Town of Deep River
Emergency Services Study

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Executive Summary

In the Spring of 2022, The Town of Deep River requested JLN Associates, LLC (JLN) conduct a comprehensive evaluation of the community's Fire and Emergency Medical Services. As part of the Study, JLN assessed the Emergency Management components as well. In addition to the collection of a significant number of documents and information, the study would include individual meetings with the leaders of the Fire Department and Ambulance Service, the First Selectman and Community Staff.

The results of JLN's research concluded the following:

1) As anticipated, the replacement or significant remodel of the Headquarters' Station is needed. While the station met the space needs of the Fire Department in 1961, changes in service and the increased size of modern apparatus is stressing the department's ability to meet today's challenges. The design of the resulting station should not only meet today's needs but also those of the future.

2) An apparatus replacement plan should be created and fiscally planned for. JLN has provided a suggested plan. Unfortunately, the history of replacing apparatus after 30 years has caused a significant conflict in future replacement timing. The department would not be prudent in pursuing this past practice.

3) Deep River is fortunate to have a successful self-sustaining Ambulance Service serving its community. The risk is that the Ambulance Association will not be able to maintain its membership and activity level in the future. We see no obvious threat to these issues currently. It is critical, however, that the generous citizens of Deep River continue to financially support both the Ambulance Association and Fire Department through donations.

Abstract

The Deep River Fire Department and Deep River Ambulance Association provides Fire, EMS and Rescue services to the residents and guests of the Town of Deep River, CT. The Town of Deep River spans 13.6 square miles and is a rural/maritime community.

The purpose of this study is to review the services delivered by the Deep River Fire Department and Deep River Ambulance Association with expanded focus on resource distribution and response profiles. In addition, the agencies' systems, support, risk contingencies, equipment, facilities, and traditional activities shall be studied.

Research questions answered were:

1) Is the present emergency response system effective and efficient?

2) What changes, specific to additional facilities/enhancements, could be made to improve the delivery of emergency services for the Town of Deep River?

3) What is the general health of the Deep River Fire and Ambulance Departments?

4) Are the Emergency Departments prepared to successfully handle emergencies at their target hazards?

5) What is the long-term resourcing that will need to take place to ensure quality service?

1.0 Table of Contents

2.0 Process

2.1 Data

The information in this report was developed based on the guidance provided on the Fire Risk Analysis for Community Fire Departments as delineated in the 18th and 19th Editions of the Fire Protection Handbook published by the National Fire Protection Association. The Report contains a review of the Deep River Fire Department and cursory review of the Deep River Ambulance Association utilizing NFPA 1201 (2015) Standard for Developing Fire Protection Services for the Public. The following standards were used as references to draw comparisons including:

NFPA 1141 (2012), Standard for Fire Protection in Planned Building Groups.

NFPA 1201 (2015), Standard for Developing Fire Protection Services for the Public.

NFPA 1500 (2013), Standard on Fire Department Occupational Safety and Health Program.

NFPA 1561 (2014), Standard on Emergency services Incident Management System and Command Safety.

NFPA 1581 (2015), Standard on Fire Department Infection Control Program.

NFPA 1720 (2016), Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments.

Documentation provided by the Department, State and Local EOP Planning Guidance was also referenced.

Travel times from Emergency Department to various commercial properties and businesses were calculated using the Apparatus Travel Time Formula provided by the ISO Commercial Risk Services, Inc. Apparatus driver response times to the Deep River Fire Department and Deep River Ambulance Association were calculated by the same means.

Information contained in this report on the potential fire hazards within the community has been based on discussions and research utilizing:

Discussions with Fire Chief Timothy Lee.
Discussions with Deputy Fire Chief James Budney.
Discussions with Assistant Fire Chief Adam Kerop.
Discussions with the First Selectman.
Discussions with the Planning Official.
Discussions with Finance Chairman.
Community tours and property visits by the staff of JLN Associates, LLC.
Research by JLN of the commercial and industrial properties within the response district.
Individual meetings with the Command Staff.

2.2 Report

This report, when applied as a whole, will provide a reasonable, realistic, and consistent template as a guide for planning and development. This report addresses the following areas:

- The delivery of Emergency Medical Services.
- The required fire protection, rescue, emergency response and potential disaster needs for the Town of Deep River based on response trending data.
- The adequacy of the Deep River Fire Department and Deep River Ambulance Association organizations based on bylaws and Standard Operating Guidelines.
- The Deep River Fire Department's use of current technology for monitoring inventory, maintenance of equipment, and maintaining response data.
- The Town of Deep River's Emergency Management Response Plan's ability to address appropriate guidance for the fire department during town emergencies including Homeland Security issues.
- The Deep River Fire Department's current configuration and the anticipated facility needs.
- The needs of the Deep River Fire Department are based on the potential growth of the town and department within the next 5, 10, and 20 years.
- Water supply needs of the Deep River Fire Department to adequately protect the Town of Deep River.
- Condition, maintenance, and replacement schedule for fire apparatus and equipment.
- The Deep River Fire Department's Fire Prevention and Public Education Programs.
- Review of Deep River Fire Department's Mutual Aid Agreements.
- The available options to the Deep River Fire Department to enhance emergency response within the community.

3.0 Community History, Geography & Demographics

3.1 History

Deep River, formerly called Eight Mile Meadow or Potapaug Quarter, was originally part of Saybrook Colony. It was incorporated in 1859 as Saybrook and renamed Deep River in 1947. The town also includes the village of Winthrop to its west. An early shipbuilding and quarrying town, it later manufactured wire goods, lace, glass, ivory combs, and piano keys. (Retrieved March 9, 2022, from https://connecticuthistory.org/towns-page/deep-river/)(n.d.)

In 1723, as the Kirtland Brothers built the first homes in Deep River, the firefighting needs of this community began. By the turn of the century the village was rapidly expanding into a thriving manufacturing community centered around its waterpower. The first attempt to organize a volunteer fire department came in 1854. When a dozen young men with George Bogart as foreman manned and cared for an old rotary pump. The pump was made by Ezra Williams at his shop on Winthrop Road. This hand drawn pump was pulled by a rope and required four or five men to turn the crank handle. The fire company became incorporated on June 4, 1857. Later a used hand pumper was purchased from the city of New Haven in 1862, but newspaper clippings revealed that the department disbanded never having the opportunity to use the equipment at a major fire. (Retrieved March 9, 2022, from https://www.deepriverfd.com/history.htm) On March 6, 1939, the Town of Saybrook established the Deep River Fire Department and Board of Fire Commissioners. They formally designated the Deep River Fire Department Inc. as the Deep River Fire Department and detailed the make-up of the Fire Commission. (Town of Saybrook, March 6, 1939, Vol. 5 Pg. 125)

3.2 Geography

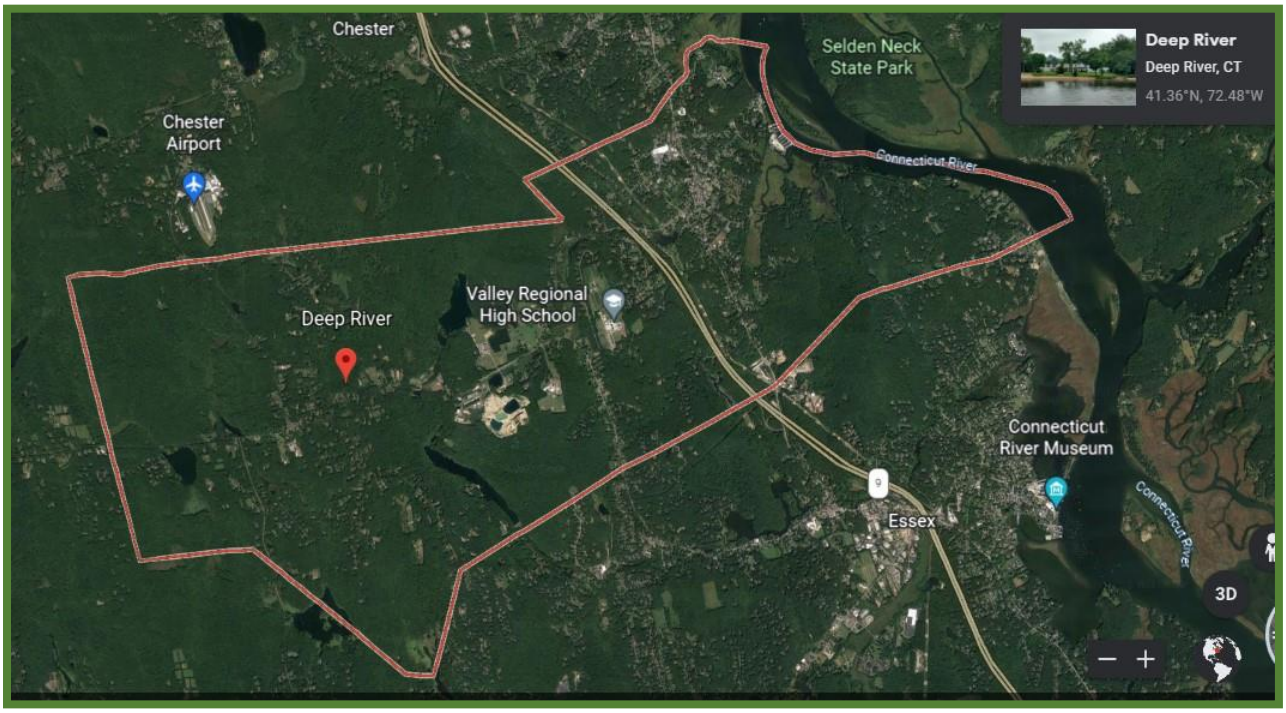


Photo 1: Deep River from Google Maps

Deep River is in Middlesex County and Connecticut's Second Congressional District. It is spread over 14 square miles with an average elevation of 150' above sea level. The community is bisected by CT Route 9 and it is impacted by Routes 80, 145, 602 and 154. The nearest cities: Chester Center (1.3 miles), Essex (1.6 miles), Chester (1.6 miles), Essex Village (1.8 miles), Lyme (2.3 miles), Westbrook (2.5 miles), Westbrook Center (2.6 miles). (Retrieved May 3, 2022, from http://www.city-data.com/city/Deep-River-Connecticut.html). Relative to major cities, it is 19 miles from Middletown, 24 miles from New London, 33 miles from New Haven, 35 miles from Hartford, 69 miles from Danbury, 83 miles from New York City (Bronx) and 132 miles from Boston, MA.

In addition to the areas adjacent to the Connecticut River, there are several areas where the public can access water. The following sites are available; Keyboard Pond, Star Lake, Tower Hill Lake, Shailer Pond, and Rogers Road Pond.

3.3 Demographics

The Town of Deep River has a population of approximately 4,480 people spread over 14 square miles. This relates to a population density of 320 individuals per square mile or a Rural Community as defined by the National Fire Protection Association. It has an unemployment rate of 6.2 percent. Connecticut has an unemployment rate of 7.7 percent. (Retrieved May 9, 2022, from http://www.city-data.com/city/Deep-River-Connecticut.html). Of the 4,480 residents, 2,358 were males, 2,122 are females and 3,235 were of voting age. The median age is 47 years old. From a race perspective, 98% are Caucasian, .02% are African American and .025 are other races. (Retrieved May 9, 2022, from https://www.census.gov/data/datasets.html). It is important to notice the ages with most residents being 35-44, 45-54 and 65-74. This is a sign of things to come with both health care needs and an aging volunteer pool.

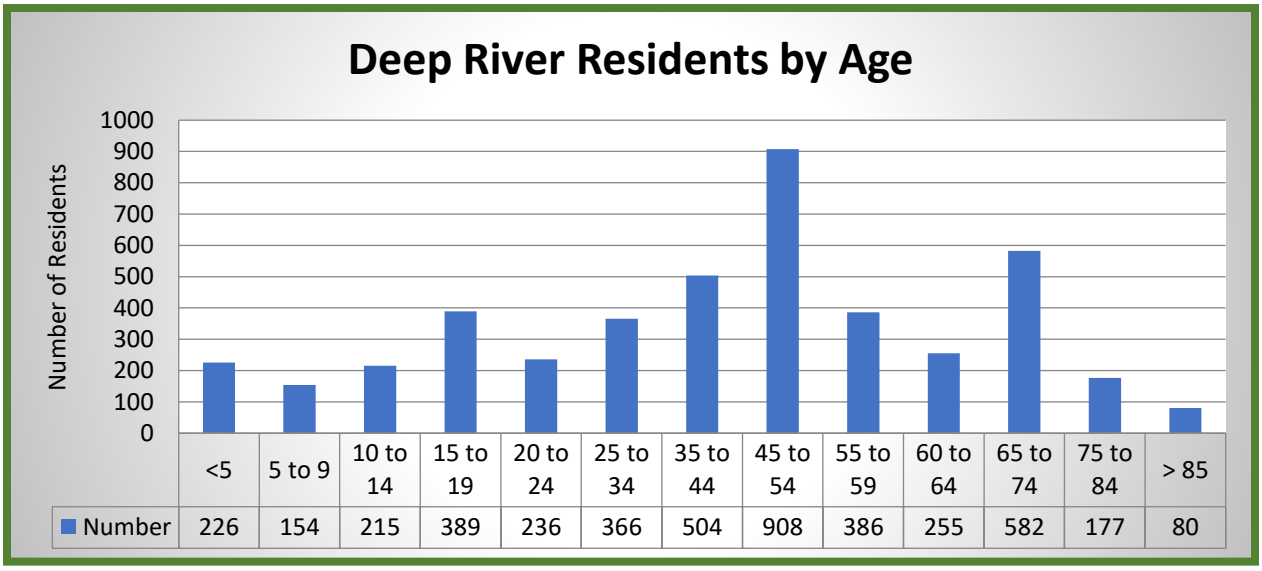


Exhibit 1: Number of Residents by Age

According to the 2020 US Census Bureau 5-year estimate for "Industry By Occupation For The Civilian Employed Population 16 Years And Over", local occupations are identified as; Construction, Manufacturing, Wholesale Trade, Retail Trade, Transportation / Warehousing / Utilities, Information, Finance / Insurance / Real Estate, Professional / Scientific / Management / Waste Management, Educational Services / Health Care / Social Assistance, Arts / Entertainment / Recreation / Lodging / Food Services, Other Services, and Public Administration.

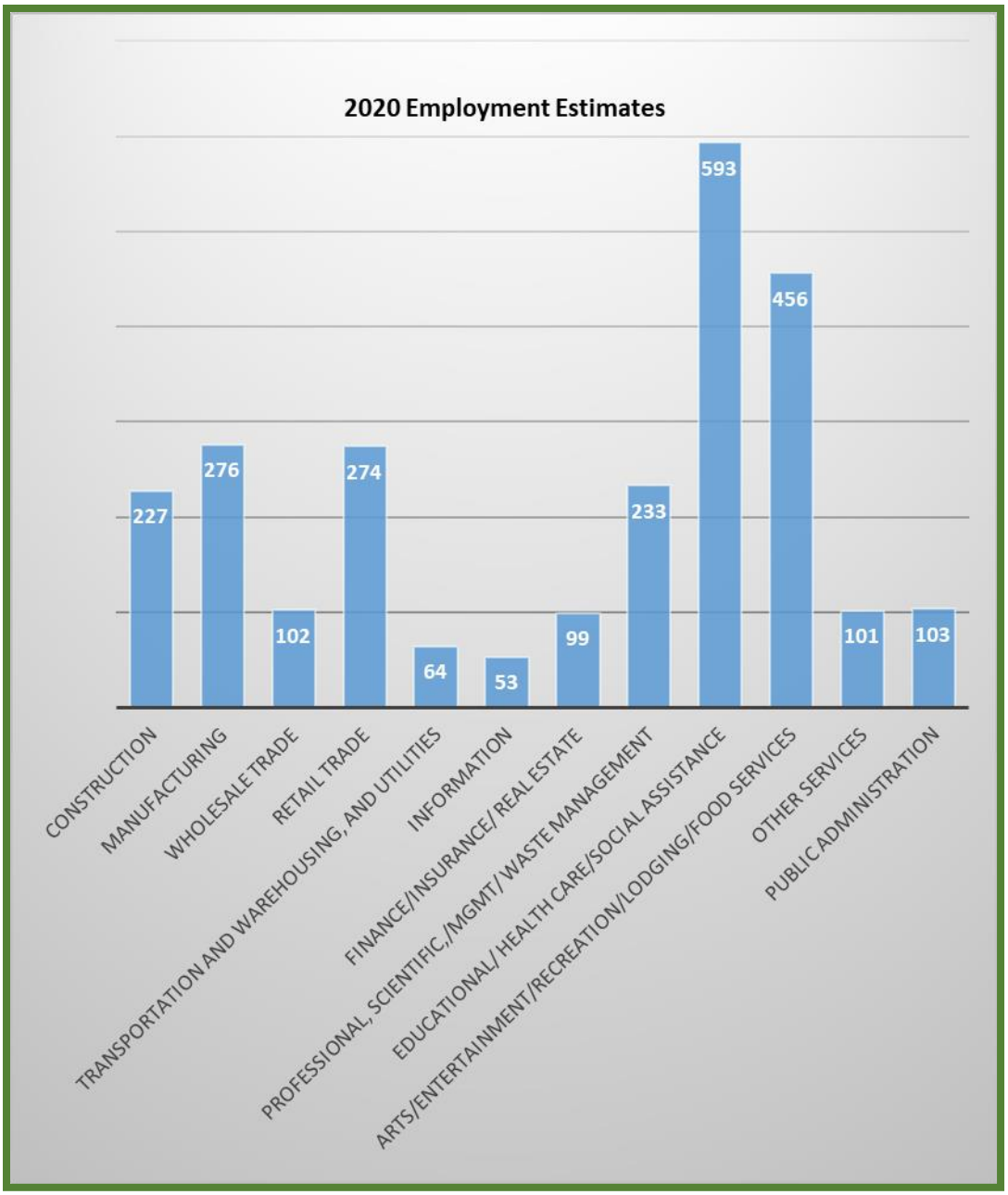


Exhibit 2: Community Employment

3.4 Medical Services

The Town of Deep River does not have a walk-in or stand-alone treatment center. Residents who wish to avail themselves of those services can go to the Shoreline Medical Center in Westbrook.

3.5 Education

The community is served by three public educational facilities. The Valley Regional High School, located at 256 Kelsey Hill Rd., serves 578 students from Chester, Deep River, and Essex. The John Winthrop Middle School, located at 1 Winthrop Rd., serves 847 students from Chester, Deep River, and Essex. The Deep River Elementary School, located at 12 River St., serves 218 students from Deep River.

Photo 2: Deep River Elementary School

Photo 3: John Winthrop Middle School

Photo 4: Valley Regional High School

3.6 Government

The Town of Deep River is served by a three-member Board of Selectmen. The First Selectman is Angus McDonald, Jr. He serves with Select Board Members Duane Gates and James A. Olson. Their terms expire in 2023. The Board of Selectmen meet the second and fourth Tuesdays of the month. In addition, there is a Board of Fire Commissioners established on March 6, 1939, with the creation of the Deep River Fire Department by, at that time, the Town of Saybrook. The Department was established under Section 510 of the General Statutes. Presently, Steven L.

David is the Acting Chairman, and he serves with David Berardis and Gary W. Clark. The Board of Fire Commissioners meet the first Monday of the month. The flow of information and requests to and from the Fire Department goes through the Fire Commission with the Board of Selectmen. During the budget preparation cycle, funding requests are shared with the Board of Finance before public participation for its input (https://www.deepriverct.us/board-fire-commissioners).

3.7 Citizen Incomes and Community Expenditures

The median income for the community is $80,495 as opposed to a median income for Middlesex County of $84,907. The poverty rate for Deep River is 3% with a poverty rate for Middlesex County of 7.1%.

3.7.1 Fire Department Expenditures

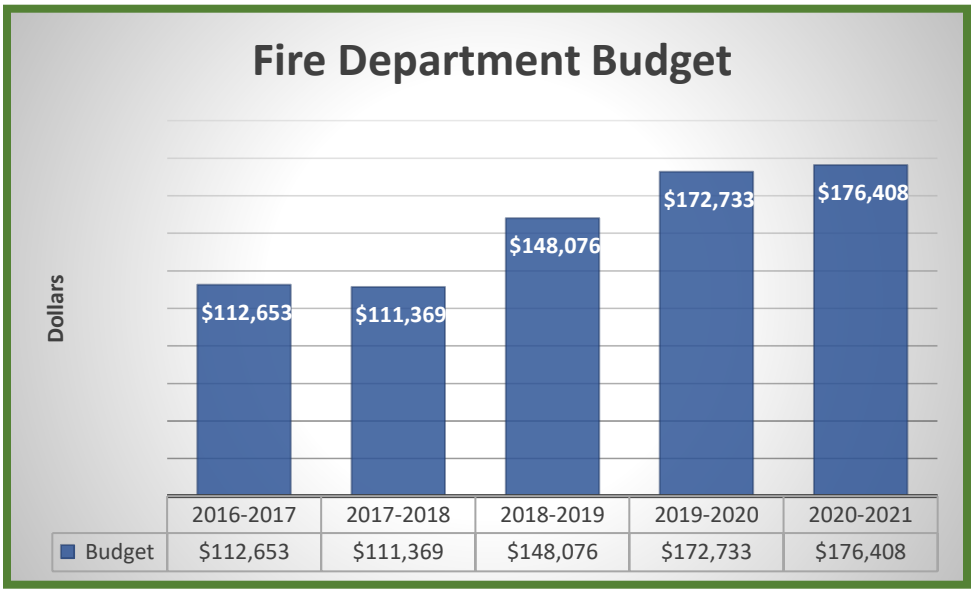


Exhibit 3: Fire Expenditures

3.7.2 Volunteer Benefits

While the Volunteers receive no pay for their services, the Town does provide a local tax abatement. In addition, a volunteer pension system is in place based on member participation.

3.8 Housing

The housing ownership rate is 69.9% in Deep River. There are approximately 2,112 housing units in the community with roughly 1,996 units occupied. Approximately 5.2% of the housing is rental. Many of the homes are older and were built with pre-fire code requirements. There is very limited space available for future development.

4.0 Town-wide Research

4.1 Community Risk

Community Risk is the baseline for all projects produced by JLN Associates. It is the core of all activities and investments a community should make, to protect its citizens.

4.2 Concept of Risk

NFPA 1201: 7-4 states an Emergency Services Organization that provides fire suppression, emergency medical services, hazardous materials response, or special operations shall develop an implementation plan to comply with all federal, state, or provincial, and local applicable laws, codes, regulations, or standards and NFPA 1500, Standard on Fire Department Occupational Safety and Health Program. This is an ongoing process. Working with their Valley Shore Mutual Aid partners, a broad range of subjects have been addressed. A review of the Valley Shore SOPs found them to be progressive and topical.

4.3 Community Risk Assessment

JLN Associates (JLN) has conducted a community fire risk analysis to identify the size and scope of the potential fire problem to determine the necessary number and deployment of fire companies. This has been done to evaluate and redefine fire protection needs for the jurisdiction to support the strategic (master) planning process. The Town of Deep River has several risks. A partial list from existing Deep River documents including Silgan Plastics, Deep River Precision Components, the Industrial Park Mixed Use, Excursion Boats on the River, Town Sewer Plant, and local boat slips. In addition, Deep River lies on the main transportation route for trucks and along the Connecticut River. These risks and examples of other risks identified by JLN are presented on the next few pages.

4.4 Examples

Industrial

Photo 5: Silgan Plastics

Photo 6: Deep River Precision Components

Mixed Use

Photo 7: 500 Main Street

Photo 8: 500 Main Street

Photo 9: 500 Main Street

Photo 10: 455 Main Street - Guardian Pest

Photo 11: Colanar Building

Photo12: Daniels Oil Storage

Photo 13: Haynes Materials

Photo 14: Eastern Transfer Station

Maritime/Tourism

Photo 15: RR/Ferry Landing

Photo 16: RR/Ferry Landing

Photo 17: Safe Harbor Marina

Photo 18: Safe Harbor Marina Fuel

Photo19: Marina Recreation

Photo 20: Excursion Rail Lines

Photo 21: Larimar Show Stables

Classic New England Street Scape

Photo 22: Main Street Front

Photo 23: Main Street Rear

Residential Occupancies

Photo 24: Piano Factory Residential Front

Photo 25: Piano Factory Rear

Photo 26: Kirtland Commons

Recreation

Photo 27: Town Recreation Pond

4.5 Strategic Planning

Presently, there is no Strategic Plan for the Deep River Fire Department. A Strategic Plan could help the Elected Officials and Public prepare for the future. The plan should encompass input from not only the Fire Department Leadership but also other department heads, elected officials and members of the economic community who may have important information to share. Workshops should take place to create a quality plan.

Recommendation 1: A Strategic Plan should be created by the Leadership of the Fire Department and the Community Leaders to prepare for the future.

4.6 Community Risk Reduction

4.6.1 Fire Prevention

The Deep River Fire Department provides public education programs as requested at the Fire Department and Community events.

4.6.2 Code Enforcement

The Fire Marshal conducts inspections as required by statutes and regulations. He is responsible for conducting Life Safety inspections. In addition, he works with the Planning and Building Departments on all new commercial and large-scale projects. As with many Fire Marshals, the primary focus is on new development and high-risk hazard inspections. The Fire Marshal can also write abatements, and propose housing regulations

4.6.3 Investigations

The Fire Marshal initially investigates all fires. If conditions present themselves where additional support is needed, the State Fire Marshal is requested for assistance.

4.7 Emergency / Disaster Management

The Fire Department participates, as needed, in Emergency Management incidents when requested. Presently, the Town of Deep River staff position for Emergency Management is vacant. As a result, the First Selectman has that responsibility. There is an Emergency Operations Plan (EOP), however, it was last reviewed in 2004. The EOP should be reviewed and updated as needed.

Recommendation 2: A replacement Emergency Manager should be appointed to prepare for potential emergencies.

Recommendation 3: The Emergency Operations Plan should be reviewed and updated as soon as possible.

5.0 Fire Department

5.1 Organizational Statement/Response Designation

The Fire Department does not have an “Organization Statement". One should be developed. On March 6, 1939, The Deep River Fire Department was created by the Town of Saybrook (Prior to the village of Deep River becoming a town). In addition, a Board of Fire Commissioners was also created. Traditional Fire Service duties fall under the jurisdiction of the Fire Commissioners and therefore, the Deep River Fire Department.

Recommendation 4: An Organizational Statement should be created to meet the NFPA and OSHA requirements.

5.2 Organizational History

As previously stated, in 1723, as the Kirtland Brothers built the first homes in Deep River, the firefighting needs of this community began. By the turn of the century the village was rapidly expanding into a thriving manufacturing community centered around its waterpower. The first attempt to organize a volunteer fire department came in 1854 when a dozen young men, with George Bogart as foreman, manned and cared for an old rotary pump. The pump was made by Ezra Williams at his shop on Winthrop Road. This hand drawn pump was pulled by a rope and required four or five men to turn the crank handle. The fire company became incorporated on June 4, 1857. Later a used hand pumper was purchased from the city of New Haven in 1862, but newspaper clippings revealed that the department disbanded never having the opportunity to use the equipment at a major fire.

A series of devastating fires in the 1880's dealt a severe economic blow to the community. After much discussion about reviving a fire company, the village of Deep River was left without organized fire protection. Finally in 1895 the selectmen of the town purchased a Halloway

Chemical Engine and housed it in a local barn. On February 28, 1896, at the insistence of the town selectmen, sixteen men gathered at the town hall to discuss the organization of a volunteer fire department. All the men signed on, and the first meeting of the Chemical Engine Brigade of Old Saybrook met on March 3, 1896. Frank Howard, a local businessman, was elected foreman of the department.

Within five years these dedicated men had purchased a piece of property from Mrs. Idelle Hodges on 10 River St, built an engine house, complete with a hand drawn chemical engine, hose reel and ladder wagon. Fire hydrants had been installed in the center of the village and a fire bell attached to the bell tower of the Baptist Church. As the town continued to grow so did the need for fire protection. Over the decades, modern equipment was purchased and as the expense of these items increased the need for long term financing became evident. In 1939 the Board of Fire Commissioners was formed to oversee the operation and maintenance of all firefighting equipment. Training programs for the men locally and on a state level kept the department up to date on the changes in firefighting techniques. With a look to the future, a Junior Division was established. To this day the Junior Division is a vital link to the membership of the department.

Winthrop Station was completed in November of 1952 to meet the expanding firefighting needs of the community. Several Winthrop families offered land for the proposed firehouse. The committee chose the property on Route 80 closest to the Winthrop four corners belonging to John Heidtman as the best suitable for the project. In 2003 an additional bay was added to the building to house the Brush Truck after the purchase of the new 5-5-4. The addition was constructed and paid for by the Department. The Ladies Auxiliary, formed in 1953, has been a great support to the department's activities and fund-raisers.

In 1961 the department had outgrown its original fire house and built a new headquarters on the corner of Elm and Union St. Today this building is headquarters for a well-trained and efficient volunteer fire department carrying on a 100 year tradition of dedication to serving friends and neighbors. (Retrieved May 11, 2022, from https://www.deepriverfd.com/history.htm)

5.3 Executive Committee / Non-Combat Structure

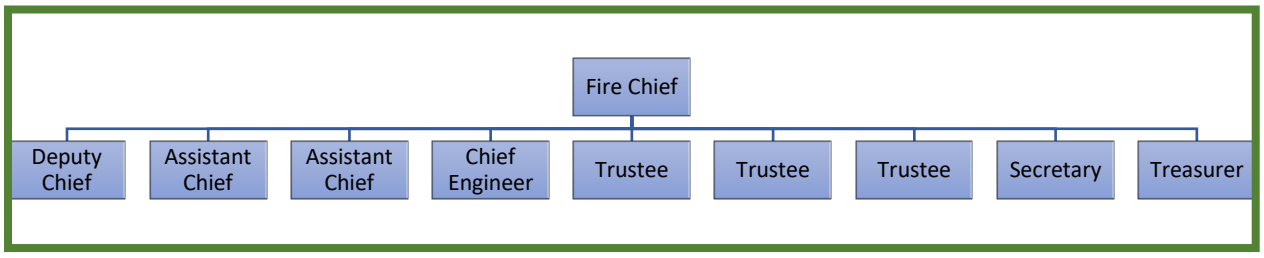


Exhibit 4: DRFD Executive Committee

5.4 Tactical Chain of Command - Executive Committee

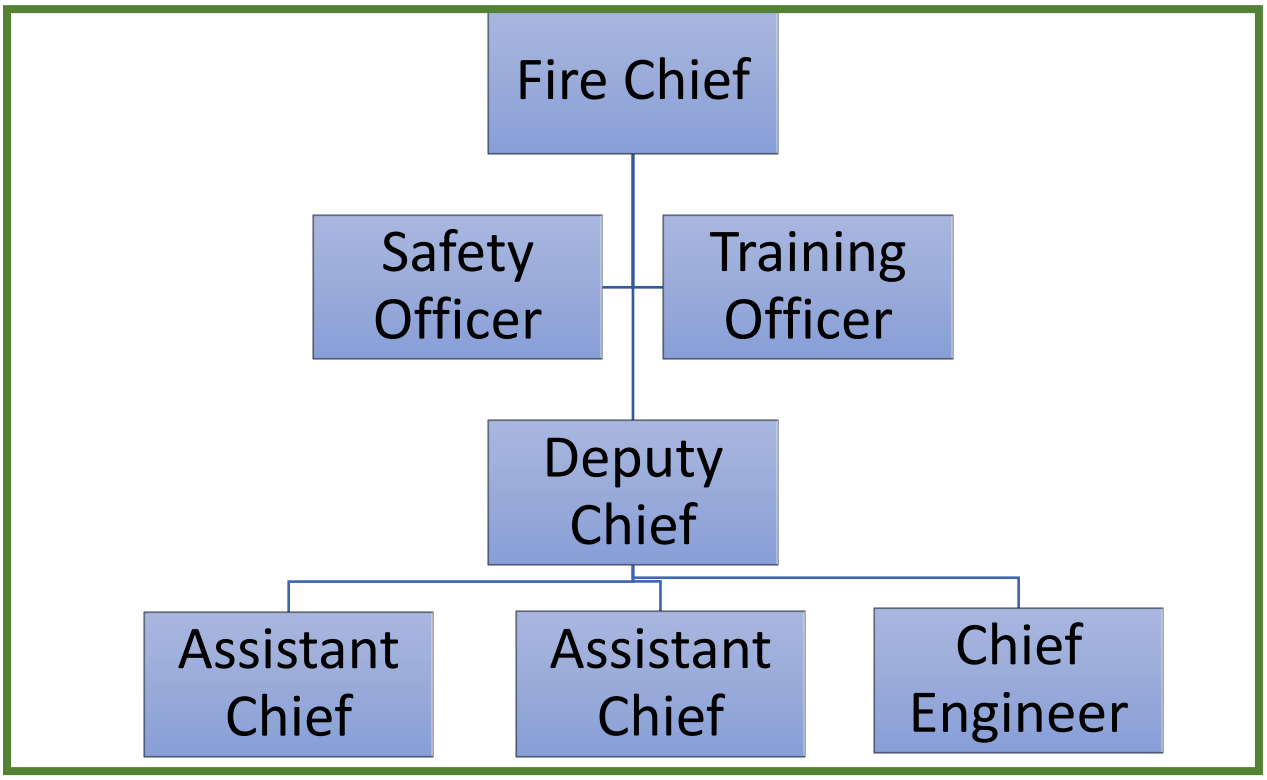


Exhibit 5: DRFD Tactical Chain of Command - Operations

5.4.1 Policies and Guidelines

The DRFD operates under policies, procedures and guidelines specifically designed to address issues the Department has deemed important. The DRFD has 17 chapters of Standard Operating Guidelines (SOG)s to provide direction and guidance. As part of the Valley Shore Mutual Aid, a significant number of SOGs have been promulgated through the organization. These Guidelines cover a wide range of local issues and risks. The policies and procedures should be reviewed by the Leadership and updated as needed.

5.4.2 Responder Minimum Standards

There are no minimum requirements relative to response standards. However, a great deal of positive feedback is used to promote volunteer activities.

5.5 Fire Marshal – Chain of Command

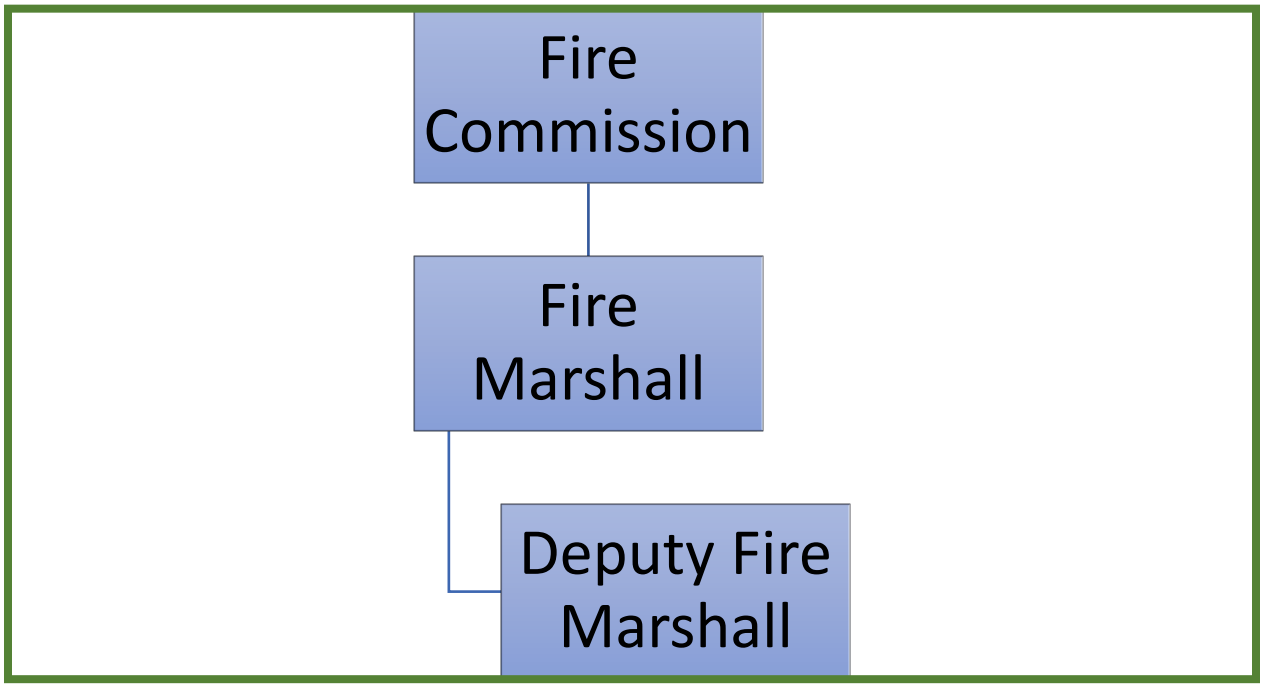


Exhibit 6: Town of Deep River Fire Marshal

5.6 Fire Services

5.6.1 Services Offered

Public fire protection services include, but are not limited to, fire suppression, fire prevention, fire investigations, public fire safety education, disaster management, rescue, emergency medical services, supplemental, hazardous materials response, maritime emergencies, and response to other emergencies as needed. To accomplish these missions, the Deep River Fire Department operates out of two stations. Headquarters is located at 57 Union St. and the second station is located at 411 Winthrop Rd (Rt 80).

NFPA 1201 states: The fire department shall have programs, procedures, and organizations for preventing the outbreak of fires in the community and to minimize the danger to persons and damage to property caused by fires that do occur. The fire department also shall carry out other compatible emergency services as mandated. The Deep River Fire Department has 56 members on the roster. Of the 56 members, 14 are

Junior members or future full status members. In 2021, the Fire Department averaged 10 members, of all levels, per call. There will be a need to hire career staffing at some point in the future. Presently, it is not needed or anticipated soon. In the next 5-10 years, Daytime personnel will most likely be needed.

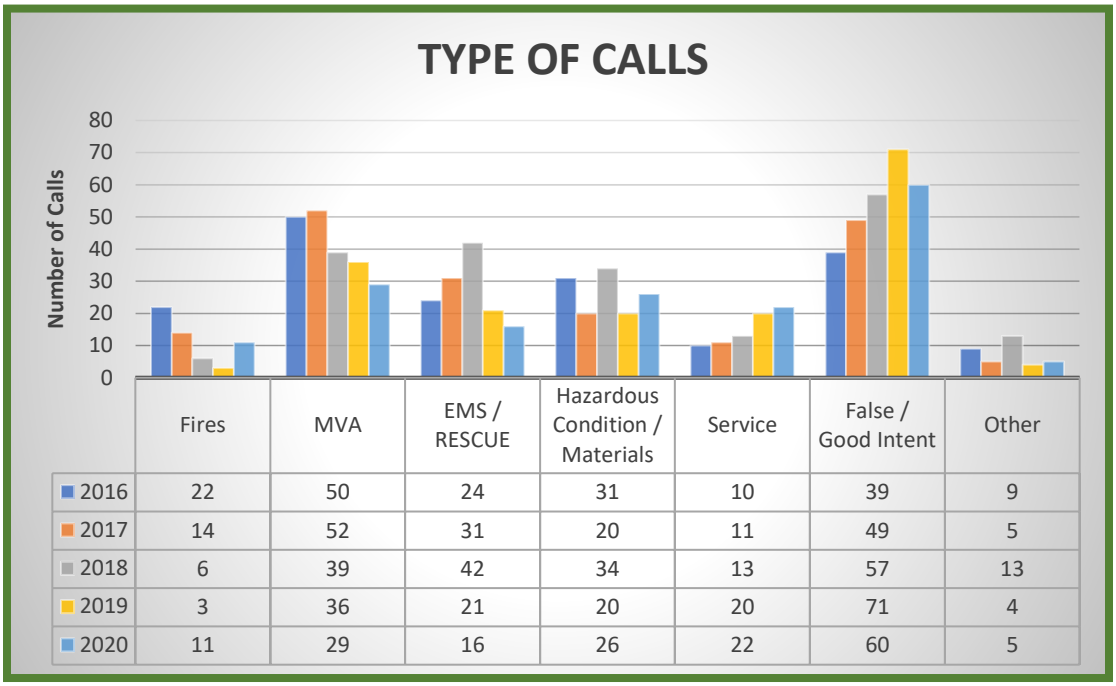
The Deep River Fire Department operates under the basic premise that all operations should result in the following primary objectives.

1) The preservation of Life and its Safety
2) The methods needed for effective Incident Stabilization and
3) Efforts for proactive Property Conservation.

NFPA 1201: 4.3.5* The Emergency Services Organization shall provide customer service–oriented programs and procedures to accomplish the following:

- Save lives
- Prevent or mitigate fires, injuries, and emergencies
- Work through a system of emergency management
- Extinguish fire
- Minimize damage to property and the environment
- Protect critical infrastructure
- Perform emergency medical services
- Protect the community from other hazardous situations
- Perform response to and mitigation of events of terrorism
- Perform rescue services
- Perform other community-related services

5.5.2 Response Data



	Fires	MVA	EMS / RESCUE	Hazardous Condition / Materials	Service	False / Good Intent	Other
2016	22	50	24	31	10	39	9
2017	14	52	31	20	11	49	5
2018	6	39	42	34	13	57	13
2019	3	36	21	20	20	71	4
2020	11	29	16	26	22	60	5

Exhibit 7: Response by Emergency Type

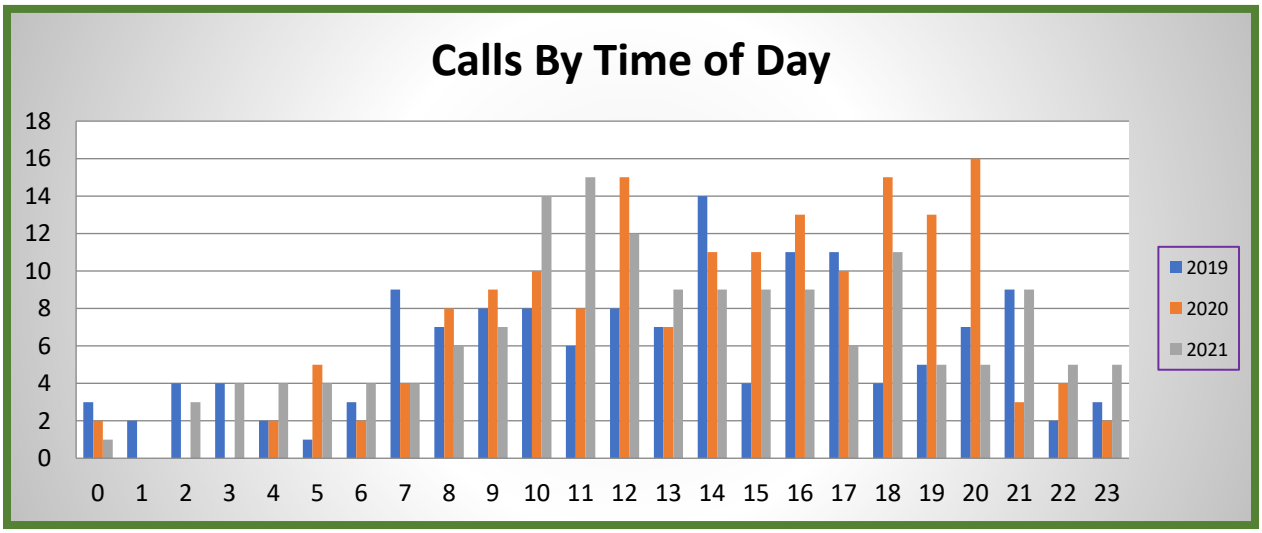
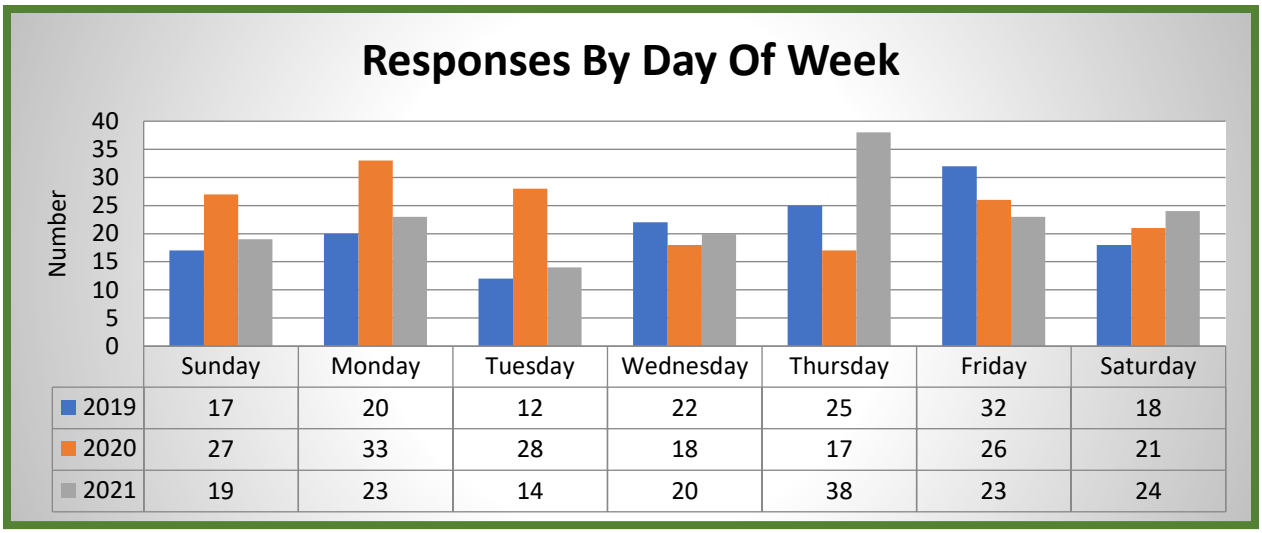


Exhibit 8: Calls by Time of Day



	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2019	17	20	12	22	25	32	18
2020	27	33	28	18	17	26	21
2021	19	23	14	20	38	23	24

Exhibit 9: Day of Week

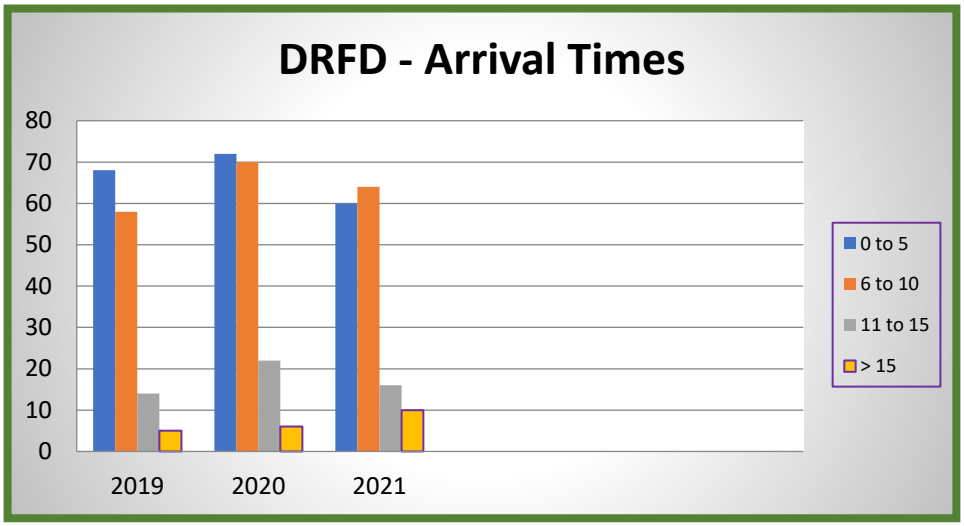


Exhibit 10: Response Times, First Arriving in Minutes (2019-2021)

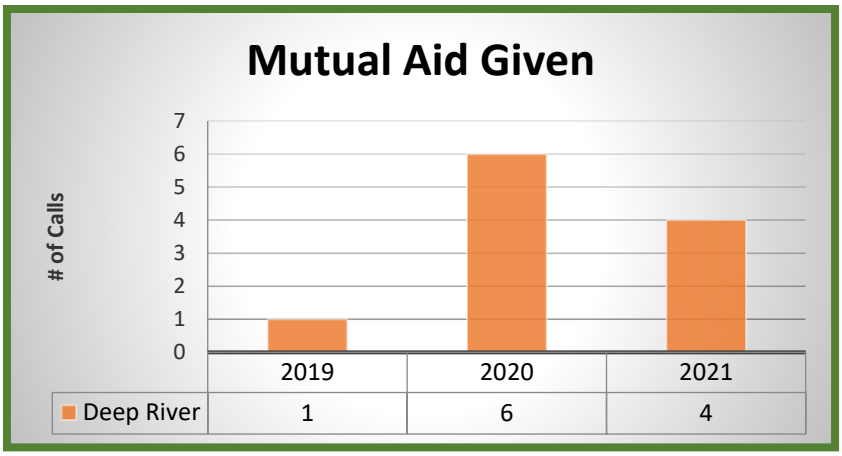


Exhibit 11: Mutual Aid Given

5.6.4 Training

The DRFD meets every Wednesday night. While the first Wednesday is the business meeting, the remaining Wednesdays are for training. Each meeting or training session starts with a review of the previous week's incidents. Then the appropriate meeting or appropriate training session takes place. This concept provides for timely review of routine incidents. In the event of a critical or significant incident, the case is initially debriefed as soon as possible.

5.6.5 Equipment

The DRFD operates 3 Engines, 1 Tanker, 1 Brush Unit, 1 Tower Ladder, 1 Heavy Rescue, 1 Utility Vehicle, a Marine Unit and two Staff Cars. These units operate out of two strategically located stations. See Section 8.0 Apparatus for a more in-depth assessment.

5.7 Dispatch & Communications

Valley Shore Emergency Communications, located at 315 Spencer Plains Rd, Westbrook, CT (DESPP, DPS, Troop F) dispatches Deep River Fire Department and Deep River Ambulance Association. Since its conceptual meetings in 1976 and development in the late 1970s and 1980s, Valley Shore Emergency Dispatch has served numerous fire and EMS agencies in the region around Deep River. There is a very close relationship between the Valley Shore Chiefs and the Dispatch Center.

Recommendation 5: DRFD and DRAA should pursue the transition of communications to the State Interoperability Frequency.

5.8 Hazardous Materials and Special Operations

The DRFD operates at the Operational (Defensive) Level. The DRAA operates at the Awareness (Recognition) Level. Hazardous Materials responses that require a higher level of risk are supported by the US Submarine Base New London/Connecticut Eastern Regional Response Integrated Team (CERRIT) or Guilford FD/New Haven Area Special Hazards Team (NHASHT). Due to the numerous bodies of water and marine navigation risks, the DRFD operates a marine unit and has been trained in the use of Cold-Water Rescue gear. While the Heavy Rescue Unit is well equipped, Mutual Aid Agreements through the Valley Shore Mutual Aid Fire Association provides significant technical rescue support.

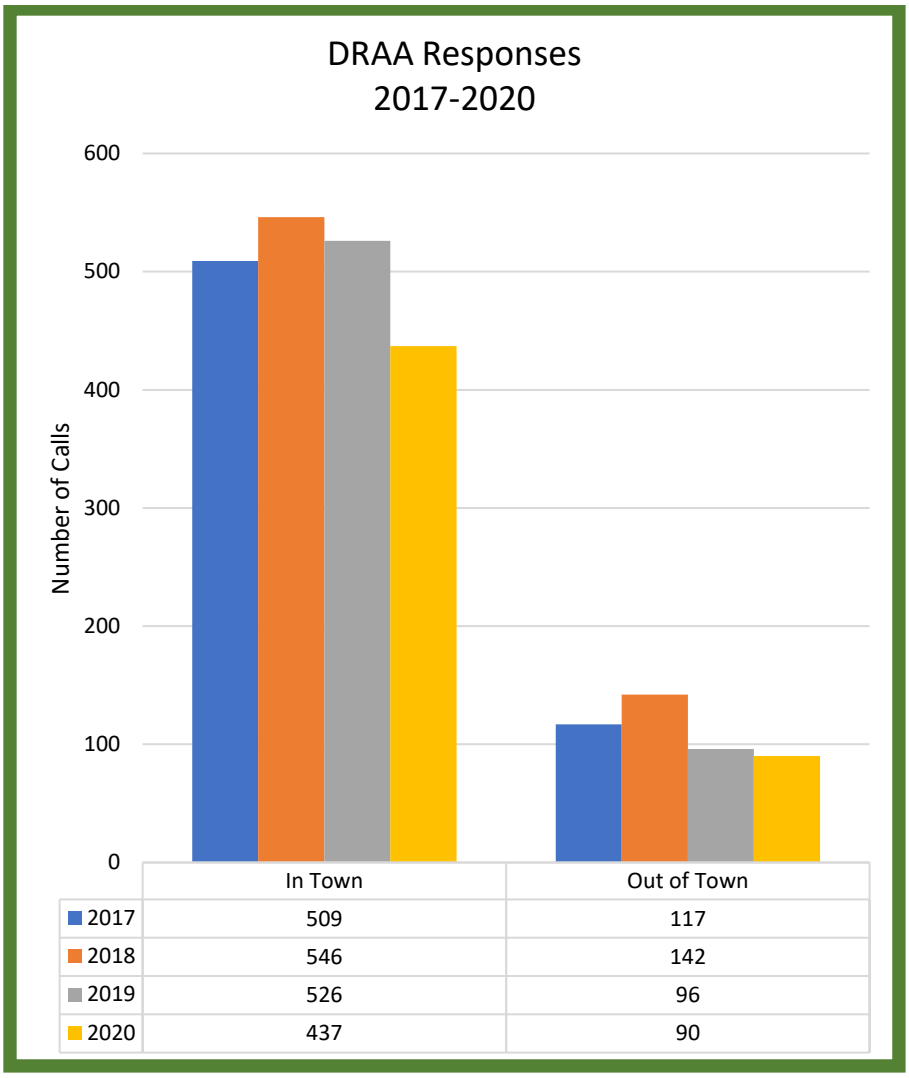
6.0 Deep River Ambulance Association

6.1 Services Offered

The Deep River Ambulance Association (DRAA) was founded in 1957. It operates two ambulances in Deep River and to mutual aid around the region. The Association operates at the Emergency Medical Technician/Emergency Medical Responder level. Paramedics respond as a third party and are provided by the Middlesex Hospital. The organization is led by a Command Staff/Board of Directors.

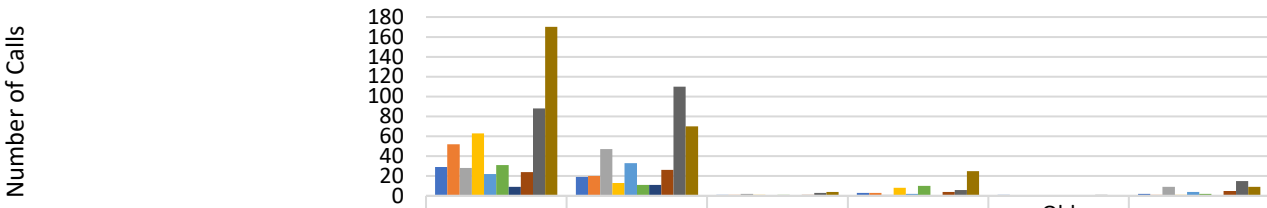
6.2 Response Data

The data below comes from the reporting software utilized by the Ambulance Association for the years 2017-2020. The injuries, illnesses and causes of ambulance requests covered a wide variety of issues. The most common forms of transport were for Abdominal Pain, Chest Pain, Cardiac Arrests, Falls, General Illness, Drug Issues, Psychiatric Emergencies, Difficulty Breathing and Syncope. A Paramedic was used on the call an average of 106 times per year. An average of 25 times per year, the patient was considered pediatric. The principal destination for the patients was Middlesex Health Shoreline Medical Center in Westbrook. The next busiest receiving site was Middlesex Hospital in Middletown. If needed and appropriate, the patient was taken wherever considered necessary. From 2017-2020, having 2,463 requests for service, the Association was unable to field a crew an average or 6.6% of the time. The high was 9.8 % of the calls in 2018 and the low was 3% in 2020. In each case, a mutual aid ambulance was called to deal with the issue.



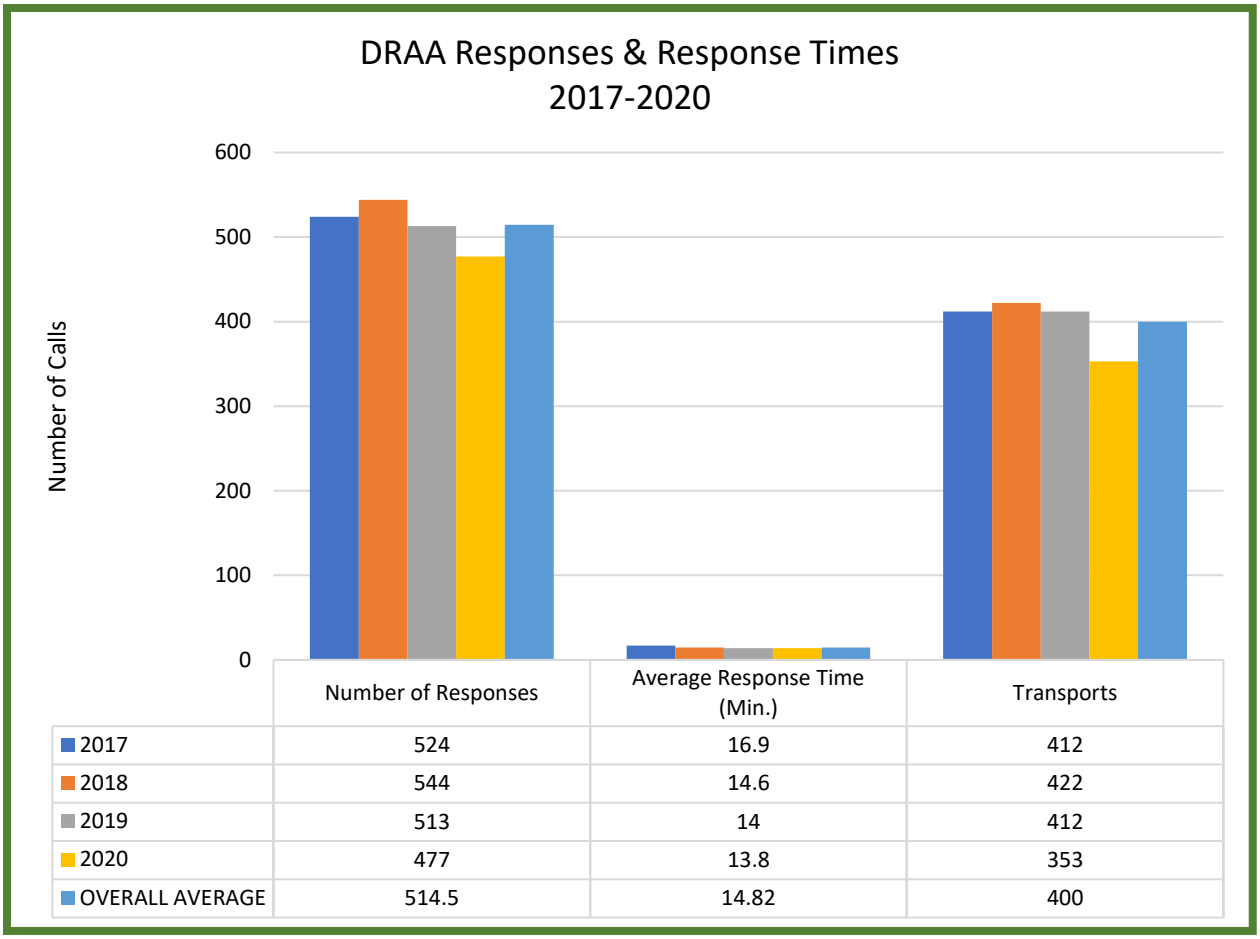
	In Town	Out of Town
2017	509	117
2018	546	142
2019	526	96
2020	437	90

Exhibit 12: In and Out of Town Comparison



	Chester	Essex	Haddam	Killingworth	Old Saybrook	Westbrook
2017 Mutual Aid Received	29	19	1	3	1	2
2017 Mutual Aid Given	52	20	1	3	0	1
2018 Mutual Aid Received	28	47	2	1	0	9
2018 Mutual Aid Given	63	13	1	8	0	1
2019 Mutual Aid Received	22	33	0	2	0	4
2019 Mutual Aid Given	31	11	1	10	0	2
2020 Mutual Aid Received	9	11	0	0	0	0
2020 Mutual Aid Given	24	26	1	4	0	5
2017-2020 Totals Mutual Aid Received	88	110	3	6	1	15
2017-2020 Totals Mutual Aid Given	170	70	4	25	0	9

Exhibit 13: Mutual Aid by Town



	Number of Responses	Average Response Time (Min.)	Transports
2017	524	16.9	412
2018	544	14.6	422
2019	513	14	412
2020	477	13.8	353
OVERALL AVERAGE	514.5	14.82	400

Exhibit 14: Response Data

6.3 Responder Data

Approximately 30 volunteers respond from home or conduct standbys. The target is 12 hours of volunteer time per week. It is not uncommon for multiple emergencies to occur at the same time. The Ambulance Leadership is acutely aware that they are fortunate to have the present numbers and response capabilities. In the future the volunteerism / paid per call dynamic may change. In that event, their costs will increase, and they may need assistance from the Elected Officials. As the community continues to age and call volume goes up, this financial support may come before the need for additional Fire Department staffing.

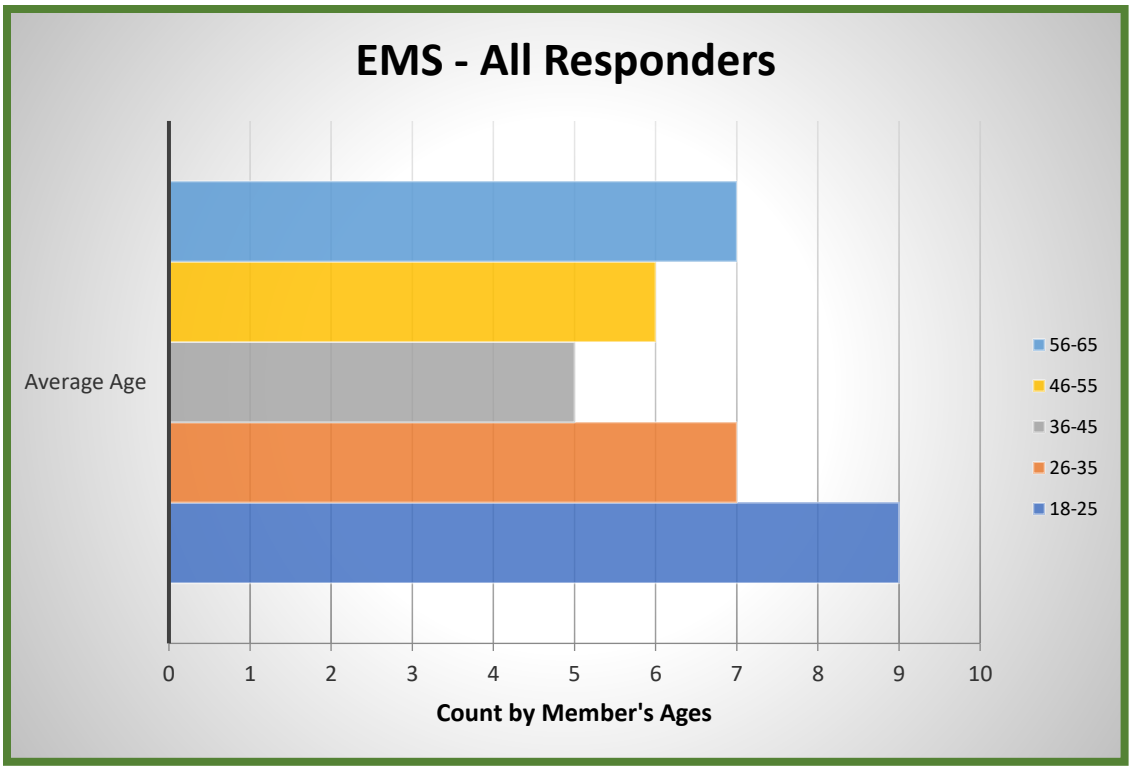


Exhibit 15: EMS Responders

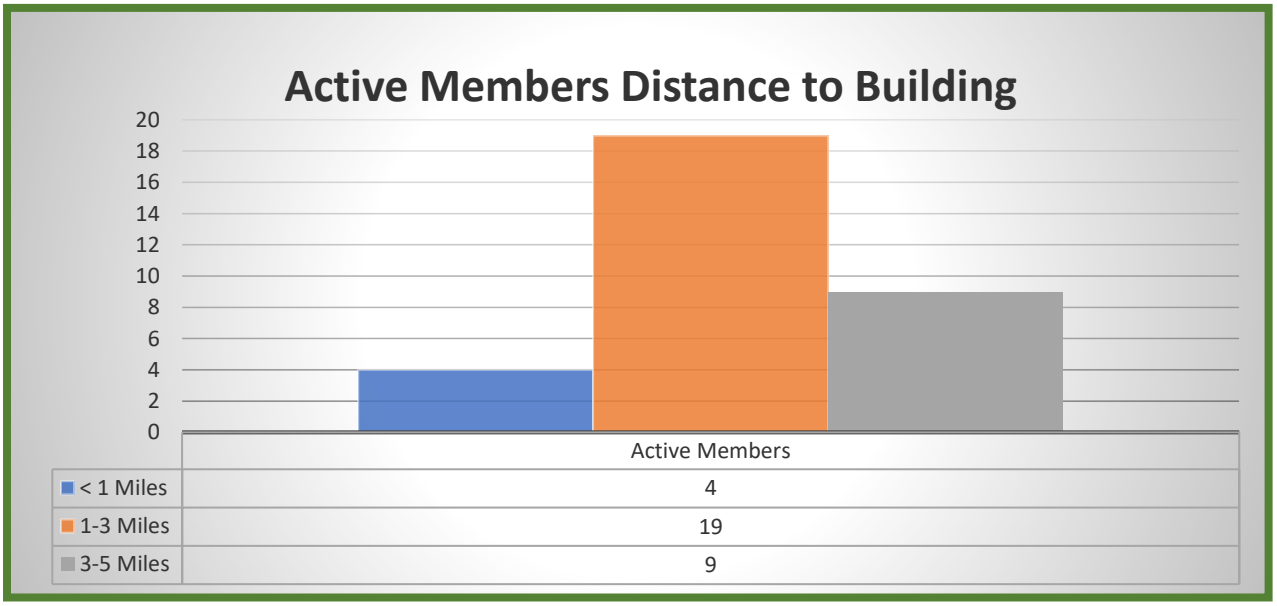


Exhibit 16: Active Members Distance to Ambulance Building

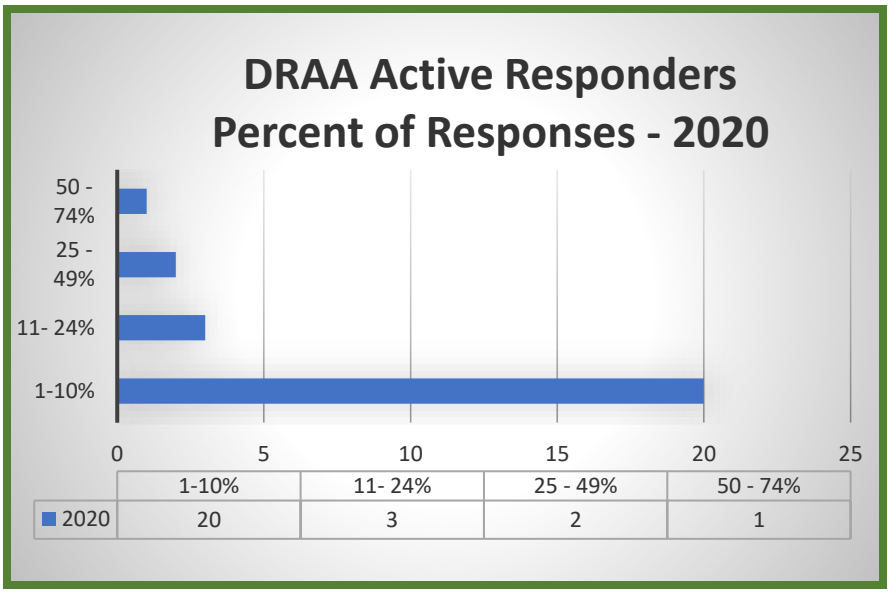


Exhibit 17: DRAA Responders Response Percent of 477 Emergencies

6.4 Chain of Command

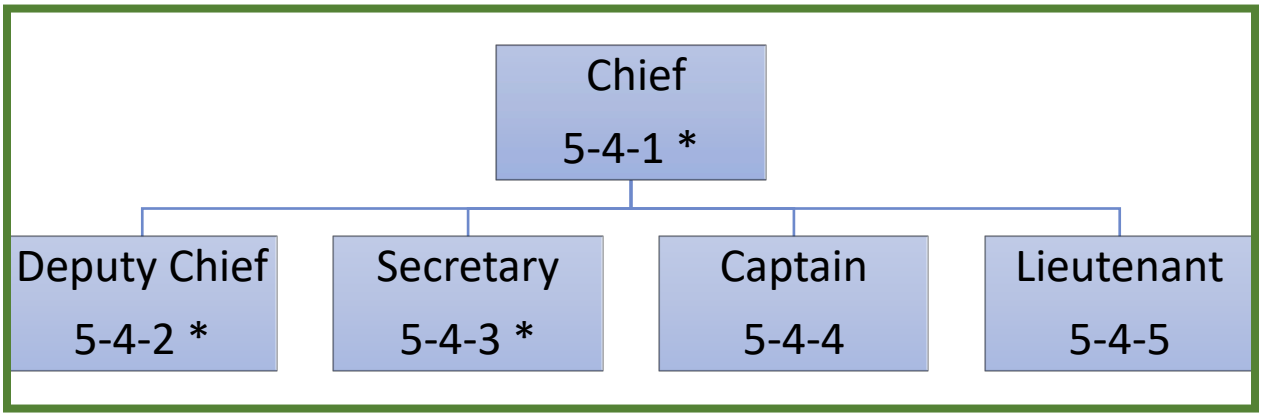


Exhibit 18: DRAA Chain of Command (* Executive Committee)

6.5 Training

The DRAA meets monthly on the first Thursday of the Month. The meetings are used for training and regular business. There is joint training with the Fire Department for specialized issues.

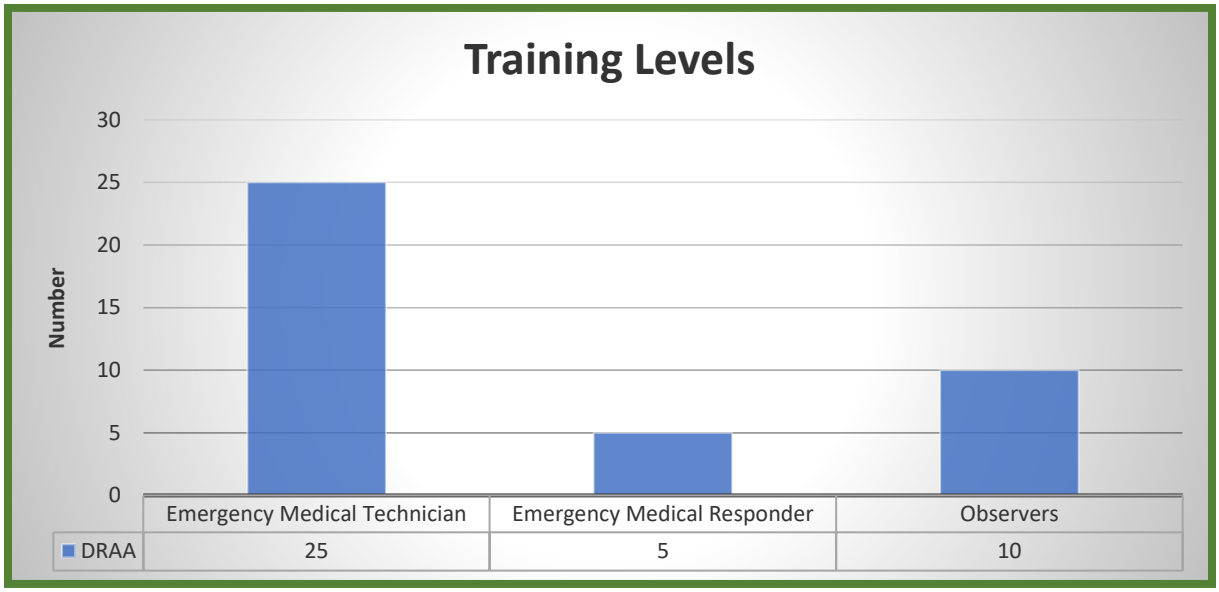


Exhibit 19: Training Levels

6.6 Equipment

The DRAA operates two Ambulances based out of their Headquarters.

2005 Osage Ambulance Type III
*Remount – BUHN Emergency Equipment
2018 E-450 Chassis
Milage 21,556

Photo 28: Ambulance 5-4

2016 Malley Industries
Dodge Pro Series Ambulance
Milage 41,191

Photo 29: Ambulance 5-5

6.7 Facilities

The DRAA Headquarters is located at 284 Elm Street.

Photo 30: Deep River Ambulance Headquarters

Photo 31: Left Side

Photo 32: Right Side

Photo 33: Rear

6.7.1 DRAA Floor Plan

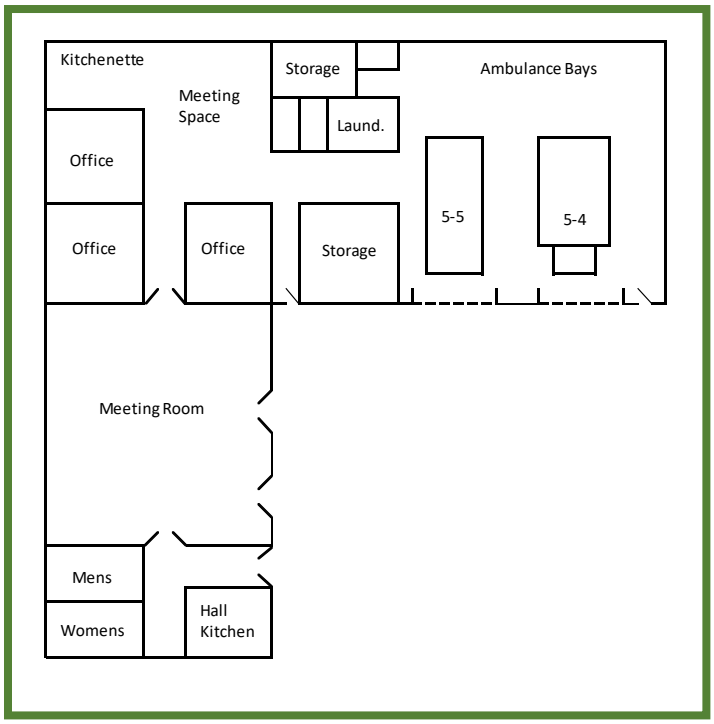


Exhibit 20: Ambulance Building

6.7.2 Space Chart

Location	Adequacy 1-10
Apparatus Floor	9
Training/Meeting Room	9
Kitchen	10
Dispatch/Radio Room	3
Furnace Room	8
Storage Space	7
Office	9
Men's & Women's Bunkroom	0
Men's & Women's Bathrooms	9

Exhibit 21: DRAA Station Space

6.8 Budget

The DRAA is principally self-sufficient. Except for Workers Compensation support, the Association does not receive funding from the Town of Deep River. The DRAA fiscal year is March 1st to February 29th. While the Association does charge for services, it relies heavily on generous donations to maintain successful services. The ability to charge for an individual's services is a valuable asset, as opposed to the other town services where everyone contributes to support the agency's needs. Active members do receive funding based on the function they perform on the calls. This is common in today's economic atmosphere. However, the Deep River system is specific to the tasks and responsibilities of the individuals on each call. The Association has been able to remain solvent and maintain operations through smart budgeting, charging and a supportive community. Currently, the DRAA is functioning well and meeting the community's needs. We do not see an expansion in the immediate future.

7.0 Fire Department Staffing / Membership

7.1 Fire vs Suppression

Responding personnel have a myriad of tactical responsibilities to prepare for regarding commercial locations, high hazard occupancies and high life safety facilities. These sites, in addition to typical residences, can tax the Deep River Fire Department on arrival due to the number of resources required to conduct basic emergency operations and help evacuate and rescue individuals at the emergency scene. Deep River counts on Mutual Aid to handle serious incidents. Fire dynamics are fuel, oxygen, heat, and time dependent.

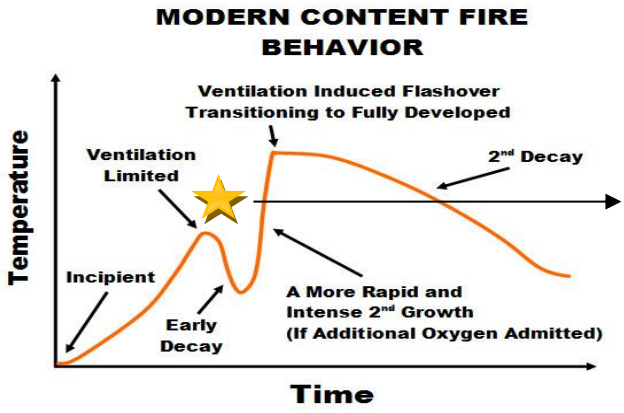


Exhibit 22: Modern Fire Timeline and Flashover

The example above shows a fire progression from start to finish. It should be noted the process displayed above reaches its critical point (Flashover) between three (3) and five (5) minutes. The Star ("Flashover") on the example is at the 3 minute : 08 second point. Fire research and the national experience has led to the importance of the tactical objectives and time requirements stated below.

As stated below, specific actions need to be taken to ensure a successful outcome. Several specific challenges were apparent to the JLN team. First, the percentage of active+ fire-type emergencies in the community is low compared to the other services offered by the Department. Second, residential home fires continue to be the number one cause of civilian fatalities. Third, other than heart attacks, thermal assault and structural collapse continue to kill fire fighters annually.

The national experience for the minimum number of personnel for Fire Operations is twelve to eighteen (12-18) plus personnel within eight (8) minutes 90% of the time. These numbers are based on the individual/team jobs necessary to conduct fire suppression operations safely and successfully. These responsibilities include Fire Attack (4), Water Supply/Shuttle (2-4+), Search and Rescue (4), Forcible Entry and Ventilation (2-4), Rapid Intervention Team and Command with an Assistant (2). The numbers for personnel are for a two thousand square foot (2,000 Sq. ft.) home. It is our opinion, given the response and survey information we have reviewed, the present system would be challenged in delivering the appropriate number of human resources to adequately control a fire within the first eight (8) minutes 90 % of the time without Automatic Mutual Aid.

NFPA 1720 (2014) 4.3.4* Upon assembling the necessary resources at the emergency scene, the fire department shall have the capability to safely commence an initial attack within 2 minutes 90 percent of the time.

Structure Fires: Deep River FD staff responds to initial emergencies. Automatic or Alarm Driven Mutual Aid can respond to structural fires from neighboring Departments as part of Mutual Aid Agreements. There is significant Mutual Aid from numerous towns. Predesignated response procedures determine who will be the Rapid Intervention Team (RIT) etc.

7.2 NFPA 1710 & NFPA 1720

NFPA Standards - Deployment

There are two National Fire Protection Association Standards dealing with fire ground staffing. NFPA 1720 (2014) - Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments (Fig.7) and NFPA 1710 (2010) - Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (Fig.8).

The figures below show the principal differences regarding on scene staffing and response times. JLN prefers to apply a task/risk-based approach. For all emergencies there are a set of tasks that need to be performed for the emergency to have the best outcome possible. As described in the Suppression Force Staffing section of the report, tasks need to be performed and personnel are needed to do those tasks. It should be noted that rural designation has more to do with frequency than seriousness.

NFPA 1720 (2014) Table 4.3.2 Staffing and Response Time				
Area	**Demographics**	**Responders**	**Response Time (Min.)**	**% of Time**
Suburban	**500–1000 people/mi2**	**10**	**10**	**80**
Rural	**<500 people /mi2**	**6**	**10**	**80**

Exhibit 23: NFPA 1720 Staffing and Response Times

NFPA 1710 (2010) Staffing and Response Time, 5.2.4.1 -5.2.4.2.2. (The initial full alarm assignment to a structure fire in a typical 2000 ft2 (186 m2), two-story single-family dwelling without basement and with no exposures)			
Apparatus	**Responders**	**Response Time (Min.)**	**% of Time**
First Due Apparatus	**4**	**4**	**90**
Remaining ApparatusWater Supply	**2**	**8**	**90**
Remaining Apparatus Attack Line #2	**2**	**8**	**90**
Remaining Apparatus Attack Back up	**2**	**8**	**90**
Remaining Apparatus Search & Rescue	**2**	**8**	**90**
Remaining Apparatus Ventilation & Aerial	**3**	**8**	**90**
Remaining Apparatus Rapid Intervention	**2**	**8**	**90**
Incident Commander	**1**	**8**	**90**
Totals	**18**	**8**	**90**

Exhibit 24: NFPA 1710 Staffing and Response Times

7.3 Mutual Aid

The DRFD is part of Valley Shore Mutual Aid Inc. The mutual aid group consists of 12 Departments. Included are the following units: Chester, Clinton, Deep River, Essex, Guilford, Killingworth, Madison, North Madison, Old Lyme, Old Saybrook, and Westbrook. The group has taken significant steps to organize and coordinate effective mutual aid responses. A cursory review of monthly minutes (2016-2021) depicted an active organization which keeps up to speed with today's issues and potential solutions. In addition, the sharing of training information and class slots enhances overall success.

7.4 Responder Data

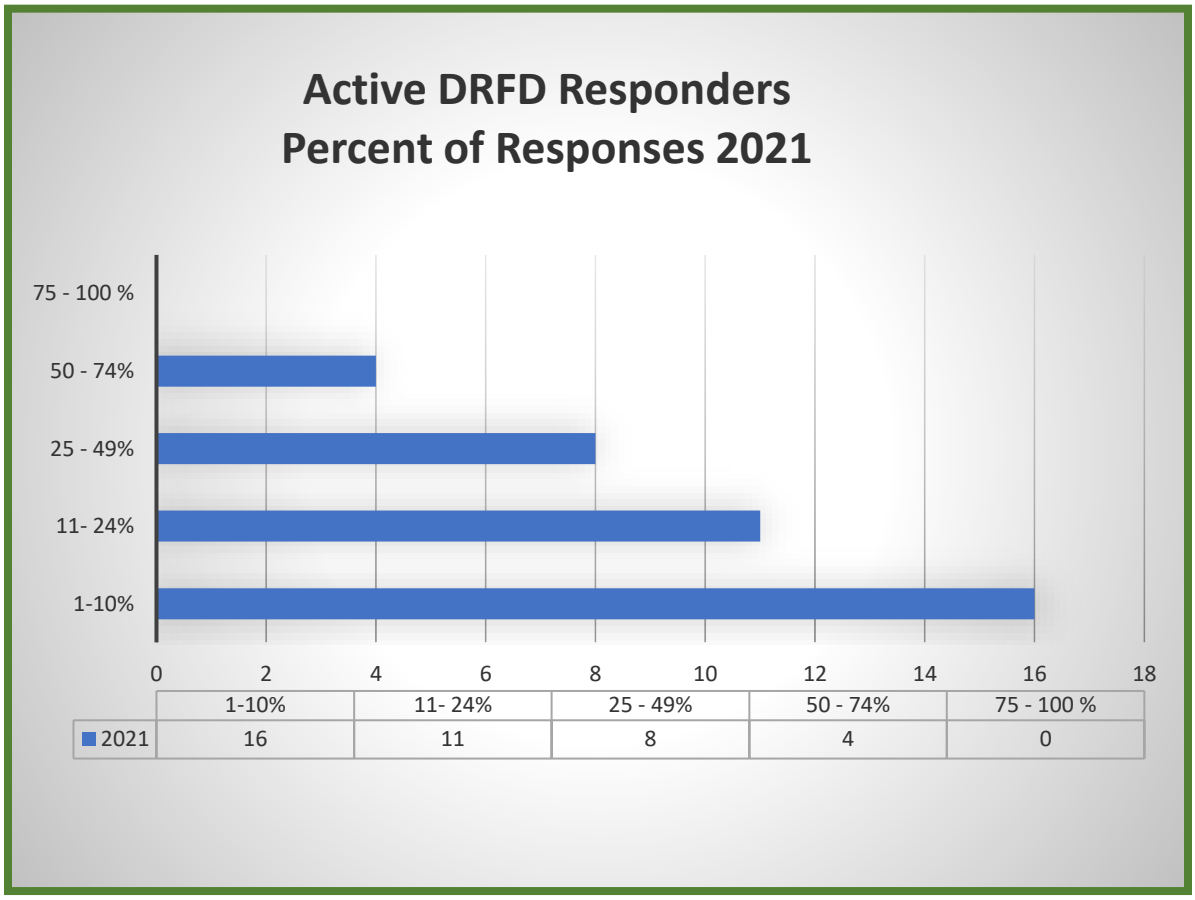


Exhibit 25: DRFD 2021 Members Response Percentage

As stated in Section 5.5, there will be a need to hire career staff at some point in the future. Presently, it is not needed or anticipated soon. In the next 5-10 years, daytime personnel will most likely be needed.

8.0 Apparatus

8.1 Fire Apparatus

Engine 5-5-2

1989 FMC Pumper
1250 GPM Pump
1000 Gallon Tank
*Open Rear Cab
A compliment of NFPA 1901 Fire Fighting Equipment
1500’ 4” Supply Line
200’ 3” w/ Stinger Ground Monitor
2.5”, 2.0” and 1 3/4 Attack Lines
24’ extension ladder, 12’ roof ladder
Battery Power / Hydraulic Rescue Tools

Photo 34: Engine 5-5-2

Engine 5-5-3

1983 Pierce Dash Pumper
1250 GPM Pump
750 Gallon Tank
2000’ of 5” supply hose,
*Open Rear Cab
(2) 200’ 1¾”, (1) 200’ 2½” preconnected crosslay attack lines,
A compliment of various NFPA 1901 equipment
24’ extension ladder, 14’ roof ladder

Photo 35: Engine 5-5-3

Engine 5-5-4

2004 Farrar / Spartan Pumper
1500 GPM Pump
1000 Gallon Tank
Four Door Cab
Built in Class A Foam System
A compliment of NFPA 1901 Fire Fighting Equipment
1500’ 5” Supply Line
2- 200’ 3” Attack Line
300’ 2.0” Attack Line
24’ aluminum extension ladder, 12’ aluminum roof ladder
Electric/Hydraulic Rescue Tools

Photo 36: Engine 5-5-4

Tanker / Tender 5-6-1
1989 Ford
500 GPM Pump
1800 Gallon Tank
2100 Gallon Portable Tank
100' 2 ½ Hose
100' 4" Hose

Photo 37: Tanker 5-6-1

Tower 5-7-1
2007 American LaFrance 100' Mid Mount Tower
4 Door Cab
2000 GPM Pump
300 Gallon Tank
2-200' 1 ¾ Attack Lines
500' 5" Supply Hose
Full Complement of Ground Ladders
10 KW Generator & Cord Reels
A compliment of NFPA 1901 Fire Fighting Equipment

* The Tower was refurbished in 2012 after serving the City of Schenectady.

Photo 38: Tower 5-7-1

Forestry 5-8
1982 Chevrolet / Redding Body 4X4 Brush Truck
85 GPM Pump
250 Gallon Tank
Forestry Hand Tools
Forestry Hose Bags
Portable Pump
Rakes/Brooms etc.

Photo 39: Forestry 5-8

Rescue 5-9

2009 Spartan Rescue
15’ Aluminum Body
30 Kw Hydraulic Generator
Storage for Spare SCBA Bottles
3-100’ Hydraulic Hose Reels
2-300’ Power Cords
9000 Watt Telescoping Light Tower
4-300’ Rope Spools & Rope Rescue Equipment
Air Struts and Associated Equipment
Hydraulic Rescue Tools
Associated Rescue Tools

Photo 40: Rescue 5-9

Marine 5-2

2004 Munson Packman High Speed Landing Craft
24’, with a 250 HP Motor
250 GPM Pump

Photo 41: Marine 5-2

Utility 5-9-6

1991 Chevrolet 2500 Pickup
Traffic Safety / Utility

Photo 42: Utility 5-9-6

Staff Vehicle - Car 5
84,000 Miles

Photo 43: Car 5

Chief's Car 5-0
2013
61,000 Miles

Photo 44: Car 5-0

8.3 Capital Improvement

A review of the apparatus within the fire stations identified:

- Typical wear and tear that one would expect given the age of the apparatus.
- The conditions typical of being exposed to the New England climate.
- Wear and tear based on the average calls for service.

During the review of available documents, JLN found no comprehensive studies on apparatus life expectancy or clear-cut time frame for replacement. There were no definitive answers for how long a fire truck lasts. Regional differences are one factor cited for the absence of these studies. Variables such as weather, road conditions, run loads, and maintenance are listed as reasons for the inadequacy of any clear-cut information in this area (Peterson, 1994). Age should not be the sole criteria for deciding to replace a fire apparatus. The vehicle's routine workload,

its physical condition, and the degree of preventative maintenance it receives are usually more accurate indications of whether the apparatus is still reliable for first-line duty (Peters, 1994).

JLN did identify the publication of 'on average' data for apparatus replacement. These estimates ranged from 5 to 10, 10 to 15 years, and 15 to 20 years. Life expectancy varied greatly from one location to another. Generally, a 10-to-15-year life expectancy is normal for engines used daily in heavy to moderate response areas (Peters, 1994). For fire apparatus approaching or exceeding 15 to 20 years of age, corrosion, metal fatigue and crystallization in concealed areas can result in serious consequences (Freitag, 1984). In general, a 10 to 15 year life expectancy is considered normal for first line pumping engines.

Perhaps the most reliable of these resources, in reference to life service of fire apparatus, is the National Fire Protection Association (NFPA) Handbook *(20th Edition Section 12.16) which references Annex D of NFPA 1901 which states,*

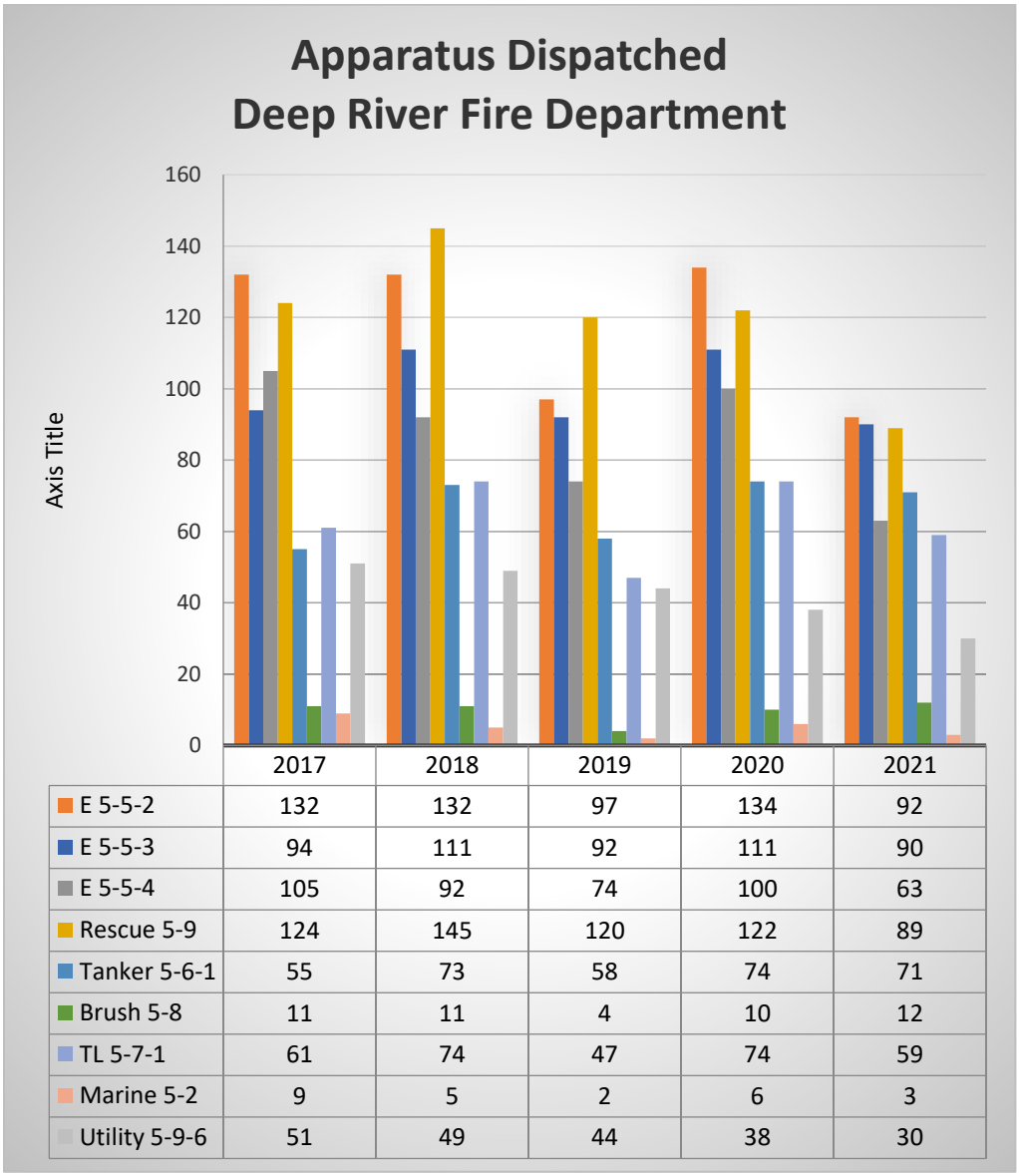
> (NFPA 1901 (2016 edition), Annex D
> D.1 General.
>
> "To maximize fire fighter capabilities and minimize risk of injuries, it is important that fire apparatus be equipped with the latest safety features and operating capabilities. In the last 10 to 15 years, much progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus. Apparatus more than 15 years old might include only a few of the safety upgrades required by the recent editions of the NFPA fire department apparatus standards or the equivalent Underwriters Laboratories of Canada (ULC) standards. Because the changes, upgrades, and fine tuning to NFPA 1901 have been truly significant, especially in safety, fire departments should seriously consider the value (or risk) to fire fighters of keeping fire apparatus more than 15 years old in first-line service.
>
> It is recommended that apparatus more than 15 years old that have been properly maintained and that are still in serviceable condition be placed in reserve status; be upgraded in accordance with NFPA 1912; and incorporate as many features as possible of the current fire apparatus standard (see Section D.3). This will ensure that, while the apparatus might not totally comply with the current editions of the automotive fire apparatus standards, many of

> the improvements and upgrades required by the current editions of the standards are available to the fire fighters who use the apparatus.
>
> Apparatus that were not manufactured to the applicable NFPA fire apparatus standards or that are over 25 years old should be replaced."

In some types of service, including areas of high fire frequency, a limit of only 10 years may be reasonable for first line service" (Peterson, 1994).

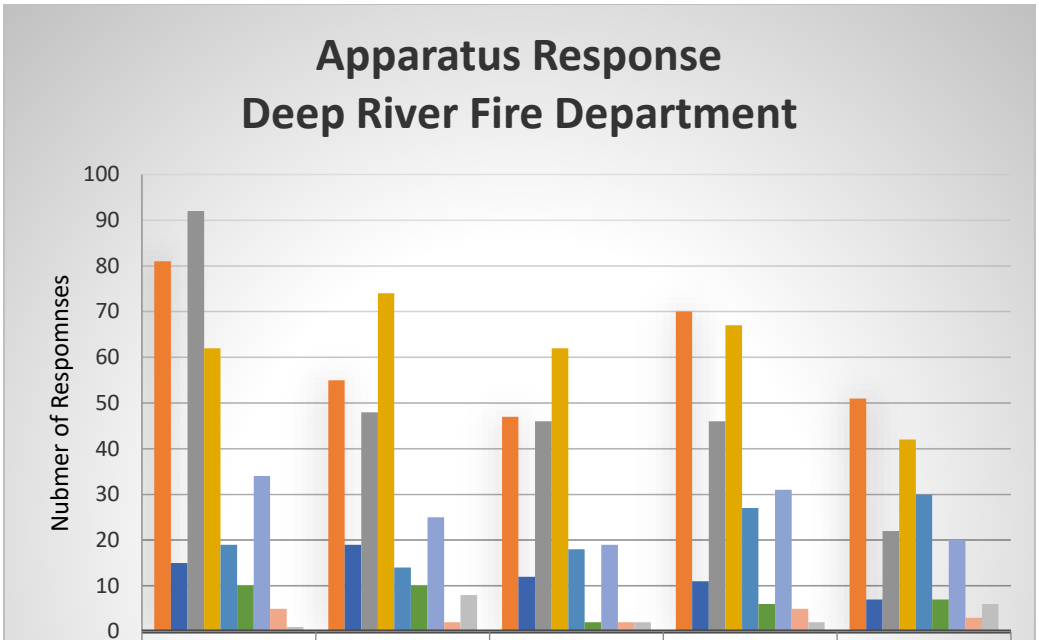
There is a general hope to get to a point where the life expectancy of fire apparatus is to provide 15 years of front line service and 10 years of reserve or lighter duty service. Again, each locale is different but on average, these time frames are reasonable for all but the busiest municipal fire departments. It is a generally accepted fact that fire apparatus, like all types of mechanical devices, have a finite life. The length of that life depends on many factors, including vehicle mileage and engine hours, quality of the preventative maintenance program, quality of the driver training program, whether the fire apparatus was used within the design parameters, whether the apparatus was manufactured on a custom or commercial chassis, quality of workmanship by the original manufacturer, quality of the components used, and availability of replacement parts, to name a few. In the fire service, there are fire apparatus with 8 to 10 years of service that are simply worn out. There are also fire apparatus that were manufactured with quality components, that have had excellent maintenance, and that have responded to a minimum number of incidents that are still in serviceable condition after 20 years. Most would agree that the care of fire apparatus, while being used, and the quality and timeliness of maintenance are perhaps the most significant factors in determining how well a fire apparatus ages.

8.4 Apparatus Data



	2017	2018	2019	2020	2021
E 5-5-2	132	132	97	134	92
E 5-5-3	94	111	92	111	90
E 5-5-4	105	92	74	100	63
Rescue 5-9	124	145	120	122	89
Tanker 5-6-1	55	73	58	74	71
Brush 5-8	11	11	4	10	12
TL 5-7-1	61	74	47	74	59
Marine 5-2	9	5	2	6	3
Utility 5-9-6	51	49	44	38	30

Exhibit 26: Apparatus Dispatches 2017-2021



	2017	2018	2019	2020	2021
552	81	55	47	70	51
553	15	19	12	11	7
554	92	48	46	46	22
59	62	74	62	67	42
561	19	14	18	27	30
58	10	10	2	6	7
571	34	25	19	31	20
52	5	2	2	5	3
596	1	8	2	2	6

Exhibit 27: Apparatus Responses (2017-2021)

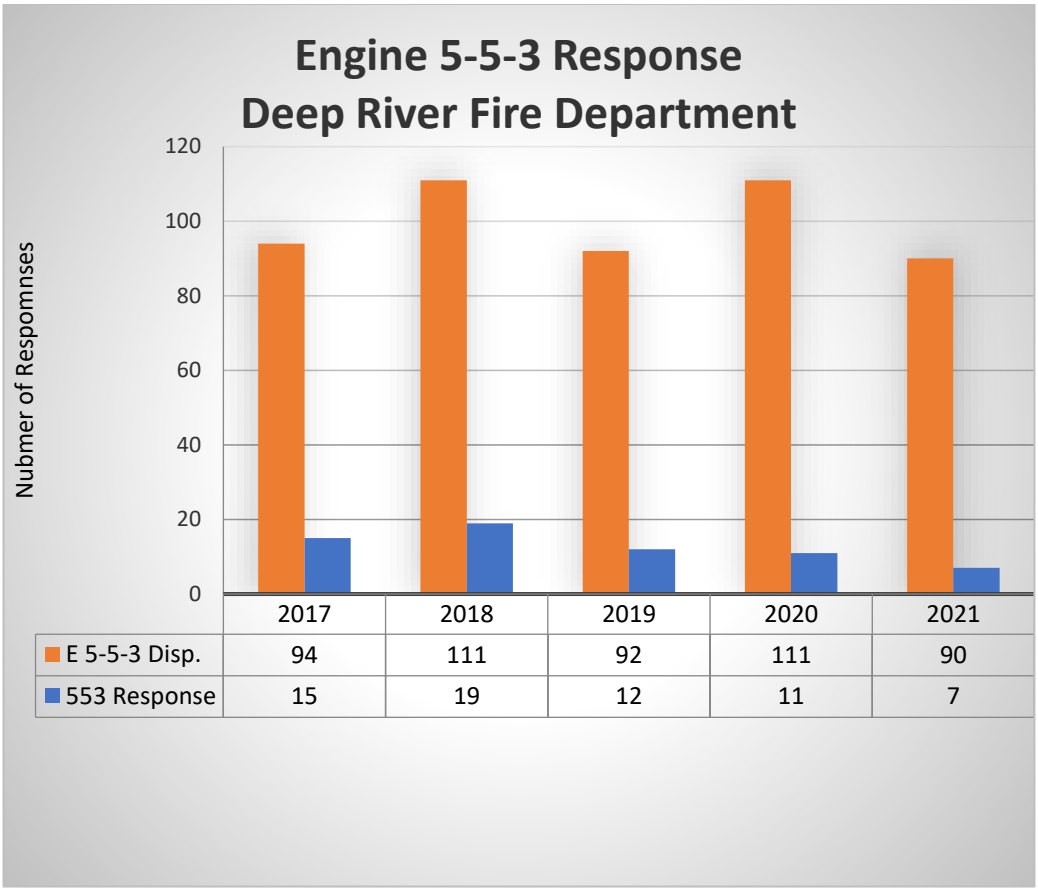


Exhibit 28: Engine 5-5-3 Responses

8.5 Apparatus Replacement Plan

Due to conditions beyond today's Community and Department leadership's control, apparatus have not been purchased over the past 17 years until this year. A new engine has been ordered, and a new tanker has been approved. Given these developments, a replacement issue still exists relative to the recommendations made by the NFPA and today's best practices. Fortunately, the workload created by the community has not outpaced the Department's ability to handle emergencies with help from mutual aid. However, it also creates a situation where modern technology made to facilitate efficiency and safety is not available. Presently, a new piece of apparatus is in production which will supplant the role of the 1989 FMC Pumper (Engine 5-5-2) as a first out apparatus at the Headquarters station. That unit, the 1989 FMC Pumper, will transition into the role presently provided by the 1983 Pierce Pumper (Engine 5-5-3) as the second out or Water Source unit. The cost of Fire Apparatus creates a difficult situation for the

Department and Community. Over the past 5 years, 1983 Pierce Pumper (Engine 5-5-3) averaged 13 responses with a low of 7 responses in 2021. While it did respond to multiple types of calls, the average is still considered very low. Over the same time Engine 5-5-2 averaged 61 and 5-5-4 averaged 51 responses. A more appropriate comparison would be the Tanker 5-6-1. The waterhole unit is like the tanker because they would not necessarily respond to all calls. The tanker averaged 22 calls and responded to 30 calls in 2021.

A key question that has been asked is "Does the 1983 Pierce Pumper – Engine 5-5-3 (the third out/Water Supply Unit) need to be replaced?" In answer to our queries, the Fire Department would like to see the unit replaced next, sooner rather than later. The Select Board and Finance Board question the need to replace a vehicle with such low response numbers. It was relayed that the existing unit had not seen fire duty but rather was primarily used as a blocker for accidents. We were not able to confirm the blocking assignment as fact. It responded as designed to numerous fire type calls over the past 5 years. We have recommended the following compromise: replace 1983 Pierce Pumper – Engine 5-5-3 in 2026 (40 years old). This would address multiple concerns.

1) The replacement timing would be closer to the recommended timeline and still give the community some time to budget for the apparatus
2) By having it 3 years from now, it provides additional time between the next large purchase of the Rescue in 2032(23 years) and Tower Ladder in 2037 (20 years post Refurb).
3) The 2004 Farrar would rotate to the Third out slot and provide excellent coverage if anything breaks and would also stretch out the replacement process.

This process would also give time for the Fire Department to fund raise in support of the purchase. The optimum time frame for refurbishing an apparatus is ten years. Unfortunately, the age of those units coming up for replacement would be considered a poor investment. We believe the data supports this recommendation.

Recommendation 6: Replace the 1989 FMC (E 5-5-2) in 2026 and follow the proposed replacement schedule.

Apparatus	Purchase Date	Condition	DRFD Capital Plan	Replacement Recommendation
Engine 5-5-2 1989 FMC	1989	Fair	2024-2025** $950,000	Transitioning to Reserve / Water Hole. Replace in 2026
Engine 5-5-3 1982 Pierce	1983	Fair – Weak * Being Replaced	2022-2023 $850.000	Transitioning Out
Engine 5-5-4 2004 Farrar	2004	Very Good	None	2034
Tanker 5-6-1 1989 Ford	1989 (2nd Owner)	Weak * Being Replaced	2022-2023** $270,000	2023
Ladder 5-7-1 2007 AL	2007 (2012 Referb)	Very Good	None	2037
Forestry 5-8 1982 Chevrolet	1982	Fair - Weak	None	2025
Rescue 5-9 2009 Spartan	2009	Good	2028-2029** $950,000	2032
Marine 5-2 2004 Munson	2004	Very Good	None	2034
Service 5-9-6 1991 Chevrolet	1991	Fair - Weak	None	2024
Chief's Car		Good	None	100,000 Mi.
Car 5 2013 Chevrolet		Good	None	100,000 Mi.
*		Being Replaced		
**		Proposed not yet approved		

Exhibit 29: Proposed Capital Apparatus Plan

Following this recommendation the Fire Department would operate 2 Attack Engines, a Water Whole / Third out / Support Engine, a Tanker, a Rescue, Tower Ladder, Forestry Unit and Boat. Given the various risks and needs of the community, this would be the appropriate number of units.

9.0 Stations

Given the topography, road and highway systems and structures diversity, operating out of two stations is appropriate. The present locations are adequate. The largest concern is the Headquarters station, and it should be focused upon. While it lies in the flood plain, engineering can be used to provide an adequate amount of height. However, if other opportunities present themselves for purchase and construction, they should be considered. Having said that, this process should not delay the replacement of the Headquarters Station. Reducing the number of stations to one is not recommended.

9.1 Headquarters

Photo 45: Headquarters W. Elm St

Photo 46: Headquarters Union St

Photo 47: Headquarters Rear

Photo 48: Headquarters Deep River

9.1.1 Headquarters Main Floor

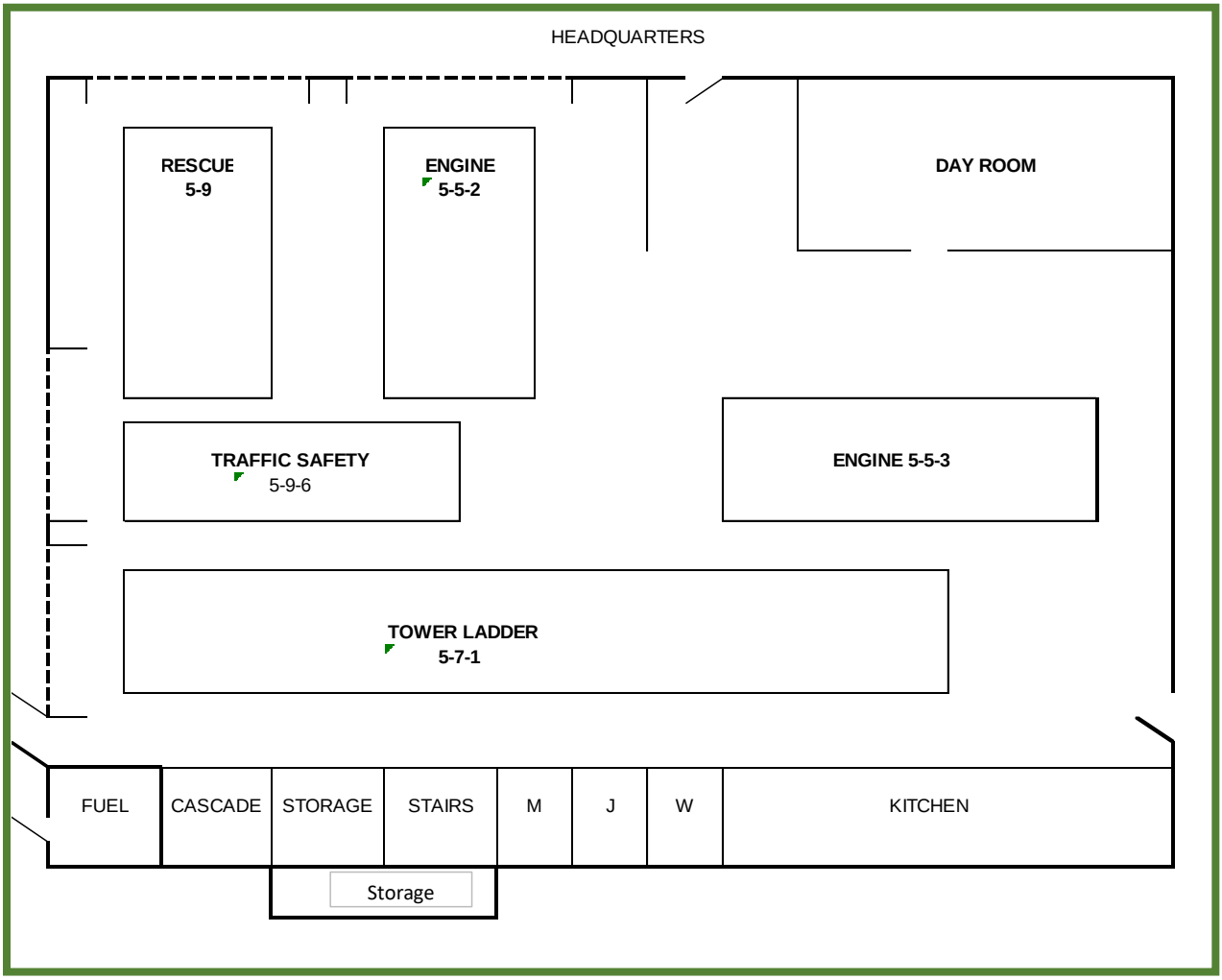


Exhibit 30: Headquarters Main Floor

9.1.2 Headquarters 2nd Floor

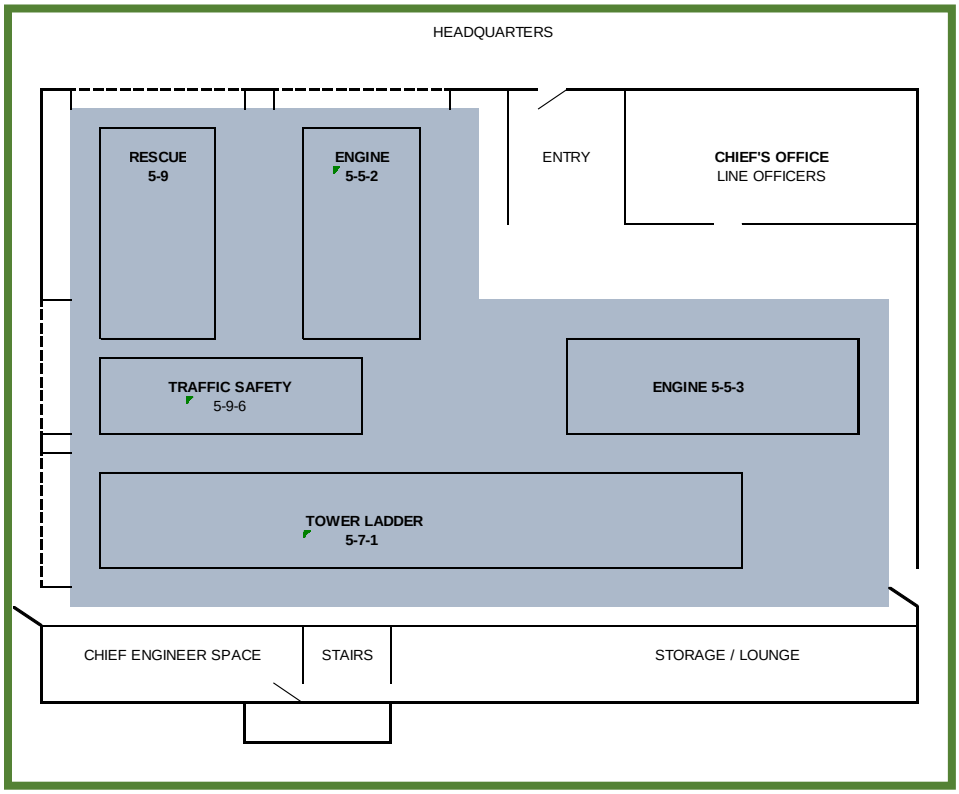


Exhibit 31: HQ 2nd Floor

9.1.3 Space Chart

Location	Adequacy 1-10
Apparatus Floor	7
Training/Meeting Room	0
Kitchen	7
Dispatch/Radio Room	6
Furnace Room	8
Storage Space	7
Office	7
Men's & Women's Bunkroom	0
Men's & Women's Bathrooms	5

Exhibit 32; DRFD HQ Station Space

The Headquarters station, built in 1961, is having issues. The roof has begun to leak, and the building is showing its age. Generally, parts of the building do not meet today's codes. There is no fire separation between the apparatus bays and the Chief's Office. In addition, the opposite side of the apparatus floor has the same condition as what has been identified as the lounge/storage area. Storage space is inadequate which has led to the loss of the lounge. In addition, there is limited security for storage. Fortunately, the members are trustworthy. The stairs to the areas above the apparatus floor do not appear to meet NFPA 101 or CT Fire Code standards.

Photo 49: Need for Separation – Office

Photo 50: Separation for lounge

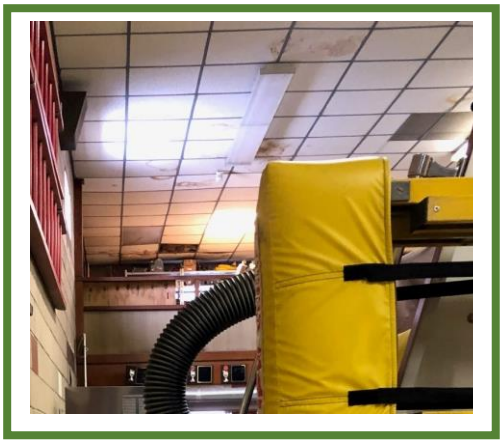


Photo 51: Roof Leak

Photo 52: Roof Leak

While the station does make it possible to store the apparatus, any other established activities require apparatus to be moved or relocated. From meetings and training to community service opportunities, there is no available space. In addition, if the need arises for personnel to stay overnight in the station, there is no suitable space protected from apparatus exhaust exposure. The Men's and Women's rooms are not ADA compliant. There does not appear to be a place for contaminated members to decontaminate before returning to their homes and families. While these issues were not typical 61 years ago, these and many more to come will continue to challenge the existing building as it stands. Most importantly, it is not possible for all the apparatus to respond without having to move other vehicles.

Two older proposed solutions were reviewed to upgrade the Headquarters station. Those proposals attempted to address several problems. A review of a newer proposal, the preliminary plans drawn by Noyes Vogt Architects dated 03/09/2020, however, appeared to correct the defects we have identified and meet today's needs. In addition, it would be a good start to prepare for the future. There will be a future need for 24-hour career staffing, but that time is significantly away. Given the building was built in 1961 and Winthrop was built in 1952, it will be a long time before the community will be able to wholesale address stations again.

Spatial Review of Draft Drawing by Noyes Vogt Architects dated 03/09/2020 Utilizing NFPA Fire Protection Handbook 17th Edition, Table 9-10a

Location	FPH 17th, Table 9-10 a Space	Space Proposed / Adequacy
Bay 1	Rescue, 700 Square Ft. (SF)	2,373 SF - Adequate
Bay 2	Tower Ladder, 1055 SF	2,373 SF- Adequate
Bay 3	Pumper 760 SF, Pumper 760 SF	2,373 - Adequate
Bay 4	SUV, Pick-up, Boat 1500	2,373 - Adequate
Dispatch / Communications	390 SF	157 SF, In-Adequate Space is smaller than recommended.
Chief's Office	No Guidance	120 SF, Adequate
Command Staff	No Guidance	192 SF, Adequate
Maintenance / Workbench	No Guidance	None Found, In-Adequate
Decontamination	No Guidance	174 SF, Adequate
Turnout Gear Cleaning	No Guidance	89 SF, Adequate
Kitchen	320 SF	237 SF, In-Adequate
Heating / Furnace	Not Found on Plan, Roof?	
Storage	300 SF	113 SF, In-Adequate
Men's Room, w/Showers	231 SF	212 SF, In-Adequate
Women's Room, w/Showers	231 SF	219 SF, In-Adequate
Locker Room	15 SF	None Found, In-Adequate
Conference Room	200 SF	247 SF, Adequate

Mechanical Space	As needed	148 SF, Adequate
SCBA Room	No Guidance	93 SF, Adequate
Day Room / Meeting Room	Variable	1098 SF, Adequate
Engineer Office	No Guidance	151 SF, Adequate

Exhibit 33 Spatial Review of Draft Drawing by Noyes Vogt Architects

A concern has been raised regarding having an apparatus behind another unit. This could lead to a delay of the rear unit responding to an emergency. It would be possible to have units without other apparatus in front. A possible solution would be to make the rear or western wall straight without the outcropping starting at the mechanical room. To move this wall forward, we would suggest adding a 5th bay to the southern wall. The SUV, Pick-up, Boat, and rear Engine could be shifted south. All the rear apparatus bay rooms would now fit behind the units. This would require the addition of one door and associated walls front and rear. The south wall and front and rear corners would already exist.

Recommendation 7: The March of 2020 HQ Station rehabilitation proposal should receive significant attention and additional discussion should take place soon regarding the plan. It is our recommendation that this plan be used as the base for successful completion within the next three- five years.

9.2 Winthrop Station

Photo 53: Winthrop Front

Photo 54: Winthrop Left Side

Photo 55: Winthrop Rear

Photo 56: Winthrop Right Side

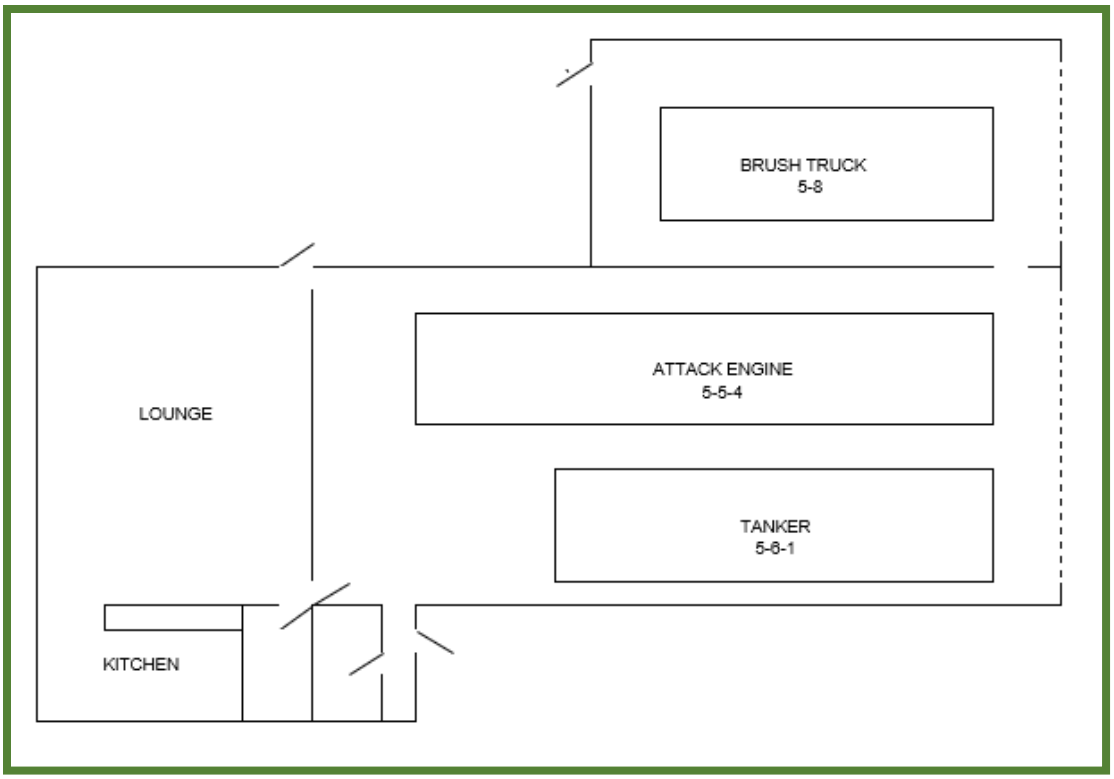


Exhibit 34: Winthrop Station

9.2.1 Space Chart

Location	Adequacy 1-10
Apparatus Floor	5
Training/Meeting Room	5
Kitchen	10
Dispatch/Radio Room	3
Furnace Room	8
Storage Space	5
Office	0
Men's & Women's Bunkroom	0
Men's & Women's Bathrooms	5

Exhibit 35: Winthrop Station Space

Modifications to the Winthrop Station have increased its comfort and versatility. The apparatus floor is still tight around the apparatus. The new Tanker could make it tighter. There will be additional needs for the station to meet various issues, i.e., ADA Restrooms etc.

Photo 57: Winthrop Space

Photo 58: Winthrop Space

9.3 Apparatus Operators Relative to Station Locations to Drive Apparatus.

Driver #	Street Address	Town	Headquarters Miles / Time	Winthrop Miles / Time
1	## Rosemont Drive	Deep River	4 Min. / 2.69 Mi.	4 Min. / 2.8 Mi.
2	## Spring Street	Deep River	1 Min. / .6 Mi.	6 Min. / 3.7 Mi.
3	## Kelsey Hill Road	Deep River	3 Min. / 1.5 Mi.	6 Min. / 3.3 Mi.
4	## Woodland Road	Deep River	5 Min. / 2.8 Mi.	4 Min. / 2.9 Mi.
5	## Woodland Road	Deep River	5 Min. / 2.8 Mi.	4 Min. / 2.9 Mi.
6	### Warsaw Street	Deep River	4 Min. / 2.5 Mi	4 Min. / 2.7 Mi.
7	## Melody Ridge	Deep River	9 Min. / 4.7 Mi.	3 Min. / 1.5 Mi.
8	## Falls Landing Road	Deep River	4 Min. / 2.5 Mi.	4 Min./2.6 Mi.
9	### West Elm Street	Deep River	1 Min. / .8 Mi.	4 Min./2.9 Mi.
10	## Bridge Street	Deep River	1 Min. / .5 Mi.	6 Min. / 3.6 Mi.

11	## Witch Hazel Rd	Deep River	8 Min. / 4.7 Mi.	1 Min. / 1.1 Mi.
12	### Bushy Hill Rd	Deep River	8 Min. / 4.9 Mi.	3 Min. / 1.5 Mi.
13	## Cedar Lake Road	Deep River	6 Min. / 3.8 Mi.	< 1 Min. / 1 Mi.
14	## Cedar Lake Road	Deep River	6 Min. / 3.8 Mi.	< 1 Min. / 1 Mi.
15	## Cedar Lake Road	Deep River	6 Min. / 3.8 Mi.	< 1 Min. / 1 Mi.
16	### Falls Landing Rd	Deep River	6 Min. / 3 Mi.	6 Min. / 3.1 Mi.
17	## Woodland Road	Deep River	5 Min. / 2.7 Mi.	5 Min. / 2.9 Mi.
18	# Hemlock Terrace Ext.	Deep River	2 Min. / .9 Mi	6 Min. / 3.4 Mi.
19	## River Street	Deep River	2 Min. / .5 Mi.	7 Min. / 4.21 Mi.
20	## Oak Ridge Drive	Deep River	4 Min. / 2.7 Mi.	2 Min. / 1.3 Mi
21	### Main Street	Deep River	1 Min. / .25Mi.	6 Min. / 3.8 Mi.
22	## Acorn Drive	Deep River	8 Min. / 4.5 Mi.	3 Min. / 1.1 Mi.
23	## Rattling Valley Road	Deep River	3 Min. / 1.25 Mi.	9 Min. / 4 Mi.
24	## Hemlock Drive	Deep River	1 Min. / .7 Mi.	5 Min. / 3.1 Mi.
25	### Rattling Valley Rd	Deep River	3 Min. / 1.2 Mi.	9 Min. / 4 Mi.
26	## Huckleberry Drive	Deep River	5 Min. / 1.5 Mi.	11 Min. / 6 Mi.
27	## Union Street	Deep River	<1 Min. / .01 Mi.	6 Min. / 3.7 Mi.
28	###-1 Warsaw Street	Deep River	4 Min. / 2.4 Mi.	4 Min./2.5 Mi.
29	## Bokum Rd	Deep River	2 Min. / 1 Mi.	6 Min. / 3.6 Mi.
30	## Westbrook Road	Deep River	6 Min. / 3.9 Mi.	< 1 Min. / .4 Mi.
31	## Hemlock Drive	Deep River	2 Min. / 1 Mi.	6 Min. / 3.5 Mi.
32	### Winthrop Rd	Deep River	5 Min. / 3.4 Mi.	< 1 Min. / .2 Mi.
33	### Kelsey Hill Rd	Deep River	3 Min. / 1.8 Mi.	5 Min. / 2.5 Mi.
34	## Spring Street	Deep River	1 Min. / 1 Mi.	7 Min. / 3.9 Mi.

35	### South Main Street	Deep River	2 Min. / 1 Mi.	7 Min. / 3.7 Mi.
36	## West Elm Street	Deep River	1 Min / .1 Mi.	6 Min. / 3.5 Mi.
37	## Castle Heights	Deep River	3 Min. / 1 Mi.	9 Min. / 4 Mi.
38	### Essex Street	Deep River	2 Min. / 1 Mi.	9 Min. / 5 Mi.
39	### Warsaw Street	Deep River	4 Min. / 2.4 Mi.	4 Min. / 2.5 Mi.

Exhibit 36: DRFD Members - Distance from Stations

10.0 Water Supply

A limited amount of the community is served by a water system provided by the Connecticut Water Co. The primary service area is concentrated in or fed by the Main Street area. This will necessitate the use of Tankers to supply water in the un-hydranted areas. An excellent Community Risk Reduction Tactic was to require water supply cisterns in developments without municipal water.

11.0 Comparison of Neighboring Communities

Topic	Deep River	Essex	Chester	Old Saybrook	Killingworth	Lyme	Clinton	Westbrook
Population	4466	6611	4219	10,072	6390	2425	12,926	6885
Square Miles	14	10	16	15	35	32	16	16
Total Calls	121	496	358	424	422	103	1,928	321
Fire Service	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EMS level	Sup. 1st Resp. *	1st. Resp.**	1st. Resp.***	NONE	1st Resp.**	1st Resp.**	1st Resp**.	1st Resp**.
Haz-Mat	OPS	OPS	OPS	OPS.	OPS	OPS	OPS	OPS
SOPs/SOGs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Engines	2	4	3	3	3	1	4	4
Engine Tankers	0	0	0	0	0	2	0	0
Tankers	0	1	1	0	2	1	1	1
Ladder	1	1 (TL)	0	1(TL)	0	0	1 (TL)	1 (TL)
Rescue	1	2	2 AMB	1	2	1	1	2
Brush Trucks	1	2	2	1	2	2	3	2
Residential	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industrial	Yes	Yes	No	Yes	Yes			Yes
Commercial	Yes	No	No	No	Yes	Yes	Yes	Yes
Combination	Yes	Yes	No	No	Yes	Yes	Yes	Yes

Exhibit 37: Community Comparison

*Supplemental 1st Responder for Specific Calls. DRAA does their own First Responder Responses.

**Full First Responder

***Runs an Ambulance

It should be noted that the Deep River Fire Department offers a Supplemental First Responder Service. The Deep River Ambulance provides its own First Responder service. As a Supplemental First Responder, the DRFD responds to specific conditions as needed to ensure their citizens are cared for. Some of their Mutual Aid partners provide First Responder services which respond more often, and one operates an ambulance. As a result, some Mutual Aid overall response numbers will be higher.

12.0 Research Questions

12.1: Is the present emergency response system effective and efficient?

As the population continues to age, the systems may become stressed. As a result, recruitment and retention issues will become more taxing to the Departments. Nationally, getting volunteers into the organizations and keeping them has been suffering. The number of young people in the organizations is unusual and frankly exciting.

The present system is effective and efficient.

12.2 What changes, specific to additional facilities/enhancements, could be made to improve the delivery of emergency services for the Town of Deep River?

The Headquarters Station will need to be addressed soon. As presented, the March 2020 proposal should receive significant additional discussion. While we have seen a great deal of pride displayed by the membership, the station is a critical issue.

Recommendation 8: The March of 2020 HQ Station rehabilitation proposal should receive significant attention and additional discussion should take place soon regarding the plan. It is our recommendation that this plan be used as the base for successful completion within the next three – five years.

JLN has addressed the apparatus replacement plan in the report. We hope this helps to answer any questions.

Recommendation 9: Replace the 1989 FMC (E 5-5-2) and follow the proposed replacement schedule.

The significant changes are rehabilitating the DRFD Headquarters Station and creating a strategic replacement plan for the apparatus.

12.3 What is the general health of the Deep River Fire and Ambulance Departments?

The Departments appear to be healthy. As stated above, getting youth interested in public service and specifically emergency services is very important. There is a concern for senior seasoned members aging out. This is a common problem in today's volunteer fire service. Consistent and aggressive recruitment is needed to continue preparing for the future. We did not hear any complaining or venting regarding the organizations from the members.

The Fire Department and Ambulance Association appear to be in good shape.

12.4 Are the Emergency Departments prepared to successfully handle emergencies at their Target Hazards?

As is typical with small rural departments, the answer is yes, with the support of mutual aid partners. In many cases, local communities cannot support funding departments for their largest hazards. The challenge is making sure they fund appropriately. The Fire Department and Ambulance appear to be frugal with their spending and planning for small repetitive costs. They have robust mutual aid plans and train both locally and regionally for their respective hazards. Presently, they can successfully handle emergencies with mutual aid if needed. There will come a time, however, where the challenges will be significant. In addition, the community taxpayer or Leadership will challenge the costs of operating independently and will be looking for more formal regional applications.

Presently, the departments can successfully handle emergencies with help from mutual aid.

12.5) What is the long-term resourcing that will need to take place to ensure quality service?

In addition to the recommendations, we have made regarding Apparatus and Buildings, the maintenance of these resources will continue to be critically important. Part of the strategic plan should include those items or services that will be needed to keep everything up to par. The organizations have worked hard to maintain their resources but a coordinated plan involving the key players will prove to be fruitful.

The Departments and Community should work together strategically to ensure that adequate support is there for the Community's assets.

References

https://www.city-data.com/city/Deep-River-Connecticut.html

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https://www.countyoffice.org/deep-river-fire-department-winthrop-street-station-deep-river-ct-478/

https://www.deepriverct.us/emergency-services-ambulance

http://factfinder.census.gov/

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http://profiles.ctdata.org/profiles/

Fire Protection Handbook, 18th and 19th Edition, National Fire Protection Association, Quincy, MA.

NFPA 1001 -2002 Edition, Standard for Fire Fighter Professional Qualifications, National Fire Protection Association, Quincy, MA.

NFPA 1141 - 2003 Edition, Standard for Fire Protection in Planned Building Groups, National +--

NFPA 1201 - 2000 Edition, Standard for Developing Fire Protection Services for the Public, National Fire Protection Association, Quincy, MA.

NFPA 1720 - 1999 Edition, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments, National Fire Protection Association, Quincy, MA.\

NFPA 1500 – 2002 Edition, Standard on Fire Department Occupational Safety and Health Program National Fire Protection Association, Quincy, MA.

NFPA 1901 - 2003 Edition, Standard for Automotive Fire Apparatus National Fire Protection Association, Quincy, MA.

NFPA 1021 – 2003 Edition, Standard for Fire Officer Professional Qualifications, National Fire Protection Association, Quincy, MA.

NFPA 1041 – 2002 Edition, Standard for Fire Service Instructor Professional Qualifications, National Fire Protection Association, Quincy, MA.

29CFR1910.134, OSHA Respiratory Protection.

29CFR 1910.120, OSHA Hazardous Waste Operations and Emergency Response.

Public Protection Survey Information for Areas without Water Mains, ISO Commercial Risk Services, Inc., Quincy, MA.

The Department of Transportation 2015 Emergency Response Guidebook.

Photos

Exhibits

Attachments

Attachment 1: Recommendation Summary

- ***Recommendation 1: A Strategic Plan should be created by the Leadership of the Fire Department and the Community Leaders to prepare for the future. Page 22***
- ***Recommendation 2: A replacement Emergency Manager should be appointed to prepare for potential emergencies. Page 23***
- ***Recommendation 3: The Emergency Operations Plan should be reviewed and updated as soon as possible. Page 23***
- ***Recommendation 4: An Organizational Statement should be created to meet the NFPA and OSHA requirements. Page 23***
- ***Recommendation 5: DRFD and DRAA should pursue the transition of communications to the State Interoperability Frequency. Page 31***
- ***Recommendation 6: Replace the 1989 FMC (E 5-5-2) in 2026 and follow the proposed replacement schedule. Page 54***
- ***Recommendation 7: The March of 2020 HQ Station rehabilitation proposal should receive significant attention and additional discussion should take place soon regarding the plan. It is our recommendation that this plan be used as the base for successful completion within the next three - five years. Page 62***
- ***Recommendation 8: The March of 2020 HQ Station rehabilitation proposal should receive significant attention and additional discussion should take place soon regarding the plan. It is our recommendation that this plan be used as the base for successful completion within the next three – five years.***
- ***Recommendation 9: Replace the 1989 FMC (E 5-5-2) and follow the proposed replacement schedule.***

Attachment 2: Potential Hazardous Materials Incident or High Risk Rescue Properties

Company	Location	Process/ Hazards	Distance/Time From DRFD HQ	Distance/Time From Winthrop Station
Silgan Plastics	38 Bridge St.	Industrial Storage and Functions	.5 Mi. / 1Min.	3.7 Mi. / 6 Min.
Deep River Precision Components	12 Bridge St.	Industrial Storage and Functions	.6 Mi. / 1 Min.	3.8 Mi. / 6 Min.
Industrial Park	500 Main St.	Storage and Operations	1.3 Mi. / 2 Min.	3.9 Mi. / 7 Min.
Industrial Park	400 Main St.	Storage and Operations	1 Mi. / 2 Min.	3.7 Mi. / 7 Min.
Industrial Park	Industrial Park Rd.	Storage and Operations	2.4 Mi. / 4 Min.	1.6 Mi. / 3 Min.
Freedom Marina	50 River La.	Storage and Operations	1 Mi. / 3 Min.	4.6 Mi. / 9 Min.
Sewer Treatment Plant	99 Winter Ave.	Storage and Operations	1.3 Mi. 4 Min.	4.7 Mi. / 9 Min.
Essex Steam Train	Railroad Line	Fuel/Steam	1 Mi. / 3 Min.	4.6 Mi. / 9 Min.
Marine Excursions	174 River St	Fuel	1 Mi. / 3 Min.	4.6 Mi. / 9 Min.
Hayes Materials	24 Woodbury Rd, Deep River, CT	Excavation	2.3 Mi. / 4 Min.	1.5 Mi / 2 Min.
Eastern Transfer Station LLC	400 Commercial Drive	High Volume of Combustibles	2.3 Mi. / 4 Min.	1.5 Mi. / 2 Min.

Attachment 3: Properties with Significant Life Safety Concerns

Property	Location	Concern	Distance / Time From DRFD HQ	Distance / Time From Winthrop Station
Incarnation Camp	253 Bushy Hill Rd.	Occupancy Residents	5.3 Mi. / 9 Min.	1.8 Mi. / 3 Min.
Kirtland Commons	92 Main St.	Occupancy Residents	.6 Mi. / 1 Min.	3.9 Mi. / 6 Min.
Valley Regional High School	256 Kelsey Hill Rd.	Occupancy Population	2.3 Mi. / 4 Min.	2.5 Mi. / 4 Min.
John Winthrop Middle School	1 Winthrop Rd.	Occupancy Population	1.7 Mi. / 2 Min.	1.9 Mi. / 2 Min.
Deep River Elementary	12 River St.	Occupancy Population	.3 Mi. / 1 Min.	3.9 Mi. / 6 Min.
Deep River Baptist	24 River St.	Occupancy Population	.3 Mi. / 1 Min.	3.9 Mi. / 6 Min.
Deep River Congregational	1 Church Dr.	Occupancy Population	.2 Mi. / 1 Min.	3.8 Mi. / 6 Min.
Deep River Baptist	444 Winthrop Rd.	Occupancy Population	3.8 Mi. / 6 Min.	.1 Mi. / 1 Min.
Brian House	573 Winthrop Rd.	Occupancy Residents	4.3 Mi. / 8 Min.	.7 Mi. / 2 Min.
Riverview Lodge	10 Prospect St.	Occupancy Residents	.5 Mi. / 2 Min.	4.1 Mi. / 8 Min.

Attachment 4: NFPA Standards

Complied with or used Yes / No	NFPA STANDARDS
	HIGH FREQUENCY
YES	NFPA 471 Recommended practices for responding to hazardous materials incidents.
YES	NFPA 472 Standard for competence of responders to hazardous materials and weapons of mass destruction incidents.
YES	NFPA 473 Standard for competencies for EMS personnel responding to has materials and weapons of mass destruction incidents.
YES	NFPA 101 Life safety code.
YES	NFPA 1000 Standard for fire service professional qualifications accreditation and certification systems.
YES	NFPA 1001 Standard for firefighter professional qualifications.
YES	NFPA 1002 Standard for apparatus operator professional qualifications.
YES	NFPA 1006 Standard for technical rescuer professional qualifications.
YES	NFPA 1021 Standard for fire officer professional qualifications.
YES	NFPA 1026 Standard for incident management personnel qualifications.
NO	NFPA 1035 Standard for professional qualifications for fire and lay safety educator.
YES	NFPA 1041 Standard for fire instructor professional qualification.
NO	NFPA 1250 Recommended practices in fire and emergency service organization risk management,
YES	NFPA 1401 Recommended practice for fire service training reports and records.
YES	NFPA 1403 Standard on live fire training evolutions.
YES	NFPA 1404 Standard for fire service respiratory protection training.
YES	NFPA 1410 Standard on training for initial emergency scene operations.
YES	NFPA 1500 Standard on fire Department occupational safety and health program.
YES	NFPA 1521 Standard for fire Department safety officer.
YES	NFPA 1561 Standard on emergency service incident management system.
YES	NFPA 1581 Standard on fire Department infection control program.
YES	NFPA 1582 Standard on comprehensive occupational medical program for fire departments,
YES	NFPA 1670 Standard on operations and training on technical search and rescue incidents.

YES	NFPA 1851 Standard on the selection care and maintenance of protective ensembles for structural firefighting.
YES	NFPA 1852 Standard on selection care and maintenance of open circuit self-contained breathing apparatus.
YES	NFPA 1901 Standard for automatic fire apparatus.
YES	NFPA 1914 Standard for testing fire Department aerial devices.
YES	NFPA 1915 Standard for fire apparatus preventive maintenance program.
YES	NFPA 1932 Standard on use maintenance and service testing of in-service fire Department ground ladders.
YES	NFPA 1962 Standard for the care, use, inspection, service testing, and replacement of fire hose, couplings, nozzles, and appliances.
YES	NFPA 1971 Standard on protective ensembles for structural firefighting and proximity firefighting,
YES	NFPA 1981 Standard on open circuit self-contained breathing apparatus for emergency services,
YES	NFPA 1982 Standard on personal alert safety systems,
	MEDIUM FREQUENCY
YES	NFPA 1 Fire Code.
YES	NFPA 10 Portable fire extinguishers
YES	NFPA 13 Standard for fire sprinklers.
YES	NFPA 14 Standard for installation of standpipe hose systems.
YES	NFPA 450 Guide for emergency medical services and systems.
NO	NFPA 551 Guide for the evaluation of fire risk assessments.
YES	NFPA 1031 Standard for professional qualifications for fired inspector or plan examiner.
YES	NFPA 1033 Standard for professional qualifications for fire investigator.
YES	NFPA 1600: Standard on Disaster/Emergency Management and Business Continuity Programs,
YES	NFPA 1936 Standard on power rescue tools.
YES	NFPA 1951 Standard on protective ensembles for technical rescue incidents,
	LOW FREQUENCY
FM	NFPA 30 Flammable and combustible liquid code
FM	NFPA 30 A code for moral fuel dispensing.
FM	NFPA 31 Standard for the installation of oil burning equipment.

FM	NFPA 54 National fuel gas code.
FM	NFPA 55 Compressed gas in cryogenic fuel
FM	NFPA 58 Liquid petroleum gas code.
FM	NFPA 70 National electrical code
FM	NFPA 72 National fire alarm and signaling code

Attachment 5: SWOT Analysis Internal

SWOT ANALYSIS **–** Fire Department – Internal

STRENGTHS

a) Good Morale
b) Experienced
c) Deep River Command Staff
d) Close During Hard Times
e) Strong Junior Division
f) Mutual Aid Given and Received
g) Inclusive Culture
h) Willing to Work
i) Tactical Communications
j) Internal Communications
k) Safe Operations Culture
l) Seasoned Membership That's Willing to Share
m) Wide Range of Age and Experienced
n) Community Outreach
o) Public Service Commitment
p) Equipment
q) Cost Conscious
r) Cross Training with Other Town Agencies
s) Good Leadership, Leadership
t) Deep River Fire Department Inc. Funding
u) Town of Deep River Funding
v) Community Donations
w) Best Chili

WEAKNESSES

a) Facilities – Conditions, Deterioration, Access Issues, Meeting Space
b) Public Information
    1) Communications Going OUT
    2) Education of Town Residents
    3) Sales and Marketing
c) Education of Community Leaders
d) Training Attendance
e) Time Availability
f) In-Town Training Grounds
g) Apparatus Designed for Specific Duties, i.e., Drafting Vehicle
h) Non-Traditional Emergency Operations Capabilities
i) No EOC
j) No Emergency Management
k) Missed Opportunities for Funding – Communications Interoperability
l) Old Apparatus – Brush Truck

OPPORTUNITIES

a) Opportunities from Weakness List and Threats
b) Dedicated Open Houses, Community Leaders, and Residents
c) Public Safety Academy – Cooking, Safety, Firematic Issues.

THREATS

a) Inflation
b) Town Leadership Changes
c) $$ Competition with Other Town Initiatives
d) Training and Available Time
e) Reliance on Older Members
f) Regionalization

Attachment 6: SWOT Analysis External

SWOT ANALYSIS **–** Board of Selectmen and Community Leadership– External

STRENGTHS

b) Dedicated/Active/Committed
c) Get Along/Work Well Together
d) Well Trained/Knowledgeable
e) Equipped
f) They Look Ahead
g) Community Service
h) Family (Fire Department)
i) Good Mutual Aid

WEAKNESSES

a) Politics, Internal/External
b) Blinders – Focus Driven/Singular
c) Public Relations/Education - Marketing/Sales of Initiatives.
d) Facilities

OPPORTUNITIES

a) Marketing Themselves
b) Not – us vs them – More Global
c) Communications Can Better Fire Department
d) Build Public Relationships
e) Build Elected Officials Relationships
f) Information Equals Support
g) Mentor Program
h) Regionalization

THREATS

a) Population Decreasing, Aging Increasing
b) Equipment Aging
c) Equipment Costs Rising
d) Career Force
e) Regionalization
f) Funding Competition

Attachment 7: Deep River Draft Comment and Review Sheet

The following pages are comments by Author and Replies during the draft processes.

DEEP RIVER DRAFT COMMENT AND REVIEW SHEET			
#	Author	Comment	Reply
1	Eckenroth	I am writing as the chairmen of the Deep River Board of Finance (BOF). I reviewed the "draft" of your emergency service study and discussed it with several members of affected community groups. I believe that the BOF needs a more concise, but detailed, summarizing narrative produced by experts focusing on both current and long-term apparatus and facility requirements. The BOF would benefit from a description of the level and type of apparatus and associated facilities that a town of 14 square miles with a population of 4,500 having certain risk characteristics needs to provide emergency service to its citizens.	Thank you for your feedback.
2	Berardis	The chain of command for the fire dept. is not correct. Chief Tim Lee should be able to provide the accurate organizational structure.	Modified Exhibit 5, Added two additional Exhibits.
3	Berardis	In Section 8.5, Apparatus Replacement Plan, it should be noted that Engine 5-5-2 is also in the process of being replaced.	Added Radio call signs to the identified units. Presently, a new piece of apparatus is in production which will replace the 1989 FMC Pumper (Engine 5-5-2) as a first out apparatus at the Headquarters station.

4	Berardis	The information in Section 11 is not an accurate comparison. The 121 total calls for Deep River are fire emergency calls, while the other neighboring towns list total calls which include ambulance/EMS. Not including EMS calls in Deep River, or not separating fire calls in neighboring towns causes readers of the document to draw inaccurate conclusions as to the needs of Deep River vs other neighboring towns.	The chart represents the types of service provided and the total numbers of alarms they responded to that year. It is a total picture. The picture would not be accurate if we modified the parameters. Modified Exhibit 35 to include: *Supplemental 1st Responder for Specific calls. DRAA does their own First Responder Responses. ** Full First Responder *** Runs an Ambulance Added an explanatory text.
5	Berardis	The RFP for a Needs Assessment for Emergency Services, including the Fire Department, requests the document address the need for a new fire station, including location, size, and the amount of apparatus that can be housed within, considering the current main fire house HQ and smaller Winthrop satellite station, and should consider upgrade/renovation vs new build. This was one of the most important requirements of the Needs Assessment, and one of the primary reasons for Deep River's request for an independent, professional, 3rd party assessment.	Modified paragraph regarding Headquarters station and Recommendation #7. The March of 2020 HQ Station replacement proposal should receive significant attention and additional discussion should take place soon regarding the plan. It is our recommendation that this plan be used as the base for successful completion within the next three - five years.

6	Berardis	This evaluation for future fire station(s) was not done. Section 9.0 (Stations), and subsections 9.1 (Headquarters) and 9.2 (Winthrop Station), and also Section 12, only list what the town has for fire stations, and some of the problems with the current stations. This is already known. What was needed and not addressed was a recommendation from JLN. The Needs Assessment should have provided a professional evaluation and recommendation for a town of 4480 people over 14 square miles, considering the locations of current fire stations and given the current types and amounts of buildings in town, and with access to mutual aid from surrounding towns. What we were looking for was a recommendation such as "One centrally located main fire station would be recommended" or "One centrally located main fire station with a downtown satellite station would be recommended" or "Existing station locations are recommended with an addition for downtown HQ station" or "Rebuild of main downtown HQ station to a larger facility would be recommended" or something like that.	Modified first paragraph in Section 9.0 Stations. Given the topography, road and highway systems and structures diversity, operating out of two stations is appropriate. The present locations are adequate. The largest concern is the Headquarters station, and it should be focused upon. While it lies in the flood plain, engineering can be used to provide an adequate amount of height. However, if other opportunities present themselves for purchase and construction, they should be considered. Having said that, this process should not delay the replacement of the Headquarters Station. Reducing the number of stations to one is not recommended.

6	Berardis	None of this was provided. The draft edition of the Needs Assessment only stated some of the things that are wrong with the current stations, such as leaky roof and inadequate space at HQ, etc. We know these issues. We were looking for and were expecting some type of professional recommendation, which was not provided. For example, if a recommendation was for one new, larger, centrally located station midway between the two current stations, if that would provide sufficient coverage based on your professional recommendation and if it would maintain the ISO rating for the town and for the neighborhoods at extreme ends of town, furthest away from some midway location. Or if two fire stations at current locations are needed to maintain the town's ISO rating. And if two stations are needed, the size necessary for the main station downtown. This ties into the next point dealing with apparatus needed.	Modified first paragraph in Section 9.0 Stations. Given the topography, road and highway systems and structures diversity, operating out of two stations is appropriate. The present locations are adequate. The largest concern is the Headquarters station, and it should be focused upon. While it lies in the flood plain, engineering can be used to provide an adequate amount of height. However, if other opportunities present themselves for purchase and construction, they should be considered. Having said that, this process should not delay the replacement of the Headquarters Station. Reducing the number of stations to one is not recommended.

7	Berardis	The RFP for a Needs Assessment for Emergency Services, including the Fire Department, requests the document address the need for quantity of apparatus, including type of apparatus. This was also one of the most important requirements of the Needs Assessment, and one of the primary reasons for Deep River's request for an independent, professional, 3rd party assessment. The recommendation for the amount and type of apparatus will also go directly into the recommendation for needs of a new fire station.	Thank you for your feedback. Please see response #6 & #7.
7	Berardis	This evaluation was not done in the Needs Assessment. Section 11 lists a comparison of Deep River with neighboring communities regarding the number of engines, tankers, ladder trucks, rescues, etc. Similar to a request for a fire station, the Needs Assessment should have provided a professional evaluation and recommendation for a town of 4480 people over 14 square miles, considering the current apparatus, and given the current types and amounts of buildings in town, and with access to mutual aid from surrounding towns. What we were looking for was a professional recommendation that said a town such as Deep River, in your best estimate, should have X engines, X tankers, X ladder trucks, X	Following this recommendation the Fire Department would operate 2 Attack Engines, a Water Whole / Third out / Support Engine, a Tanker, a Rescue, Tower Ladder, Forestry Unit and Boat. Given the various risks and needs of the community, this would be the appropriate number of units.

		rescue trucks, X ambulances, etc. We know what we currently have for apparatus and understand the current replacement plan of two engines and one tanker. But what we would have like to have was a recommendation for the amount of apparatus that a town such as Deep River should have. Then we can make decisions and plans that would have a professional recommendation to address if we are short on the quantity of apparatus, if we have sufficient numbers and types of apparatus, or if we have too much apparatus at present in your opinion.	
8	Berardis	If you can please make corrections for points 1, 2, and 3 above, and make professional recommendations based on your experience and expertise for points 4 and 5 above, we would appreciate it, and this document would be much more of an useful tool for the town for future planning. As it stands right now, the two most important parts that were requested in the RFP (points 4 and 5) did not have a suitable recommendation based on JLN Associates experience, expertise, and knowledge of the industry and what small towns such as Deep River should have for Fire/EMS services. Thank you for your time and consideration	Thank you for your feedback.

		reading this response to your Needs Assessment.	
9	Olson	My main question when we contracted for the report was what do we need? By that I'm looking for what you feel Deep River needs. I know what we have in town for equipment, and I know what the fire department wants. Like all of us in our personal lives we have needs and wants and we must determine what can be done financially and responsibly. I'd like to see in the report what the town's needs, fire apparatus and fire house wise.	Thank You for your feedback.
10	Olson	Is what we have sufficient, or do we need more or less? Do we have an appropriate number of apparatuses? Do we need less? More?	Modified end of Section 8. 5. Following this recommendation the Fire Department would operate 2 Attack Engines, a Water Whole / Third out / Support Engine, a Tanker, a Rescue, Tower Ladder, Forestry Unit and Boat. Given the various risks and needs of the community, this would be the appropriate number of units.

11	Olson	Our fire headquarters and satellite station, are they sufficient? Located in the right part of town? Can the existing site grow and accommodate future needs? Or should it all consolidated in another location?	Modified first paragraph in Section 9.0 Stations. Given the topography, road and highway systems and structures diversity, operating out of two stations is appropriate. The largest concern is the Headquarters station, and it should be focused upon. Reducing the number of stations to one is not recommended. Two stations is appropriate.
12	Bolduk	The page numbers are cut off and makes referring to a page difficult	Modified Word Footer settings
13	Bolduk	The Fire Department building and equipment at 34 River St are not covered in this assessment	The building at 34 River St. has No emergency equipment. It is a museum. Outside the scope of study.
14	Bolduk	Maritime is mentioned and highlighted, and I don't see statistics for calls/use	Please see Exhibit 25 & 26.

15	Bolduk	Does the boat meeting pertain to the needs of the town?	Modified end of Section 8. 5. Following this recommendation the Fire Department would operate 2 Attack Engines, a Water Whole / Third out / Support Engine, a Tanker, a Rescue, Tower Ladder, Forestry Unit and Boat. Given the various risks and needs of the community, this would be the appropriate number of units.
16	Bolduk	Is it future proof - is there / will there be a need for additional boats and storage?	The research we have conducted does not suggest additional boats.
17	Bolduk	Any new building should meet today's needs, as well as future anticipated needs	Modified paragraph regarding Headquarters station and Recommendation #7. The March of 2020 HQ Station replacement proposal should receive significant attention and additional discussion should take place soon regarding the plan. It is our recommendation that this plan be used as the base for successful completion within the next three- five years.
18	Bolduk	Is refurbishing equipment an option?	Modified Section 8.5. The optimum time frame for refurbishing an apparatus is ten years. Unfortunately, the age of those units coming up for replacement would be considered a poor investment.

19	Bolduk	What do paid services look like?	Modified Section 5.5 Text. There will be a need to hire at some point in the future. Presently, it is not needed or anticipated soon. In the next 5-10 years, Daytime personnel will most likely be needed.
20	Bolduk	Is there a need for ambulance expansion?	Modified Section 6.8. Currently, the DRAA is functioning well and meeting the community's needs. We do not see an expansion in the immediate future.
21	Bolduk	Will the current 2 ambulances continue to meet future needs?	Modified Section 6.8. Currently, the DRAA is functioning well and meeting the community's needs. We do not see an expansion in the immediate future.
22	Bolduk	What would combined services with a surrounding town look like?	Modified Section 6. 8. Currently, the DRAA is functioning well and meeting the community's needs. We do not see an expansion in the immediate future. Mutual Aid partners work very well together. From 2017-2020, having 2,463 requests for service, the Association was unable to field a crew an average or 6.6% of the time. The high was 9.8 % of the calls in 2018 and the low was 3% in 2020. In each case, a mutual aid ambulance was called to deal with the issue.

23	Bolduk	A simplified chart on replacement order	Modified Chart
24	Bolduk	Is the addition of a smaller fire house and repairs to the existing 3 fire houses more cost effective?	Our research does not support adding additional stations. Modified paragraph regarding Headquarters station and Recommendation #7. The March of 2020 HQ Station replacement proposal should receive significant attention and additional discussion should take place soon regarding the plan. It is our recommendation that this plan be used as the base for successful completion within the next three - five years.
25	Bolduk	Can retrofit old buildings be retrofitted and planned for the long term?	Our research does not support adding additional stations. Modified paragraph regarding Headquarters station and Recommendation #7. The March of 2020 HQ Station replacement proposal should receive significant attention and additional discussion should take place soon regarding the plan. It is our recommendation that this plan be used as the base for successful completion within the next three - five years.

26	Kollmer	My sincere apologies for the delay in getting this response to you. We really don't have much in the way of comments; there do not appear to be any errors in the data presented.	Thank You for your feedback.
27	Kollmer	That said, I think the report might have benefited from some long-term planning suggestions for the town to consider regarding Emergency Medical Services. While DRAA is currently a strong volunteer organization, pragmatic consideration should be given to future staffing. The trend in immediate surrounding towns is toward fully paid staff, either through the EMS organization or by the town, and the Town of Deep River should keep this in mind going forward - no immediate action is required, but town leadership should stay in close communication with its EMS service and continue to monitor its health.	Modified Section 6.3 - The Ambulance Leadership is acutely aware that they are fortunate to have the present numbers and response capabilities. In the future the volunteerism / paid per call dynamic may change. In that event, their costs will increase, and they may need assistance from the Elected Officials. As the community continues to age and call volume goes up, this financial support may come before the need for additional Fire Department staffing.
28	Lee & Kerop	1. Section on chain of command and Board of directors was inaccurate. We provided the current command structure and Executive committee membership.	Modified 5.3 to Executive Committee, Modified 5.4 Tactical Chain of Command, 5.5 Fire Marshal Chain of Command

29	Lee & Kerop	1. Correction to the data on engine 5-5-3. It currently carries 2000' of 5" supply line.	Modified 8.1, Engine 5-5-3 2000 - Supply Line
30	Lee & Kerop	1. We discussed the section regarding reference standards and guidance relative to the service life of apparatus and replacement timeframes. Would like to understand why NFPA 1901 and NFPA 1911 were not included in the references as they have relevant recommendations and supporting documentation on this topic.	Modified Section 8.3 after additional research. A key question that has been asked is "Does the 1983 Pierce Pumper – Engine 5-5-3 (the third out/Water Supply Unit) need to be replaced?" In answer to our queries, the Fire Department would like to see the unit replaced next, sooner rather than later. The Select Board and Finance Board question the need to replace a vehicle with such low response numbers. It was relayed that the existing unit had not seen fire duty but rather was primarily used as a blocker for accidents. We were not able to confirm the blocking assignment as fact. It responded as designed to numerous fire type calls over the past 5 years. We have recommended the following compromise: replace 1983 Pierce Pumper – Engine 5-5-3 in 2026 (40 years old). This would address multiple concerns. 1) The replacement timing would be closer to the recommended timeline and still give the community some time to budget for the apparatus, 2) By having it 3 years from now, it provides additional time between the next large purchase of the Rescue in 2032(23 years) and Tower Ladder

			in 2037 (20 years post Refurb), 3) the 2004 Farrar would rotate to the Third out slot and provide excellent coverage if anything breaks and would also stretch out the replacement process. This process would also give time for the Fire Department to fund raise in support of the purchase. The optimum time frame for refurbishing an apparatus is ten years. Unfortunately, the age of those units coming up for replacement would be considered a poor investment. We believe the data supports this recommendation.
31	Lee & Kerop	1. Section 8.5 - we discussed the need to clarify the language related to replacement timing. We understand that while you stated "replace the 2004" engine, you actually mean replace the 1989 FMC and rotate the 2004 to the water supply position. You agreed this would be updated in the revised document for clarity.	Modified / Realigned Exhibit 28. Modified Recommendation #6
32	Lee & Kerop	1. Section 8.5 - we asked for feedback relative to the number and types of apparatus we currently have in the department. Your feedback is that based on your review we do have the appropriate number and	Modified end of Section 8. 5. Following this recommendation the Fire Department would operate 2 Attack Engines, a Water Whole / Third out / Support Engine, a Tanker, a Rescue, Tower Ladder, Forestry Unit and Boat. Given the various risks and needs

		types of apparatus. This will be reflected in the updated version.	of the community, this would be the appropriate number of units.
33	Lee & Kerop	1. Section 8.5 - correction was made where you reference the 89 FMC but should be the 83 Pierce.	Modified Section 8.5 "Does the 1983 Pierce Pumper – Engine 5-5-3 (the third out/Water Supply Unit) need to be replaced?"

34	Lee & Kerop	1. Regarding the fire headquarters building - We would like to have your recommendations relative to the need for administrative space, storage of equipment (fire/building/maintenance/etc.) and the need for space supporting our apparatus engineers. Suggestions for the other typical spaces needed in a fire station as well.	Created Spatial Review of Draft Drawing by Noyes Vogt Architects dated 03/09/2020 Utilizing NFPA Fire Protection Handbook 17th Edition, Table 9-10 a. Added the following text. "A concern has been raised regarding having an apparatus behind another unit. This could lead to a delay of the rear unit responding to an emergency. It would be possible to have units without other apparatus in front. A possible solution would be to make the rear or western wall straight without the outcropping starting at the mechanical room. To move this wall forward, we would suggest adding a 5th bay to the southern wall. The SUV, Pick-up, Boat, and rear Engine could be shifted south. All the rear apparatus bay rooms would now fit behind the units. This would require the addition of one door and associated walls front and rear. The south wall and front and rear corners would already exist."
35	Lee & Kerop	1. We discussed the section covering neighboring communities and the comparison of total calls. We requested clarification be provided that the call volume listed for neighboring towns includes all medical responses where Deep Rivers are primarily just fire department related. It's important that those reading the report understand why those call volumes are substantially higher.	Modified Exhibit 35 to include: *Supplemental 1st Responder for Specific calls. DRAA does their own First Responder Responses. ** Full First Responder *** Runs an Ambulance Added an explanatory text.