



Boscawen Fire Department

Boscawen, NH

Feasibility Study

August 12, 2021



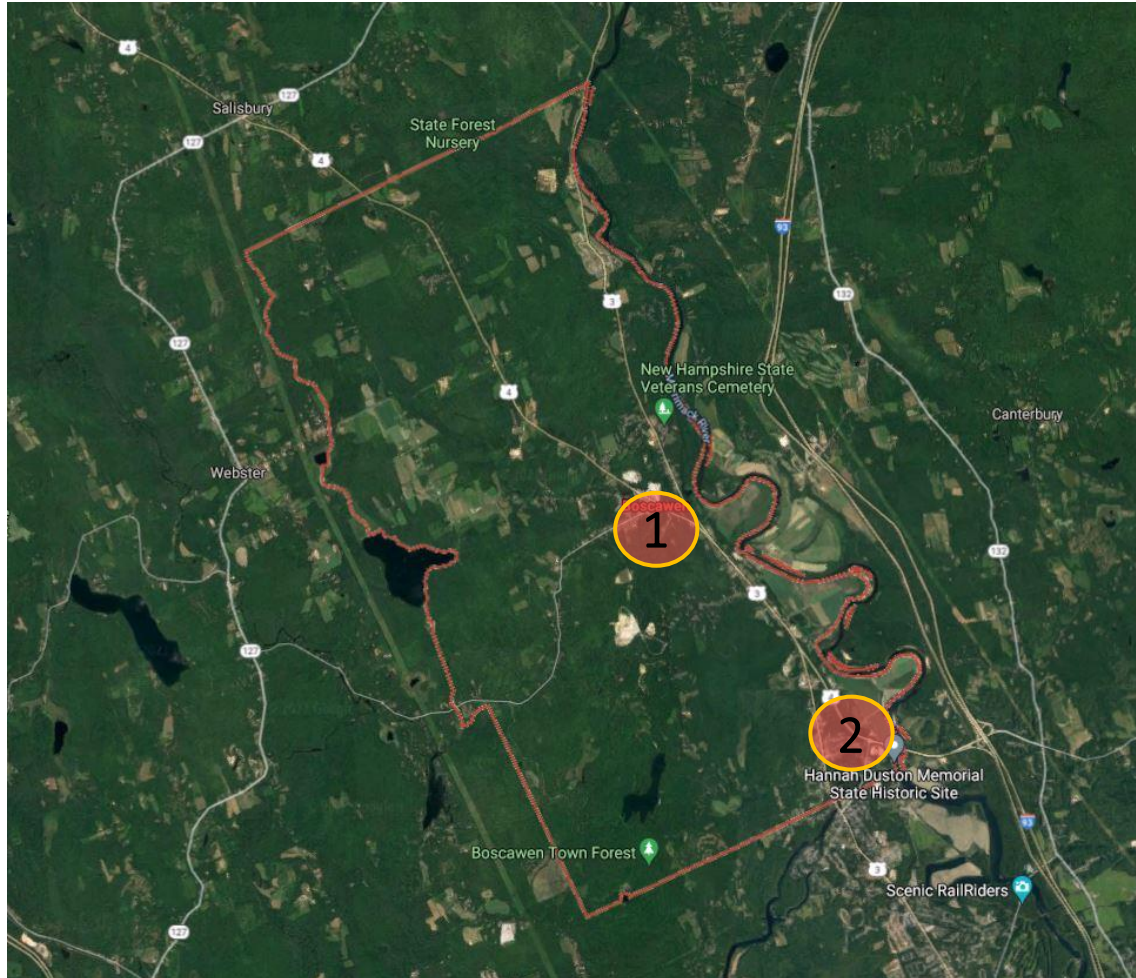
HARRIMAN

Project Goals

- 1 Review existing Fire Department facility and site conditions**
- 2 Determine Space Needs for Fire Department and Community Meeting Room**
- 3 Develop conceptual floor plans and site plan diagrams**
- 4 Create conceptual cost estimate**
- 5 Review concepts with the Town**

■ Current Conditions

The Town currently utilizes a central Fire Station to support operations of an all-volunteer Fire Department.



1. 15 High Street: Fire Department
2. 1 Oak Street: Penacook Rescue Squad (EMS)

Current Conditions

Assessment of the existing facility was formalized in a draft report



HARRIMAN

AUBURN

BOSTON

PORTLAND

PORTSMOUTH

www.harriman.com

TOWN OF BOSCAWEN
FIRE DEPARTMENT FACILITY AND SPACE NEEDS ASSESSMENT
Boscawen, New Hampshire
PROJECT # 20454

FEBRUARY 4, 2021

DRAFT FOR OWNER REVIEW



© 2021 Harriman



TOWN OF BOSCAWEN FIRE DEPARTMENT FACILITY AND SPACE NEEDS ASSESSMENT

EXECUTIVE SUMMARY

Introduction

The Town of Boscawen, New Hampshire hired Harriman to perform a facility assessment, space needs analysis, and develop conceptual design options of its Fire Department in November 2020. The facility assessment is a visual, non-invasive review of the current condition of each building and its site. The purpose, intent, and goals of the project are listed in italics below.

Purpose

To undertake an overall efficiency study on facility and space needs for its Fire Department administration, operations, equipment, and training. Work included evaluating one municipally owned building.

Intent

The primary intent is to conduct a Facility Needs Assessment Study to determine the physical condition and capacity of existing facilities. To assess whether existing facilities are adequate to provide a level of service within the Town. Adequacy is intended to be in line with generally accepted standards and "best practices," for modern day Firefighting services. A desired outcome is to be consistent with benchmarks for safety used by comparable Fire Departments in comparable communities.

Project Goals

The goals are to identify facility improvement and recommend strategies that result in the improvement of space utilization and occupant safety and comfort.

Project Background



Aerial Site Plan (N.T.S.) with Boscawen Fire Department marked with red pin

Page 1 of 6



Street

Currently, the Town's Fire Department is located in a residential area. The Town's Fire Department is currently located in a residential area. The Town's Fire Department is currently located in a residential area.

Area.

The Fire Department is currently located in a residential area. The Fire Department is currently located in a residential area. The Fire Department is currently located in a residential area.

Inspector and study. Some command of

coordinated response is required to the Merrimack

located in fire art areas do e informally

2 of 6



the Town.

clients with s of today's

ing of current consultants' spreadsheets and other site reviewed by, ment is all- e or career) The trend of e shift stems e are able to hybrid model del may not that design

provided if scawen FD. need to be

ents of the rations will Hampshire to parking, ins, vertical

the financial age of the house the ns such as rnot and Board of t the Fire

provided if firefighting operation,

performing efficiency, and poorly door energy

abilities to and facility

on (N.T.S.)

escent light res such as operational

municipal

reinforced

ctions are parking and

throughout

Department

emergency have space

4 of 6

of 6

of 6

of 6

■ Space Needs

Total square footage needed to support operational current and future operational program requirements

Summary FD Area Table	2020		2021				2026				2041			
	Current Staff	Current Area	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area (sq. ft.)	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area Sub-Total (sq. ft.)	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area Sub-Total (sq. ft.)
I. Administration		1,309				1,034				326				0
II. Communications		0												0
III. Day Space Areas		1,210				1,043				167				0
IV. Staff Quarters & Support		0												0
V. Stationhouse Operations		66												140
VI Apparatus & Vehicles		2,794				4,150				1,050				400
VII. Vehicle Maintenance		0				200				0				0
VIII. Training		0				140				0				0
Building Totals (Fire Department Only)														
(NSF) Sub Total All Areas:		5,379				7,341				2,446				540
Circulation and Walls:		1.17				1.40				1.40				1.40
(GSF) Total Space Needs:		6,274				10,277				3,424				756
IX Public		0				3,160				0				0
Building Totals														
(NSF) Sub Total All Areas:		5,379				10,501				2,446				540
Circulation and Walls:		2.00				1.40				1.40				1.40
(GSF) Total Space Needs:		10,755				14,701				3,424				756

Existing area supporting the Town's volunteer Fire Department needs

■ Space Needs

Total square footage needed to support operational current and future operational program requirements

Summary FD Area Table	2020		2021				2026				2041			
	Current Staff	Current Area	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area (sq. ft.)	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area Sub-Total (sq. ft.)	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area Sub-Total (sq. ft.)
I. Administration		1,309				1,034				326				0
II. Communications		0				0				0				0
III. Day Space Areas		1,210				1,043				0				0
IV. Staff Quarters & Support		0				0				0				0
V. Stationhouse Operations		66				774				140				140
VI Apparatus & Vehicles		2,794				4,150				400				400
VII. Vehicle Maintenance		0				200				0				0
VIII. Training		0				140				0				0
Building Totals (Fire Department Only)														
(NSF) Sub Total All Areas:	5,379					7,341				2,446				540
Circulation and Walls:	1.17					1.40				1.40				1.40
(GSF) Total Space Needs:	6,274					10,277				3,424				756
IX Public	0					3,160				0				0
Building Totals														
(NSF) Sub Total All Areas:	5,379					10,501				2,446				540
Circulation and Walls:	2.00					1.40				1.40				1.40
(GSF) Total Space Needs:	10,755					14,701				3,424				756

Area Needed to support the Town's current volunteer Fire Department

■ Space Needs

Total square footage needed to support operational current and future operational program requirements

Summary FD Area Table	2020		2021				2026				2041			
	Current Staff	Current Area	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area (sq. ft.)	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area Sub-Total (sq. ft.)	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area Sub-Total (sq. ft.)
I. Administration		1,309				1,034				326				0
II. Communications		0				0								0
III. Day Space Areas		1,210				1,043								0
IV. Staff Quarters & Support		0				0				830				0
V. Stationhouse Operations		66				774				168				140
VI Apparatus & Vehicles		2,794				4,150				1,058				400
VII. Vehicle Maintenance		0				200				0				0
VIII. Training		0				140				0				0
Building Totals (Fire Department Only)														
(NSF) Sub Total All Areas:		5,379				7,341				2,446				540
Circulation and Walls:		1.17				1.40				1.40				1.40
(GSF) Total Space Needs:		6,274				10,277				3,424				756
IX Public		0				3,160				0				0
Building Totals														
(NSF) Sub Total All Areas:		5,379				10,501				2,446				540
Circulation and Walls:		2.00				1.40				1.40				1.40
(GSF) Total Space Needs:		10,755				14,701				3,424				756

Area to support the Town's current and future Fire Department operations: assumes paid staff positions

■ Space Needs

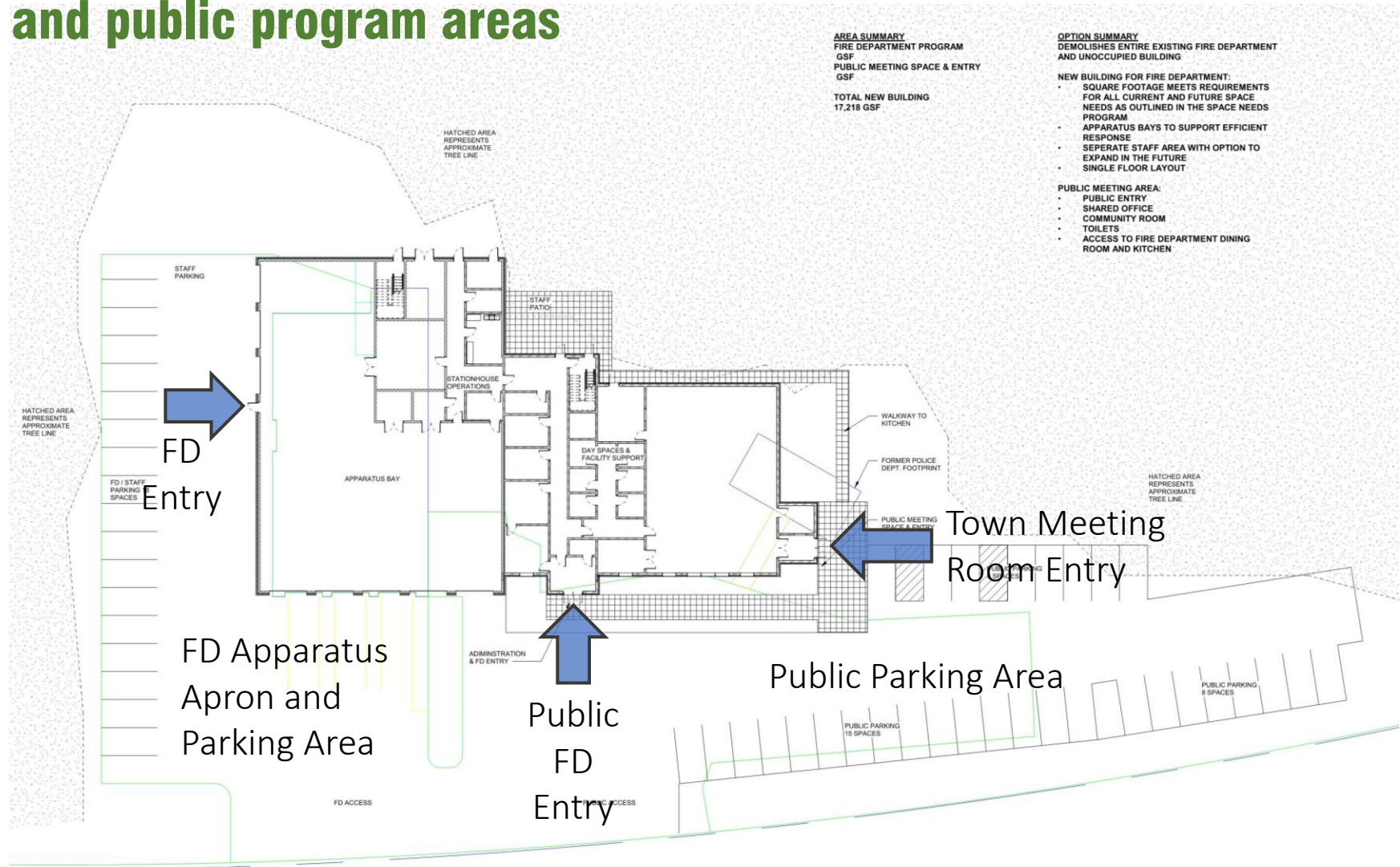
Total square footage needed to support operational current and future operational program requirements

Summary FD Area Table	2020		2021				2026				2041			
	Current Staff	Current Area	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area (sq. ft.)	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area Sub-Total (sq. ft.)	Staffing Projections	Total No. of Spaces	Area of Each Space (sq. ft.)	Net Area Sub-Total (sq. ft.)
I. Administration		1,309				1,034				326				0
II. Communications		0				0				0				0
III. Day Space Areas		1,210				1,043				72				0
IV. Staff Quarters & Support		0				0				830				0
V. Stationhouse Operations		66				774				168				140
VI Apparatus & Vehicles		2,794				4,150				1,550				400
VII. Vehicle Maintenance		0				200				0				0
VIII. Training		0				140				0				0
Building Totals (Fire Department Only)														
(NSF) Sub Total All Areas:	5,379					7,341				2,446				540
Circulation and Walls:	1.17					1.40				1.40				1.40
(GSF) Total Space Needs:	6,274					10,277				3,424				756
IX Public		0				3,160				0				0
Building Totals														
(NSF) Sub Total All Areas:	5,379					10,501				2,446				540
Circulation and Walls:	2.00					1.40				1.40				1.40
(GSF) Total Space Needs:	10,755					14,701				3,424				756

Area Needed to support the Town's Fire Department and Town meeting space

Conceptual Site Plan Diagram

Site Layout works with existing constraints, safely separates FD and public program areas



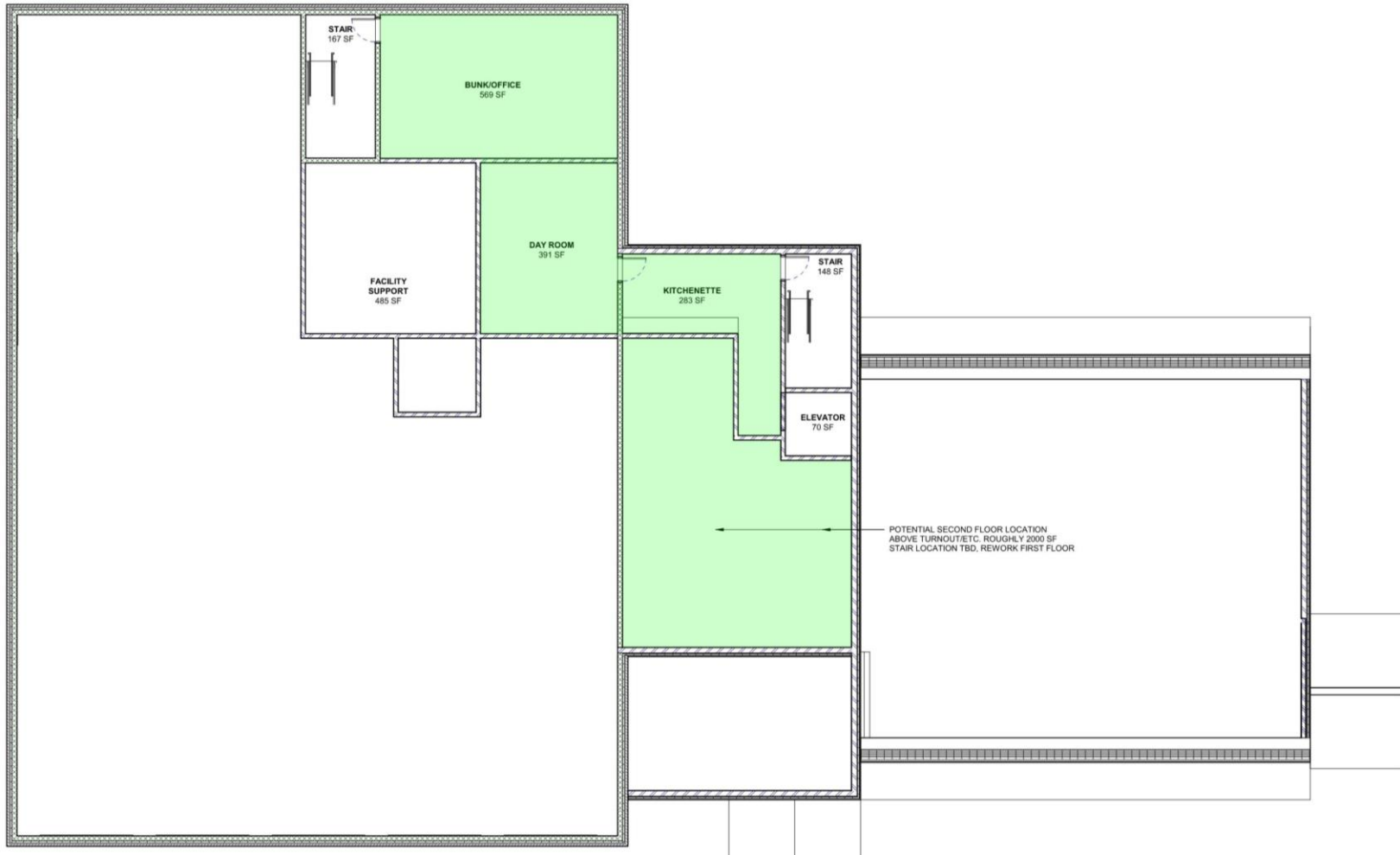
Conceptual Floor Plans

Ground Floor includes Apparatus Bay, Station Operations, Administration, and Community Meeting spaces



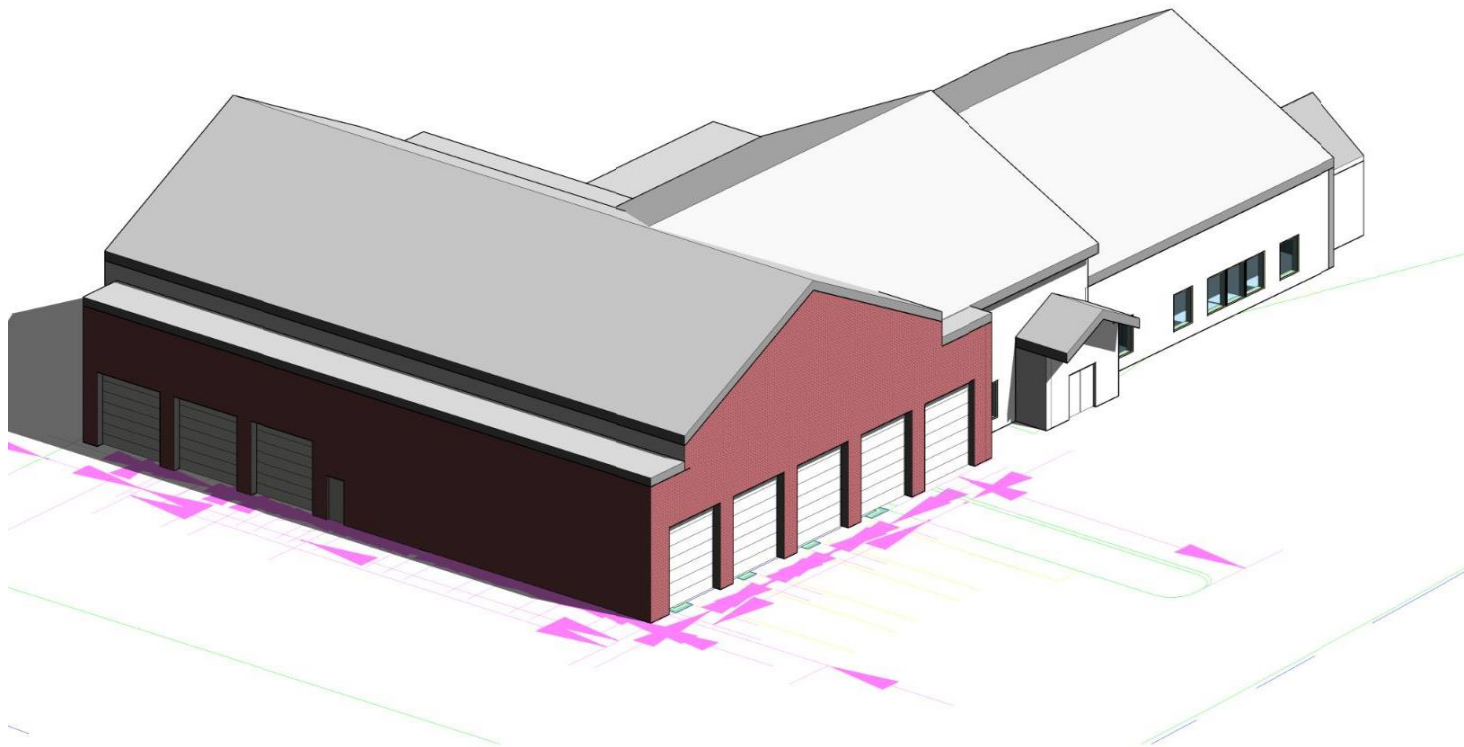
■ Conceptual Floor Plans

Second Floor includes Day Room, Bunking, and other Offices spaces



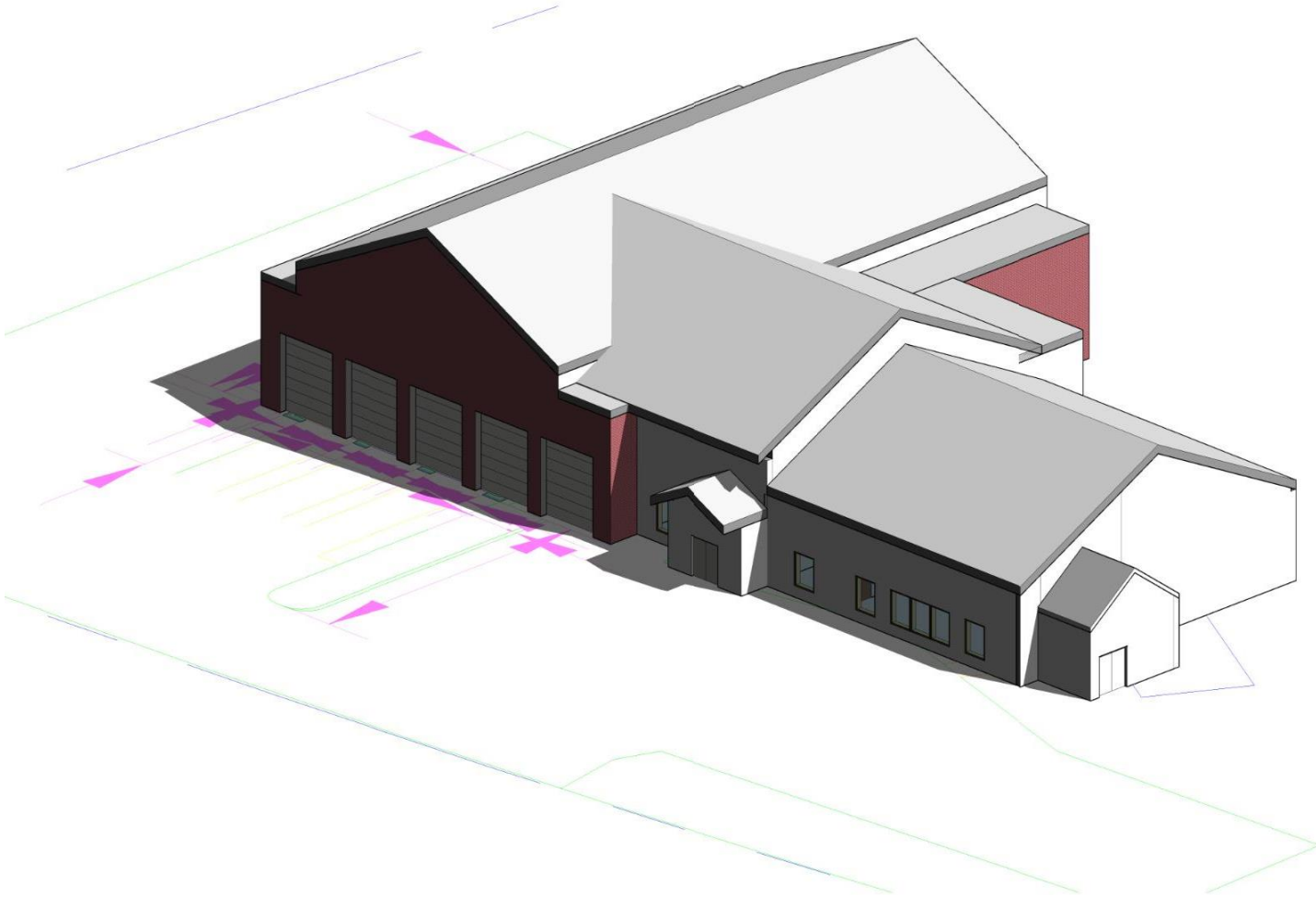
■ Conceptual Massing Studies

Brick Apparatus Bay and siding on 1-story volumes



■ Conceptual Massing Studies

Brick Apparatus Bay and siding on 1-story volumes



Cost Modeling-FD Only

Order of Magnitude estimate includes total project cost

I. Construction	Option 1			Option 2			Option 3-New Only			Option 4-2-Story New		
	Concise Option 2-2-21			Concise Option 2-2-21			Concise Option 4-8-21			Concise Option 5-18-21		
	12,415 sf			10,068 sf			12,243 sf			12,784 sf		
Notes	Reuse bldg. Small Addition to Apparatus Bay, Small Addition to FD			Reuse bldg. Apparatus Bay remains the same, Small Addition to FD			Remove bldg. 6 Apparatus Bays, 1 Story New Bldg			Remove bldg. 5 Apparatus Bays, 2 Story New Bldg		
Construction Cost	Area	Cost/SF	Cost	Area	Cost/SF	Cost	Area	Cost/SF	Cost	Area	Cost/SF	Cost
Demolition Former Police Building	718	\$ 10.00	7,180	718	\$ 10.00	7,180	718	\$ 10.00	7,180	718	\$ 10.00	7,180
Demolition (Original 1st floor)	2,980	\$ 3.50	10,430	2,980	\$ 3.50	10,430	2,980	\$ 9.00	26,820	2,980	\$ 9.00	26,820
Demolition (Addition basement)	700	\$ 3.50	2,450	700	\$ 3.50	2,450	700	\$ 10.00	7,000	700	\$ 10.00	7,000
Demolition (Addition 1st floor)	1,723	\$ 6.50	11,200	1,723	\$ 6.50	11,200	1,723	\$ 9.00	15,507	1,723	\$ 9.00	15,507
Demolition (Addition 2nd floor)	1,575	\$ 6.50	10,238	1,575	\$ 6.50	10,238	1,575	\$ 9.00	14,175	1,575	\$ 9.00	14,175
Exterior Fire Escape			1,000			1,000						
Demolition Total	7,696		42,497	7,696		42,497	7,696		70,682	7,696		70,682
Renovation: Original (1st Floor)	2,980	\$ 80	238,400	2,980	\$ 80	238,400	0	\$ 80	0	0	\$ 80	0
Arch + Mech + Elec (new people doors, no new apparatus doors)												
Renovation: Addition (1st Floor)	1,723	\$ 125	215,375	1,723	\$ 125	215,375	0	\$ 125	0	0	\$ 125	0
Code required Kitchen upgrades:vents & ADA												
Renovation: Addition (2nd Floor)	1,575	\$ 85	133,875	1,575	\$ 85	133,875	0	\$ 85	0	0	\$ 85	0
New partitions-all trades												
Renovation Total	6,278		587,650	6,278		587,650	0		0	0		0
New Construction (1st floor FD apparatus bay)	2,350	\$ 275	646,250	0	\$ 275		6,200	\$ 255	1,581,000	6,000	\$ 255	1,530,000
New Construction (1st floor FD)	2,040	\$ 290	591,600	2,040	\$ 290	591,600	6,043	\$ 300	1,812,900	4,626	\$ 300	1,387,800
New Construction (2nd floor FD)	1,750	\$ 205	358,750	1,750	\$ 205	358,750	0	\$ 300	0	2,156	\$ 300	647,400
New Construction (1st floor Community Spaces)	0	\$ 260	0	0	\$ 260	0	0	\$ 260	0	0	\$ 260	0
New Construction Total	6,140		1,596,600	3,790		950,350	12,243		3,393,900	12,784		3,565,200
Total All Building Construction	12,416		2,226,747	10,068		1,580,497	12,243		3,464,582	12,784		3,635,882
Phasing Costs			0			0			0			0
Site			500,000			400,000			785,000			785,000
Total Revised Project Construction Subtotal			2,726,747			1,980,497			4,249,582			4,420,882
Overhead and Profit (6%)			163,605			118,830			254,975			265,253
Building Construction Subtotal			2,890,352			2,099,327			4,504,557			4,686,135
Bond and Insurance (2%)			57,807			41,967			90,091			93,723
Building Construction Subtotal			2,948,159			2,141,313			4,594,648			4,779,858
April 2022 Construction Start: Escalation 9%			265,334			192,718			413,518			430,187
CONSTRUCTION TOTAL	\$/SF	\$ 258.78	\$3,213,493	\$/SF	\$ 231.83	\$2,334,032	\$/SF	\$ 409.06	\$5,008,166	\$/SF	\$ 407.54	\$5,210,045

■ Cost Modeling-FD Only

Order of Magnitude estimate includes total project cost

CONSTRUCTION TOTAL	\$/SF \$ 258.78	\$3,213,493	\$/SF \$ 231.83	\$2,334,032	\$/SF \$ 409.06	\$5,008,166	\$/SF \$ 407.54	\$5,210,045
II. Administrative Cost & Reserve								
Land		0		0		0		0
FF&E (budget to be confirmed)		100,000		90,000		100,000		100,000
Technology Infrastructure (budget)		30,000		30,000		30,000		30,000
Advertising/Printing		5,000		5,000		5,000		5,000
Insurance/Legal		5,000		5,000		5,000		5,000
Bid Contingency (5% New, 7.5% Reno)	7.5%	241,012	7.5%	175,052	5.0%	250,408	5.0%	260,502
Construction Contingency (5% New, 7.5% Reno)	7.5%	241,012	7.5%	175,052	5.0%	250,408	5.0%	260,502
TOTAL		\$622,024		\$480,105		\$640,817		\$661,004
III Fees & Services								
Total Basic Services Harriman	10.2%	352,360	10.3%	258,436	8.7%	457,496	8.7%	475,938
FF&E Fee and Technology Infrastructure	10.2%	\$ 13,260	10.3%	\$ 12,360	8.7%	\$ 11,310	8.7%	\$ 11,310
TEL / Data Design (Incl. in construction scope)		0		0		0		0
Fee for Planning Board Permitting (as required)		10,000		10,000		10,000		10,000
Harriman Reimbursable	3.0%	10,571	3.0%	7,753	3.0%	13,725	3.0%	14,278
Survey/Soils/Borings		12,000		12,000		18,000		18,000
Clerk Fee (clarify if needed)		0		0		0		0
Special Inspections		8,000		6,000		12,000		12,000
Cost Estimating		12,000		12,000		12,000		12,000
Commissioning		6,000		6,000		6,000		6,000
Misc Fees and Expenses		20,000		20,000		20,000		20,000
Testing and Balancing		25,000		18,000		50,000		50,000
TOTAL		\$469,190		\$362,549		\$610,531		\$629,526
Total Project Cost (FD Only)		\$4,304,707		\$3,176,685		\$6,259,514		\$6,500,575

Cost Modeling-FD & Community Mtg

Order of Magnitude estimate includes total project cost

I. Construction	Option 1 <u>Concort Option 2-2-21</u> 15,953 sf			Option 2 <u>Concort Option 2-2-21</u> 13,603 sf			Option 3-New Only <u>Concort Option 4-8-21</u> 16,543 sf			Option 4-2-Story New <u>Concort Option 5-18-21</u> 16,969 sf		
Notes	Reuse bldg. Apparatus Bay remains the same, Small Addition to FD			Reuse bldg. Addition to Apparatus Bay, Small Addition to FD			Remove bldg. 6 Apparatus Bays, 1 Story New Bldg			Remove bldg. 5 Apparatus Bays, 2 Story New Bldg		
Construction Cost	Area	Cost/SF	Cost	Area	Cost/SF	Cost	Area	Cost/SF	Cost	Area	Cost/SF	Cost
Demolition Former Police Building	718	\$ 10.00	7,180	718	\$ 10.00	7,180	718	\$ 10.00	7,180	718	\$ 10.00	7,180
Demolition (Original 1st floor)	2,980	\$ 3.50	10,430	2,980	\$ 3.50	10,430	2,980	\$ 9.00	26,820	2,980	\$ 9.00	26,820
Demolition (Addition basement)	700	\$ 3.50	2,450	700	\$ 3.50	2,450	700	\$ 10.00	7,000	700	\$ 10.00	7,000
Demolition (Addition 1st floor)	1,723	\$ 6.50	11,200	1,723	\$ 6.50	11,200	1,723	\$ 9.00	15,507	1,723	\$ 9.00	15,507
Demolition (Addition 2nd floor)	1,575	\$ 6.50	10,238	1,575	\$ 6.50	10,238	1,575	\$ 9.00	14,175	1,575	\$ 9.00	14,175
Exterior Fire Escape			1,000			1,000						
Demolition Total	7,696		42,497	7,696		42,497	7,696		70,682	7,696		70,682
Renovation: Original (1st Floor)	2,980	\$ 80	238,400	2,980	\$ 80	238,400	0	\$ 80	0	0	\$ 80	0
Arch + Mech + Elec (new people doors, no new apparatus doors)												
Renovation: Addition (1st Floor)	1,723	\$ 125	215,375	1,723	\$ 125	215,375	0	\$ 125	0	0	\$ 125	0
Code required Kitchen upgrades:vents & ADA												
Renovation: Addition (2nd Floor)	1,575	\$ 85	133,875	1,575	\$ 85	133,875	0	\$ 85	0	0	\$ 85	0
New partitions-all trades												
Renovation Total	6,278		587,650	6,278		587,650	0		0	0		0
New Construction (1st floor FD apparatus bay)	2,350	\$ 275	646,250	0	\$ 275		6,200	\$ 255	1,581,000	6,000	\$ 255	1,530,000
New Construction (1st floor FD)	2,040	\$ 290	591,600	2,040	\$ 290	591,600	6,043	\$ 300	1,812,900	4,626	\$ 300	1,387,800
New Construction (2nd floor FD)	1,750	\$ 205	358,750	1,750	\$ 205	358,750	0	\$ 300	0	2,158	\$ 300	647,400
New Construction (1st floor Community Spaces)	3,935	\$ 260	919,100	3,935	\$ 260	919,100	4,300	\$ 260	1,118,000	4,185	\$ 260	1,088,100
New Construction Total	9,675		2,515,700	7,325		1,869,450	16,543		4,511,900	16,969		4,653,300
Total All Building Construction	15,953		3,145,847	13,603		2,499,597	16,543		4,582,582	16,969		4,723,982
Phasing Costs			0			0			0			0
Site			500,000			400,000			785,000			785,000
Total Revised Project Construction Subtotal			3,645,847			2,899,597			5,367,582			5,508,982
Overhead and Profit (6%)			218,751			173,976			322,055			330,539
Building Construction Subtotal			3,864,598			3,073,573			5,689,637			5,839,521
Bond and Insurance (2%)			77,292			61,471			113,793			116,790
Building Construction Subtotal			3,941,890			3,135,044			5,803,430			5,956,311
April 2022 Construction Start: Escalation 9%			354,770			282,154			522,309			536,068
CONSTRUCTION TOTAL	\$/SF \$ 269.33		\$4,296,660	\$/SF \$ 251.21		\$3,417,198	\$/SF \$ 382.38		\$6,325,738	\$/SF \$ 382.60		\$6,492,379

■ Cost Modeling-FD & Community Mtg

Order of Magnitude estimate includes total project cost

CONSTRUCTION TOTAL	\$/SF	\$ 269.33	\$4,296,660	\$/SF	\$ 251.21	\$3,417,198	\$/SF	\$ 382.38	\$6,325,738	\$/SF	\$ 382.60	\$6,492,379
II. Administrative Cost & Reserve												
Land			0			0			0			0
FF&E (budget to be confirmed)			100,000			90,000			100,000			100,000
Technology Infrastructure (budget)			30,000			30,000			30,000			30,000
Advertising/Printing			5,000			5,000			5,000			5,000
Insurance/Legal			5,000			5,000			5,000			5,000
Bid Contingency (5% New, 7.5% Reno)	7.5%		322,249	7.5%		256,290	5.0%		316,287	5.0%		324,619
Construction Contingency (5% New, 7.5% Reno)	7.5%		322,249	7.5%		256,290	5.0%		316,287	5.0%		324,619
TOTAL			\$784,499			\$642,580			\$772,574			\$789,238
III Fees & Services												
Total Basic Services Harriman	10.2%		471,129	10.3%		378,369	8.7%		577,856	8.7%		593,079
FF&E Fee and Technology Infrastructure	10.2%	\$	13,260	10.3%	\$	12,360	8.7%	\$	11,310	8.7%	\$	11,310
TEL / Data Design (Incl. in construction scope)			0			0			0			0
Fee for Planning Board Permitting (as required)			10,000			10,000			10,000			10,000
Harriman Reimbursable	3.0%		14,134	3.0%		11,351	3.0%		17,336	3.0%		17,792
Survey/Soils/Borings			12,000			12,000			18,000			18,000
Clerk Fee (clarify if needed)			0			0			0			0
Special Inspections			8,000			8,000			12,000			12,000
Cost Estimating			12,000			12,000			12,000			12,000
Commissioning			6,000			6,000			6,000			6,000
Misc Fees and Expenses			20,000			20,000			20,000			20,000
Testing and Balancing			25,000			18,000			50,000			50,000
TOTAL			\$591,523			\$486,080			\$734,502			\$750,181
Total Project Cost			\$5,672,681			\$4,545,858			\$7,832,814			\$8,031,799

Questions