The Ad Hoc Facilities Committee of the Village of Northbrook Board of Trustees will hold a meeting on Tuesday, October 30, 2018 at 6:30 p.m. in the Training Room of the Northbrook Police Station, 1401 Landwehr Road. The following will be discussed.

MEETING AGENDA

Please note: A light dinner will be provided for Board Members and Staff

1. Call To Order
2. Hear From The Audience
3. Space Needs Analysis Process and Methodology
4. Closed Session: Public Facilities Security
5. Space Needs Analysis Findings
6. Adjourn

Robert Israel, Chair
Ad Hoc Facilities Committee

Members: Trustee A.C. Buehler
          Trustee Kathryn Ciesla

Village of Northbrook
Cook County, Illinois
October 30, 2018
MEMORANDUM
VILLAGE OF NORTHBROOK
PUBLIC WORKS DEPARTMENT

TO: RICHARD A. NAHRSTADT, VILLAGE MANAGER
FROM: KELLY HAMILL, PUBLIC WORKS DIRECTOR
DATE: OCTOBER 30, 2018
SUBJECT: UPDATE ON FACILITIES ASSESSMENT AND SPACE NEEDS ANALYSIS

The Village Board established its Ad Hoc Facilities Committee to review the current conditions and operational uses of the Village's facilities and recommend a plan to the Village Board for the future management and maintenance of these facilities. After tours of the Village’s facilities and discussions about the Committee’s priorities, the Ad Hoc Facilities Committee directed staff to prepare a RFP for a condition assessment and space needs analysis of the Police Station, Fleet Maintenance Garage, and operations wing of Fire Station 11. Staff prepared an RFP and the project was awarded on October 10, 2017 to Healy, Bender & Associates of Naperville, Illinois.

The process established in the RFP included three key milestones for the project: (i) a condition assessment of the three facilities; (ii) a space needs analysis of the three facilities; and (iii) an evaluation of the current facilities to determine the most cost effective solution for the Village to meet its needs whether it is renovation, addition, reconstruction on the same site, or relocation of the facility.

The space needs analysis of the Police Station, Fleet Maintenance Garage and Fire Station 11 and preliminary cost estimates for potential options have been completed. This analysis examines the operations housed at each facility, identifies current problems the facility poses to those operations, and the total space needed for each function. Additionally, the analysis considers related topics such as the relative organization and proximity of different functions, the overall functionality of the current space and other considerations such as public access and security.

To prepare the analysis, the consultants have completed a review of the operations housed at each facility. Surveys and interviews were done with the employees at each facility to supplement the information provided during the review, capture feedback on the existing facility and aid in projecting future changes in personnel. Ultimately, the consultants developed “space standards” for each facility using the information collected during these reviews, their previous project experience and any applicable codes and standards. A detailed discussion of the methodology for the analysis can be found in the attached methodology memo.

Staff will provide a presentation on the findings and options outlined for the Police Station, Fire Station 11, and the Fleet Maintenance Garage at the Ad Hoc Facilities Committee meeting.
As part of the Facilities Assessment project, the Village’s consultant has completed a comprehensive Space Needs Analysis for the Police Department, Fire Station 11, and Fleet Maintenance Garage. This analysis was done to evaluate the amount of space available, the amount of space needed for the current operations at each facility, and the amount of space needed based on changes in operations or services in the future. The consultant has also prepared options to show how the space needs for the Village’s operations at the three identified facilities can best be met. With the options to meet the Village’s space needs, the consultant has provided cost estimates for construction as an order of magnitude. The consultant has also prepared “concept plans” for the options identified in the Space Needs Analysis, which are intended to show the amount of space needed and how that space could be organized with renovation of the existing facilities.

Review of Current Space and Development of Space Needs
As with any process, knowing where you are starting is the first step. The consultants began their review with a comprehensive assessment of the current space available at the Police Department, Fire Station 11 and the Fleet Maintenance Garage. Using walkthroughs, surveys and staff interviews; the consultants identified the various functions housed at each facility, the space available to them, and their needs. Understanding the needs of departments is a key component to understanding how work flows within an organization and how operations can/should be allocated. This information was coupled with operational data such as shift structures and the number and types of vehicles housed at each facility. Ultimately, this information provides the consultant with an understanding of both the current space and existing challenges within each facility.

Once the review of the existing facilities was complete, the consultants analyzed how much space would be needed for operations at the three facilities. For space such as offices, the consultant used accepted office space models tied to particular functions. For instances where a shared space existed (such as the spaces used by Patrol Officers), the consultant used an accepted standard and scaled it based on the number of employees using the space. For example, the number of lockers, which drives the calculation of space in the locker rooms, is scaled to the number of police officers and other applicable employees. Finally, when it came to more specialized components (such as the Fleet Maintenance Garage bays), the consultant drew upon their previous project experience. This is similar to the planning done for the renovations at Village Hall and the Public Works Center in 2008. To create an estimate of the total space needed, the consultants summed all of their standards and arrived at a total square footage. Finally, a “circulation factor” was added. This factor accounts for things such as hallways, mechanical space, the building envelope and related items which enable the building to operate but are not actual working space. For the purposes of estimation, the consultant used a standard, accepted estimating percentage to calculate the space needed.
The difference between the amount of space available and the amount of space identified for each of the facilities is displayed in several ways throughout the document. In each section, a square foot gap analysis illustrates the current amount of space available as a percentage of the current need. This is done for each function identified in the building as well as for the facility as a whole. An example of the overall building analysis from Fire Station 11 can be found below as Exhibit A.

Exhibit A: Square Foot Gap Analysis for Fire Station 11

<table>
<thead>
<tr>
<th>SF Gap Analysis</th>
<th>20%</th>
<th>40%</th>
<th>60%</th>
<th>80%</th>
<th>100%</th>
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<tbody>
<tr>
<td>Overall Percentage of NSF Adequacy for Current Needs</td>
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<td>Station 11</td>
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<tr>
<td>Warehouse Bdg.</td>
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Additionally, each section contains a listing of current spaces which compares their current square footage to their current and future needs. An example can be found below as Exhibit B. In order to ensure that any options presented could meet both the current and future need, the consultants worked to make simple projections of staffing based on their experience and staff feedback. These projections are critical due to the fact that space is often directly connected to the number of personnel working in a facility. Using staffing projections that were developed in conjunction with the Village’s management team, the consultants sought to build enough capacity to not only accommodate current needs but any that may arise within the 20-year timespan of the study. These staffing numbers are not recommendations for more personnel and may not be ultimately needed. However, considering and planning for these potential changes will minimize any future work needed to accommodate additional staff. For that reason, the 20-year space need figures are utilized to create the facility options.

Exhibit B: Space & Staffing Projections for FS 11
Facility Options:
For each facility, the consultants developed two options using the 20-year space projections: (i) Option 1, which examines potential ways to reuse the existing facility and site and (ii) Option 2, which reviews the possibility of building a new facility on a different site. Both options are designed to meet the space requirements outlined by the consultant and mitigate any problems in the existing facility that were identified. For example, if a problem was noted for a particular circulation pattern or something was found to be non-code compliant, the option would address the underlying issue.

For Option 1, a series of conceptual plans illustrating both the potential layout of the new building and the traffic patterns is included. It should be noted that these are not final plans but merely guides to help visualize the new space. Where the exploration of different configurations was feasible, the consultant also included those. For example, in the Police Department, the consultant created Options 1 and 1A which review the feasibility of one and two-story configurations.

Costs:
For each option, the consultants created a cost estimate. True costing is not possible until a final design has been created, but the consultants can create an estimate based on the square footage of space either renovated or newly constructed. This estimate is based on industry averages and includes construction plus other expenses such as design, parking, furniture, fixtures and equipment. The numbers also include allowances for contingencies and inflation.

It is important to note that the costs here are only related to the facility itself and do not include any costs for land acquisition, site work requiring engineering (such as stormwater improvements) or relocation expenses if operations need to be temporarily relocated during construction. These costs also do not include any potential offsets from the sale of property.

Ad Hoc Facilities Meetings:
At this time, staff has completed its review of the analysis and the options created by the consultants. At the Ad Hoc Facilities Committee meeting staff will provide an overview of the methodology for this phase of the project; discuss the Police Station, Fire Station, and Fleet Maintenance Garage Findings; and answer any questions the Committee may have. The consultants will attend the meeting for any specific questions related to the analysis.
Facility Needs Assessments

Northbrook Police Department
Northbrook Fire Station #11
Northbrook Fleet Maintenance Garage

DRAFT

October 16, 2018
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<th>TAB 1</th>
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<tbody>
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<tr>
<td>TAB 3</td>
<td>Northbrook Fire Department</td>
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<tr>
<td>TAB 4</td>
<td>Northbrook Fleet Maintenance Garage</td>
</tr>
</tbody>
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INTRODUCTION / PROCESS

In October 2017, the Village of Northbrook asked the consultant team consisting of Healy, Bender & Associates, Inc. and Moyer Associates, Inc. to develop a Facility Needs Assessment Study for three (3) of their existing buildings:

- Police Station (1401 Landwehr Road)
- Fire Station No. 11 (740 Dundee Road)
- Fleet Maintenance Garage (1227 Cedar Lane)

The purpose of the Facility Needs Assessment Study was to provide an understanding of the existing conditions in respect to the functional operations for each facility, identify the deficiencies, and provide options to resolve the deficiencies. This study is the result of a collaborative process between the consultant team and the Village of Northbrook.

At the start of the project, a kick-off meeting was held with representatives from the Northbrook Police, Fire and Public Works Departments to establish the project’s goals and lines of communication. Subsequent meetings were held with each applicable operation division within these Departments to communicate the purpose of the project and how the data would be collected for analysis.

Each building was analyzed separately and involved several different techniques for obtaining valuable information for integrating it into the needs assessment and master planning process.

**Police Station & Fire Station No. 11:**

Moyer Associates, Inc. lead the process individually with both the Police Department and the Fire Department. The team held subsequent meetings with personnel in operating components to provide information on the full range of activities that generate the need for space. The existing operational conditions of the facilities that interfere with the ability to effectively or efficiently carry out police and fire station operations were key components of study.

Staff survey/Interviews from all police and fire station operating areas were a vital source of information. The information gathering technique included the preparation of a Survey Questionnaire which
was administered on-line. The electronic survey proved to be the most efficient way to compile the vast amount of data generated from multiple departments within each facility. The information was reviewed, discussed, and incorporated into the decision-making process.

Parallel to this activity, the team toured the buildings with police and fire staff to see first-hand how the facilities operated on a day-to-day basis. This helped the team visualize the deficiencies and gain valuable insight to the needs of the facilities compared to various applicable industry practices.

Based on all the data that was gathered, the team developed existing space utilization descriptions. These documents defined the operational deficiencies within the existing buildings.

After a thorough understanding of the current conditions was achieved, the next step was to develop the space program for current and projected space needs. Each programmed space was assigned a square footage based on space standards based on the discussions with the staff, and project experience of professionally recognized guidelines such as Police Facility Planning Guidelines, issued by the International Association of Chiefs of Police (IAPC) for which Frederic Moyer FAIA was the principal Project Consultant, and the project experience from Moyer Associates, Inc. The draft space programs were reviewed with staff and refined based on their feedback.

Lastly, plans were prepared which offered strategies for both the reuse of the existing police and fire facilities or construction of new facilities on new sites. This phase was conducted in a collaborative manner, involving the Police and Fire staff in a process of critique and exploration of options for meeting space needs and supporting efficient operations.

**Fleet Maintenance Garage:**

Healy, Bender & Associates, Inc. lead the process with subsequent meetings with personnel in individual operating components of the Fleet Maintenance Garage to provide information on the full range of activities that generate the need for space. The existing operational conditions of the facility that interfere with the ability to effectively or efficiently carry out operations was a key component of study.
To begin the effort an initial kick-off meeting was held with Administration as well as the Northbrook Fleet Maintenance Department. The overall goals were discussed and confirmed, lines of communication were established, and planning steps described. Due to the size of the department, it was decided to hold a group interview/meeting to discuss the deficiencies of the existing facility. Additionally, each staff member was given the opportunity to express their thoughts and opinions through an individual survey to assure their valuable input was communicated. The information was reviewed, discussed, and incorporated into the decision-making process.

Parallel to this activity, the team toured the building with the fleet supervisor to see firsthand how the facilities operated on a day-to-day basis. This helped the consultant gain valuable insight into the needs of the facilities.

Based on all the data that was gathered, the team developed existing space utilization descriptions. These documents defined the operational deficiencies within the existing buildings.

After a thorough understanding of the current conditions was achieved, the next step was to develop the space program for current and projected space needs. Each programmed space was assigned a square footage based on space standards developed by the consultant team. These standards were based on discussions with the staff (including the surveys) and project experience from Healy, Bender & Associates, Inc. A second tour of the facilities with the fleet supervisor and staff members was conducted to discuss and confirm the various program spaces and potential opportunities to remedy deficiencies.

Lastly, exhibits were prepared which offered strategies for both the reuse of the existing fleet maintenance garage or the construction of a new facility on a new site. This phase was conducted in a collaborative manner, involving the Garage staff in a process of critique and exploration of options for meeting space needs and supporting efficient operations.
2. Northbrook Police Department DRAFT
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Option 1: cont’d.

- Re-uses existing space, reducing the amount of new construction required.
- Requires no property acquisition.
- Maintains existing communications tower services/location.
- Requires temporary relocation of police operations during renovation/construction.
- Requires cooperative agreements to hold prisoners at an other location during renovation/construction.
- Achieves optimal functional relationships of operational components at one floor level.
- Achieves weather protected parking for Police fleet vehicles, prolonging service life.
Police Department - Executive Summary

Option 1a: (a variation of Option 1)

Seeks to remedy the identified deficiencies and operational inadequacies of the Northbrook Police facility at the existing site, with major expansion of the building space by multi-floor construction, and providing outdoor surface parking for the majority of all police vehicles.

- This option does not re-use existing space. It requires demolition of the existing building and construction of a new two level building, plus basement, in the general location of the existing building.

- Requires no property acquisition.

- Maintains existing communications tower services/location.

- Requires temporary relocation of police operations during renovation/construction.

- Requires cooperative agreements to hold prisoners at another location during renovation/construction.

- Requires new grade level construction of a Firearms Training component, with issues of noise abatement.

- Police fleet parking is required to be outside, not weather protected.

- The basic operational components will not fit on one floor within the required Option 1A footprint, bringing increased movements, functional inefficiencies and loss of convenient access for both police personnel and the public.
Option 2:

*Construct a new Police facility at another location and sell the existing property, if not suitable for other Village uses.*

- Requires site acquisition (potentially offset by sale of existing site).
- Allows Police to *remain operational in the existing building throughout the construction period.*
- *Avoids the need for a cooperative agreement with another jurisdiction for prisoner processing/holding* during the construction period.

The preliminary review of potential construction costs between the Options yields the following:

<table>
<thead>
<tr>
<th>Option</th>
<th>Cost</th>
</tr>
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<tbody>
<tr>
<td>Option 1</td>
<td>$27,634,691</td>
</tr>
<tr>
<td>Option 1a</td>
<td>$36,478,343</td>
</tr>
<tr>
<td>Option 2</td>
<td>$37,682,280</td>
</tr>
</tbody>
</table>

These numbers include building construction/renovation costs only, excluding any site acquisition expenses, sitework (excluding parking), storm drainage features, and temporary relocation costs.

**Note:** A variation of Option 2 would be the purchase of a current building and potentially renovate that property to serve Northbrook Police Department needs. It is not possible to compare the operational feasibility or costs under this variation without the identification of the particular property and its analysis.
1.0

Overview of Police Department
1.1 Study Scope

The consultant team, consisting of Moyer Associates Inc., and Healy, Bender and Associates, have addressed the specific circumstances of the Northbrook Police Department operations and facility resources, applying professionally recognized guidelines for law enforcement facilities. Among these references are the Police Facility Planning Guidelines, issued by the International Association of Chiefs of Police (IACP), for which Frederic Moyer FAIA was the Principal Project Consultant. As a part of the Consultant study workscope, the assessment and evaluation of the existing Northbrook Police facility is an essential part. This work has been developed by the Moyer Associates Inc. Consultant team. During the course of its development, a close dialog and participation has been maintained between the consultant and Northbrook Police personnel in all operational areas as well as other Village staff.

The goal of this study is to determine the adequacy of the existing facility to meet current and projected needs, together with the development of solution alternatives that could be considered to respond to identified shortcomings.

Consulting activities have included the administration of a survey questionnaire followed up by individual interviews with personnel in each operational area and designated user entity. The process has involved inspection of the existing Northbrook Police building and the observation of current levels of activity in every area. The evaluation has included the extent to which the existing areas are capable of supporting these activities or, instead, impair the effective performance of their functions. The pages immediately following provide an overview of the operational problems that have been identified and the constraints that are presented by the existing building.

Accordingly, this first section of provides a description of current Northbrook Police facility space occupancies and an overview of existing operational and functional problems. It is followed by Sections 2 and 3 presenting the findings of needed space in all areas. It is next followed by Sections 4 and 5 describing Space Standards, Section 6 and 7 presenting solution Options and lastly by Section 8, which overviews cost estimates.
1.2 Functions

Responsibilities and Services:
The Northbrook Police Department's mission, 24 hours per day, is to serve those who live, work, shop, and play in the Village through the fair and effective delivery of services. The department is made up of the following divisions:

- **Communications** - Employees in this division act as the liaisons between the public and the department, performing the essential duty of answering 911 phone calls.

- **Investigations** - The Criminal Investigations Unit follows up upon criminal incidents. Investigators use state-of-the-art surveillance equipment, computer-imaging software, and extensive computer databases.

- **Patrol** - The Police Department's Patrol Division is the backbone of the Department and provides its most basic functions. The largest and most visible unit in the Police Department, Uniformed Patrol is responsible for providing continuous protection to the community.

- **Records** - The Records Unit is responsible for the administration and maintenance of all department records. All criminal histories, arrest records, and related information are maintained within this unit. All police reports, statistical data and traffic citations are stored in the Records Unit.

- **Community Relations** - Community Relations Unit provides a variety programs, including: Child Safety Seat Inspection Program, Citizen Police Academy, Home & Business Security Surveys, and Speakers Bureau.

- **Counseling Services** - The Counseling Services Unit provides crisis intervention with police, criminal court advocacy with victims of crimes, short-term counseling for police referred cases, information and referral and consultation to local schools, social service agencies and clergy.

- **Animal Control** - The Animal Control Officer is responsible for handling service calls involving both domestic and wild animals. Aside from enforcement duties, the Animal Control Officer monitors and develops programs that deal with Northbrook's animal concerns.

- **Police officer Recruitment** - The Northbrook Police Department provides opportunities for a number of special assignments to support officers’ career development.

- **Police Chaplain** - The Chaplain Program provides spiritual assistance and crisis counseling to Department staff and members of the community in times of need.
1.3 Police Department Organizational Chart
2.0

Review of Existing Facility
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3.0

Identified Problems
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4.0 Space Program
4.1 Introduction

This section tabulates the functional components and space needed for the Northbrook Police Department operational units. The amount of space designated in each component has been developed through the interviewing of operations personnel in every unit, the inspection and evaluation of current deficiencies in all areas, and the application of relevant professional standards for the tasks and functions involved. Program development has incorporated efficiencies through task-specific space planning and space sharing where feasible. Reference is made to the following Section 5.0 Standards for this specific information.

In developing this component Space Program, the following process was employed. A web-based survey form prepared specifically for this project elicited information in a variety of areas from each office. The informational areas included such topics as the number of personnel, classification of personnel by task, types of working environments required, equipment and storage needs, hours of operation, amount of public visitor traffic and amount of internal traffic with other units, proximity and adjacency requirements with other functional areas, trends in activities (either increasing or decreasing), potential technology impacts upon operations, and other issues. The information obtained related directly to the amount of space required for the adequate support of personnel and their activities in the respective offices. Space standards were applied as applicable to the functional areas in order to generate square foot requirements. When functional requirements did not correspond to a space standard, industry standards for each functional area were applied using the minimum amount of space necessary to meet each functional requirement.

In addition, each area of the existing Northbrook Police facility was inspected and current occupancies observed. The degree of overcrowding and extent of space shortage existing was observed in every area. In conjunction with this, personnel were interviewed to provide further understanding of present demands upon the spaces in the various offices and units.
4.2 SF Gap Analysis

On the next page, a Space Adequacy Summary is presented in graphic form.

It summarizes the findings concerning the amount of space that is presently available in each of the functional components in the Northbrook Police Department facility in relation to the amount of space that is found to be currently needed in each of these components. As such, it presents the extent of current space adequacy in each area and expresses this in terms of a percentage.

Both individual component and overall facility space adequacy is shown.

Two important features need to be brought into the picture when considering this information:

1) The Space Adequacy bar chart is displaying adequacy on a current basis. As noted in Sections 2 and 3, space for many functions currently do not exist and have been accommodated by necessity causing operational and safety hazards. Without the provision of increased amounts of space going forward, the percentage of adequacy will be decreasing with each passing year for areas with anticipated future growth. This growth will compound on and intensify the existing deficiencies and conditions.

2) Space adequacy is only one of the important factors in evaluating the extent to which existing facilities are supporting operational needs. Other factors include the proximity of key components to one another, travel distances required of staff to perform their duties, code compliance, efficient grouping of functions, and convenience for the public in accessing services, among others, all contributing to how well departmental operations are able to function.

Accordingly, the space evaluation is a very important factor in considering existing facilities adequacy but needs to be supplemented with the consideration of other factors, mentioned above, as well. The full range of factors have been included in the development of the recommendations in this report.

Based upon all of the data that has been assembled and evaluated, it is found that the current facility does not meet the space needs of the Department or their use.

SF (square foot) Note:
The referenced area depicted in the following chart corresponds to NSF (net square feet) which includes usable SF for individual unit requirements plus secondary circulation around it (aisles between workstations). The black bar shown reflects the percentage of net square feet (NSF) currently occupied vs. that which is currently required for each listed unit.
## 4.0 Space Program

### Northbrook Police Department

### DRAFT

Healy, Bender & Associates, Inc. | Moyer Associates Inc.

### Percentage of NSF Adequacy for Current Needs

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<th>Area</th>
<th>20%</th>
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<th>60%</th>
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<tr>
<td>A6 Counseling Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A7 Community Relations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Support Areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1 Lobby</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2 Training Room</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B3 Interview Areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B5 Break Room</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B6 Intake/Holding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B7 Sallyport</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B8 Property/Evidence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B9 Impound Bay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B10 Locker Rooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B11 Fitness Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B12 Fire Arm Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B13 Storage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B14 Enclosed Garage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SF Gap Analysis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Northbrook Police Dept.**
4.3 Individual Space Tabulation

Space Program Organization

A. Staff Work Areas
   A1 Administrative
   A2 Investigations
   A3 Patrol
   A4 Communications
   A5 Records
   A6 Counseling Services
   A7 Community Resources

B. Support Areas
   B1 Lobby
   B2 Training Room
   B3 Interview Area
   B4 Incident Command Center
   B5 Break Room
   B6 Intake/Holding
   B7 Sallyport
   B8 Property/Evidence
   B9 Impound Bay
   B10 Locker Room
   B11 Fitness Training
   B12 Fire Arms Training
   B13 Storage
   B14 Enclosed Garage

Summary-Building Areas

C. Exterior Support/Parking
As an introduction to the material that follows in this section, and as a preface to the Space Program for the Northbrook Police Department which is presented in this section of the report, a description of its formatting and the codes used follows.

EXPLANATORY LEGEND

<table>
<thead>
<tr>
<th>STND</th>
<th>NSF</th>
<th>Comp. No.</th>
<th>Consultant Number used for component identification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>A. Staff Work Areas</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>A2. Investigations</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>A2.2 Unit support areas</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Major CaseRoom</td>
<td>C-432</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STND</th>
<th>NSF</th>
<th>Comp. No.</th>
<th>Consultant Number used for component identification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Unit Net Square Feet</strong></td>
<td>Usable Square Footage per component unit code</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Current Need</strong></td>
<td>Unit/# Number of component units currently needed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Staff/# Number of staff currently needed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SF: Total component square footage currently needed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>10 Year Need</strong></td>
<td>Unit/# Number of component units currently needed in 10 years.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Staff/# Number of staff support needed in 10 years.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SF: Total component square footage needed in 10 years.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>20 Year Need</strong></td>
<td>Unit/# Number of component units currently needed in 20 years.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Staff/# Number of staff support needed in 20 years.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SF: Total component square footage needed in 20 years.</td>
</tr>
</tbody>
</table>

*Note: " when appearing in the existing column reflects inclusion of existing SF for this item in the overall existing total. (Typ. currently mixed with other functions)*

STAFFING PROJECTIONS: Projections for future staff in the twenty year increment came from supervisory staff in each operational area based upon their knowledge of service demand and trends in service delivery. The number of projected future staff is reflected in the tabulation, should the Village choose to approve the additional positions. Expansion space for future staff is reflected in the tabulation to ensure flexibility for the future.
CIRCULATION FACTORS:

DEPARTMENTAL CIRCULATION FACTOR: Consists of space required for circulation within each Department or operational unit. (i.e. aisles between workstation). The total arrived by adding this factor equals NSF (net square feet). This factor varies by nature of size, number and type of space and is documented accordingly within the program. Example below:

Appears at each operational unit:

<table>
<thead>
<tr>
<th>Subtotal</th>
<th>2,388</th>
<th>2,479</th>
<th>2,479</th>
<th>2,479</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Circulation Factor- 35%</td>
<td>976</td>
<td>868</td>
<td>868</td>
<td>868</td>
</tr>
<tr>
<td><strong>Total Administrative:</strong></td>
<td>3,364</td>
<td>3,347</td>
<td>3,347</td>
<td>3,347</td>
</tr>
</tbody>
</table>

Note: The circulation factor will vary according to type of space and is reflected as such throughout the program. (ex.-Office space with numerous smaller areas requires a higher factor than a larger or more contiguous area such as storage)

BUILDING GROSSING FACTOR: Consists of a 35% allowance made up of the following:

- Building Circulation- 15%
- Building Envelope- 2%
- Building Mechanical/Electrical space- 10%
- Police Operations Support Space- 8%
  (emerg. power, generator, security equipment, communications)

Total: 35%

The total arrived by adding this factor equals GSF (gross square feet)

Note- This factor is an allowance only. It has proven to be an accurate allowance for planning purposes however the design layout and specific equipment required will dictate the actual percentage. It is a goal in the design process to keep this number as minimal as possible. Example below:

Appears on the summary page:

<table>
<thead>
<tr>
<th>Subtotal</th>
<th>32,671</th>
<th>63,371</th>
<th>64,174</th>
<th>64,775</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Grossing Factor- 35%</td>
<td>12,444</td>
<td>22,180</td>
<td>22,461</td>
<td>22,671</td>
</tr>
<tr>
<td>(Mech. Allowance, circulation, structure, envelope)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total GSF:</strong></td>
<td>45,115</td>
<td>85,551</td>
<td>86,634</td>
<td>87,446</td>
</tr>
<tr>
<td>Staff:</td>
<td>95</td>
<td>103</td>
<td>107</td>
<td></td>
</tr>
</tbody>
</table>
# 4.0 Space Program

## A. Staff Work Areas

### A1. Administrative

#### A1.1 Individual work areas

<table>
<thead>
<tr>
<th>Position</th>
<th>STND</th>
<th>NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief</td>
<td>0-375</td>
<td>375</td>
<td>429</td>
<td>1</td>
<td>1</td>
<td>375</td>
</tr>
<tr>
<td>Toilet</td>
<td>48</td>
<td>40</td>
<td>48</td>
<td>1</td>
<td>1</td>
<td>48</td>
</tr>
<tr>
<td>Deputy Chief</td>
<td>0-300</td>
<td>300</td>
<td>590</td>
<td>2</td>
<td>2</td>
<td>600</td>
</tr>
<tr>
<td>Internal Services Administrator</td>
<td>0-180</td>
<td>180</td>
<td>192</td>
<td>1</td>
<td>1</td>
<td>180</td>
</tr>
<tr>
<td>Training/Planning Sergeant</td>
<td>0-150</td>
<td>150</td>
<td>208</td>
<td>1</td>
<td>1</td>
<td>150</td>
</tr>
<tr>
<td>Admin. Assistant- Chief</td>
<td>0-120</td>
<td>120</td>
<td>105</td>
<td>1</td>
<td>1</td>
<td>120</td>
</tr>
<tr>
<td>Assist./Prop. Officer- Dep. Chief</td>
<td>0-120</td>
<td>120</td>
<td>153</td>
<td>1</td>
<td>1</td>
<td>120</td>
</tr>
<tr>
<td>Admin. Clerk</td>
<td>WS-48</td>
<td>48</td>
<td>48</td>
<td>1</td>
<td>1</td>
<td>48</td>
</tr>
</tbody>
</table>

#### A1.2 Unit support areas

<table>
<thead>
<tr>
<th>Area</th>
<th>STND</th>
<th>NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wtg Area</td>
<td>100</td>
<td>63</td>
<td>100</td>
<td>1</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Executive Conference</td>
<td>C-432</td>
<td>432</td>
<td>354</td>
<td>1</td>
<td>1</td>
<td>432</td>
</tr>
<tr>
<td>Coffee</td>
<td>B-36</td>
<td>36</td>
<td>&quot;</td>
<td>1</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>File/Copy</td>
<td>WA-120</td>
<td>120</td>
<td>206</td>
<td>1</td>
<td>1</td>
<td>120</td>
</tr>
<tr>
<td>Storage</td>
<td>150</td>
<td>&quot;</td>
<td>150</td>
<td>1</td>
<td>1</td>
<td>150</td>
</tr>
</tbody>
</table>

**Subtotal**

<table>
<thead>
<tr>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,388</td>
<td>2,479</td>
<td>2,479</td>
<td>2,479</td>
</tr>
</tbody>
</table>

**Department Circulation Factor - 35%**

<table>
<thead>
<tr>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>976</td>
<td>868</td>
<td>868</td>
<td>868</td>
</tr>
</tbody>
</table>

**Total Administrative:**

<table>
<thead>
<tr>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,364</td>
<td>3,347</td>
<td>3,347</td>
<td>3,347</td>
</tr>
</tbody>
</table>
### A. Staff Work Areas

#### A2. Investigations

<table>
<thead>
<tr>
<th></th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A2.1 Individual work areas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commander O-150</td>
<td>1100</td>
<td>1,142</td>
<td>1,398</td>
<td>1,398</td>
</tr>
<tr>
<td>Sergeant O-120</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Crime Analyst WS-64</td>
<td>761</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Detective WS-64</td>
<td>&quot;</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Tactical Officer WS-64</td>
<td>&quot;</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>High School Liaison WS-64</td>
<td>&quot;</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Task Force WS-48</td>
<td>&quot;</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

#### A2.2 Unit support areas

<table>
<thead>
<tr>
<th></th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Case Room C-432</td>
<td>432</td>
<td>432</td>
<td>432</td>
<td>432</td>
</tr>
<tr>
<td>Interview rooms C-100</td>
<td>128</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Tech/Monitor room</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Secure Storage</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Juvenile File Room</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Coffee B-36</td>
<td>36</td>
<td>36</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>Survel. Equip.</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Equip stor</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Copy/Supplies WA-42</td>
<td>42</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>

**Subtotal**

|                      | 1,700  | 2,382        | 2,638   | 2,638   |

**Department Circulation Factor- 35%**

|                      | 591    | 834          | 923     | 923     |

**Total Investigations**

|                      | 2,291  | 3,216        | 3,561   | 3,561   |

*Note: additional space (NSF) is added to the total in order to insure flexibility for future staff.*

**Note: Accommodates 14 at table with peripheral surrounding seating**
### A. Staff Work Areas

#### A3. Patrol

**A3.1 Individual work areas**

<table>
<thead>
<tr>
<th>Role</th>
<th>STND</th>
<th>NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commander</td>
<td>150</td>
<td>49</td>
<td>855</td>
<td>1,680</td>
<td>1,800</td>
<td>1,800</td>
</tr>
<tr>
<td>Sergeant</td>
<td>120</td>
<td>495</td>
<td>49</td>
<td>1,680</td>
<td>1,800</td>
<td>1,800</td>
</tr>
<tr>
<td>Patrol Officer</td>
<td>30</td>
<td>0</td>
<td>55</td>
<td>1,800</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Traffic Officer</td>
<td>0</td>
<td>1</td>
<td>57</td>
<td>1,800</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>K-9 Officer</td>
<td>0</td>
<td>1</td>
<td>57</td>
<td>1,800</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**A3.2 Unit support areas**

<table>
<thead>
<tr>
<th>Area</th>
<th>STND</th>
<th>NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll Call/Briefing</td>
<td>608</td>
<td>608</td>
<td>1,449</td>
<td>2,560</td>
<td>2,680</td>
<td>2,680</td>
</tr>
<tr>
<td>Report Writing</td>
<td>180</td>
<td>180</td>
<td>1,449</td>
<td>2,560</td>
<td>2,680</td>
<td>2,680</td>
</tr>
<tr>
<td>Duty Bag Lockers</td>
<td>50</td>
<td>1</td>
<td>1,449</td>
<td>2,560</td>
<td>2,680</td>
<td>2,680</td>
</tr>
<tr>
<td>Copy</td>
<td>42</td>
<td>&quot;</td>
<td>1,449</td>
<td>2,560</td>
<td>2,680</td>
<td>2,680</td>
</tr>
<tr>
<td>Battery Charge Station</td>
<td>36</td>
<td>&quot;</td>
<td>1,449</td>
<td>2,560</td>
<td>2,680</td>
<td>2,680</td>
</tr>
</tbody>
</table>

**Department Circulation Factor - 35%**

- **Total Patrol:**
  - 1,716
  - 3,456
  - 3,618
  - 3,618

*Note: Staff number includes multiple shifts*

Gen. Note: SF requirements for field officers such as Patrol and Traffic are minimal as they utilize shared work and conference areas. Locker space would be the dedicated requirement per officer.
## A. Staff Work Areas

### A4. Communications

#### A4.1 Individual work areas

<table>
<thead>
<tr>
<th>STND</th>
<th>NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>470</td>
<td>12</td>
<td>470</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Supervisor</td>
<td>O-150</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Dispatcher</td>
<td>W-64</td>
<td>320</td>
<td>320</td>
<td>320</td>
</tr>
</tbody>
</table>

#### A4.2 Unit support areas

<table>
<thead>
<tr>
<th>STND</th>
<th>NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>157</td>
<td>288</td>
<td>288</td>
<td>288</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity</th>
<th>STND</th>
<th>NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor O-150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Dispatcher W-64</td>
<td>64</td>
<td>320</td>
<td>11</td>
<td>320</td>
<td>11</td>
<td>320</td>
</tr>
<tr>
<td>B-100</td>
<td>100</td>
<td>42</td>
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<td>100</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Toilet</td>
<td>48</td>
<td>40</td>
<td>1</td>
<td>48</td>
<td>1</td>
<td>48</td>
</tr>
<tr>
<td>Lockers</td>
<td>50</td>
<td>&quot;</td>
<td>1</td>
<td>50</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>File/Reference W-4</td>
<td>12</td>
<td>48</td>
<td>4</td>
<td>48</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>Scanner/Printer W-42</td>
<td>42</td>
<td>42</td>
<td>1</td>
<td>42</td>
<td>1</td>
<td>42</td>
</tr>
</tbody>
</table>

Subtotal: 627 758 758 758

Department Circulation Factor: 35%

Total Communications: 1,005 1,023 1,023 1,023

*Note: Staff number includes multiple shifts, sufficient space for staff is available in the area provided should the Village take on client agencies.*
# 4.0 Space Program

## Northbrook Police Department

### A. Staff Work Areas

#### A5. Records

<table>
<thead>
<tr>
<th>Staff Work Areas</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>STND</td>
<td>NSF</td>
<td>Staff</td>
<td>Unit</td>
</tr>
<tr>
<td>Individual work areas</td>
<td>294</td>
<td>5</td>
<td>342</td>
<td>5</td>
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<tr>
<td>Supervisor</td>
<td>O-150</td>
<td>150</td>
<td>144</td>
<td>1</td>
</tr>
<tr>
<td>Clerk</td>
<td>WS-48</td>
<td>48</td>
<td>150</td>
<td>4</td>
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<tr>
<td>Unit support areas</td>
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<td>548</td>
<td>548</td>
<td>548</td>
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<tr>
<td>Public Counter</td>
<td>36</td>
<td>50</td>
<td>3</td>
<td>108</td>
</tr>
<tr>
<td>Copy</td>
<td>36</td>
<td>12</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>Microfilm/scanner workstation</td>
<td>WS-36</td>
<td>36</td>
<td>0</td>
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</tr>
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<td>Secure Storage</td>
<td>WS-36</td>
<td>36</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Temporary work area</td>
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<td>36</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>File Cabinet</td>
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<td>36</td>
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<td>60</td>
</tr>
<tr>
<td>General storage</td>
<td>100</td>
<td>121</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Mail/copy/sort</td>
<td>WA-120</td>
<td>100</td>
<td>&quot;</td>
<td>1</td>
</tr>
<tr>
<td>Subtotal</td>
<td>525</td>
<td>890</td>
<td>890</td>
<td>938</td>
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<tr>
<td>Department Circulation Factor- 35%</td>
<td>195</td>
<td>312</td>
<td>312</td>
<td>328</td>
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<td><strong>Total Records</strong></td>
<td>720</td>
<td>1,202</td>
<td>1,202</td>
<td>1,266</td>
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</table>
### A. Staff Work Areas

#### A6. Counseling Services

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<th>STND</th>
<th>NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A6.1 Individual work areas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td>O-225</td>
<td>225</td>
<td>189</td>
<td>1</td>
<td>225</td>
<td>225</td>
</tr>
<tr>
<td>Social worker</td>
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<td>48</td>
<td>100</td>
<td>2</td>
<td>96</td>
<td>144</td>
</tr>
</tbody>
</table>

|                      |      |     |        |              |         |         |
| Large soft interview | C-S220| 220 | 216    | 1            | 220     | 220     |
| Soft interview       | C-S150| 150 | 0      | 2            | 300     | 300     |
| Reference area/library| WS-36 | 36  | 24     | 1            | 36      | 36      |
| Client work area     |       |     |        |              |         |         |
| printer/scanner/copy | WA-42 | 42  | 24     | 1            | 42      | 42      |
| Coffee               |       |     |        |              |         |         |
| storage              |       |     |        |              |         |         |

| Subtotal             |      |     | 638    | 1,071        | 1,119   | 1,119   |
| Department Circulation Factor - 35% |      |     | 97     | 375          | 392     | 392     |

| **Total Counseling Services** |      |     | 735    | 1,446        | 1,511   | 1,511   |

---

Healy, Bender & Associates, Inc.  |  Moyer Associates Inc.
## 4.0 Space Program

### A. Staff Work Areas

#### A7. Community Relations

<table>
<thead>
<tr>
<th></th>
<th>STND</th>
<th>NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A7.1 Individual work areas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor</td>
<td>O-150</td>
<td>150</td>
<td>164</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Service Officer</td>
<td>WS-48</td>
<td>48</td>
<td>120</td>
<td>96</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td>Animal Warden</td>
<td>WS-64</td>
<td>64</td>
<td>66</td>
<td>64</td>
<td>64</td>
<td>64</td>
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<tr>
<td>Crossing Guards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### A7.2 Unit support areas

<table>
<thead>
<tr>
<th></th>
<th>STND</th>
<th>NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Animal Control Work Rm/lab</td>
<td>120</td>
<td>0</td>
<td>1</td>
<td>120</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>* Animal Control Equip. Storage</td>
<td>120</td>
<td>0</td>
<td>1</td>
<td>120</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Crossing Guard Storage</td>
<td>80</td>
<td>108</td>
<td>1</td>
<td>80</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Community Relations Storage</td>
<td>120</td>
<td>78</td>
<td>1</td>
<td>120</td>
<td>1</td>
<td>1</td>
</tr>
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</table>

Subtotal: 536 750 750 750

Department Circulation Factor: 35% 178 263 263 263

Total Community Relations: 714 1,013 1,013 1,013

*Note: this function has moved into area not intended for it's use, no dedicated, separated space exists.*
### B. Support Areas

<table>
<thead>
<tr>
<th>Area</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STND NSF</strong></td>
<td>Staff Unit</td>
<td>Staff Unit</td>
<td>Staff Unit</td>
<td>Staff Unit</td>
</tr>
<tr>
<td>B1 Lobby</td>
<td>838</td>
<td>1,099</td>
<td>1,099</td>
<td>1,099</td>
</tr>
<tr>
<td>Entry Vestibule</td>
<td>80</td>
<td>1</td>
<td>80</td>
<td>1</td>
</tr>
<tr>
<td>General Lobby</td>
<td>250</td>
<td>1</td>
<td>250</td>
<td>1</td>
</tr>
<tr>
<td>Service Counter</td>
<td>30</td>
<td>3</td>
<td>90</td>
<td>3</td>
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<tr>
<td>Visitor Work Area</td>
<td>30</td>
<td>1</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>Public Seating</td>
<td>12</td>
<td>8</td>
<td>96</td>
<td>8</td>
</tr>
<tr>
<td>Public Toilets</td>
<td>120</td>
<td>2</td>
<td>240</td>
<td>2</td>
</tr>
<tr>
<td>Interview Room</td>
<td>C-100</td>
<td>1</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>Public Fingerprint Area</td>
<td>30</td>
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<td>30</td>
<td>0</td>
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</table>

Circulation Factor: 20%

183

<table>
<thead>
<tr>
<th>Area</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B2 Training Room</strong></td>
<td>1210</td>
<td>1,287</td>
<td>1,287</td>
<td>1,287</td>
</tr>
<tr>
<td>Training Room C-990</td>
<td>990</td>
<td>962</td>
<td>990</td>
<td>990</td>
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<tr>
<td>Storage</td>
<td>120</td>
<td>120</td>
<td>120</td>
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<tr>
<td>AV Storage</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
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</tbody>
</table>

Circulation Factor: 10%

117

<table>
<thead>
<tr>
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<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B3 Interview Areas</strong></td>
<td>168</td>
<td>473</td>
<td>473</td>
<td>473</td>
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<tr>
<td>Interview C-150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
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<tr>
<td>Soft Interview C-S200</td>
<td>200</td>
<td>168</td>
<td>200</td>
<td>168</td>
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</tbody>
</table>

Circulation Factor: 35%

123

<table>
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<tr>
<th>Area</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B4 Emerg. Op. Center</strong></td>
<td>0</td>
<td>1,480</td>
<td>1,480</td>
<td>1,480</td>
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<tr>
<td>Command Center C-1035</td>
<td>1,035</td>
<td>1,035</td>
<td>1,035</td>
<td>1,035</td>
</tr>
<tr>
<td>Equipment Storage</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Dispatch Station WS-64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>Toilets</td>
<td>48</td>
<td>2</td>
<td>96</td>
<td>2</td>
</tr>
</tbody>
</table>

Circulation Factor: 10%

135

<table>
<thead>
<tr>
<th>Area</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B5 Break Room</strong></td>
<td>930</td>
<td>1,080</td>
<td>1,080</td>
<td>1,080</td>
</tr>
<tr>
<td>Break Room BA-660</td>
<td>660</td>
<td>1</td>
<td>660</td>
<td>1</td>
</tr>
<tr>
<td>Toilets</td>
<td>120</td>
<td>2</td>
<td>240</td>
<td>2</td>
</tr>
</tbody>
</table>

Circulation Factor: 20%

180

* Second fingerprint area located near lobby, away from holding area.

** Note: EOC functions are planned for locations in both the Police Department and Fire Administration Building in order to allow for back up insurance.
### 4.0 Space Program

#### B. Support Areas

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>B6</td>
<td>Intake/Holding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secure Vestibule</td>
<td>80</td>
<td>2</td>
<td>160</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Intake/Processing</td>
<td>250</td>
<td>1</td>
<td>250</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Officer Workstation</td>
<td>36</td>
<td>2</td>
<td>72</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Staff Toilet</td>
<td>48</td>
<td>1</td>
<td>48</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Detainee Staging</td>
<td>24</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Property Storage</td>
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<td>1</td>
<td>24</td>
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<tr>
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<td>Breathalyzer</td>
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<td>100</td>
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<td>Holding Cell</td>
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<td>640</td>
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<tr>
<td></td>
<td>Detainee shower</td>
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<td>1</td>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Interview</td>
<td>100</td>
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<td>200</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Bond Out Area</td>
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<td>120</td>
<td>1</td>
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<tr>
<td></td>
<td>Circulation Factor- 50%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>B7</td>
<td>Sallyport</td>
<td>744</td>
<td>1,987</td>
<td>1,987</td>
<td>1,987</td>
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<td></td>
<td>Vehicle Bay</td>
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<td>1,500</td>
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<tr>
<td></td>
<td>Circ./Ramp</td>
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<td>1</td>
<td>120</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Prisoner Shower</td>
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<td>1</td>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Circulation Factor- 20%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B8</td>
<td>Property/Evidence</td>
<td>1793</td>
<td>3,542</td>
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<td>3,692</td>
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<tr>
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<td>Staff Bag/Tag Area</td>
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<td>150</td>
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</tr>
<tr>
<td></td>
<td>Evidence Lockers</td>
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<td>100</td>
<td>1</td>
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<td></td>
<td>Tech Sorting Area</td>
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<tr>
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<td>Custodian Office</td>
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<td>120</td>
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<td>Staff Counter</td>
<td>24</td>
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<tr>
<td></td>
<td>General Storage (2-3x)</td>
<td>1600</td>
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<td>200</td>
<td>1</td>
</tr>
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<td></td>
<td>Bike Storage</td>
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<td>1</td>
<td>200</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Evidence Tech Processing</td>
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<td></td>
<td>Circulation Factor- 20%</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B9</td>
<td>Impound Bay</td>
<td>585</td>
<td>743</td>
<td>743</td>
<td>743</td>
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<tr>
<td></td>
<td>Impound Bay</td>
<td>375</td>
<td>1</td>
<td>375</td>
<td>1</td>
</tr>
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<td></td>
<td>Work Bench</td>
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</tr>
<tr>
<td></td>
<td>Storage</td>
<td>200</td>
<td>1</td>
<td>200</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Circulation Factor- 10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Support Areas

<table>
<thead>
<tr>
<th>Area</th>
<th>Existing (STND)</th>
<th>Current Need (NSF)</th>
<th>Year 10</th>
<th>Year 20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>10 Locker Rooms</strong></td>
<td>1880</td>
<td>3,018</td>
<td>3,066</td>
<td>3,132</td>
</tr>
<tr>
<td>Male Sworn Locker</td>
<td>15 &quot;</td>
<td>70</td>
<td>1,050</td>
<td>71</td>
</tr>
<tr>
<td>Male Civilian Locker</td>
<td>5 &quot;</td>
<td>14</td>
<td>70</td>
<td>14</td>
</tr>
<tr>
<td>Male Shower</td>
<td>48 &quot;</td>
<td>3</td>
<td>144</td>
<td>3</td>
</tr>
<tr>
<td>Male Toilet</td>
<td>200 &quot;</td>
<td>1</td>
<td>200</td>
<td>1</td>
</tr>
<tr>
<td>Female Sworn Locker</td>
<td>15 0</td>
<td>12</td>
<td>180</td>
<td>13</td>
</tr>
<tr>
<td>Female Civilian Locker</td>
<td>5 0</td>
<td>15</td>
<td>75</td>
<td>17</td>
</tr>
<tr>
<td>Female Shower</td>
<td>48 0</td>
<td>2</td>
<td>96</td>
<td>2</td>
</tr>
<tr>
<td>Female Toilet</td>
<td>200 0</td>
<td>1</td>
<td>200</td>
<td>1</td>
</tr>
<tr>
<td>Bunk Room</td>
<td>100 0</td>
<td>5</td>
<td>500</td>
<td>5</td>
</tr>
</tbody>
</table>

Circulation Factor - 20%
503
511
522

| **11 Fitness Training** | 1458 | 1,980 | 1,980 | 1,980 |
| Weights/Equip. Room | 1000 936 | 1 | 1,000 | 1 | 1,000 | 1 | 1,000 |
| Defensive Tactics Room | 800 522 | 1 | 800 | 1 | 800 | 1 | 800 |

Circulation Factor - 10%
180
180
180

| **12 Fire Arm Training** | 2318 | 8,543 | 8,543 | 8,543 |
| Firing Range-8 Lane 100' | 6,500 1820 | 1 | 6,500 | 1 | 6,500 | 1 | 6,500 |
| Range Master | 200 36 | 1 | 200 | 1 | 200 | 1 | 200 |
| Simulator Training Area | 500 0 | 1 | 500 | 1 | 500 | 1 | 500 |
| Armory | 250 210 | 1 | 250 | 1 | 250 | 1 | 250 |
| Weapons Cleaning/Ready Rm | 36 252 | 6 | 216 | 6 | 216 | 6 | 216 |
| Storage | 100 " | 1 | 100 | 1 | 100 | 1 | 100 |

Circulation Factor - 10%
777
777
777

| **13 Storage** | 1718 | 2,217 | 2,217 | 2,217 |
| General Storage | 400 437 | 1 | 400 | 1 | 400 | 1 | 400 |
| Equipment/Quartermaster | 200 0 | 1 | 200 | 1 | 200 | 1 | 200 |
| Riot Gear Storage | 150 0 | 1 | 150 | 1 | 150 | 1 | 150 |
| Building Storage | 200 210 | 1 | 200 | 1 | 200 | 1 | 200 |
| K-9 Storage | 120 120 | 1 | 120 | 1 | 120 | 1 | 120 |
| Records Storage | 300 290 | 1 | 300 | 1 | 300 | 1 | 300 |
| Vehicle Storage | 200 220 | 1 | 200 | 1 | 200 | 1 | 200 |
| Comm./911 Storage | 225 225 | 1 | 225 | 1 | 225 | 1 | 225 |
| Commun. Equip. | 220 216 | 1 | 220 | 1 | 220 | 1 | 220 |

Circulation Factor - 10%
202
202
202

*Note: This function has moved into an area not intended for its use. No dedicated, separated space exists.*
### B. Support Areas

<table>
<thead>
<tr>
<th>B14 Enclosed Garage</th>
<th>5042</th>
<th>16,875</th>
<th>16,875</th>
<th>16,875</th>
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<td>Unmarked Cars</td>
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<tr>
<td>Specialty Vehicles</td>
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<tr>
<td>Motorcycles</td>
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<td>Patrol Bicycles/Maint</td>
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<td>Vehicle Equip. Storage</td>
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<td>Circulation Factor- 50%</td>
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<td>5,625</td>
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*Note: Includes all Village fleet vehicles for the Police Department*
## Summary

### A. Staff Work Areas

<table>
<thead>
<tr>
<th>Staff Work Areas</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
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</thead>
<tbody>
<tr>
<td><strong>A1 Administrative</strong></td>
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<td><strong>A2 Investigations</strong></td>
<td>2,291</td>
<td>14</td>
<td>3,216</td>
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<tr>
<td><strong>A3 Patrol</strong></td>
<td>1,716</td>
<td>49</td>
<td>3,456</td>
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<tr>
<td><strong>A4 Communications</strong></td>
<td>1,005</td>
<td>12</td>
<td>1,023</td>
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<tr>
<td><strong>A5 Records</strong></td>
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<td>1,202</td>
<td>5</td>
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<tr>
<td><strong>A6 Counseling Services</strong></td>
<td>735</td>
<td>3</td>
<td>1,446</td>
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<td><strong>A7 Community Relations</strong></td>
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<td>4</td>
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</table>

### B. Support Areas

<table>
<thead>
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<th>Support Areas</th>
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<th>10 Year</th>
<th>20 Year</th>
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<td>1,287</td>
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<tr>
<td><strong>B3 Interview Areas</strong></td>
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<td><strong>B6 Intake/Holding</strong></td>
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<td><strong>B7 Sallyport</strong></td>
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<td><strong>B9 Impound Bay</strong></td>
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<td><strong>B10 Locker Rooms</strong></td>
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<td><strong>B11 Fitness Training</strong></td>
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<td>1,980</td>
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<td>8,543</td>
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<td><strong>B13 Storage</strong></td>
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<td>2,217</td>
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<td><strong>B14 Enclosed Garage</strong></td>
<td>5,042</td>
<td>16,875</td>
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</table>

**Subtotal:**
- **30,955**
- **61,571**
- **62,341**
- **62,472**

**Building Grossing Factor - 35%**
- **14,160**
- **21,550**
- **21,819**
- **21,865**

**Total GSF:**
- **45,115**
- **83,121**
- **84,161**
- **84,337**

**Staff:**
- **95**
- **103**
- **107**
- **107**

---

**Note:**
- The above values are illustrative and subject to change.
- The data reflects a draft update as of the publication date.
## 4.0 Space Program

### C. Exterior Support

<table>
<thead>
<tr>
<th></th>
<th>STND</th>
<th>NSF</th>
<th>Staff</th>
<th>Unit</th>
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<th>STND</th>
<th>NSF</th>
<th>Staff</th>
<th>Unit</th>
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<tr>
<td>Circulation Factor- 10%</td>
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</tbody>
</table>
5.0 Space Standards
5.0 Space Standards

5.1 Introduction

In this section, Individual Space Standards are illustrated which describe assignable areas together with their furnishings and equipment capabilities.

In the development of the Northbrook Police Facility Program, it was determined that similar work area requirements are needed for certain functions on a recurring basis throughout the different operating units. For these situations, maximum efficiency will be achieved by the standardization of the workstation and furnishings provision response. Accordingly, a series of space standards are presented in this section which are utilized in the Space Tabulations section for similar staff work assignments throughout the Northbrook Police Facility operating units. Among the examples, the office space allocations at the supervisory level in the respective areas have incorporated "in-office" conferencing space. In essence, it combines an office space and a conference room into one more efficient space than would be achieved with two separate spaces. Other office standards isolate the conferencing function and reduce the office size. In these cases, the programming concept includes appropriate scheduling and sharing of these conferencing spaces between units. Except for unit supervision, work areas space standards emphasize "open office" workstations. This kind of accommodation allows the greatest flexibility for changes in staffing and staff groupings, and are more economical in their requirement for overall building space.

In the various workspace standards, alternative furnishings arrangements are shown. These are not intended to limit or recommend the adoption of particular patterns of space utilizations, but instead are shown to help in conveying the capabilities of particular space sizes to support personnel activities.

The Space standards which follow in this section have also been prepared to accommodate Federal ADA (Americans With Disabilities Act) requirements and recognized professional requirements. Accordingly, they represent mandated minimums in certain of their dimensional tolerances.

Finally, the standards which follow present the more repeated types of spaces and do not attempt to depict every space that is described in the program. Various specialized space standards, however, are depicted.
### 5.0 Space Standards

#### Table of Contents:

<table>
<thead>
<tr>
<th>Area</th>
<th>Code</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Break Area</td>
<td>B-1</td>
<td>B-36, B-100, B-660</td>
</tr>
<tr>
<td>Conference Area</td>
<td>C-1</td>
<td>C-80, C-100, C-150</td>
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<td>C-2</td>
<td>C-375, C-432, C-608</td>
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<td>C-3</td>
<td>Sergeant Options</td>
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<td>C-S150, C-S220</td>
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<td>C-1035</td>
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<td>WS-36, WS-48, WS-64</td>
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</table>

#### Key:
- Telephone
- Computer
- Printer
- Handicap Circulation Radius
5.0 Space Standards

B-36

Designated Area:
Admin.
Invest.

Net Square Feet: 36

B-660

Designated Area:
Break Room

Net Square Feet: 660

Legend:
A. ................................. 36x30" Table
B. ................................. 30"x60" Table
C. ................................. 36"x60" Table
D. ................................. 72"x24" Table
E. ................................. White Board/Screen
F. ................................. 90"x24" Table
G. ................................. Counter/Desk
H. ................................. Credenza/Side Table
I. ................................. Side Table
J. ................................. Lounge Seating
K. ................................. Lecturn
L. ................................. Sink/UnderCounter Refrig.
M. ................................. Shelving

B-100

Designated Area:
Communications

Net Square Feet: 100
5.0 Space Standards

Northbrook Police Department

Healy, Bender & Associates, Inc. | Moyer Associates Inc.

C-80
Designated Area:

Net Square Feet: 80

C-100
Designated Area:
Investigations: (2)
Lobby: (1)
Intake/Holding: (2)

Net Square Feet: 100

C-150
Designated Area:
Interview Area: (1)

Net Square Feet: 150

Legend:
A............................................................. 36x30" Table
B............................................................ 30"x60" Table
C............................................................ 36"x72" Table
D............................................................ Modular Training Table
E............................................................ White Board/Screen/Tack Bd
F............................................................ 84"x24" Training Table
G............................................................ Counter/Computer Desk
H............................................................ Credenza/Side Table
I............................................................ Mail Boxes
J............................................................ Lounge Seating
K............................................................ Lecturn
L............................................................ Storage
M............................................................ Shelving

Conference Area

C-1
5.0 Space Standards

C-375
Designated Area:
Administration: Executive Conf.
Net Square Feet: 375

C-432
Designated Area:
Investigations: Major Case
Net Square Feet: 432

C-608
Designated Area:
Patrol: Roll Call / Briefing
Net Square Feet: 608

Legend:
A. 36x30" Table
B. 30x60" Table
C. 36"x72" Table
D. Modular Training Table
E. White Board/Screen/Tack Bd
F. 84"x24" Training Table
G. Counter/Computer Desk
H. Credenza/Side Table
I. Mail Boxes
J. Lounge Seating
K. Lecturn
L. Storage
M. Shelving

Conference Area
C-2

DRAFT
5.0 Space Standards

Northbrook Police Department

Healy, Bender & Associates, Inc. | Moyer Associates Inc.

Sergeant Options

C-3

Legend:

A................................. Forms/Copy/Storage
B................................. Sergeant Work Area
C................................. Roll Call Room
5.0 Space Standards

Northbrook Police Department

Healy, Bender & Associates, Inc. | Moyer Associates Inc.

C-S150

Designated Area:
Counsel. Serv.: (2)

Interview Area: (1)

Net Square Feet: 150

C-S220

Designated Area:
Counsel. Serv.: (1)

Interview Area: (1)

Net Square Feet: 220

Legend:

A. 36x30" Table
B. 30"x60" Table
C. 36"x72" Table
D. Modular Training Table
E. White Board/Screen/Tack Bd
F. 84"x24" Training Table
G. Counter/Computer Desk
H. Credenza/Side Table
I. Mail Boxes
J. Lounge Seating
K. Lecturn
L. Storage
M. Shelving
5.0 Space Standards

C-1035

Designated Area:
Emergency Operations Center

Net Square Feet: 1035

Legend:
A.................................36x30" Table
B.................................30"x60" Table
C.................................36"x72" Table
D.........................Modular Training Table
E......................White Board/Screen/Tack Bd
F..................84"x24" Training Table
G..............Counter/Computer Desk
H..................Credenza/Side Table
I..................Mail Boxes
J..............Lounge Seating
K..................Lecturn
L..................Storage
M..................Shelving
N..................Modular Wall Partition
5.0 Space Standards

C-990

Designated Area:

Training Room

Net Square Feet: 990

Legend:

A: 36x30" Table
B: 30"x60" Table
C: 36"x72" Table
D: Modular Training Table
E: White Board/Screen/Tack Bd
F: 84"x24" Training Table
G: Counter/Computer Desk
H: Credenza/Side Table
I: Mail Boxes
J: Lounge Seating
K: Lecturn
L: Storage
M: Shelving
5.0 Space Standards

O-120

**Designated Area:**
Admin: Admin. Asst.-Chief
Admin: Asst./ Prop. Off.- DC
Invest.: Sgt.
Patrol: Sgt
Property/ Evid.: Custodian Off.

**Net Square Feet:** 120

O-150

**Designated Area:**
Admin.: Training/ Planning Sgt.
Investigations: Commander
Patrol: Commander
Records: Supervisor
Communications: Supervisor
Community Relations: Supervisor

**Net Square Feet:** 150

O-180

**Designated Area:**
Admin: Internal Serv. Admin.

**Net Square Feet:** 180

Legend:
A.......................... 66"W U-Shaped Work Area w/ Files
B.......................... U-Shaped Work Area With Conf. Top
C............................. 72"W Double Pedestal Desk
D.............................. Credenza Work Area w/ Files
E............................. 36"W Lateral File Cabinet
F.............................. Book Case
G.............................. Printer/Tackboard
H.............................. Guest Chair
I.............................. 36"D Conf. Table/Seating
J.............................. Lounge Seating
K.............................. Side Table
L.............................. Storage Wardrobe
5.0 Space Standards

Northbrook Police Department

Healy, Bender & Associates, Inc. | Moyer Associates Inc.

Legend:

A................... 66"W  U-Shaped Work Area w/ Files
B................... U-Shaped Work Area With Conf. Top
C...................... 72"W Double Pedestal Desk
D...................... Credenza Work Area w/ Files
E...................... 36"W Lateral File Cabinet
F................................. Book Case
G.............................. Printer/Tackboard
H.............................. Guest Chair
I.............................. Conf. Table/Seating
J.............................. Lounge Seating
K.............................. Side Table
L.............................. Storage Wardrobe

O-225
Designated Area:
Couns. Serv.: Director

Net Square Feet: 225

O-300
Designated Area:
Admin.: Deputy Chief

Net Square Feet: 300

O-375
Designated Area:
Admin.: Chief

Net Square Feet: 375
5.0 Space Standards

**WA-42**
- **Designated Area:**
  - Copy/Printer:
  - Investigations
  - Patrol
  - Communications
  - Counseling Services
- **Net Square Feet:** 42

**WA-120**
- **Designated Area:**
  - Copy/Work:
  - Admin.
  - Records
- **Net Square Feet:** 120
5.0 Space Standards

**WA-180**

**Designated Area:**
Patrol: Report Writing Room

**Net Square Feet:** 180

**WA-408**

**Designated Area:**
Evidence Tech. Processing

**Net Square Feet:** 408

---

**Legend:**

A........................................36"x30" Table  
B........................................30"x60" Table  
C........................................36"x60" Table  
D........................................72"x36" Table  
E........................................ Drying  
F........................................ Storage  
G........................................ Counter/Desk  
H........................................ Credenza/Side Table  
I........................................ Side Table  
J........................................ Lounge Seating  
K........................................ Fume Hood  
L........................................ Sink/UnderCounter Refrig.  
M........................................ Shelving
5.0 Space Standards

Northbrook Police Department

Healy, Bender & Associates, Inc. | Moyer Associates Inc.

Legend:
Possible Components Include:
- Under Counter Pedestal/File
- Under Counter Lateral File
- Overhead Shelving
- Guest Seating
- Wardrobe Closet
- Task Lighting
- Tack Surface

Workstation Work Area

WS-36

Designated Area:
- Records: Intern
- Records: Microfilm Scanner
- Records: Patrol Off. Temp. Station
- Couns. Serv: Client Work Area
- Intake/ Hold: Officer Work Area

Net Square Feet: 36

WS-48

Designated Area:
- Admin: Clerk
- Patrol: Traffic Officer
- Records: Clerk
- Couns. Serv: Social Worker
- Commun. Rel: Service Officer

Net Square Feet: 48

WS-64

Designated Area:
- Investigations: Crime Analyst
- Investigations: Detective
- Investigations: Tact. Officer
- Investigations: HS Liaison
- Communications: Dispatch
- Commun. Rel: Animal Warden

Net Square Feet: 64
6.0 Options
6.1 Introduction of Options

Following the development of the Space Needs Program for the Northbrook Police Department, together with completion of the Existing Facility Problems analysis, attention was turned to the options that could be considered to meet these needs.

The following options are identified and reported upon:

Option 1:

Remedy the identified deficiencies and operational inadequacies of the Northbrook Police facility at the existing building, expanding building space as needed while maintaining all operational units at the ground floor level. This option incorporated re-use of the existing garage for police vehicle parking, expanded under the new construction to provide all weather protection for police vehicles and equipment.

Option 1a:

Address the identified deficiencies and operational inadequacies of the Northbrook Police facility at the existing site, with major expansion of the building space by multi-floor construction, and providing outdoor surface parking for the majority of all police vehicles.
6.0 Options

6.1 Introduction of Options Cont.

Option 2:

Construct a new Police facility at another location and sell the existing property, if not suitable for other Village uses.

In order to provide the Village of Northbrook with information that will be important for decision-making, the next activities undertaken in the development of this consultant study have been in the exploration of the feasibility of Option 1, followed by the review of Option 1a and Option 2.

It is recognized at the outset that if Option 1 or Option 1a cannot be developed to meet the Police Department space needs, the required functional relationships, and on-site parking capacities for public and staff, then Option 2 will be the only recourse available.

6.2 Option 1 Detail

The first finding in the assessment of Option 1 is that the Police Department operations would need to be temporarily relocated during a period of facility modification and expansion. This has been done in other similar projects, and in each case has been contingent upon the municipality having an available structure for short-term use by the Police. "Short-term", depending upon individual project circumstances, could mean two (2) years, plus or minus. In these other examples, an empty school has sometimes been used, or empty portions of other municipally-owned properties. Minor adaptations have been put in place for the general Police occupancies, while prisoner processing and holding have been accomplished through cooperative agreements with adjacent municipalities during the period of temporary occupancy. The use of cooperative agreements has also been relied upon with communications and dispatch, although there are precedents where communications has stayed on-site, using a trailer and hook-up to an existing tower during a renovation/construction period.

In the instance of the existing Northbrook Police Facility, the existing facility problems include dysfunctional locations of its various operational components. These problems are identified and described in detail within the "Identified Problems" section of this report. Their proliferation throughout the building does not allow for them to be remedied while operations are being continued within the facility. Also, the overlapping of contractor activities with seven days-per-week, 24-hour per day police activities would not be feasible.
Accordingly, Option 1 seeks to make maximum use of the existing police facility resource while developing an entirely different and more functionally efficient allocation of space use within it. To the extent that all the space needs of the Northbrook Police Department operations do not fit within the existing building, the ability for the existing building to be expanded has been explored.

In this process, Option 1 attains more efficient space use and a reduced percentage of the building area devoted to corridors. Travel distances between functions are reduced and operational benefits attained at the same time. The investment that is represented in the original construction of the Northbrook Police Facility is continued in its service to the Village of Northbrook. The portions of that construction that have outlived their useful service life are replaced with new systems.

In the pages that follow, "blocking plans" are presented which show individual functional components scaled for their space program need, and located in a proposed organization to meet Northbrook Police Department operational needs.

For maximum efficiency, all principal operating components are located at the same level. Support spaces are located in the Basement. Each of these levels are expanded to meet space needs, as shown in the diagrams that follow.

Conventional "Bubble Diagrams", showing desirable functional relationships, are adapted in this report to accomplish the same communication...but in the context of the floor plan diagrams. Accordingly, a series of important topics are addressed in the context of the proposed plan arrangements in the following materials. These topics include:

- Clustering of Daily Operations Components
- Prisoner Holding-Bond-Release Flow
- Immediate Lobby Access Grouping
- Evidence Intake with Bag-Tag-Procesing-Impound Vehicle Access

The related diagrams illustrate how the desirable relationships for these functions are accomplished in the plan concept.
ORGANIZATIONAL CONCEPT

Option 1 has been developed to eliminate the documented deficiencies of the existing police facility, by re-purposing and re-using all existing building space, and adding to it to meet the identified space shortages.

The organization of the functional components (Patrol, Investigations, Holding, Administration, etc.) responds to the operational needs expressed by Northbrook Police staff during the interview process and questionnaire responses received from all areas of operations. Instead of the present remote separations of key functions, they are grouped close together to provide short travel distances and the elimination of inappropriate and unsecured movement conflicts. Reference is made to the Component Relationship Diagrams appearing in this report following the floor plan pages.

Functional zoning allows the creation of secure zones within the building to prevent detainee movements through adjacent operational areas or exterior access.

In addition, communications staff responsibilities for periodic detainee checks is assisted by their location immediately adjacent to prisoner Holding, rather than at the opposite end of the building as it is at present.

Administration is located in close proximity to Patrol, Investigations and other offices, eliminating the existing awkward and inefficient movements that are required through the facility throughout the day.

Increased operational efficiency and increased levels of inter-staff communications and service to the public is supported by the configuration that is recommended in the accompanying plans.

It is also a part of the planning concept to incorporate interlocked vestibule doors between the secured detainee zone and the exterior to control movements into and out of the secure zone. Locking devices with controlled access are proposed to prevent unauthorized access into police operational areas.
This page has been removed pursuant to 5 ILCS 140 Sec 7(1)(e) and 7(1)(k).
This option, which seeks to meet the Police space needs with multi-story construction in the same general area as the existing building, is found to bring the following features:

a. Unlike Option 1, which reuses the existing building structure and building envelope, entirely new construction would be required to achieve a new floor. Existing structure and building framing will not support the loads that come with an additional floor. A new Basement as well as First and Second floors would need to be built.

b. Like Option 1, the Police Department operations would need to housed at another location while the existing site is redeveloped.

c. The required dimensions of a new Firearms Training component with related support will not fit in the basement and will require new ground level construction on the site.

d. Ground level construction of the Firearms Training component will bring the need to address acoustic issues to mitigate a negative impact for the adjacent residential community.

e. The basic operational components of Administration, Patrol, Investigations, Prisoner intake and holding, Evidence, Lockers and Fitness Training will not fit on one floor within the required Option 1A footprint. At a minimum, Administration, Incident, Lockers and Fitness Training would need to be at the Second Floor, bringing increased movements and loss of convenient access for both police personnel and the public.
Option 2 brings with it the need to identify and acquire a new Police Facility site, if it is not a property already owned by the Village.

As a guide to the needed size, it would need to be at least the size of the present site which has been found capable of accommodating the necessary building square footage and surface parking.

As in the planning concept that is proposed in Option 1 for the existing site, it is recommended that the primary operational components be located at the same level. These components include: Public Entry, Interview, Administration, Patrol, Investigations, Prisoner Sallyport-Holding-Interview, Communications, Records, Counseling, Community Outreach, Evidence Bag-Tag, Evidence Storage, Impound Vehicle, Break Area. The reason for this recommendation lies in the operational efficiency and increased level of inter-staff communications and service to the public that this configuration supports. Experience in the field provides ample evidence that when a police facility site has constricted dimensions that dictate a multi-level police facility design, the result will include reduced levels of communication between units and compromise in operational efficiency.

Option 1:

- Re-uses existing space, reducing the amount of new construction required.
- Requires no property acquisition.
- Maintains existing communications tower services/location.
- Requires temporary relocation of police operations during renovation/construction.
- Requires cooperative agreements to hold prisoners during renovation/construction.
- Achieves optimal functional relationships of operational components at one floor level.
- Achieves weather protected parking for Police fleet vehicles, prolonging service life.
6.5 Overview of Option Benefits and Challenges -Cont.

Option 1a:

- Does not re-use existing space. Requires demolition of the existing building and construction of a new three level building in the general location of the existing building.
- Requires no property acquisition.
- Maintains existing communications tower services/location.
- Requires temporary relocation of police operations during renovation/construction.
- Requires cooperative agreements to hold prisoners during renovation/construction.
- Requires new grade level construction of a Firearms Training component, with issues of noise abatement.
- Police fleet parking is required to be outside, not weather protected.
- The basic operational components will not fit on one floor within the required Option 1A footprint, bringing increased movements and loss of convenient access for both police personnel and the public.

Option 2:

- Requires site acquisition (potentially offset by sale of existing site).
- Allows Police to remain operational in the existing building throughout the construction period.
- Avoids the need for a cooperative agreement with another jurisdiction for prisoner processing/holding during the construction period.
7.0 Options-Diagrams
7.1 Option 1

7.1a MASTER PLAN CONCEPT FOR EXISTING SITE RE-USE
7.1 Option 1

7.1b MASTER PLAN CONCEPT - Showing Existing Building Re-Use Relationship

WALTERS AVENUE
LANDWEHR ROAD

Public/Training Parking
Sallyport

Existing Building
Shift Parking
Short Term Fleet Parking

0 10 20 30
NORTH

Existing Antenna

Option One

Northbrook Police Department
DRAFT
Healy, Bender & Associates, Inc. | Moyer Associates Inc.

10-16-2018
7.1 Option 1

7.1c FIRST FLOOR “BLOCKING” PLAN
7.0 Options-Diagrams

Northbrook Police Department
DRAFT
Healy, Bender & Associates, Inc. | Moyer Associates Inc.

7.1 Option 1

7.1c BASEMENT LEVEL BLOCKING PLAN

Firing Range
Support
Support
Mech.
Mech.
St.
Unexcavated

Basement Expansion
Ramp Up
Property Line

Northbrook Police Department
7.0 Options-Diagrams

7.1 Option 1

7.1d CLUSTERING OF DAILY OPERATIONS COMPONENTS
7.0 Options-Diagrams

Northbrook Police Department

DRAFT

Healy, Bender & Associates, Inc. | Moyer Associates Inc.

7.1 Option 1

7.1e PRISONER INTAKE-HOLDING-BOND-RELEASE
7.0 Options-Diagrams

Northbrook Police Department
DRAFT
Healy, Bender & Associates, Inc. | Moyer Associates Inc.

7.1 Option 1

7.1f EVIDENCE INTAKE with BAG+TAG-PROCESSING-IMPOUND VEHICLE ACCESS
7.1 Option 1

7.1g IMMEDIATE LOBBY ACCESS GROUPING
7.2 Option 1a

7.2a MASTER PLAN CONCEPT - Showing Existing Building Re-Use Relationship

WALTERS AVENUE
LANDWEHR ROAD

New Police Facility Construction - multi-story

Public/Training Parking

Sallyport

Existing Building

Short-term Fleet Parking

Surface Parking

Existing Antenna

New Firing Range

Shift Parking
8.0 Preliminary Cost Review
8.0 Preliminary Cost Review

8.1 Introduction

At this early stage of project scope definition, detailed cost estimating is not feasible. However, a preliminary analysis can be developed which is based upon the use of cost-per-square foot allowances for the various categories of construction or renovation, and based upon cost experience in other similar projects.

Even under this procedure, no two projects are exactly the same in their complexity or other features. Other project cost experience is also influenced by the market conditions at the time it was bid, the volume of local construction activity affecting contractor interest and other factors.

Accordingly, the cost review for the Option 1 project scope for the Northbrook Police Department facility is very preliminary. It uses cost-per-square-foot allowances for the proposed renovation of existing space at three different levels:

- Minor Renovation
- Moderate Renovation
- Major Renovation

It uses a different "average" cost-per-square-foot allowance for proposed new construction. A contingency allowance is added for project administrative costs, professional fees, FFE (Furniture, Fixtures and Equipment) and site development including landscaping.

The "square footage" calculations are based upon the Police space program presented in this report, combined with preliminary estimates of space needed for circulation (corridors), mechanical and other support space.

All of the above will be impacted by subsequent project development going forward, including decision-making by the Village of Northbrook concerning project features.
### 8.1 Tabulation

**Northbrook Police Department - Option 1**

<table>
<thead>
<tr>
<th>Description</th>
<th>SF</th>
<th>%</th>
<th>Allowance</th>
<th>SF</th>
<th>%</th>
<th>Allowance</th>
<th>SF</th>
<th>%</th>
<th>Allowance</th>
<th>SF</th>
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<th>Allowance</th>
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<td>1.00%</td>
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<td>2.05%</td>
<td>$390,591</td>
<td>2,047</td>
<td>2.05%</td>
<td>$390,591</td>
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<td>2.05%</td>
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</tr>
<tr>
<td>1st Floor</td>
<td>50,140</td>
<td>50.14%</td>
<td>$1,463,774</td>
<td>50,140</td>
<td>50.14%</td>
<td>$1,463,774</td>
<td>50,140</td>
<td>50.14%</td>
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<tr>
<td>Basement Floor</td>
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<td>$757,284</td>
<td>27,137</td>
<td>27.14%</td>
<td>$757,284</td>
<td>27,137</td>
<td>27.14%</td>
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<td>33.07%</td>
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**Northbrook Police Department - Option 2**

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<th>Allowance</th>
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</thead>
<tbody>
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<td>33.07%</td>
<td>$1,070,058</td>
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</table>

**Total**: Preliminary Project Cost Estimate:

- Option 1: $36,478,343
- Option 2: $37,682,280

**Notes**

- Temporary re-location costs not included.
- The total garage area in Option 1 includes
  - Option 1 - On-Site and Off-Site grading, utilities, and storm water management costs have not been included in this estimate. Costs for an engineered solution will need to be added.
  - Option 2 - On-Site and Off-Site grading, utilities, and storm water management costs have not been included in this estimate. Costs for an engineered solution will need to be added.
Fire Department-Station 11 - Executive Summary

The Healy Bender I Moyer team were asked to develop a Facility Needs Report for the Village of Northbrook Fire Department Facility 11. The study result has developed out of a collaborative process between the consultant team and the Village of Northbrook personnel. The Fire Station 11 study process included the documentation of existing Station 11 operational issues and the assessment of facility space deficiencies, followed by the identification of the options that are available to the Village of Northbrook to respond the needs that were identified.

It is the finding of this study, based upon the information obtained through the entire process, that the existing facility fails to meet the current space needs and serve operational needs in multiple aspects. Among the notable deficiencies are the following:

- Inefficient organization of spaces.
- Inadequate space for all basic functions.
- Absence of dedicated space to support female personnel.
- Dangerous conditions for personnel movements.

The site context for Station 11 includes the connected Administration wing as well as the Maintenance/Storage building. The activities associated with these buildings came under review due to their need for access on the site, their support for Station 11 operations, as well as the interaction of Station 11 personnel with their functions.

In considering the options that could be available to meet Station 11 deficiencies, it was found necessary to include this context. When considering the best possible ways to configure and maximize the use of the Operations wing, it was found that the Administration wing and Warehouse provided both potential limitations and solutions. In order to create workable solutions, the entire site context and building occupancies were included in the assessment of Station 11 solution strategies.

The overall finding of this study, following the documentation of existing Fire Department Station 11 operational issues and the assessment of facility space deficiencies, is that the following options are available to the Village of Northbrook to respond the needs that have been identified:
Option 1:

Construct an addition immediately north of the Apparatus Bays to supplement the Station 11 operations support space, together with the construction of an expansion of the Fire Administration wing that is connected to Station 11 and expansion of the Warehouse to meet Station 11 operational needs with the combined space use opportunities in these expanded components.

- Northward expansion behind the Apparatus Bays and the reallocation of existing space within the station to *meet space needs and keep main functions at the same floor level*.
- Administration wing is also expanded to the north to bring Fire Prevention to the first floor for *improved public access and maximize the use of space at the second floor*.
- Existing Warehouse building is expanded to *meet storage needs* as well as providing an additional vehicle bay.
- *Operational efficiency is served, code compliance is delivered and a safer work environment is provided for fire personnel.*
Fire Department-Station 11 - Executive Summary

Option 2:

Identify an alternative site for the construction of a new Station 11, together with the relocation of Fire Administration to either that site or another location.

- Construction of replacement fire facilities at a different site, contingent upon the identification of a suitable alternative location, its feasibility for acquisition as well as the availability of any cost savings that it might bring.

- Option 2 would involve a considerably greater amount of new construction and would most likely only be viable if the present site could be sold for a much greater amount of money than a new site would cost.

The preliminary review of potential construction costs between the Options yields the following:

<table>
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<th>Option</th>
<th>Cost</th>
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<tr>
<td>Option 2</td>
<td>$13,516,618</td>
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These numbers include building construction/renovation costs only, excluding any site acquisition expenses, sitework (excluding parking), storm drainage features, and temporary relocation costs.

Note: A variation of Option 2 would be the purchase of a current building and potentially renovate that property to serve Northbrook Fire Department needs. It is not possible to compare the operational feasibility or costs under this variation without the identification of the particular property and its analysis.
1.0
Overview of Fire Department - Station 11
1.1 INTRODUCTION

The consultant team, consisting of Moyer Associates Inc. and Healy, Bender and Associates, have applied professionally recognized practices and guidelines for public safety facilities to the specific circumstances of the Northbrook Fire Department Station 11 operations and facility resource. This work has been developed by the Moyer Associates Inc. Consultant team. During the course of its development, a close dialog and participation was maintained between the consultant and Northbrook Fire Department personnel. Frequent visits were made to Station 11 in the verification of conditions in different areas, the updating of original plans and discussion with staff.

The goal of this study is to determine the adequacy of the existing facility to meet current and projected needs, the identification of conditions that have a negative impact upon operations, and the development of solution alternatives that respond to identified shortcomings.

This first section provides an overview of existing facility problems and description of current Northbrook Fire Station 11 space occupancies. The Northbrook Fire Department personnel have been exemplary in their responsiveness to requests for information and in providing data to the study team. The following pages provide an overview of the operational problems that have been identified and the constraints that are presented by the existing building.
Northbrook Fire Station 11 at 740 Dundee Road was constructed in 1971, with a 1988 addition to add administrative offices.

1.2 Functions

Northbrook Fire Department services delivered from Station 11 and Fire Administration include:

- Fire suppression
- Emergency medical services (advanced life support)
- Fire cause and origin investigation
- Hazardous materials
- Emergency preparedness planning
- Fire prevention inspections/plan review/permits
- Training
- Emergency Operations Center (EOC)
1.3 Fire Department Organizational Chart

**Village Manager**

- Hiring, FF Entrance, FAE, and Promotions
- Data Analysis and Reporting
- Annual Report
- Minute Traq/Resolutions
- Labor Relations-Admin.
- Payroll Oversight
- Capital Improvement Plan
- Budget Admin
- Governance Documents
- Incident Safety/Labor
- Peer Support Coordinator
- Policies/Procedures-Train
- Annual Physical/Vaccinations
- FOIA Officer
- Personnel Records
- MABAS SOPs
- Depositions
- Leave Requests
- OSHA
- Stipend Administration
- OMEGA (Fit for Duty)
- Public Information Officer
- POC Administrator
- MABAS/RED/CAD
- MABAS Box Cards
- Labor Relations Ops

**Deputy Chief Administration/Finance**

- Budget Administrator
- Capital Improvement Plan
- Payroll Oversight
- Advice of Status
- Minute Trap/Resolutions
- Data Analysis and Reporting
- Hiring, FF Entrance, FAE, and Promotional Exams
- Governance Documents
- Personnel Records
- FOIA Officer
- BFPC Liaison
- Labor Relations Admin.
- Annual Report
- RMA/OSHA/OSFM/DOL
- NFSTA Training Liaison
- Professional Standards
- Division 3 Training Liaison
- Safety Committee Chair
- Notary
- Child Seat Installer
- Fire Permit Coordinator
- Assist Safety Officer
- Team Leaders
- Fire Resource Deployment
- Jury Duty, Subpoenas
- Chaplain Liaison
- ISO/Accreditation
- 7G Reporting
- Budgeting
- Accounts Payable
- Ambulance Billing
- Admin. Clerk
- (1)
- Desk Reception
- Payroll Entry
- Fire Permit Coordinator
- Child Seat Installer
- Notary
- PT Clerk
- (1)
- Desk Reception
- Maintain Filing Systems
- Rosters

**Division Chief Training & Safety**

- Training Program Manager
- Incident Safety Officer
- Training Records
- Peer Support Coordinator
- Policies/Procedures-Train
- Annual Physical/Vaccinations
- NEMESIS Report
- Grant Research and Development
- Assist Safety Officer
- New Paramedic Student Coordinator
- Paramedic Student Coordinator
- New Paramedic Student Coordinator
- Paramedic Continuing Ed
- Public Information Officer
- POC Administrator
- Operations-DOG’s/SOPs
- MABAS Box Cards
- ECC Manager
- IAP for Spec. Events
- IAP Hazardous Conditions
- Village ID
- MABAS Tier II ID Cards
- Active Threat Liaison
- Fire Prevention Bureau

**Deputy Chief Operations**

- Logistics/Facilities/Grounds
- (1-Battalion Chief)
- Station 10
- (1-Captain) Black Shift
- Station 11
- (1-Captain) Red Shift
- Station 12
- (1-Captain) Gold Shift
- Assistant Medical Officer
- Operations-DOG’s/SOPs
- MABAS Box Cards
- ECC Manager
- IAP for Spec. Events
- IAP Hazardous Conditions
- Village ID
- MABAS Tier II ID Cards
- Active Threat Liaison
- Fire Prevention Bureau

**Fire Chief**

- Village Manager
- Deputy Chief Administration/Finance
- Division Chief Training & Safety
- Deputy Chief Operations
- Fire Prevention Bureau

**Note:**
This chart displays all Fire Dept. positions. Not all of these positions are at FS 11; some are at FS 10 and 12.
2.0

Review of Existing Facility - Station 11
2.1 Apparatus Floor Level: - Current Conditions

The assessment of space utilization has included the inspection and evaluation of current occupancy patterns in all areas of the Northbrook Fire Station 11 building.

The pages that follow in this section illustrate and describe specific operational problems that activities within the Northbrook Fire Department are required to contend with on a daily basis due to current facility conditions.

In the floor plan located on the left, the areas in "red" are devoted to Northbrook Fire Department Administration. They are fully needed for its functions and offer no ability to also take on a role in meeting the space deficiencies of Station 11.

The support areas for Station 11, shown in "brown", are insufficient in size to meet the functional needs. They are also dysfunctional in being located at two different levels and at opposite sides of the Apparatus Bays.

Legend:
- Administration Building
- Apparatus-Three Bays
- Area Shown Between Upper and Lower Levels Apparatus Support Area.
2.2 **Upper Floor Level**: Current Operations Support Area Issues

- The existing facility lacks needed facility support for both male and female personnel. Shower and toilet facilities are lacking and require *improvised intermittent use by one or the other gender*.

- **Male lockers are insufficient both in number and size**, as illustrated to the left.

- **There is no Women’s Locker area, with current female staff changing clothes in the Captain’s office.**

- Bunk room bedding storage cubicles are also *insufficient in both size and number* with current female staff sleeping in the Captain’s office.

- Existing floor space is too restricted to allow remedy of these conditions.

---

**Legend:**
- Administration Building
- Men’s Lockers/Toilets
- Battalion Chief Office, Captain, Lt. Offices With Sleeping Areas
- Bunk Area
- Storage

---

**Upper Level Floor Plan**

**Existing Floor Plan Reflecting Current Locations of Functions**

*Color-Coded for Identification*
2.3 **Lower Floor Level:** -Current Operations Support Area Issues

- In the Lower Level floor plan located on the left below, and as described in the preceding descriptions, **each area is insufficient in its size to accommodate the needs which are assigned to it.**

- **None of the paths for access meet contemporary building safety standards and code requirements.**

- The space that is used for gear storage is overcrowded and **lacking in its ability to meet the needs it is intended to serve.** Gear storage is also improvised in other locations.

- **Unsafe and non-code conforming conditions** are illustrated to the left, including a stair (excessively steep) which has no landing, accompanied by a yellow painted concrete curb which introduces added safety risk itself.

- The lower level located Kitchen **lacks code-conforming fire exiting with its in-swinging exit door.**

![Lower Level Floor Plan](image)

Legend:
- Administration Building
- Kitchen
- Day Room
- Fitness
- Workshop
- Mech./Laundry
3.0

Identified Problems - Station 11
3.0 Identified Problems

3.1 Building Circulation: Operational Issues

- Areas shown in orange are currently providing connection for staff circulation between support areas.

- The stairs are too narrow for proper movement with equipment and gear. All functions require use of stairs for their access.

- The first picture shows the referenced yellow marked hazard which has been improvised to identify the immediate stair with no landing, and to keep water in the Apparatus area from flowing to the lower level.

- Additional difficulty is created for firefighters who are quickly responding to a call with the vertical movements that are required. The existing building configuration creates these conditions. Call volume is reported to be approximately 11 times per day, but these movements are made throughout the day in the course of operations as well.

Legend:
- Administration Building
- Stair Connections Between Apparatus Support
- Connections Between Apparatus and Support

First Floor Plan
3.2 Support Areas: Operational Issues

- Existing support areas for Fire Station 11 currently are inadequate with no means for expansion in the present building configuration.

- The Bunk/Sleeping area is congested and is being used for storage of sleeping bags as well, exacerbating the lack of sleeping space.

- The Men's Locker Room is insufficient in size and lacking space to accommodate officer uniforms, boots and other needed items. The lockers are too small, forcing staff to improvise with the use of cubby holes above the lockers. The cubby holes are too high and difficult to access.

- Apparatus Support area functions lack needed grouping for operational efficiency. Presently, they are divided by the Apparatus Bays with two small and narrow areas located at each of the two levels. The traffic within Station 11 from one wing's support areas to another wing's areas involves constant movement through the Apparatus Bays to these separated locations.
3.3 Overall: Operational Issues

- Existing support storage areas are extremely overcrowded and are spread throughout Fire Station 11.

- Lack of sufficient areas for Storage Support is forcing the diversion of some Apparatus equipment, materials and supplies to improvised locations, impairing operational efficiency.

- The Outer Storage is presently being shared with the Fire Department Administration and is full of storage items and equipment with no space for expansion. Also lacking is code-compliant ingress/egress.
4.0 Space Program
4.1 Introduction

This section provides tabulation of the functional components and spaces needed for Northbrook Fire Department Station 11. It also includes analysis of space needs for the immediately connected Fire Administration.

The amount of space designated in each component has been developed through the interviewing of operations personnel in every unit, the inspection and evaluation of current deficiencies in all areas, and the application of relevant professional standards for the tasks and functions involved. Program development has incorporated efficiencies through task-specific space planning and space sharing where feasible. Reference is made to the following Section 3. Standards for this specific information.

In developing this component Space Program, the following process was employed. A web-based survey form prepared specifically for this project elicited information in a variety of areas from each office. The informational areas included such topics as the number of personnel, classification of personnel by task, types of working environments required, equipment and storage needs, hours of operation, amount of public visitor traffic and amount of internal traffic with other units, proximity and adjacency requirements with other functional areas, trends in activities (either increasing or decreasing), potential technology impacts upon operations, and other issues. The information obtained related directly to the amount of space required for the adequate support of personnel and their activities in the respective offices. Space standards were applied as applicable to the functional areas in order to generate square foot requirements. When functional requirements did not correspond to a space standard, industry standards for each functional area were applied using the minimum amount of space necessary to meet each functional requirement.

In addition, each area of the existing Fire Station 11 facility was inspected and current occupancies observed. The degree of overcrowding and extent of space shortage existing was observed in every area. In conjunction with this, personnel were interviewed to provide further understanding of present demands upon the spaces in the various offices and units.
4.2 SF Gap Analysis

On the next page, a Space Adequacy Summary is presented in graphic form.

It summarizes the findings concerning the amount of space that is presently available in each of the functional components in Station 11 and adjoining Administrative wing in relation to the amount of space that is found to be currently needed in each of these components. As such, it presents the extent of current space adequacy in each area and expresses this in terms of a percentage.

Both individual component and overall facility space adequacy is shown.

Two important features need to be brought into the picture when considering this information:

1) The Space Adequacy bar chart is displaying adequacy on a current basis. As noted in Sections 2 and 3, space for many functions currently do not exist and have been accomodated by necessity causing operational and safety hazards. Without the provision of increased amounts of space going forward, the percentage of adequacy will be decreasing with each passing year for areas with anticipated future growth. This growth will compound on and intensify the existing deficiencies and conditions.

2) Space adequacy is only one of the important factors in evaluating the extent to which existing facilities are supporting operational needs. Other factors include the proximity of key components to one another, travel distances required of staff to perform their duties, code compliance, efficient grouping of functions, and convenience for the public in accessing services, among others, all contributing to how well departmental operations are able to function.

Accordingly, the space evaluation is a very important factor in considering existing facilities adequacy but needs to be supplemented with the consideration of other factors as well. The full range of factors have been included in the development of the recommendations in this report.

Based upon all of the data that has been assembled and evaluated, it is found that the current facility does not meet the space needs of the Department or their use.

SF (square foot) Note:
The referenced area depicted in the following chart cooresponds to NSF (net square feet) which includes usable SF for individual unit requirements plus secondary circulation around it (aisles between workstations).
## SF Gap Analysis

<table>
<thead>
<tr>
<th>A. Administration</th>
<th>Percentage of NSF Adequacy for Current Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 Chief’s Office</td>
<td>60%</td>
</tr>
<tr>
<td>A2 Fire Prevention Bur.</td>
<td>80%</td>
</tr>
<tr>
<td>A3 Training/EOC</td>
<td>60%</td>
</tr>
<tr>
<td>A4 Administrative Supp.</td>
<td>60%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B1. Shift Command</th>
<th>Shift Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2. Station 11</td>
<td></td>
</tr>
<tr>
<td>Lt. Office/</td>
<td></td>
</tr>
<tr>
<td>Kitchen</td>
<td></td>
</tr>
<tr>
<td>Day Room</td>
<td></td>
</tr>
<tr>
<td>Bunk Room</td>
<td></td>
</tr>
<tr>
<td>Exercise</td>
<td></td>
</tr>
<tr>
<td>Laundry</td>
<td></td>
</tr>
<tr>
<td>Turn Out Gear</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td></td>
</tr>
<tr>
<td>Vehicle Bay</td>
<td></td>
</tr>
<tr>
<td>Bay Support Areas</td>
<td></td>
</tr>
</tbody>
</table>

### Overall:

<table>
<thead>
<tr>
<th>SF Gap Analysis</th>
<th>Percentage of NSF Adequacy for Current Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>60%</td>
</tr>
<tr>
<td>Station 11</td>
<td>60%</td>
</tr>
<tr>
<td>Warehouse Bdg.</td>
<td>60%</td>
</tr>
</tbody>
</table>
4.2 Individual Space Tabulation

Space Program Organization

Northbrook Fire Department

A. Administration
   A1 Chief's Office
   A2 Fire Prevention Bureau
   A3 Training/EOC
   A4 Administrative Support

B. Operations
   B1 Shift Command
   B2 Station 11

C. Warehouse Bdg.
   (Separate building with storage/garage)

Summary- Building Areas
As introduction to the material that follows in this section, and as a preface to the Space Program for the Northbrook Fire Department -Station 11 which is presented in this section of the report, a description of its formatting and the codes used follows.

### EXPLANATORY LEGEND

**STAFFING PROJECTIONS:** Projections for future staff in the twenty year increment came from supervisory staff in each operational area based upon their knowledge of service demand and trends in service delivery. The number of projected future staff is reflected in the tabulation, should the Village choose to approve the additional positions.

<table>
<thead>
<tr>
<th>B. Operations</th>
<th>B2 Station 11</th>
<th>B2.1 Staff Support Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lt. Office</td>
<td>O-120</td>
<td>120</td>
</tr>
<tr>
<td>Lt Bunk Area</td>
<td>B-100</td>
<td>100</td>
</tr>
</tbody>
</table>

### Notes:
- `*`: when appearing in the existing column reflects inclusion of existing SF for this item in the overall existing total. (Typ. currently mixed with other functions)
- `STND`: Space standard identification
- `NSF`: Consultant Number used for component identification
- `STND NSF`: Consultant Number used
- `Unit Net Square Feet`: Usable square footage per component unit code
- `Current Need`: Unit/# Number of component units currently needed.
- `10 Year Need`: Unit/# Number of component units currently needed in 10 years.
- `20 Year Need`: Unit/# Number of component units currently needed in 20 years.
- `Staff/# Number of staff currently needed.`
- `Staff/# Number of staff support needed in 10 years.`
- `Staff/# Number of staff support needed in 20 years.`
- `SF`: Total component square footage currently needed.
- `SF`: Total component square footage needed in 10 years.
- `SF`: Total component square footage needed in 20 years.
CIRCULATION FACTORS:

DEPARTMENTAL CIRCULATION FACTOR: Consists of space required for circulation within each Department or operational unit. (i.e. aisles between workstation). The total arrived by adding this factor equals NSF (net square feet). This factor varies by nature of size, number and type of space and is documented accordingly within the program. Example below:

Appears at each operational unit:

<table>
<thead>
<tr>
<th></th>
<th>1,577</th>
<th>2,291</th>
<th>2,411</th>
<th>2,411</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Circulation Factor- 35%</td>
<td>684</td>
<td>802</td>
<td>844</td>
<td>844</td>
</tr>
<tr>
<td>Total Chief's Office:</td>
<td>2,261</td>
<td>3,093</td>
<td>3,255</td>
<td>3,255</td>
</tr>
</tbody>
</table>

Note: The circulation factor will vary according to type of space and is reflected as such throughout the program. (ex.-Office space with numerous smaller areas requires a higher factor than a larger or more contiguous area such as storage)

BUILDING GROSSING FACTOR: Consists of a 35% allowance made up of the following:

- Building Circulation- 15%
- Building Envelope- 2%
- Building Mechanical/Electrical space- 10%
- Police Operations Support Space- 8%
  (emerg. power, generator, security equipment, communications)
  
  Total: 35%

The total arrived by adding this factor equals GSF (gross square feet)

Note- This factor is an allowance only. It has proven to be an accurate allowance for planning purposes however the design layout and specific equipment required will dictate the actual percentage. It is a goal in the design process to keep this number as minimal as possible. Example below:

Appears on the summary page:

<table>
<thead>
<tr>
<th></th>
<th>8,127</th>
<th>14,112</th>
<th>14,314</th>
<th>14,705</th>
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<tbody>
<tr>
<td>Building Grossing Factor- 35%</td>
<td>6,336</td>
<td>4,939</td>
<td>5,010</td>
<td>5,147</td>
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<tr>
<td>Total GSF Oper.:</td>
<td>13,728</td>
<td>19,051</td>
<td>19,324</td>
<td>19,852</td>
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</table>
## A. Administration
### A1. Chief's Office

#### A1.1 Individual work areas

<table>
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<tr>
<th>Role</th>
<th>STND</th>
<th>NSF</th>
<th>Staff Unit</th>
<th>Current Need</th>
<th>Year</th>
<th>Year</th>
<th>Year</th>
<th>Year</th>
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<td>250</td>
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<td>Deputy Chief</td>
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<td>300</td>
<td>221</td>
<td>2</td>
<td>2</td>
<td>600</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Admin. Assistant- Chief</td>
<td>0-120</td>
<td>120</td>
<td>128</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>120</td>
<td>1</td>
</tr>
<tr>
<td>Admin. Clerk- Records/Payroll</td>
<td>WS-64</td>
<td>64</td>
<td>120</td>
<td>1</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>Admin. Clerk- EMS/Billing</td>
<td>WS-64</td>
<td>64</td>
<td>120</td>
<td>1</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
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<tr>
<td>PT Admin Clerk</td>
<td>WS-48</td>
<td>48</td>
<td>120</td>
<td>1</td>
<td>1</td>
<td>48</td>
<td>1</td>
<td>48</td>
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<tr>
<td>Temporary Work Area</td>
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<td>36</td>
<td>144</td>
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<td>36</td>
<td>1</td>
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#### A1.2 Unit support areas

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<th>NSF</th>
<th>Staff Unit</th>
<th>Current Need</th>
<th>Year</th>
<th>Year</th>
<th>Year</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wtg Area</td>
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<td>100</td>
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<td>1</td>
<td>100</td>
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<td>315</td>
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<td>375</td>
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<tr>
<td>Medium Conference</td>
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<td>204</td>
<td>1</td>
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</tr>
<tr>
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<tr>
<td>Copy</td>
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<td>150</td>
<td>1</td>
<td>1</td>
<td>150</td>
<td>1</td>
</tr>
</tbody>
</table>

Subtotal                      | 1,577| 2,291| 2,411      | 2,411        |      |
Department Circulation Factor- 35%| 684  | 802  | 844        | 844          |      |
Total Administrative:          | 2,261| 3,093| 3,255      | 3,255        |      |
### A. Administration


<table>
<thead>
<tr>
<th></th>
<th>STND</th>
<th>NSF</th>
<th>Staff</th>
<th>Unit</th>
<th>Staff</th>
<th>Unit</th>
<th>10 Year</th>
<th>Staff</th>
<th>Unit</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A2.1 Individual work areas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Director</td>
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<td>PT Inspector</td>
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<td>1</td>
<td>1</td>
<td>2</td>
<td>36</td>
</tr>
<tr>
<td><strong>A2.2 Unit support areas</strong></td>
<td></td>
<td></td>
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<td>1</td>
<td>120</td>
<td>1</td>
<td>120</td>
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</tr>
<tr>
<td>Coffee</td>
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<tr>
<td>Toilets</td>
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<tr>
<td><strong>Subtotal</strong></td>
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</tr>
<tr>
<td></td>
<td>1,547</td>
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<td>1,641</td>
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<tr>
<td>Department Circulation Factor-35%</td>
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<td><strong>Total Fire Prevention:</strong></td>
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<td>1,782</td>
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</tbody>
</table>
## 4.0 Space Program

### A. Administration

#### A3. Training/EOC

<table>
<thead>
<tr>
<th></th>
<th>STND NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A3.1 Individual work areas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety Division Chief</td>
<td>O-225 225</td>
<td>213</td>
<td>3</td>
<td>297</td>
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<tr>
<td>PT Training Officer</td>
<td>WS-36 36</td>
<td>*</td>
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<td>2</td>
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<td><strong>A3.2 Unit support areas</strong></td>
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</tr>
<tr>
<td>Work/Reference Area</td>
<td>C-990 990</td>
<td>120</td>
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<td>120</td>
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<tr>
<td>Training Room/EOC</td>
<td>891 64</td>
<td>132</td>
<td>1</td>
<td>132</td>
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<tr>
<td>Storage</td>
<td>162</td>
<td>1</td>
<td>162</td>
<td>1</td>
<td>162</td>
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<tr>
<td>AV Storage</td>
<td>60</td>
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<td>60</td>
<td>1</td>
<td>60</td>
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<td>Dispatch Station</td>
<td>WS-64 64</td>
<td>64</td>
<td>36</td>
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<td>Toilets</td>
<td>48</td>
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<td>96</td>
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## 4.0 Space Program

### A. Administration

#### A4. Administrative Support

<table>
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<tr>
<th>STND</th>
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<th>Year</th>
<th>Year</th>
<th>Year</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Exist.</td>
<td>Current Need</td>
<td>10 Year</td>
<td>20 Year</td>
</tr>
<tr>
<td>Entry Vestibule</td>
<td>80</td>
<td>76</td>
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<td>80</td>
<td>1</td>
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<tr>
<td>General Lobby</td>
<td>120</td>
<td>120</td>
<td>1</td>
<td>120</td>
<td>1</td>
</tr>
<tr>
<td>Service Counter</td>
<td>30</td>
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<td>30</td>
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<td>Public Seating</td>
<td>12</td>
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<td>4</td>
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<td>4</td>
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<td>Circulation Factor- 20%</td>
<td>70</td>
<td>56</td>
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#### A4.2 Break Area

<table>
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<th>STND</th>
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<th>Year</th>
<th>Year</th>
<th>Year</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Exist.</td>
<td>Current Need</td>
<td>10 Year</td>
<td>20 Year</td>
</tr>
<tr>
<td>Break Room</td>
<td>B-270</td>
<td>270</td>
<td>164</td>
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<td>270</td>
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<td>Toilets</td>
<td>120</td>
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#### A4.3 Storage Area

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<th>Year</th>
<th>Year</th>
<th>Year</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Exist.</td>
<td>Current Need</td>
<td>10 Year</td>
<td>20 Year</td>
</tr>
<tr>
<td>General Storage</td>
<td>200</td>
<td>73</td>
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<td>200</td>
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<tr>
<td>Building Storage</td>
<td>200</td>
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<td>1</td>
<td>200</td>
<td>1</td>
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<td>Records Storage</td>
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<td>120</td>
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<td>200</td>
<td>1</td>
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<tr>
<td>Circulation Factor-20%</td>
<td>70</td>
<td>120</td>
<td>120</td>
<td>120</td>
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</table>

**Total Support:** 982 | 1,666 | 1,666 | 1,666
## 4.0 Space Program

### B. Operations

#### B1 Shift Command

<table>
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<tr>
<th></th>
<th>STND</th>
<th>NSF</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Staff Unit</td>
<td>Staff Unit</td>
<td>Staff Unit</td>
<td>Staff Unit</td>
<td></td>
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<tr>
<td><strong>B1.1 Individual work areas</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battalion Chief Office</td>
<td>563</td>
<td>6</td>
<td>375</td>
<td>6</td>
<td>375</td>
<td>6</td>
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<tr>
<td>Captain Office</td>
<td>O-225 225</td>
<td>288</td>
<td>3</td>
<td>1</td>
<td>225</td>
<td>3</td>
</tr>
<tr>
<td>Battalion Chief Office</td>
<td>O-150 150</td>
<td>275</td>
<td>3</td>
<td>1</td>
<td>150</td>
<td>3</td>
</tr>
</tbody>
</table>

| **B1.2 Unit support areas** | | | | | | |
| Battalion Bunk Area | 100 | 1 | 100 | 1 | 100 | 1 |
| Battalion Lockers | 15 | 3 | 45 | 3 | 45 | 3 |
| Battalion Toilet/Shower | 72 | 1 | 72 | 1 | 72 | 1 |
| Captain Bunk Area | B-100 100 | 1 | 100 | 1 | 100 | 1 |
| Captain Lockers | 15 | 3 | 45 | 3 | 45 | 3 |
| Captain Toilet/Shower | 72 | 1 | 72 | 1 | 72 | 1 |
| Store Room | 120 | 1 | 120 | 1 | 120 | 1 |
| Uniform Storage | 120 | 1 | 120 | 1 | 120 | 1 |

| Subtotal | 663 | 1,049 | 1,049 | 1,049 |
| Department Circulation Factor- 35% | 72 | 367 | 367 | 367 |

**Total Shift Command:**

| 735 | 1,416 | 1,416 | 1,416 |
### B. Operations
#### B2 Station 11

#### B2.1 Staff Support Areas

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<th>10 Year</th>
<th>20 Year</th>
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</thead>
<tbody>
<tr>
<td>Lt. Office/Report Writing</td>
<td>298</td>
<td>9</td>
<td>579</td>
<td>9</td>
<td>579</td>
<td>9</td>
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<tr>
<td>Lt. Office</td>
<td>O-120</td>
<td>120</td>
<td>298</td>
<td>1</td>
<td>120</td>
<td>1</td>
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<tr>
<td>Lt Bunk Area</td>
<td>B-100</td>
<td>100</td>
<td>&quot;</td>
<td>1</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>Lt Lockers</td>
<td>15</td>
<td></td>
<td>45</td>
<td>3</td>
<td>45</td>
<td>3</td>
</tr>
<tr>
<td>Shift Change/Report Writing</td>
<td>WA-180</td>
<td>180</td>
<td>&quot;</td>
<td>8</td>
<td>180</td>
<td>8</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchen</td>
<td>298</td>
<td>0</td>
<td>432</td>
<td>0</td>
<td>432</td>
<td>0</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Day Room</td>
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<td>600</td>
<td>0</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>0</td>
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<td></td>
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<td>Exercise/Lockers</td>
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<td>750</td>
<td>1</td>
<td>750</td>
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<td>Male Bathroom/showers</td>
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<td>150</td>
<td>1</td>
<td>150</td>
<td>1</td>
<td>150</td>
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<tr>
<td>Male Lockers</td>
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<td>300</td>
<td>15</td>
<td>225</td>
<td>18</td>
<td>270</td>
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<tr>
<td>Female Bathroom/Shower</td>
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<td>120</td>
<td>120</td>
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<td>Female Lockers</td>
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<td>30</td>
<td>3</td>
<td>45</td>
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<td>Dress Uniform Storage</td>
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<td>72</td>
<td>1</td>
<td>72</td>
<td>1</td>
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<td>Small Laundry</td>
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<td>72</td>
<td>1</td>
<td>72</td>
<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Laundry/EMT storage</td>
<td>120</td>
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<td>180</td>
<td>0</td>
<td>180</td>
<td>0</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn Out Gear</td>
<td>289</td>
<td>0</td>
<td>576</td>
<td>0</td>
<td>576</td>
<td>0</td>
</tr>
<tr>
<td>Turn out storage</td>
<td>15</td>
<td>289</td>
<td>32</td>
<td>480</td>
<td>480</td>
<td>32</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage</td>
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<td>336</td>
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<td>80</td>
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<td>Supply Storage</td>
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<td>1</td>
<td>200</td>
<td>1</td>
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<tr>
<td></td>
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</table>
### B. Operations
#### B2 Station 11

#### B2.2 Vehicle Support Areas

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</thead>
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<td>7,026</td>
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<td>5,586</td>
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<tr>
<td>* Additional Bay</td>
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<td>1</td>
<td>1,440</td>
<td>1</td>
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<tr>
<td><strong>Support Areas</strong></td>
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<td>643</td>
<td>643</td>
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<tr>
<td>Work Room</td>
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<td>120</td>
<td>1</td>
</tr>
<tr>
<td>Hose Tower</td>
<td>120</td>
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<td>120</td>
<td>1</td>
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<td>Fill Station</td>
<td>60</td>
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<td>60</td>
<td>1</td>
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<td>Tool/Maint. Area</td>
<td>50</td>
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<td>Road Salt</td>
<td>36</td>
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<tr>
<td>Storage</td>
<td>150</td>
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<td>150</td>
<td>1</td>
</tr>
<tr>
<td>Circulation Factor- 20%</td>
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<td>107</td>
<td>107</td>
<td>107</td>
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**Total Station 11:**

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<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7,392</td>
<td>12,696</td>
<td>12,898</td>
<td>13,289</td>
</tr>
</tbody>
</table>

*Note:* The Additional Bay is only required if a new station is constructed. If the current site is used, this space can be accommodated in the onsite Warehouse.
### C Warehouse Bdg.

<table>
<thead>
<tr>
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<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
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<tbody>
<tr>
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<td>Staff Unit</td>
<td>Staff Unit</td>
<td>Staff Unit</td>
<td>Staff Unit</td>
</tr>
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<td>C1 Arch. Stor./Garage</td>
<td>2920</td>
<td>3,750</td>
<td>3,750</td>
<td>3,750</td>
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</table>

* Arch. Stor./Garage

Note: 3,750sf includes additional space for a vehicle bay. If the station leaves the site and acquires a bay, this added area is not required.
## 4.0 Space Program

### Summary

<table>
<thead>
<tr>
<th></th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Administration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A1 Chief's Office</strong></td>
<td>2,261</td>
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<td>7</td>
<td>3,255</td>
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<tr>
<td><strong>A2 Fire Prevention Bur.</strong></td>
<td>1,782</td>
<td>9</td>
<td>9</td>
<td>2,215</td>
</tr>
<tr>
<td><strong>A3 Training/EOC</strong></td>
<td>1,716</td>
<td>3</td>
<td>4</td>
<td>2,192</td>
</tr>
<tr>
<td><strong>A4 Administrative Supp.</strong></td>
<td>982</td>
<td>0</td>
<td>0</td>
<td>1,666</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>6,741</td>
<td>9,010</td>
<td>9,226</td>
<td>9,328</td>
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<tr>
<td><strong>Building Grossing Factor- 35%</strong></td>
<td>1,250</td>
<td>3,153</td>
<td>3,229</td>
<td>3,265</td>
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<tr>
<td><strong>Total GSF Admin.:</strong></td>
<td>7,991</td>
<td>12,163</td>
<td>12,455</td>
<td>12,593</td>
</tr>
</tbody>
</table>

|                     |        |              |         |         |
| **B. Operations** |        |              |         |         |
| **B1 Shift Command** | 735    | 1,416        | 1,416   | 1,416   |
| **B2 Station 11** | 7,392  | 12,696       | 12,898  | 13,289  |
| **Subtotal** | 8,127  | 14,112       | 14,314  | 14,705  |
| **Building Grossing Factor- 35%** | 2,414  | 4,939        | 5,010   | 5,147   |
| **Total GSF Oper.:** | 10,541 | 19,051       | 19,324  | 19,852  |

|                     |        |              |         |         |
| **C. Warehouse Bdg.** |        |              |         |         |
| **C1 Storage/Garage** | 2,920  | 3,750        | 3,750   | 3,750   |
| **Subtotal** | 2,920  | 3,750        | 3,750   | 3,750   |
| **Total GSF Stor.:** | 2,920  | 3,750        | 3,750   | 3,750   |
5.0 Space Standards
5.0 Space Standards

5.1 Individual Space Tabulation

Table of Contents:

Break Area

- **B-1:** B-36, B-100, B-270
- **B-2:** B-360, B-500

Conference Area

- **C-1:** C-150, C-200
- **C-2:** C-375, C-990

Office Work Area

- **O-1:** O-120, O-150, O-180
- **O-2:** O-225, O-300, O-375

Work Area

- **WA-1** WA-120, WA-180

Workstation Area

- **WS-1** WS-36, WS-48, WS-64

Key:

- ------------------------ Telephone
- ------------------------ Printer
- ------------------------ Computer
- ........Handicap Circulation Radius
5.0 Space Standards

Northbrook Fire Department

DRAFT

Healy, Bender & Associates, Inc. | Moyer Associates Inc.

5.0 Space Standards

Northbrook Fire Department

DRAFT

Healy, Bender & Associates, Inc. | Moyer Associates Inc.

Legend:

A..........................................................42x120” Table
B..................................................Refrig./Freezer
C..........................................................Mailboxes
D..........................................................Counter/Printer
E..........................................................Reclining Chair
F..........................................................Television
G..........................................................Bedding Storage
H..........................................................Single Bed
I..........................................................Side Table
J..........................................................Side Chair
K..........................................................Vending Machine

B-36

Designated Area:

Net Square Feet: 36

B-100

Designated Area:
Operations - Bunk Room

Net Square Feet: 100

B-270

Designated Area:
Admin. - Break Room

Net Square Feet: 270
5.0 Space Standards

B-360

Designated Area:
Operations - Kitchen

Net Square Feet: 360

B-500

Designated Area:
Operations - Day Room

Net Square Feet: 500

B-2

Break Area
5.0 Space Standards

**C-150**

**Designated Area:**
Fire Protection Bureau

**Net Square Feet:** 150

---

**C-200**

**Designated Area:**
Administration-Dep. Chief’s

**Net Square Feet:** 200

---

**Legend:**

A................................. 36x30" Table
B................................. 36x96" Table
C................................. 36x72" Table
D.................................. Modular Training Table
E............................ White Board/Screen/Tack Bd
F.................................84"x24" Training Table
G................................. Counter/Computer Desk
H................................. Credenza/Side Table
I................................. Mail Boxes
J................................. Lounge Seating
K................................. Lecturn
L................................. Storage
M................................. Shelving
5.0 Space Standards

Northbrook Fire Department

O-120
Designated Area:
Admin. Asst.-Chief
Fire Prev.-Fire Inspector
Operations-Lt.

Net Square Feet: 120

O-150
Designated Area:
Shift Command-Captain

Net Square Feet: 150

O-180
Designated Area:

Net Square Feet: 180

Legend:
A............... 66" W U-Shaped Work Area w/ Files
B............... U-Shaped Work Area With Conf. Top
C................... 72" W Double Pedestal Desk
D............... Credenza Work Area w/ Files
E................... 36" W Lateral File Cabinet
F........................ Book Case
G........................ Printer/Tackboard
H........................ Guest Chair
I...................... 36" D Conf. Table/Seating
J........................ Lounge Seating
K........................ Side Table
L...................... Storage Wardrobe/Closet

Office Work Area

O-1

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### 5.0 Space Standards

#### O-225

**Designated Area:**
- Fire Prev.: Director
- Training: Safety Div. Chief
- Shift Command: Battalion Chief

**Net Square Feet:** 225

#### O-300

**Designated Area:**
- Admin.: Deputy Chief

**Net Square Feet:** 300

#### O-375

**Designated Area:**
- Admin.: Chief

**Net Square Feet:** 375

---

**Legend:**
- A: 66"W U-Shaped Work Area w/ Files
- B: U-Shaped Work Area With Conf. Top
- C: 72"W Double Pedestal Desk
- D: Credenza Work Area w/ Files
- E: 36"W Lateral File Cabinet
- F: Book Case
- G: Printer/Tackboard
- H: Guest Chair
- I: Conf. Table/Seating
- J: Lounge Seating
- K: Side Table
- L: Storage Wardrobe/Closet
5.0 Space Standards

WA-120

Designated Area:
Copy/Supply Area:
Administration

Net Square Feet: 120

WA-180

Designated Area:
Report Writing Room

Net Square Feet: 180

Legend:
A. Copy Machine
B. Recycling
C. Counter/Storage
D. Counter/Printer/Form Storage
6.0 Options
6.1 Introduction of Options

The following presentation of facility options for Fire Station 11 responds to the findings of the Existing Facility Problems analysis within this report, information obtained through fire personnel interviews and the detailed analysis of space needs as presented within this report. The analysis of facility options included the total site context, considering the adjacent conditions and all site occupancies, as described in the following pages.

Two final options are presented for consideration. They are:

Option 1:

*Construct an addition immediately north of the Apparatus Bays to supplement the Station 11 operations support space, together with the construction of an expansion of the Fire Administration wing that is connected to Station 11 and expansion of the Warehouse to meet Station 11 operational needs with the combined space use opportunities in these expanded components.*

Option 2:

*Identify an alternative site for the construction of a new Station 11, together with the relocation of Fire Administration to either that site or another location.*
In the course of the analysis of the present Fire Department operations at the 740 Dundee Road location, the following findings are pertinent to Station 11 solution options.

First, the co-located Fire Administration component is important not only in terms of its physical facilities implications but also in terms of the operations interaction with Station 11 that occurs on a daily basis.

Accordingly, early options consideration took into account the total site context in considering options for meeting Station 11 shortcomings. These shortcomings are described in the preceding Section 2. In addition, space programming activities have included Administration space needs, as was the assessment of Existing Conditions. Completing the analysis of the total site occupancies, the existing Warehouse needs have also been included.

This study has found that Fire Station 11, with its physical and operational connection to Administration, has its best opportunity for problems resolution when viewed in a combined analysis of solution options with Administration.

Option 1 represents the results of that study. It features a northward expansion behind the Apparatus Bays and the reallocation of existing space within the station. Administration is also expanded to the north, as is the existing Warehouse building to meet storage needs as well as providing an additional vehicle bay. Not only are space deficiencies in the various components met within this option, but operational efficiency is served, code compliance is delivered and a safer work environment is provided for fire personnel. The pages that follow describe Option One features.

Option 2 is the construction of replacement fire facilities at a different site. The implementation of Option 2 is contingent upon the identification of a suitable alternative location, its feasibility for acquisition as well as the availability of any cost savings that it might bring. Since Option 1 makes full use of all existing space, Option 2 would involve a considerably greater amount of new construction and would most likely only be viable if the present site could be sold for a much greater amount of money than a new site would cost.
7.0 Options-Diagrams
7.1 Option 1

7.1a SITE PLAN

Northbrook Fire Department

7.1 Option 1

7.1b FIRST FLOOR BLOCKING PLAN
7.1 Option 1

7.1b SECOND FLOOR BLOCKING PLAN

Warehouse Expansion with additional Storage and Emergency Vehicle Bay

Station 11 Expansion

Existing Warehouse Bldg.
7.1 Option 1

7.1b BASEMENT BLOCKING PLAN - EOC Option Alternate
7.1 Option 1

7.1C KEY COMPONENT RELATIONSHIPS

Northbrook Fire Department

8.1 Introduction

At this early stage of project scope definition, detailed cost estimating is not feasible. However, a preliminary analysis can be developed which is based upon the use of cost-per-square foot allowances for the various categories of construction or renovation, and based upon cost experience in other similar projects.

Even under this procedure, no two projects are exactly the same in their complexity or other features. Other project cost experience is also influenced by the market conditions at the time it was bid, the volume of local construction activity affecting contractor interest and other factors.

Accordingly, the cost review for the Option 1 project scope for the Northbrook Fire Department facility is very preliminary. It uses cost-per-square-foot allowances for the proposed renovation of existing space at three different levels:

- Minor Renovation
- Moderate Renovation
- Major Renovation

It uses a different "average" cost-per-square-foot allowance for proposed new construction. A contingency allowance is added for project administrative costs, professional fees, FFE (Furniture, Fixtures and Equipment) and site development including landscaping.

The "square footage" calculations are based upon the Police space program presented in this report, combined with preliminary estimates of space needed for circulation (corridors), mechanical and other support space.

All of the above will be impacted by subsequent project development going forward, including decision-making by the Village of Northbrook concerning project features.
### 8.0 Preliminary Cost Review

#### Fire Department - Option 1

<table>
<thead>
<tr>
<th>Area</th>
<th>MINOR RENOVATION</th>
<th>MODERATE RENOVATION</th>
<th>MAJOR RENOVATION</th>
<th>NEW CONSTRUCTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF</td>
<td>Allowance</td>
<td>SF</td>
<td>Allowance</td>
<td>SF</td>
<td>Allowance</td>
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<tr>
<td>Fire Department - Option 1</td>
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<tr>
<td>1st Floor-includes:</td>
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<tr>
<td>A2. Fire Prevention Bureau</td>
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<td>A4.1 Lobby</td>
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<tr>
<td>A4.3 Storage Area</td>
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<tr>
<td>A3.1 Training Staff</td>
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<td>B2.1 Kitchen/Day Room</td>
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<td>B2.1 Laundry/EMT Storage</td>
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<td>2nd Floor-includes:</td>
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<td>B1. Shift Commander/Storage</td>
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<td>Turn out Gear/Storage</td>
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<td>184</td>
<td>$3,501,685</td>
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</table>

#### Security System Equipment
- Project Contingency 15%
- Admin/Fees/Exp. 10%
- FF&E 7%
- Inflation 5.5%

#### Site Reconfiguration:
- Parking Lot Reconfiguration: 38 stalls $4,000
- Total: $152,000

#### Subtotal: Building Circulation Factor -35%

#### Site:
- Parking Lot 38 stalls $4,000

#### Total:
- Total: 21,284 $5,364,296

---

**Note:** Option 1 - On-Site and Off-Site grading, utilities, and storm water management costs have not been included in this estimate. Costs for an engineered solution will need to be added.

#### Total:
- Option 1 - Preliminary Project Cost Estimate: $7,455,907

---

### 8.1 Tabulation

<table>
<thead>
<tr>
<th>Area</th>
<th>MINOR RENOVATION</th>
<th>MODERATE RENOVATION</th>
<th>MAJOR RENOVATION</th>
<th>NEW CONSTRUCTION</th>
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</thead>
<tbody>
<tr>
<td>SF</td>
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<tr>
<td>Fire Station 11</td>
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</tr>
<tr>
<td>A. ADMINISTRATION BLDG</td>
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</tr>
<tr>
<td>B. OPERATIONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Note:** Option 2 - Requires acquisition of a site for a new Fire Facility. Cost of a new site is not included in this review, nor is any revenue realized from a sale of the existing Fire site.

#### Option 2 - On-Site and Off-Site grading, utilities, and storm water management costs have not been included in this estimate. Costs for an engineered solution will need to be added.

#### Total:
- Option 2 - Preliminary Project Cost Estimate: $13,516,618
Fleet Maintenance Garage – Executive Summary

The Healy Bender | Moyer team were asked to develop a Facility Needs Report for the Village of Northbrook Fleet Maintenance Garage. The following Study is the result of a collaborative process between the consultant team and the Village of Northbrook personnel.

Based upon the information obtained throughout the entire process the existing facility doesn’t meet the current space needs required to allow the FMG to function properly and is deficient in multiple aspects. Some of the notable deficiencies are as follows:

- Deficient toilet room and locker room facilities
- Deficient maintenance (service) bay area.
- Inefficient organization of spaces.
- Insufficient ceiling heights for safe indoor maintenance.

In order to remedy the deficiencies, several options were explored, and the following option was prepared which offers alternative strategies for meeting the defined needs within the context of the existing facility.

Option 1 reorganizes the existing facility and develops an addition to provide an over height service bay to maintain the Villages larger vehicles in the building. This option addresses the immediate needs and meets the program but falls short in providing over height ceilings for all the service bays. This restricts the flexibility of the facility. Some of the notable benefits and challenges are as follows:

- Re-uses existing space, reducing the amount of new construction required.
- Requires no property acquisition.
- Requires shuffling of maintenance areas during construction.
- Achieves enhanced functional relationships of operational components.
- Achieves secured vehicle storage.
• Achieves dedicated areas for parts storage and shop spaces in centralized locations.
• Achieves additional services bays
• Achieves one service bay with higher ceiling heights to maintain larger vehicles inside the facility.
• Achieves the addition of adequate toilet and locker room facilities.

Option 2 is to find a new location and build a new facility. This option allows the ability to develop a very efficient floor plan that meets your exact requirements without the restrictions of fitting within an existing envelope. Some of the notable benefits and challenges are as follows:

• Requires site acquisition (potentially offset by sale of existing site).
• Allows Fleet Maintenance Garage to remain operational in the existing building throughout the construction period.
• Allow for optimal space planning and open concept
The preliminary review of potential construction costs between the Options yields the following:

- Option 1 $4,497,816
- Option 2 $6,182,473

**Note:** A variation of Option 2 would be the purchase of a current building and potentially renovate the property to serve Northbrook Fleet Maintenance Garage needs. It is not possible to compare the operational feasibility or costs under this variation without the identification of the particular property and its analysis.
1.0 Overview of Fleet Maintenance Garage
1.1 Study Scope & Function

The product of the Northbrook Fleet Maintenance Garage (FMG) Facility Needs Assessment Study is the result of a collaborative process between the consultant team and Village of Northbrook personnel.

The consultant team consisting of Moyer Associates Inc., and Healy, Bender and Associates, have developed standards specifically for the Northbrook Fleet Maintenance garage operations. As a part of the Consultant study work scope, the assessment and evaluation of the existing Northbrook FMG facility is an essential part. During its development, a close dialog and participation has been maintained between the consultant team and Northbrook FMG staff, with work progress coordinated through the administrative staff of the Northbrook FMG and the Village of Northbrook.

The goal of this study is to determine the adequacy of the existing facility to meet current and projected needs, together with the development of solution alternatives that could be considered to respond to identified shortcomings.

Consulting activities have included the administration of a survey questionnaire followed up by interviews with the Northbrook FMG staff and supervisors. The process has involved inspection of the existing Northbrook FMG building and the observation of activity in the facility. The evaluation included the extent the existing spaces support these activities or, instead, have characteristics that impair the effective performances of the functions that are housed.

The first section provides an overview of existing operational/functional challenges and a description of current Northbrook FMG space occupancies. The Northbrook FMG personnel have been exemplary in their responsiveness to requests for information and in providing data to the study team. The following pages provide an overview of the operational problems that have been identified and the constraints that are presented by the existing building.
The Village’s FMG operations staff is comprised of one (1) chief mechanical/FMG supervisor, five (5) mechanics, one (1) part-time mechanic, and one (1) administrative clerk. This facility is a full-service maintenance shop servicing, maintaining and retrofitting over 145 Village vehicles plus an extensive inventory of smaller equipment.
1.3 Current Maintenance Responsibilities

Police
(36) Cars & sport utility vehicles (8’x17’)
(2) Motorcycles
(1) Four wheel (ATV) with trailer
(2) Speed monitor trailers (6’x10’)

Fire
(6) Pumper/rescue squad fire engines (‘9x36’)
(2) Aerial fire engines (100’ tower and a 105’ ladder) (20’x52’)
(6) Ambulances (medium duty International/Freightliner Chassis) (9’x24’)
(9) Cars & sport utility vehicles (8’x17’)
(1) Aerial light tower trailer (6’x10’)
(1) Rescue boat & trailer (8’x15’)

Public Works & Village Hall
(16) Single axle dump trucks (9’x27’)
(1) Tandem axle dump truck (10’x33’)
(3) Front-end wheel loaders (10’x28’)
(1) Tandem axle sewer rodding/ vacuum truck
(1) Single axle sewer flusher truck
(2) Backhoes (10’x28’)
(2) Skidsteers with trailers (9’x24’)
(2) Single axle aerial trucks (9’x27’)
(2) Sweepers
(2) Step vans (9’x24’)
(2) Asphalt rollers with trailers
(1) Mini excavator with trailer (9’x24’)
(50) Cars and pick-ups (9’x25’)
(2) Landscape equipment trailers (10’x28’)

Examples of work performed at the FMG include: part fabrications, exhaust systems, transmissions, tire repairs, oil changes, tune-ups, brake systems, power steering systems, electrical and mechanical repairs, complete engine repairs, and ‘change-outs’ (retrofitting/outfitting new vehicles for Village use).
2.0
Identified Problems
2.1 Inefficient use of maintenance bays

The Northbrook Fleet Maintenance Garage located at 1227 Cedar Lane, Northbrook Illinois was initially constructed in 1956 (Service Building #1) and contains 7,000 square feet on the ground floor, 720 square feet on the storage mezzanine level, and 720 square feet in the basement. In 1966, a 4,850 square foot addition was built (Service Building #2) to expand the number of maintenance bays.

Service Building #1 has six different vehicle maintenance bays totaling approximately 4,100 square feet of dedicated vehicle maintenance space with one (1) heavy duty truck hoist, three (3) car/truck lifts, and six (6) rotary mobile column lifts.

- Staff is forced to shuffle vehicles to utilize the lifts in the space. This results in inefficient time utilization.
- The truck lift isn’t centered on the overhead door which adds to the difficulty of maneuvering vehicles.
2.2 Insufficient maintenance bay ceiling heights

The original 1956 building (Service building #1) has steel roof joists with approximately 18’ clear height from the bottom of the structure to the finished concrete floor. Additionally, there are various pieces of mechanical and electrical equipment suspended below the joists allowing approximately 16’-6” to 17’-0” of clear space to service Village equipment.

The 1966 building addition (Service Building #2) has steel roof joists with approximately 14’-0” clear space from the bottom of the structure to the finished concrete floor. Additionally, there are various pieces of mechanical and electrical equipment suspended below the joists allowing approximately 12’-6” to 13’-0” of clear space to service Village equipment.

- There is Insufficient clear space in either Service Building #1 or #2 to maintain the Villages larger vehicles – especially the fire department aerial tower and ladder engines, or vacuum trucks.
- Larger vehicles must be serviced outside in all weather conditions.
2.3 Storage Materials in Maintenance Bays

- Valuable vehicle maintenance space is being utilized to store recycling materials.
- Egress doors are within the caged parts storage area and don’t have proper clearances or access resulting in a code violation.
- Oxygen tanks must be stored a min. of 20’ from other combustibles and may not be stored with other flammable gases or liquids.
2.4 Inadequate work clearances

- Only two vehicle maintenance areas out of five potential spaces are being utilized in Service Building #2 for maintenance/change out purposes. This causes the overflow work to be shuffled over to Service Building #1 which adds to the inefficient use of space and poor time utilization.

- Work space around the vehicles in the maintenance areas is cramped and could use an additional three feet clearance around the vehicles for efficient space utilization.

- Only one vehicle maintenance area is utilized for change-overs and the space is tight and cramped. There is a need for two service areas and vehicles are often squeezed into one vehicle maintenance area.
2.5 Shop spaces in maintenance bays

- Tire storage and associated equipment take up an entire service bay that could be utilized to maintain vehicles and equipment.

- Metal storage, shop tools, and equipment take up an entire service bay that could be utilized to maintain vehicles and equipment.
2.6 Insufficient toilet rooms and support spaces

- Heavy parts and equipment are kept in the basement which are difficult to move.
- Men’s locker area is located within a storage mezzanine. It is insufficient in size, lacking privacy, inaccessible, and not code compliant.
- Women’s locker rooms and toilet facilities are absent in the current facility. Under this condition, women must use a unisex toilet facility originally designed as a men’s toilet room.

Legend:

- Service Bay #1
- Service Bay #2
- Administration
- Staff Room
- Parts / Storage
- Fabrication
- Toilet/Locker
- Recycling
- Circulation

Healy, Bender & Associates, Inc. | Moyer Associates Inc.

DRAFT
2.7 Poor proximity to support spaces

As the Fleet Maintenance Garage has evolved over the years, every corner of the facility has been utilized to meet their growing needs for storage and shop space. The circulation within the facility has become very inefficient. Parts and materials are stored in every remote location rather than in one central location with easy access. This forces the staff to spend time running for parts that should be located closer to their work spaces. Some of the most centrally located spaces inside the building are being utilized for recycling storage. These conditions have collectively made the facility very inefficient.
3.0

Space Program
3.1 Introduction

This section provides a tabulation of the functional components and spaces needed for the Northbrook Fleet Maintenance Garage.

The amount of space designated in each component has been developed through the interviewing of operations personnel, the evaluation of current deficiencies, and the application of relevant professional standards for the tasks and functions involved. Program development has incorporated efficiencies through task-specific space planning and space sharing where feasible. Reference is made to the following Section 4. Standards for this specific information.

In developing this component Space Program, the process has involved a survey form prepared specifically for this project. It has elicited information in a variety of areas from the FMG personnel. The information areas included have concerned such topics as the number of staff, types of working environments required, equipment and storage needs, amount of internal traffic, proximity and adjacency requirements with other functional areas.

3.2 SF Gap Analysis

On the next page, a Space Adequacy Summary is presented in graphic form.

It summarizes the findings concerning the amount of space that is presently available in each of the functional components in the Northbrook Fleet Maintenance Garage facility in relation to the amount of space that is found to be currently needed in each of these components. As such, it presents the extent of current space adequacy in each area and expresses this in terms of a percentage.

Both individual component and overall facility space adequacy is shown.
Two key features need to be brought into the picture when considering this information:

1. The Space Adequacy bar chart is displaying adequacy on a current basis. Without the provision of increased amounts of space going forward.
2. Space adequacy is only one of the key factors in evaluating the extent to which existing facilities are supporting operational needs. Other factors include the proximity of key components to one another, travel distances required of staff to perform their duties, code compliance, efficient grouping of functions, and convenience for the public in accessing services, among others.

Accordingly, the space evaluation is a very important factor in considering existing facilities adequacy but needs to be supplemented with the consideration of other factors mentioned above, as well. The full range of factors have been included in the development of the recommendations in this report.

Based upon all the data that has been assembled and evaluated, it is found that the current facility does not meet the space needs of the Department or their use.

**SF (Square foot) Note:**
The referenced area depicted in the following chart corresponds to NSF (net square feet) which includes usable SF for individual unit requirements plus secondary circulation around it (aisles between workstations). The black bar shown reflects the percentage of net square feet (NSF) currently occupied vs. that which is currently required for each listed unit.
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<th>20%</th>
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<td>A2 Administrative Clerk</td>
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<td>A3 Waiting Room</td>
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<td>A4 File Storage</td>
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<td>B1 Break/Meeting Room</td>
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<td>C3 Service Bay (Heavy Duty)</td>
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<td>C4 Fabrication/Welding</td>
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<td></td>
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</tr>
<tr>
<td>C5 Metal Storage &amp; Shop Equipment</td>
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<td><strong>D. FMG Storage</strong></td>
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<td></td>
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<tr>
<td>D1 Tire Maintenance</td>
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<td>D2 Small Parts Storage</td>
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<tr>
<td>D3 Large Parts Storage</td>
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<tr>
<td>D4 Temp. Seasonal Equipment Storage</td>
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<tr>
<td><strong>E. Building Support</strong></td>
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<tr>
<td>E1 Janitor Closet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E2 Mechanical / Electrical</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>E3 Building Storage</td>
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<tr>
<td>E4 Parts Room Computer Station</td>
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<th>40%</th>
<th>60%</th>
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<th>100%</th>
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<td><strong>Overall</strong></td>
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<tr>
<td>Fleet Maintenance Garage</td>
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</tr>
</tbody>
</table>

Percentage of NSF Adequacy for Current Needs

Percentage of NSF adequacy

DRAFT

Healy, Bender & Associates, Inc. | Moyer Associates Inc.

158
3.3
Individual Space Tabulation

Northbrook Fleet Maintenance Garage

A. Administrative
   A1  Fleet Supervisor's Office
   A2  Administrative Clerk
   A3  Waiting Room
   A4  File Storage

B  Staff Support
   B1  Break/Meeting Room
   B2  Womens Locker Room
   B3  Mens Locker Room
   B4  Cold & Wet Weather Gear Storage

C  FMG Operations
   C1  Service Bay (Light Duty)
   C2  Service Bay (Medium Duty)
   C3  Service Bay (Heavy Duty)
   C4  Fabrication/Welding
   C5  Metal Storage & Shop Equipment

D  FMG Storarge
   D1  Tire Maintenance
   D2  Small Parts Storage
   D3  Large Parts Storage
   D4  Temporary Seasonal Equipment Storage
   D5  Electronics Recycling

E  Building Support
   E1  Janitor Closet
   E2  Mechanical / Electrical
   E3  Building Storage

Summary- Building Areas
As an introduction to the material that follows in this section, and as a preface to the Space Program for the Northbrook Fleet Maintenance Garage which is presented in this section of the report, a description of its formatting and the codes used follows.

**EXPLANATORY LEGEND**

<table>
<thead>
<tr>
<th>Comp. No.</th>
<th>Space Name/ Designation</th>
<th>STND</th>
<th>Unit/ NSF</th>
<th>Exist. SF</th>
<th>Staff #</th>
<th>Unit Code</th>
<th>Current Need SF</th>
<th>Staff #</th>
<th>Unit Code</th>
<th>10 Year SF</th>
<th>Staff #</th>
<th>Unit Code</th>
<th>20 Year SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Service Bay (Light Duty) SB-680</td>
<td>680</td>
<td>2,296</td>
<td>5</td>
<td>10</td>
<td>6,800</td>
<td>5</td>
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<td>6,800</td>
<td>5</td>
<td>10</td>
<td>6,800</td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Service Bay (Medium Duty) SB-1182</td>
<td>1182</td>
<td>1,516</td>
<td>2</td>
<td>2</td>
<td>2,364</td>
<td>2</td>
<td>2</td>
<td>2,364</td>
<td>2</td>
<td>2</td>
<td>2,364</td>
<td></td>
</tr>
<tr>
<td>C3</td>
<td>Service Bay (Heavy Duty - large scale) SB-1419</td>
<td>1419</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1,419</td>
<td>1</td>
<td>1</td>
<td>1,419</td>
<td>1</td>
<td>1</td>
<td>1,419</td>
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</tr>
<tr>
<td>C4</td>
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<td>583</td>
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<td>1</td>
<td>540</td>
<td>1</td>
<td>1</td>
<td>540</td>
<td>1</td>
<td>1</td>
<td>540</td>
<td></td>
</tr>
<tr>
<td>C5</td>
<td>Metal Storage &amp; Shop Equipment</td>
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<td>464</td>
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<td>1</td>
<td>450</td>
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<td>1</td>
<td>450</td>
<td>1</td>
<td>1</td>
<td>450</td>
<td></td>
</tr>
</tbody>
</table>

**Legend**

- **Comp. No.** Consultant Number used for component identification
- **STND** Space standard identification
- **Unit Net Square Feet** Usable Square Footage per component unit code
- **Current Need** Unit/# Number of component units currently needed.
  - Staff/# Number of staff currently needed.
  - SF: Total component square footage currently needed.
- **10 Year Need** Unit/# Number of component units currently needed in 10 years.
  - Staff/# Number of staff support needed in 10 years.
  - SF: Total component square footage needed in 10 years.
- **20 Year Need** Unit/# Number of component units currently needed in 20 years.
  - Staff/# Number of staff support needed in 20 years.
  - SF: Total component square footage needed in 20 years.
CIRCULATION FACTORS:

DEPARTMENTAL CIRCULATION FACTOR: Consists of space required for circulation within each Department or operational unit. (i.e. aisles between workstations). The total arrived by adding this factor equals NSF (net square feet). This factor varies by nature of size, number and type of space and is documented accordingly within the program. Example below:

Appears at each operational unit:

| C4 | Fabrication / Welding | S-540 |
| C5 | Metal Storage & Shop Equipment | 450 |
| Circulation Factor- 30% | 1892 |
| Total FMG Operations Areas: | 6,751 |

Note: The circulation factor will vary according to type of space and is reflected as such throughout the program. (ex. – Office space with numerous smaller areas requires a higher factor than a larger or more contiguous area such as storage)

BUILDING GROSSING FACTOR: Consists of a 30% allowance made up of the following:

- Building Circulation – 15%
- Building Envelope (walls) – 3%
- Building Mechanical/Electrical space – 10%
- Interior Construction – 2%
  (wall thicknesses, mech/electrical chase, structure)

The total arrived by adding this factor equals GSF (gross square feet)

Note – This factor is an allowance only. It has proven to be an accurate allowance for planning purposes however the design layout and specific equipment required will dictate the actual percentage. It is a goal in the design process to keep this number as minimal as possible. Example below:

Appears on the summary page:

| FMG Operations | 6,751 | 5 | 15,045 | 5 | 15,045 | 5 | 15,045 |
### A. Administration

<table>
<thead>
<tr>
<th>Comp. No.</th>
<th>Space Name/Designation</th>
<th>STND</th>
<th>Unit/ #</th>
<th>NSF</th>
<th>SF</th>
<th>Staff</th>
<th>Unit/ #</th>
<th>SF</th>
<th>Circulation Factor- 30%</th>
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</thead>
<tbody>
<tr>
<td>A1</td>
<td>Fleet Supervisor's Office</td>
<td>O-120</td>
<td>120</td>
<td>67</td>
<td>1</td>
<td>1</td>
<td>120</td>
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<tr>
<td>A2</td>
<td>Administrative Clerk</td>
<td>O-64</td>
<td>64</td>
<td>64</td>
<td>1</td>
<td>1</td>
<td>64</td>
<td>1</td>
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<tr>
<td>A3</td>
<td>Waiting Room</td>
<td>O-40</td>
<td>20</td>
<td>42</td>
<td>1</td>
<td>20</td>
<td>20</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>File Storage</td>
<td></td>
<td>20</td>
<td>20</td>
<td></td>
<td></td>
<td>20</td>
<td>1</td>
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</tr>
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</table>

**Total Administration Areas:**

293

### B. Staff Support

<table>
<thead>
<tr>
<th>Comp. No.</th>
<th>Space Name/Designation</th>
<th>STND</th>
<th>Unit/ #</th>
<th>NSF</th>
<th>SF</th>
<th>Staff</th>
<th>Unit/ #</th>
<th>SF</th>
<th>Circulation Factor- 30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Break/Meeting Rm</td>
<td>B-527</td>
<td>527</td>
<td>344</td>
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<tr>
<td>B2</td>
<td>Womens Locker / Toilet Rm</td>
<td>L-265</td>
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<td>265</td>
<td>265</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>B4</td>
<td>Mens Locker / Toilet Rm</td>
<td>L-265</td>
<td>265</td>
<td>235</td>
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<td>265</td>
<td>265</td>
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<tr>
<td>B5</td>
<td>Cold &amp; Wet Weather Gear Storage</td>
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</table>

**Total Staff Support Areas:**

929

### C. FMG Operations

<table>
<thead>
<tr>
<th>Comp. No.</th>
<th>Space Name/Designation</th>
<th>STND</th>
<th>Unit/ #</th>
<th>NSF</th>
<th>SF</th>
<th>Staff</th>
<th>Unit/ #</th>
<th>SF</th>
<th>Circulation Factor- 30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Service Bay (Light Duty)</td>
<td>SB-680</td>
<td>680</td>
<td>2,296</td>
<td>5</td>
<td>10</td>
<td>6,800</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>C2</td>
<td>Service Bay (Medium Duty)</td>
<td>SB-1182</td>
<td>1182</td>
<td>1,516</td>
<td>2</td>
<td>10</td>
<td>2,364</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>C3</td>
<td>Service Bay (Heavy Duty - large scale)</td>
<td>SB-1419</td>
<td>1419</td>
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<td>1</td>
<td>1,419</td>
<td>1</td>
<td>10</td>
<td>1,419</td>
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<tr>
<td>C4</td>
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<td>S-540</td>
<td>540</td>
<td>583</td>
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<td>540</td>
<td>1</td>
<td>540</td>
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</tr>
<tr>
<td>C5</td>
<td>Metal Storage &amp; Shop Equipment</td>
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<td>450</td>
<td>464</td>
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<td>450</td>
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</table>

**Total FMG Operations Areas:**

6,751

### D. FMG Storge

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<tr>
<th>Comp. No.</th>
<th>Space Name/Designation</th>
<th>STND</th>
<th>Unit/ #</th>
<th>NSF</th>
<th>SF</th>
<th>Staff</th>
<th>Unit/ #</th>
<th>SF</th>
<th>Circulation Factor- 30%</th>
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</thead>
<tbody>
<tr>
<td>D1</td>
<td>Tire Maintenance</td>
<td>S-384</td>
<td>383</td>
<td>533</td>
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<td>383</td>
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<td>383</td>
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<tr>
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<td>Small Parts Storage</td>
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<td>200</td>
<td>176</td>
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<td>200</td>
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<td>200</td>
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<tr>
<td>D4</td>
<td>Large Parts Storage</td>
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<td>2000</td>
<td>1,773</td>
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<td>2,000</td>
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<td>D5</td>
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**Total FMG Storage Areas:**

5,117

### E. Building Support

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<th>Unit/ #</th>
<th>NSF</th>
<th>SF</th>
<th>Staff</th>
<th>Unit/ #</th>
<th>SF</th>
<th>Circulation Factor- 30%</th>
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<tbody>
<tr>
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<td></td>
<td>50</td>
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<td>50</td>
<td>1</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>E2</td>
<td>Mechanical / Electrical</td>
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<td>140</td>
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<td>200</td>
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<tr>
<td>E3</td>
<td>Building Storage</td>
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<td>0</td>
<td>1</td>
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<td>E4</td>
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<td>1</td>
<td>100</td>
<td>1</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>E5</td>
<td>Parts Room Computer Station</td>
<td></td>
<td>50</td>
<td>0</td>
<td>1</td>
<td>50</td>
<td>1</td>
<td>50</td>
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**Total Building Support Areas:**

200

---

Healy, Bender & Associates, Inc. | Moyer Associates Inc.
### SUMMARY

<table>
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<th>Comp. No.</th>
<th>Space Name/ Designation</th>
<th>Exist.</th>
<th>Current Need</th>
<th>10 Year</th>
<th>20 Year</th>
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<td></td>
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<td>Staff</td>
<td>Unit/ STND</td>
</tr>
<tr>
<td>A</td>
<td>Administration</td>
<td>293</td>
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<td>291</td>
<td>2</td>
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<tr>
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<td>Staff Support</td>
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<td>1,439</td>
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<td>FMG Operations</td>
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<td>15,045</td>
<td>5</td>
</tr>
<tr>
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<td>E</td>
<td>Building Support</td>
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<td>650</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total GSF:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Staff:</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### F. Exterior Support

#### F1 Parking

| Staff Parking          | 200 | 7 | 1,400 | 7 | 1,400 | 7 | 1,400 |
| Visitor Parking        | 200 | 2 | 400   | 2 | 400   | 2 | 400   |
| Additional Required Parking | 200 | 11 | 2,200 | 11 | 2,200 | 11 | 2,200 |
| Secured Fleet Storage  | 200 | 5 | 1,000 | 5 | 1,000 | 5 | 1,000 |
| Exterior Tire Storage  |      |   | 500   |   | 500   |   | 500   |
| Circulation Factor- 50% |     |   | 2,750 |   | 2,750 |   | 2,750 |
| **Total Administration Areas:** | **8,250** | **8,250** | **8,250** | **8,250** |

#### F2 Support

| Trash / Recycling     | 120 | 1 | 120  | 1 | 120  | 1 | 120  |
| Loading Dock          | 265 | 1 | 265  | 1 | 265  | 1 | 265  |
| Generator             | 200 | 1 | 200  | 1 | 200  | 1 | 200  |
| Ground Mounted Utility Equipment | 300 | 1 | 300  | 1 | 300  | 1 | 300  |
| Circulation Factor- 10% |     |   | 310  |   | 310  |   | 310  |
| **Total Staff Support Areas:** | **1,195** | **1,195** | **1,195** | **1,195** |
4.0

Space Standards
In this section, Individual Space Standards are illustrated which describe assignable areas together with their furnishings and equipment capabilities.

In the development of the Northbrook Fleet Maintenance Garage Program, it was determined that similar work area requirements are needed for certain functions on a recurring basis throughout the different operation areas. Accordingly, a series of space standards are presented in this section which are utilized in the Space Tabulations section for similar staff work assignments throughout the FMG.

The Space standards which follow in this section have been prepared to accommodate Federal ADA (American With Disabilities Act) requirements and recognized professional requirements. Accordingly, they represent mandated minimums in certain of their dimensional tolerances.

Finally, the standards which follow present the more repeated types of spaces and do not attempt to depict every space that is described in the program. Various specialized space standards, however, are depicted.
Table of Contents:

Break Room & Locker Room

B/L-1: B-527, L-265

Office Work Area

O-1: O-64, O-120, O-40

Shop Space

S-1: S-540, S-384

Service/Maintenance Bay

SB-1: SB-680
SB-2: SB-1182, SB-1419
B-527
Designated Area:
Break Room
Net Square Feet: 527

L-265
Designated Area:
Womens & Mens Locker / Toilet Rooms
Net Square Feet: 265

Legend:
A..................................42x120 Table and Chairs
B..................................Refrigerator/Freezer
C..................................Upper Storage Cabinets
D..................................Base Cabinets
E..................................White Board/Screen/Tack Bd.
F..................................12x72 Metal Lockers
G..................................ADA Bench

Break Room & Toilet / Locker Room B/L-1
O-64
Designated Area:
Admin - Clerk
Net Square Feet: 64

O-120
Designated Area:
Admin - Fleet Supervisor
Net Square Feet: 120

O-40
Designated Area:
Admin - Waiting Area
Net Square Feet: 40

Legend:
A............................Undercounter Pedestal/File
B............................Under Counter Lateral File
C............................Overhead Shelving
D............................Guest Seating
E............................Wardrobe Closet
F............................Task Lighting
G............................White Board/Screen/Tack Board
H............................66" U-Shaped Work Area w/ Files
J............................Book Case
K............................36"W. Lateral File Cabinet
L............................Side Table

Office Work Area
O-1

Healy, Bender & Associates, Inc. | Moyer Associates Inc.
S-540
Designated Area:
Fabrication Shop
Net Square Feet: 540

S-384
Designated Area:
Tire Shop
Net Square Feet: 384

Legend:
A........................................30x72 Workbench
B........................................24x48 Mobile Tool Storage
C...............................24x48 Heavy Duty Storage Shelving
D........................................30x72 Welding Bench
E......................................Welding Equipment
F........................................Grinding
G......................... Overhead Shop Crane (1/2 ton)
H.........................16x92 (3) Tier Tire Shelving
J......................................Tire Equipment
SB-680

Designated Area:
Service Bay (Light Duty - Lift)
Service Bay (Light Duty - No Lift)
Change-Over Bay (Light Duty - No Lift)

Net Square Feet: 680

Legend:
A...................(2) Two Post Overhead Lift (12,000 lbs)
B........................Portable Column Lift (18,000 lbs)
C..................................30x72 Workbench
D.................................24x48 Mobile Tool Storage
E.............................24x48 Heavy Duty Storage Shelving
SB-1182
Designated Area:
Service Bay (Medium Duty - Lift)
Net Square Feet: 1,182

SB-1419
Designated Area:
Service Bay (Heavy Duty - Lift)
Net Square Feet: 1,419

Legend:
A..........................(2) Two Post Overhead Lift (12,000 lbs)
B.........................Portable Column Lift (18,000 lbs)
C........................................30x72 Workbench
D.................................24x48 Mobile Tool Storage
E..................................24x48 Heavy Duty Storage Shelving
5.0
Options
5.1 Introduction of Options

Following the development of the Space Needs Program for the Northbrook Fleet Maintenance Garage, together with completion of the Existing Facility Problems analysis, attention was turned to the options that could be considered to meet these needs.

Three final options are presented for consideration. They are:

**Option No. 1:**
Construct an addition immediately north of the existing FMG - Service Building #2 to supplement the existing operations and reorganize the existing facility to remedy the identified deficiencies.

**Option No. 2:**
Construct a new Northbrook Fleet Maintenance Garage at another location and demolish the existing facility and redevelop the land for additional Northbrook parking for the downtown business corridor.
During the analysis of the present Fleet Maintenance Garage operations at the 1227 Cedar Lane location, the following findings are pertinent to the facilities.

To maintain the Villages fleet in an organized and efficient manner, additional service bays would need to be added. The program identifies the need for three different service bays:

- **Heavy Duty** – which would accommodate the largest Village vehicles such as the fire department tower and ladder trucks with a head height of 24’ min. floor to underside of structure. This maintenance bay would utilize heavy duty (18,000 lbs.) individual mobile column lifts to service the vehicles. This allows for flexibility of the maintenance bay.

- **Medium Duty** – which would accommodate the large equipment that can be serviced with a head height of 20’ or lower. This maintenance bay would also utilize heavy duty (18,000 lbs.) individual mobile column lifts to service the vehicles. This allows for flexibility of the maintenance bay.

- **Light Duty** – which would accommodate the cars, trucks, and small equipment. This maintenance bay would utilize smaller two post overhead lifts (12,000 lbs.) to service the vehicles.

The existing Northbrook Fleet Maintenance Garage doesn’t have enough light duty service bays to allow the staff to efficiently maintain the fleet. Additionally, there are several maintenance bays that are being utilized for recycled materials and tire storage that could otherwise be used for vehicle maintenance which is the primary function of the facility. There isn’t a heavy-duty service bay in the existing facility.

The first finding in the assessment of Option One was that there would need to be a substantial addition to address the need for higher floor to structure clear heights for the Villages largest vehicles. The existing facility doesn’t have the minimum clearances to maintain these vehicles inside of the facility as detailed in the “Identified Problems” section of this report.
In addition, the existing FMG facility includes dysfunctional locations of various operational components. These problems are identified and described in the “Existing Facility Problems” section of the report. The overlapping operational areas, inefficient circulation patterns and remote parts storage have all contributed to the current inefficiencies. Beyond the work space day to day movement patterns there is a lack of sufficient service/maintenance space as described in the “Space Needs” sectional of this report.

Option 1 features a northward expansion behind the existing service building #2 and the reallocation of the existing space within the facility. The addition would be built with a 24’-0” minimum clear head height from the floor to the bottom of structure and will house a new heavy-duty service bay that the existing facility is lacking. Support, Parts, and storage spaces are relocated in this option to be more centrally located which will help with the operational efficiency. Existing space within the facility will be reorganized to provide code compliant toilet and locker room facilities for both men and women. This option is not without its challenges however, because there will need to be a reconfiguration of the parking lot to the west of the existing facility which will result in a loss of Village parking spaces.

Option 2 is the construction of a replacement fleet maintenance garage located at a different site. This option is contingent upon the identification of a suitable alternative location and its feasibility for acquisition. The replacement facility may utilize an open site or take advantage of existing shell warehouse space. It is likely that that a new location will involve a greater amount of new construction to accommodate operational and organizational efficiencies.
5.5 Overview of Option Benefits and Challenges

Option 1:
- Re-uses existing space, reducing the amount of new construction required.
- Requires no property acquisition.
- Requires shuffling of maintenance areas during construction.
- Achieves enhanced functional relationships of operational components.
- Achieves secured vehicle storage.
- Achieves dedicated areas for parts storage and shop spaces in centralized locations.
- Achieves additional services bays
- Achieves one service bay with higher ceiling heights to maintain larger vehicles inside the facility.
- Achieves the addition of adequate toilet and locker room facilities.

Option 2:
- Requires site acquisition (potentially offset by sale of existing site).
- Allows Fleet Maintenance Garage to remain operational in the existing building throughout the construction period.
- Allow for optimal space planning and open concept
6.0
Option - Diagram
7.0
Preliminary Cost Review
8.1 Introduction

At this early stage of project scope definition, detailed cost estimating is not feasible. However, a preliminary analysis can be developed which is based upon the use of cost-per-square foot allowances for the various categories of construction or renovation, and based upon cost experience in other similar projects.

Even under this procedure, no two projects are exactly the same in their complexity or other features. Other project cost experience is also influenced by the market conditions at the time it was bid, the volume of local construction activity affecting contractor interest and other factors.

Accordingly, the cost review for the Option 1 project scope for the Northbrook Fire Department facility is very preliminary. It uses cost-per-square-foot allowances for the proposed renovation of existing space at three different levels:

- Minor Renovation
- Moderate Renovation
- Major Renovation

It uses a different "average" cost-per-square-foot allowance for proposed new construction. A contingency allowance is added for project administrative costs, professional fees, FFE (Furniture, Fixtures and Equipment) and site development including landscaping.

The "square footage" calculations are based upon the Police space program presented in this report, combined with preliminary estimates of space needed for circulation (corridors), mechanical and other support space.

All of the above will be impacted by subsequent project development going forward, including decision-making by the Village of Northbrook concerning project features.
**7.1 Preliminary Cost Review**

**CALCULATION OF NEW & RENOVATED SPACES (SF) & COST SUMMARY**

<table>
<thead>
<tr>
<th>Area</th>
<th>MINOR RENOVATION</th>
<th>MODERATE RENOVATION</th>
<th>MAJOR RENOVATION</th>
<th>NEW CONSTRUCTION</th>
<th>SUBTOTALS</th>
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<td>Allowance</td>
<td>SP</td>
<td>Allowance</td>
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<td>Building/Maintenance</td>
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**Note:**
- Option 1: Includes the re-use of existing FG building including both Service Building #1 and Service Building #2.
- Option 1: On-site & Off-site grading, utilities, and storm water management costs have not been included in this estimate. Costs for an engineered solution will need to be added.

| **FLEET MAINTENANCE GARAGE - OPTION 2** | | | | | | |
| **TOTAL** | $10,000 | | | | | | |
| **Note:**
- Option 2: Requires acquisition of a site for a new Fleet Maintenance Garage.
- For the purposes of this review it was assumed that the new facility would be entirely new construction. The cost of a new site is not included in this review, nor to the re-deployment of the existing site to create additional Village parking or any revenue realized from a potential sale of the existing FG property.
- Option 2: On-site & Off-site grading, utilities, and storm water management costs for the new site have not been included in this estimate. Costs for an engineered solution will need to be added.