I. GOALS AND OBJECTIVES

The Facilities and Apparatus Needs Analysis Subcommittee was tasked with evaluating the assets of the Garden City Fire Department (Fire Department). The intent of the analysis was to provide a status assessment of the facilities and apparatus and identify actionable recommendations for the Village. Where possible, quantifiable financial commitments have been estimated for recommendations.

As a relatively broad task, the subcommittee identified goals and objectives to facilitate the process.

A. Primary Goal

   i. Ensure the volunteer Fire Department has the facilities and equipment necessary to adequately address first responder incidents in the Village and to protect residents, property, operations and the volunteers themselves.

B. Secondary Goals

   i. Support volunteer recruitment and retention.
   ii. Reduce response times.
   iii. Anticipate future Department needs and incorporate flexibility.
   iv. Enhance training capabilities.
   v. Standardize equipment, apparatus and facilities.

C. Objectives and Tasks

   i. Visit and survey existing assets, specifically Facilities, Apparatus, and Equipment (FAE).
   ii. Perform a review of existing documentation related to FAE.
   iii. Evaluate the results of the site visits and documentation review in the context of how the Department operates and the recommendations of the Emergency Action and Response Plan Subcommittee.
   iv. Identify recommendations that protect the Village and Fire Department's assets and complement the Emergency Action and Response Plan Subcommittee's recommendations.

v. Attempt to quantify the financial commitment of the Village necessary to implement the recommendations.

The evaluation of assets was split into two major categories, Apparatus and Facilities. Within each section, the existing conditions were evaluated and needs and recommendations were identified.

It is important to make note of two distinctions. First, the Department is not in charge of maintaining their facilities or developing long term plans for the facilities. These are responsibilities of the Village. Second, the Department is constantly and consistently evaluating their equipment needs and has the ability to pursue the acquisition of equipment.

Finally, throughout the process it has become apparent that the Fire Department has come to some of the same conclusions as this Subcommittee. In some cases, implementation of solutions has been hindered by Village process and approvals and in others, solutions are in the process of being implemented. There are other conclusions and recommendations that this Subcommittee have that are inconsistent with the Fire Departments internal positions; however, the opinion of the Subcommittee that these are important points and must be addressed in some fashion by both the Fire Department and the Village.

II. APPARATUS

Existing Apparatus

The Fire Department currently has three engines, one ladder truck, one quintuple combination pumper, one heavy rescue, four Chief's vehicles, and one All-Terrain Vehicle (ATV). The Fire Department preferred to provide the equipment lists for all apparatus, so the lists could not be independently verified by the Subcommittee.

In addition to the expertise of the Subcommittee members, the information outlined in this section is based on nationally accepted standards and the following documents:

A. Various list of apparatus provided by Department

B. Maintenance records provided by the Department
C. Presentation by a representative of Rescue Vehicles regarding apparatus sales, maintenance contracts and procedures.

The following general conclusions were drawn from the analysis:

A. Several requests for clarification related to the equipment on apparatus were necessary to obtain the necessary information to perform our analysis. This implied that the Department does not keep an active list of the equipment on the apparatus, nor the characteristics of the equipment necessary to ensure proper maintenance or application on the fire scene. This will be further explored in the Needs and Recommendations section.
B. Information related to the training of members to operate apparatus that was provided was generic. Detailed information requested to evaluate the coverage of the Village by operators of specific equipment was not fulfilled so recommendations could not be generated. It should be noted that although this information was not provided the Department indicated that an aggressive training and cross training program is being applied.
C. Provided maintenance data indicates the apparatus are properly maintained and no neglect was noted.
D. Generally, the type and quantity of apparatus and how they are deployed are not consistent with the optimal allocation of resources and are inconsistent with the Emergency Action and Response Plan Subcommittee's recommendations.

Apparatus Characteristics

The following section outlines the current apparatus characteristics. Apparatus images are included in Appendix A.

A. Engine 142 - Station#2,
    i. 2004 Seagrave
    ii. Tank capacity: 500 gallons
    iii. Pump capacity 1,500 GPM
    iv. Ht.9'-1" L-28'-0"

v. GVWR 26830lbs
vi. 5100 battery hours
vii. 42,500 miles.
viii. Seats 6

B. Engine 143: Station #3,
i. 2009 Spartan-Crimson
ii. Tank capacity: 500-gallon tank
iii. Pump capacity 1,500 GPM
iv. Ht.9'-6" L-28'-4"
v. GVWR 44000lbs
vi. Unknown battery hours,
vii. 38,000 miles.
viii. Seats 8

C. Ladder 144: Headquarters
i. 2007 Seagrave
ii. Ht.11'-4" L-40'-4"
iii. GVWR 61500lbs
iv. 3,500 battery hours,
v. 98 foot rear mounted aerial,
vi. 22,000 miles.
vii. Seats 8.

D. Engine 145 Headquarters
i. 2015 Ferrara
ii. Tank capacity: 750 gallons
iii. Pump capacity 1,500 GPM
iv. Ht.10'-0" L-32'-5"
v. GVWR 48500lbs
vi. 2200 battery hours,
vii. 18,000 miles.
viii. Seats 8.

E. Rescue 146: Headquarters

i. 2015 Ferrara.
ii. Ht.10'-7" L-34'-6"
iii. GVWR 56500 lbs.
iv. 2,500 battery hours,
v. 15,000 miles.
vi. Seats 8.

F. Quintuple Combination Pumper (Quint) 147: Headquarters
i. 2018 Ferrara
ii. Ht.11'-4" L-43'-2"
iii. GVWR 81000lb
iv. 102 ft rear mount aerial.
v. 400-gallon tank/1500 GPM.
vi. 850 battery hours, 8,600 miles.
vii. Seats 8.

G. 1415: Station 3
i. 2014 Polaris ATV
ii. Tank capacity: 95 gallons
iii. Pump capacity 140 GPM
iv. Seats 2.

H. Chiefs Vehicles:
i. 1400-2019 Chevrolet Silverado
ii. 1401-2015 Chevrolet Tahoe
iii. 1402-Chevrolet Tahoe.
iv. 1403-Chevrolet Suburban

Maintenance Conditions and Records

The GC Fire Department has an agreement in place with Neville Apparatus Corporation, an outside contractor. They have been servicing and repairing the apparatus for the past 7 years.

Capabilities, Features, & Equipment

The following section summarizes the capabilities and features of each apparatus in

terms of the functions they can perform and hazards they can address. A detailed list of characteristics, and equipment is included in Appendix B.

A. 142, Engine

This apparatus' primary function is fire suppression activities, and it is adequately equipped to perform all necessary functions of fire extinguishment. This unit's equipment affords firefighters the ability to address the following secondary hazards:

i. Forcible Entry
ii. Laddering heights to 24 ft elevations
iii. Mechanical Ventilation
iv. CO Metering
v. Gas Detection/Emergencies
vi. Elevator Emergencies
vii. Electrical Emergencies
viii. First Aid
ix. Spills of 5 gallons or less

B. 143, Engine

This apparatus' primary function is fire suppression activities, and it is adequately equipped to perform all necessary functions of fire extinguishment. This unit's equipment affords firefighters the ability to address the following secondary hazards:

i. Forcible Entry
ii. Laddering heights to 24 ft elevations
iii. Mechanical Ventilation
iv. CO Metering
v. Gas Detection/Emergencies
vi. Elevator Emergencies
vii. Electrical Emergencies
viii. First Aid
ix. Spills of 5 gallons or less

C. 144, Ladder

This apparatus' primary function is truck operations adequately equipped to perform

all necessary laddering, forcible entry and ventilation functions. This unit's equipment affords firefighters the ability to address the following secondary hazards:

i. Elevated Hose Streams
ii. Mechanical Ventilation
iii. Auto Extrication
iv. Down Trees
v. CO Metering
vi. Gas Detection/Emergencies
vii. Elevator Emergencies
viii. Electrical Emergencies
ix. Salvage Operations
x. First Aid
xi. Spills of 5 gallons or less

D. 145, Engine

This apparatus' primary function is fire suppression activities, and it is adequately equipped to perform all necessary functions of fire extinguishment. This unit's equipment affords firefighters the ability to address the following secondary hazards:

i. Forcible Entry
ii. Laddering heights to 24 ft elevations
iii. Forcible Entry
iv. Mechanical Ventilation
v. Down Trees
vi. CO Metering
vii. Gas Detection/Emergencies
viii. Elevator Emergencies
ix. Electrical Emergencies
x. First Aid
xi. Spills of 5 gallons or less

E. 146, Heavy Rescue

This apparatus' primary function is to support truck operations as well as address unusual emergencies. This unit's equipment affords firefighters the ability to address the following hazards:

i. Forcible Entry
ii. Laddering Elevations of 24 ft
iii. Mechanical Ventilation
iv. Down Trees
v. CO Metering
vi. Auto Extrication
vii. High Angle Emergencies (No one Trained to date)
viii. Building Collapse
ix. Water Rescues
x. Gas Detection/Emergencies
xi. Elevator Emergencies
xii. Electrical Emergencies
xiii. First Aid
xiv. Spills of 15 gallons or less

F. 147, Quintuple Combination Pumper (Quint)

This apparatus' primary functions are fire suppression and truck activities. It is adequately equipped to perform all necessary functions of fire extinguishment, laddering, forcible entry and ventilation. This unit's equipment affords firefighters the ability to address the following secondary hazards:

i. Elevated Hose Streams
ii. Laddering Elevation to 102 ft
iii. Forcible Entry
iv. Mechanical Ventilation
v. Auto Extrication
vi. CO Metering
vii. Down Trees
viii. Gas Detection/Emergencies
ix. Elevator Emergencies

x. Electrical Emergencies
xi. First Aid
xii. Spills of 5 gallons or less
xiii. Salvage

Reserve Equipment

Spare equipment housed at Headquarters. Awaiting Asset List

Needs and Recommendations

The apparatus and equipment currently serving the Department are generally serving the functions necessary to support the operations must frequently performed by the Department. However, in the context of recommendations of the Emergency Action and Response Plan Subcommittee and the operation of the Department as an entirely Volunteer department, there are modifications, enhancements, and redeployments that would provide a greater level of safety to the residents of the Village. The following summarizes this Subcommittee's recommendations.

It should be noted that the Department, either prior to this committee's formation or concurrently, identified some of these needs themselves. In addition, in some cases changes are being implemented. It is important to acknowledge the Department's ongoing internal evaluation and adjustment.

A. Superfluous Equipment

The equipment necessary for almost all tasks /emergencies could be reconfigured to equip all three engines (142,143,145). When properly staffed, each engine could handle most alarms as Recue/Enhanced Engines. This would make the first due apparatus more effective. In addition, it would decrease the time for all necessary equipment to arrive on scene during hours when volunteer attendance is lower, including but not limited to:

1. Nights
2. Holidays
3. Mutual aid assistance in other jurisdictions

4. County training nights
5. Department social events and celebrations

B. Equipment Safety

There is some technical rescue equipment and water rescue gear on the Rescue apparatus (146). Inspection, expiration dates and a log of trained members has not been delivered. These items should be removed immediately for member's safety.

C. Apparatus Life Cycles

The current market for used apparatus, the wear issues caused by the local climate and frequency of use support replacement of apparatus every 10 to 15 years. Budgeting and planning to purchase new apparatus as existing apparatus reaches this time in service will maximize the Village's Return on Investment (RoI) and decrease lifetime maintenance costs. It should be noted that purchasing a new apparatus can take up to two years, so cooperative planning between the Department and the Board of Trustees is important.

D. Standardization of Apparatus

This subcommittee's recommendation along with the Emergency Action and Response Plan Subcommittee is to standardize the apparatus. This has several advantages:

1. Decrease overall training time necessary for members of the Department.
2. Increase number of members trained per apparatus.
3. Increase proficiency in operating apparatus. During stressful operations, muscle memory is employed. Even members trained on multiple apparatus will not be able to draw on muscle memory alone effectively due to the varying controls.
4. Decrease equipment access time by locating all equipment in the same compartments.
5. Increase reliability of proper operation during fire scene operations.

E. Apparatus Placement

The Emergency Action and Response Plan Subcommittee included recommendations to redeploy apparatus to achieve the following goals:

1. Reduce response times.

2. Increase the probability of saving occupants.
3. Reduce the likelihood property damage.

This includes relocating apparatus as follows:

1. Headquarters (Company 1)
    a. Engine, equipped as an Enhanced Engine for a Duty Crew
    b. Spare Engine (if maintained)
    c. Rescue
2. Company 2
    a. Ladder
    b. Engine
3. Company 3
    a. Ladder
    b. Engine

Due to existing building constraints, this is not feasible immediately. The intent of the facilities recommendations is to accommodate this recommendation. However, the current apparatus can be redeployed once the facilities are altered.

F. Existing Apparatus Recommendations

i. Engine 142

Engine 142 is currently 17 years old. With an apparatus of this age, maintenance issues will steadily rise. Once an apparatus is over 10 years old, parts for the vehicle become increasingly difficult to source. This leaves the apparatus out of service for longer periods of time.

This and Engine 143 are the only apparatuses that physically fit into Station 2. When this apparatus is out of service, it leaves only two engines and the Quint to cover the entire GC fire district. It is recommended to replace this apparatus in the near future, but keep the existing vehicle as a “spare” or trade in. The replacement of this unit needs to be configured properly for the placement in Station 2 (the current conditions or a future alteration). This is further discussed in Section band in the Emergency Action and Response plan.

A new purchase could incorporate the capabilities of an Enhanced Engine with a path toward standardizing all pump panels. The current pump panel is unique to this vehicle, which is an issue as outlined above.

In addition, the identification of compartments, tool location, and tool type should be consistent between apparatus so that equipment is easily retrievable.

ii. Engine 143

This apparatus is 12 yrs. old and has passed the 10-year window where parts and repairs will be less supported by the manufacturer. As discussed with dealers, heads of other fire departments purchasing committees and fire district mechanics trade in values exponentially decline in years 11-15 and after 15 years value bottoms out. The replacement of this unit needs to be configured properly for the placement in Station 3 (as currently constructed or as removed) as is further discussed in the Section 3.B and in the Emergency Action and Response plan.

A new purchase could incorporate the capabilities of an Enhanced Engine again with a path towards standardized pump panels. This unit's pump panel is unique to this vehicle, which is an issue as outlined above.

In addition, the identification of compartments, tool location, and tool type should be consistent between apparatus so that equipment is easily retrievable.

iii. Ladder 144

This apparatus is 14 years old and is also quickly entering an area of value reduction. When anticipated renovations are completed in Stations 2 and 3 this unit, or its replacement, should be configured for a relocation from Headquarters. In the future what should be uniform in scope is the ladder control panel, identification of compartments, tool location, tool type so that equipment is easily retrievable.

iv. Engine 145

This unit is relatively new and should be immediately reconfigured to become an "Enhanced Engine" for a scheduled 24/7 duty This crew should be set up

and maintained by the Chiefs of GCFD with a schedule and time clock documentation for proper coverage. This unit's pump panel is unique to this vehicle, which is an issue as outlined above.

v. Rescue 146

This apparatus is a vestige of the mixed volunteer and career department and served as the only entirely volunteer apparatus. Much of the equipment on this apparatus is redundant to some degree. No documentation has been provided to demonstrate that members are trained in technical rescue.

This unit is regarded as a must needed piece of equipment by leaders of the department due to its historical connection to the volunteer department. Although this vehicle has unique capabilities, they are rarely needed and there are multiple similar apparatus' in the county. Most of the equipment is used for auto extrication purposes and can be redeployed on other apparatus within the department.

Trading in or reselling this unit would bring in a large value now as opposed to later. Those monies could be used to standardize the engine companies.

vi. Ladder 147 - Quint

This unit is relatively new, and it is unique because it provides both laddering and pumping capabilities. The pump panel is unique to this vehicle as is all other panels within the department. When anticipated renovations are completed in Stations 2 and/or 3 this unit or its replacement which should be <u>strictly a ladder</u> shall be configured for a relocation from Headquarters (Station 1)

Use of this apparatus as a combination unit requires the operator to understand prior to arrival on scene what the primary function will be for the specific conditions. This will affect apparatus placement on scene and member functions. This level of complexity is likely to lead to mistakes, which is why the apparatus should be redeployed as a ladder apparatus only.

G. Chief's Vehicles

There are two major recommendations for Chief's vehicles. First, new vehicles should be pick-up style trucks. This would include rear bed storage for contaminated gear and equipment that is physically separated from occupants.

Second, there should also be a compliment of the necessary hydrant tools with equipment layout matching each vehicle.

H. Apparatus Procurement

The future purchase of any apparatus should be a simplistic approach in making sure that all mechanical devices ladders/pumps are laid out and operate the same. A single manufacturer should be selected to ensure uniformity between apparatus. The storage of equipment should mirror each apparatus type (ladder-ladder, engine-engine).

In lieu of purchasing one engine or ladder at a time, a full complement of each type of apparatus should be purchased at once (i.e., two ladders or three or four engines if a spare will be incorporated). Buying in volume will decrease overall cost but will require a significant amount of preplanning and budgeting by the Village. The trade in of 146 and/or 147 or other apparatus could offset this cost significantly.

III. FACILITIES

Existing Conditions

Two categories define the existing Fire Department facilities; training facilities and fire houses. The three fire houses are located at 347 Stewart Avenue, Stewart Avenue & Edgemere Road, and St. James North & Emmet Place.

There are two types of training facilities, first village owned locations and second properties owned and operated by other entities. The Village owned training facilities are currently located at the village yard at 2 Cherry Valley Avenue and the water department at 103 11th Street. The remaining site is a parking garage at 1325 Franklin Avenue that is available to the Fire Department upon request of the owner.

The information outlined in this section is based on the following data gathering efforts:

A. In person surveys of the existing facilities by the subcommittee

B. Existing Conditions Documentation & Recommendations Reports dated February 2, 2018, prepared by Cameron Engineering and Vincent Benic Architect (VBA).
C. Undocumented question-and-answer sessions with the Chiefs of the Department.
D. GCFD Feasibility Study: Programming and Conceptual Design Presentation dated February 17, 2020, prepared by PKAD Architecture and Design.
E. Recommendations from the Emergency Action and Response Plan Committee, specifically:
    i. Accommodating a Rescue/Enhanced Engine at Company 1, Headquarters
    ii. Accommodating an Engine apparatus and a Ladder apparatus at Company 2
    iii. Accommodating an Engine apparatus and a Ladder apparatus at Company 3
    iv. Providing space for a dispatcher to operate at Company 1, Headquarters
    v. Accommodating duty crews for 24/7 presence at Company 1, Headquarters
F. Presentation by a representative of Fire Training Structures.

In general, the following conclusions were derived from the review of all available information:

A. The facilities range in condition; however, at best they are in a deferred maintenance and neglected state (i.e. Headquarters and Company 3). Proper and timely maintenance and care has not been afforded for some time and many inappropriate alteration projects were noted. At worst, some facilities (i.e. Company 2, and the training facilities) are either near, or potentially in, an end-of-life condition due to lack of care and proper maintenance.
B. The facility uses, spaces, and functions do not align with the current needs of the Department. Including the relatively recent advent of the Hot Zone design methodology to protect fire fighters from exposure to carcinogens.
C. No master plan is in place to address future needs of the Department, including:
    i. Changing apparatus dimensions.
    ii. Changing equipment and apparatus needs.
    iii. Changing volunteer retention, recruitment, and on-site member presence needs.
    iv. Flexibility and multi-use/convertibility in space allotment.

D. Although an existing conditions assessment has been performed for the fire stations, none has been prepared for the training facilities.
E. The existing conditions assessment was only a maintenance review of the facilities. It does not address space planning issues, programming deficiencies, or usefulness/effectiveness of spaces.
F. Several OSHA, Building, and Fire Code compliance issues were noted that require immediate attention.
G. Company 1 originally provided spaces for both the career and volunteer portions of the Department. With the consolidation of the Department into volunteer only, several spaces are redundant and could be repurposed.
H. Company 2 cannot accommodate most current apparatus or any future apparatus due to the change in dimensions since the building was first modified.
I. The existing training facilities are inadequate in terms of training capabilities provided, size of facility, and outdoor operating space.
J. The village yard site has inadequate site infrastructure for real world training operations and training support elements, including but not limited to:
    i. Yard hydrant coverage
    ii. Electrical service and power availability
    iii. Sanitary facilities
    iv. Lighting
    v. Equipment storage

Facility Descriptions

A. Company 1 – 347 Stewart Avenue

The existing spaces include storage, offices, meeting and function space, and apparatus bay. Storage is provided for firefighting equipment, self-contained breathing apparatus (SCBA) pressure vessels, uniforms, pantries, radio equipment, and miscellaneous office needs. Meeting space is provided in two different locations, one small conference space and the large meeting room. The apparatus bay includes space for four apparatus and currently includes other non-firefighting uses.

Company 1 currently serves as the primary fire house for the Village. The station houses the following major apparatus:

i. One engine
ii. One aerial apparatus
iii. One Quintuple combination apparatus (engine and aerial combination)
iv. One heavy rescue apparatus

In addition to the major apparatus listed above, several important functions are performed in this station only and the associated equipment includes:

i. Laundry facilities for turnout gear
ii. SCBA pressure vessel filling
iii. Gym equipment
iv. Radio infrastructure
v. Cooking facilities
vi. Digital hose trainer
vii. Smart dummies
viii. Standpipe props
ix. Fire Fabricators forcible entry door
x. Spare equipment storage

In general, the building is in an acceptable condition. However, the Existing Conditions assessment notes several severe conditions that should be addressed in short order to avoid more costly repairs. These include unprotected openings and penetrations of fire resistance rated assemblies and envelope issues with the facades and roofing.

The building currently has a Kohler diesel fueled emergency generator with an automatic transfer switch. Details of the generator are not available; however, given the lack of code required emergency power equipment it is believe the generator is sized to accommodate the overall operation of the building. It should be noted that the use of diesel in lieu of natural gas is not ideal as regular fuel deliveries will be necessary to ensure operation and during natural emergencies this may not be possible.

The facility currently provides the necessary functionality for the department needs. However, many of the spaces are old and require updating, are not right sized, or are redundant. There is an existing dispatcher location, which should be capable as serving as the in-house dispatching location as recommended by the Emergency Action and Response Plan Subcommittee. The recommendations will address these in more detail.

B. Company 2 – Edgemere Road and Stewart Avenue

The existing spaces include storage, an apparatus bay, a kitchen and lounge space. An unused space is located on the second floor.

Company 2 currently serves as a supporting station for the Western half of the Village. The station houses the following major apparatus:

i. One engine
ii. The antique engine (not fit for service)
iii. A support vehicle (1414), generator and light tower

The building does not currently include any other major functions.

The building is currently in major disrepair. Years of neglect have transformed minor maintenance tasks into larger capital projects. This is supported by the existing conditions assessment. The presence of mold was noted in certain locations, likely caused by the envelope issues noted in the existing conditions assessment.

The facility cannot accommodate current or future apparatus, which is a significant deficiency for the operation of the Department. Most of the spaces are outdated and need refreshing. As an outlying station, the building is not necessarily deficient in uses; however, the recommendations section will address other enhancements that should be considered for the future success of the facility.

The building currently has a Kohler natural gas fueled emergency generator with an automatic transfer switch. Details of the generator are not available; however, given the lack of code required emergency power equipment it is believe the generator is sized to accommodate the overall operation of the building.

Company 2 is unique in that the Village has retained a design professional (PKAD) to prepare a Programming and Conceptual Design Package. In addition, Cosmo Veneziale Architect PLLC, has prepared Progress Drawings for a rehabilitation of the building.

The PKAD study presents two major concepts, first the rehabilitation of the existing building and second the programming and conceptual design of a new building. Pricing estimates were provided for the rehabilitation concept.

The information outlined by both design professionals, in addition to the existing conditions assessment prepared Cameron and VBA provides a good basis for the next steps in addressing the facility needs of the West side of the Village.

C. Company 3 – St James North & Emmet Place

The existing spaces include storage, an apparatus bay, a kitchen and dining space, and lounge space.

This building does not include any major support equipment other than gym equipment.

This facility is an acceptable maintenance condition. One exception the design professional report noted was the flat roof and associated drainage which should be addressed in short order.

The building currently has a Kohler diesel fueled emergency generator with an automatic transfer switch. Details of the generator are not available; however, given the lack of code required emergency power equipment it is believe the generator is sized to accommodate the overall operation of the building. It should be noted that the use of diesel in lieu of natural gas is not ideal as regular fuel deliveries will be necessary to ensure operation and during natural emergencies this may not be possible.

The building is not currently deficient for the current uses. However, it will not accommodate the recommended apparatus deployment by the Emergency Action and Response Plan Subcommittee.

During the Subcommittee walkthrough, water intrusion in the basement was noted. The Department indicated that a request had been submitted to the Village to resolve the

issue. Two weeks later, the issue had not yet been resolved and the water intrusion and pooling has increased.

D. Village Yard

The building includes two Levels with a total area of 900 Square feet. The Street Level (upper area) is approximately 450 square feet with two rooms and a hallway of which approximately 150 square feet is storage. The Yard Entrance Level (lower area) is approximately 450 square feet with two rooms of which 250 sq/ft is used for storage.

The following equipment is currently located at the village yard training facility:

i. (2) VEIS Training Windows
ii. Search Mannequins
iii. Bullex Magnum Pan Fire System
iv. Bullex Car Fire System
v. Bullex Thermal Smart Dummy
vi. Bullex Extrication Dummy
vii. Fire Fabricators Forcible Entry Door
viii. Liquified Propane Gas (LPG) Tanks for fire simulation

Unlike the actual stations, the village yard has not been reviewed by any design professionals to generate an existing conditions assessment. Therefore, a comprehensive understanding of the structure and systems is not available. However, based on our professional background there are exterior envelope deficiencies allowing water and pest intrusion and there are several OSHA and Fire Code compliance issues.

The following image illustrates the intrusion of pests.

Two issues requiring immediate action are upgrading the stairs within the facility to comply with OSHA standards and removing the storage of LPG, which is not permitted indoors by the Nassau County Fire Prevention Ordinance (2017).

The stairs do not have guards, handrails, treads or risers complying with the current Building Code or Fire Code as illustrated below:

Several physical and operational deficiencies were noted, including the following:

i. The facility is significantly lacking interior floor area to provide the necessary training experiences. This includes no space to accommodate the following training modules:
   a. Most interior firefighting operations, including commercial firefighting features (e.g., standpipes, fire sprinklers, Fire Department Connections (FDC),

b. Mask confidence
c. Bail-out
d. Most truck company operations, including Vent, Entry and Search (VES)
e. Rescue and removal operations
f. Roof operations
g. Interior “live” burns

ii. Deficiencies in structure and surrounding access points (i.e. exterior stairs, doors and windows).

iii. More than 50% of the space is used for training resource storage as indicated in the following images and certain equipment has to be stored outside, which will decrease the life of the Village investment:

E. Water Works

The Department's space is on one level with a total of 365 square feet used for mask confidence training. The Lower Level of the building has a mock window set for Bail-Out System (PSS) Training deployment with landing area below. On the perimeter of the landing area is a Mask Confidence Course.

Unlike the actual stations, the Water Works has not been reviewed by any design professionals to generate an existing conditions assessment. Therefore, a

comprehensive understanding of the structure and systems is not available. However, based on our professional background there are exterior envelope deficiencies allowing water and pest intrusion and there are several OSHA and Fire Code compliance issues. Access/egress to location/training area obstructed by ongoing construction, chemical storage and building degradation.

Several physical and operational deficiencies were noted, including the following:

i. The facility is lacking interior floor area to provide the necessary training experiences. This includes no space to accommodate the following training modules:
   a. Bail-out Training confined to limited space obstructed by Water Department materials.
   b. Mask Confidence course designed into an inaccessible area which would limit instructors' ability to tend to a participant that is in distress.
ii. The facility is under the control of another Village department. GCFD use and access was previously limited and is now not permitted.

F. 1325 Franklin Ave Parking Garage Space

This is a five story structure used for Standpipe and Hose-Stretch Drills. This facility is owned and operated by another entity other than the Village. The Department uses the space through an informal use agreement.

As a facility owned and operated by other entity than the Village, maintenance of the facility is not a relevant topic.

This property is privately owned thus making it difficult to use at certain times and this Subcommittee will not make an assessment of this property due to the unreliability of access to the space.

Needs and Recommendations

A. Fire Protection Committee and XXX

As the committee has worked over the last few months, several of the subcommittees have come to the same conclusion about the future needs of the Department. A

permanent Fire Department Administrative Liaison, which will be an employee of the Village. This position is necessary to facilitate meeting many of the Departments needs and to manage the accountability of the Department to this Committee's recommendations. In addition, some form of this Committee should remain on to assist with progressing these documents, incorporating recommendations and providing guidance related to facilities, apparatus, training, and operations.

There are several benefits to these two concepts. First, as unelected entities unaffiliated with the Department, their motivation can be solely to enhance resident fire safety. Second, as unelected entities, the tenure will be longer than the elected representatives ensuring continuity between terms. Finally, as dedicated entities to overall fire safety, concepts such as fire prevention, code enforcement, training and facility maintenance can be priorities that cannot be expected Department responsibilities.

B. Village Wide Programming and Company 2 Design Competition

The facilities need to be addressed to evaluate the future viability of each building independently and as part of a system. This will likely result in suggestions related to modifying uses, updating spaces, right sizing spaces, and creating new uses. A design professional or multiple design professionals should be retained to perform this assessment.

The existing documentation for the facilities including the Concept level documentation prepared by PKAD and existing conditions assessments prepared by Cameron and VBA provide a good basis for initiating a design phase effort for either the rehabilitation of the existing building or construction of a new building. However, review of PKAD's portfolio does not indicate any fire station work and only one historical rehabilitation. In addition, the presentation does not appear to reference the use of a Construction Manager (CM) or General Contractor (GC) to develop the pricing estimates. Finally, no historic building research seems to have been performed to understand the significance of the building. Demolition of building of this vintage and architectural appeal should not be performed without understanding the historical significance of the building.
The decision to rehabilitate or build a new building should be performed with trusted

professionals that have experience in both historic building rehabilitation and fire station design and construction. In addition, a Construction Manager or General Contractor should be retained for preconstruction services for pricing exercises and intelligent abatement estimates. Based on the information currently available and research performed through the architectural community on Long Island, deconstruction of this facility should not be taken lightly and should be a last resort. Given the future needs of the building, it is likely a reasonable project can be undertaken to modify the existing building and accommodate these needs, potentially even for a project equal to or less than the cost of a new building. This would be a fiscally prudent, architecturally respectful, and functionally sufficient solution that should be investigated.

It is proposed to issue a Request for Qualifications (RFQ) to both CM/GC's and Architects. The intent would be to retain approximately three Architects to participate in a paid design competition using the currently available documentation. Additional programming efforts should be performed and blocking/massing diagrams and potentially renderings prepared to assist in selecting a rehabilitation option and Architect to have a pricing estimate performed by a GC/CM.

The cost of the design competition should not exceed approximately $30,000 in total. Although this approach will cost the Village more money than retaining a single architect, it is advantageous for several reasons:

a. Instead of one idea of how to solve for the rehabilitation or reconstruction of Station 2, three competing ideas will be available for selection.
b. The community can be incorporated in the evaluation process of design options, empowering the residents.
c. The best portions of all three ideas can be implemented in the design that moves into full design phases with the selected architect.
d. This approach will enhance transparency in the process for the residents.

The following concepts were identified by the Subcommittee as concepts that, at a minimum, should be addressed by the Architects:

a. Storage – All Three Stations

   It was generally apparent that storage was either in excess or insufficient and rarely co-located with the supported use.

b. Remote/work from home office space – All Three Stations

   To encourage volunteer presence within the building during business hours and accommodate duty crews at headquarters, remote working facilities could be provided. In the post (or near post) Covid world, remote and home working is more common. Providing a space where students or office workers could work would encourage volunteer presence within the station and reduce response times further. Providing certain office equipment would be necessary, including but not limited to a printer/scanner/fax, Wi-Fi, and phones (potentially with small semi-private phone spaces)

c. Sleeping rooms – All Three Stations

   These could encourage volunteers to stay the night in the facility or accommodate standby crews during a state of emergency. Currently, air mattresses are used at Headquarters.

   The legal and insurance issues associated with this should be evaluated; however, should this be a realistic option it would reduce overnight response times. These spaces could be one and the same with the office spaces (i.e. convertible) with creative space planning.

d. Kitchenettes – Stations 2 and 3

   To encourage free time attendance at the stations, spaces that facilitate meals in the building could be provided. The intent would be to limit the spaces to warming operations, refreshments, and refrigeration. This would avoid costly mechanical upgrades related to cooking operations with grease laden vapors. This is unnecessary at Station 1 (Headquarters) as this location currently has a full commercial kitchen.

e. Exercise rooms – All Three Stations or One

   The current exercise accommodations do not comply with the OSHA requirements for these spaces and are not consistent with the Hot Zone

operational approach. Exercise rooms will be a membership perk and encourage station attendance. The presence of smaller facilities within each station or a single larger space in one station should be evaluated by the design professionals.

f. Recreation or lounge room – Companies 2 and 3

The multipurpose recreational rooms at both stations could be updated both in terms of provided equipment and space/infrastructure.

g. Flexibility and Convertibility of Spaces

The future needs of the Department, both from a volunteer retention perspective and an equipment perspective, are challenging to anticipate. Spaces should be evaluated and designed for future flexibility.

h. Dispatcher Space

Infrastructure needs for dispatcher spaces have changed since the last time the current space was used. Although the space is likely appropriate in size, equipment will need to be updated.

ii. Maintenance

Regardless of the future design and construction efforts for the stations, the approach to maintenance of the facilities needs to change. The cost of current maintenance efforts is significantly greater than if the Village had kept up with maintenance efforts on a more regular basis. Conversations with the Department have indicated that the bureaucratic process has contributed to this condition. Therefore, the Village should evaluate the ability to provide a dedicated maintenance budget and process for the Department to maintain their facilities. This would remove challenges to relatively low expenditures that ultimately become larger capital projects when neglected.

iii. Equipment Storage

The general feedback from the Department related to equipment is that the processing and financial support from the Village has been sufficient. So, although the infrastructure to support the equipment (e.g., storage and protection) has been lacking, the purchasing of all types of equipment has been an acceptable process. Firefighting operations will continue to evolve

as technology progresses. The use of drones for firefighting is on the horizon, battery powered extrication equipment is now available, and other types of equipment continues to become more efficient, smaller, and diversified. The storage facilities provided need to be flexible to accommodate these future changes.

iv. Apparatus Redeployment

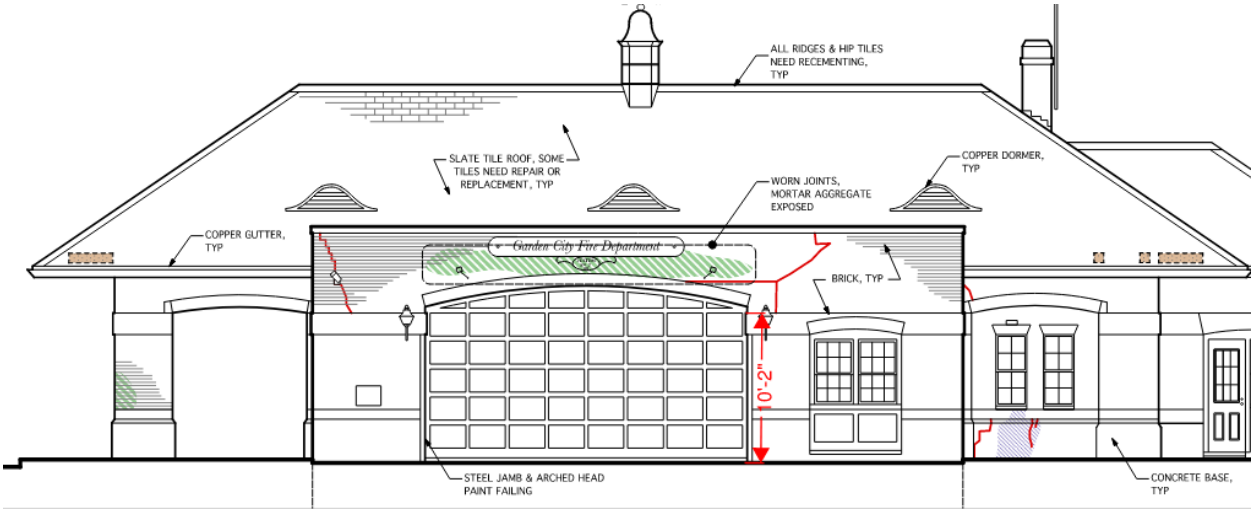
The Emergency Action and Response Plan Subcommittee has recommended the redeployment of apparatus as follows:

a. Headquarters (Company 1)
    i. Engine, equipped as an Enhanced Engine for a Duty Crew
    ii. Spare Engine
    iii. Rescue
b. Company 2
    iv. Ladder
    v. Engine
c. Company 3
    vi. Ladder
    vii. Engine

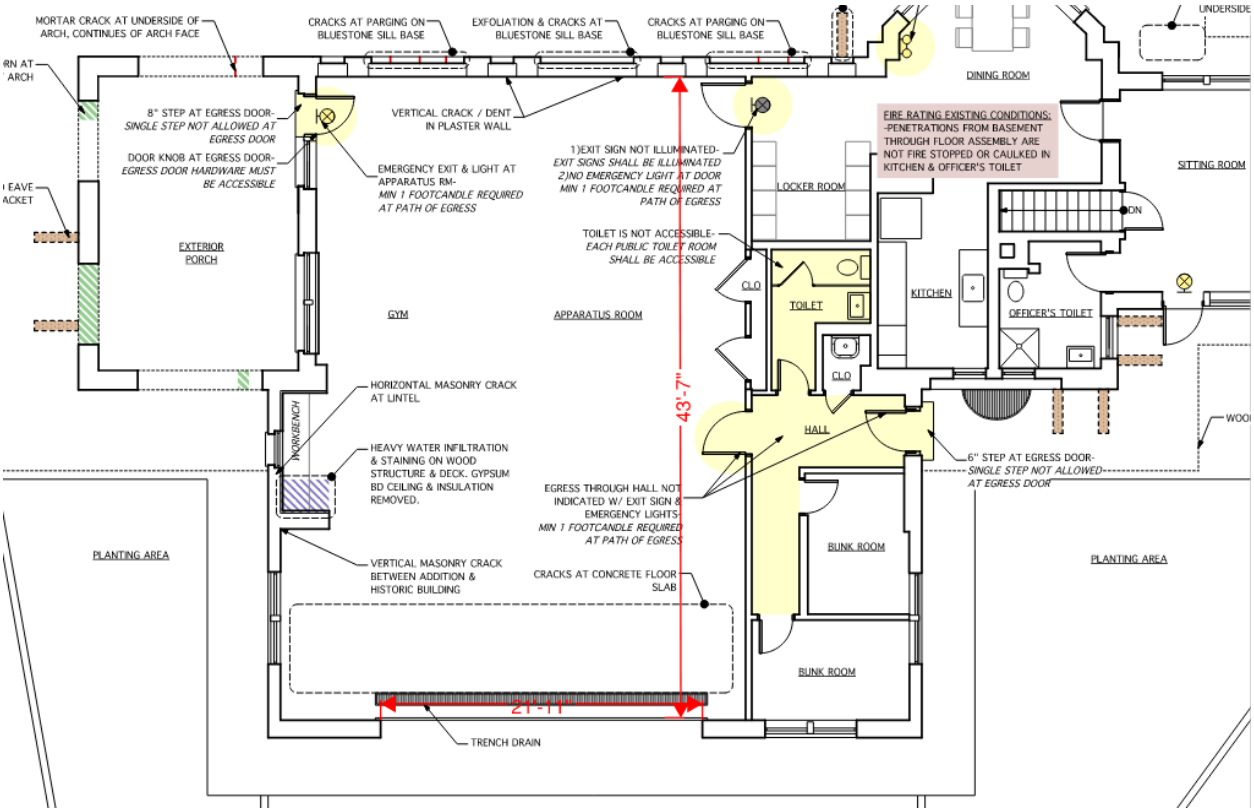
To accommodate these conditions, both Company 2 and Company 3 must be modified.

a. Company 3

    As currently constructed, the apparatus bay cannot accommodate the height of a ladder truck due to the curved bay door. With a height of approximately 10 feet, the opening would need to be modified to accommodate ladder heights of approximately 11 feet, by increasing the clear height to a minimum of 12 feet.

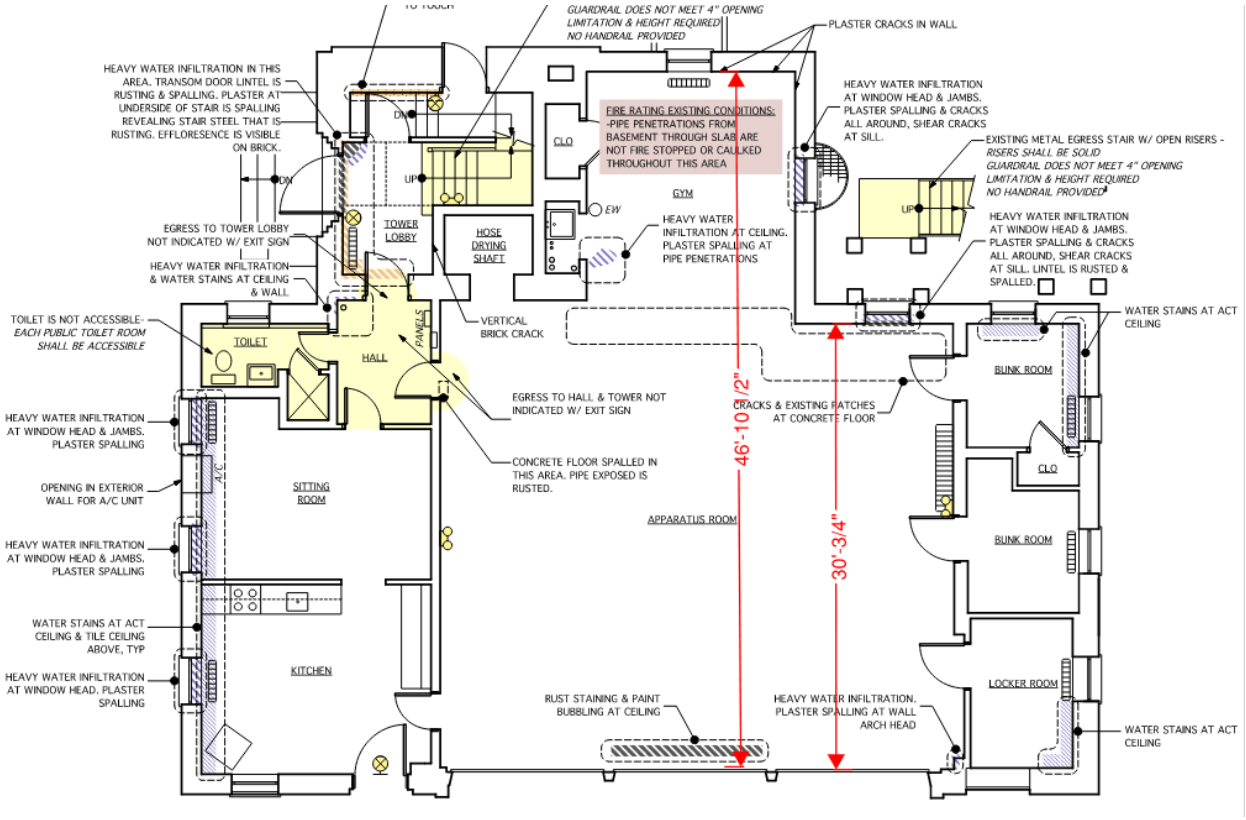


Modification of the building enclosure may not be necessary due to the current depth of the apparatus bay; however, should an extension be necessary, this should be capable on the current lot since the rear of the bay is set back from the dining room projection.



b. Company 2

Modifications to Company 2 will likely accompany a more significant overhaul of the building. However, these alterations will need to incorporate two significant changes to the apparatus bay to accommodate the other Subcommittee's recommendation. This includes increasing the bay door heights, or a minimum of one door to approximately 12 feet. In addition, the center portion of the bay was previously extended to a length that will accommodate a ladder truck; however, the remainder will not accommodate an engine:



A second modification must be incorporated into the alterations to create approximately 40 feet of depth in another apparatus position. This will accommodate current and future engine apparatus dimensions.

C. Training Facilities

i. Full Scale Training Facility

As outlined above the existing training facilities are inadequate in both size and capabilities and in some cases are not dedicated to fire department use

or owned by the Village. In addition, the facilities do not include adequate site infrastructure for real world firefighting training operations. Furthermore, it is our understanding that the Department has been pursuing a new training solution for quite some time. Although documentation is not available to demonstrate a timeline, this is a significant concern of the Subcommittee. The ability for members to adequately protect residents is directly correlated to the quality of their training. Insufficient investment by the Village and neglecting requests by the Department to provide the necessary facilities is not only a disservice to the Department but to the residents overall.

A new training site, potentially located at the current Village Yard, must (not should, but must) be provided to accommodate all training needs. The site and structure must be designed and constructed in accordance with NFPA 1402 as required by Section 430.1 of the Building Code. Infrastructure, including but not limited to, yard hydrants, electrical service and power, and sanitary facilities must be provided at the site. A means to secure the site and provide adequate access for other entities (e.g., the Department of Public Works) that does not require travel through the Fire Department training site must be provided.

Finally, the facility must include storage, exterior space, and interior space that addresses the following needs:

a. Interior firefighting operations, including residential and commercial firefighting features (e.g., standpipes, fire sprinklers, Fire Department Connections (FDC))
b. Mask confidence
c. Bail-out
d. Truck company operations, including Vent, Entry and Search (VES) and specifically truck and ground ladder positioning
e. Rescue and removal operations
f. Roof operations
g. Interior engine operations

h. Yard hydrants
i. Electrical service
j. Sanitary facilities (e.g., bathrooms and eye wash stations)
k. Hydration facilities (e.g., storage for cases of water or water dispensing)
l. Car fire and extraction operations

The subcommittee has identified a potential solution to provide this facility which would require the following enhancements:

a. Adjacent to the existing Village yard facility is an open exterior space currently used for exterior storage of dry well drainage materials. This site is underutilized and already has adequate truck access. Relocating this exterior storage can provide the exterior space necessary to accommodate a new enclosed training facility and associate exterior operational space.

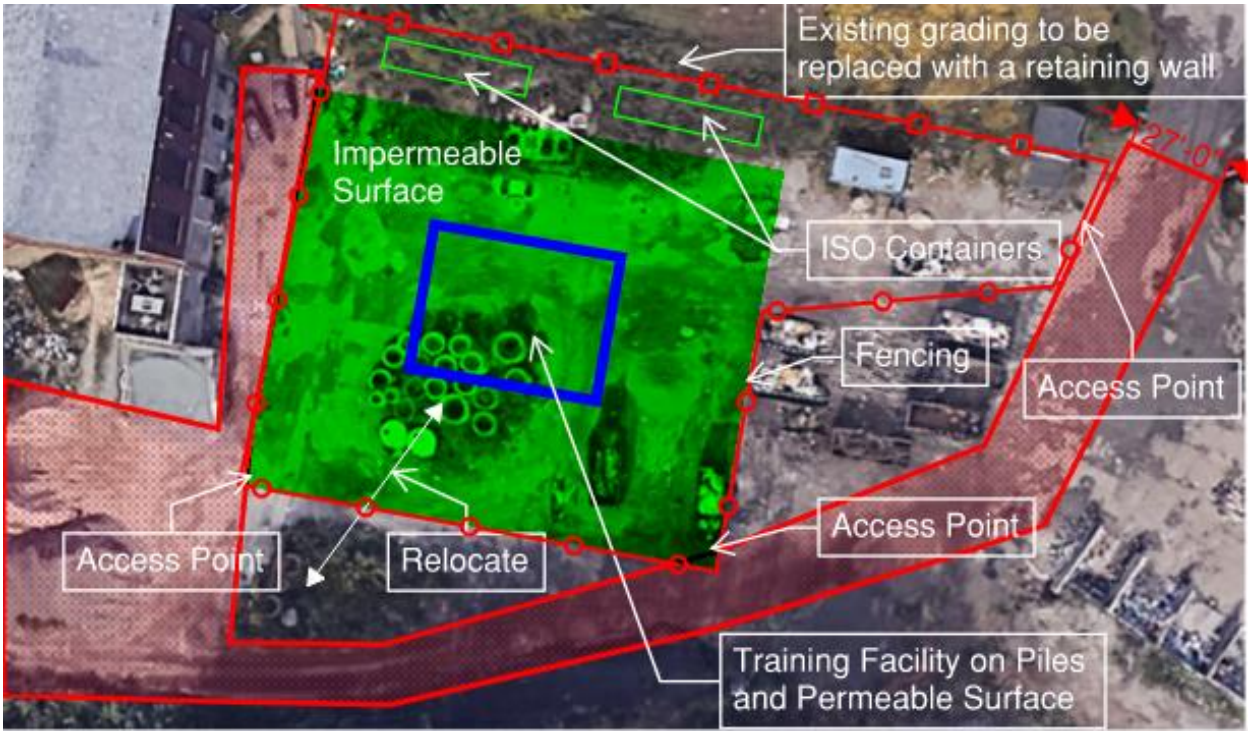
View From Cherry Valley Avenue

View From South

b. Site work will be necessary to accommodate the required infrastructure including regrading, construction of a retaining wall or other retaining construction (i.e., ISO shipping containers used also for storage), and utility work. It is our understanding that the Village is currently embarking on a project to construct a retaining wall at the location necessary to accommodate the facility. This project should be revised to accommodate some of the needs of this effort to economize both projects.

c. Installation of a permeable surface below a prefabricated training structure to facilitate drainage.
d. Installation of an impermeable surface, such as asphalt, around the perimeter of the training structure to permit Department operations.
e. Installation of a new fire hydrant/s within the training area.
f. Installation of a perimeter fence to protect the Village's investment and secure the facility.
g. Procurement and installation of a training structure, such as the FTS Manhattan System (see attached product literature in Appendix C), which complies with NFPA 1402 and provides the required firefighting training features outlined above.
h. Acquisition of a portable heating and cooling unit for use prior to training events. Conversations with other users indicate that the stagnant training structures can have untenable hot or cold conditions during weather extremes.

A civil/site plan was not available for the location, so an aerial view was modified to illustrate a potential solution. It should be noted that multiple options may be available to provide the necessary space for Department operations, while maintaining site access for other Village employees at the yard.



The layout above is intended to address the needs of the Department for internal training. However, a recommendation by the Emergency Action and Response Plan Subcommittee indicates that there is an increasing reliance on the mutual aid system of Nassau County. The mutual aid agreements in place ensure that if there is a transmission of a working fire, mutual aid departments will automatically be operating on scene. It is imperative that the Department be training regularly for these situations.

The layout above is also intended to facilitate training with mutual aid departments in addition to GCFD only internal trainings. The multiple access points and 360-degree operating space will provide opportunities for the Department to train with the primary mutual aid departments as they would at a fire scene.

ii. Fire Department Facility Requests

Anecdotally, the process for requesting maintenance and alterations to the existing facilities was noted as failing. As noted above for the water intrusion at Company 3, maintenance requests can go unresolved for extended time periods. Alteration request, such as for the laundry facilities at Company 1,

Headquarters, are often delayed and never completed. A means for facilitating this process and ensuring completion of projects must be implemented.

IV. SUPPORTING DOCUMENTS

A. NFPA Standards
   i. 1402 *Standard on Facilities for Fire Training and Associated Props*
   ii. 1901 *Standard for Automotive Fire Apparatus*
   iii. 1911 *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles* 1500 *Standard on Fire Department Occupational Safety, Health, and Wellness Program*
   iv. 1720 *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*
   v. 1851 *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*
B. Existing Conditions Assessment documents prepared by Cameron Engineering and Vincent Benic Architect (VBA)
C. PKAD GCFD Feasibility Study: Programming and Conceptual Design Presentation
D. Fire Training Structures product literature
E. 2020 New York State Construction Codes
F. 2020 New York State Fire Code
G. 2017 Nassau County Fire Prevention Ordinance
H. Subcommittee photographs
I. GCFD provided documentation

V. REQUESTED DOCUMENTS NOT RECEIVED

A. Village yard site/civil drawings.
B. Village yard retaining wall project information.
C. Ladder testing and certification agency or vendor information.
D. Hose testing and certification agency or vendor information.
E. Detailed list of certified operators for each piece of equipment

F. Approved vendors list for procurements
G. Spare equipment and asset lists.
H. Training curriculum.
I. Fire prevention presentations.
J. Previous training facility request correspondence between the Chiefs and the Village.
K. Commissioning and decommissioning dates for equipment.

VI. APPENDICES

A. Apparatus Images
B. Apparatus Equipment List
C. FTS Manhattan System
D. Cameron Engineering and Vincent Benic Architect (VBA)
E. GCFD Feasibility Study: Programming and Conceptual Design Presentation