Town of Hilton Head Island

COMMUNITY SERVICES AND PUBLIC SAFETY COMMITTEE MEETING

Monday, January 24, 2022, 10:00 AM

AGENDA

The Community Services & Public Safety Meeting will be conducted virtually and can be viewed on the Town's Public Meetings Facebook page.

1. **Call to Order**

2. **FOIA Compliance** Public notification of this meeting has been published, posted, and distributed in compliance with the South Carolina Freedom of Information Act and the requirements of the Town of Hilton Head Island.

3. **Roll Call**

4. **Approval of the Agenda**

5. **Approval of the Minutes**

   a. Regular Meeting – November 22, 2021

   b. Special Meeting – January 13, 2022

6. **Appearance by Citizens**

   Citizens who wish to address the Committee concerning agenda items, may do so by contacting the Town Clerk at 843.341.4701, no later than 4:30 p.m., Friday, January 21, 2022.

   Citizens may also submit written comments concerning any of the items on the agenda through the eComment portal. The eComment portal can be found by following this link: January 24, 2022 Community Services & Public Safety Meeting Information, by clicking on the eComment icon.

7. **New Business**

   a. Fire Rescue presentation on the updated 2021 Hilton Head Island Fire Rescue Community Risk Assessment /Standards of Cover Document that was submitted to support the department's reaccreditation process from the Commission on Fire Accreditation International

8. **Adjournment**

Please note, a quorum of Town Council may result if four (4) or more of their members attend this meeting.

Town of Hilton Head Island
Community Services & Public Safety Committee
Monday, November 22, 2021, 9:00 a.m.
Meeting Minutes

Present from the Committee:*;* David Ames, Tamara Becker, Tom Lennox, Glenn Stanford, *Council Members*

Absent from the Committee: Bill Harkins, *Chairman*;

Present for Town Council: Councilman Alex Brown

Present from Town Staff: Brad Tadlock, *Fire Chief;* Jeff Buckalew, *Interim Director of infrastructure Services*; Krista Wiedmeyer, *Town Clerk*

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1. **Call to Order**

On behalf of Chairman Harkins, Mr. Lennox stepped in to preside over the meeting.

Mr. Lennox called the meeting to order at 9:00 AM.

2. **FOIA Compliance:** Public notification of this meeting has been published, posted, and distributed in compliance with the South Carolina Freedom of Information Act and the requirements of the Town of Hilton Head Island.

3. **Roll Call –** Attendance was confirmed by way of Roll Call. Mr. Harkins was absent.

4. **Approval of the Minutes**

   a. Regular Meeting – October 25, 2021

Mr. Stanford moved to approve the minutes as noted on the agenda. Ms. Becker seconded. The minutes were approved by a vote of 4-0.

5. **Appearance by Citizens**

Ms. Wiedmeyer reported that no one had signed up to address the Committee.

6. **Unfinished Business**

   a. Discussion of the Sandalwood Food Pantry and Use of Town-Owned Property

Ms. Cyran delivered a presentation to the Committee reviewing the previous discussion of the Committee concerning the Sandalwood Food Pantry. Dr. Nannette Pierson addressed the Committee providing additional information regarding the same. The Committee had a detailed discussion, providing staff with direction on how they would like to proceed with this matter.

Dr. Pierson will continue to work with Town staff and come back at a later date to address the number of concerns the Committee had.

7. Adjournment

By way of unanimous vote, the meeting was adjourned at 9:55 AM

Approved:

Approved: _____
Krista M. Wiedmeyer, Town Clerk

Town of Hilton Head Island

Community Services & Public Safety Committee

Thursday, January 13, 2022 – 10:00 a.m.

MINUTES

Present from the Committee: Bill Harkins, *Chairman*; David Ames; Tom Lennox; Glenn Stanford

Present from Town Council: Tamara Becker

Present from Town Staff: Joshua Gruber, Deputy Town Manager; Shawn Colin, Advisor to the Town Manager; Jeff Buckalew, Interim-Director of Infrastructure Services; Chris Yates, Interim-Director of Community Development; Aaron Black, Facilities Manager; Krista Wiedmeyer, Town Clerk; Karen Knox, Senior Administrative Assistant

Others Present: Peter Kristian; *Hilton Head Plantation POA*; Chris Creed, *Olsen Associates, Inc.*; Curtis Coltrane, Esquire

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1. **Call to Order**

   Chairman Harkins called the meeting to order at 10:00 a.m.

2. **FOIA Compliance** – Public notification of this meeting has been published, posted, and distributed in compliance with the South Carolina Freedom of Information Act and the requirements of the Town of Hilton Head Island.

Ms. Wiedmeyer confirmed compliance with FOIA.

3. **Roll Call**

Attendance was confirmed.

4. **Approval of Agenda**

Mr. Ames moved to approve. Ms. Becker seconded. The motion was unanimously approved.

5. **Appearance by Citizens**

There were no requests from citizens to appear before the Committee.

6. **Committee Business**

   a) **Consideration of an Ordinance Revision Portion of Title 8, Chapter 1, of the Town of Hilton Head Island Code of Ordinances to Expand the Definition of Beach to Include Pine Island Beach and the Mitchelville Park Areas**.

   Jeff Buckalew stated the Town would like to extend the defined beach from Fish Haul Creek up to a creek outlet called Park Creek, which is on the northwestern side of Pine Island. The Town's Strategic Plan includes an initiative that we are to look at the next beach renourishment project, consider expanding the geographical limits of the beach and

include this beach area in the next beach renourishment project. Mr. Buckalew stated the benefits of doing this are as we expand the managed beach; this will allow beach preservation fee funds to be spent on this beach. Should there be a catastrophic disaster and this segment suffer severe erosion, this would allow us to seek federal funds through public assistance. Upon the conclusion of Mr. Buckalew's presentation, he answered questions from the Committee.

Mr. Ames moved to forward a recommendation to Town Council to revise the definition of Beach in Title 8, Chapter 1, of the Town of Hilton Head Island Code of Ordinances be expanded to include the shoreline area from Fish Haul Creek to Park Creek on the northern side of Pine Island as presented. Mr. Lennox seconded. The Motion was unanimously approved.

b) Consideration of an Agreement with Hilton Head Plantation Property Owners Association to Assist in the Renourishment of Pine Island Beach.

Jeff Buckalew stated this is an Agreement between the Town and Hilton Head Plantation POA to provide funding assistance for their continued maintenance and renourishment efforts on Pine Island Beach. The Term of the Agreement is not to exceed three years and the amount is not to exceed $100,000 per year, as approved in the annual budget. The funding source will be the Beach Preservation Fee. The Town intends to include this area in the next Beach Renourishment Project in 2025. In the interim, the HHP POA desires to conduct isolated renourishment projects to mitigate further erosion which they have agreed to design, permit, and construct. Upon the conclusion of Mr. Buckalew's presentation, he answered questions from the Committee.

Mr. Ames moved that Town Council authorize the Town Manager to enter into the Agreement as proposed with Hilton Head Plantation Property Owners' Association to assist in the renourishment of Pine Island Beach. Mr. Lennox seconded. The Motion was unanimously approved.

7. Adjournment

By way of unanimous vote, the meeting was adjourned at 10:38 a.m.

Submitted by: Karen D. Knox, Secretary

Approved: _____

The recording of this meeting can be found on the Town's website at www.hiltonheadislandsc.gov

HILTON HEAD ISLAND FIRE RESCUE

Community Risk Assessment – Standards of Cover

September 2021

Acknowledgements

Fire Rescue Administrative Staff

Brad Tadlock, Fire Chief
Chris Blankenship, Deputy Chief - Operations
Joheida Fister, Deputy Chief - Administration/Fire Marshal
Colin Fanning, Battalion Chief - Safety & Professional Development
Russell Rogers, Battalion Chief - Bureau of Fire Prevention
Tina Sanders, Battalion Chief - Emergency Medical Services
Tom Dunn, Emergency Manager
Becky Neugent, Communications Manager
Keith Tison, Fleet Maintenance Supervisor

Accreditation Team

Christopher Osterman, Fire Inspector – Accreditation Manager

Significant Contributors

Jason Walters, Battalion Chief – Operations (Technical Rescue Team Coordinator)
Jeffrey Hartberger, Battalion Chief - Operations
David Bell, Captain (Hazardous Materials Team Coordinator)
Eric Lainhart, Captain – Safety and Professional Development
Stephen Ralston, Public Safety Systems Administrator
Randy Marrero, Public Safety Systems Analyst
Laura Nold, Fire Rescue Coordinator

Introduction

A Community Risk Assessment and Standards of Cover (CRA/SOC) document is an essential element in the Center for Public Safety Excellence accreditation model. The development of the document involves the research and evaluation of the risks that can impact the community, along with an analysis of the department's current deployment model and response data to determine our effectiveness in mitigating those risks.

Hilton Head Island Fire Rescue is committed to the goal of continuous improvement. The information contained in the CRA/SOC along with the companion documents: 2019 Strategic Plan and the 2021 Self-Assessment Manual, serve as the guides to constantly challenge the department to establish high standards, evaluate our performance, adjust processes, and implement change that ensures continuous improvement is an outcome and becomes the department's culture.

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Executive Summary

The 2021 Hilton Head Island Community Risk Assessment (CRA) and Standards of Cover (SOC) document is an update to the 2017 version. The CRA-SOC is required to be updated as part of the Center for Public Safety Excellence (CPSE) accreditation process. Hilton Head Island Fire Rescue was originally accredited in 2002 and will seek reaccreditation for the fourth time in 2022. The accreditation process utilizes third-party confirmation to demonstrate Fire Rescue's business practices and response operations meet recognized best practices.

The process of updating the CRA-SOC involved reviewing and updating the community characteristics, the all-hazard community risk assessment, critical tasking for Fire, EMS, Hazmat, & Tech Rescue, and the current deployment model and performance. The culmination of the process is to utilize the information to identify gaps in processes or performance and establish goals for improvement. The process challenges the department and staff members to evaluate operations versus changing trends in the community, so the highest levels of services are maintained, and a culture of innovation and improvement is established in the department.

As part of the continuous improvement model, Fire Rescue has identified three recommendations to enhance the current deployment and coverage system.

- The department should continue to improve procedures and processes that support improved turnout times.
- The department should analyze the call volume and workload at fire stations 3, 4, 6 & 7, which are currently cross-staffed, and determine if implementing dedicated staff (2/2- minimum of 4) is warranted.
- The department should evaluate the current utilization of Fire & Medical Priority Dispatching Systems (MPDS) to determine if the call triaging method for all incidents should consider allowing the MPDS process to proceed to the determinant level before dispatching resources.

This report is presented to the Elected Officials, Town Manager, and the citizens of the community to inform and educate them of the department's operations and performance, and to demonstrate to all that we are committed to our Vision: *To Strive for Excellence in all that We Do.*

Brad Tadlock

Fire Chief, Hilton Head Island Fire Rescue

A. Documentation of Area Characteristics

Overview

Hilton Head Island is a barrier island community located in the very southeastern corner of South Carolina. The Island is located approximately 20 miles northeast of Savannah, Georgia and 95 miles southwest of Charleston, South Carolina. Hilton Head Island is one of the largest barrier islands on the east coast, with an area of approximately 54 square miles. The Island is accessed by two bridges from the mainland and one main roadway, U.S. Highway 278, referred to as William Hilton Parkway once inside the Town limits of Hilton Head Island. The first bridge extends from the mainland to Pinckney Island spanning Mackay's Creek. The second bridge starts on Pinckney Island and spans the intercostal waterway of Skull Creek to the Town limits of Hilton Head Island.

Hilton Head Island is part of Beaufort County, in an area named the Lowcountry of South Carolina. The island features 13 miles of beachfront along the Atlantic Ocean and is a popular vacation destination. In 2004, an estimated 2.25 million visitors pushed more than $1.5 billion into the local economy. The Professional Golf Association's RBC Heritage Golf Tournament is played each year in April in the Sea Pines Resort.

Hilton Head Island is primarily known as a vacation resort destination and for its planned communities, (Planned Unit Development – PUDs), which encompasses approximately 70% of the Island. The Island is known for its salt marshes, creeks, lagoons, forests, and heavy tree canopies, all providing shelter for hundreds of species of animals. The vast history and cultural heritage of Hilton Head Island is also being recognized as the island is included in the Gullah Geechee Cultural Heritage Corridor, designated by Congress in 2006.

History of Hilton Head Island

Hilton Head Island, sometimes referred to as simply Hilton Head, is a Lowcountry resort town located on an island of the same name in Beaufort County, South Carolina, United States. The island is named after Captain William Hilton, who in 1663 identified a headland near the entrance to Port Royal Sound, which he named "Hilton's Head" after himself.

The island has a rich history that began with seasonal occupation by Native Americans thousands of years ago and continued with European exploration and the Sea Island Cotton trade. It became an important base of operations for the Union blockade of the Southern ports during the Civil War. Once the island fell to Union troops, hundreds of ex-slaves flocked to Hilton Head, which is still home to many "native islanders", many of whom are descendants of freed slaves known as the Gullah (or Geechee) who have managed to hold on to much of their ethnic and cultural identity.

The Gullah culture is a unique aspect of the Island's history, starting with the transportation of enslaved Africans to the sea islands of South Carolina, Georgia, and Florida. They brought over their homeland languages, cultures, and traditions. Over time, these developed into a distinct cultural pattern as the remnant formerly enslaved population remained in relative isolation on the Sea Islands following the Civil War.

Today, the Island is home to a small, resident Native Islander Gullah population. Their contribution to the character and culture of the Island is very important to the community fabric, economy, and unique appeal of the Island. Over time, however, the Gullah culture has been in steady decline. This has been the result of family land (heirs' property), lost to incompatible development policy, tax sales, or acquisition, as the Island has changed since the 1950s. In response to concerns over this loss of the culture and population, the Town established the Gullah Geechee Land and Cultural Task Force (Gullah Task Force) in 2017. Their mission is, "to identify and assist in the preservation of the Gullah Geechee culture for the purpose of detecting and resolving issues specific to its community, including, without limitation, heirs' property, taxes and land use, economic and sustainability issues for an improved quality of life, and through on-going education programs, workshops and seminars."

The beginning of Hilton Head as a resort started in 1956 with Charles E. Fraser developing Sea Pines Resort. Soon, other developments followed, such as Hilton Head Plantation, Palmetto Dunes Plantation, Shipyard Plantation, and Port Royal Plantation, imitating Sea Pines' architecture and landscape. Sea Pines however continued to stand out by creating a unique locality within the plantation called Harbour Town, anchored by a recognizable lighthouse. Fraser was a committed environmentalist who changed the whole configuration of the marina at Harbour Town to save an ancient live oak. It came to be known as the Liberty Oak, known to generations of children who watched singer and songwriter Gregg Russell perform under the tree for over 25 years. Fraser was buried next to the tree when he died in 2002. The Heritage Golf Classic was first played in Sea Pines Resort in 1969 and has been a regular stop on the PGA Tour ever since.

After the Four Seasons Resort (now Hilton Head Resort) was built along William Hilton Parkway, a referendum of incorporation was passed in 1983. The first Land Management Ordinance was passed by the Town Council in 1987. Hilton Head Island had become a town.

Legal Basis

The Town of Hilton Head Island was established on September 26, 1983, under ordinance 83-5 as a municipality. Hilton Head Island has a Council-Manager style of government. The council is made up of seven positions, comprised of the mayor and six council members. The Town Manager is appointed by the council as the executive head of the Town, responsible for day-to-day operations of the town services and programs.

Boundary Lines

Generally, the Town limits incorporate "all land and water located on and adjacent to Hilton Head Island, Beaufort County, South Carolina." However, the jurisdictional boundaries established in the Statement of Purpose identify Fire Rescue's responsibility as providing mission, services, and functions within the "Town's corporate boundaries above the high-water mark" (Town of Hilton Head Island, 2015). Further, "Fire Rescue will respond to the extent possible and within its capabilities when an emergency exists between the high water and low water mark. However, the primary mission of Fire Rescue will be to serve as a coordinating agency with other local, county, state, and federal agencies as appropriate to assist those agencies with emergency services for events between the high water and the low water mark."

Figure 1: Town of Hilton Head Island Town Limits

Financial Basis

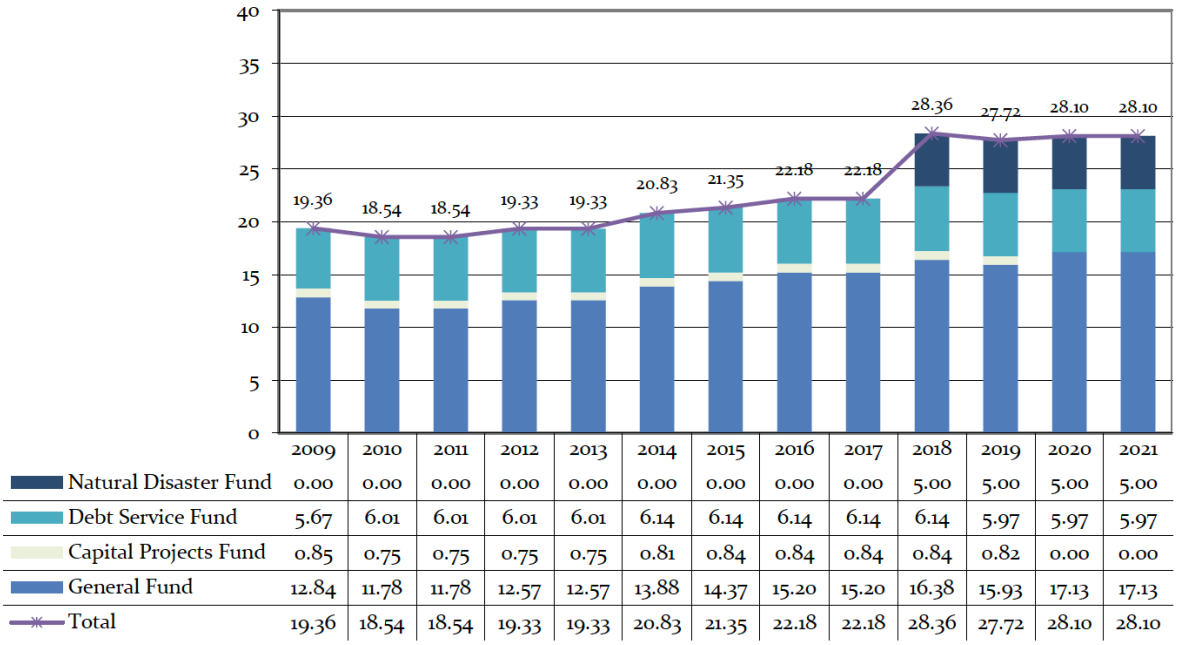
Overview

The budget is a tool with which the Town can allocate its financial, human, and capital resources in an effective and efficient manner to meet residents' needs. Through the budget process, the Town makes decisions on the allocation of human and financial resources to achieve long and short-term goals and objectives as set forth by the Town Council. Hilton Head Island prides itself on being fiscally responsible and providing financial transparency. As a long-standing recipient of the Distinguished Budget Presentation Award presented by the Government Finance Officers Association (GFOA), the Town of Hilton Head Island and Fire Rescue have maintained an excellent level of service for many years through conservative financial management. The adopted budget for fiscal year (FY) 2020 was $79,147,817, resulting in a 0.6% reduction from the FY 2019 budget. The reduction is largely the result of an 11.2% reduction to the Debt Service Fund that declined from its planned peak in FY 2019. In addition to the Debt Service Fund, the budget also includes a General Fund, Capital Improvement Fund/Plan (CIP), and a Stormwater Utility Fund. The table below provides a historical comparison of budgeted expenditures by fund.

	FY 2017 Adopted Budget	FY 2018 Adopted Budget	FY 2019 Adopted Budget	FY 2020 Adopted Budget	% change	FY 2021 Adopted Budget
General Fund	39,613,643	40,319,036	40,257,829	41,108,317	2.1%	42,558,447
Debt Service Fund	13,572,500	24,200,000	24,200,000	21,500,000	-11.2%	21,500,000
CIP	49,440,250	16,924,000	9,876,000	11,139,500	12.8%	9,111,000
Stormwater Utility	3,825,987	7,898,000	5,311,000	5,400,000	1.7%	5,450,000
Total	**$ 106,452,380**	**$89,341,036**	**$ 79,644,829**	**$ 79,147,817**	-0.6%	**$78,619,447**

Table 1: Historical Comparison of Budget Expenditures by Fund

In FY 2020, the Town merged the CIP millage into the General Fund Millage to eliminate the need to transfer funds. The millage rates for FY 2020 and 2021 will increase by .38 mils. This 2.2% increase is based upon the Consumer Price Index (CPI) as allowed by South Carolina law. The additional funds will be utilized to strengthen the Town's reserves. The Town is in the third (FY 2020) and fourth (FY 2021) years of the planned five years of the 5-mil override for disaster recovery to replenish $25,000,000 in reserves that were utilized after Hurricane Matthew damaged the Town.



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Natural Disaster Fund	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00
Debt Service Fund	5.67	6.01	6.01	6.01	6.01	6.14	6.14	6.14	6.14	6.14	5.97	5.97	5.97
Capital Projects Fund	0.85	0.75	0.75	0.75	0.75	0.81	0.84	0.84	0.84	0.84	0.82	0.00	0.00
General Fund	12.84	11.78	11.78	12.57	12.57	13.88	14.37	15.20	15.20	16.38	15.93	17.13	17.13
Total	19.36	18.54	18.54	19.33	19.33	20.83	21.35	22.18	22.18	28.36	27.72	28.10	28.10

Figure 2: Historical Millage Rate by Fund

The budget for Fire Rescue is found in the General Fund. The General Fund accounts for the revenues and expenditures necessary to carry out basic governmental activities of the Town such as police and fire protection, recreation, and legal and administrative services. The FY 2020 budget for Fire Rescue is $15,499,346 which comprises 38% of the General Fund expenditures and approximately 20% of the Town's total budget.

Department	Personnel	Operating	Capital	Grants	Expenditures
Town Council	167,924	311,300	-	-	479,224
Town Manager	823,190	23,250	-	-	846,440
Human Resources	438,516	249,250	-	-	687,766
Administrative Services	2,096,000	1,705,389	155,880	-	3,957,269
Finance	1,785,716	206,690	-	-	1,992,406
Community Development	3,347,297	206,700	-	-	3,553,997
Public Projects and Facilities	1,938,460	3,703,583	-	-	5,642,043
Fire and Rescue	13,859,226	1,640,120	-	-	15,499,346
Sheriff/Other Public Safety	-	3,813,237	-	-	3,813,237
Non-Departmental (Townwide)	489,695	2,067,621	266,000	1,813,273	4,636,589
Totals	**24,946,024**	**13,927,140**	**421,880**	**1,813,273**	**41,108,317**

Table 2: FY 2020 General Fund Expenditures by Department/Category

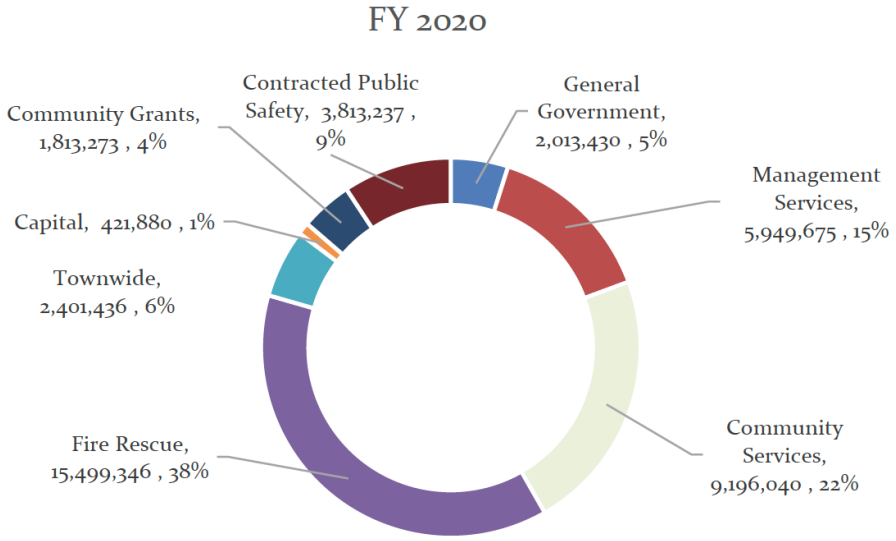


Figure 3: General Fund Expenditures by Department/Category FY2020

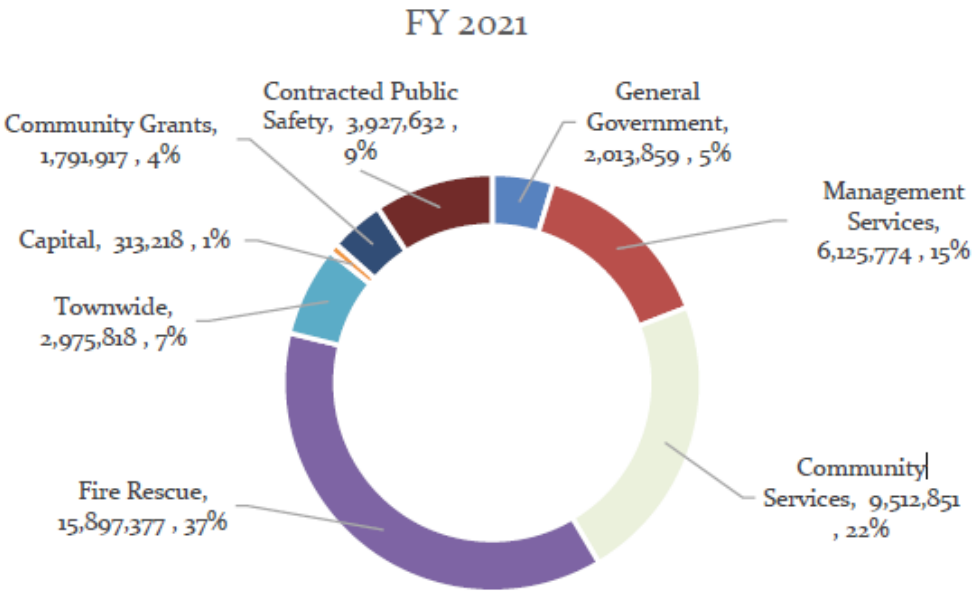


Figure 4: General Fund Expenditures by Department/Category FY2021

	FY 2017 Actual	FY 2018 Actual	FY 2019 Adopted Budget	2020 Budget	% change	2021 Budget	% change
Fire Rescue - Program Summary							
Administration	349,703	367,204	386,413	413,491	7.0%	425,896	3.0%
Operations	9,632,711	9,871,814	9,983,568	10,205,552	2.2%	10,511,717	3.0%
E-911 Communications	1,081,980	1,158,635	1,293,655	1,300,756	0.5%	1,339,779	3.0%
E-911 Communications Suppport	286,042	227,355	249,490	474,415	90.2%	421,697	-11.1%
Emergency Management	137,342	132,985	162,865	165,224	1.4%	170,181	3.0%
Fire Prevention	576,729	558,774	603,968	589,317	-2.4%	606,997	3.0%
Fleet Maintenance	512,305	525,624	600,493	577,151	-3.9%	594,466	3.0%
EMS Training	101,564	293,244	408,335	461,131	12.9%	474,965	3.0%
Support Services	1,556,084	625,043	765,395	592,157	-22.6%	609,922	3.0%
Safety and Professional Development	712,784	640,786	685,719	720,152	5.0%	741,757	3.0%
Total	**14,947,244**	**14,401,464**	**15,139,901**	**15,499,346**	2.4%	**15,897,377**	2.6%
Fire Rescue - By Category							
Personnel	12,817,393	13,180,816	13,512,676	13,859,226	2.6%	14,275,003	3.0%
Operating	1,114,289	1,204,757	1,627,225	1,640,120	0.8%	1,622,374	-1.1%
Capital	1,015,562	15,891	-	-	0.0%	-	0.0%
Total	**14,947,244**	**14,401,464**	**15,139,901**	**15,499,346**	2.4%	**15,897,377**	2.6%
Personnel	145.9	145.9	145.3	145.3		145.3	

Table 3: Hilton Head Island Fire Rescue Expenditures by Program/Category FY20/21

Expenditure Controls and Restrictions

The Town maintains all budgeted funds during the year using the modified accrual basis of accounting. Revenues are recorded when earned, and expenses are recorded at the time liabilities are incurred, regardless of when the related cash flows take place. On an accrual basis, revenue from property taxes is recognized in the fiscal year for which the taxes are levied. In accordance with the provisions of two South Carolina Statutes, S.C. Code Ann. 6-5-10 and S.C. Code Ann. 11-1-60, the Town is authorized to invest in numerous pre-approved investment instruments including the Government National Mortgage Association (GNMA), Small Business Administration (SBA), Federal Financing Bank (FFB), and the General Services Administration (GSA), among others. The Town's primary objectives, in priority order of investment activities, are safety, liquidity, and yield.

When the Town finances capital projects by issuing bonds, it amortizes the debt over a term not to exceed the average useful life of the project financed. General statutes limit the amount of general obligation debt that a unit of government can issue, up to 8% of the total assessed value of taxable property located within that government's boundaries. The Town may incur General Obligation Debt over the 8% limit when approved by a majority vote in a referendum, as authorized by law. To protect its assets against catastrophic events, the Town has established a reserve policy in FY 2019 that maintains an operating reserve based on a range with a minimum of 35% up to a maximum of 40% of the Town's upcoming adopted fiscal year operating budget. This is an increase from prior years that provided for a minimum of 25% and a maximum of 30%.

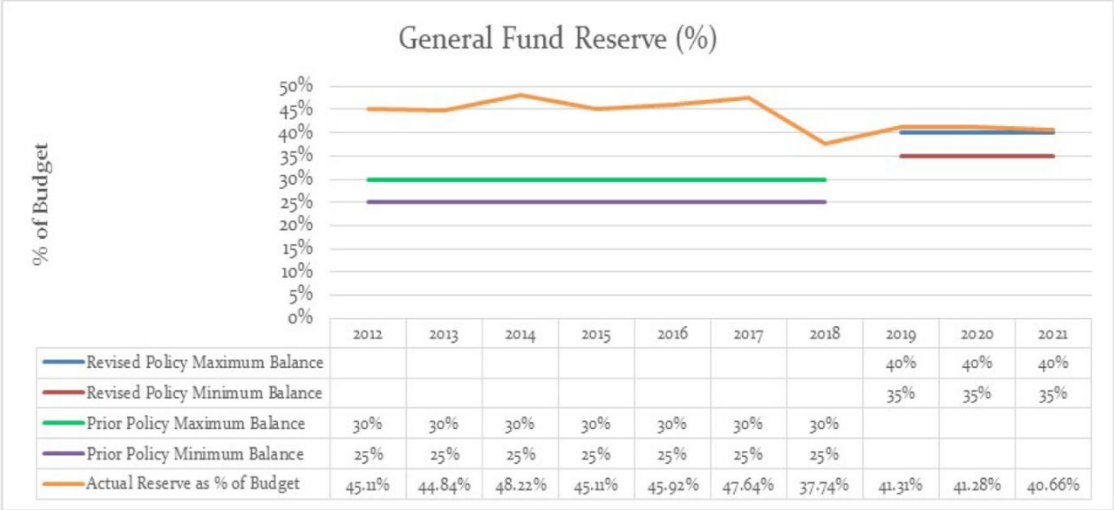
The Town is required by State law to develop a ten-year Capital Improvements Plan (CIP) and update it annually. The Town also has a Restricted Advertising Account (RAA) for purposes of having ready

access to funds for special advertising needs in cases of such things as a near-miss hurricane, response to a declared disaster, or public health emergency. The Town is to maintain a balance of $1.0 million in the account and should it fall below this amount, deposit 2% of the local hospitality tax revenues and 5% of the local accommodations tax collected annually into the RAA.

General Fund Revenues

General Fund revenues and transfers in from other funds are projected to be $41.6 million in fiscal year 2020 and $43.1 million fiscal year 2021. This is a 3.6% increase from fiscal year 2019 to fiscal year 2020 and a 3.5% increase from fiscal year 2020 to fiscal year 2021.

The Town's elected officials, administrative staff, and the finance department have demonstrated excellent management of financial resources during some very challenging times over the last 10 years. Their fiscal responsibility has served the community well and also adequately supported Fire Rescue's general operations and capital improvement initiatives.



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Revised Policy Maximum Balance								40%	40%	40%
Revised Policy Minimum Balance								35%	35%	35%
Prior Policy Maximum Balance	30%	30%	30%	30%	30%	30%	30%			
Prior Policy Minimum Balance	25%	25%	25%	25%	25%	25%	25%			
Actual Reserve as % of Budget	45.11%	44.84%	48.22%	45.11%	45.92%	47.64%	37.74%	41.31%	41.28%	40.66%

Figure 5: General Fund Reserve Percentage by Year

	2020 Budget	% change	2021 Budget	% change
Property Taxes	15,127,344	36.5%	15,386,181	35.9%
Business Licenses	9,945,639	24.0%	9,995,367	23.3%
ATAX	5,428,891	13.1%	5,483,180	12.8%
Hospitality Taxes	3,337,240	8.1%	3,819,465	8.9%
Other	2,934,697	7.1%	3,385,509	7.9%
Permit Fees	1,515,000	3.7%	1,522,575	3.5%
Beach Preservation Fees	1,361,140	3.3%	1,498,253	3.5%
Franchise Fees	955,000	2.3%	964,550	2.2%
State Shared	840,000	2.0%	840,000	2.0%
Total	**41,444,951**	100.0%	**42,895,081**	100.0%

Table 4: General Fund Revenue by Source as a Percentage of Total Revenue FY20/FY21

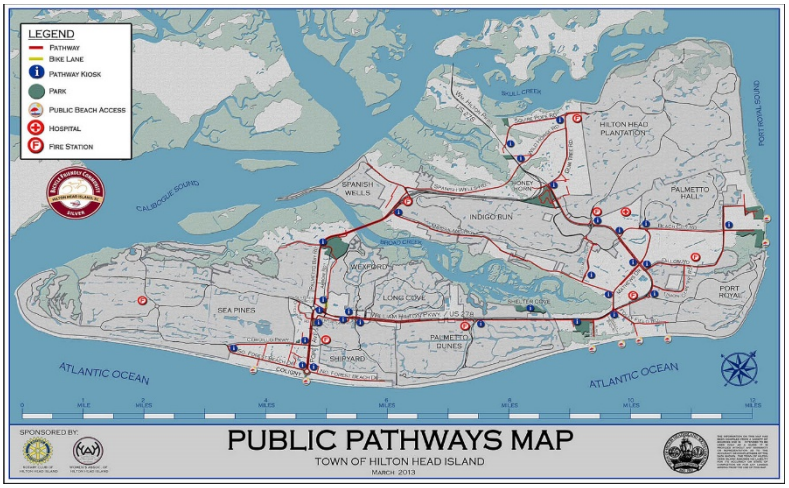
Infrastructure

Roads

The Town of Hilton Head Island faces unique challenges with infrastructure. Those challenges are a direct result of limited access to the island. Hilton Head Island has a total of 390.67 miles of roadways, both public and private. Motor vehicle traffic can become a challenge quickly along U.S Route 278, the single road providing access to and from the island. Along with the single access point to the island, many of the communities on the island are gated with limited access and narrow, low speed travel lanes. To reduce travel times increased by seasonal congestion and gated communities', Fire Rescue has 13 Town owned emergency access gates and manage over 100 Click2Enter and Knox Switch devices across the island to allow for reduced travel times in gated communities, resorts, and other gated complexes. These devices are inspected monthly by line personnel and preventative maintenance is completed annually on all Town owned gates.

Public Pathways

The Town of Hilton Head Island has made a commitment to be a bike-friendly community. The Town has created 64 miles of bike/pedestrian paths throughout the entire island that allow pedestrian and bicyclists a safer way to traverse the island without having to travel in the same lanes as motor vehicles. According to the University of South Carolina Visitor Profile Survey for 2020, page 9, 15.7% of people that visit the island is for biking, this is slightly down from the 18% in 2018.



Beaches

Hilton Head Island maintains 13 miles of beach along the coastline of the island. The Town has eight community beach access points and contracts with Shore Beach Services for lifeguard and patrol services. Fire Rescue assists and coordinates water and beach incidents. The loggerhead turtle has made the 13 miles of beach a common nesting ground. On average there are approximately 150 nests on Hilton Head Island, in 2019 there were over 450 nests. The loggerhead turtle is a threatened species both by the state of South Carolina and the United States. This has caused the Town to create and enforce the Lights Out for Turtles initiative.

Cellular Network

There are a total of 61 cell towers within Hilton Head Island. These towers are owned and operated by a variety of local PSDs, resorts, and cellular carriers such as Verizon and Alltel.

Figure 6: Cell Tower Locations

Critical Infrastructure

The Town of Hilton Head Island is comprised of typical critical infrastructure components. Typical critical infrastructure components include the airport, public transportation systems, a hospital, and utilities. A complete list of critical infrastructure for the Town of Hilton Head Island can be found in Appendix E.

Airport

Hilton Head Island airport is a full-service general aviation facility operated by Beaufort County. The airport is partnered with three major airlines: American, Delta, and United. The airport terminal is currently in the early stages of a significant expansion, stemming from increased demand related to new flights and increased amounts of visitors.

Public Transportation

Palmetto Breeze Transit provides public service transportation services to residents and visitors of the island daily. This organization provides The Breeze Trolley, connecting visitors to some of the most famous and popular locations on the island. This service has recently expanded to provide additional seasonal routes to meet new needs within the coastal community.

Hospital

Hilton Head Regional Healthcare provides quality care as the only hospital system on the island. The hospital has a bed capacity of 109 and provides services such as cardiovascular, spinal, orthopedic, breast health and an outpatient rehabilitation. The hospital does not provide trauma services or a helipad for aeromedical transportations. As a result, Fire Rescue provides transportation for medical flight crews and patients to and from the hospital, as well as inter-facility transportations to off island trauma centers.

Public Service Districts

Hilton Head Island water and sewer systems are serviced by three public service districts (PSD's). The Hilton Head PSD is a special purpose district created by the South Carolina General Assembly in 1969 to provide water and sewer services to the Island. Currently, Hilton Head PSD provides services to the North and Mid-Island. Broad Creek and South Island PSD provide the remainder of the services to the southern portion of the island.

Hilton Head PSD obtains most of their water from a Reverse Osmosis Water Treatment Facility on Jenkins Island, located near to the entrance to the Island. This facility produces 4 million gallons of water per day. Wholesale water is procured from the Beaufort Jasper Water and Sewer Authority from an underground main that is piped in under the Intercostal Waterway from the mainland. Hilton Head PSD can draw 2 million gallons per day from an Aquifer Storage and Recovery facility, storing over 240 million gallons of water, in addition to five elevated and three ground storage tanks storing over 8.4 million gallons of water.

Broad Creek PSD's treatment plant draws from three Floridian aquifers and a transmission line linked to Hilton Head PSD to supply 2.08 million gallons of water per day. Broad Creek stores 300,000 gallons in one elevated storage tank.

South Island PSD produces 6 million gallons per day with a peak of 8.5 million gallons of water. South Island draws from 13 Floridian wells, one cretaceous well, and one Reverse Osmosis Facility. South Island has two Aquifer Storage and Recovery facilities storing 300 million gallons of water, a 2 million gallon above ground storage tank, and two elevated 300,000-gallon water storage tanks.

In the event of catastrophic system loss, Hilton Head Island can use county and state-wide mutual aid agreements for water supply assistance.

Energy

Palmetto Electric Cooperative is the provider of electricity for over 75,000 customers in Beaufort County, as well as neighboring Hampton and Jasper counties. The Beaufort County service office is conveniently located on Hilton Head Island, located at 111 Mathews Drive.

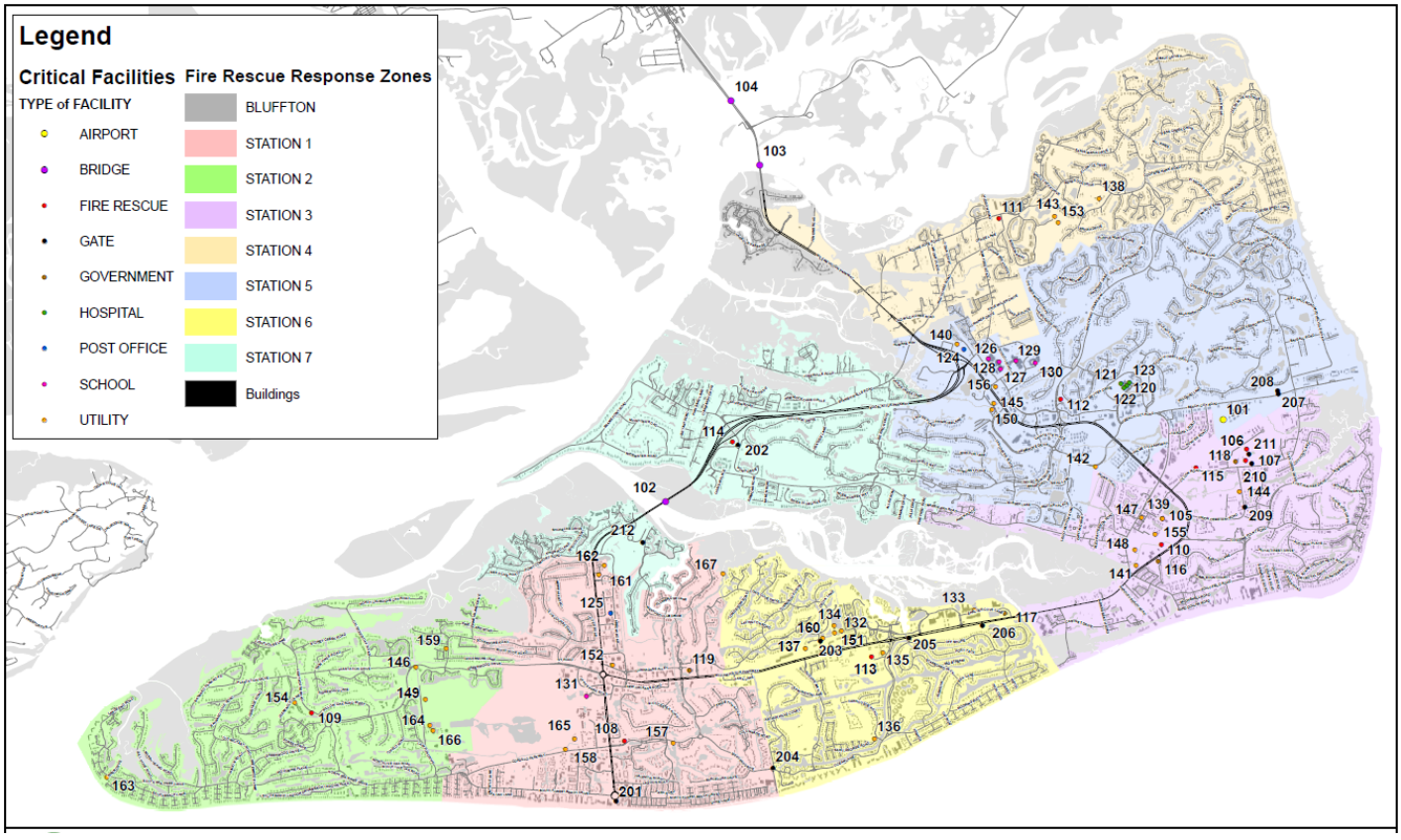


Figure 7: Town of Hilton Head Island Critical Infrastructure Map

Climate

Hilton Head Island has a humid subtropical climate with warm, humid summers and cold winters. The average summer temperatures range from 71.1 to 89.1 degrees Fahrenheit with peak temperature taking place during the month of July. The coldest month of the year is January with average temperatures ranging between 38.7 to 59.6 degrees Fahrenheit. Hilton Head Island is prone to thunderstorms during the Summer and flooding amid heavy rainfall. August is the month that typically brings the most rainfall, averaging 7.8 inches, while November is the driest month, averaging only 2.5 inches of precipitation. The average rainfall per year is 52.1 inches.

Hilton Head Island has a humid subtropical climate. Source: Weatherbase													
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Year**
Average Temperature °F (°C)	49.1 (9.5)	52.0 (11.1)	58.1 (14.5)	65.0 (18.3)	72.1 (22.3)	77.6 (25.3)	80.7 (27.1)	80.0 (26.7)	76.2 (24.6)	67.4 (19.7)	58.8 (14.9)	51.5 (10.8)	65.7 (18.7)
Average high °F (°C)	59.6 (15.3)	62.8 (17.1)	68.8 (20.4)	75.9 (24.4)	82.0 (27.8)	86.6 (30.3)	89.3 (31.8)	88.4 (31.3)	84.4 (29.1)	77.1 (25.1)	69.4 (20.8)	62.1 (16.7)	75.5 (24.2)
Average low °F (°C)	38.7 (3.7)	41.2 (5.1)	47.4 (8.6)	54.2 (12.3)	62.4 (16.9)	68.6 (20.3)	72.1 (22.3)	71.6 (22.0)	68.0 (20.0)	57.6 (14.2)	48.2 (9.0)	40.9 (4.9)	55.9 (13.3)
Average precipitation inches (mm)	3.8 (98)	3.5 (89)	3.9 (100)	3.0 (75)	3.8 (96)	5.1 (131)	6.3 (161)	7.8 (199)	5.9 (149)	3.5 (89)	2.5 (62)	2.9 (74)	52.1 (1,323)

Table 5: Hilton Head Island Climate

Community Population

According to the U.S. Census Bureau, the Town of Hilton Head Island serves a year-round population of 39,639. The Town has observed manageable growth over the years, experiencing a 7.5% increase in population since the last U.S. Census in 2010. Across the island, the population density within the Town ranges from > 271 up to 3,933 people per square mile, with the average population density of approximately 897 people per square mile.

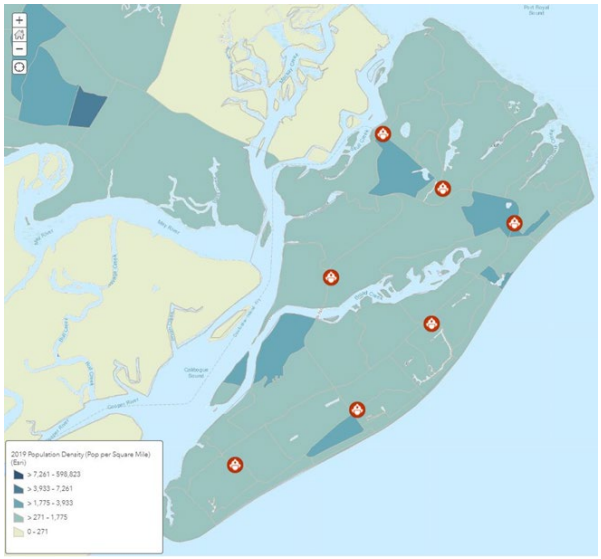


Figure 8: Population Density by Census Block - 2019

The annual population growth rate is predicted at > 0.27% to 2.8% for the majority of census block areas in the jurisdiction. The annual population growth rate for the darkest blue shaded area is predicted to be 5.21%. The overall growth since the 2010 census is reported at 7.5%.

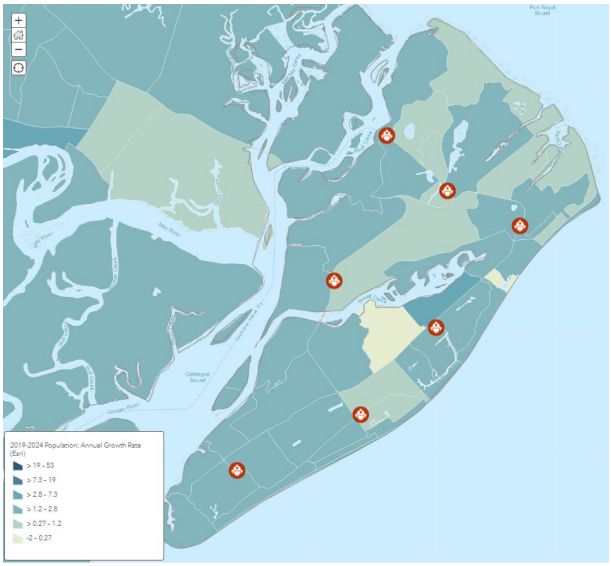


Figure 9: Annual Population Growth 2019-2024

Community Demographics

The most vulnerable populations within Hilton Head Island are the elderly and minors. Historically, elderly populations utilize EMS with greater frequency than other demographics. It is important to understand the distribution of population risks is not uniform across the jurisdiction. Data indicates several census block areas in the jurisdiction have populations with median ages ranging from 53 to 86 years. Considering the age of the residents, estimates include 3.3% under five years of age and 37% over 65 years of age.

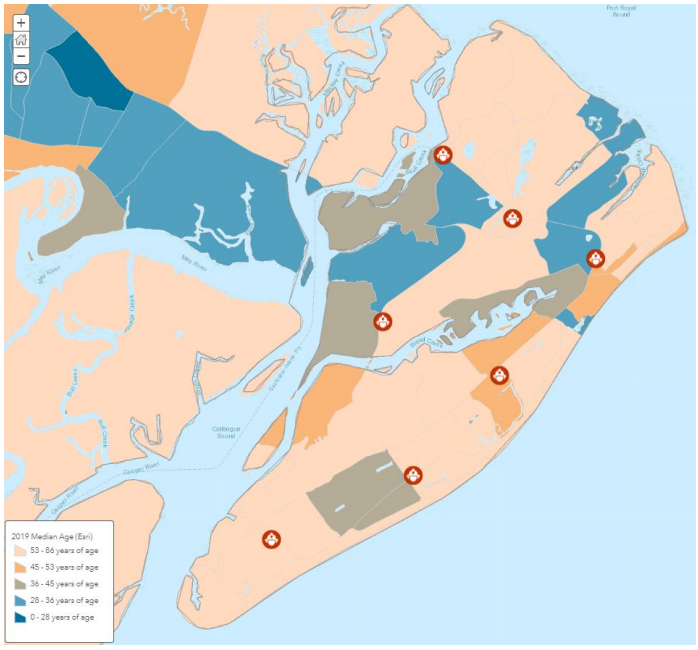


Figure 10: Median Age - 2019

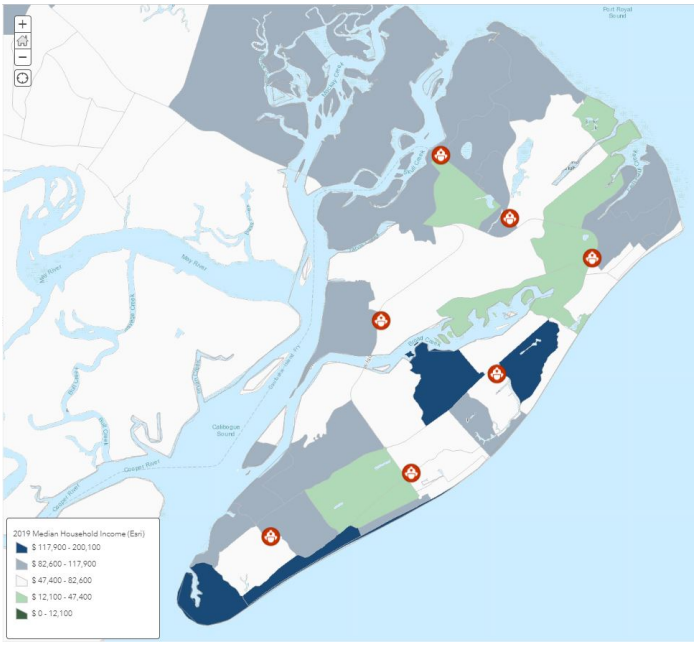


Figure 11: Median Household Income - 2019

Population alone is not the sole variable influencing demand for services, as socioeconomic and demographic factors have greater influence over demand. Median household income was evaluated to determine the degree to which the community had underprivileged populations. According to the U.S. Census Bureau, the 2019 (i.e., most recent data available), national median household income is reported at $68,703. The median household income for Hilton Head Island was $84,575 while the State of South Carolina's median household income was $53,199.

The Town is nearly 87% White, with 6.7% being White Hispanic or Latino. Additional populations include 11.8% Hispanic or Latino, 5.9% Black or African American, two or more races make up 1.4%, Asian 0.9% and Native Hawaiian or Pacific Islander 0.2%.

Hilton Head Island is a premier visitor and tourism destination. As previously noted, nearly 2.7 million people visit Hilton Head Island each year in addition to the nearly 40,000 permanent resident population and approximately 25,000 work force that make the commute daily. The visitor population has the potential to significantly increase the "actualized" population density during the peak periods of the year.

Segment	Count
Villa Rental	755,953
Hotel	473,679
Timeshare	454,093
Second Homeowner	613,216
Non-Paying Guests	159,137
Day Trip	228,250
Total Visitors	**2,684,328**

Figure 12: Number of Hilton Head Island Visitors by Segment (2019)

The tourism industry provides an estimated economic multiplier of 1.38. In other words, for every dollar spent by tourists in Hilton Head, the output for Beaufort County's economy increases by $1.38. The total estimated economic impact on the County was $1.5 billion in 2019. Including the various available taxes, the net local revenue for the County is estimated to have been $32.9 million.

The employment environment follows the tourism industry as well. The study suggests the tourism is the true export industry. There were 16,654 jobs estimated to contribute to the total impact generated from Hilton Head Island tourists that represents 14.7% of all jobs in Beaufort County.

B. Description of Agency Programs and Services

History of Hilton Head Island Fire Rescue

Hilton Head Island Fire Rescue started operations on July 1, 1993, as a consolidation of the Hilton Head Island Fire District, Sea Pines - Forest Beach Fire Department, and the Hilton Head Island Rescue Squad. The consolidation was legally established in 1992 and on October 3, 1993, Ordinance 83-07 established the fire protection service guidelines to be utilized within the Town.

Prior to becoming a formally organized and structured fire department, fire protection was provided on the Island by volunteers, combination staffing and eventually all paid staff. Development on the Island during the late 1960s required a more systematic and organized approach to providing fire protection. As a result, the Sea Pines-Forest Beach Fire Department was established in 1969 by joining the two public service districts and became responsible for providing fire protection to the South end of the Island. Later in the same year, Hilton Head Island Fire District was established through the South Carolina legislature and became responsible for providing fire protection to the North end of the island. In 1970, citizens came together to purchase an ambulance and established the Hilton Head Island Rescue Squad that was staffed by a volunteer work force. Both fire departments on the island provided fire suppression as well as hazardous materials and technical response capabilities while assisting the Hilton Head Island Rescue Squad with first responder level EMS. The Hilton Head Island Rescue Squad provided Advanced Life Support (ALS) ambulance and transport services within the Town limits. Although the Town of Hilton Head Island was established in 1983, fire protection services and EMS continued to be provided by the three agencies until the merger in 1993.

Figure 13: Hilton Head Island Fire Rescue Organization Chart (May 3, 2021)

Major Service Milestones

Since the consolidation of the organization, Fire Rescue has achieved several organizational milestones:

- Since 2002, Fire Rescue has been recognized as an Accredited Agency by CFAI.
- Recognized by the International Association of Fire Chief's (IAFC) as a HeartSafe Community of the Year in 2012.
- Awarded South Carolina Child Car Seat Fitting Station of the Year in 2013.
- Designated as a StormReady Community by the National Weather Service in 2015. Awarded for meeting the National Weather Service's standards for storm preparedness.
- American Heart Association's Lifeline Gold EMS Award in 2016. Recognized for significant efforts in improving quality of care for STEMI and Acute Coronary Syndrome patients.
- In February of 2018, Fire Rescue partnered with the Center for Patient Safety, a federal patient safety organization. The partnership will guide future efforts to improve system performances, measure outcomes, and reduce medical errors.
- In July of 2018, the Town received the TsunamiReady designation from the National Weather Service. This voluntary community program promotes tsunami hazard preparedness.
- Fire Rescue implemented a Field Training Officer and Field Training Evaluation Program in August of 2018, ensuring new paramedics are appropriately led through various operational and clinical competencies prior to release for independent practice.
- The PulsePoint AED app was launched in July of 2018, verifying, and uploading over 200 public AEDs using GPS to notify citizen-rescuers of nearby sudden cardiac arrest incidents.
- Created the position of Captain of EMS in September of 2018 to focus on developing and implementing training programs to the safe, efficient, and effective delivery of Emergency Medical Services.
- Implemented a new Computer Aided Dispatch (CAD) system in the E911 Center in December of 2018. The new CAD replaced 18-year-old technology and has improved mapping features, collection of response times and incident data.
- Received continuous designation as a Fire Safe South Carolina Community since 2019 for implementation of community risk reduction programs.
- On March 1, 2019, Fire Rescue achieved a new Public Protection Classification (PPC) rating of 2 from the Insurance Services Organization (ISO). This is an improvement from the Class 3 rating received in 2012.

All these honors recognize the dedication and partnership between Fire Rescue and local community stakeholders.

Fire Rescue

Fire Rescue is managed by three main divisions: 1) Executive 2) Operations and 3) Administration. As each division oversees very distinct roles within the organization however, the ability for all divisions to work together allows Fire Rescue to provide the highest level of customer service throughout the community.

Executive

The Fire Chief manages and leads the department under the Executive Division. Responsible for complete oversight and direction of Fire Rescue, the Fire Chief works closely with the Administrative and Operations Divisions, as well as oversees the Maintenance and Emergency Management Division. Overall functions of the Fire Chief include developing the annual operating budget, developing and maintaining the departments' guiding documents, and all other executive management functions related to Fire Rescue.

Maintenance

Operating out of Fire Rescue Headquarters, the division is responsible for repairs and maintenance of approximately 130 Town vehicles and equipment, including emergency apparatus. Maintenance also manages the inspections, testing, and replacement schedule of all vehicles and equipment. Overseen by the Maintenance Supervisor, Maintenance operates with two full-time mechanics and a part-time administrative assistant. All three maintenance personnel are certified mechanics, each holding multiple certifications to maintain emergency apparatus and Town vehicles.

Emergency Management

Under the direction of the Emergency Manager, the Emergency Management division develops town-wide plans and procedures for the preparedness, response, and recovery from human and natural disasters, to include but not limited to evacuations, hurricanes and tropical storms, earthquakes, floods, tornadoes, fire, hazardous materials, etc. The Manager also coordinates all emergency plans with local, county, state, and federal authorities.

Administration

Managed by the Deputy Chief of Administration, who also serves as Fire Rescue's Public Information Officer and Fire Marshal, the Administration Division oversees the Bureau of Fire Prevention, Communications, 911 Addressing, Supply and Support, and the Accreditation Manager. The Administration Division is responsible for the supervision of Fire Rescue's compliance with ISO framework and accreditation compliance with the Commission on Fire Accreditation International.

Bureau of Fire Prevention

Fire Rescue's Bureau of Fire Prevention (BFP) provides three main programs to the community 1) Fire Inspections 2) Fire Investigations and 3) Public Education. The Bureau is managed by the Battalion Chief of Fire Prevention, who also serves as the Deputy Fire Marshal.

BFP offers a comprehensive fire inspection program focused on obtaining compliance through the most recently adopted fire codes. Annual inspections of multifamily residential, assembly, educational, institutional, and hazardous occupancies, along with business and mercantile occupancies on a two or three year inspection cycle are the focal point for BFP. In addition, the Bureau conducts inspections of special events, mobile food vendors, new business license permits, as well as the review of all new construction, renovation, fire protection systems, and residential site development plans.

The purpose of the Bureau of Fire Prevention's Fire Investigation Team is to determine responsibility by identifying the area of origin and cause of fires within the Town. Investigators maintain required training and equipment necessary to perform systematic scene examinations, scene documentation and evidence collection duties in accordance with NFPA 1033 and NFPA 921. Facts gathered from these investigations provide information to guide future public education programs to achieve annual loss reductions for fire incidents and casualties.

BFP's public education program utilizes several avenues to reach all demographics. The BFP promotes fire and life safety geocaching and scavenger hunts, public safety messages in local publications, fire extinguisher training, smoke alarm installations, home fire safety visits, car seat installations and bicycle safety throughout the community. In addition, the BFP offers CPR and First Aid classes and manages over 100 AEDs enrolled in the Town AED Program.

Communications

Hilton Head Island E911 Communications Center serves as the Primary Public Safety Answering Point (PSAP) for Hilton Head Island and Daufuskie Island. The facility also serves as the backup center for Beaufort County E911 Dispatch Center. Communications answers all 911 calls originating on Hilton Head Island and Daufuskie Island. The Communications Center is always staffed with a minimum of two dispatchers and operates under the leadership of the Communications Manager.

Operations

The Operations Division is led by the Deputy Chief of Operations. The Deputy Chief is tasked with supervising all response services and operations, the deployment of resources based on documented risk, and the procurement of capital items such as apparatus and personal protective equipment.

Operations is the largest division within Fire Rescue and the Town, comprised of three shifts working a 24/48 schedule. Daily minimum staffing for Fire Rescue is 29 personnel across seven stations, all under the direct supervision of an Operations Battalion Chief. To supplement response during peak call volume times, a Coverage Crew of three personnel working four 10-hour days assist in response or cover fire stations while the primary apparatus are on incidents or completing training. The Coverage Crew also assist in new hire orientation and report directly to the Battalion Chief of Safety and Professional Development.

Safety and Professional Development

Managed by the Battalion Chief of Safety and Professional Development, the division is tasked with planning and facilitating all training activities for Fire Rescue. Assisted by the Captain of Safety and Professional Development, the division is responsible for management Fire Rescue's health and safety policies and procedures, as well as the professional development of all members of the organization. All uniformed personnel are required to meet minimum departmental standards and be trained to the level of NFPA 1001 Firefighter II (ProBoard or IFSAC). All fire officers are required to meet the NFPA 1021 Fire Officer, and NFPA 1041 Fire Instructor I standard (ProBoard or IFSAC).

The Battalion Chief of Safety and Professional Development also serves as the designated safety officer for all working incidents during normal business hours.

Emergency Medical Services

The Emergency Medical Service (EMS) division is managed by the Battalion Chief of EMS. Supporting the Battalion Chief of EMS is the EMS Captain, who manages training as well as EMS policy and procedure development for Fire Rescue. All line personnel are trained as an Emergency Medical Technician, with at least one Paramedic always assigned to each unit. Personnel can provide Basic Life Support (BLS) and Advanced Life Support (ALS) care to patients and work closely with Hilton Head Regional Medical Center to provide the highest quality of care and clinical excellence to all patients.

Technical Rescue

The Technical Rescue Team (TRT) provides technician level rescue, recovery, and disaster assistance at various types of incidents. These incidents include collapsed buildings, trench collapse, confined space rescue, high angle rescue, heavy vehicle or machinery entrapment, large area search, and flood water evacuation and rescue.

As part of the State Emergency Response Task Force, the TRT serves as one of the five Regional Urban Search & Rescue Regional Response Teams. The TRT is designated as the Lowcountry USAR Team (SCTF-4), and is comprised of firefighters from Hilton Head Island Fire Rescue and Bluffton Township Fire District. The TRT is available for emergency responses for both jurisdictions every day of the year.

Additionally, the TRT provides technical rescue response to the City of Hardeeville, the Town of Ridgeland, and Jasper County through mutual aid agreements. The TRT is a State of South Carolina Regional Response Team and is subject to deployment anywhere in the state through Firefighter Mobilization.

Hazardous Materials

The Hazardous Materials Emergency Response Team (HMERT) responds to actual and potential emergency calls involving the release of Hazardous Materials. The purpose of the HMERT is to provide for life safety when needed in the form of victim removal from hazardous atmospheres, decontamination of individuals exposed to contaminants, and incident stabilization/property (environmental) conservation through hazardous materials identification and release mitigation.

The HMERT is comprised of firefighters from Hilton Head Island Fire Rescue and Bluffton Township Fire District. Staffing for responses is achieved by on duty Hazardous Materials Hazmat Technicians and augmented by call back of off duty personnel. The HMERT is available for emergency responses for both jurisdictions on an around the clock basis during every day of the year. Additionally, the HMERT provides hazardous materials response coverage to the City of Hardeeville, the Town of Ridgeland, and Jasper County through mutual aid agreements. The HMERT is also a State of South Carolina Regional Hazardous Materials and WMD Response Team and is subject to deployment anywhere in the state through Firefighter Mobilization.

Stations, Apparatus and Staffing

Fire Rescue Headquarters

Dedicated in 2001, Fire Rescue Headquarters is located at 40 Summit Drive. All administrative staff and maintenance personnel are housed in this location. The Fire Rescue Training Facility is located just behind Headquarters, housing the Coverage Crew, along with props and training equipment necessary for the development of personnel.

E911 Communications Center

Dedicated in 2003, Fire Rescue's E911 Communication Center is located at 21 Oak Park Drive, on the second floor of the Hilton Head Public Service District Office. The center operates with a minimum of two dispatchers, handling all 911 calls originating on Hilton Head Island and Daufuskie Island.

Emergency Operations Center

Located in the same facility as the E911 Communications Center, the Emergency Operations Center (EOC) is where the Town manages significant incidents. In the EOC, the Town functions in a similar fashion to an All-Hazards Incident Management Team. This allows the staff to use the Incident Command System to manage events and request external support from All-Hazard Incident Management Teams. The Town's alternate EOC is the Fire Rescue Classroom at Fire Rescue Headquarters. All of the roles within the Town's EOC are filled by Town staff with the exception of the Law Enforcement Liaison from the Beaufort County Sheriff's Office.

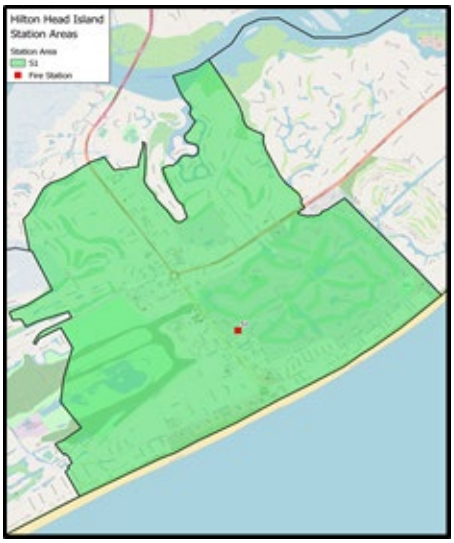


Figure 14: Boundaries of SPZ 1

Fire Station #1

Dedicated in November 2011, Station 1 is located at 70 Cordillo Parkway. This station houses a Quint and Medic, each with minimum staffing of two personnel for a total minimum staffing of four personnel. In addition, personnel cross-staff Rescue 1, the Technical Rescue/Urban Search and Rescue apparatus.

Distribution of incidents per station from 2016-2020 is provided for each station. This data includes the distribution of those incidents by fire incidents (NFIRS 100s), EMS incidents (NFIRS 300s) and all other incident types. The daily average of incidents per station is included as well.

- Pop: 6,166
- Pop./mi.^{2}: 1,168
- Sq. Miles: 5.28
- Road Miles: 52.87

Fire Station #1		
Apparatus	**Description**	**Minimum Staffing**
Engine 1	103' Quint – 1500 GPM Pump and a 500 Gallon Tank	2
Medic 1	ALS Transport Unit	2
Rescue 1	Technical Rescue/Urban Search and Rescue	Cross Staffed
Total		**4**

Table 6: Station 1 Resources

Incidents By Apparatus						
Apparatus	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
E1	1,097	1,014	1,008	1,095	715	**4,929**
M1	1,154	1,197	1,140	1,220	1,246	**5,957**
Total	**2,251**	**2,211**	**2,148**	**2,315**	**1,961**	

Table 7: Station 1 Incidents

Incidents By Service Area					
	Responses	**Fire (%)**	**EMS (%)**	**Other (%)**	**Per Day**
2016	1534	1.5	72.03	26.47	4.2
2017	1570	1.46	74.78	23.76	4.31
2018	1499	1.47	71.58	26.95	4.12
2019	1622	1.29	69.17	29.53	4.46
2020	1585	1.01	67.38	31.61	4.34

Table 8: Station 1 Incidents by Service Area

Fire Station #2

Originally dedicated in 1975, this station completed a redesign in 2021. Station 2 is located at 65 Lighthouse Road. This station houses an Engine and Medic, each with minimum staffing of two personnel, for a total minimum staffing of four personnel.

Figure 15: Boundaries of SPZ 2

- Pop: 3,444
- Pop./mi.^{2}: 579
- Sq. Miles: 5.95
- Road Miles: 51.67

Fire Station #2		
Apparatus	**Description**	**Minimum Staffing**
Engine 2	Engine - 1500 GPM Pump and 500 Gallon Water Tank	2
Medic 2	ALS Transport Unit	2
Total		**4**

Table 9: Station 2 Resources

Incidents By Apparatus						
Apparatus	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
E2	514	482	559	593	386	**2,534**
M2	757	687	809	846	671	**3,770**
Total	**1,271**	**1,169**	**1,368**	**1,439**	**1,057**	

Table 10: Station 2 Incidents

Incidents By Service Area					
	Responses	**Fire (%)**	**EMS (%)**	**Other (%)**	**Per Day**
2016	683	2.64	62.23	35.14	1.87
2017	650	1.23	59.54	39.23	1.79
2018	769	0.91	59.43	39.66	2.11
2019	797	0.88	57.34	41.78	2.19
2020	724	0.97	55.94	43.09	1.98

Table 11: Station 2 Incidents by Service Area

Fire Station #3

Dedicated in 2000, Station 3 is located at 534 William Hilton Parkway. This station houses an Engine and Medic unit that is cross staffed for a minimum staffing of three personnel. In addition, the station houses Utility 1, an Air Support Apparatus.

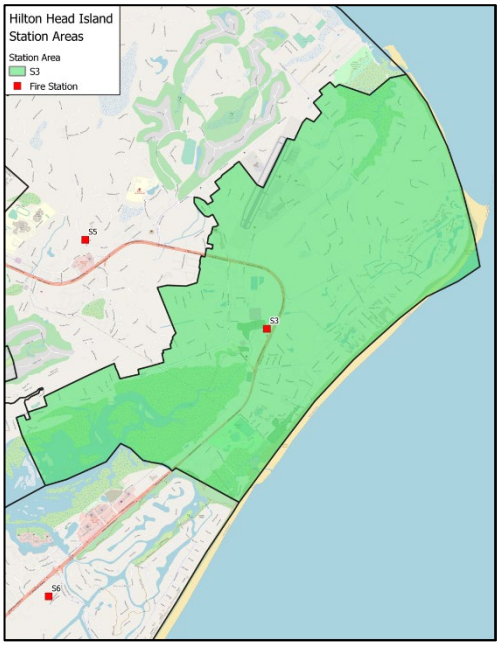


Figure 16: Boundaries of SPZ 3

- Pop: 6,357
- Pop. /mi.^{2}: 1,095
- Sq. Miles: 5.8
- Road Miles: 46.14

Fire Station #3		
Apparatus	**Description**	**Minimum Staffing**
Engine 3	Engine - 1500 GPM Pump and 500 Gallon Water Tank	3 (Cross-Staffed)
Medic 3	ALS Transport Unit	3 (Cross-Staffed)
Utility 1	Cascade System and Rehab Supplies	N/A
Total		**3**

Tables 12: Station 3 Resources

Incidents By Apparatus						
Apparatus	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
E3	465	401	331	362	319	**1,878**
M3	875	819	782	813	761	**4,050**
Total	**1,340**	**1,220**	**1,113**	**1,175**	**1,080**	

Table 13: Station 3 Incidents

Incidents By Service Area					
	Responses	**Fire (%)**	**EMS (%)**	**Other (%)**	**Per Day**
2016	970	2.68	70.52	26.8	2.66
2017	894	2.57	69.8	27.63	2.46
2018	900	2.33	71.56	26.11	2.47
2019	889	1.01	74.02	24.97	2.44
2020	866	2.08	66.86	31.06	2.37

Table 14: Station 3 Incidents by Service Area

Fire Station #4

Dedicated in 2005, Station 4 is located at 400 Squire Pope Road. This station houses an Engine and Medic unit cross-staffed for a minimum staffing of three personnel. In addition, this station houses a reserve Engine and Medic.

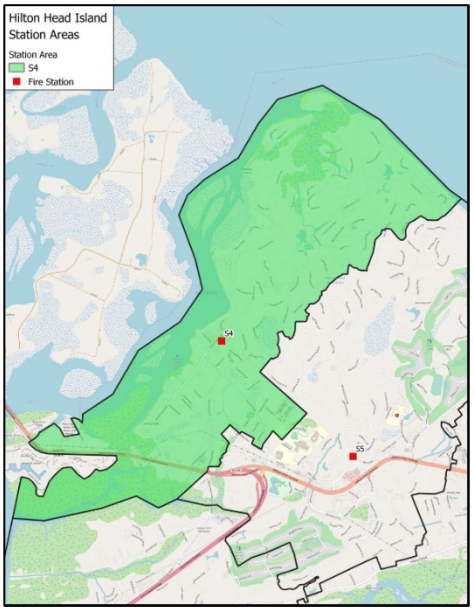


Figure 17: Boundaries of SPZ 4

- Pop: 8,093
- Pop./mi.^{2}: 1,168
- Sq. Miles: 7.02
- Road Miles: 55.37

Fire Station #4		
Apparatus	**Description**	**Minimum Staffing**
Engine 4	Engine - 1500 GPM Pump and 500 Gallon Water Tank	3 (Cross-Staffed)
Medic 4	ALS Transport Unit	3 (Cross-Staffed)
Medic 10	ALS Transport Unit	Reserve
Engine 10	Engine – 1500 GPM Pump and 500 Gallon Water Tank	Reserve
Total		**3**

Table 15: Station 4 Resources

Incidents By Apparatus						
Apparatus	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
E4	356	312	336	288	244	**1,536**
M4	815	877	918	1,039	1,011	**4,660**
Total	**1,171**	**1,189**	**1,254**	**1,327**	**1,255**	

Table 16: Station 4 Incidents

Incidents By Service Area					
	Responses	**Fire (%)**	**EMS (%)**	**Other (%)**	**Per Day**
2016	887	1.24	74.86	23.9	2.43
2017	966	1.45	76.81	21.74	2.65
2018	1111	1.8	73.45	24.75	3.05
2019	1208	0.58	74.75	24.67	3.32
2020	1166	0.6	73.07	26.33	3.19

Table 17: Station 4 Incidents by Service Area

Fire Station #5

Dedicated in 2011, Station 5 is located at 20 Whooping Crane Way. This station houses an Engine and a Medic, each with a minimum staffing of two, for a total minimum staffing of four personnel.

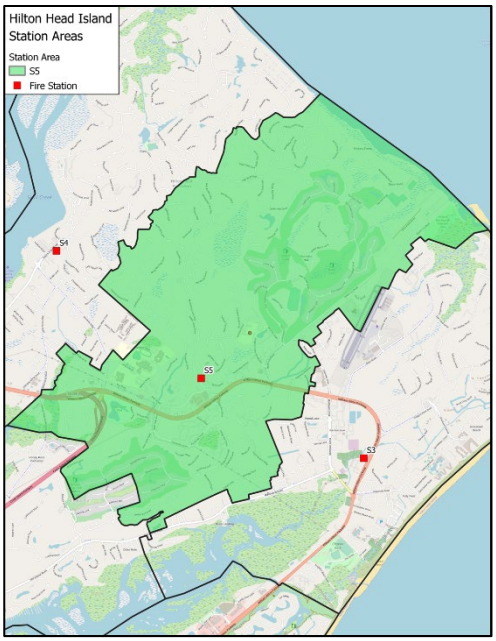


Figure 18: Boundaries of SPZ 5

- Pop: 7,094
- Pop./mi.^{2}: 932
- Sq. Miles: 7.6
- Road Miles: 80.88

Fire Station #5		
Apparatus	**Description**	**Minimum Staffing**
Engine 5	103' Quint – 1500 GPM Pump and a 500 Gallon Tank	2
Medic 5	ALS Transport Unit	2
Truck 7	110' Tractor Drawn Aerial	Reserve
Total		**4**

Table 18: Station 5 Resources

Incidents By Apparatus						
Apparatus	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
E5	1,234	1,202	1,169	1,204	774	**5,583**
M5	1,356	1,265	1,253	1,283	1,266	**6,423**
Total	**2,590**	**2,467**	**2,422**	**2,487**	**2,040**	

Table 19: Station 5 Incidents

Incidents By Service Area					
	Responses	**Fire (%)**	**EMS (%)**	**Other (%)**	**Per Day**
2016	2893	0.9	71.47	27.63	5.19
2017	1638	1.22	75.34	23.44	4.5
2018	1638	1.16	75.89	22.95	4.5
2019	1649	0.85	76.41	22.74	4.53
2020	1603	0.5	73.74	25.76	4.39

Table 20: Station 5 Incidents by Service Area

Fire Station #6

Dedicated in 2014, Station 6 is located at 12 Dalmatian Lane. This station houses a Truck company of four personnel and an Engine and Medic unit cross-staffed with minimum staffing of three personnel, for a total minimum staffing of seven personnel. In addition, this station houses Haz-Mat 2, a hazardous material response apparatus cross-staffed by two Haz-Mat Technicians.

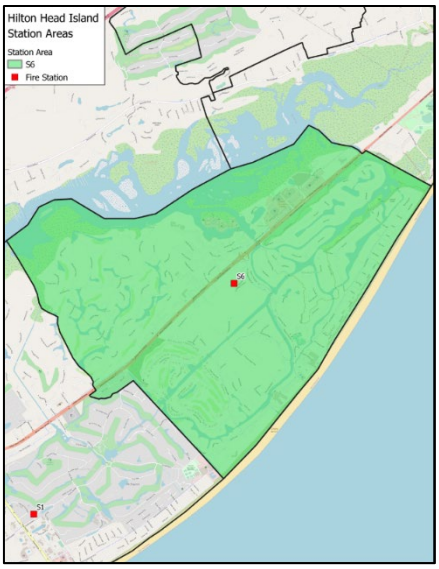


Figure 19: Boundaries of SPZ 6

- Pop: 3,984
- Pop./mi.^{2}: 845
- Sq. Miles: 4.7
- Road Miles: 43.73

Fire Station #6		
Apparatus	**Description**	**Minimum Staffing**
Engine 6	Engine - 1500 GPM Pump and 500 Gallon Water Tank	3 (Cross-Staffed)
Medic 6	ALS Transport Unit	3 (Cross-Staffed)
Truck 6	110’ Tractor Drawn Aerial	4
HazMat 2	Hazardous Materials Response Apparatus	Cross-Staffed
Total		**7**

Table 21: Station 6 Resources

Incidents By Apparatus						
Apparatus	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
E6	320	322	321	344	299	**1,606**
M6	677	644	620	692	672	**3,305**
T6	666	505	550	533	517	**2,771**
Total	**1,663**	**1,471**	**1,491**	**1,569**	**1,488**	

Table 22: Station 6 Incidents

Incidents By Service Area					
	Responses	**Fire (%)**	**EMS (%)**	**Other (%)**	**Per Day**
2016	843	1.55	64.76	33.69	2.3
2017	818	1.96	66.26	31.78	2.25
2018	808	1.24	63.84	34.9	2.22
2019	888	0.68	62.5	36.82	2.44
2020	881	1.14	58.34	40.52	2.41

Table 23: Station 6 Incidents by Service Area

Fire Station #7

Dedicated in 2003, Station 7 is located at 1001 Marshland Road. This station houses an Engine and Medic cross-staffed for minimum staffing of three personnel, along with Battalion 1, the Operation Battalion Chief's Vehicle. In addition, this station houses a reserve Engine and Medic.

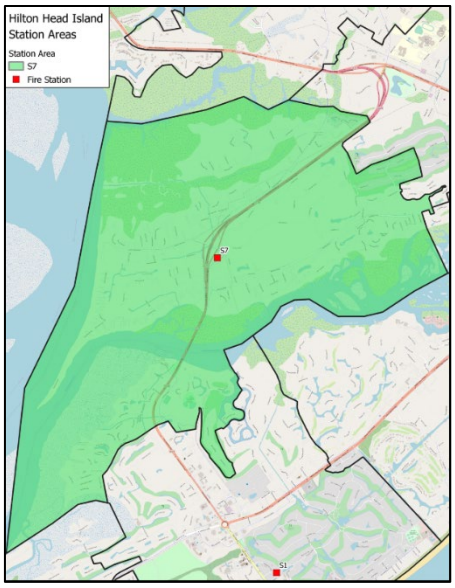


Figure 20: Boundaries of SPZ 7

- Pop: 7,104
- Pop./mi.^{2}: 884
- Sq. Miles: 8.04
- Road Miles: 60.01

Fire Station #7		
Apparatus	**Description**	**Minimum Staffing**
Engine 7	Engine - 1500 GPM Pump and 500 Gallon Water Tank	3 (Cross-Staffed)
Medic 7	ALS Transport Unit	3 (Cross-Staffed)
Battalion 1	Operations Command Vehicle	1
Engine 9	Engine – 1500 GPM Pump and 500 Gallon Water Tank	Reserve
Medic 9	ALS Transport Unit	Reserve
Total		**4**

Table 24: Station 7 Resources

Incidents By Apparatus						
Apparatus	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
E7	349	322	291	337	270	**1,569**
M7	675	752	709	768	821	**3,725**
B1	427	490	476	529	694	**2,616**
Total	**1,451**	**1,564**	**1,476**	**1,634**	**1,785**	

Table 25: Station 7 Incidents

Incidents By Service Area					
	Responses	**Fire (%)**	**EMS (%)**	**Other (%)**	**Per Day**
2016	756	2.25	63.76	33.99	2.07
2017	834	2.16	69.78	28.06	2.29
2018	739	1.89	71.72	26.39	2.03
2019	802	2.0	73.19	24.81	2.2
2020	862	1.51	73.9	24.59	2.36

Table 26: Station 7 Incidents by Service Area

Apparatus

Engine

Quint

Tractor Drawn Aerial

Operations Command Vehicle

Medic Units

Hazardous Materials Response Apparatus

Wildland Apparatus

Urban Search and Rescue Apparatus

C. All-Hazard Risk Assessment of the Community

Methodology

Fire Rescue recognizes hazards exist within Hilton Head Island, bringing a risk to residents and visitors, as well as property and the environment. The process for assessing risk within the community requires a logical, systematic, and consistent methodology that can be utilized and re-evaluated annually. Fire Rescue assess risk created by identified hazards to determine the potential adverse impacts for fire, EMS, hazardous materials, and technical rescue services.

The department identifies risks by reviewing three factors: probability of an incident occurring, the consequence of the event occurring, and the impact to the organization and the ability of the organization to continue to provide services during an incident. Risk is assessed using known data sources managed at the station planning zone for deployment and administrative purposes. Fire Rescue is continuously evaluating adding additional resources into existing fire stations if call volume and performance demand it.

Heron's Formula was adopted and applied to each of the services provided by Fire Rescue. To determine the probability, each service area's historical incident data was analyzed and scaled to develop the risk score. To address consequences to the community, staff members from within the department were surveyed and used their experience to determine the scores for the variable. Finally, impact to the department was also determined by staff tasked with completing the assignments corresponding with the specific incident. A sample calculation for a High-Risk Fire Incident is shown below.

$$Risk \sqrt{\frac{(PC)^2}{2} + \frac{(CI)^2}{2} + \frac{(IP)^2}{2}}$$

High Risk Fire	
Probability of Occurrence	2.00
Community Consequence	4.00
Department Impact	4.00
Heron's Formula Calculation	13.86

Figure 21: Heron's Formula Risk Assessment Calculation

Risks calculated utilizing the formula are illustrated by a three-axis graphic for each Station Planning Zone. The results of the formula's calculation, or risk area, is illustrated by the triangular shape created by the risk scores ascribed to points on each axis.

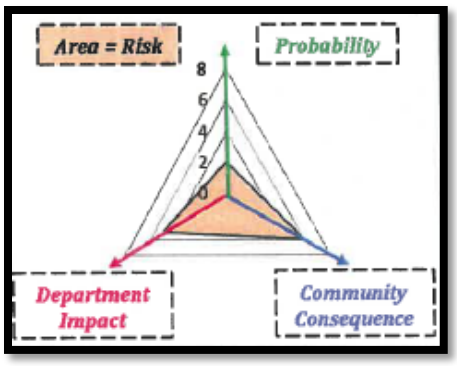


Figure 22: Axis Display of Heron's Formula Risk Assessment Calculation

Station Planning Zones (SPZs)

Beginning in the 1990's, Fire Rescue was divided into 231 Fire Demand Zones. Today, these zones are maintained in the event of a communications center failure. Fire Rescue transitioned to a Station Planning Zone methodology in 2017, utilizing Station Planning Zones to organize response districts within Hilton Head Island. The Station Planning Zones divide the Island into seven geographical sections, aligning with each of Fire Rescue's seven stations. Fire Rescue dispatches by AVL to determine the location of closest apparatus, which has increased reliability for services provided. Using the Station Planning Zones allows the department to analyze demographic information, risk potentials, and emergency response data to establish operational direction, policies, goals, and objectives more accurately.

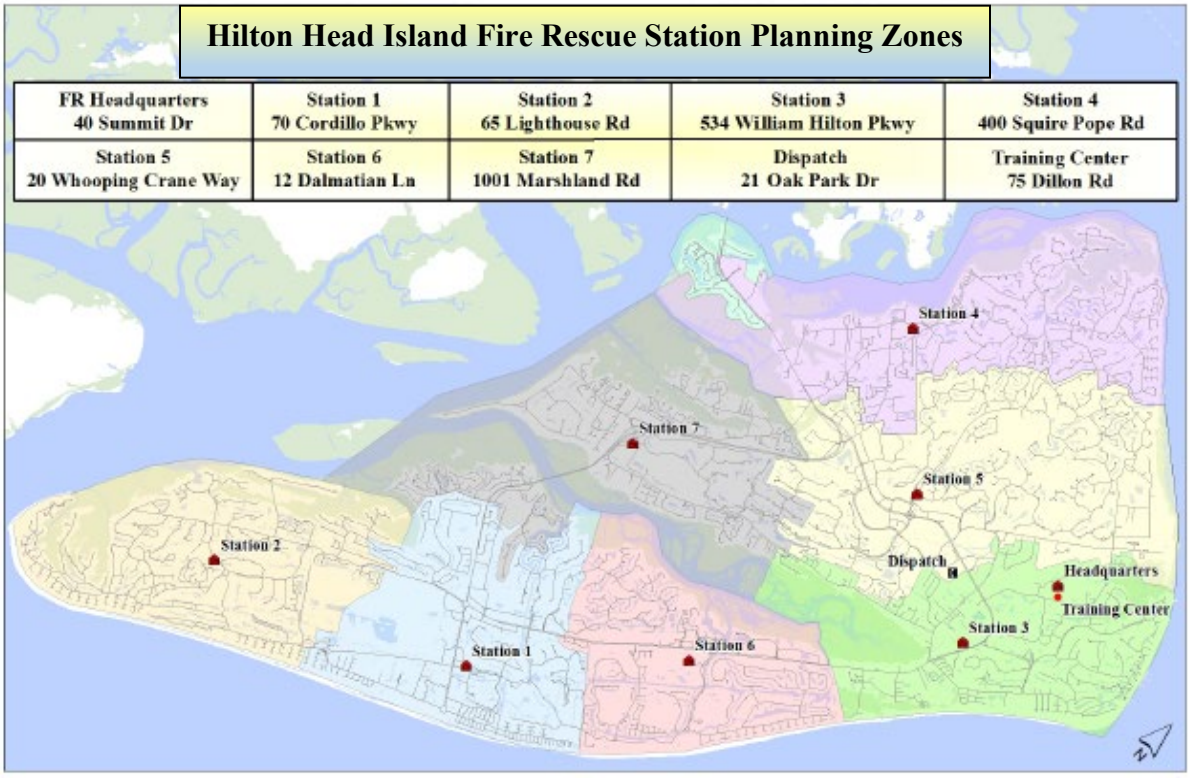


Figure 23: Hilton Head Island Fire Rescue Station Planning Zones

Concentration Factors

Concentration of Risks by SPZ

Analyses were conducted to describe and measure the relative concentration of risks in each of the SPZs. Therefore, a SPZ risk matrix was developed to quantitatively evaluate the relative risk by including measures for the population density, median income, percentage of assessed value, median age, square mileage, occupancy risks per square mile, and the diversity index. In addition, several measures both serve the distribution aspect of the risk evaluation, but also contribute to the need for higher concentrations of resources. For example, a higher call volume may serve to drive the need for additional resources to cover the community's demand.

The variables included in the risk matrix are the demand for services for each SPZ, a homogenization of the previous variables, and the impact of simultaneous events in each SPZ. All measures were weighted equally; however, two variables have surrogate relationships with historical community demands and one variable is dedicated to prospective risk. All homogenized variables were weighted equally as none of the variable were statistically correlated with demand. Community demands were rated more heavily to provide a realistic balance between the risk potential with historical experience. The risk tool and the scoring templates are provided in Appendix B. Each of the variables presented below were then homogenized into a single risk value to complete the 3-D modeling for station-level risks. The homogenized variables matrix is also provided in Appendix B.

Population Density
The population for each SPZ was calculated to a standardized value per square mile.

Median Household Income
The median household income was calculated and geocoded to each SPZ. The median household income for the nation was used as the center point of five at a value of $52,306. Additionally, the poverty threshold in South Carolina for a family of three was $54,300. The actual average number of persons per household was 2.54.

Proportion of Assessed Value
The proportion of overall community assessed value was utilized to measure the relative prospective risk by each SPZ. Therefore, with seven SPZs, the average proportion should be approximately 14.29%. As such, this value was utilized as the midpoint in the risk valuation scale.

Median Age
The median age of each of the seven SPZs was utilized. Research has shown a correlation for both the utilization of fire and EMS services and age. However, in this study, a correlation was not statistically significant with call demand by planning zone.

Square Miles per SPZ
The square mileage for each SPZ was calculated utilizing GIS analytics. Understanding that if the community had an equally distributed square mileage across each of the station planning zones, then the average square mileage would be approximately 14.3 square miles. Therefore, the average experience was utilized as the midpoint on the risk valuation scale.

Occupancy Risk per Square Mile

The number of measured occupancy risks per square mile was calculated for each of the seven SPZs. The average value was 127 occupancies per square mile and was utilized as the midpoint in the scale.

Diversity Index

The nationally reported diversity score was 65% through 2018. A diversity index of 65 translates to a probability that two people randomly chosen from the US population would belong to different race or ethnic groups. However, because the index has a maximum value of 100%, 65 could not be utilized as the midpoint of the range and the more traditional value of approximately 50 was utilized.

Station Planning Zone	Community Demand	Call Concurrency	Risk Homogenized Variables	Total Risk Score	Risk Rating
1	5	5	5	31.80	Moderate
2	3	3	4	13.21	Low
3	3	4	6	21.45	Moderate
4	3	4	4	17.37	Moderate
5	5	5	4	27.23	Moderate
6	2	3	4	11.38	Low
7	3	3	4	13.58	Low

Table 27: Station Planning Zone Risk Concentration Matrix

The methodology of establishing Station Planning Zones provides information for Fire Rescue to consider alternative solutions to assist in the mitigation of risks. The main variables of Community Demand, Call Concurrency, and the Homogenized Risk were utilized in the Station Planning Zone Risk Concentration Matrix. Within this process, a temporal analysis was completed for each major program area and evaluated by station planning zone and frequency of incidents.

Risk Assessment

Fire Suppression

Hilton Head Island Fire Rescue consistently staff five engines, two quints and one tractor-drawn aerial as active fire suppression companies. A Battalion Chief of Operations provides command of day-to-day operations and the crews. Each crew is assigned a minimum of three to four personnel: a company officer, fire apparatus operator, and one or two firefighters.

The assessment conducted for the fire suppression risk considered the probability of a fire within the community based on historical data, consequences a fire could have on the community, and the impact the incident would have on Fire Rescue's resources.

Fire-Max	2	6	8	**36.77**
Fire-High	2	4	4	**13.86**
Fire-Moderate	6	2	2	**12.33**
Fire-Low	8	2	2	**16.25**

Table 28: Fire Risk by Category and Classification

Utilizing mathematical data for each category and classification, a three-dimensional model was created to visualize consequences such incidents could pose for the community.

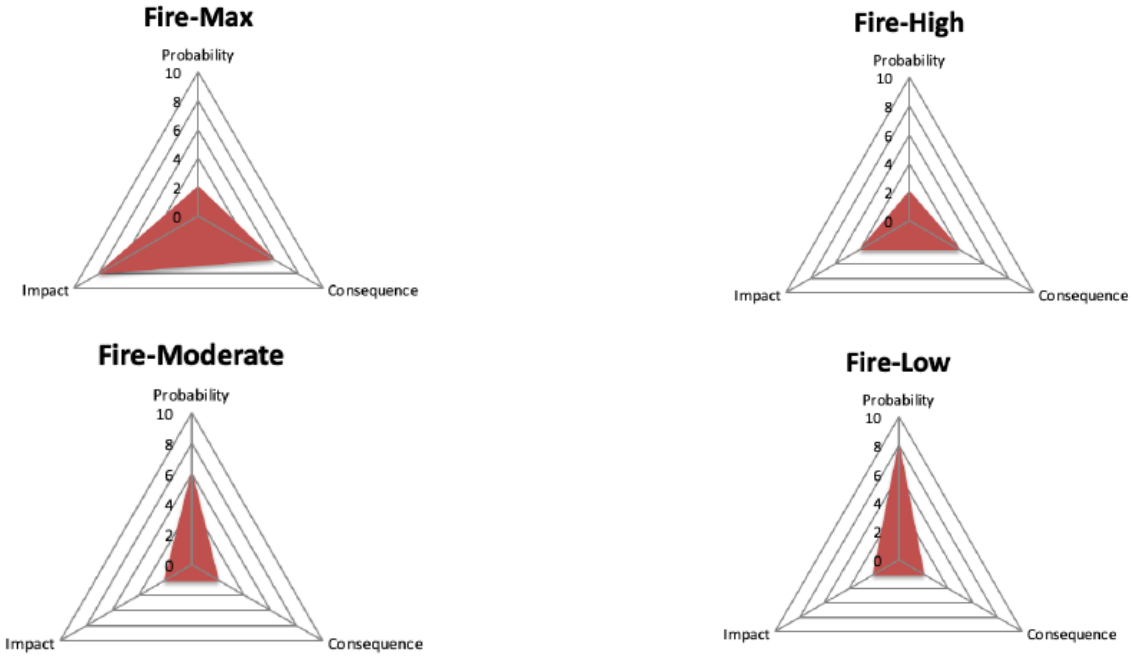


Figure 24: Models for Fire Risk

Emergency Medical Services

Fire Rescue provides Advance Life Support (ALS) and Basic Life Support (BLS) transport services to the community. All operation personnel are certified to a minimum of Emergency Medical Technician Basic (EMT-B) level, with a minimum of one Paramedic on each medic unit.

The assessment conducted for the EMS risk considered the probability of EMS incidents within the community based on historical data, consequences incidents could have on the community, and the impact an incident would have on Fire Rescue's resources.

Risk Category	Probability	Consequence	Impact	Total Risk Score
EMS-High	6	4	2	**19.80**
EMS-Moderate	8	2	2	**16.25**
EMS-Low	8	2	2	**16.25**

Table 29: EMS Risk by Category and Classification

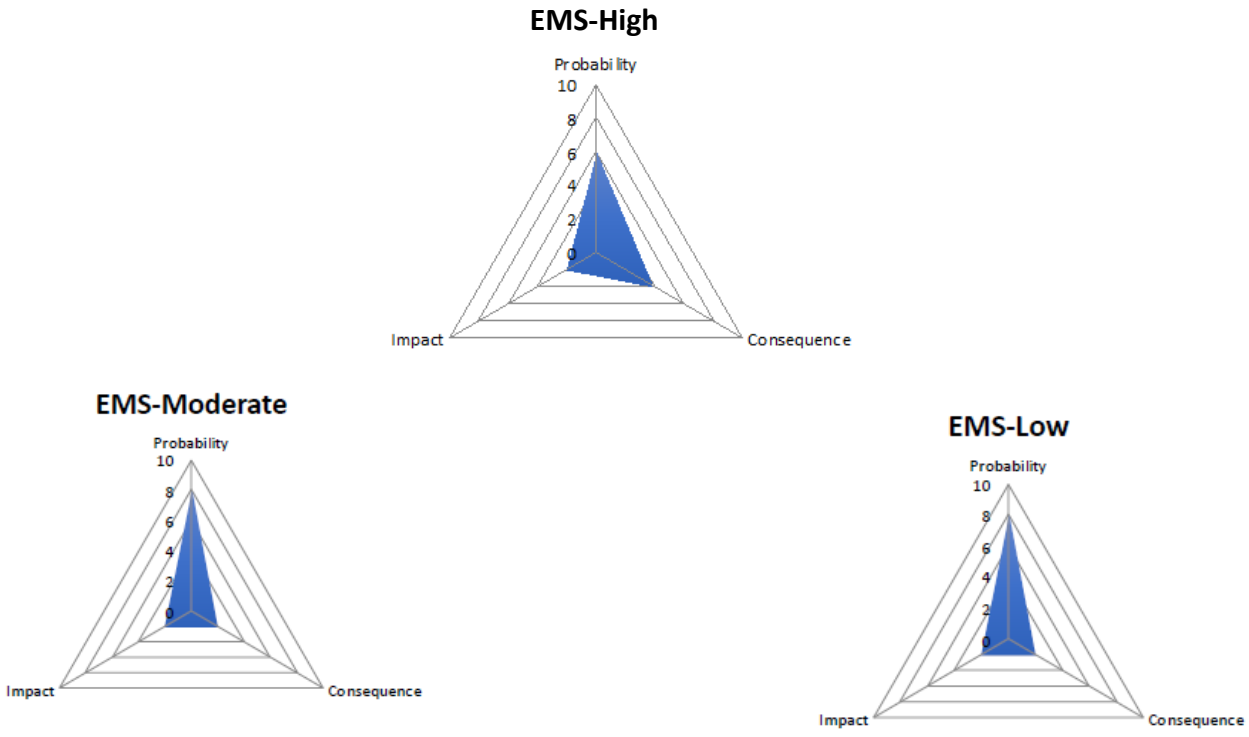


Figure 25: Models for EMS Risk

Technical Rescue

Fire Rescue provides initial response for technical rescue incidents for the community. A minimum of two Technical Rescue Technicians are always staffed at station one to begin to develop mitigation strategies for technical rescue. The demand for technical rescue services is relatively low in relation to fire suppression and EMS.

The assessment conducted for the Technical Rescue risk considered the probability of rescue incidents within the community based on historical data, consequences incidents could have on the community, and the impact an incident would have on Fire Rescue's resources.

Risk Category	Probability	Consequence	Impact	Total Risk Score
Rescue-High	2	4	6	**19.80**
Rescue-Moderate	2	2	4	**8.49**
Rescue-Low	6	2	2	**12.33**

Table 30: Technical Rescue Risk by Category and Classification

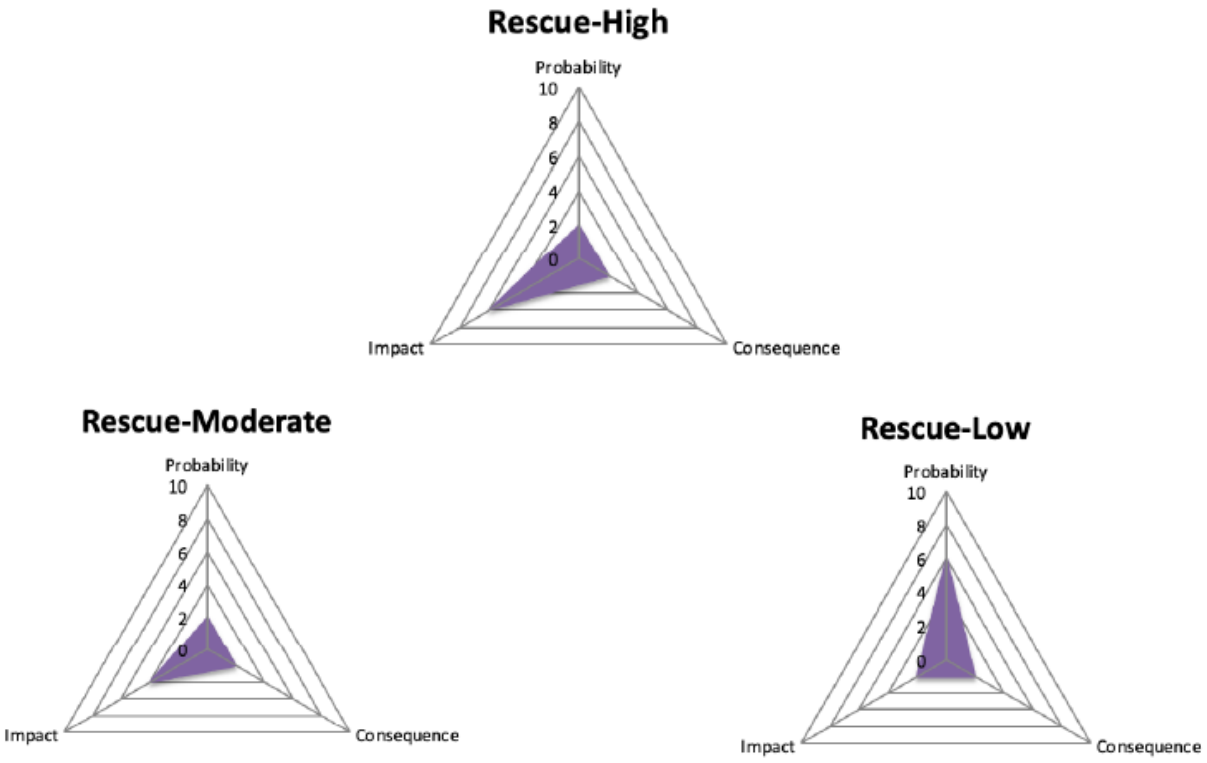


Figure 26: Models for Technical Rescue Risk

Hazardous Materials

Fire Rescue responds to and mitigates hazardous materials incidents. All department personnel are trained to the operations level for hazardous materials. More significant hazardous materials events that require additional resources for decontamination, entry, and medical monitoring receive technician-level personnel with the hazardous materials unit. The demand for hazardous material services is relatively low in relation to fire suppression and EMS.

The assessment conducted for the Hazardous Materials risk considered the probability of incidents within the community based on historical data, consequences incidents could have on the community, and the impact an incident would have on Fire Rescue's resources.

Risk Category	Probability	Consequence	Impact	Total Risk Score
Hazardous Materials-High	2	6	6	**28.14**
Hazardous Materials-Moderate	2	2	4	**8.49**
Hazardous Materials-Low	4	2	2	**8.49**

Table 31: Hazardous Material Risk by Category and Classification

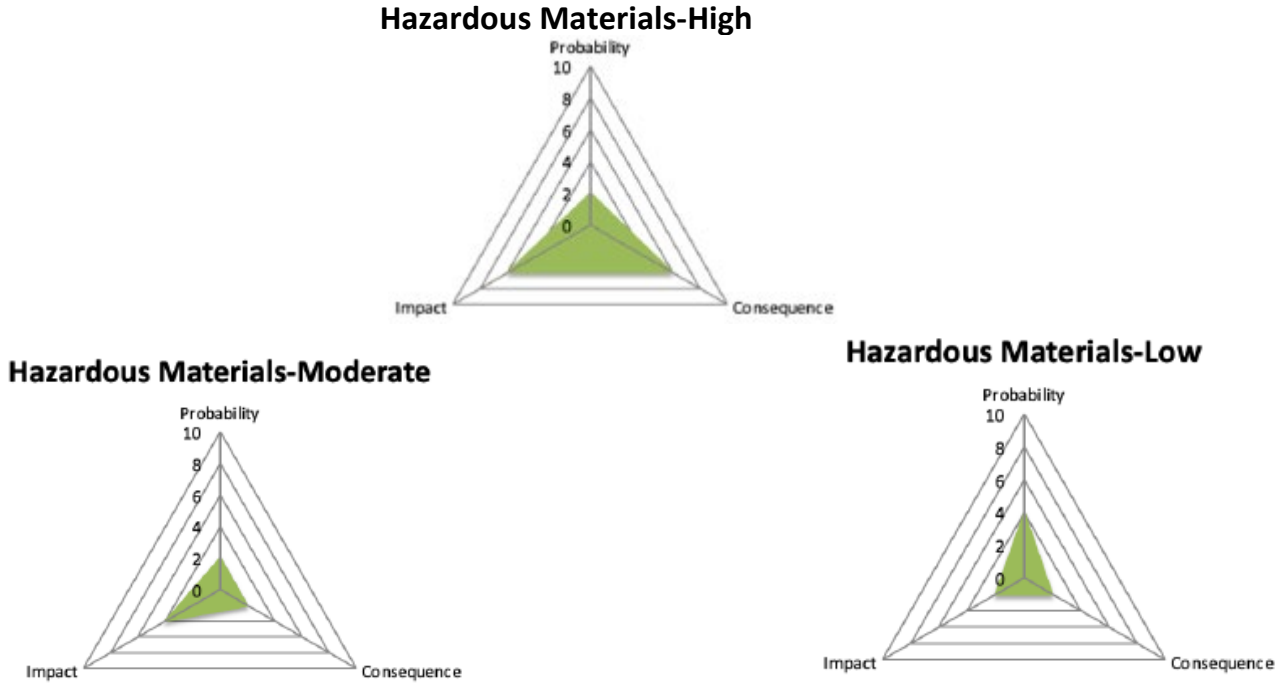


Figure 27: Models for Hazardous Materials Risk

Occupancy-Level Risk

Occupancy risk was evaluated for the Town of Hilton Head Island utilizing the most recent internal occupancy-level data. The available data provided specific building occupancy classifications that established base risk ratings of the occupancy. Next, moderating values for the presence of critical fire protection systems such as an automatic fire sprinkler system, fire alarm, fire pump, and standpipes were included to reduce the occupancy classification risk rating. The risk matrix utilized to determine reduced classification is below.

Occupancy Class	Occ Description	Base Risk Rating	System Information	Adjusted Risk Rating If Present
A1	Assembly	High	SYSTEMS AS/FA/SP	Low
A2	Assembly	High	SYSTEMS AS/FA	Low
A3	Assembly	High	SYSTEMS AS/FA/H	Low
A4	Assembly	High	SYSTEMS AS/FA/FP	Low
A5	Assembly	High	SYSTEMS AS/H	Moderate
B	Business	Moderate	SYSTEMS AS	Moderate
E	Education	High	SYSTEMS AS/H/FA	Low
E - DAY CARE	Day Care	High	AS/FA	Low
E1		High	AS/FA/H	Low
F1	Factory	High	SYSTEMS AS/FA/FP/H	Low
F2	Factory	High	SYSTEMS SP	Moderate
H2	High Hazard	High	SYSTEMS AS/FAH/SP	Low
H3	High Hazard	High	SYSTEMS AS/FA/H/SP	Low
H4	High Hazard	High	AS/FA/FP/H	Low
I1	Institution	High	SYSTEMS AS/FA/FP/SP	Low
I2	Institution	High	SYSTEMS AS/FA/H/TC	Low
I3 COND 1	Institution	High	SYSTEMS FA/SP	Moderate
I3 COND 3	Institution	High	SYSTEMS FA/FP/SP	Moderate
I3 COND 5	Institution	High	SYSTEMS AS/FA/TC	Low
M	Mercantile	High	SYSTEMS AS/FP/H/SP	Moderate
R1	Residential	High	SYSTEMS FA/SP/FP	Moderate
R2	Residential	High		
R3	Residential	High		
R4	Residential	High		
S1	Storage	High		
S2	Storage	High		
S3	Storage	High		
S4	Storage	High		
S5	Storage	High		
U1	Utility and Miscellaneous	Moderate		

Table 32: Summary of Occupancy Risk Matrix

The occupancies that received the highest risk values are assumed to be at a higher risk for a fire incident, based on the lack of fire protection systems and use of the occupancy. In this matter, the fact that 96% of the fires are controlled with sprinkler activation is incorporated into the matrix for a more realistic risk factor rating. The results of the risk assessment process categorized the 2,713 occupancies into 631 high-risk structures, 1,559 moderate-risk structures, and 512 low-risk structures.

Geospatial analyses were completed to map the locations of each of the occupancies included in the risk matrix process and specifically overlaid within each of the fire station locations. This analysis lends validity to the risk assessment matrix and the process utilized by Fire Rescue, as the concentration of risks is correlated with the historical demand for fire related services. The results of the geospatial analyses of all structures by risk, and of high, moderate, and low-risk structures are presented in the individual SPZ evaluations.

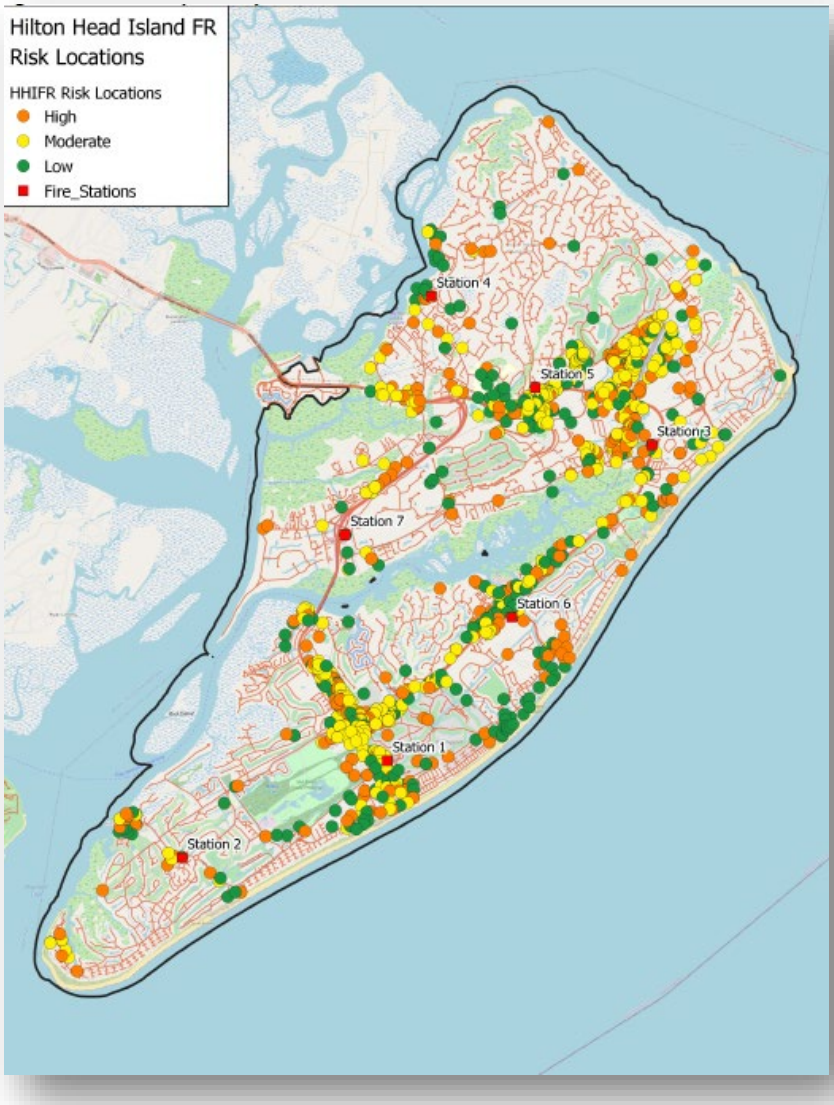


Figure 28: All Risk Occupancies within Hilton Head Island

Station Planning Zone Risk Evaluations

Within the CRA, risk was measured at the jurisdiction levels and stratified by risk category and classification. In addition, each SPZ evaluated risk on multiple variables to provide an individual SPZ risk rating of Low, Moderate, or High to assist in risk mitigation strategies and resource allocation decisions.

Station Planning Zone 1

SPZ 1 represents 18.8% ($2.6 billion) of the total assessed value for the jurisdiction and 11.88% of the total square miles. The weighted community demand, a factor of the frequency of incidents by risk classification, is indicative of 1,849 incidents with a call concurrency rate of 14.9%.

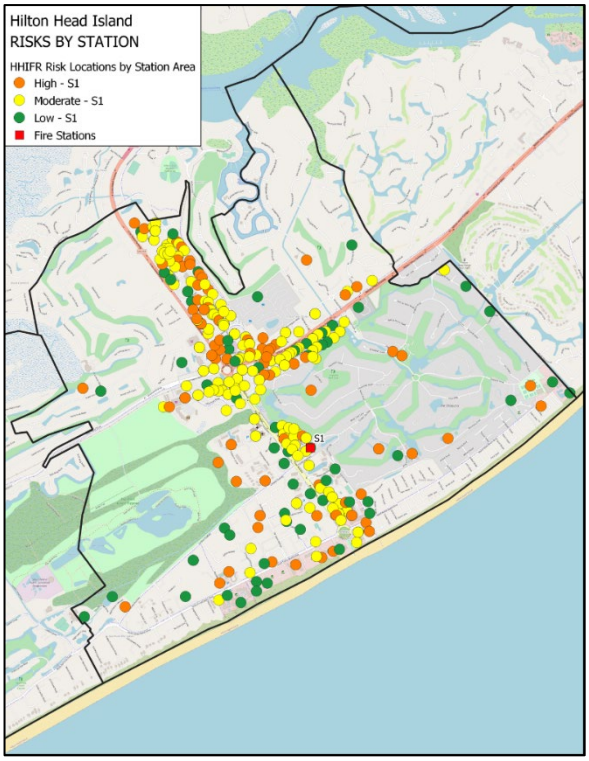


Figure 29: All Risk Occupancies for SPZ1

From the inspectable properties database within SPZ 1, there were 230 high-risk occupancies and 634 moderate-risk occupancies.

The risk severity is presented by category and classification to better understand the relationship of risk by program area. Fire related risks had a much greater frequency of low- and moderate-risk incidents than high risk.

EMS related incidents had a higher frequency of moderate-risk incidents, but overall has a more evenly distributed risk profile between low-, moderate-, and high-risk incidents.

Hazardous materials incidents were evenly distributed at a low frequency value.

Rescue related incidents had a relatively more frequent rate of low-risk incidents with an even distribution of infrequent moderate and high risks.

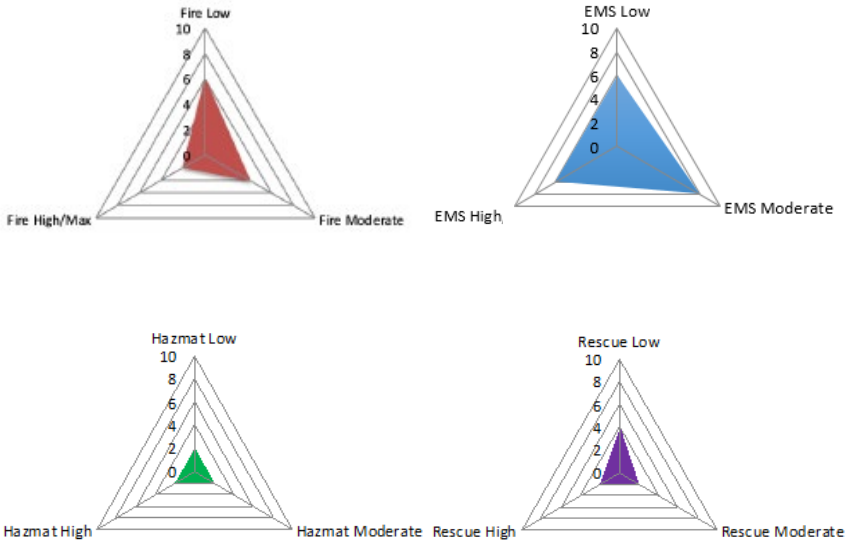


Figure 30: SPZ 1 Risk Assessments

Station Planning Zone 2

SPZ 2 represents 17.3% ($2.4 billion) of the total assessed value for the jurisdiction and 13.4% of the total square miles. The weighted community demand, a factor of the frequency of incidents by risk classification, is indicative of 900 incidents with a call concurrency rate of 8.0%.

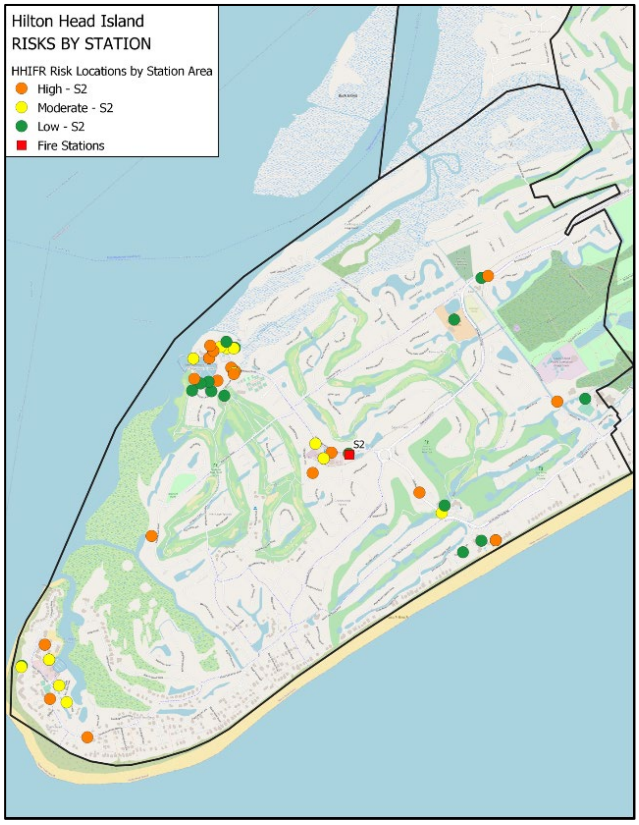


Figure 31: All Risk Occupancies for SPZ2

From the inspectable properties database within SPZ 2, there were 49 high-risk occupancies and 53 moderate-risk occupancies.

The risk severity is presented by category and classification to better understand the relationship of risk by program area. Fire related risks had a much greater frequency of low-risk than moderate- and high-risk incidents.

EMS related incidents had a more evenly distributed risk profile between low-, moderate-, and high-risk incidents.

Hazardous materials incidents were evenly distributed at a low frequency value.

Rescue related incidents had a relatively more frequent rate of low-risk incidents with an even distribution of infrequent moderate and high risks.

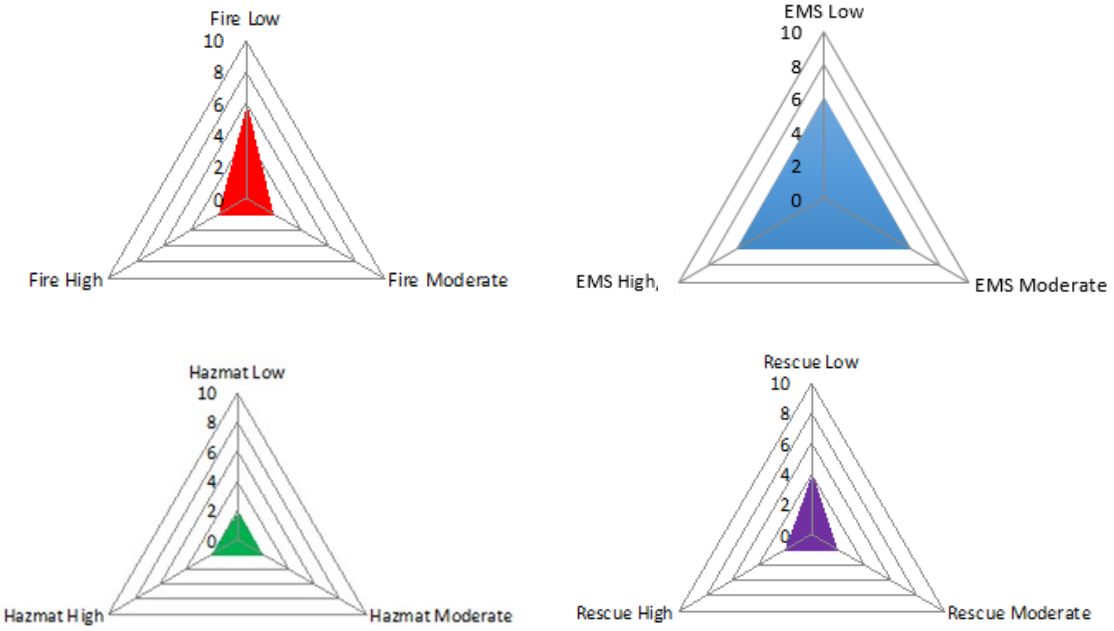


Figure 32: SPZ2 Risk Assessment

Station Planning Zone 3

SPZ 3 represents 11.9% ($1.7 billion) of the total assess value for the jurisdiction and 13.1% of the total square miles. The weighted community demand, a factor of the frequency of incidents by risk classification, is indicative of 1,849 incidents with a call concurrency rate of 14.9%.

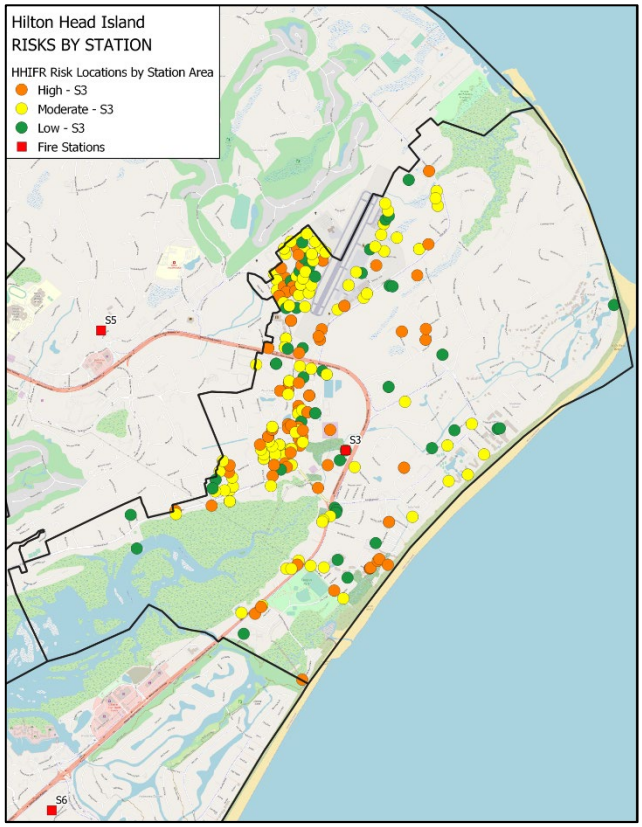


Figure 33: All Risk Occupancies for SPZ3

From the inspectable properties database within SPZ 3, there were 224 high-risk occupancies and 597 moderate-risk occupancies.

The risk severity is presented by category and classification to better understand the relationship of risk by program area. Fire related risks had a much greater frequency of low risks than of moderate- and high-risk incidents.

EMS related incidents had an evenly distributed risk profile between low-, moderate-, and high-risk incidents.

Hazardous materials incidents were evenly distributed at a low frequency value.

Rescue related incidents had a relatively more frequent rate of low-risk incidents with an even distribution of infrequent moderate and high risks.

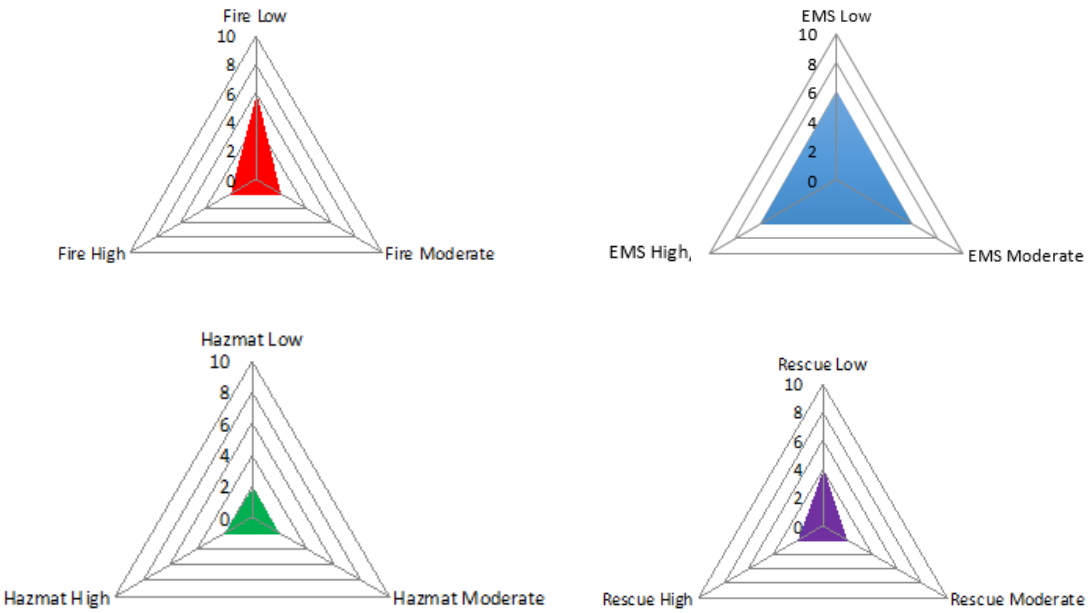


Figure 34: SPZ3 Risk Assessment

Station Planning Zone 4

SPZ 4 represents 12.8% ($1.8 billion) of the total assess value for the jurisdiction and 15.8% of the total square miles. The weighted community demand, a factor of the frequency of incidents by risk classification, is indicative of 1,326 incidents with a call concurrency rate of 9.2%.

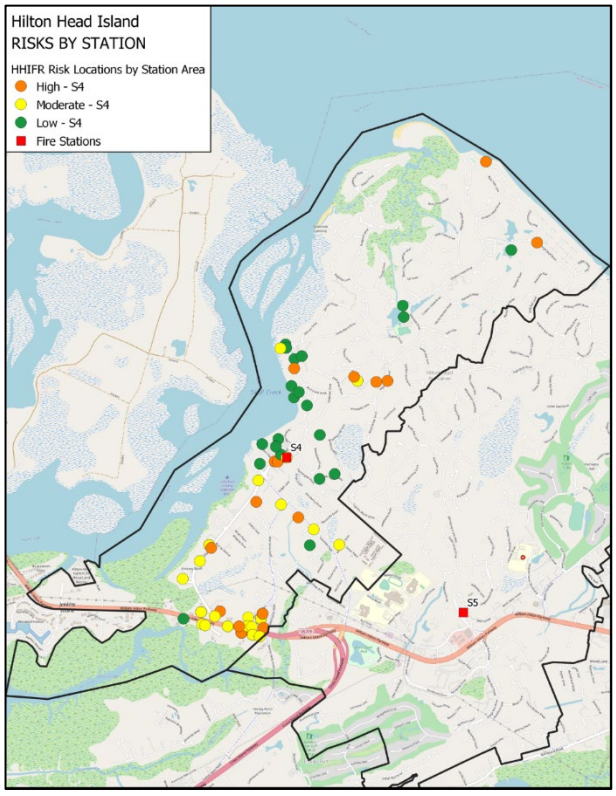


Figure 35: All Risk Occupancies for SPZ4

From the inspectable properties database within SPZ 4, there were 14 high-risk occupancies and 15 moderate-risk occupancies.

The risk severity is presented by category and classification to better understand the relationship of risk by program area. Fire related risks had a much greater frequency of low-risk than moderate- and high-risk incidents.

EMS related incidents had a higher frequency of moderate-risk incidents, but overall is a relatively evenly distributed risk profile between low-, moderate-, and high-risk incidents.

Hazardous materials incidents were evenly distributed at a low frequency value.

Rescue related incidents were evenly distributed at a low frequency value.

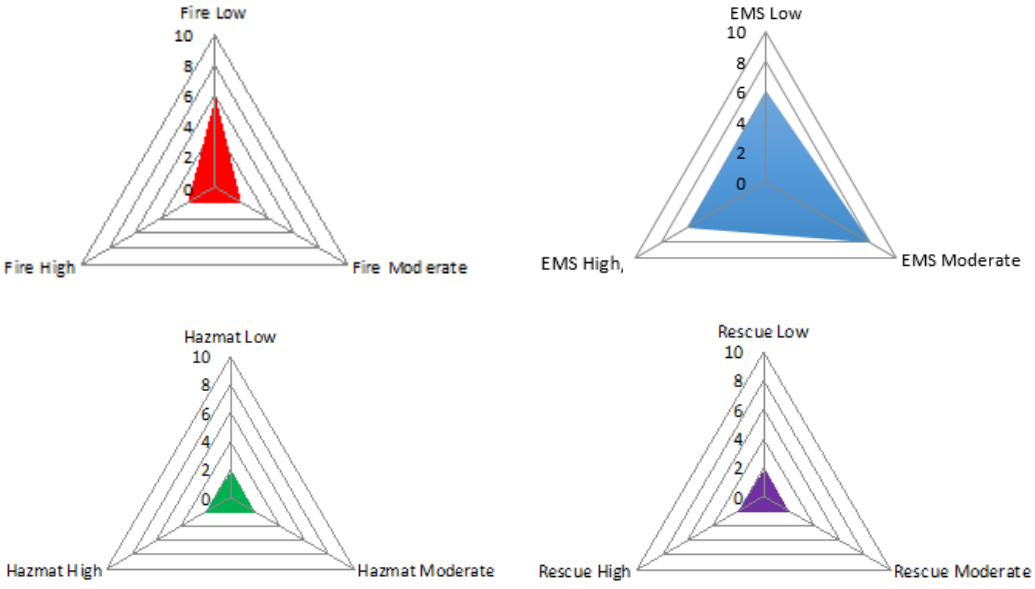


Figure 36: SPZ4 Risk Assessment

Station Planning Zone 5

SPZ 5 represents 13.7% ($1.9 billion) of the total assess value for the jurisdiction and 17.4% of the total square miles. The weighted community demand, a factor of the frequency of incidents by risk classification, is indicative of 1,820 incidents with a call concurrency rate of 12.6%.

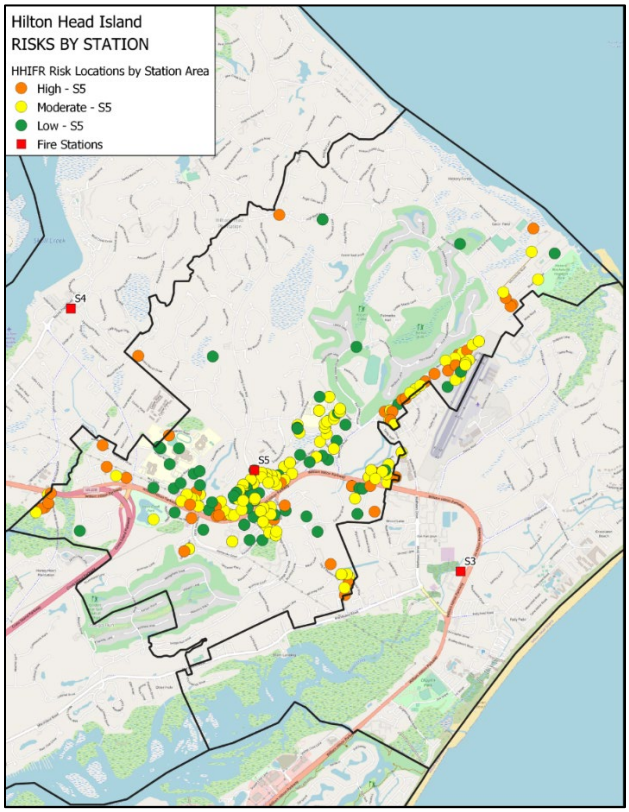


Figure 37: All Risk Occupancies for SPZ5

From the inspectable properties database within SPZ 5, there were 4 high-risk occupancies and 63 moderate-risk occupancies.

The risk severity is presented by category and classification to better understand the relationship of risk by program area. Fire related risks had a much greater frequency of low- and moderate-risk incidents than high-risk incidents.

EMS related incidents had a higher frequency of low- and moderate-risk incidents, but overall has a more evenly distributed risk profile between low-, moderate-, and high-risk incidents.

Hazardous materials incidents were evenly distributed at a low frequency value.

Rescue related incidents had a relatively more frequent rate of low-risk incidents with an even distribution of infrequent moderate and high risks.

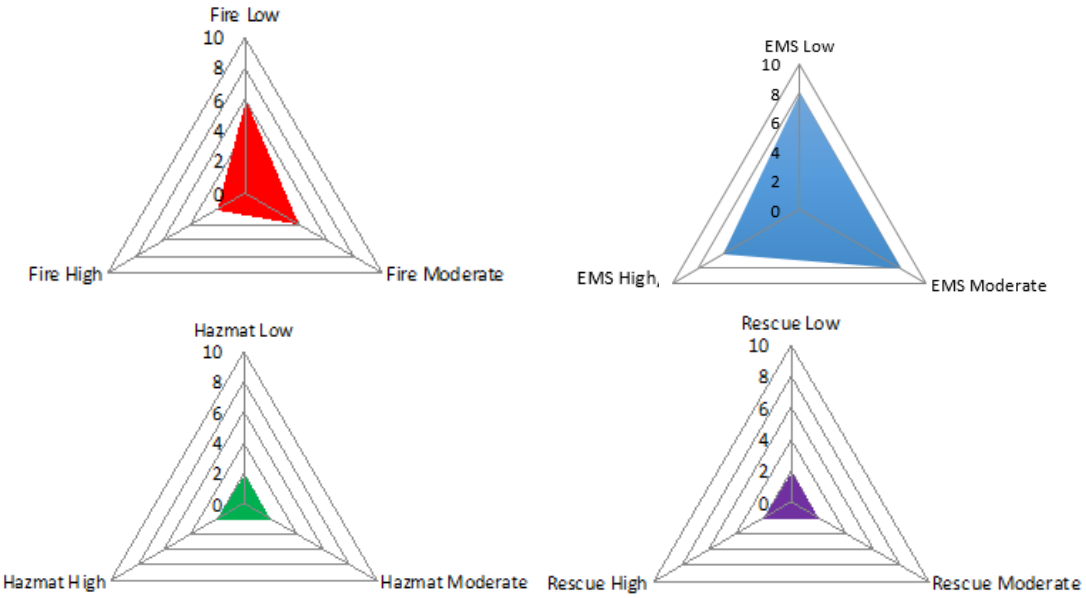


Figure 38: SPZ5 Risk Assessment

Station Planning Zone 6

SPZ 6 represents 17.7% ($2.5 billion) of the total assess value for the jurisdiction and 10.62% of the total square miles. The weighted community demand, a factor of the frequency of incidents by risk classification, is indicative of 890 incidents with a call concurrency rate of 8.3%.

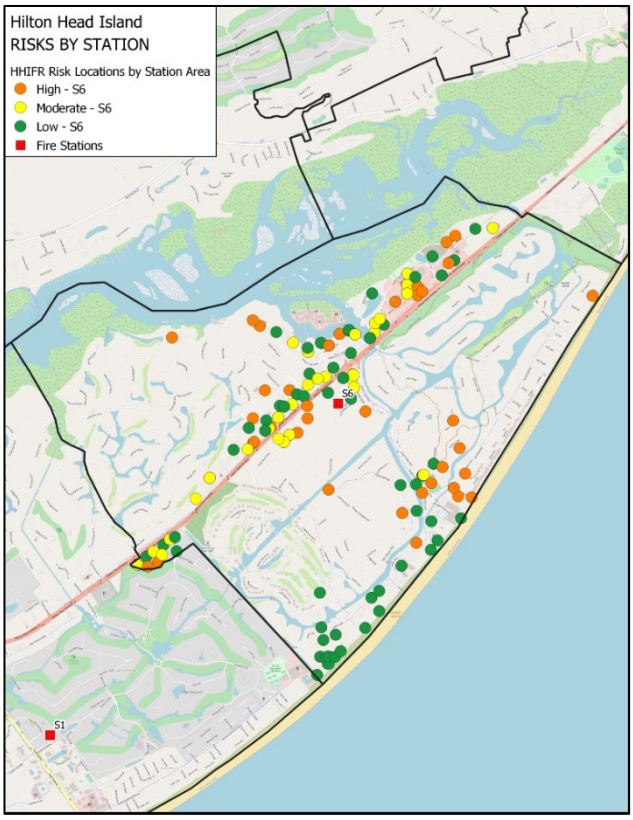


Figure 39: All Risk Occupancies for SPZ6

From the inspectable properties database within SPZ 6, there were 47 high-risk occupancies and 102 moderate-risk occupancies.

The risk severity is presented by category and classification to better understand the relationship of risk by program area. Fire related risks had a much greater frequency of low-risk incidents than moderate- and high-risk.

EMS related incidents had an evenly distributed risk profile among low-, moderate-, and high-risk incidents.

Hazardous materials incidents were evenly distributed at a low frequency value.

Rescue related incidents had a relatively more frequent rate of low-risk incidents with an even distribution of infrequent moderate and high risks.

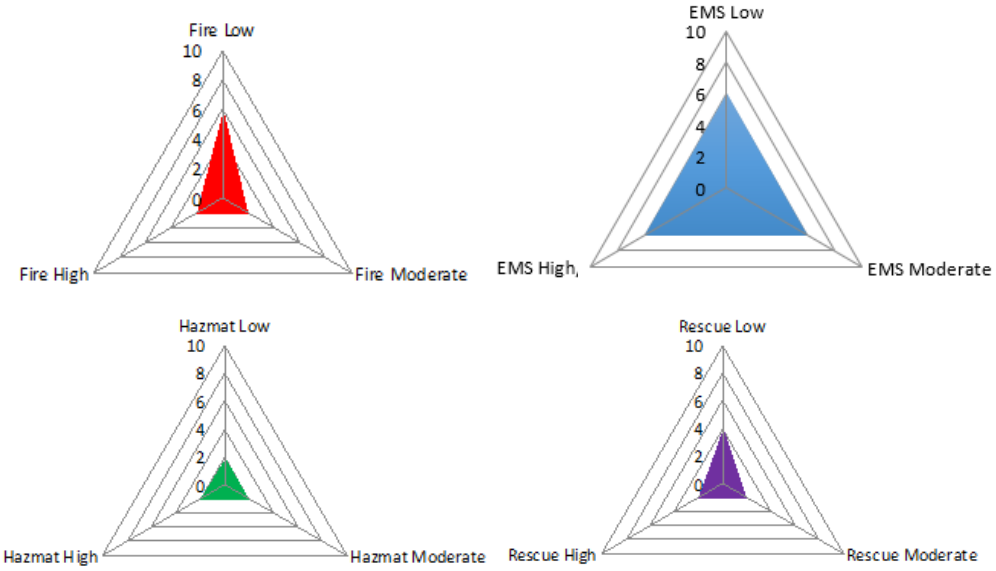


Figure 40: SPZ6 Risk Assessment

Station Planning Zone 7

SPZ 7 represents 7.9% ($1.1 billion) of the total assess value for the jurisdiction and 18.1% of the total square miles. The weighted community demand, a factor of the frequency of incidents by risk classification, is indicative of 928 incidents with a call concurrency rate of 8.0%.

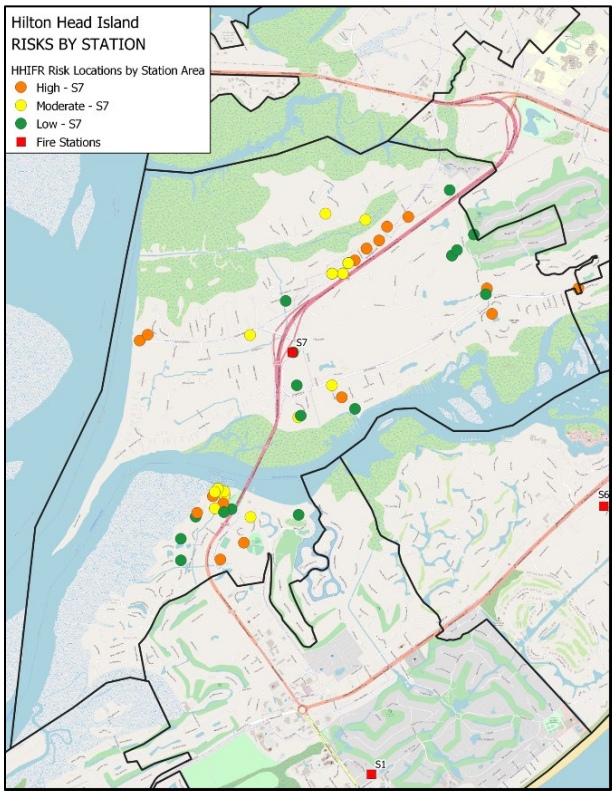


Figure 41: All Risk Occupancies for SPZ7

From the inspectable properties database within SPZ 7, there were 63 high-risk occupancies and 93 moderate-risk occupancies.

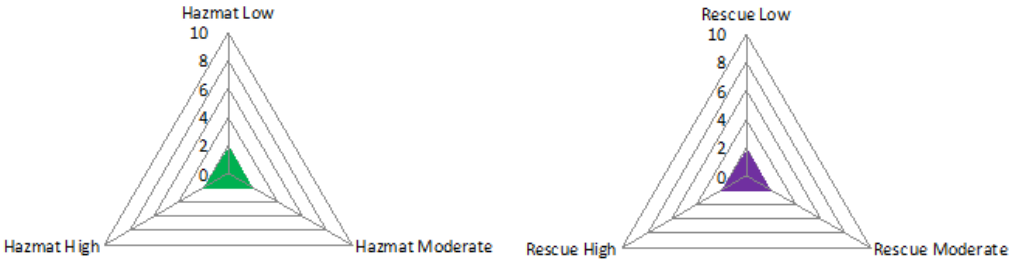
The risk severity is presented by category and classification to better understand the relationship of risk by program area. Fire related risks had a much greater frequency of low-risk incidents than moderate- and high-risk incidents.

EMS related incidents had an evenly distributed risk profile among low-, moderate-, and high-risk incidents.

Hazardous materials incidents were evenly distributed at a low frequency value.

Rescue related incidents were evenly distributed at a low frequency value.

Figure 42: SPZ7 Risk Assessment



Critical Task Analysis

A critical task analysis was developed by Fire Rescue staff through a facilitated process that included recommendations from the CFAI and NFPA, along with current staffing and deployment models. Risks were categorized by program area and stratified by the risk developed through critical task matrices.

Critical tasks were developed for low, moderate, high, and maximum risk incidents for Fire Suppression, and low, moderate, and high for EMS, Technical Rescue, and Hazmat. In addition to the critical tasks for personnel requirements, a similar process was conducted to establish the appropriate apparatus required to assemble the requisite personnel and equipment.

Fire Suppression

Low Risk

A single fire apparatus with a two-person crew has the capabilities to manage low risk fire incidents. Low risk fire incidents may include fire alarm activations, arcing electrical equipment, smoke scares and motor vehicle accidents where no EMS is necessary.

Critical Task	Needed Personnel
Command / Control	1
Investigation / Extinguishment	1
Total	**2**

Responding Units	Minimum Staffing
Engine/ Truck	2
Total Response Provided	**2**
Personnel Required by Critical Tasks	**2**

Table 33: Critical Tasks Analysis for Low-Risk Fire Responses

Moderate Risk

Moderate risk fire incidents are mitigated by one fire apparatus with a minimum ERF of three, or two apparatus with a minimum ERF of four. As Fire Rescue operates both jump and split crews, the minimum staffing of the first apparatus dispatched dictates the need to add an additional apparatus to meet the needed ERF of three. Types of incidents included in the category are contained cooking fires, trash fires and passenger vehicle fires.

Critical Task	Needed Personnel
Command / Control	1
Investigation / Extinguishment	2
Total	**3**

Responding Units	Minimum Staffing
Engine	2
Engine / Truck	2 (3-4)
Total Response Provided	**3-4**
Personnel Required by Critical Tasks	**3**

Table 34: Critical Tasks Analysis for Moderate Risk Fire Responses

High Risk

High risk fire incidents are fires that occur in a single-family residential structure or a water vehicle (boat, barge, etc.). Response for high-risk incidents include an ERF of 14 responding in three engines, one truck, one medic and the Battalion Chief.

Critical Task	Needed Personnel
Command/Control	1
Initial Fire Attack	2
Search	2
Ventilation/Utilities	2
Water Supply / Secondary Fire Attack	2
IRIC	2
Pump Operator	1
Sub-Total Critical Tasks	**12**
Medical / Rehab	1
Safety	1
Total	**14**

Battalion Chief	1
Engine	3
Engine	3
Truck	4
Engine with Tag Medic	3
Total Response Provided	**14**
Personnel Required by Critical Tasks	**14**

Table 35: Critical Tasks Analysis for High-Risk Fire Responses

Maximum Risk

Maximum risk fire incidents receive an ERF of 17, adding an additional engine to the units assigned to a high-risk incident. Commercial structure fires make up all maximum risk fire incidents.

Critical Task	Needed Personnel
Command/Control	1
Initial Fire Attack	2
Search	2
Ventilation/Utilities	2
Water Supply / Secondary Fire Attack	3
RIC	3
Pump / Aerial Operator	2
Sub-Total Critical Tasks	**15**
Medical / Rehab	1
Safety	1
Total	**17**

Responding Units	Minimum Staffing
Battalion Chief	1
Engine	3
Engine	3
Engine	3
Truck	4
Engine with Tag Medic	3
Total Response Provided	**17**
Personnel Required by Critical Tasks	**17**

Table 36: Critical Tasks Analysis for Maximum Risk Fire Responses

Emergency Medical Services

Low Risk

All Alpha, Bravo, Charlie, and Omega level incidents are identified as low risk EMS incidents. These incidents are mitigated with an ERF of two on a single medic unit.

Treatment/Transport	2
Total	**2**

Responding Units	Minimum Staffing
Medic	2
Total	**2**

Table 37: Critical Tasks Analysis for Low-Risk EMS Responses

Moderate Risk

All Delta level incidents are identified as moderate risk EMS incidents. These incidents are mitigated with an ERF of four, consisting of the closest medic unit and next closest unit.

Critical Task	Needed Personnel
Treatment / Transport	4
Total	**4**

Responding Units	Minimum Staffing
Medic	2
Closest Unit	2
Total	**4**

Table 38: Critical Tasks Analysis for Moderate Risk EMS Responses

High Risk

All Echo level incidents are identified as high-risk EMS incidents. These incidents are mitigated with an ERF of seven, consisting of the closest medic unit, the next two closest units, and the Battalion Chief.

Critical Task	Needed Personnel
Treatment / Transport	7
Total	**7**

Responding Units	Minimum Staffing
Medic	2
Closest Unit	2
Closest Unit	2
Battalion Chief	1
Total	**7**

Table 39: Critical Tasks Analysis for High-Risk EMS Responses

Technical Rescue

Low Risk

Low risk technician rescue incidents are mitigated by one fire apparatus with an ERF of 2. Types of incidents included in the low-risk category include lockouts, ring removals, and removal of persons from a stalled elevator.

Critical Task	Needed Personnel
Command/Investigation	1
Extrication / Rescue / Removal	1
Total	**2**

Responding Units	Minimum Staffing
Engine/Truck	2
Total Response Provided	**2**
Personnel Required by Critical Tasks	**2**

Table 40: Critical Tasks Analysis for Low-Risk Technical Rescue Responses

Moderate Risk

Moderate risk technical rescue incidents are mitigated by an engine, truck, medic, and the Battalion Chief, for a total ERF of 8. Moderate risk rescue incidents include surf rescues, searches, and vehicle extrications.

Critical Task	Needed Personnel
Command/Investigation	1
Hazard Control	2
Extrication / Rescue / Removal	3
Medical	2
Personnel Required by Critical Tasks	**8**

Responding Units	Minimum Staffing
Engine	2
Truck	3
Medic	2
Battalion Chief	1
Total Response Provided	**8**
Personnel Required by Critical Tasks	**8**

Table 41: Critical Tasks Analysis for Moderate Risk Technical Rescue Responses

High Risk

High risk technical rescue incidents are mitigated by an engine, medic, Battalion Chief, rescue, and a team mobilization, for a total ERF of 17. High risk rescue incidents include building collapse, high angle rescues and swift water rescues.

Critical Task	Needed Personnel
Command/Investigation	1
Medical	2
Safety	1
Planning	1
Team Lead	1
Team Mobilization (Technicians)	10
Logistics	1
Total Critical Tasks	**17**

Responding Units	Minimum Staffing
Battalion Chief	1
Engine	2
Rescue 1 (Technician Level)	3
Medic	2
Team Mobilization	9
Total Response Provided	**17**
Personnel Required by Critical Tasks	**17**

Table 42: Critical Tasks Analysis for High-Risk Technical Rescue Responses

Hazardous Materials

Low Risk

Low risk hazardous material incidents are mitigated with an engine or truck with a total ERF of 2. Low risk incidents include flammable or combustible liquid spills under five gallons, natural gas leaks with tanks under 21 pounds, and investigations with no release or material located.

Critical Task	Needed Personnel
Command/Investigation	2
Total	**2**

Responding Units	Minimum Staffing
Engine /Truck	2
Total Response Provided	**2**
Personnel Required by Critical Tasks	**2**

Table 43: Critical Tasks Analysis for Low-Risk Hazardous Materials Responses

Moderate Risk

Moderate risk hazardous material incidents are mitigated with an engine, medic, hazmat unit and Battalion Chief for a total ERF of 8. Moderate risk incidents include flammable or combustible liquid spills over 5 gallons, natural gas leaks with tanks over 21 pounds, or chemical spill or leak involving unstable or reactive materials.

Critical Task	Needed Personnel
Command and Control	1
Identify/Confine/Abatement	2
Back-up	2
Safety	1
Decon	2
Total	**8**

Responding Units	Minimum Staffing
Battalion Chief	1
Engine	2
Hazmat 2 (Technician Level)	3
Medic	2
Total Response Provided	**8**
Personnel Required by Critical Tasks	**8**

Table 44: Critical Tasks Analysis for Moderate Risk Hazardous Materials Responses

High Risk

High risk hazardous material incidents are mitigated with the same ERF as a moderate incident, with the addition of a team mobilization for a total ERF of 17. High risk incidents include a biological investigation, confirmed biological hazard, or other toxic condition.

Critical Task	Needed Personnel
Command and Control	1
Branch Director	1
Science	1
Entry Team	3
Back-up	2
Incident Safety	1
Hazmat Safety	1
Decon	3
Medical	3
Planning	1
Sub-Total Critical Tasks	**17**
Support Level Tasks for Regional Hazmat (Bluffton)	4
Total	**21**

Responding Units	Minimum Staffing
Battalion Chief	1
Engine	2(3-4)
Hazmat 2 (Technician Level)	3(4)
Medic	2(3)
Team Mobilization	9
Total Response Provided	**17 (20-21)**
Personnel Required by Critical Tasks	**17**

Table 45: Critical Tasks Analysis for High-Risk Hazardous Materials Responses

Historical Perspective

To understand the critical tasking requirements and the time-based performance measurements of Fire Rescue's, as well as the distribution, concentration and reliability methodology utilized by the department, an understanding of basic fire and EMS concepts is helpful.

Every fire progresses through individual stages of development, from incipient to flashover. Flashover is the stage of fire development in which the contents of a room or building reach ignition temperatures, igniting all contents within that space. With flashover brings the chance of victim to survival to extremely unlikely and significant property loss certain. Modern construction materials and home finishes and furnishings can produce flashover conditions within 10 minutes of the fire's ignition. The need for rapid mitigation of fire incidents is illustrated in figure 43. The more quickly Fire Rescue's crews can arrive on scene and prevent the fire's growth, the greater the possibility of a positive outcome is for saving lives, mitigating hazards, and preventing increased property damage.

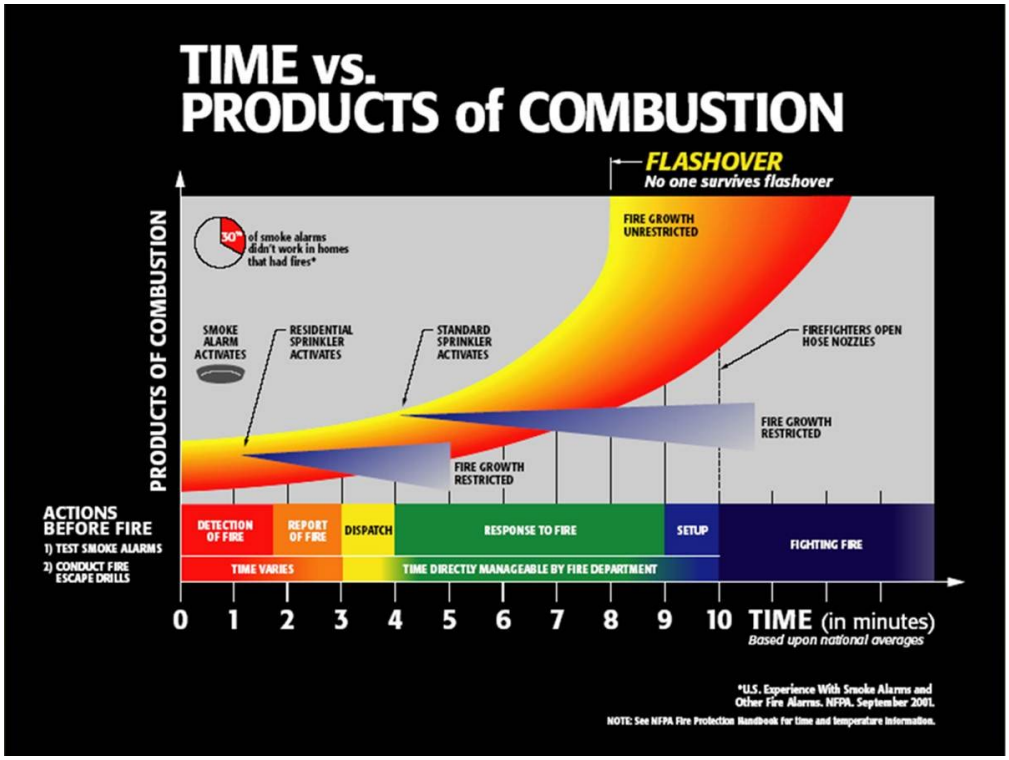


Figure 43: Time vs Products of Combustion

Rapid response to medical incidents is also time-dependent to begin life-saving treatment in the pre-hospital setting. Figure 44 illustrates the survival rate for a person in cardiac arrest decreases between 7-10% for every minute the patient does not receive quality cardiopulmonary resuscitation and defibrillation. The American Heart Association reports that bystander-witnessed cardiac arrest patients with a heart rhythm treatable by a defibrillator have a survival rate of 31% when EMS personnel provided quality CPR and defibrillation intervention within the survivability time frame.

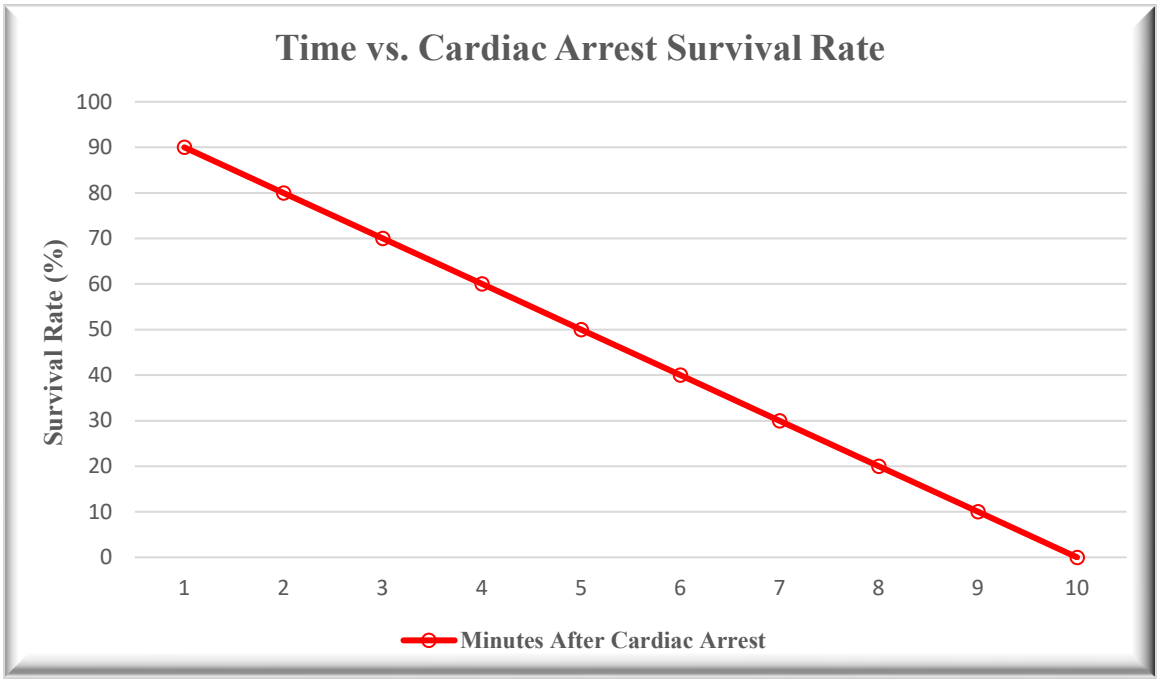


Figure 44: Cardiac Arrest Rates of Survival without CPR and Defibrillation

Geographic and Weather-Related Risks

The Town of Hilton Head Island and Fire Rescue have the potential to face a variety of natural and man-made incidents. Using the probability and consequence matrix, each major natural and man-made risk was evaluated to clearly define the risk rating.

Ground Cover Fires: **Moderate**

The South Carolina Forestry Commission reports that an average of 396 acres of land are burned per year in Beaufort County. Given the relatively small land areas affected by the fires and the terrain of Beaufort County, wildfires are considered a minor to moderate threat for the unincorporated and incorporated areas of Beaufort County.

Thunderstorms and Wind: **Moderate**

While most of the continental United States is mapped as having a design wind speed of 90 mph, the Atlantic and Gulf Coast areas have design wind speeds ranging from 100 mph to 150 mph. Wind events can also be the result of thunderstorms, which occur more often than hurricanes. Historical records from the National Climatic Data Center (NCDC) show that there have been over 185 wind events in Beaufort County since 1950 related to thunderstorms.

Flood: **High**

Beaufort County's Flood Insurance Rate Maps (FIRMs) show that an estimated two-thirds of the County's land mass lies within the 100-year floodplain, or Special Flood Hazard Area (SFHA). Data collected by the NCDC indicate that, since 1950, at least 30 floods occurred in Beaufort County. Combined, the 30 floods caused a total of $22.5 million in property damage and $1.5 million in crop damage. According to data from the South Carolina Hazard Research Laboratory, the percent chance per year of a flood is 46.88%.

Drought: **Low**

Droughts can result in a shortage of water for consumption and can affect hydroelectric power, recreation, and navigation. Severe droughts can lead to losses of wildlife, as well as increase the risk of wildfires. According to the South Carolina Hazards Research Lab, 21 droughts have occurred in Beaufort County in the last 65 years. This represents an annual probability of 32.81%.

Tornadoes: **Low**

Most of the recorded incidents of tornadoes in Beaufort County have been low-strength tornadoes with only one with a rating of F2 being recorded. Other recorded tornadoes were F0 or F1 tornadoes. Data was based on information from NCDC. The probability of a tornado occurring in Beaufort County in any given year is 27.69%.

Hurricanes and Tropical Storms: **High**

The South Carolina hurricane season begins June 1 and ends November 30. Hurricanes are classified as Category 1 through 5 using the Saffir-Simpson Hurricane Scale. Hurricane track data gathered from the South Carolina State Hazard Assessment indicate that from 1850 to 2015, 20 storms passed directly through Beaufort County. These included all named tropical storms, depressions, and hurricanes. On October 8, 2016, the eyewall of Hurricane Matthew passed very close to Hilton Head Island bringing over 13 inches of rainfall and 89 mph wind gusts. The aftermath resulted in flooding, beach erosion, and a large number of downed trees that substantially impacted power, water and sewer, roads, and other critical services.

Winter Weather: **Low**

While winter storms have had an effect on Beaufort County, even though they occur relatively infrequently. A snowstorm that occurred on February 10-11, 1973 resulted in Beaufort County receiving 11 inches of snow. The storm caused 30,000 tourists to be stranded on the State's highways, many needing to be rescued by helicopters. On January 24, 2000, nearly two inches of snow accumulated in Beaufort County and was the first measurable snow event since 1989. Based on the limited period of record for winter events, five major winter storm events have occurred within South Carolina in the last 20 years. However, only one of these resulted in winter precipitation and had a moderate to major impact on Beaufort County. According to the South Carolina Hazard Research Lab assessment, there is 1.5% chance in any given winter of a cumulative snow depth total of up to 10 inches of snow. The area is thus expected to experience this type of winter on average once every 65 years.

Earthquakes: **Low**

The United States Geological Service (USGS) rates areas of the United States for their susceptibility to earthquakes based on a 10% probability of a given peak force being exceeded in a 50-year period. Beaufort County's peak acceleration is 5-6% which is considered significant. Earthquake epicenter location data were collected for the period from 1698 to 2015 and indicate that there has been only one earthquake with its epicenter in Beaufort County. While the South Carolina Hazard Research Lab reports only a 0.32% annual probability of a strong earthquake in the region, the effects of such an event on Beaufort County could be devastating.

Contagious Disease Outbreaks/Pandemics: **High**

The Southeastern United States has historically had to mitigate the impacts of mosquito-borne diseases such as Encephalitis and the West Nile Virus. The high degree of tourism and visitors to the Town may introduce additional opportunities for the spread of communicable diseases. However, of specific note is the impact that a global pandemic such as Covid-19 has had on municipalities, businesses, and emergency services.

All indications are the Town of Hilton Head Island has managed the pandemic extremely well and the economic impact has been manageable. However, the next pandemic may have a different pathology, impact, and/or response mitigation strategy that may result in a different experience. Therefore, a more risk averse rating is provided to emphasize the need for continuous planning and preparation.

Man-Made Risks

Aviation: **Moderate**

The Hilton Head Island Airport is owned and operated by Beaufort County and is located within the Town and response jurisdiction of Hilton Head Island. Fire Rescue does not have primary responsibilities of response and mitigation on airport property. Emergencies occurring on airport property are handled by Beaufort County Aircraft Rescue and Firefighting (ARFF). A Memorandum of Understanding (MOU) and mutual-aid agreement are in place for Fire Rescue to provide additional support for ARFF as necessary. Although having an airport in the community establishes the potential for an aircraft emergency, data does not support an aircraft emergency as a highly probable hazard or significant risk to the community.

Highway: **Low**

U.S. Route 278 is the only highway coming to Hilton Head Island. The majority of traffic on Hilton Head Island is composed of County and Town roadways and residential streets. High-risk transportation materials are relatively limited throughout the community which contributes to the low volume of transportation-related hazardous materials events and motor vehicle accidents.

D. Community Feedback

Stakeholder Input Process

For a successful organization to continue to provide excellent service to the community, the voice of the community must be welcomed to drive the future of the organization. Fire Rescue conducted a strategic planning process between April and May of 2018, during which time stakeholder input was obtained by the organization's personnel and members of the community. Input obtained from internal and external parties were reviewed and implemented within Fire Rescue's goals and objectives. Organizational stakeholders included members from all ranks and divisions of the Fire Rescue. Community stakeholders involved in the process included residents, public utilities districts, plantation representatives, and other key service providers within Fire Rescue's coverage area.

Community Expectations

Community expectations were evaluated through the strategic planning process as well as via communication with fire administration, line personnel, Town Council, and stakeholders residing in Fire Rescue's response jurisdiction. In addition to the participation of community stakeholders in the Strategic Planning process, the representativeness of the organizational structure and continuous community interactions were determined to provide the requisite assessment of community expectations.

The community stakeholders provided direct structured feedback by identifying community priorities. The intent is to help guide Fire Rescue in the allocation of time, energy, and resources to services most desired by the community. The three highest priority programs for the community are EMS, Fire Suppression, and 911 Communications. These prioritized results are provided below.

Programs	Ranking	Score
Emergency Medical Services	1	264
Fire Suppression	2	218
Fire Rescue E911 Communications	3	207
Rescue – Basic and Technical	4	190
Domestic Preparedness Planning and Response	5	146
Community Risk Reduction	6	95
Hazardous Materials Mitigation	7	77
Public and Life Safety Education	8	70
Fire Investigation	9	65

Table 46: Community Priorities from 2019-2024 Strategic Plan

Community Communication Survey

Between March and June 2021, Fire Rescue conducted a community-wide survey to understand the best methods for communicating with citizens and visitors. Hard copies of the survey were sent to all senior living care facilities, and a digital survey was available through the Town's Virtual Open Town Hall comment portal. With close to 500 responses, many of whom were between ages of 51 and 70, the results of the survey are outlined below. Information obtained from this survey will be used to guide future communication from Fire Rescue to the community.

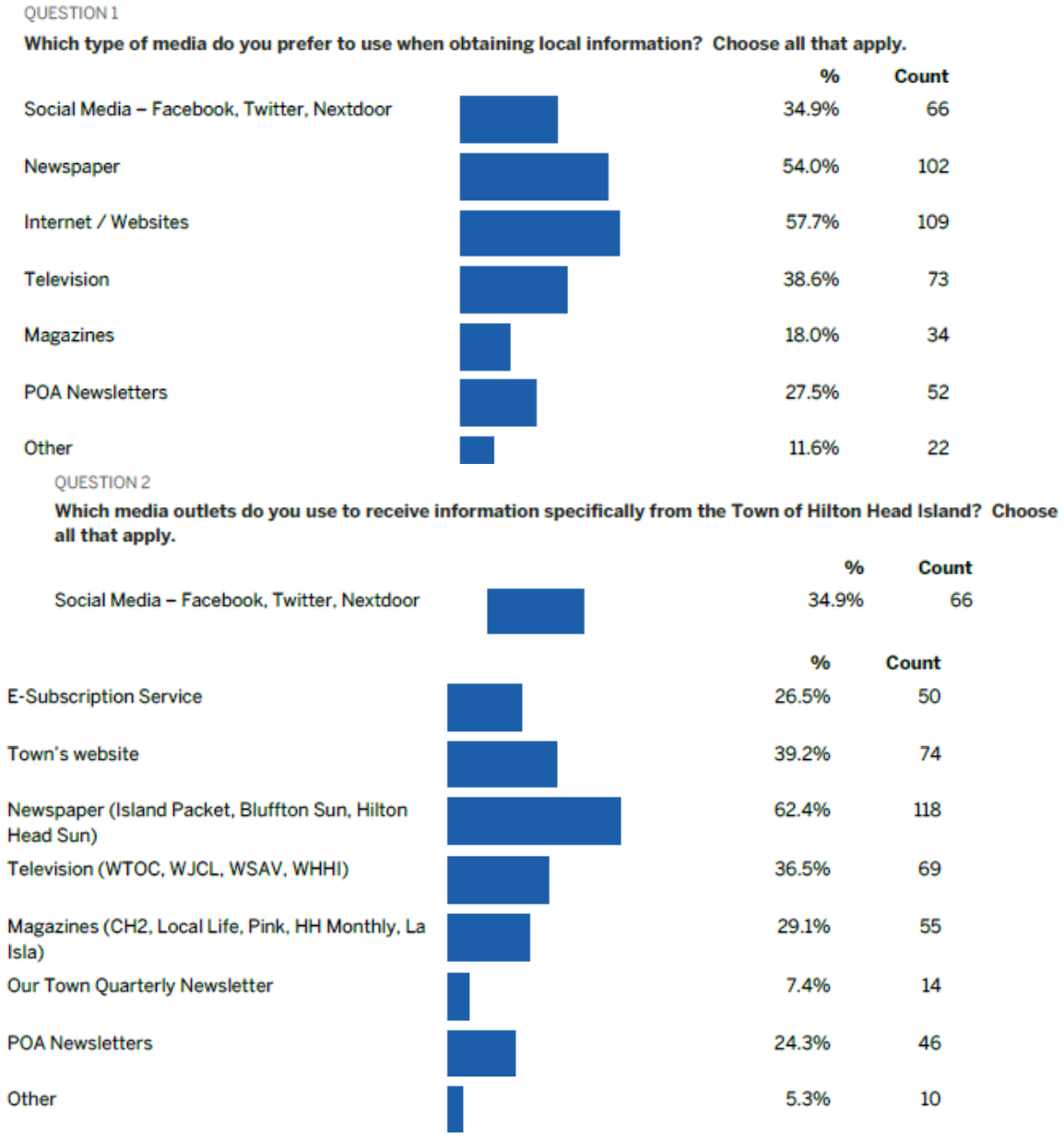


Figure 45: Community Communication Survey Results

EMS Patient Survey

Beginning in July of 2019, Fire Rescue implemented a patient care survey attached to all EMS invoices. Patient's gain access to the voluntary survey through the payment portal once they receive their invoice. Twelve questions are included in the survey, focused on patient experience, timely response and a clean, safe environment for the patient while under Fire Rescue's care. As responses to the survey to date have been minimal, the department is pleased with the results this avenue of feedback has provided.

Guiding Principles

Vision
To strive for excellence in all that we do!

Mission
Hilton Head Island Fire Rescue is committed to serving our citizens and visitors by preserving life, protecting property, and conserving the environment.

Core Values
Hilton Head Island Fire Rescue Core Values are to serve our community through:

- Compassion
- Integrity
- Professionalism
- Diversity

Hilton Head Island Fire Rescue's 2019-2023 vision is continual organizational improvement utilizing the international accreditation model for emergency services, mission-focused on prevention, education, preservation, protection, and conservation, while valuing compassion, integrity, professionalism, and diversity.

- **H**aving the community's best interest in mind, we will continue to connect with them through relevant outreach methods and bolster our emergency communications to meet changing needs.
- **H**elping our personnel meet the needs of the public, we will endeavor to provide an appropriately staffed organization that is trained, equipped, and ready to meet the changing needs of those who live, work and play on the island.
- **I**n an effort to effectively meet evolving needs, our concentration on enhancing our EMS program will provide for more positive outcomes, contributing to the Hilton Head Island way of life.
- **F**or us to be our best and to meet all expectations, we will continue to seek and embrace new technology that will help us serve all stakeholders in an efficient manner.
- **R**emembering our history but always looking to the future, we will always remain committed to our calling by holding each other accountable for fulfilling our mission, living our values, accomplishing our goals, and making this vision a reality.

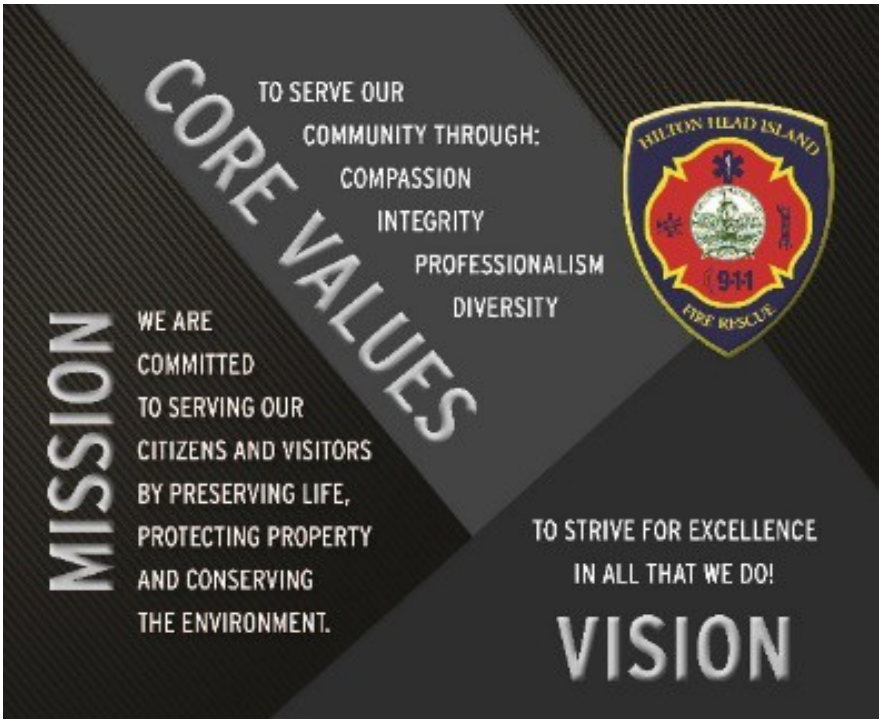


Figure 46: Fire Rescue's Vision, Mission and Value Statement

Organization's Goals

To achieve the mission of Fire Rescue, SMART goals and objectives were established to provide clear direction and address concerns of the community. These goals will direct the organization to its desired future while having reduced the obstacles along the way. Goals for the organization are reviewed annually by Senior Staff and include:

- Create the appropriate staffing model to fulfill the needs of the department and best serve the community.
- Enhance the professional development of our personnel to meet the needs of our organization and community.
- Improve the Community Outreach programs to promote our message to the community.
- Enhance emergency communications through recognized best practices and regulations to meet organizational needs.
- Improve the quality of EMS care on Hilton Head Island.
- Enhance information technology systems to support the mission and improve efficiencies.

E. Program Goals and Objectives

Overview

Hilton Head Island Fire Rescue maintains goals and objectives for each division and program through Annual Compliance Reports. This enables Fire Rescue to maintain a single document that is reviewed annually, eliminating the confusion of referencing multiple documents. Copies of reports are distributed to all personnel, the Town Manager, Town Council, as well as the community. Realistic and achievable goals and objectives must be identified to guide personnel toward meeting Fire Rescue's mission. Current goals and objectives for each program for the year 2021 are as follows:

Operations

- Continue to monitor and adapt to the COVID-19 pandemic response.
- Review and develop new methods for better turnout times.
- Develop new methods for recruitment and retention.
- Emphasize command and control training for all personnel.

Emergency Medical Services

- Review and update EMS protocols.
- Implement NREMT NCCP program.
- Revise current HIPAA compliance program to new policy format.
- Recover and restore EMS operations from the COVID-19 pandemic.

Technical Rescue

- Deliver monthly training to team members.
- Provide necessary specialty training classes.
- Continue to develop and implement planning group.
- Prepare for EMAP Accreditation for Type IV USAR Team.
- Increase floodwater response capabilities.
- Remain current with technology, equipment and training trends.
- Continue to be engaged with local mutual aid departments.
- Test response capabilities annually.

Hazardous Materials Emergency Response Team

- Remain a fully deployable resource for our identified response area.
- Continue to reach out to mutual aid partners for training opportunities.
- Provide training to ensure team members meet required standards.
- Consult outside vendors for additional training to meet proposed requirements for team personnel.
- Begin succession planning for Team Coordinator.

Bureau of Fire Prevention

- Implement new inspection software to increase inspection capabilities in the field.
- Review current community risk reduction programs and ensure these programs are effective, making changes to the programs as needed.
- Utilize new 360-degree fire investigation camera to capture fire scenes with enhanced detail.

Communications

- Finalize plan for emergency relocation through written policy or a hard back-up facility.
- Complete upgrade on CAD System due for mid-year improvements.
- Increase training capabilities for personnel with the launch of new LMS.
- Review and develop new methods to achieve call processing time goal of 90% of calls within 80 seconds.
- Implement new Text to 911 program.

F. Current Deployment and Performance

Deployment Model

Fire Rescue's utilization of closest unit AVL dispatching largely erodes the value of a traditional measure such as zone reliability that is better answered with other system measures such as workload, call concurrency, response time performance, and outcome measures. For example, performance measures for SPZ 1 are more appropriately assessed from the citizen's lens irrespective of which units provided the service. The utilization of AVL dispatching introduces ambiguity into the traditional measure of reliability because it is specifically designed to send the closest units whether the "primary" unit was available or not.

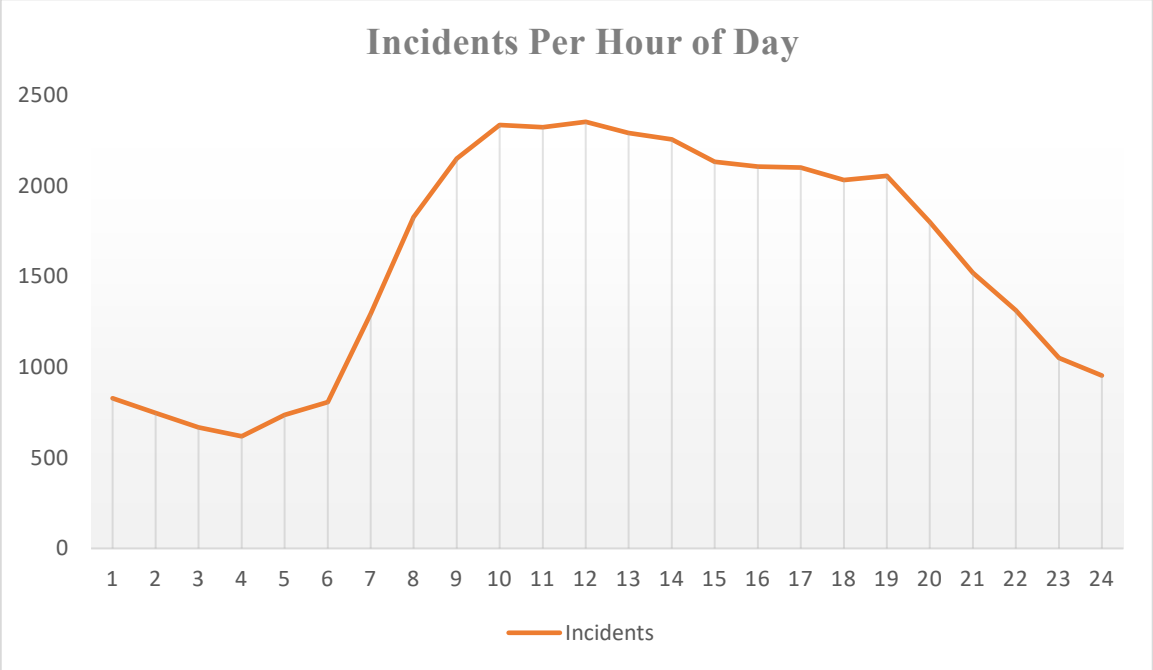


Figure 47: Average Fire Related Calls per Day by Hour of Day (2016-2020)

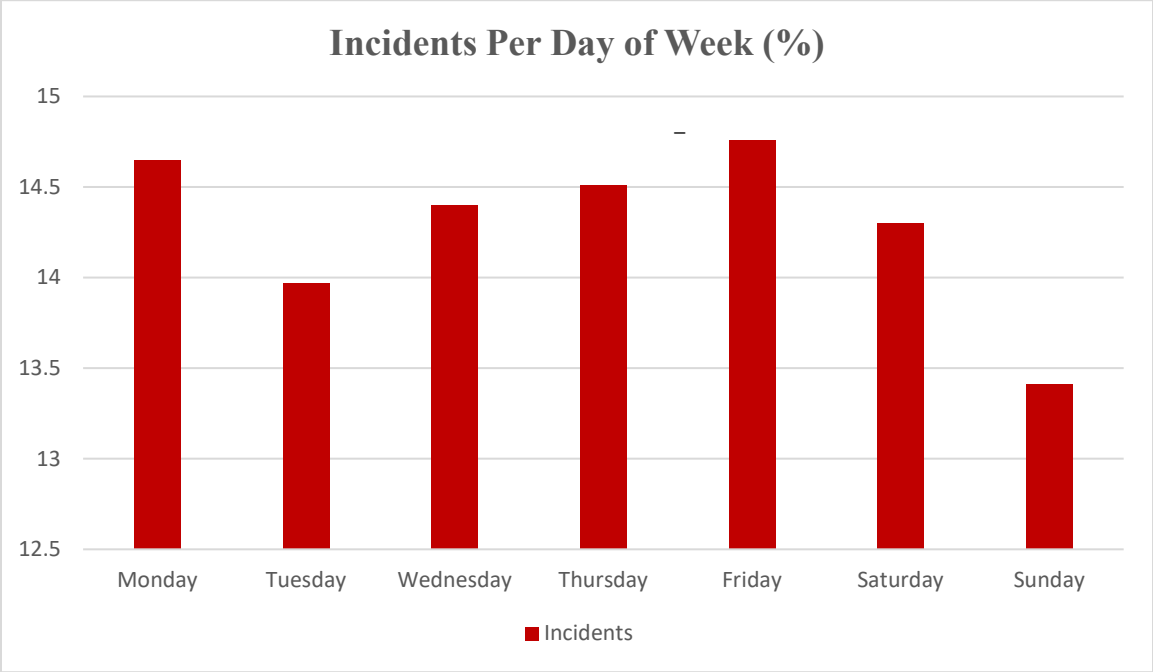


Figure 48: Total Incidents per Day of Week (2016-2020)

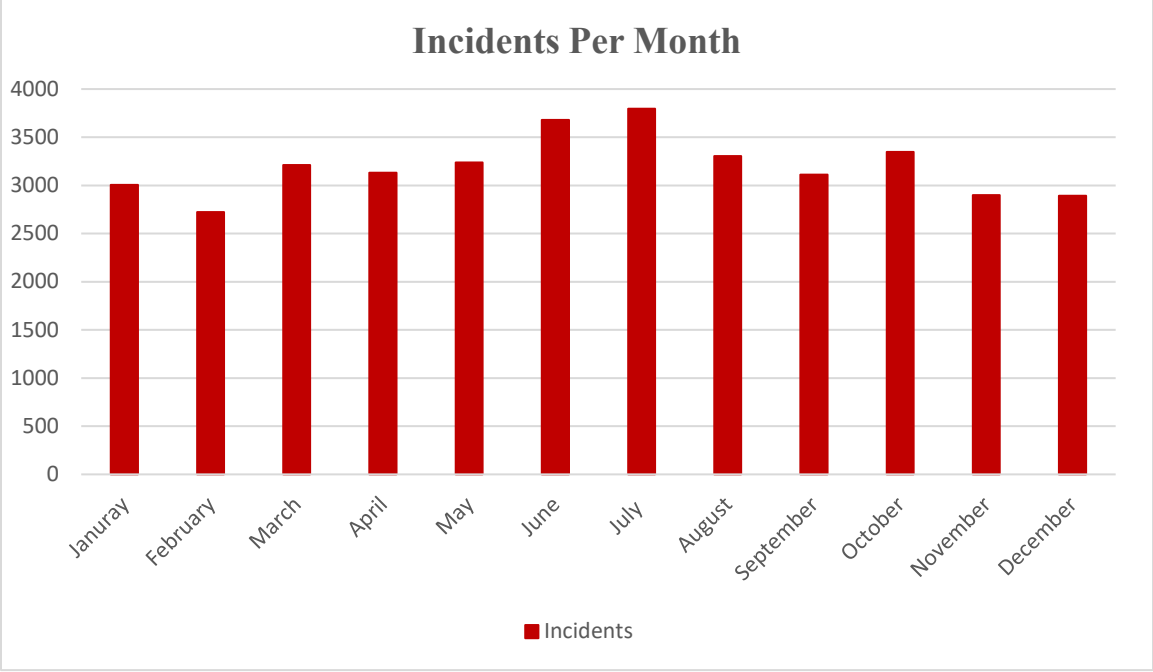


Figure 49: Total Incidents per Month (2016-2020)

	2016	2017	2018	2019	2020	Total
Content Loss Value	$296,009	$516,265	$1,902,515	$459,045	$1,402,329	**$4,576,163**
Property Loss Value	$2,422,460	$2,108,841	$3,226,179	$1,359,080	$1,780,808	**$10,897,368**
Total Save Value	$124,802,946	$349,097,835	$136,389,561	$274,689,794	$83,557,707	**$968,537,843**
Injuries	2	6	3	5	2	**18**
Fatalities	0	0	0	0	1	**1**

Table 47: Fire Loss Statistics (2016 – 2020)

Station Planning Zone	2016	2017	2018	2019	2020
Station 1	$272,400	$44,690	$1,540,841	$1,258,390	$226,312
Station 2	$522,250	$395,175	$1,214,000	$40,000	4508,000
Station 3	$1,253,449	$972,927	$96,015	$323,550	$281,347
Station 4	$111,260	$343,030	$1,515,888	$21,930	$311,900
Station 5	$390,800	$308,784	$409,150	$44,425	$13,000
Station 6	$42,550	$176,830	$3,600	$24,000	$1,257,725
Station 7	$125,760	$22,370	$155,750	$94,830	$576,000

Table 48: Property Loss by Station Planning Zone

Performance Benchmarks

Identifying current performance measures establishes a means of comparison to identify strengths and weaknesses within Fire Rescue's response system. Hilton Head Island Fire Rescue establishes performance benchmarks based on historical data and the National Fire Protection Association (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*. Response and Trave times for the ERF were determined utilizing the following formulas:

ERF Travel Time = ERF Total Response Time – Alarm Handling – Turnout

ERF Response Time = Alarm Handling + Turnout + ERF Travel Time

Alarm Handling Time – The time interval from the receipt of the alarm at the primary public safety answering point (PSAP) until the beginning of the transmittal of the response information to emergency response facilities and emergency response units.

Turnout Time – The time interval that begins when the emergency response facilities and units' notification process begins and ends at the beginning point of travel time.

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

Total Response Time – The time interval from the receipt of the alarm at the agency's PSAS to when the unit(s) arrives at the scene. The Total Response Time is calculated using the formula:

Alarm Handling Time + Turnout Time + Travel time = Total Response Time

The following benchmark objectives are provided for the first arriving unit and the effective response force (ERF) of Fire Rescue's resources.

All Programs

For 90 percent of all program responses, the total alarm handling time shall be 1 minute and 20 seconds.

For 90 percent of all program responses, the travel time for all calls shall be 5 minutes.

Fire Suppression

All Fire Incidents

For 90 percent of all fire responses, the total response time for the arrival of the first-arriving unit, staffed with 2 firefighters, shall be 8 minutes and 50 seconds in all areas. The first-due unit for all risk levels shall be capable of: providing 500 gallons of water and 1,500 gallons per minute (GPM) pumping capacity; initiating command; requesting additional resources; establishing an attack line, flowing a minimum of 150 gpm; establishing an uninterrupted water supply; and rescuing at risk victims. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Low Risk Fire Incidents

For 90 percent of all low-risk fire responses, the total response time for the arrival of the first-arriving unit, staffed with 2 firefighters, shall be 8 minutes and 50 seconds. The first-due unit for all risk levels shall be capable of: providing 500 gallons of water and 1,500 gallons per minute (GPM) pumping capacity; initiating command; requesting additional resources; establishing an attack line, flowing a minimum of 150 gpm; establishing an uninterrupted water supply; and rescuing at risk victims. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Moderate Risk Fire Incidents

For 90 percent of all moderate risk fire responses, the total response time for the arrival of the ERF, staffed with 3 firefighters, shall be 12 minutes. The ERF shall be capable of: investigating and safely mitigating moderate-risk fire responses; providing 500 gallons of water and 1,500 gallons per minute (GPM) pumping capacity; initiating command; requesting additional resources; establishing an attack line, flowing a minimum of 150 gpm; establishing an uninterrupted water supply; and rescuing at risk victims on incidents that are escalated. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

High Risk Fire Incidents

For 90 percent of all high-risk fire responses, the total response time for the arrival of the ERF, staffed with 14 firefighters and officers, shall be 15 minutes. The ERF shall be capable of: establishing command; appointing a site safety officer; providing an uninterrupted water supply; advancing an attack line and a backup line for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two-in and two-out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Unless the minimum requirements of OSHA's two-in/two-out rule are met, guidelines established by Fire Rescue prohibit the entry of personnel into involved structures unless there is an immediate life-safety threat and entry must be made to rescue individuals. Even then, a risk analysis shall be considered as to the viability of victims prior to entry. Fire can be attacked in accordance with best practices by using streams, cooling or removing fuels, or isolating the fire. Otherwise, personnel shall wait until sufficient forces are present to comply with two-in/two-out regulations.

Maximum Risk Fire Incidents

For 90 percent of all maximum risk fire responses, the total response time for the arrival of the ERF, staffed with 17 firefighters and officers, shall be 20 minutes. The ERF shall be capable of: establishing command; appointing a site safety officer; providing an uninterrupted water supply; advancing an attack line and a backup line for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two-in and two-out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and

overhaul. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Emergency Medical Services

All Risk EMS Incidents

For 90 percent of all EMS incidents, the total response time for the first arriving unit, staffed with two firefighters (one EMT and one Paramedic), shall be 8 minutes and 5 seconds. The first arriving unit for all risk levels shall be capable of: providing advanced life support; initiating command; requesting additional resources; establishing patient contact and scene control; performing a patient assessment; providing treatment of injury and illness; and packing for and/or transporting the patient to a definitive health care facility. All operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Low Risk EMS Incidents

For 90 percent of all low-risk EMS response incidents, the total response time for the ERF, staffed with two firefighters (one EMT and one Paramedic), shall be 8 minutes and 5 seconds. The ERF shall be capable of: providing advanced life support; initiating command; requesting additional resources; establishing patient contact and scene control; performing a patient assessment; providing treatment of injury and illness; and packing for and/or transporting the patient to a definitive health care facility. All operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Moderate Risk EMS Incidents

For 90 percent of all high-risk EMS response incidents, the total response time for the ERF, staffed with four firefighters (three EMTs and one Paramedic), shall be 9 minutes and 30 seconds. The ERF shall be capable of: advanced life support; establishing command; requesting additional resources; maintaining patient contact and scene control; providing treatment of injury and illness; cardiopulmonary resuscitation; and packing for and transporting the patient to a definitive health care facility. All operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

High Risk EMS Incidents

For 90 percent of all maximum risk EMS response incidents, the total response time for the ERF, staffed with seven firefighters (six EMTs and one Paramedic), shall be 12 minutes. The ERF shall be capable of: advanced life support; establishing command; requesting additional resources; maintaining patient contact and scene control; providing treatment of injury and illness; crew-oriented cardiopulmonary resuscitation; and packing for and transporting the patient to a definitive health care facility. All operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Technical Rescue Services Program

All Risk Technical Rescue Incidents

For 90 percent of all risk levels for technical rescue incidents, the total response time for first arriving unit, staffed with two firefighters, shall be 8 minutes and 50 seconds in all areas. The first arriving unit shall be capable of: establishing command; evaluating the need for additional resources; sizing up to determine if a technical rescue response is required; isolating the scene and controlling immediate hazards; and providing advanced life support to victims without endangering response personnel. All operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Low Risk

For 90 percent of low-risk levels for technical rescue incidents, the total response time for first arriving unit, staffed with two firefighters, shall be 8 minutes and 50 seconds. The first arriving unit shall be capable of: establishing command; evaluating the need for additional resources; sizing up to determine if a technical rescue response is required; isolating the scene and controlling immediate hazards; and providing advanced life support to victims without endangering response personnel. All operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Moderate Risk Technical Rescue Incidents

For 90 percent of all moderate risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with eight firefighters shall be 15 minutes. The ERF shall be capable of: appointing a site safety officer; managing more complex hazards; accessing the victim; victim stabilization; extrication and disentanglement; treatment and transport. All operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

High Risk Technical Rescue Incidents

For 90 percent of all high-risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with 17 firefighters shall be 30 minutes. The ERF shall be capable of: providing a dedicated incident safety officer; site monitoring, ventilation, and support activities; rigging, cutting and/or shoring teams; and the knowledge, skills, and abilities to mitigate a technical rescue incident. All operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Hazardous Materials Services Program

All Risk Hazardous Materials Incidents

For 90 percent of all hazardous materials response incidents, the total response time for the first arriving unit, staffed with two firefighters, shall be 8 minutes and 50 seconds in all areas. The first arriving unit is capable of: establishing command; evaluating the need for additional resources; sizing up to determine if a hazardous materials response is required; isolating the scene and controlling immediate hazards; and providing basic life support to victims without endangering response personnel. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Low Risk

For 90 percent of all low risk level hazardous materials response incidents, the total response time for the first arriving unit, staffed with two firefighters, shall be 8 minutes and 50 seconds. The first arriving unit is capable of: establishing command; evaluating the need for additional resources; sizing up to determine if a hazardous materials response is required; isolating the scene and controlling immediate hazards; and providing basic life support to victims without endangering response personnel. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the public.

Moderate Risk Hazardous Materials Incidents

For 90 percent of all moderate risk hazardous materials response incidents, the total response time for the arrival of the ERF, including the hazardous materials response team, staffed with 8 firefighters, shall be 15 minutes. The ERF shall be capable of: appointing a site safety officer; managing more complex hazards; accessing and stabilization of victims; mitigating material releases; decontamination; and/or stabilizing the scene from private clean-up contractors.

High Risk Hazardous Materials Incidents

For 90 percent of all high-risk hazardous materials response incidents, the total response time for the arrival of the ERF, including the hazardous materials response team staffed with 17 firefighters, shall be 30 minutes. The ERF shall be capable of: providing a dedicated incident safety officer; emergency or mass decontamination; defensive containment measures; and the knowledge, skills, and abilities to mitigate a hazardous materials incident.

Reliability Factors

Reliability reflects the probability that adequate personnel, apparatus, and equipment are available for emergency incidents. Several proactive measures have been implemented by Fire Rescue to increase resource availability: 1) fire prevention and public education, 2) apparatus and equipment maintenance with scheduled replacement, and 3) utilization of the coverage crew during peak hours of service and training evolutions.

Several factors are used to measure the reliability of Fire Rescue's deployment system, such as call volume, response times, concurrent calls, and critical tasking for the incident. As Fire Rescue is comprised of split crews and jump crews, if a crew responds to a medical emergency in their planning zone, they are unavailable if a second incident arises. Using AVL, the next closest unit is assigned to the second incident. As four out of the seven station planning zones consist of jump crews, a second emergency in their area will require a response from the next closest station or unit. Figure 50 displays how many incidents occurred department wide while simultaneous incidents were occurring.

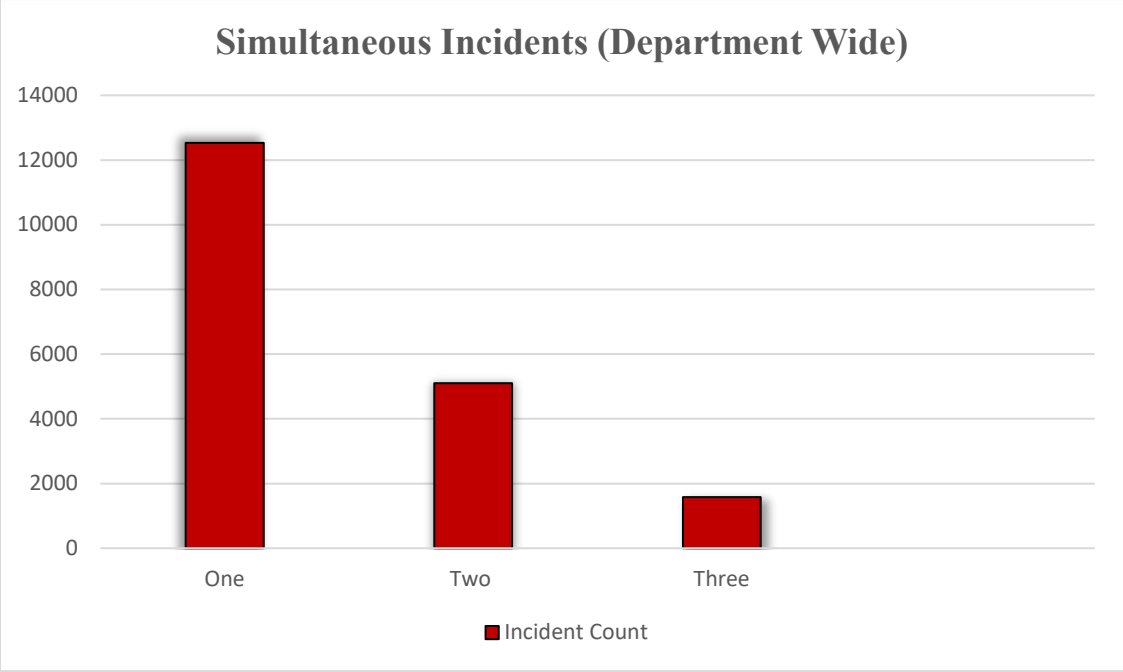


Figure 50: Department Wide Simultaneous Incidents (2016 – 2020)

Table 49 identifies the number of times where more than one incident occurred in the planning zone, by total number and percentage of the total incidents in that planning zone.

Simultaneous Incidents by SPZ			
SPZ	**Number of Incidents**	**Simultaneous in District**	**Simultaneous in District %**
1	7,871	1,158	8.2%
2	3,703	293	7.9%
3	4,513	433	9.6%
4	5,517	600	10.9%
5	8,371	1,203	14.4%
6	4,309	364	8.4%
7	4,016	316	7.9%
All Incidents	**38,300**	**4,367**	**9.6%**

Table 49: Simultaneous Incidents by SPZ (2016 – 2020)

Table 50 demonstrates the reliability as well as identifies where the units assigned to a SPZ responded to other SPZs and where other SPZ zone units responded into neighboring SPZs. The reliability for units assigned to a specific SPZ within the respective zone is represented in the percent compliance total.

Station Planning Zone	Unit's Assigned Station								Total	Percent Compliance
	1	2	3	4	5	6	7	N/A		
1	**1,403**	226	8	3	2	119	168	51	1,571	**89.3**
2	75	**759**	4	0	0	34	57	12	800	**94.9**
3	8	5	**719**	19	231	163	100	66	889	**80.9**
4	7	5	27	**926**	305	27	119	52	1,132	**81.8**
5	9	12	206	163	**1,307**	67	137	66	1,561	**83.7**
6	107	7	50	1	12	**695**	37	27	781	**89.0**
7	188	21	18	66	69	46	**608**	23	762	**79.8**
All	1,797	1,035	1,032	1,178	1,926	1,151	1,226	303	7,510	--

Table 50: SPZ Reliability for 2018/19

G. Evaluation of Current Deployment and Performance

Data Collection Methodology

Data utilized to establish Fire Rescue's historical response times for the calendar years 2016-2020 were generated by computer-aided dispatch (CAD) system. The information is collected and stored in Fire Rescue's Record Management System (RMS) and retrieved using the RMS's *CFAI Annual ERF Call Processing Summary (90 Percentile)*. The RMS report follows the steps below to analyze the data and develop the data report:

- Classification of incidents by Risk Classification (Fire Suppression, EMS, Technical Rescue, and HazMat)
- Assigning the incidents to the correct Risk Category (Low, Moderate, High, and Maximum) based upon the risk matrix in the SOC.
- This report contains the 90th percentile for incidents times of the varying incident types for the years filtered as well as the department's goals. The report takes into account incidents with the response class chosen (Fire, EMS, Hazmat, and Rescue) and the risk category chosen (Low, Moderate, Significant, and Maximum). The incidents taken into account are only incidents that fall within 2 standard deviations from the mean (2.28% highest and lowest outliers are removed before calculating the 90th percentile.)

Performance Baselines

Fire Rescue's baseline statements reflect actual performance during calendar years 2016-2020. It should be noted the total number of incidents, "n" in the 2016-2020 column is not equal to the sum of the individual years. The "n" is the number of incidents used for the 90th percentile after removing outliers from each individual year separately. Fire Rescue's baseline service performance for calendar year 2016-2020 is as follows:

Fire Suppression

(Low Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	00:49	00:48	00:43	00:39	00:42	00:54	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:48	03:03	02:43	02:46	02:41	02:34	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	05:23	05:32	05:07	05:02	05:18	05:50	05:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	07:34	07:49	07:13	07:24	07:34	07:35	08:50
			n=5836	n=1106	n=1133	n=1144	n=1054	n=1233	

(Moderate Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	01:00	01:01	00:51	00:51	00:56	00:54	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:37	02:54	02:32	02:23	02:37	02:35	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	05:10	04:52	05:27	05:10	05:04	05:09	05:00
	Travel Time ERF **Concentration**	Urban	05:38	05:14	05:44	06:41	05:46	05:25	08:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	08:36	08:30	08:48	07:43	08:27	08:10	08:50
			n=322	n=39	n=51	n=65	n=83	n=74	
	Total Response Time ERF **Concentration**	Urban	08:43	08:31	08:54	09:29	08:47	08:10	12:00
			n=300	n=37	n=48	n=69	n=79	n=68	

(High Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	00:53	01:13	00:57	00:36	00:45	00:43	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:45	02:42	02:42	02:59	02:29	02:42	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	05:28	04:42	05:15	07:02	07:19	05:36	05:00
	Travel Time ERF **Concentration**	Urban	14:41	13:48	14:41	16:00	11:53	20:24	11:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	08:53	09:15	08:21	09:02	09:06	08:40	08:50
			n=87	n=17	n=11	n=18	n=18	n=24	
	Total Response Time ERF **Concentration**	Urban	17:44	16:55	17:27	17:44	12:44	23:17	15:00
			n=57	n=13	n=8	n=12	n=9	n=14	

(Maximum Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	00:51	01:16	00:42	00:52	00:45	01:11	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:39	02:37	02:31	02:38	02:38	03:11	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	05:01	04:12	05:09	05:09	05:15	04:34	05:00
	Travel Time ERF **Concentration**	Urban	19:31	16:10	22:38	12:36	20:39	15:48	16:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	08:06	08:06	06:58	07:54	07:52	08:29	08:50
			n=84	n=14	n=16	n=22	n=14	n=17	
	Total Response Time ERF **Concentration**	Urban	21:39	18:39	24:52	15:29	22:42	18:58	20:00
			n=26	n=4	n=6	n=7	n=3	n=5	

Emergency Medical Services

(Low Risk) EMS - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	00:56	01:02	00:44	0:46	00:53	01:02	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:19	02:33	02:16	02:11	02:14	02:18	01:45
Travel Time	Travel Time 1st Unit Distribution	Urban	05:19	05:36	05:16	05:15	05:12	05:09	05:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	08:18	08:52	08:00	07:39	07:47	08:19	08:05
			n=18391	n=3785	n=3810	n=3542	n=3361	n=3678	

(Moderate Risk) EMS - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	00:53	01:00	00:43	00:46	00:50	00:57	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:16	02:34	02:14	02:08	02:14	02:15	01:45
Travel Time	Travel Time 1st Unit Distribution	Urban	05:01	05:40	05:06	04:51	04:46	04:44	05:00
	Travel Time ERF **Concentration**	Urban	07:38	08:56	07:28	07:25	07:30	07:39	06:25
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	08:03	08:53	07:52	07:36	07:22	08:00	08:05
			n=6936	n=1152	n=1462	n=1375	n=1437	n=1446	
	Total Response Time ERF **Concentration**	Urban	10:15	12:06	10:01	10:01	10:02	10:31	09:30
			n=4884	n=474	n=1164	n=1104	n=1155	n=996	

(High Risk) EMS - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	00:56	00:54	00:47	00:43	00:53	01:11	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:14	02:36	02:09	02:03	02:15	02:20	01:45
Travel Time	Travel Time 1st Unit Distribution	Urban	04:28	04:09	04:13	04:30	04:31	04:37	05:00
	Travel Time ERF **Concentration**	Urban	10:03	09:46	10:39	09:39	11:06	09:50	08:55
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	07:38	07:36	06:49	06:48	07:20	08:08	08:05
			n=1289	n=189	n=195	n=255	n=332	n=282	
	Total Response Time ERF **Concentration**	Urban	12:40	12:45	13:46	11:21	13:45	12:50	12:00
			n=893	n=135	n=141	n=181	n=238	n=197	

Technical Rescue Services Program

(Low Risk) Technical Rescue - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	01:14	00:27	01:07	00:54	00:45	01:27	01:20
Turnout Time	Turnout Time 1st Unit	Urban	01:56	02:10	01:50	02:00	02:09	01:40	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	05:49	04:17	05:01	06:11	05:41	06:05	05:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	08:46	06:40	07:29	08:47	08:39	09:31	08:50
			n=136	n=7	n=28	n=34	n=28	n=36	

(Moderate Risk) Technical Rescue - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	01:22	01:10	01:22	01:21	02:40	01:10	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:03	02:07	01:41	01:54	01:40	03:44	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	05:50	05:57	05:10	05:47	05:03	10:08	05:00
	Travel Time ERF **Concentration**	Urban	10:33	09:11	10:33	10:18	15:01	08:18	11:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	10:32	09:33	08:48	08:52	10:32	26:50	08:50
			n=49	n=12	n=12	n=12	n=7	n=5	
	Total Response Time ERF **Concentration**	Urban	13:10	12:16	12:23	12:29	17:53	10:46	15:00
			n=27	n=7	n=7	n=7	n=6	n=1	

High risk technical rescue events did not have sufficient data to analyze the 90th percentile effective response force performance.

(High Risk) Technical Rescue - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	00:29	--	00:29	00:16	--	04:33	01:20
Turnout Time	Turnout Time 1st Unit	Urban	03:12	--	06:49	02:04	--	02:02	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	04:45	--	58:19	04:45	--	03:46	05:00
	Travel Time ERF **Concentration**	Urban	--	--	--	--	--	--	26:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	18:08	--	01:05:53	07:12	--	18:08	8:50
			n=5	n=0	n=2	n=2	n=0	n=2	--
	Total Response Time ERF **Concentration**	Urban	--	--	--	--	--	--	30:00
			--	--	--	--	--	--	--

Hazardous Materials Services Program

(Low Risk) HazMat - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	01:31	01:21	01:39	01:04	01:05	01:33	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:47	02:49	02:30	03:01	02:26	02:38	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	05:21	05:22	05:14	04:55	05:04	05:17	05:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	09:18	09:22	09:13	07:58	09:11	09:18	08:50
			n=174	n=43	n=39	n=29	n=23	n=36	

(Moderate Risk) HazMat - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	01:01	02:20	00:52	01:19	01:01	00:49	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:54	02:54	03:24	03:56	01:55	02:32	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	04:41	05:30	04:41	04:39	04:35	04:51	05:00
	Travel Time ERF **Concentration**	Urban	14:43	14:43	12:46	13:00	14:00	31:06	11:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	08:25	09:45	07:05	08:00	07:55	08:25	08:50
			n=23	n=5	n=6	n=6	n=3	n=3	
	Total Response Time ERF **Concentration**	Urban	18:20	18:20	17:06	15:30	17:07	34:40	15:00
			n=16	n=4	n=4	n=4	n=3	n=2	

High Risk hazardous materials incidents did not have sufficient data to analyze the 90th percentile effective response force performance.

(High Risk) HazMat - 90th Percentile Times - Baseline Performance			2018	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	02:20	01:20
Turnout Time	Turnout Time 1st Unit	Urban	01:43	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	03:30	05:00
	Travel Time ERF **Concentration**	Urban	--	26:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	07:56	08:50
			n=1	
	Total Response Time ERF **Concentration**	Urban	--	30:00
			--	

Performance Gap Analysis

The following tables represent the agency's actual performance (baseline) versus the goal (benchmark). The gaps are provided in red (representing improvement opportunities), and green (when actual performance exceeds the goal).

Fire Suppression

2016-2020 Moderate Risk Fire Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	8:36	8:50	**00:14**
		n=322		
ERF	Urban	8:43	8:50	**00:07**
		n=300		

2016-2020 High Risk Fire Suppression Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	8:53	8:50	**00:03**
		n=87		
ERF	Urban	17:44	15:00	**02:44**
		n=57		

2016-2020 Max Risk Fire Suppression Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	8:06	8:50	**00:44**
		n=84		
ERF	Urban	21:39	20:00	**01:39**
		n=26		

Emergency Medical Services

2016-2020 Moderate Risk EMS Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	8:03	8:05	**00:02**
		n=6936		
ERF	Urban	10:15	9:30	**00:45**
		n=4884		

2016-2020 High Risk EMS Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	7:38	8:05	**00:27**
		n=1289		
ERF	Urban	12:40	12:00	**00:40**
		n=893		

Hazardous Materials

2016-2020 Low Risk HazMat Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	9:18	8:50	**00:28**
		n=174		

2016-2020 Moderate Risk HazMat Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	8:25	8:50	**00:25**
		n=23		
ERF	Urban	18:20	15:00	**03:20**
		n=16		

Technical Rescue

2016-2020 Low Risk Tech Rescue Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	8:46	8:50	**00:04**
		n=136		

2016-2020 Moderate Risk Tech Rescue Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	10:32	8:50	**01:42**
		n=49		
ERF	Urban	13:10	15:00	**01:50**
		n=27		

H. Plan for Maintaining and Improving Response Capabilities

Recommendations for Improvement - Deployment and Coverage

Recommendation # 1 - Turn-Out Time

Throughout the update of the SOC, the department understands the opportunity to improve the total response time by improving turnout time for urgent responses and improving services to the community. While the turnout time has been consistent with the 2016 assessment, it is still identified as a low-cost option for improved service capability. The CFAI and NFPA 1710 recommend a 60 second turnout time for EMS events and either 90 seconds or 80 seconds for non-EMS events, respectively.

Currently, EMS performance is 2:14 minutes and Fire is 2:45 minutes, both at nearly double the recommended best-practice performance. The department should continue to improve procedures and processes that support improved turnout times.

It is recommended:

- Prioritize the message department wide through education on the importance of turn-out times in the overall total response time metric.
- The department will utilize the new RMS reporting software to produce consistent reports that can be viewed in real time to identify turn out times for each shift and station.
- It also recommended to replace the outdated station alert system to improve the station notification process.

Recommendation # 2 - Cross - Staffing Deployment

Typically, the efficacy of cross-staffing units has been established in the range of 1,500 calls per year and a call concurrency rate of less than 15%. The actual value of call concurrency in each station planning zone within the Department-wide value is 45.7%. The total responses by station were nearing or exceeding the recommended workload, and the UHU values are similar between cross-staffed resources (Engine 3/ Medic 3) and single dedicated Medic resources (Medic 1).

From the perspective of total responses, alternatives considering an expanded dedicated Medic program may be considered in the following order: Station 3, Station 4, Station 7, and then Station 6. Once fully developed, the department could reevaluate the efficiency of the Engine 8/Medic 8 peak unit staffing model.

Station Planning Zone	Engine	Medic Unit	Quint	Truck	Total Current Min	Risk Rating	Staffed Medic	Total Proposed Staffing
1		1	1		4	Moderate		4
2	1	1			4	Low		4
3	1*	1*			3*	Moderate	1	4
4	1*	1*			3*	Moderate	1	4
5		1	1		4	Moderate		4
6	1*	1*		1	7*	Low	1	7/8
7	1*	1*			3*	Low	1	4
Daily Minimum Staffing					**28**			**31/32**

Table 51: Summary of Concentration of Resources by SPZ and Risk Rating at Minimum

In addition, at the department's discretion, the expanded Medic program could be accomplished with peak-load personnel similar to the current Engine 8/Medic 8 program with an opportunity to extend it to 7 days per week.

It is recommended:

- The department analyze the call volume and workload at the fire station currently cross-staffed and determine if implementing dedicated staff (2/2- minimum of 4) is warranted at fire stations 3, 4, 6 & 7.
- The department analyze peak-load volume and determine if expanding the coverage company program to 7 days per week is warranted.

Recommendation # 3 - Dispatch Determinant

The department is currently not utilizing the Fire & Medial Priority Dispatching Systems (MPDS) to dispatch resources at the determinant level. This allows some incidents to be "over dispatched" (additional units /emergent response) or "under dispatched" (signal unit on a multi-unit response) when the actual situation requires more or less resources. A policy decision to implement a rapid dispatch determinant works well for some incidents, but as call load increases the need to efficiently utilize apparatus and personnel requires a re-evaluation of this procedure.

It is recommended:

The department should evaluate the current utilization of Fire & Medial Priority Dispatching Systems (MPDS) to determine if the call triaging method for all incidents should consider allowing the MPDS process to proceed to the determinant level before dispatching resources.

Performance Maintenance and Improvement Plan

Compliance Methodology

This CRA-SOC document is designed to guide the Department to continuously monitor performance, seek areas for improvement, and to clearly articulate service levels and performance to the community we have the privilege of serving. Therefore, the Fire Chief has established a Compliance Team to continuously monitor elements of this SOC and make recommendations for system adjustments or improvement quarterly.

Compliance Team / Responsibility

The Compliance Team will consist of the following members and will have the responsibility of continuously monitoring changes in risk, community service demands, and department performance in each program area, station demand zone, and/or risk category.

- Chair - Fire Chief
- Vice Chair - Deputy Chief of Operations
- Member - Accreditation Manager
- Member - Deputy Chief of Administration
- Member - Battalion Chief of Safety & Professional Development
- Member - Battalion Chief of Emergency Medical Services
- Member - Communications Manager
- Member - Emergency Manager
- Member - Public Safety Systems / Town IT
- Member - Fire Rescue Coordinator

Performance Evaluation and Compliance Strategy

Fire Rescue will evaluate system performance by measuring first due unit performance at the 90th percentile quarterly and annually. Benchmarks for incident review were established as part of Fire Rescue's quality improvement regarding incident reporting. The benchmarks identified for review are listed in table 52 below. In addition, the department will evaluate first due performance by each individual SPZ and by program area. Measures for the ERF by each program area, SPZ, and risk category will be evaluated annually. Annual reviews will be conducted in January of each year regarding the previous year. All response performance monitoring will exclusively evaluate emergency responses.

Segment	Benchmark	For Review
Alarm handling – all calls	1:20 (80 sec)	2:00 (120 sec)
Turnout – EMS	1:45 (105 sec)	3:00 (180 sec)
Turnout – Fire	2:30 (150 sec)	3:30 (210 sec)
Travel – all calls	5:00 (300 sec)	8:00 (480 sec)
Total response - EMS	8:05 (485 sec)	9:00 (540 sec)
Total response - Fire	8:50 (530 sec)	9:00 (540 sec)

Table 52: Fire Rescue Times for Benchmarks and Incident Review

The Compliance Team will determine the strengths, weaknesses, opportunities, and threats of the system performance annually and make recommendations for system adjustments to the Fire Chief. Finally, Fire Rescue will annually update and evaluate the risk assessment matrices for relevancy and changes in community risk.

Ultimately, it is recommended that outcome measures are adopted and serve as the primary evaluation tool and that the traditional performance objectives and measures presented previously are utilized primarily as a management tool. In this manner, the Department will not be overly sensitized to incremental changes in performance criteria if the outcomes continue to be met.

Compliance Verification Reporting

The Compliance Team will communicate results of the period evaluations to the Fire Chief. The Fire Chief will disseminate the quarterly and annual results and any system adjustments in a timely manner so that both performance measurement and continuous improvement becomes part of the organization's culture. All performance and risk measures will be reported through the Fire Chief to the Town Manager and the Town Council and made available to the community annually.

Constant Improvement Strategy

The department will utilize the following conceptual model to facilitate both compliance and continuous improvement.

Figure 51: Continuous Improvement and Compliance Model

Appendix A: Summary of Station Planning Zone Risk Matrix

Risk Variable	Actual Value	Risk Calculated Value for Matrix
Population Density	1,168	3
Median Household Income	$74,102	3
Proportion of Assess Value	18.8%	7
Median Age	53.8	6
Proportion of Total Square Miles	11.88%	4
Measured Occupancy Risk per Mile	247	10
Diversity Index	32.4	4
Weighted Community Demand	1,849	5
Simultaneity / Call Concurrency	14.9%	5

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SPZ 1 Risk Matrix

Risk Variable	Actual Value	Risk Calculated Value for Matrix
Population Density	579	3
Median Household Income	$106,725	1
Proportion of Assess Value	17.3%	6
Median Age	64.4	8
Proportion of Total Square Miles	13.4%	5
Measured Occupancy Risk per Mile	91	4
Diversity Index	9.0	1
Weighted Community Demand	900	3
Simultaneity / Call Concurrency	8.0%	3

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SPZ 2 Risk Matrix

Risk Variable	Actual Value	Risk Calculated Value for Matrix
Population Density	1,095	3
Median Household Income	$57,131	5
Proportion of Assess Value	11.9%	4
Median Age	38.4	5
Proportion of Total Square Miles	13.07%	5
Measured Occupancy Risk per Mile	217	9
Diversity Index	72.4	8
Weighted Community Demand	1,061	3
Simultaneity / Call Concurrency	9.5%	4

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SPZ 3 Risk Matrix

Risk Variable	Actual Value	Risk Calculated Value for Matrix
Population Density	1,154	3
Median Household Income	$89,202	2
Proportion of Assess Value	12.8%	5
Median Age	56.4	7
Proportion of Total Square Miles	15.8%	6
Measured Occupancy Risk per Mile	67	3
Diversity Index	35.3	4
Weighted Community Demand	1,326	3
Simultaneity / Call Concurrency	9.2%	4

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SPZ 4 Risk Matrix

Risk Variable	Actual Value	Risk Calculated Value for Matrix
Population Density	932	2
Median Household Income	$80,162	2
Proportion of Assess Value	13.7%	5
Median Age	50.6	6
Proportion of Total Square Miles	17.4%	6
Measured Occupancy Risk per Mile	67	3
Diversity Index	44.8	5
Weighted Community Demand	1,820	5
Simultaneity / Call Concurrency	12.6%	5

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SPZ 5 Risk Matrix

Risk Variable	Actual Value	Risk Calculated Value for Matrix
Population Density	845	2
Median Household Income	$104,316	1
Proportion of Assess Value	17.7%	6
Median Age	59.1	7
Proportion of Total Square Miles	10.62%	4
Measured Occupancy Risk per Mile	125	5
Diversity Index	34.2	4
Weighted Community Demand	890	2
Simultaneity / Call Concurrency	8.3%	3

4

SPZ 6 Risk Matrix

Risk Variable	Actual Value	Risk Calculated Value for Matrix
Population Density	884	2
Median Household Income	$79,450	3
Proportion of Assess Value	7.9%	3
Median Age	41.8	5
Proportion of Total Square Miles	18.1%	7
Measured Occupancy Risk per Mile	74	3
Diversity Index	48.1	5
Weighted Community Demand	928	3
Simultaneity / Call Concurrency	8.0%	3

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SPZ 7 Risk Matrix

Appendix B: Homogenized Concentration Factors

Population Density		
Risk Value	Range-Low	Range-High
1	0	500
2	501	1,000
3	1,001	1,500
4	1,501	2,000
5	2,001	2,500
6	2,501	3,000
7	3,001	3,500
8	3,501	4,000
9	4,001	4,500
10	4,501	5,000+

Population Density Risk Matrix

Median Household Income		
Risk Value	Range-Low	Range-High
1	$90,001	$100,000+
2	$80,001	$90,000
3	$70,001	$80,000
4	$60,001	$70,000
5	$50,001	$60,000
6	$40,001	$50,000
7	$30,001	$40,000
8	$20,001	$30,000
9	$10,001	$20,000
10	$1	$10,000

Median Household Income Risk Matrix

Proportion of Community Assessed Value		
Risk Value	Range-Low (%)	Range-High (%)
1	0	2.99
2	3	5.99
3	6	8.99
4	9	11.99
5	12	14.99
6	15	17.99
7	18	20.99
8	21	23.99
9	24	26.99
10	27	29.99+

Proportion of Community Assessed Value Matrix

Median Age		
Risk Value	Range-Low	Range-High
1	0	8.9
2	9	17.9
3	18	26.9
4	27	35.9
5	36	44.9
6	45	53.9
7	54	62.9
8	63	71.9
9	72	80.9
10	81	89.9

Median Age Risk Matrix

Geographic Square Mileage		
Risk Value	Range-Low	Range-High
1	0	2.99
2	3	5.99
3	6	8.99
4	9	11.99
5	12	14.99
6	15	17.99
7	18	20.99
8	21	23.99
9	24	26.99
10	27	29.99+

Geographic Square Mileage Risk Matrix

Occupancy Risk per Square Mile		
Risk Value	Range-Low	Range-High
1	0	25.9
2	26	51.9
3	52	77.9
4	78	103.9
5	104	129.9
6	130	155.9
7	156	181.9
8	182	207.9
9	208	233.9
10	234	259.9

Occupancy Risk Per Square Mile

Diversity Index		
Risk Value	Range-Low	Range-High
1	0	9.9
2	10	19.9
3	20	29.9
4	30	39.9
5	40	49.9
6	50	59.9
7	60	69.9
8	70	79.9
9	80	89.9
10	90	99.9

Diversity Index Risk Matrix

Station	Pop Density	Median HH Inc.	% of AV	Median Age	Sq. Mi	Occ Risk per Sq MI	Diversity Index	Score
1	3	3	7	6	4	10	4	**5**
2	2	1	6	8	5	4	1	**4**
3	3	5	4	5	5	9	8	**6**
4	3	2	5	7	6	3	4	**4**
5	2	2	5	6	6	3	5	**4**
6	2	1	6	7	4	5	4	**4**
7	2	3	3	5	7	3	5	**4**

Homogenized Risk Scoring Matrix

Appendix C: Risk Classifications Based on RMS Data

Program	Call Type	"Code Description" from RMS	Risk Classification
EMS	EMS - General	311 - Medical Assist	Based on "Final Dispatch Code" from RMS
EMS	EMS - General	320 - Emergency Medical Service, other (If no other code)	
EMS	EMS - General	321 - EMS call - Excludes vehicle accidents	
EMS	EMS - MVA	322 - Vehicle Accident with Injuries	
EMS	EMS - MVA	323 – Motor Vehicle/Pedestrian Accident	
EMS	EMS - MVA	324 - Motor Vehicle Accident with no injuries	
EMS	EMS - General	371 - Electrocution or potential electrocution	
EMS	EMS - Standby	381 - Rescue or EMS Standby	
EMS	Service Call	552 – Police Matter	
EMS	Service Call	554 - Assist Invalid	
EMS	Good Intent	611 – Dispatched and Cancelled Enroute	
EMS	Good Intent	661 - EMS call, party transported by non-fire agency or left the scene prior to arrival	

"AgencyEventTypeCode" Entries from CAD[1]	Risk Classification
A	Low
B	Low
C	Low
D	Moderate
E	High
O	Low

Program	Call Type	"Code Description" from RMS	Risk Classification
Fire	Structure Fire	111 - Building Fire (Single Family)	High See Property Use Codes for Property Types
Fire	Structure Fire	111 - Building Fire (Commercial)	Max See Property Use Codes for Property Types
Fire	Structure Fire	112 - Fires in Structures-that are not buildings (Tents-Fence-Dock-Piers-Shelters)	Moderate
Fire	Structure Fire	113 - Cooking Fire, confined to container (w/o building involvement)	Moderate
Fire	Structure Fire	114 - Chimney or flue fire, confined to chimney or flue (w/o building)	Moderate
Fire	Structure Fire	118 - Trash or Rubbish Fire, contained (w/o building)	Moderate
Fire	Structure Fire	121 - Fire in mobile home used as fixed residence (not in transit)	High
Fire	Structure Fire	123 - Fire in portable building, fixed location (Sheds, classrooms, porta-toilets)	Moderate
Fire	Structure Fire	130 - Mobile property (vehicle) fire, other (Use if no other code)	Moderate
Fire	Vehicle Fire	131 - Passenger vehicle fire (cars-p/u-motorcycles-buses)	Moderate
Fire	Vehicle Fire	132 - Road freight or transport vehicle fire (semis-delivery-dump trks-contr. vehs)	Moderate
Fire	Vehicle Fire	134 - Water vehicle fire (Boats-barges-PWC-etc.)	High
Fire	Vehicle Fire	138 - Off-road vehicle or heavy equipment fire (dirt bikes, bull dozers, farm equip)	Moderate
Fire	Outside Fire	140 - Natural vegetation fire, other (Use if no other applicable code)	Moderate
Fire	Outside Fire	141 - Forest, woods or wildland fire (Areas w/o development)	Moderate
Fire	Outside Fire	142 - Brush, or brush grass mix fire (Ground level fuels)	Moderate
Fire	Outside Fire	143 - Grass fire (Little other fuel types like brush-logs-limbs)	Moderate
Fire	Outside Fire	150 - Outside rubbish fire, other	Moderate
Fire	Outside Fire	151 - Outside rubbish, trash or waste fire	Moderate
Fire	Outside Fire	154 - Dumpster or other outside trash receptacle fire	Moderate
Fire	Outside Fire	160 - Special outside fire, other	Moderate
Fire	Outside Fire	161 - Outside storage fire	Moderate
Fire	Outside Fire	162 - Outside equipment fire (HVAC-pumps-grinders-grills-no build involved)	Moderate
Fire	Outside Fire	163 - Outside gas or vapor combustion explosion (without sustained fire)	Moderate

Program	Call Type	"Code Description" from RMS	Risk Classification
Fire	Outside Fire	173 - Cultivated trees or nursery stock fire	Moderate
Fire	Rupture/Explosion	211 - Overpressure rupture of steam pipe or pipeline	Moderate
Fire	Rupture/Explosion	221 - Overpressure rupture of air or gas pipe / pipeline	Moderate
Fire	Rupture/Explosion	240 - Explosion (no fire), other	Moderate
Fire	Rupture/Explosion	243 - Fireworks explosion (No fire)	Moderate
Fire	Rupture/Explosion	251 - Excessive heat, scorch burns with no ignition (Lightning strikes w/ o fire use 814)	Moderate
Fire	Hazardous Condition	424 - Carbon monoxide incident (CO present. If CO alarm w/o CO present, use 736 or 746)	Low
Fire	Hazardous Condition	440 - Electrical wiring / equipment problem, other (Use if no other code)	Low
Fire	Hazardous Condition	441 - Heat from short circuit (wiring), defective / worn insulation	Low
Fire	Hazardous Condition	442 - Overheated motor or wiring	Low
Fire	Hazardous Condition	443 - Light ballast breakdown	Low
Fire	Hazardous Condition	444 - Power line down (Use 372 if person trapped by powerline)	Low
Fire	Hazardous Condition	445 - Arcing, shorted electrical equipment	Low
Fire	Hazardous Condition	460 - Accident, potential accident, other	Low
Fire	Hazardous Condition	462 - Aircraft standby (routine stand-bys for take offs / landings and emergency alerts)	Low
Fire	Hazardous Condition	463 - Vehicle accident, general cleanup only (No EMS provided, fuel spills 411 or 413)	Low
Fire	Hazardous Condition	480 - Attempted burning, illegal action, other	Low
Fire	Service Call	520 - Water problem, other	Low
Fire	Service Call	521 - Water evacuation (removal of water)	Low
Fire	Service Call	522 - Water or steam leak (Ruptures use 211)	Low
Fire	Service Call	531 - Smoke or odor removal	Low
Fire	Service Call	540 - Animal problem, other	Low
Fire	Service Call	550 - Public service assistance, other	Low
Fire	Service Call	551 - Assist Police or other Govt. agency (forcible entry, lighting, etc. on or off island)	Low
Fire	Service Call	553 - Public Service - Fire Response (service to others / not govt. agencies)	Low
Fire	Service Call	571 - Cover Assignment, standby, move up	Low
Fire	Good Intent	621 - Wrong location (If malicious use 71 series codes)	Low
Fire	Good Intent	622 - No incident found on arrival at address	Low

Program	Call Type	"Code Description" from RMS	Risk Classification
Fire	Good Intent	631 - Authorized controlled burning (Legal Burn Cond. OK, Fire not extinguished)	Low
Fire	Good Intent	632 - Prescribed fire (large, planned burns, not done on HHI)	Low
Fire	Good Intent	650 - Steam, other gas mistaken for smoke, other (Use if no other code)	Low
Fire	Good Intent	651 - Smoke Scare, odor of smoke (Gas scare use 671)	Low
Fire	Good Intent	652 - Steam, vapor, fog or dust thought to be smoke	Low
Fire	Good Intent	653 - Smoke from barbecue or tar kettle (No hostile fire)	Low
Fire	False Call	710 - Malicious, mischievous false call, other	Low
Fire	False Call	713 - Telephone, malicious false alarm (Someone calls says house on fire but not)	Low
Fire	False Call	714 - Central station, malicious false alarm	Low
Fire	False Call	715 - Local alarm system, malicious false alarm	Low
Fire	False Call	721 - Bomb Scare (No Bomb)	Low
Fire	False Call	730 - System malfunction, other	Low
Fire	False Call	731 - Sprinkler activation due to malfunction	Low
Fire	False Call	732 - Extinguishing syst. act. due to malfunction. (hoods, spray booths, halon, clean agent)	Low
Fire	False Call	733 - Smoke detector activation due to malfunction	Low
Fire	False Call	734 - Heat detector activation due to malfunction	Low
Fire	False Call	735 - Alarm system sounded due to malfunction	Low
Fire	False Call	736 - CO detector activation due to malfunction (No CO present)	Low
Fire	False Call	740 - Unintentional transmission of alarm, other	Low
Fire	Fire Other	911 - Citizen Complaint	Low
Fire	False Call	741 - Sprinkler activation, no fire - unintentional	Low
Fire	False Call	743 - Smoke detector activation, no fire - unintentional	Low
Fire	False Call	744 - Heat Detector activation, no fire - unintentional	Low
Fire	False Call	745 - Alarm system sounded, no fire - unintentional	Low
Fire	False Call	746 - Carbon monoxide detector activation, (No CO present)	Low
Fire	Severe Weather	812 - Flood assessment	Low
Fire	Severe Weather	813 - Wind storm, tornado / hurricane assessment	Low
Fire	Fire Other	911 – Citizen Complaint	Low

Program	Call Type	"Code Description" from RMS[1]	Risk Classification
Rescue	Rescue	331 - Lock-In Opening locked Areas to gain entry, (if lock out, use 511)	Low
Rescue	Rescue	340 - Search, other	Moderate
Rescue	Rescue	341 - Search for person on land	Moderate
Rescue	Rescue	342 - Search for person in water	Moderate
Rescue	Rescue	350 - Extrication, rescue, other	Low
Rescue	Rescue	351 - Extrication of victim(s) from building/structure (Collapse)	High
Rescue	Rescue	352 - Extrication of victim(s) from vehicle (Extrication only No EMS)	Moderate
Rescue	Rescue	353 - Removal of victim(s) from stalled elevator (Elevator Rescues)	Low
Rescue	Rescue	356 – High-angle rescue. Includes rope rescue and rescue off structures	High
Rescue	Rescue	357 - Extrication of victim(s) from machinery	Moderate
Rescue	Rescue	360 - Water & ice related rescue, other (Use if no other code)	Moderate
Rescue	Rescue	361 - Swimming / recreational water areas rescue (Pools-ponds-lagoons-victim in water)	Moderate
Rescue	Rescue	363 - Swift water rescue (In-shore rescue fast flowing water hazard., flash floods)	High
Rescue	Rescue	364 - Surf rescue (Off-shore or near shore-beaches, sounds, rivers, creeks victim. in water)	Moderate
Rescue	Rescue	365 - Watercraft rescue (Of persons from boats or that have fallen overboard)	Moderate
Rescue	Rescue	461 - Building or structure weakened or collapsed (if people trapped, use 351)	High
Rescue	Service Call	510 - Person in distress, other	Low
Rescue	Service Call	511 - Lock-Out - includes efforts to remove car keys (Lock in use 331)	Low
Rescue	Service Call	512 - Ring or jewelry removal only (If person injured use proper EMS code)	Low
Rescue	Service Call	542 - Animal rescue	Low
Rescue	Service Call	555 - Defective Elevator, no occupants	Low

Program	Call Type	"Code Description" from RMS[1]	Risk Classification
Hazmat	Hazardous Condition	410 - Flammable gas or liquid condition, other (Use if no other code)	Low
Hazmat	Hazardous Condition	411 - Gasoline or other flammable liquid spill (Less than 5 gallons)	Low
Hazmat	Hazardous Condition	411 - Gasoline or other flammable liquid spill (Greater than 5 gallons)	Moderate
Hazmat	Hazardous Condition	412 - Gas leak - natural gas or LPG - (Less than 21 pounds)	Low
Hazmat	Hazardous Condition	412 - Gas leak - natural gas or LPG - (Greater than 21 pounds)	Moderate
Hazmat	Hazardous Condition	413 - Oil or other combustible liquid spill (Less than 5 gallons)	Low
Hazmat	Hazardous Condition	413 - Oil or other combustible liquid spill (greater than 5 gallons)	Moderate
Hazmat	Hazardous Condition	420 - Toxic condition, other (Use if no other code)	High
Hazmat	Hazardous Condition	421 - Chemical hazard (no spill or leak)	Low
Hazmat	Hazardous Condition	422 - Chemical spill or leak (Less than 5 gallons)	Low
Hazmat	Hazardous Condition	422 – Chemical spill or leak (Greater than 5 gallons)	Moderate
Hazmat	Hazardous Condition	423 - Refrigeration leak (Less than 5 gallons)	Low
Hazmat	Hazardous Condition	423 – Refrigeration leak (Greater than 5 gallons)	Moderate
Hazmat	Hazardous Condition	451 - Biological hazard, confirmed or suspected	High
Hazmat	Good Intent	671 - Hazmat release investigation w/ no hazmat (includes gas leaks-no leaks or gas found)	Low
Hazmat	Good Intent	672 - Biological hazard investigation (no hazardous conditions found)	High

Appendix D: Property Use Code from RMS

Property Use Code from RMS (Numeric)	Property Use Code from RMS (Text Definition)	Risk Classification
116	Swimming facility.	Max
121	Ballroom, gymnasium.	Max
131	Church, chapel.	Max
134	Funeral parlor	Max
142	Clubhouse	Max
143	Yacht club.	Max
151	Library.	Max
161	Restaurant.	Max
162	Nightclub.	Max
171	Airport passenger terminal.	Max
183	Motion-picture theater.	Max
211	Nursery school.	Max
213	Elementary school.	Max
215	High school, Middle School	Max
241	College classroom building.	Max
311	Nursing Home	Max
331	Hospital	Max
419	One- and Two-Family Dwelling, Manufactured Home, Duplex	High
429	Multi-Family Apartments, Tenements, Flats	Max
439	Rooming, Boarding, Lodging House	Max
449	Hotels, Motels, Inns, Lodges	Max
500	Mercantile Properties, Business	Max
511	Convenience Store	Max
519	Food, Beverage Sales, Grocery Stores, Liquor Stores	Max
549	Specialty Shops	Max
557	Barber, beauty shop.	Max
564	Self-service laundry, dry cleaning.	Max
571	Service station, Gas Station	Max
579	Motor Vehicle or Boat Sales, Services	Max
580	General Retail	Max
581	Department store.	Max
592	Bank, with first story banking facilities.	Max
596	Post office.	Max

Property Use Code from RMS (Numeric)	Property Use Code from RMS (Text Definition)	Risk Classification
599	Offices not classified above.	Max
800	Storage	Max
808	Out Building, Shed	Max
888	Fire stations.	Max
891	Warehouse	Max
898	Dock, Marina	Max
899	Residential Storage, Mini Storage	Max
919	Dump, Landfill	Max
935	Campsite with utilities.	Max

Appendix E: Critical Infrastructure Identification List

ID	TYPE	FACILITY	SPZ
101	AIRPORT	HILTON HEAD AIRPORT TERMINAL	5
102	BRIDGE	CROSS ISLAND	7
103	BRIDGE	J WILTON GRAVES BRIDGE	BLUFFTON
104	BRIDGE	KARL BOWERS BRIDGE	BLUFFTON
105	FIRE RESCUE	FIRE RESCUE DISPATCH CENTER	3
106	FIRE RESCUE	FIRE RESCUE HEADQUARTERS	3
107	FIRE RESCUE	FIRE RESCUE TRAINING CENTER	3
108	FIRE RESCUE	FIRE STATION 1	1
109	FIRE RESCUE	FIRE STATION 2	2
110	FIRE RESCUE	FIRE STATION 3	3
111	FIRE RESCUE	FIRE STATION 4	4
112	FIRE RESCUE	FIRE STATION 5	5
113	FIRE RESCUE	FIRE STATION 6	6
114	FIRE RESCUE	FIRE STATION 7	7
115	FIRE RESCUE	FIRE STATION 9 ARFF	3
201	GATE	BREAKERS (COLIGNY)	1
202	GATE	INDIGO RUN (POND ROAD)	7
203	GATE	LONG COVE (HARGRAY)	6
204	GATE	PALMETTO DUNES - SHIPYARD (SOUTH SHORE DRIVE)	6
205	GATE	PALMETTO DUNES (OFF SHORE)	6
206	GATE	PALMETTO DUNES (YARD ARM)	6
207	GATE	PALMETTO HALL (FORT HOWELL)	5
208	GATE	PALMETTO HALL (FORT MITCHELL)	5
209	GATE	PORT ROYAL	3
210	GATE	TRAINING CENTER (DILLION ROAD)	3
211	GATE	TRAINING CENTER (HQ SIDE)	3
212	GATE	WEXFORD - HAIG POINT EMBARKATION	7
116	GOVERNMENT	BEAUFORT COUNTY GOVERNMENT COMPLEX	3
117	GOVERNMENT	BEAUFORT COUNTY SHERIFFS' DEPARTMENT	6
118	GOVERNMENT	TOWN OF HHI FACILITIES MANAGEMENT	3
119	GOVERNMENT	TOWN OF HHI TOWN HALL	1
120	HOSPITAL	HILTON HEAD MEDICAL CENTER	5
121	HOSPITAL	HILTON HEAD MEDICAL CENTER	5

ID	TYPE	FACILITY	SPZ
122	HOSPITAL	HILTON HEAD MEDICAL CENTER	5
123	HOSPITAL	HILTON HEAD MEDICAL CENTER	5
124	POST OFFICE	US POST OFFICE - FAIRFIELD	5
125	POST OFFICE	US POST OFFICE - HILTON HEAD ISLAND	1
126	SCHOOL	HHI ELEMENTARY SCHOOL CREATIVE ARTS	5
127	SCHOOL	HHI ELEMENTARY SCHOOL IB	5
128	SCHOOL	HHI ELEMENTARY SCHOOL IB	5
129	SCHOOL	HHI HIGH SCHOOL	5
130	SCHOOL	HHI MIDDLE SCHOOL	5
131	SCHOOL	USCB HOSPITALITY MANAGEMENT CAMPUS	1
132	UTILITY	BROAD CREEK PSD OFFICE	6
133	UTILITY	BROAD CREEK PSD PUMP STATION	6
134	UTILITY	BROAD CREEK PSD TREATMENT PLANT	6
135	UTILITY	BROAD CREEK PSD WATER TOWER	6
136	UTILITY	BROAD CREEK PSD WELL	6
137	UTILITY	HARGRAY COMMUNICATIONS MAIN OFFICE	6
138	UTILITY	HHPSD ASR WELL & WASTEWATER TRANSFER STATION	4
139	UTILITY	HHPSD MAIN OFFICE	3
140	UTILITY	HHPSD PUMP STATION	5
141	UTILITY	HHPSD WATER STORAGE TANK	3
142	UTILITY	HHPSD WELL TOWER 1	5
143	UTILITY	HHPSD WELL TOWER 3	4
144	UTILITY	HHPSD WELL TOWER 9	3
145	UTILITY	JARVIS CREEK PUMP STATION	5
146	UTILITY	LAWTON CANAL STORM WATER PUMP STATION	2
147	UTILITY	PALMETTO ELECTRIC COOPERATIVE INC	3
148	UTILITY	PLAMETTO ELECTRIC SUB STATION FOLLY FIELD	3
149	UTILITY	PALMTTO ELECTRIC SUB STATION HERITAGE	2
150	UTILITY	PALMETTO ELECTRIC SUB STATION INDIGO RUN	5
151	UTILITY	PALMETTO ELECTRIC SUB STATION LONG COVE	6

ID	TYPE	FACILITY	SPZ
152	UTILITY	PALMETTO ELECTRICE SUB STATION MARKETPLACE	1
153	UTILITY	PALMETTO ELECTRIC SUB STATION PLANTATION	4
154	UTILITY	PALMETTO ELECTRIC SUB STATION SEAPINES	2
155	UTILITY	SANTEE COOPER SUB STATION	3
156	UTILITY	SANTEE COOPER SUB STATION	5
157	UTILITY	SHIPYARD PUMP STATION	1
158	UTILITY	SOUTH ISLAND PSD - LIFT STATION 3	1
159	UTILITY	SOUTH ISLAND PSD - LIFT STATION SP-14	2
160	UTILITY	SOUTH ISLAND PSD - LONG COVE ASR	6
161	UTILITY	SOUTH ISLAND PSD - MAIN OFFICE	1
162	UTILITY	SOUTH ISLAND PSD - PALMETTO BAY ASR	1
163	UTILITY	SOUTH ISLAND PSD - POTABLE WELL SP-1	2
164	UTILITY	SOUTH ISLAND PSD - WASTEWATER TREATMENT PLANT	2
165	UTILITY	SOUTH ISLAND PSD - WATER STORAGE TANK	1
166	UTILITY	SOUTH ISLAND PSD - WATER TREATMENT PLANT	2
167	UTILITY	WEXFORD STORM WATER PUMP STATION	6

Hilton Head Island Fire Rescue

Hilton Head Island Fire Rescue

What is a Community Risk Assessment?
CRA

A Community Risk Assessment (CRA) is a process to evaluate unique risks within the community and within each planning zone so the proper recourses (personnel & equipment) can be allocated to effectively mitigate the risks.

The CRA assigns a risk classification for the services provided by the department. Fire Rescue's services includes fire suppression, emergency medical services, technical rescue, and hazardous materials; in the categories of low, moderate, high, maximum.

Hilton Head Island Fire Rescue

What is a Standards of Cover?

A Standards of Cover (SOC) is defined in *Community Risk Assessment: Standards of Cover 6th Edition* as:

"Those written policies and procedures that establish the distribution and concentration of fixed and mobile resources of an organization."

**Ensures emergency services being delivered are reflective of the community's expectations.

Hilton Head Island Fire Rescue

Example of a required Performance Indicator.

Performance Indicators:

2A.1 Service area boundaries for the agency are identified, documented, and legally adopted by the authority having jurisdiction.

Description

The Town has adopted and identified the boundaries in the Town Municipal Code Title 2, Chapter 1, Sec. 2-1-20. The boundaries identify the service area for all of Fire Rescue's functions and services.

Appraisal

The Town has clearly identified, documented, and legally adopted boundaries that establish Fire Rescue's service area. Fire Rescue has utilized the boundaries in defining the station planning zones. The description provides the required information in determining Town limits to include the high and low water mark designations.

Plan

Fire Rescue will monitor and adjust any station planning zones if the boundaries are changed and approved by Town Council.

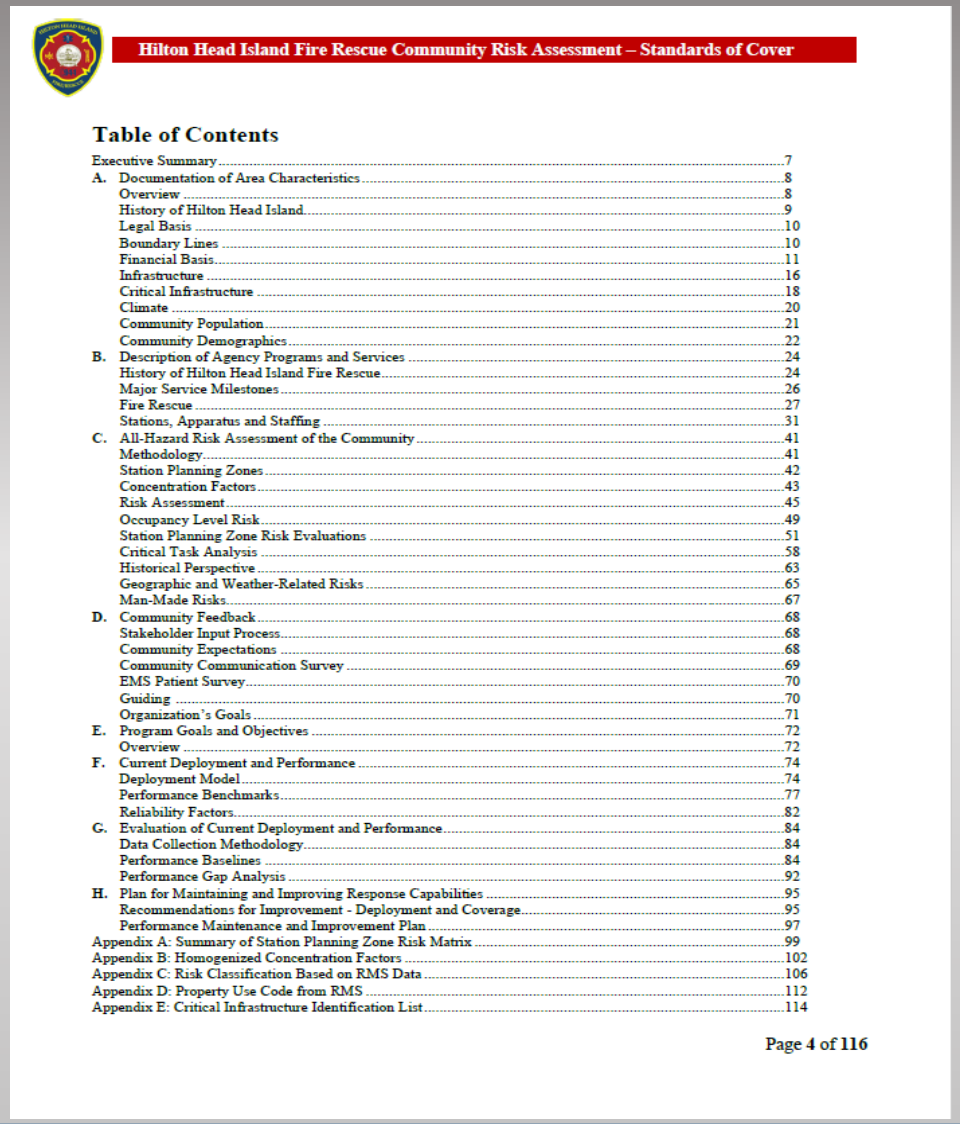
References

492 Municipal Code Town of Hilton Head Island, 1983, Title 2, Chapter 1, Section 2-1-20, Corporate Boundaries

493 Hilton Head Island Fire Rescue Community Risk Assessment - Standards of Cover, 2021, p.10

Hilton Head Island Fire Rescue

Community Risk Assessment / Standard of Cover (CRA/SOC) Table of Contents –



Hilton Head Island Fire Rescue Community Risk Assessment – Standards of Cover

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Area Characteristics

- Utilized information from a variety of sources to maintain consistency.
  - Town of Hilton Head Island “Our Plan”
  - Town of Hilton Head Island Budget Book

Hilton Head Island Fire Rescue

Description of Agency Characteristics

- *Dept. History*
- *Milestones*
- *Divisions of Fire Rescue*
- *Stations, Apparatus & Staffing*

Hilton Head Island Fire Rescue

Description of Agency Characteristics

Fire Station #1

Dedicated in November 2011, Station 1 is located at 70 Cordillo Parkway. This station houses a Quint and Medic, each with minimum staffing of two personnel for a total minimum staffing of four personnel. In addition, personnel cross-staff Rescue 1, the Technical Rescue/Urban Search and Rescue apparatus.

Distribution of incidents per station from 2016-2020 is provided for each station. This data includes the distribution of those incidents by fire incidents (NFIRS 100s), EMS incidents (NFIRS 300s) and all other incident types. The daily average of incidents per station is included as well.

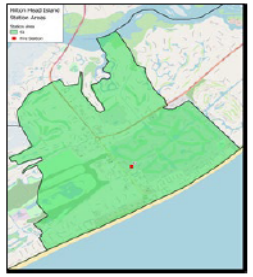


Figure 14: Boundaries of SPZ 1

- Pop: 6,166
- Pop./mi.^{2}: 1,168
- Sq. Miles: 5.28
- Road Miles: 52.87

Fire Station #1		
Apparatus	**Description**	**Minimum Staffing**
Engine 1	103' Quint – 1500 GPM Pump and a 500 Gallon Tank	2
Medic 1	ALS Transport Unit	2
Rescue 1	Technical Rescue/Urban Search and Rescue	Cross Staffed
Total		4

Table 6: Station 1 Resources

Incidents By Apparatus						
Apparatus	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
E1	1,097	1,014	1,008	1,095	715	**4,929**
M1	1,154	1,197	1,140	1,220	1,246	**5,957**
Total	**2,251**	**2,211**	**2,148**	**2,315**	**1,961**	

Table 7: Station 1 Incidents

Incidents By Service Area					
	Responses	**Fire (%)**	**EMS (%)**	**Other (%)**	**Per Day**
2016	1534	1.5	72.03	26.47	4.2
2017	1570	1.46	74.78	23.76	4.31
2018	1499	1.47	71.58	26.95	4.12
2019	1622	1.29	69.17	29.53	4.46
2020	1585	1.01	67.38	31.61	4.34

Table 8: Station 1 Incidents by Service Area

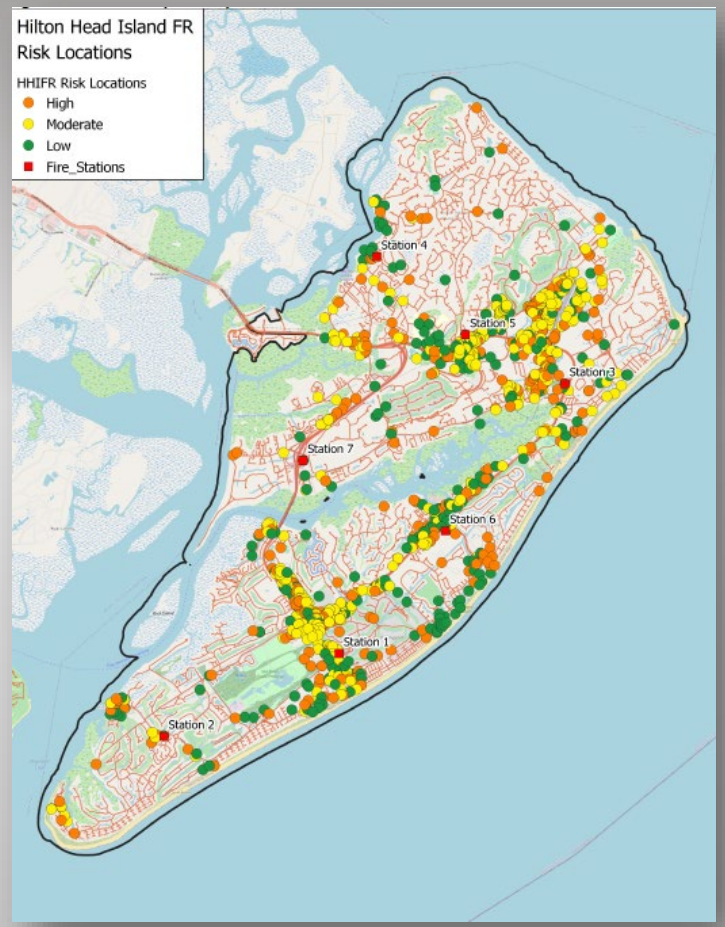
Hilton Head Island Fire Rescue

All Hazards Community Risk Assessment

Occupancy Class	Occ Description	Base Risk Rating	System Information	Adjusted Risk Rating if Present
A1	Assembly	High	SYSTEMS AS/FA/SP	Low
A2	Assembly	High	SYSTEMS AS/FA	Low
A3	Assembly	High	SYSTEMS AS/FA/H	Low
A4	Assembly	High	SYSTEMS AS/FA/FP	Low
A5	Assembly	High	SYSTEMS AS/H	Moderate
B	Business	Moderate	SYSTEMS AS	Moderate
E	Education	High	SYSTEMS AS/H/FA	Low
E - DAY CARE	Day Care	High	AS/FA	Low
E1		High	AS/FA/H	Low
F1	Factory	High	SYSTEMS AS/FA/FP/H	Low
F2	Factory	High	SYSTEMS SP	Moderate
H2	High Hazard	High	SYSTEMS AS/FAH/SP	Low
H3	High Hazard	High	SYSTEMS AS/FA/H/SP	Low
H4	High Hazard	High	AS/FA/FP/H	Low
I1	Institution	High	SYSTEMS AS/FA/FP/SP	Low
I2	Institution	High	SYSTEMS AS/FA/H/TC	Low
I3 COND 1	Institution	High	SYSTEMS FA/SP	Moderate
I3 COND 3	Institution	High	SYSTEMS FA/FP/SP	Moderate
I3 COND 5	Institution	High	SYSTEMS AS/FA/TC	Low
M	Mercantile	High	SYSTEMS AS/FP/H/SP	Moderate
R1	Residential	High	SYSTEMS FA/SP/FP	Moderate
R2	Residential	High		
R3	Residential	High		
R4	Residential	High		
S1	Storage	High		
S2	Storage	High		
S3	Storage	High		
S4	Storage	High		
S5	Storage	High		
U1	Utility and Miscellaneous	Moderate		

Occupancy-Level Risk

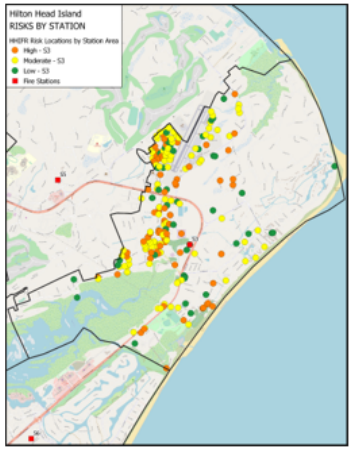
Occupancy risk was evaluated for the Town of Hilton Head Island utilizing the most recent internal occupancy-level data. The available data provided specific building occupancy classifications that established base risk ratings of the occupancy. Next, moderating values for the presence of critical fire protection systems such as an automatic fire sprinkler system, fire alarm, fire pump, and standpipes were included to reduce the occupancy classification risk rating. .



Hilton Head Island Fire Rescue

Station Planning Zone 3

SPZ 3 represents 11.9% ($1.7 billion) of the total assess value for the jurisdiction and 13.1% of the total square miles. The weighted community demand, a factor of the frequency of incidents by risk classification, is indicative of 1,849 incidents with a call concurrency rate of 14.9%.



From the inspectable properties database within SPZ 3, there were 224 high-risk occupancies and 597 moderate-risk occupancies.

The risk severity is presented by category and classification to better understand the relationship of risk by program area. Fire related risks had a much greater frequency of low risks than of moderate- and high-risk incidents.

EMS related incidents had an evenly distributed risk profile between low-, moderate-, and high-risk incidents.

Hazardous materials incidents were evenly distributed at a low frequency value.

Rescue related incidents had a relatively more frequent rate of low-risk incidents with an even distribution of infrequent moderate and high risks.

Figure 33: All Risk Occupancies for SPZ3

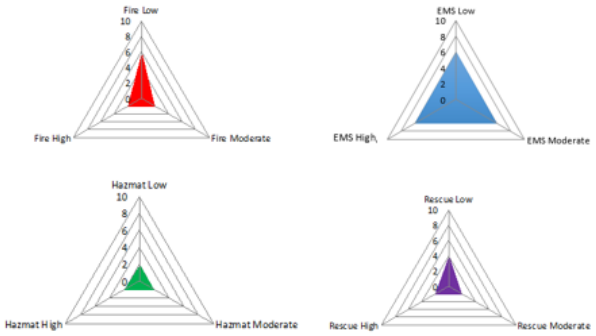


Figure 34: SPZ3 Risk Assessment

All Hazards Community Risk Assessment

Station Planning Zones Risk

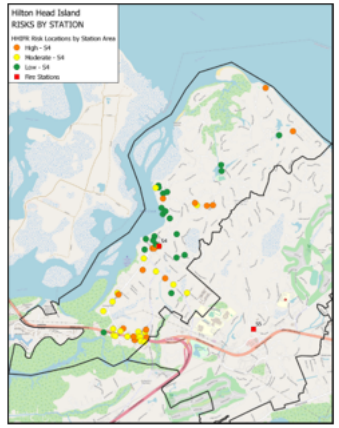
Examples:
Fire Station #3
Port Royal

Fire Station # 4
Back Gate HHP

Hilton Head Island Fire Rescue Community Risk Assessment – Standards of Cover

Station Planning Zone 4

SPZ 4 represents 12.8% ($1.8 billion) of the total assess value for the jurisdiction and 15.8% of the total square miles. The weighted community demand, a factor of the frequency of incidents by risk classification, is indicative of 1,326 incidents with a call concurrency rate of 9.2%.



From the inspectable properties database within SPZ 4, there were 14 high-risk occupancies and 15 moderate-risk occupancies.

The risk severity is presented by category and classification to better understand the relationship of risk by program area. Fire related risks had a much greater frequency of low-risk than moderate- and high-risk incidents.

EMS related incidents had a higher frequency of moderate-risk incidents, but overall is a relatively evenly distributed risk profile between low-, moderate-, and high-risk incidents.

Hazardous materials incidents were evenly distributed at a low frequency value.

Rescue related incidents were evenly distributed at a low frequency value.

Figure 35: All Risk Occupancies for SPZ4

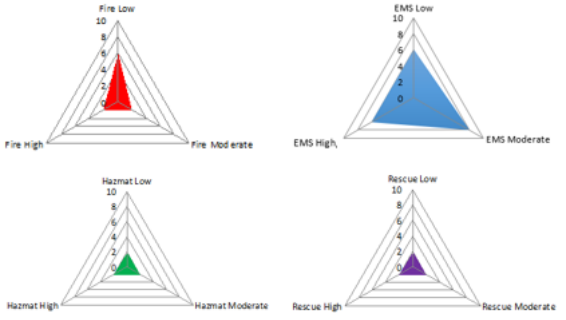


Figure 36: SPZ4 Risk Assessment

Hilton Head Island Fire Rescue

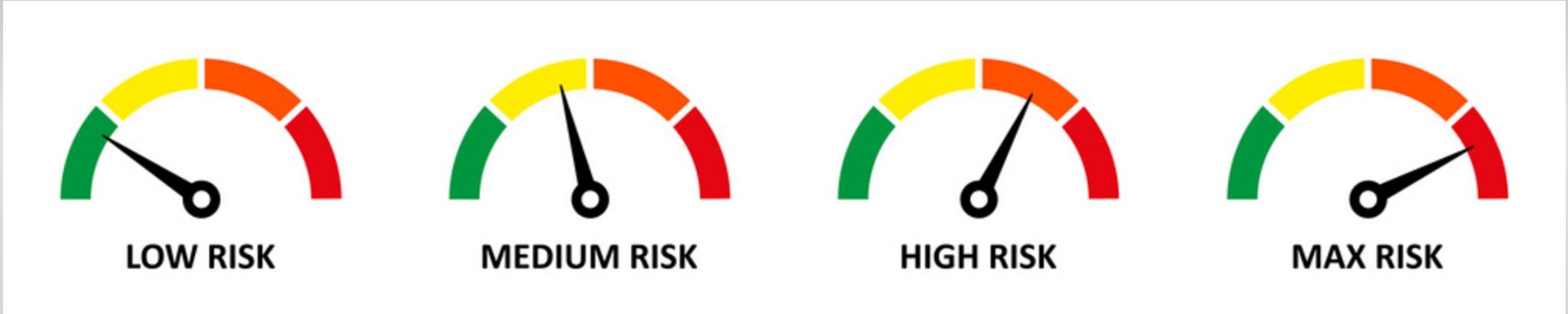
Risk assessments were completed for the
four emergency service delivery programs Fire Rescue provides

- ❑Fire
- ❑EMS
- ❑Hazmat
- ❑Technical Rescue

Hilton Head Island Fire Rescue

Risk ***Categories*** were completed for the

four emergency service delivery programs



Hilton Head Island Fire Rescue

Critical Task Analysis and development of associated Effectiveness Response Force

- Critical Task Analysis - A time-sensitive work function/task that is essential along with other work functions to ensure a positive outcome for a performance objective.
- Effective Response Force (ERF)-The ERF is the result of the critical tasking analysis conducted as part of a community risk assessment. The ERF is 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 actions to mitigate the emergency.

Hilton Head Island Fire Rescue

Critical Tasking for each Risk Level and assigned Minimum Staffing for *EMS*

Emergency Medical Services

Low Risk

All Alpha, Bravo, Charlie, and Omega level incidents are identified as low risk EMS incidents. These incidents are mitigated with an ERF of two on a single medic unit.

Critical Task	Needed Personnel
Treatment/Transport	2
Total	**2**

Responding Units	Minimum Staffing
Medic	2
Total	**2**

Table 37: Critical Tasks Analysis for Low-Risk EMS Responses

Moderate Risk

All Delta level incidents are identified as moderate risk EMS incidents. These incidents are mitigated with an ERF of four, consisting of the closest medic unit and next closest unit.

Critical Task	Needed Personnel
Treatment / Transport	4
Total	**4**

Responding Units	Minimum Staffing
Medic	2
Closest Unit	2
Total	**4**

Table 38: Critical Tasks Analysis for Moderate Risk EMS Responses

High Risk

All Echo level incidents are identified as high-risk EMS incidents. These incidents are mitigated with an ERF of seven, consisting of the closest medic unit, the next two closest units, and the Battalion Chief.

Critical Task	Needed Personnel
Treatment / Transport	7
Total	**7**

Responding Units	Minimum Staffing
Medic	2
Closest Unit	2
Closest Unit	2
Battalion Chief	1
Total	**7**

Table 39: Critical Tasks Analysis for High-Risk EMS Responses

Hilton Head Island Fire Rescue

Critical Tasking for each *Fire Suppression* Risk Level and assigned Minimum Staffing

Fire Suppression

Low Risk

A single fire apparatus with a two-person crew has the capabilities to manage low risk fire incidents. Low risk fire incidents may include fire alarm activations, arcing electrical equipment, smoke scares and motor vehicle accidents where no EMS is necessary.

Critical Task	Needed Personnel
Command / Control	1
Investigation / Extinguishment	1
Total	**2**

Responding Units	Minimum Staffing
Engine / Truck	2
Total Response Provided	**2**
Personnel Required by Critical Tasks	**2**

Table 33: Critical Tasks Analysis for Low-Risk Fire Responses

Moderate Risk

Moderate risk fire incidents are mitigated by one fire apparatus with a minimum ERF of three, or two apparatus with a minimum ERF of four. As Fire Rescue operates both jump and split crews, the minimum staffing of the first apparatus dispatched dictates the need to add an additional apparatus to meet the needed ERF of three. Types of incidents included in the category are contained cooking fires, trash fires and passenger vehicle fires.

Critical Task	Needed Personnel
Command / Control	1
Investigation / Extinguishment	2
Total	**3**

Responding Units	Minimum Staffing
Engine	2
Engine / Truck	2 (3-4)
Total Response Provided	**3-4**
Personnel Required by Critical Tasks	**3**

Table 34: Critical Tasks Analysis for Moderate Risk Fire Responses

Hilton Head Island Fire Rescue

Critical Tasking for each *Fire Suppression* Risk Level and assigned Minimum Staffing

High Risk

High risk fire incidents are fires that occur in a single-family residential structure or a water vehicle (boat, barge, etc.). Response for high-risk incidents include an ERF of 14 responding in three engines, one truck, one medic and the Battalion Chief.

Critical Task	Needed Personnel
Command/Control	1
Initial Fire Attack	2
Search	2
Ventilation/Utilities	2
Water Supply / Secondary Fire Attack	2
IRIC	2
Pump Operator	1
Sub-Total Critical Tasks	**12**
Medical / Rehab	1
Safety	1
Total	**14**

Responding Units	Minimum Staffing
Battalion Chief	1
Engine	3
Engine	3
Truck	4
Engine with Tag Medic	3
Total Response Provided	**14**
Personnel Required by Critical Tasks	**14**

Table 35: Critical Tasks Analysis for High-Risk Fire Responses

Maximum Risk

Maximum risk fire incidents receive an ERF of 17, adding an additional engine to the units assigned to a high-risk incident. Commercial structure fires make up all maximum risk fire incidents.

Critical Task	Needed Personnel
Command/Control	1
Initial Fire Attack	2
Search	2
Ventilation/Utilities	2
Water Supply / Secondary Fire Attack	3
RIC	3
Pump / Aerial Operator	2
Sub-Total Critical Tasks	**15**
Medical / Rehab	1
Safety	1
Total	**17**

Responding Units	Minimum Staffing
Battalion Chief	1
Engine	3
Engine	3
Engine	3
Truck	4
Engine with Tag Medic	3
Total Response Provided	**17**
Personnel Required by Critical Tasks	**17**

Table 36: Critical Tasks Analysis for Maximum Risk Fire Responses

Hilton Head Island Fire Rescue

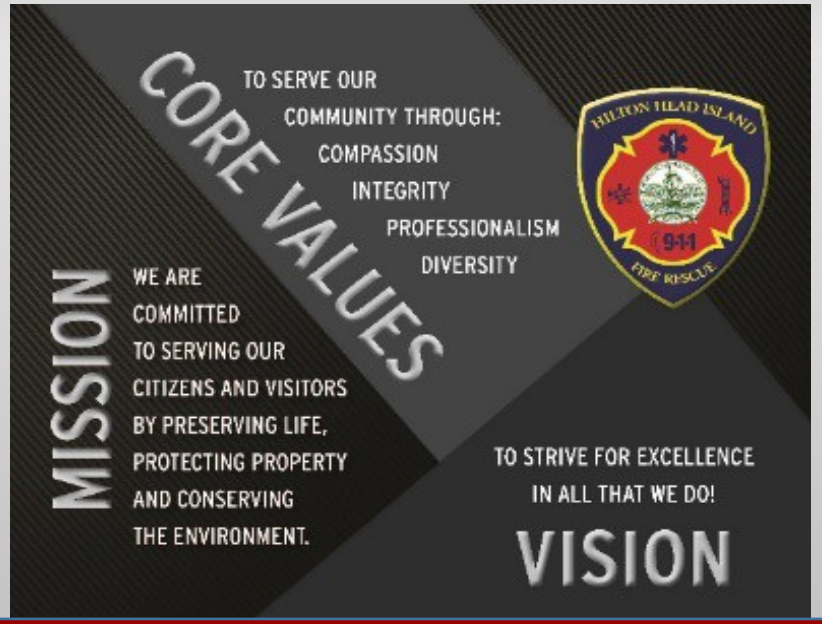
Community Feedback

- Strategic Plan – Internal and External feedback obtained through planning process.
- Community Communications Survey - Community-wide survey conducted between March and June of 2021 to better understand how to communicate with residents and visitors.
- EMS Patient Survey – As of July 2019, patient surveys are attached to EMS invoices to provide voluntary feedback.
- Customer Service Survey – QR code in development to allow community members to provide feedback on Fire Rescue services.

Programs	Ranking	Score
Emergency Medical Services	1	264
Fire Suppression	2	218
Fire Rescue E911 Communications	3	207
Rescue – Basic and Technical	4	190
Domestic Preparedness Planning and Response	5	146
Community Risk Reduction	6	95
Hazardous Materials Mitigation	7	77
Public and Life Safety Education	8	70
Fire Investigation	9	65

Program Goals and Objectives

- Program goals and objectives are updated during the annual appraisal process, allowing for honest reflection of the progress of individual programs and Fire Rescue has a whole.



Response Time Performance and Gap Analysis

- Five-year 90th percentile incident time charts
  - Benchmark vs. Baseline
  - Analysis of emergent responses excluding outliers.
  - Comparison of Fire Rescue standards and actual response data

- Five-year Performance Gap Analysis
  - Review of 90th percentile incident data to determine if Fire Rescue is meeting or exceeding established benchmarks. Provides data to determine need to reevaluate response benchmarks.

Hilton Head Island Fire Rescue

(Moderate Risk) EMS - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	00:53	01:00	00:43	00:46	00:50	00:57	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:16	02:34	02:14	02:08	02:14	02:15	01:45
Travel Time	Travel Time 1st Unit Distribution	Urban	05:01	05:40	05:06	04:51	04:46	04:44	05:00
	Travel Time ERF Concentration	Urban	07:38	08:56	07:28	07:25	07:30	07:39	06:25
Total Response Time	Total ResponseTime 1st Unit on Scene Distribution	Urban	08:03	08:53	07:52	07:36	07:22	08:00	08:05
			n=6936	n=1152	n=1462	n=1375	n=1437	n=1446	
	Total Response Time ERF Concentration	Urban	10:15	12:06	10:01	10:01	10:02	10:31	09:30
			n=4884	n=474	n=1164	n=1104	n=1155	n=996	

2016-2020 Moderate Risk EMS Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	8:03	8:05	00:02
		n=6936		
ERF	Urban	10:15	9:30	00:45
		n=4884		

Hilton Head Island Fire Rescue

(High Risk) EMS - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	00:56	00:54	00:47	00:43	00:53	01:11	01:20
Turnout Time	Turnout Time 1stUnit	Urban	02:14	02:36	02:09	02:03	02:15	02:20	01:45
Travel Time	Travel Time1st UnitDistribution	Urban	04:28	04:09	04:13	04:30	04:31	04:37	05:00
	Travel Time ERF Concentration	Urban	10:03	09:46	10:39	09:39	11:06	09:50	08:55
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	07:38	07:36	06:49	06:48	07:20	08:08	08:05
			n=1289	n=189	n=195	n=255	n=332	n=282	
	Total Response Time ERF Concentration	Urban	12:40	12:45	13:46	11:21	13:45	12:50	12:00
			n=893	n=135	n=141	n=181	n=238	n=197	

2016-2020 High Risk EMS Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	7:38	8:05	00:27
		n=1289		
ERF	Urban	12:40	12:00	00:40
		n=893		

Hilton Head Island Fire Rescue

(Moderate Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	01:00	01:01	00:51	00:51	00:56	00:54	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:37	02:54	02:32	02:23	02:37	02:35	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	05:10	04:52	05:27	05:10	05:04	05:09	05:00
	Travel Time ERF Concentration	Urban	05:38	05:14	05:44	06:41	05:46	05:25	08:10
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	08:36	08:30	08:48	07:43	08:27	08:10	08:50
			n=322	n=39	n=51	n=65	n=83	n=74	
	Total Response Time ERF Concentration	Urban	08:43	08:31	08:54	09:29	08:47	08:10	12:00
			n=300	n=37	n=48	n=69	n=79	n=68	

2016-2020 Moderate Risk Fire Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	8:36	8:50	00:14
		n=322		
ERF	Urban	8:43	8:50	00:07
		n=300		

Hilton Head Island Fire Rescue

(High Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	00:53	01:13	00:57	00:36	00:45	00:43	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:45	02:42	02:42	02:59	02:29	02:42	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	05:28	04:42	05:15	07:02	07:19	05:36	05:00
	Travel Time ERF Concentration	Urban	14:41	13:48	14:41	16:00	11:53	20:24	11:10
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	08:53	09:15	08:21	09:02	09:06	08:40	08:50
			n=87	n=17	n=11	n=18	n=18	n=24	
	Total Response Time ERF Concentration	Urban	17:44	16:55	17:27	17:44	12:44	23:17	15:00
			n=57	n=13	n=8	n=12	n=9	n=14	

2016-2020 High Risk Fire Suppression Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	8:53	8:50	00:03
		n=87		
ERF	Urban	17:44	15:00	02:44
		n=57		

Hilton Head Island Fire Rescue

(Maximum Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2016-2020	2020	2019	2018	2017	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	00:51	01:16	00:42	00:52	00:45	01:11	01:20
Turnout Time	Turnout Time 1st Unit	Urban	02:39	02:37	02:31	02:38	02:38	03:11	02:30
Travel Time	Travel Time 1st Unit Distribution	Urban	05:01	04:12	05:09	05:09	05:15	04:34	05:00
	Travel Time ERF Concentration	Urban	19:31	16:10	22:38	12:36	20:39	15:48	16:10
Total Response Time	Total ResponseTime 1st Unit onScene Distribution	Urban	08:06	08:06	06:58	07:54	07:52	08:29	08:50
			n=84	n=14	n=16	n=22	n=14	n=17	
	Total Response Time ERF Concentration	Urban	21:39	18:39	24:52	15:29	22:42	18:58	20:00
			n=26	n=4	n=6	n=7	n=3	n=5	

2016-2020 Max Risk Fire Suppression Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	8:06	8:50	00:44
		n=84		
ERF	Urban	21:39	20:00	01:39
		n=26		

Hilton Head Island Fire Rescue

Plan for Maintaining and Improving Response Capabilities

- Turn Out Times
  - Prioritize the message through department wide education on the importance of turn out times.
  - Fire Rescue will utilize the new RMS reporting software (FireWorks) to produce consistent reports.
  - Fire Rescue is working towards replacing outdated station alerting to improve the station notification process.
- Cross-Staffing Deployment
  - Fire Rescue is evaluating the call volume and workload of current cross-staffed stations to determine the need for implementation of a dedicated 2/2 staffing at fire stations 3, 4, 6 & 7.
- Dispatch Determinant
  - Fire Rescue is evaluating call triaging methods for all incidents to proceed to the determinant level before dispatching resources.
- Clearly Identified Compliance Team
  - Compliance team has been implemented and includes staff from the Town and Fire Rescue.
  - Compliance team has been tasked with the responsibility of monitoring changes in risk, community service demands, and department performance in each program area, station planning zone, and risk category.

Hilton Head Island Fire Rescue

Any Questions?