzed and categorized, enhancing the department's ability to manage and mitigate risks effectively.

Geographical Planning Areas/Zones

The Swansboro Fire Department (SFD) defines its planning zones by the established city limits of Swansboro, referred to as the Swansboro Fire District (17A), and the unincorporated jurisdiction lines of Onslow County, known as the White Oak River Fire District (17B). These defined planning zones enable SFD to tailor its risk assessment and resource allocation strategies to each district's specific needs and characteristics, ensuring effective fire protection and emergency response across the entire area.

Table 6: Geographical Planning Zones

Fire Management Zone {FMZ}	Approximate Area {Square Miles}	Approximate Road Miles	Property Parcels	Address Points
FMZ 17 A	2.421	29.66	2,316	2,330
FMZ 17 B	7.07	28.37	1,244	1,277
Total Agency	9.491	58.03	3,560	3,607

Planning Zone 17A, which encompasses the incorporated city limits of Swansboro, features a diverse and dynamic landscape. The area includes a variety of residential communities, commercial stores, and a hotel. Additionally, Zone 17A houses two senior nursing facilities, providing essential care to elderly community members. The historic downtown district of Swansboro, rich in cultural heritage and local charm, is also in this

zone. This mix of residential, commercial, and historic areas presents unique challenges and opportunities for community fire protection and emergency response.

Table 7: Total Calls for Service - Planning Zone 17A

Classification	2021	2022	2023
Fire	118	149	174
EMS	190	385	592
Technical Rescue	5	5	8
Hazardous Materials	11	9	26
Wildland	2	9	3
Total Calls	326	557	836

Table 8: Annual Incident Increase Percentage - Planning Zone 17A

Category	2021	2022	2023
Annual Incidents	326	557	836
Percentage Increase	-	70.86%	50.1%

Planning Zone 17B, known as the White Oak River Fire District, encompasses the unincorporated areas of Onslow County. It is characterized by a blend of residential communities, expansive open and undeveloped land, and productive farmland. Planning Zone 17B also includes the scenic NC Hammocks Beach State Park, a popular destination for outdoor recreation and natural beauty. The diverse terrain and land uses within Zone 17B create unique challenges and considerations for fire protection and emergency services, necessitating tailored strategies to manage and mitigate risks in this varied landscape effectively. The area is sporadically covered with a definitive or pressurized water source, requiring augmentation of response plans to incorporate an alternative water supply operation.

Table 9: Total Calls for Service - Planning Zone 17B

Classification	2021	2022	2023
Fire	27	22	47
EMS	33	115	204
Technical Rescue	6	2	5
Hazardous Materials	2	4	1
Wildland	9	4	1
Total Calls	77	147	258

Table 10: Annual Incident Increase Percentage - Planning Zone 17A

Category	2021	2022	2023
Annual Incidents	77	147	258
Percentage Increase	-	90.91%	75.51%

Risk Assessment

Fire Suppression Services

The SFD has chosen to categorize risks based on the probability of incidents and the potential consequences associated with subsequent losses, assigning occupancies to the following three distinct risk levels.

Low Risk – Occupancies and outdoor spaces with a low probability of incidents and minimal consequences. For example, a non-residential structure with minimal square footage would fall into this category.

Moderate Risk – Occupancies with a moderate probability of incidents and moderate consequences. Detached single-family homes or townhomes with up to four units under one roof are examples of moderate-risk occupancies.

High Risk – Encompasses occupancies with a low or moderate probability of incidents but high consequences. Examples include apartment buildings and

larger commercial occupancies, where the potential impact of an incident is significant.

When evaluating structure fires in individual occupancies, the agency's Risk Assessment Fire Evaluation and Rating (RAFER) scoring process captures each occupancy's risk profile. Each occupancy is assessed and assigned a score correlating to its risk rating, ensuring a systematic and objective evaluation of potential hazards.

Table 11: RAFER Scoring {Structures}

RAFER SCORE	
High Risk	19 – 24
Moderate Risk	12 – 18
Low Risk	8 – 11

Recognizing that RAFER scores are targeted to identify the risk level of individual occupancies, the agency employs the three-axis model to assess risk factors for various types of fire events comprehensively and adds a Maximum Risk classification.

Low Risk—Fire Suppression incidents present minimal danger, including being small, contained, and easily controlled. Low-risk incidents may include trash/dumpster fires, grass/woodland fires, or passenger vehicles.

Moderate Risk—Incidents that pose an increased danger and may require increased resources or coordination to manage effectively. Fire suppression incidents of this classification may include mobile home fires, larger woodland/grass fires, and specialty vehicles.

High Risk – Fire suppression incidents require significant resources to be managed effectively and pose a greater danger to the public. Categorized incidents may include but are not limited to small and medium commercial occupancy fires, multi-family dwellings (townhomes/duplex), and 1-2 family dwellings.

Maximum Risk – Incidents in this category include fire suppression incidents that significantly deplete system resources, pose a high risk of danger, and

impact the community. Incidents may include but are not limited to large commercial occupancies, multi-family dwellings (apartments), or high-rises (>3 stories).

Table 12: Three-Axis Score {Fire}

Three-Axis Risk Score {FIRE}	
Maximum Risk	≥ 65.01
High Risk	35.01 – 65
Moderate Risk	15.01 - 35
Low Risk	≤ 15

Emergency Medical Services

While the Swansboro Fire Department relies on Onslow County EMS resources for patient transport and Advanced Life Support care, the agency also responds to all Emergency Medical Dispatch (EMD) calls as EMT first responders.

Low Risk – A low-risk medical incident typically requires a single fire department and Onslow County EMS resource to provide or assist with patient care. These responses are generally handled through non-emergency responses and pose minimal risk to the community. Examples of responses in this category include single patients who call 911 and report being sick or needing assistance with no injuries.

Moderate Risk – A moderate-risk medical incident may require more than one fire department and Onslow County EMS resource to aid patient care. Although this category involves the response of multiple units, the overall consequence is typically lower. Motor vehicle collisions involving multiple patients are the primary incidents in this category, with a lower risk of significant loss of life.

High Risk – A high-risk medical incident necessitates multiple fire department and Onslow County EMS resources to provide patient care. While the probability of such incidents is low, the potential consequences are significant. Examples

include large-scale medical emergencies where the severity of injuries and the number of patients require substantial intervention.

Maximum Risk – A maximum-risk medical incident includes scenarios that would overwhelm the fire department and Onslow County EMS resources, requiring mutual or automatic aid to manage the situation effectively. Although the probability of these incidents is very low, the consequences can be catastrophic due to the potential for a large loss of life. Examples include major disasters or mass casualty events where the scale of the incident surpasses local response capabilities.

Table 13: Three-Axis Score {EMS}

Three-Axis Risk Score {EMS}	
Maximum Risk	≥ 30.01
High Risk	20.01 – 30.01
Moderate Risk	10.01 - 20
Low Risk	≤ 10

Technical Rescue Services

The SFD provides technical rescue services, such as vehicle extrication and water rescue operations with watercraft. However, we rely on Camp Lejeune Fire and Emergency Services to provide high-angle, agricultural, confined space, and trench rescue services as those skills expand beyond our current capabilities.

Low Risk – A low-risk technical rescue incident typically requires a single fire department resource and can be managed using tools and equipment carried on a fire engine. An example includes rescuing a person stuck in an elevator.

Moderate Risk—A moderate-risk technical rescue incident typically involves more than one resource and requires specific rescue tools. Examples may include motor vehicle collisions in which individuals are trapped.

High Risk – A high-risk technical rescue incident requires specially trained firefighters with advanced rescue skills and specialized equipment. Responses in

this category may involve swift water rescue, high-angle rescue, trench rescue, or confined space rescue.

Maximum Risk—A maximum–risk technical rescue incident exceeds the agency's capabilities and requires assistance from state resources, such as an urban search and rescue team.

Table 14: Three-Axis Score {Technical Rescue}

Three-Axis Risk Score {Technical Rescue}	
Maximum Risk	≥ 50.01
High Risk	30.01 – 50
Moderate Risk	15.01 - 30
Low Risk	≤ 15

Hazardous Materials

The Swansboro Fire Department (SFD) provides hazardous materials response at the operations level, relying on Camp Lejeune Fire and Emergency Services for incidents beyond general control, monitoring, and containment. Additionally, spills exceeding 50 gallons necessitate notification to Onslow County Emergency Management.

Low Risk – A low-risk hazardous materials incident typically requires minimal resources and can be managed using basic personal protective equipment and standard containment measures. Examples include small chemical spills or minor leaks.

Moderate Risk – A moderate-risk hazardous materials incident requires additional resources and specialized equipment for effective containment and mitigation. Examples may involve larger chemical spills or leaks requiring specific handling procedures.

High Risk—A high-risk hazardous materials incident requires advanced training and specialized equipment to handle hazardous substances safely. Responses in this category may include incidents involving highly toxic chemicals, flammable materials, or complex industrial accidents.

Maximum Risk – A maximum-risk hazardous materials incident surpasses local capabilities and requires state or federal assistance, such as hazardous materials response teams with advanced technical expertise and specialized resources.

Table 15: Three-Axis Score {Hazardous Materials}

Three-Axis Risk Score {Hazardous Materials}	
Maximum Risk	≥ 30.01
High Risk	20.01 - 30
Moderate Risk	10.01 - 20
Low Risk	≤ 10

Emergency Management – Disaster Preparedness

The SFD is Swansboro's Emergency Management and Disaster Preparedness division. We collaborate closely with Onslow County and North Carolina Emergency Management (EM) for additional resources or assistance if incidents or events exceed our capabilities.

Low Risk—Low-risk scenarios typically require minimal resources and can be managed with basic preparedness activities. These include monitoring potential threats, ensuring sufficient emergency supplies, and educating the community on readiness. Examples may include minor weather events, small-scale power outages, or localized emergencies with limited infrastructure and public safety impact.

Moderate Risk—Moderate-risk scenarios require additional resources and enhanced preparedness efforts. These involve coordinating with state and local emergency management agencies, implementing evacuation plans for vulnerable areas, and securing necessary supplies and equipment. Examples include severe storms, moderate floods, or regional power outages that threaten infrastructure and may require temporary evacuations and sheltering.

High Risk – High-risk scenarios necessitate advanced planning and response measures. These include activating emergency operations centers, issuing mandatory evacuation orders, and deploying emergency response teams. Examples involve major

hurricanes, significant wildfires, or large-scale industrial accidents that threaten significant damage to infrastructure, widespread power outages, and substantial risks to public safety, requiring large-scale evacuations and extensive emergency sheltering.

Maximum Risk—A maximum-risk scenario surpasses local capabilities and requires state or federal assistance. These often involve deploying specialized response teams, coordinating mass evacuations, and providing medical and humanitarian aid. Examples include catastrophic natural disasters, major terrorist attacks, or large-scale pandemics with extensive impacts on infrastructure and public health, forcing comprehensive multi-agency response and long-term recovery efforts.

Table 16: Three-Axis Score {Emergency Management}

Three-Axis Risk Score {Emergency Management}	
Maximum Risk	≥ 45.01
High Risk	30.01 – 45
Moderate Risk	15.01 - 30
Low Risk	≤ 15

Critical Task Analysis

The SFD recognizes the importance of critical tasking in promoting the allocation of adequate resources and the establishment of an effective response force—a crucial challenge in navigating the complex landscape of career, combination, and volunteer agency response in Onslow County. The agency has identified the optimal personnel and resource requirements by conducting thorough critical task analyses across various emergency incident classes—fire, emergency medical, technical rescue, and hazardous materials. Utilizing this approach promotes SFD's ability to respond swiftly and effectively, utilizing initial automatic aid and requested second alarm/mutual aid resources to protect the community and safeguard lives and property amidst diverse and challenging emergency scenarios. Each class incident has also been broken into categories correlating with the risk level classification, identifying the rapid expandability of incidents and differing resource needs for Suburban and Rural districts.

Fire Suppression Services

Low Risk—Fire Suppression incidents present minimal danger, including being small, contained, and easily controlled. Low-risk incidents may include trash/dumpster fires, grass/woodland fires, or passenger vehicles.

Table 17: Critical Tasking - Fire Suppression - Low Risk

Task	Number of Personnel (Urban/Hydranted)	Number of Personnel (Rural/Non-Hydranted)
Command/Safety	1	1
Fire Attack	2	2
Pump Operator	1	1
Water Supply – (Tanker)	N/A	1
Total ERF	4	5

Moderate Risk—Incidents that pose an increased danger and may require increased resources or coordination to manage effectively. Fire suppression incidents of this classification may include mobile home fires, larger woodland/grass fires, and specialty vehicles.

Table 18: Critical Tasking - Fire Suppression - Moderate Risk

Task	Number of Personnel (Suburban/Hydranted)	Number of Personnel (Rural/Non-Hydranted)
Command/Accountability	1	1
Safety	1	1
Pump Operator (Attack)	1	1
Fire Attack, 1st Line	2	2
Fire Attack, 2nd Line	2	2
Rapid Intervention Crew	4	4
Search & Rescue	2	2
Ventilation	2	2
Water Supply (Hydrant)	1	N/A
Water Supply (Tankers)	N/A	5

Total ERF	15	19
Additional Non-Fire Resources	*Number of Personnel (Suburban/Hydranted)*	*Number of Personnel (Rural/Non-Hydranted)*
Rehab (Onslow EMS)	3	3

High Risk – Fire suppression incidents require significant resources to be managed effectively and pose a greater danger to the public. Categorized incidents may include but are not limited to small and medium commercial occupancy fires, multi-family dwellings (townhomes/duplex), and 1-2 family dwellings.

Table 19: Critical Tasking - Fire Suppression - High Risk

Task	**Number of Personnel (Suburban/Hydranted)**	**Number of Personnel (Rural/Non-Hydranted)**
Command/Accountability	1	1
Safety	1	1
Pump Operator (Attack)	1	1
Fire Attack, 1st Line	2	2
Fire Attack, 2nd Line	2	2
Rapid Intervention Crew	4	4
Search & Rescue	4	4
Ventilation	2	2
Aerial Operations	2	2
Water Supply (Hydrant)	1	N/A
Water Supply Officer	N/A	1
Pump Operator (Fill Site)	N/A	1
Pump Operator (Dump Site)	N/A	1
Water Supply (Tankers)	N/A	5
Total	20	27
Additional Non-Fire Resources	*Number of Personnel (Suburban/Hydranted)*	*Number of Personnel (Rural/Non-Hydranted)*
Rehab (Onslow EMS)	5	5

Maximum Risk – Incidents in this category include fire suppression incidents that significantly deplete system resources, pose a high risk of danger, and impact the community. Incidents may include but are not limited to large commercial occupancies, multi-family dwellings (apartments), or high-rises (>3 stories).

Table 20: Critical Tasking - Fire Suppression - Maximum Risk

Task	Number of Personnel (Suburban/Hydranted)	Number of Personnel (Rural/Non-Hydranted)
Command/Accountability	1	1
Safety	1	1
Pump Operator (Attack)	1	1
Fire Attack, 1st Line	3	3
Fire Attack, 2nd Line	3	3
Rapid Intervention Crew	6	6
Search & Rescue	4	4
Aerial Operations	4	4
Water Supply (Hydrant)	2	N/A
Water Supply Officer	N/A	1
Pump Operator (Fill Site)	N/A	1
Pump Operator (Dump Site)	N/A	1
Water Supply (Tankers)	N/A	10
Total ERF	25	36
Additional Non-Fire Resources	*Number of Personnel (Suburban/Hydranted)*	*Number of Personnel (Rural/Non-Hydranted)*
Rehab (Onslow EMS)	5	5

Emergency Medical Services (EMS)

Low Risk – A low-risk medical incident typically requires a single fire department and Onslow County EMS resource to provide or assist with patient care. These responses are generally handled through non-emergency responses and pose minimal risk to the community. Examples of responses in this category include single patients who call 911 and report being sick or needing assistance with no injuries.

Table 21: Critical Tasking - EMS - Low Risk

Task	Number of Personnel
Command/Safety	1
Patient Care	1
Documentation	1
SFD Total	3
Transport	2
Onslow County EMS Total	2

Moderate Risk – A moderate-risk medical incident may require more than one fire department and Onslow County EMS resource to aid patient care. Although this category involves the response of multiple units, the overall consequence is typically lower. Motor vehicle collisions involving multiple patients are the primary incidents in this category, with a lower risk of significant loss of life.

Table 22: Critical Tasking - EMS - Moderate Risk

Task	Number of Personnel
Command/Safety	1
Patient Care	2
Documentation	1
SFD Total	4
Transport	2
EMS Supervisor	1
Onslow County EMS Total	3

High Risk – A high-risk medical incident necessitates multiple fire department and Onslow County EMS resources to provide patient care. While the probability of such incidents is low, the potential consequences are significant. Examples include large-scale medical emergencies where the severity of injuries and the number of patients require substantial intervention.

Table 23: Critical Tasking - EMS - High Risk

Task	Number of Personnel
Command/Safety	1
Patient Care	2
Documentation	1
SFD Total	4
ALS Care	2
Supervisor (Advanced Services)	1
Transport	2
Onslow County EMS Total	5

Maximum Risk – A maximum-risk medical incident includes scenarios that would overwhelm the fire department and Onslow County EMS resources, requiring mutual or automatic aid to manage the situation effectively. Although the probability of these incidents is very low, the consequences can be catastrophic due to the potential for a large loss of life. Examples include major disasters or mass casualty events where the scale of the incident surpasses local response capabilities.

Table 24: Critical Tasking - EMS - Maximum Risk

Task	Number of Personnel
Command/Safety	1
Patient Care	2
Documentation	1
Triage	1
SFD Total	5
ALS Care	4
Supervisor (Advanced Services)	3
Transport	6
Onslow County EMS Total	13

Technical Rescue

Low Risk – A low-risk technical rescue incident typically requires a single fire department resource and can be managed using tools and equipment carried on a fire engine. An example includes rescuing a person stuck in an elevator.

Table 25: Critical Tasking - Technical Rescue - Low Risk

Task	Number of Personnel
Command/Safety	1
Rescue	2
SFD Total	3

Moderate Risk—A moderate-risk technical rescue incident typically involves more than one resource and requires specific rescue tools. Examples may include motor vehicle collisions in which individuals are trapped.

Table 26: Critical Tasking - Technical Rescue - Moderate Risk

Task	Number of Personnel
Command/Safety	1
Rescue/Extrication	3
Support Function (Hose, Patient Care)	2
SFD Total	6

High Risk – A high-risk technical rescue incident requires specially trained firefighters with advanced rescue skills and specialized equipment. Responses in this category may involve swift water rescue, high-angle rescue, trench rescue, or confined space rescue.

Table 27: Critical Tasking - Technical Rescue - High Risk

Task	Number of Personnel
Command/Safety	1
Accountability	1

Rescue/Support	4
SFD Total	6
Camp Lejeune Fire & Emergency Services – Support	12

Maximum Risk—A maximum–risk technical rescue incident exceeds the agency's capabilities and requires assistance from state resources, such as an urban search and rescue team.

Table 28: Critical Tasking - Technical Rescue - Maximum Risk

Task	Number of Personnel
Command/Safety	1
Accountability	1
Support/Rescue	4
SFD Total	6
Camp Lejeune Fire & Emergency Services – Support	18

Hazardous Materials

Low Risk – A low-risk hazardous materials incident typically requires minimal resources and can be managed using basic personal protective equipment and standard containment measures. Examples include small chemical spills or minor leaks.

Table 29: Critical Tasking - Hazardous Materials - Low Risk

Task	Number of Personnel
Command/Safety	1
Incident Mitigation	3
SFD Total	4

Moderate Risk – A moderate-risk hazardous materials incident requires additional resources and specialized equipment for effective containment and mitigation. Examples may involve larger chemical spills or leaks requiring specific handling procedures.

Table 30: Critical Tasking - Hazardous Materials - Moderate Risk

Task	Number of Personnel
Command/Safety	1
Incident Mitigation	3
Decontamination	2
SFD Total	6

High Risk—A high-risk hazardous materials incident requires advanced training and specialized equipment to handle hazardous substances safely. Responses in this category may include incidents involving highly toxic chemicals, flammable materials, or complex industrial accidents.

Table 31: Critical Tasking - Hazardous Materials - High Risk

Task	Number of Personnel
Command/Safety	1
Accountability	1
Scene Assessment/Rescue	2
Pump Operation	1
Fire Protection	2
Water Supply	1
SFD Total	8
Camp Lejeune Fire & Emergency Services	8
Onslow County EMS Total	5

Maximum Risk – A maximum-risk hazardous materials incident surpasses local capabilities and requires state or federal assistance, such as hazardous materials response teams with advanced technical expertise and specialized resources.

Table 32: Critical Tasking - Hazardous Materials - Maximum Risk

Task	Number of Personnel
Command/Safety	1
Accountability	1
Scene Assessment/Rescue	2
Pump Operation	1
Fire Protection	2
Water Supply	1
Decontamination	2
Evacuation	4
SFD/SPD Total	14
Camp Lejeune Fire & Emergency Services – Support	12
Onslow County EMS Total	13

Risk Classification and Categories

Table 33: Risk Classification - Fire Suppression

CLASSIFICATION: FIRE SUPPRESSION					
Incident Type	Probability	Consequence	Impact	Risk	Category
Passenger Vehicle Fire	2	2	2	4.90	Low
Small Outside Fire (>1 acre)	4	2	4	13.86	Low
Moderate Outside Fire (1 - 15 acres)	2	2	6	12.33	Low
Large Outside Fire (<15 acres)	4	4	8	33.94	Moderate
Mobile Home Fire	4	4	8	33.94	Moderate
Specialty Vehicle Fire (EV, Military, Commercial)	2	4	8	25.92	Moderate
Commercial Building - Small (<10,000 square feet)	2	6	10	45.52	High

Commercial Building - Medium (10,000-25,000 square feet)	2	6	10	45.52	High
Commercial Building - Large (>25,000 square feet)	2	10	10	73.48	Maximum
Muti-Family (Townhome/Duplex)	4	8	8	55.33	High
1-2 Family Residential	6	6	8	55.43	High
Multi-Family (Apartments)	4	8	10	67.17	Maximum
High-Rise (>3 Stories)	2	10	10	73.48	Maximum

Table 34: Risk Classification - EMS

CLASSIFICATION: EMERGENCY MEDICAL SERVICE (EMS)					
Incident Type	Probability	Consequence	Impact	Risk	Category
Low Priority EMS Incident (Omega & Alpha)	8	2	2	16.25	Moderate
Moderate Priority Incident (Bravo & Charlie)	8	2	2	16.25	Moderate
Critical Incident (Delta & Echo)	8	6	2	36.77	Maximum
Mass Casualty Incident	4	8	6	44.18	Maximum
Motor Vehicle Collision (MVC)	8	4	2	25.92	High

Table 35: Risk Classification - Technical Rescue

CLASSIFICATION: TECHNICAL RESCUE					
Incident Type	Probability	Consequence	Impact	Risk	Category
Elevator Rescue	4	2	2	8.49	Low
Vehicle Extrication	4	6	6	34.99	High
Confined Space Rescue	2	2	8	16.25	Moderate
Trench Rescue	2	2	8	16.25	Moderate

High Angle Rescue	2	2	8	16.25	Moderate
Agriculture Rescue	2	2	8	16.25	Moderate
Swift Water Rescue	2	4	8	25.92	Moderate
Surface/Open Water Rescue	8	4	8	55.42	Maximum

Table 36: Risk Classification - Hazardous Materials

CLASSIFICATION: HAZARDOUS MATERIALS					
Incident Type	Probability	Consequence	Impact	Risk	Category
Fuel/Fluid Leak – Minor (>5 Gallons)	4	2	2	8.49	Low
Fuel/Fluid Leak – Moderate (5 – 55 gallons)	4	2	4	13.86	Moderate
Fuel/Fluid Leak – Large (<55 Gallons)	2	2	8	16.25	Moderate
Gas/Strange Odor (Outside)	4	2	6	19.80	Moderate
Gas/Strange Odor (Inside)	4	2	6	19.80	Moderate
Gas Leak (Natural or LP)	4	4	6	26.53	High

Table 37: Risk Classification - Emergency Management & Domestic Preparedness

CLASSIFICATION: EMERGENCY MANAGEMENT & DOMESTIC PREPAREDNESS					
Incident Type	Probability	Consequence	Impact	Risk	Category
Tropical Systems (Depressions, Storms, Hurricanes)	2	8	10	59.40	Maximum
Tornado/Destructive Winds	2	8	10	59.40	Maximum
Severe Weather (Thunderstorms)	6	2	4	19.80	Moderate
Flash Flooding	4	4	2	13.85	Low
Storm Surge/Tidal Flooding	4	2	2	8.49	Low
Nor'easters	2	2	2	4.90	Low
Winter Events (Snow/Ice)	2	2	2	4.90	Low

Historical Perspective and Summary of System Performance

Our agency's data collection efforts were notably deficient in the past, often failing to provide comprehensive and reliable information for effective decision-making. This resulted in a lackadaisical approach to data presentations, where incomplete and outdated data frequently hindered our ability to assess performance and identify areas for improvement accurately.

Recognizing these deficiencies, our agency has embarked on a rigorous continuous improvement process. We are committed to transparency, diligently publishing baseline historical data and current operational metrics to foster accountability and innovation. By leveraging this data, we aim to disrupt inefficient and ineffective performance standardization, driving progressive changes that enhance our success.

The following section provides the agency's baseline performance values from 2021-2023 within the incorporated and unincorporated areas protected by the Swansboro Fire Department. Incidents for which SFD provided automatic or mutual aid have been removed.

Distribution Factors

The Swansboro Fire Department (SFD) has established manageable service areas based on the established response district boundaries, Swansboro (17A) and White Oak River (17B). The following table identifies the characteristics of each zone.

Table 38: Fire Management Zones - Area, Road Miles, Population, Density, & Classification

Fire Management Zone {FMZ}	Approximate Area {Square Miles}	Approximate Road Miles	Approximate Population	Approximate Density {Population per Square Mile}	Demographic Classification
FMZ 17 A	2.421	29.66	3,744	1,547	Urban
FMZ 17 B	7.07	28.37	1,859	263	Rural
Total Agency	9.491	58.03	5,603	590	Urban/Rural

The following table illustrates the baseline travel times for SFD throughout the district and per zone. Travel times correlate with the geographical area covered based on size and distance.

Table 39: Fire Management Zone Travel Time & Area

Fire Management Zone	2020 - 2023 Travel Times (90th Percentile)	2023 - 2022 Travel Times (90th Percentile)	2022 - 2021 Travel Times (90th Percentile)	2021 - 2020 Travel Times (90th Percentile)	Fire Management Zone Area (Square Miles)
FMZ 17 A	5:11	4:57	4:49	3:56	2.421
FMZ 17 B	6:51	6:08	6:51	5:45	7.07
All Districts	5:51	5:47	6:02	5:43	9.491

Concentration Factors

Concentration refers to the strategic arrangement of resources so that an initial effective response force (ERF) can arrive on the scene within the specified time frames outlined in the on-scene performance expectations. The SFD only operates from one location, requiring outside resources to complete the outline ERF requirements. However, the distribution of annual calls per district is depicted in the following table.

Table 40: Annual Call Volume per District

District	2021	2022	2023
Swansboro {17A}	326	557	836
White Oak River {17B}	77	147	258
District Wide Total (Excluding Aid Given)	403	704	1,094
District Wide Total (Including Aid Given)	535	813	1221

Reliability Factors

The Swansboro Fire Department (SFD) has identified numerous factors that may impact response reliability within the defined fire management zones. Through the initial risk analysis, the SFD found that unit reliability has not been evaluated historically. The SFD is the only 24-hour agency in the Northeast region of Onslow County, often responding to mutual or automatic aid incidents to supplement volunteer agencies. The location of our current facility impacts the travel time to areas in both zones based on the geographical area of coverage. Furthermore, the SFD primarily staffed a single company, which cross-staffed apparatus, relying on personnel recalls or volunteers to back-fill on extended incidents. These factors are identified as they may impact the ability to reach incidents within the benchmark performance objectives established.

Overlapping Incidents

The Swansboro Fire Department (SFD) has also identified the impact of overlapping incidents on the reliability of first-due apparatus. The influx of incidents subsequently impacted the number of overlapping incidents. The following tables demonstrate the increase in overlapping incidents per zone.

Table 41: Annual Overlapping Incident Percentage - Planning Zone 17A

Category	2021	2022	2023
Overlapping Calls	25	38	112
Annual Incidents	326	557	836
Percentage Overlap	7.67%	6.82%	13.4%

Table 42: Annual Overlapping Incident Percentage - Planning Zone 17B

Category	2021	2022	2023
Overlapping Calls	0	6	29
Annual Incidents	77	147	258
Percentage Overlap	0%	4.08%	11.24%

Baseline Performance Tables

For years, the Swansboro Fire Department (SFD) relied on average response times as the primary measure of their performance. Calculating the average response time involved summing all recorded responses and dividing them by the number of incidents. While this approach offered a general sense of how quickly the department responded to calls, it failed to account for the variability and extreme cases within the data. The average response time metric often masked critical issues, such as excessively long response times to certain areas or emergencies.

The reliance on averages proved particularly problematic because it smoothed out the peaks and troughs in the data. Suppose most response times were reasonably quick, but there were a few significantly delayed responses. In that case, the average might still suggest satisfactory performance, creating a false sense of security and overlooking serious lapses that could have severe consequences in emergencies. The department's reporting software, a powerful tool designed to capture a wide array of data, was underutilized. The lack of a defined quality assurance and improvement program exacerbated these issues, distorting the picture of the agency’s true performance capabilities.

Committed to improving, the SFD has begun transitioning to the 90th percentile mentality, marking a significant shift in how it measures and portrays its capabilities. By focusing on the 90th percentile, the department can ensure more consistent and reliable emergency service. The SFD also transitioned Report Management System (RMS) software in August 2023.

The following tables compile key data components obtained for the past three years {August 1, 2020 – July 31, 2023} reflecting on our reporting software change, creating a strong baseline to improve. We also reference our remaining 2023 data to realign our dataset to a calendar year, January 1 – December 31.

Dataset Definitions

The Swansboro Fire Department (SFD) has adopted the following terminology listed in the Quality Improvement for the Fire and Emergency Services (QIFES) text, following

the 10th edition Commission on Fire Accreditation International (CFAI) Model, and the National Fire Protection Association (NFPA), 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, to analyze performance.

Alarm Handling Time – The time interval that begins when the alarm is received at the agency's primary Public Safety Answering Point (PSAP) until the beginning of the transmittal of the response information via voice or electronic means to emergency response facilities or the emergency response units in the field.

Effective Response Force (ERF) – The minimum amount of staffing and equipment that must reach a specific emergency zone location within a maximum prescribed total response time and is capable of initial fire suppression, EMS, and/or mitigation. The ERF results from the critical tasking analysis conducted as part of a community risk assessment.

Rural – An area with fewer than 500 people per square mile

Turnout Time – The time interval that begins when the emergency response facilities and emergency response units' notification process begins by either an audible alarm or visual annunciation or both and ends at the beginning point of travel time.

Travel Time – The interval that begins when a unit is enroute to the emergency incident and ends when the unit arrives at the scene.

Total Response Time – The interval from receiving the alarm by the agency's PSAP to when the first emergency response unit is initiating action or intervening to control the incident.

Urban – An incorporated or unincorporated area with over 30,000 people ***and/or*** a population density of over 1,000 people per square mile but less than 2,999.

Dataset Qualifications

The Swansboro Fire Department (SFD) historically applied averages to demonstrate performance. The SFD has begun transitioning to a 90th-percentile measurement to

accurately and effectively report performance. The data was extracted from the previous report management system (RMS) software, Emergency Reporting, to gauge the current performance and provide a consistent evaluation. The extracted data, in the form of a Microsoft Excel workbook, was sorted and had the “PERCENTILE.EXC” function applied to identify the 90th percentile. The agency does not have an outlier policy in which data values would be excluded from the entire dataset based on certain criteria. However, the raw data evaluation provided a foundation for building such criteria in future assessments.

Effective Response Force – Accountability

The Swansboro Fire Department (SFD) has identified two significant challenges in accurately tracking our historical effective response force (ERF) and risk classifications for emergencies beyond our previous internal capabilities. Our ERF shortfall was further complicated by a regional mentality of “doing more with less,” often overexerting our on-scene resources. The SFD also recognized accurately classifying incident types within the newly developed classification system was non-existent. Furthermore, before April 2023, the SFD district was a non-delineated response zone, creating the inability of our Computer-Aided Dispatch (CAD) software to separate empirical data into the proper response zones (17A and 17B). Consequently, identifying incident classifications per our Dispatch Types compared to the National Fire Incident Reporting System (NFIRS) codes or even identifying our ERF has proven beyond challenging regarding the identification risk classification type and category.

The complex dynamics also encompass items like the aiding agencies' response. In some instances, personnel may be present but not fully capable of performing the required tasks due to limitations in training, experience, or the specific demands of the incident. This often necessitates assigning multiple roles to fewer individuals or operating with reduced staffing levels, which can further strain our response capabilities. Relying on volunteer agencies, whose availability and capability vary widely, compounds these challenges. Without standardized response guidelines across the county, the numbers we relied upon were inconsistent and unreliable, challenging our ability to identify baseline performance data relative to benchmarking our ERF and completing our critical tasking groups.

We acknowledge that our previous data collection methods did not allow us to paint a comprehensive picture of the personnel and resources deployed on incidents that required automatic or mutual aid, leading to gaps in our ability to monitor and evaluate response effectiveness. The baseline performance data below does not include an ERF or subdivided Risk Classifications component based on the inability to obtain accurate data and timestamps of established items or the number of personnel on the scene capable of fulfilling the ERF components. The SFD was able to sort incidents by Town and County (previous internal identifier) and generic NFIRS Codes for Fire and EMS incidents to provide the following Baseline Performance Data. SFD acknowledges the shortfall in this essential component, which will be identified in Section D of this report as a continuous improvement item.

Table 43: Baseline Performance Data – All Incidents – All Risk

All Incident Types 90th Percentile Times Baseline Performance	District {*Zone*} {Classification}	23 - 20	23	23 - 22	22 - 21	21 - 20
			FirstDue	*Emergency Reporting*		
Alarm Handling	Town {*17A*} Urban	2:40	2:11	2:10	2:42	2:14
	County {*17B*} Rural	3:17	1:43	2:36	3:24	3:28
	District-Wide	2:50	2:02	2:28	3:00	3:28
Turnout Time	Town {*17A*} Urban	2:07	2:31	2:05	1:58	1:36
	County {*17B*} Rural	2:20	2:38	2:25	2:10	1:48
	District-Wide	2:11	2:32	2:15	2:09	2:00
Travel Time	Town {*17A*} Urban	5:11	5:36	4:57	4:49	3:56
	County {*17B*} Rural	6:51	8:11	6:08	6:51	5:45
	District-Wide	5:51	6:06	5:47	6:02	5:43
Total Response Time	Town {*17A*} Urban	8:41	7:16	8:06	8:21	6:34
	County {*17B*} Rural	10:57	9:20	10:57	10:57	8:39
	District-Wide	9:28	8:09	9:30	9:39	8:15

i. Emergency Reporting – Data Sets Range from August 1, 2020, to July 31, 2023.

ii. First Due – Data Range Begins July 31, 2023, to December 31, 2023.

iii. The 2020 – 2023 Cumulative total includes the additional six months from the 23 FirstDue RMS transition.

Table 44: Baseline Performance Data - Fire Incidents - All Risk

Fire Incidents {All Risk} 90th Percentile Times Baseline Performance	District {*Zone*} {Classification}	23 - 20	23	23 - 22	22 - 21	21 - 20
			FirstDue	***Emergency Reporting***		
Alarm Handling	Town {*17A*} Urban	2:34	2:48	2:50	2:43	2:35
	County {*17B*} Rural	2:30	1:55	1:56	2:24	2:04
	District-Wide	2:30	2:42	3:34	2:29	2:26
Turnout Time	Town {*17A*} Urban	2:09	2:24	2:14	2:17	1:58
	County {*17B*} Rural	1:58	3:15	1:45	1:49	00:41
	District-Wide	2:09	2:32	2:27	2:06	1:58
Travel Time	Town {*17A*} Urban	5:55	5:46	7:25	6:00	6:00
	County {*17B*} Rural	7:26	8:31	5:53	5:30	5:30
	District-Wide	5:55	6:09	6:20	5:43	5:43
Total Response Time	Town {*17A*} Urban	9:09	7:38	9:38	8:30	8:30
	County {*17B*} Rural	10:00	9:45	9:30	9:47	7:21
	District-Wide	9:26	8:01	11:07	9:46	8:04

i. Emergency Reporting – Data Sets Range from August 1, 2020, to July 31, 2023.

ii. First Due – Data Range Begins July 31, 2023, to December 31, 2023.

iii. The 2020 – 2023 Cumulative total includes the additional six months from the 23 FirstDue RMS transition.

Table 45: Baseline Performance Data - EMS Incidents - All Risk

EMS Incidents {All Risk} 90th Percentile Times Baseline Performance	District {*Zone*} {Classification}	23 - 20	23	23 - 22	22 - 21	21 - 20
			FirstDue	*Emergency Reporting*		
Alarm Handling	Town {*17A*} Urban	2:40	1:59	2:21	3:00	2:37
	County {*17B*} Rural	3:26	1:52	2:43	3:35	4:27
	District-Wide	2:45	1:57	2:25	3:17	3:17
Turnout Time	Town {*17A*} Urban	2:07	2:31	2:10	2:06	1:51
	County {*17B*} Rural	2:25	2:44	2:27	2:19	2:06
	District-Wide	2:11	2:35	2:12	2:09	1:51
Travel Time	Town {*17A*} Urban	5:03	5:33	5:05	5:10	4:19
	County {*17B*} Rural	6:51	8:11	6:33	6:55	6:45
	District-Wide	5:34	6:08	5:32	5:42	5:09
Total Response Time	Town {*17A*} Urban	8:35	7:07	8:42	9:01	6:59
	County {*17B*} Rural	11:11	9:15	11:11	11:11	13:36
	District-Wide	9:24	8:24	9:34	9:39	7:49

i. *Emergency Reporting – Data Sets Range from August 1, 2020, to July 31, 2023.*

ii. *First Due – Data Range Begins July 31, 2023, to December 31, 2023*

iii. *The 2020 – 2023 Cumulative total includes the additional six months from the 23 FirstDue RMS transition.*

Evaluation of Service Delivery

The following section describes the benchmark performance objectives that the Swansboro Fire Department (SFD) strives to achieve against the baseline performance results achieved over the July 2020- December 2023 incident data period.

Throughout the benchmark and baseline statements, the terms urban and rural are used as follows:

- Urban refers to events within the incorporated municipal boundaries of the Town of Swansboro, known as the Swansboro Fire District.
- Rural refers to events that occur in the unincorporated area of Onslow County but within the Swansboro Fire Department Response District, defined as the White Oak River Community Fire District.

Performance Objectives – Benchmarks

All Programs First Due

For 90 percent of **all combined incidents**, the total response time for the arrival of the first-due unit, staffed with two firefighters and one officer, shall be 5:00 minutes in urban areas and 6:00 minutes in rural areas. The first-due unit shall be capable of initiating command, assessing the situation; requesting additional resources; and establishing the proper level of services for the type of incident found. These operations shall be conducted per departmental standard operating procedures while ensuring the safety of responders and the general public.

Fire Suppression Services Program

For 90 percent of **all fire suppression incidents**, the total response time for the arrival of the first-due unit, staffed with two firefighters and one officer, shall be 6:00 minutes in urban areas and 7:30 minutes in rural areas. The first-due unit shall be capable of providing 1000 gallons of water and 1,250 gallons per minute (gpm) pumping capacity; initiating command; requesting additional resources; establishing and advancing an attack line flowing a minimum of 165 gpm; establishing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing salvage operations. These

operations shall be conducted per departmental standard operating procedures while ensuring the safety of responders and the general public.

For 90 percent of all **Low-Risk** fire suppression incidents, the total response time for the arrival of the effective response force (ERF), staffed with two firefighters and an officer {urban} / three firefighters and an officer {rural}, shall be 6:00 minutes in urban areas and 7:30 minutes in rural areas. The ERF shall be capable of establishing command, providing an uninterrupted water supply (urban) or tanker-nursing operation (rural), and deploying and advancing an attack line for extinguishment.

For 90 percent of all **Moderate-Risk fire** suppression incidents, the total response time for the arrival of the effective response force (ERF), staffed with 16 firefighters and officers {urban} and 19 firefighters and officers {rural}, shall be 12 minutes in urban areas and 15:00 minutes in rural areas. The ERF shall be capable of establishing command, providing an uninterrupted water supply (urban) or rural water supply operation (rural), and deploying and advancing an attack line for extinguishment.

For 90 percent of all **High-Risk fire** suppression incidents, the total response time for the arrival of the effective response force (ERF), staffed with 23 firefighters and officers {urban} and 28 firefighters and officers {rural}, shall be 15:00 minutes in urban areas and 18:00 minutes in rural areas. The ERF shall be capable of establishing command, providing an uninterrupted water supply (urban) or rural water supply operation (rural), deploying and advancing an attack and backup line for extinguishment, establishing a Rapid Intervention Crew (RIC), and conducting a primary search for victims.

For 90 percent of all **Maximum-Risk fire** suppression incidents, the total response time for the arrival of the effective response force (ERF), staffed with 30 firefighters and officers {urban} and 36 firefighters and officers {rural}, shall be 18:00 minutes in urban areas and 21:00 minutes in rural areas. The ERF shall be capable of establishing command, providing an uninterrupted water supply (urban) or rural water supply operation (rural), deploying and advancing an attack and backup line for extinguishment, establishing a Rapid Intervention Crew (RIC), conducting a primary search for victims, and evacuation of occupants.

Emergency Medical Services Program

For 90 percent of **all EMS** responses, the total response time for the arrival of the first-due unit, staffed with two firefighters and one officer, shall be 5:30 minutes in urban areas and 6:30 minutes in rural areas. The first-due unit shall be capable of assessing scene safety and establishing command; sizing up the situation; conducting an initial patient assessment; obtaining vitals and the patient's medical history; providing first responder medical aid, including automatic external defibrillation (AED); and assisting transport personnel with packaging the patient.

For 90 percent of **Moderate-Risk EMS** responses, the total response time for the arrival of the effective response force (ERF), staffed with four firefighters and officers, along with three EMS personnel, shall be 12:00 minutes in urban areas and 14:00 minutes in rural areas. The total ERF shall be capable of establishing incident command, sizing up and assessing the situation, determining the need for additional resources, establishing a patient assessment or triage system, effective patient care, and assisting transport personnel with packaging the patient.

For 90 percent of **High-Risk EMS** responses, the total response time for the arrival of the effective response force (ERF), staffed with four firefighters and officers, along with Five EMS personnel, shall be 16:00 minutes in urban areas and 18:00 minutes in rural areas. The total ERF shall be capable of establishing incident command, sizing up and assessing the situation, determining the need for additional resources, establishing a patient assessment or triage system, effective patient care, and assisting transport personnel with packaging the patient.

For 90 percent of **Maximum-Risk EMS** responses, the total response time for the arrival of the effective response force (ERF), staffed with five firefighters and officers, along with 13 EMS personnel, shall be 22:00 minutes in urban areas and 25:00 minutes in rural areas. The total ERF shall be capable of establishing incident command, sizing up and assessing the situation, determining the need for additional resources, establishing a patient assessment or triage system, effective patient care, and assisting transport personnel with packaging the patient.

Technical Rescue Services Program

For 90 percent of all technical rescue incidents, the total response time for the arrival of the first-due unit, minimally staffed with two firefighters and one officer, shall be 6:00 minutes in urban areas and 7:30 minutes in rural areas. The first-due unit shall be capable of establishing command, sizing up to determine if an expanded technical rescue response is required, requesting additional resources, and providing basic life support to any victim without endangering response personnel.

For 90 percent of **Moderate-Risk** Technical Rescue responses, the total response time for the arrival of the effective response force (ERF), staffed with six firefighters and officers, shall be 10:00 minutes in urban areas and 12:30 minutes in rural areas. The total ERF shall be capable of establishing incident command, sizing up and assessing the situation, determining the need for additional resources, stabilizing any immediate threats, establishing operating zones, initiating personnel accountability, and supporting the specialized Technical Rescue Team.

For 90 percent of **High-Risk** Technical Rescue responses, the total response time for the arrival of the effective response force (ERF), staffed with 18 firefighters and officers, shall be 16:00 minutes in urban areas and 18:30 minutes in rural areas. The total ERF shall be capable of establishing incident command, sizing up and assessing the situation, determining the need for additional resources, stabilizing any immediate threats, establishing operating zones, initiating personnel accountability, and supporting the specialized Technical Rescue Team.

For 90 percent of **Maximum Risk** Technical Rescue responses, the total response time for the arrival of the effective response force (ERF), staffed with 24 firefighters and officers, shall be 24:30 minutes in urban areas and 26:00 minutes in rural areas. The total ERF shall be capable of establishing incident command, sizing up and assessing the situation, determining the need for additional resources, stabilizing any immediate threats, establishing operating zones, initiating personnel accountability, and supporting the specialized Technical Rescue Team.

Hazardous Materials Services Program

For 90 percent of all hazardous materials response incidents, the total response time for the arrival of the first-due unit, staffed with two firefighters and one officer, shall be 6:00 minutes in urban areas and 7:30 minutes in rural areas. The first-due unit shall be capable of establishing command, sizing up and assessing the situation to determine the presence of potentially hazardous material, determining the need for additional resources, estimating the potential harm without intervention, and beginning to establish a hot, warm, and cold zone.

For 90 percent of **low-risk hazardous material** responses, the total response time for the arrival of the effective response force (ERF), staffed with four firefighters and officers, will be 6:00 minutes in urban areas and 7:30 minutes in rural areas. The total ERF shall be capable of establishing incident command, sizing up and assessing the situation to determine the presence of potentially hazardous material, determining the need for additional resources, controlling any spills or discharges, estimating the potential harm without intervention, and beginning to establish a hot, warm, and cold zone.

For 90 percent of **moderate-risk hazardous material** responses, the total response time for the arrival of the effective response force (ERF), staffed with six firefighters and officers, will be 10:00 minutes in urban areas and 12:00 minutes in rural areas. The total ERF shall be capable of establishing incident command, sizing up and assessing the situation to determine the presence of potentially hazardous material, determining the need for additional resources, controlling any spills or discharges, estimating the potential harm without intervention, and beginning to establish a hot, warm, and cold zone.

For 90 percent of **high-risk hazardous material** responses, the total response time for the arrival of the effective response force (ERF), staffed with 21 firefighters and officers, will be 18:00 minutes in urban areas and 19:30 minutes in rural areas. The total ERF shall be capable of establishing incident command, sizing up and assessing the situation to determine the presence of potentially hazardous material, determining the need for additional resources, controlling any spills or discharges, estimating the

potential harm without intervention, establishing a hot, warm, and cold zone, and establish the ability to decontaminate.

For 90 percent of **maximum-risk hazardous material** responses, the total response time for the arrival of the effective response force (ERF), staffed with 39 firefighters, officers, EMS, and law enforcement personnel, will be 25:00 minutes in urban areas and 26:00 minutes in rural areas. The total ERF shall be capable of establishing incident command, sizing up and assessing the situation to determine the presence of potentially hazardous material, determining the need for additional resources, controlling any spills or discharges, estimating the potential harm without intervention, establishing a hot, warm, and cold zone, creating decontamination process, and evacuating necessary areas.

Performance Gaps – Baseline to Newly Developed Benchmarks

The Swansboro Fire Department (SFD) has just transitioned our evaluation method, along with the newly defined performance benchmarks for the 90th percentile and effective response force numbers. The following charts highlight the gaps between our service performance and the desired performance levels, as determined by our comprehensive community risk assessment and needs analysis.

*** Due to the inability to previously track Effective Response Force (ERF) and Risk Classification, the following depicts All Risk Levels for the First Arriving Apparatus – Only.*

All Service Programs

Table 46: Baseline to Benchmark Time Gap - All Incidents - All Risk

Year	District	Baseline	Benchmark	Gap
2020 - 2023	Swansboro (17A) {Urban}	8:41	5:00	(3:41)
	White Oak River (17B) *{Rural}*	10:57	6:00	(4:57)
2023 (First Due RMS)	Swansboro (17A) {Urban}	7:16	5:00	(2:16)
	White Oak River (17B) *{Rural}*	9:20	6:00	(3:20)
2022 – 2023 (Emergency Reporting)	Swansboro (17A) {Urban}	8:06	5:00	(3:06)
	White Oak River (17B) *{Rural}*	10:57	6:00	(4:57)
2021 – 2022	Swansboro (17A) {Urban}	8:21	5:00	(3:21)
	White Oak River (17B) *{Rural}*	10:57	6:00	(4:57)
2020 – 2021	Swansboro (17A) {Urban}	6:34	5:00	(1:34)
	White Oak River (17B) *{Rural}*	8:39	6:00	(2:39)

Fire Suppression Services Program

Table 47: Baseline to Benchmark Time Gap - Fire - All Risk

Year	District	Baseline	Benchmark	Gap
2020 - 2023	Swansboro (17A) {Urban}	9:09	6:00	(3:09)
	White Oak River (17B) *{Rural}*	10:00	7:30	(2:30)
2023 (First Due RMS)	Swansboro (17A) {Urban}	7:38	6:00	(1:38)
	White Oak River (17B) *{Rural}*	9:45	7:30	(2:15)
2022 – 2023 (Emergency Reporting)	Swansboro (17A) {Urban}	9:38	6:00	(3:38)
	White Oak River (17B) *{Rural}*	9:30	7:30	(2:00)

2021 – 2022	Swansboro (17A) {Urban}	8:30	6:00	(2:30)
	White Oak River (17B) *{Rural}*	9:47	7:30	(2:17)
2020 – 2021	Swansboro (17A) {Urban}	8:30	6:00	(2:30)
	White Oak River (17B) *{Rural}*	7:21	7:30	**0:09**

Emergency Medical Services Program

Table 48: Baseline to Benchmark Time Gap - EMS - All Risk

Year	District	Baseline	Benchmark	Gap
2020 - 2023	Swansboro (17A) {Urban}	8:35	5:30	(3:05)
	White Oak River (17B) *{Rural}*	11:11	6:30	(4:41)
2023 (First Due RMS)	Swansboro (17A) {Urban}	7:07	5:30	(1:37)
	White Oak River (17B) *{Rural}*	9:15	6:30	(2:45)
2022 – 2023 (Emergency Reporting)	Swansboro (17A) {Urban}	8:42	5:30	(3:12)
	White Oak River (17B) *{Rural}*	11:11	6:30	(4:41)
2021 – 2022	Swansboro (17A) {Urban}	9:01	5:30	(3:31)
	White Oak River (17B) *{Rural}*	11:11	6:30	(4:41)
2020 – 2021	Swansboro (17A) {Urban}	6:59	5:30	(1:29)
	White Oak River (17B) *{Rural}*	13:36	6:30	(7:06)

Performance Maintenance and Improvement Plans

Compliance Team / Responsibility

The Swansboro Fire Department (SFD) has established a Compliance Team to systematically analyze, monitor, and enhance the department's operational efficiency. By utilizing performance data, the team will identify areas for improvement, ensure accountability, and implement strategies to optimize service delivery. The SFD compliance team comprises the fire chief, assistant fire chief of operations and training, assistant fire chief of administration and logistics, and three fire captains. The responsibilities of those positions are as follows:

***Fire Chief*:** Overall responsibility for the department’s operational performance.

Assistant Fire Chief of Operations and Training: Responsible for the performance of operational personnel (three shifts, volunteers, and part-time) and the oversight, development, and implementation of the agency’s training programs.

Assistant Fire Chief of Administration and Logistics*:* Responsible for overseeing and managing apparatus repair, maintenance, and standards compliance to improve effectiveness and performance.

Fire Captains: Each responsible for the overall performance of their assigned shifts, including data entry and reporting, strengthening benchmark compliance, and developing improvement plans for operational shifts or personnel.

Performance Evaluation and Compliance Strategy

The Swansboro Fire Department (SFD) will assess its performance by continuously evaluating the services provided. This will be achieved by measuring the performance of individual crews and the overall agency, with results reported back to the crews to reinforce accountability and drive improvement. The agency will analyze the components of total response time—alarm handling, turnout, and travel—separately, allowing for more precise identification, prioritization, and targeting of areas for improvement.

The Fire Chief compiles a monthly report illustrating the agency's operational performance. Additionally, the new Report Management Software (RMS) allows for the development of a dashboard that allows users to view this performance in real-time with every RMS system log-in. We are working with our RMS partners to develop the report as the initial landing page for all personnel. Likewise, we are revamping our agency webpage and social media to help boost our transparency and performance accountability from our internal and external stakeholders.

Continuous Improvement Strategy

To ensure the agency meets its service level objectives, continuous monitoring of the services will be conducted regularly. The compliance team will review service level baseline performance monthly, quarterly, and annually.
The monthly report shall include:

i. Summary of Incident Volume
ii. Overall summary of monthly baseline performance by program classification
iii. A gap analysis of the month's performance, compared to the year and previous months' performance.
iv. Each shift's monthly performance compared to the year and previous months' performance.
v. Factors influencing performance or impacted reports qualifying as an outlier.

The quarterly report shall include:

i. Each component in the monthly report with the respective quarters below.
    - First Quarter – *January 1st – March 31st*
    - Second Quarter – *April 1st – June 30th*
    - Third Quarter – *July 1st – September 30th*
    - Fourth Quarter - *November 1st – December 31st*
ii. Each quarter's performance will be compared to all quarters within the current calendar year.
iii. A percentage change chart of compared data.

The annual report shall include:

i. All components from the monthly reports compiled for the calendar year.
ii. A graphic displaying each quarter’s performance, with a trend line.
iii. List of identified factors positively and negatively impacting agency performance.
iv. Total annual calls for service subdivided by the following:
    - Program Area (Fire, EMS, TR, Hazardous Materials)
    - Response Zone (17A, 17B)
    - Aid Given
    - Overlapping Incidents
v. Comparison of annual data with percent of change calculation.
vi. Performance Gaps for total response areas.

Monthly reports will be provided to the elected officials via the monthly reports section of the Board of Commissioners packet. Quarterly and Annual reports will be presented at the first available Board of Commissioners meeting following the quarter's or calendar year's end.

Recommendations for Improved Effectiveness in Deployment and Coverage

Through the Community Risk Assessment and Standards of Cover program, the Swansboro Fire Department (SFD) has identified numerous areas for improvement and has already begun addressing key issues while planning for continued service enhancement. These efforts include designing and constructing a new Public Safety Building and acquiring new apparatus to modernize our fleet and improve operational efficiency.

We have begun working with our dispatch center to amplify the use of the software, aiming to enhance time tracking, improve data accuracy, and streamline our response processes. With a focus on accurate data tracking and implementing more effective accountability mechanisms, we are committed to refining how we monitor and evaluate our performance. These improvements will also include stronger partnerships with neighboring agencies and organizations, ensuring that we work collaboratively to provide the highest level of service to the community.

While we have made progress through initial improvements, significant work remains ahead. The SFD has identified the need to refine our data entry processes to more accurately capture Effective Response Force (ERF), benchmark timestamps, personnel on scene, and ERF times. These adjustments are crucial for precise performance tracking and operational effectiveness. Additionally, our services depend heavily on external support, and we frequently provide aid to surrounding areas. Therefore, planning for future growth, optimizing service delivery, and effectively managing overlapping incidents are essential to ensuring our agency meets the community's needs and remains resilient in the face of evolving challenges.

APPENDICES

Appendix A – References/Citation

Center for Public Safety Excellence. (2016). Community Risk Assessment: Standards of Cover. *6th*. Virginia, Chantilly: CPSE.

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Appendix B – Town of Swansboro Board of Commissioners Resolution