City of Maplewood

EMS/ Fire Department
Space Needs Assessment

Final Report
Maplewood, Minnesota
Completed March 2020

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PLANNERS
ARCHITECTS
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Section 1: Introduction

Wold Architects and Engineers are pleased to submit to the Maplewood EMS/ Fire Department, the 2019-2020 Space Needs Assessment.

We wish to thank the Maplewood EMS/ Fire Department for their efforts in providing the Wold Team with the information necessary to complete this report in a timely fashion, as well as the Maplewood City Council for their consideration of the needs identified herein.

Maplewood City Council

Marylee Abrams	Mayor
Kathleen Juenemann	Council Member
Bill Knutson	Council Member
Sylvia Neblett	Council Member
Bryan Smith	Council Member

Core Group Committee

Scott Nadeau	Public Safety Chief
Michael Mondor	EMS Chief
Steve Lukin	Fire Chief
Shawn Conway	Battalion Chief

Section 2: Executive Summary

The purpose of this needs assessment included building programming, conceptual studies, project scheduling and preliminary budget for the consolidation of two existing fire stations. This assessment and recommendation will allow the City to begin developing a more specific strategy and timeline for the replacement and consolidation of fire stations.

Section 3: Supporting Information

a. Study Methodology

To arrive at the recommendations included in this report, extensive meetings and discussions occurred between the Wold team, the Core Planning Group and EMS/ Fire Department Staff. This effort included focus group interviews, information gathering, and touring recently constructed facilities. We asked the department to review staffing numbers and to project the number of staff needed to effectively and efficiently provide service to the community in the future.

To assist in determining operational efficiency and future need, the Core Planning Group studied the following:

Current and Future Operations
- Analysis of current operations
- Focus group interviews
- Projection of operational opportunities

Growth Needs Analysis
- Review and approval of projected growth needs
- Exploration of space deficiencies

Program
- Development of a program of spaces
- Refinement of basic program needs
- Discussion of standardizing workstation and office sizes

Tours
- Observation of relevant recent Fire projects, including:
  - » Cottage Grove Central Fire Station
  - » Stillwater Fire Station
  - » Richfield Fire Station
  - » Roseville Fire Station

b. Principles, Goals and Objectives

The following Principles, Goals and Objectives were discussed and agreed on by the Core Planning Team as for the Space Needs Assessment

Guiding Principles

1. Focus on Function & Operations:
    a. The facility should strive to be safe for staff, but also be open and publicly welcoming.
    b. The facility should promote the health, safety, and wellness of staff members.
2. Sustainability (Long Term Use):
    a. Plan for common sense sustainable approaches for buildings and operations.
    b. Materials should have longevity.
3. Community Pride
    a. The facility should display and reflect the history of the Department in the Community.
    b. The facility should adhere to the context of the neighborhood while being cognizant of the ongoing shift from residential.

Project Goals

1. Accommodate growth in the Department for 20+ years.
2. Provide clear separation between public and private spaces.
3. Accommodate historic displays in the lobby.
4. Provide for an EOC in Fire facility.
5. Promote best practice routines for firefighter health, safety and wellness.

Section 4: Space Standards

The following Space Standards based on job classification were discussed and deemed acceptable by the Core Planning Team. In the modern work environment, the need for space has decreased as technology and digital file storage has increased. Workstations are more efficient and allow for more collaborative and interactive functions that also create buffers between departments.

OFFICES

Chief	180 sq. ft. to 225 sq. ft.
Battalion Chief	150 sq. ft. to 180 sq. ft.

Open Office Employees

Administrative	8'x6' workstation
Line	7'x6' workstation
Flexible/ Intern	6'x6' workstation

SUPPORT AND MEETING ROOMS

Small Meeting Room	150 sq. ft. (3-4 people)
Medium Meeting Room	250 sq. ft. (5-8 people)
Large Meeting Room	500 sq. ft. (10-15 people)
Training Room	1,500 sq. ft. to 2,000 sq. ft. (50 to 90 persons)

These space standards were used as the basis for the Department's space planning program.

Section 5: Program Summary

Utilizing staffing projections, spaces needed to support EMS/ Fire Department operations were developed and reviewed with the Core Group Committee. The following pages summarize and then detail room by room the space needs generated to allow EMS/ Fire Department to operate effectively both today and into the foreseeable future.

The net space requirement for each program area was increased by a factor of 1.4 in areas that were occupied mostly by live/ work functions and 1.15 for vehicle storage to allow for circulation, walls, and common space. The total building square footage was increased by a factor of 1.25 to allow for exterior walls, public hallways, restrooms and mechanical spaces. See Appendix a for the complete Space Program.

	Pre-Planning			Recommended		
New EMS/ Fire Station	**Staff**	**Program**		**Staff**	**Program**	
Public/ Support Space	-	5,110	SF	-	4,480	SF
Command	5	708	SF	5	907	SF
Fire Staff	11+	972	SF	11+	944	SF
Dorms & Living	8	5,642	SF	8	5,509	SF
Apparatus Support	-	6,650	SF	-	4,830	SF
Vehicle Storage	-	8,016	SF	-	7,383	SF
Total Net Square Footage	**24+**	**27,380**	**SF**	**24+**	**24,053**	**SF**
Building Net to Gross Factor	x	1.25		x	1.25	
Total Building Area		**34,225**	**SF**		**30,066**	**SF**

Section 6: Recommendation

Through discussions with the Core Planning Group, a recommendation was developed to meet the needs of the Department for the next 20 years. The group considered the following when determining need:

- City population growth
- Staffing projections
- Changing demographics
- Technology
- Service delivery model
- Expandability of site

The final solution consists of a new 30,066 SF EMS/ Fire Station. The proposed station is located at 1530 County Road C E, a site currently owned by the Department, and the existing location of Fire Station #3. The new facility would be built in place of the existing facility, and would utilize the same emergency response and return routes. Design consideration was lent to the surrounding residential occupants, resulting in a solution that retains much of the natural buffer areas that are present today.

The proposed station gives the Department the opportunity consolidate functions, replacing two of the City's outdated and deteriorating stations. Some of the design considerations include adequate space for current and future apparatus, proper housing quarters for current and future full-time staff members, a large training room open to all city organizations, and the promotion of fire fighter health and safety through delineation of hazard zones and proper decontamination strategies.

a. Proposed EMS/ Fire Station Plan

b. Budget Estimate

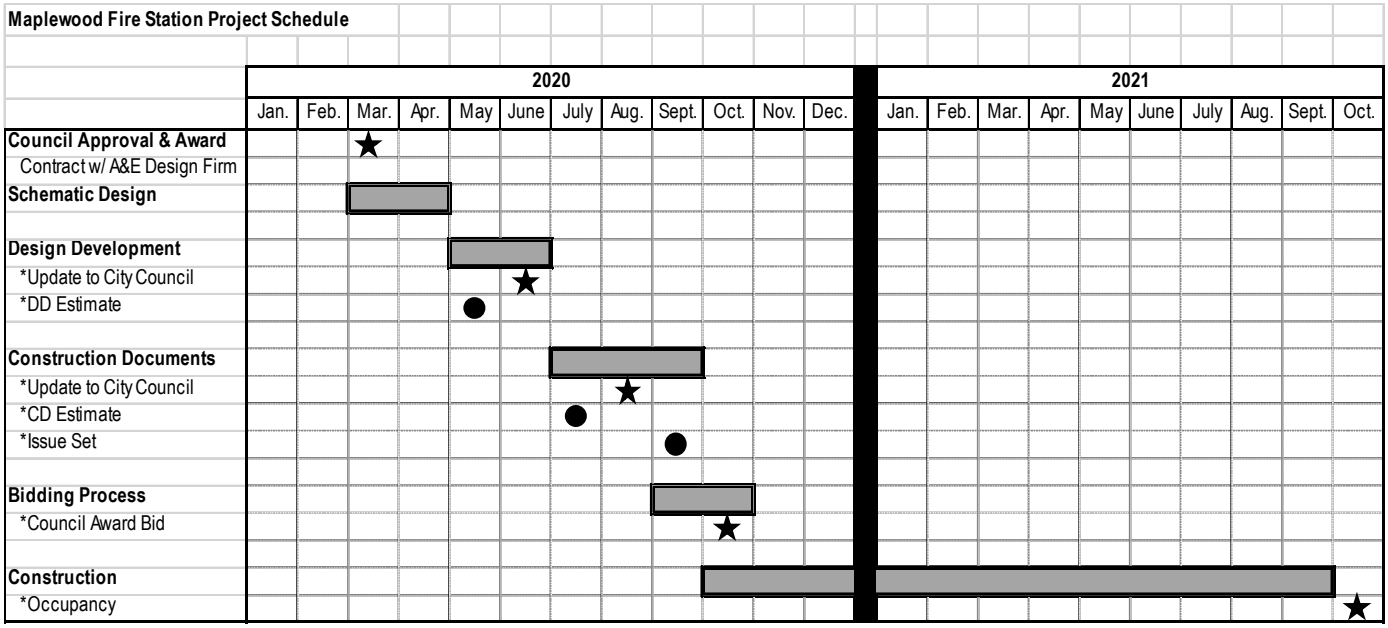
New EMS/ Fire Station

New Construction (30,000 S.F. x $275/S.F.)	$ 8,200,000
Building Demolition ($ 75,000 Allowance)	$ 75,000
Total Construction Cost	$ 8,275,000
Project Cost Multiplier	x 1.29
(Fees, Testing, Contingencies, Furniture & Equipment)	
Total Project Cost	**$ 10,700,000**

* All numbers assume 2020 construction dollars and would have to be inflated by 4-5% annually.

c. Project Schedule

The following proposed project schedule was discussed and agreed on by the Core Planning Team as for the design and construction or a new EMS/ Fire Facility



Appendix A: Space Program

Space Program

	Pre-Planning		Recommended	
	Staff	Program	Staff	Program
Support				
Public Lobby	-	600 s.f.	-	500 s.f.
Conference Room (3-4 people) (Health & Wellness)	-	150 s.f.	-	150 s.f.
Training Room (50-90 people)	-	1,500 s.f.	-	1,200 s.f.
EMS Training	-	350 s.f.	-	350 s.f.
Exam Room	-	150 s.f.	-	100 s.f.
Toilet/Shower	-	100 s.f.	-	100 s.f.
Fitness Room	-	800 s.f.	-	800 s.f.
Subtotal Support	**-**	**3,650 s.f.**	**-**	**3,200 s.f.**
Department Net to Gross Factor	x	1.40	x	1.40
Total Gross Square Footage Support		**5,110 s.f.**		**4,480 s.f.**
Command				
Office	1	180 s.f.	1	150 s.f.
Office	1	180 s.f.	1	150 s.f.
Office	1	150 s.f.	1	150 s.f.
Office	1	150 s.f.	1	150 s.f.
Administrative Assistant	1	48 s.f.	1	48 s.f.
Subtotal Command	**5**	**708 s.f.**	**5**	**648 s.f.**
Department Net to Gross Factor	x	1.40	x	1.40
Total Gross Square Footage Command		**991 s.f.**		**907 s.f.**
Fire Staff				
Watch Command Office	1	150 s.f.	1	130 s.f.
Line Staff Open Office Shared workstations (5 @ 42 s.f. + 2 Future)	10+	294 s.f.	10+	294 s.f.
Conference Room (5-8 people)	-	250 s.f.	-	250 s.f.
Subtotal Fire Staff	**11+**	**694 s.f.**	**11+**	**674 s.f.**
Department Net to Gross Factor	x	1.40	x	1.40
Total Gross Square Footage Fire Staff		**972 s.f.**		**944 s.f.**
Dorms & Living				
Dorm Rooms (7 @ 130 s.f., 1 @ 180 s.f.)	8	1,060 s.f.	8	1,090 s.f.
Living	-	800 s.f.	-	700 s.f.
Dining Room	-	600 s.f.	-	600 s.f.
Kitchen	-	500 s.f.	-	500 s.f.
Shower Rooms (4 @ 100 s.f.)	-	400 s.f.	-	400 s.f.
Laundry Room	-	150 s.f.	-	125 s.f.
Storage	-	130 s.f.	-	130 s.f.
Library/ Study (3 @ 130 s.f.)	-	390 s.f.	-	390 s.f.
Subtotal Dorm/Living	**8**	**4,030 s.f.**	**8**	**3,935 s.f.**
Department Net to Gross Factor	x	1.40	x	1.40
Total Gross Square Footage Dorm/Living		**5,642 s.f.**		**5,509 s.f.**

Space Program

		Pre-Planning Staff	Pre-Planning Program	Recommended Staff	Recommended Program
Apparatus Support					
Tool Room		-	100 s.f.	-	100 s.f.
Gear Room (70 Jumbo Lockers @ 24")		-	650 s.f.	-	650 s.f.
General Storage		-	300 s.f.	-	300 s.f.
EMS Storage		-	400 s.f.	-	400 s.f.
SCBA/ Workroom		-	300 s.f.	-	300 s.f.
Gear Wash & Dry (incl. hose)		-	300 s.f.	-	500 s.f.
Decontamination (Showers)/ Lockers		-	800 s.f.	-	500 s.f.
Emergency Equipment			200 s.f.		200 s.f.
Mezzanine Storage		-	1,700 s.f.	-	500 s.f.
Subtotal Apparatus Support		-	**4,750 s.f.**	-	**3,450 s.f.**
Department Net to Gross Factor		x	1.40 s.f.	x	1.40 s.f.
Total Gross Square Footage Apparatus Support			**6,650 s.f.**		**4,830 s.f.**
Vehicle Storage					
Drive-Thru 1					
(Medic 22′-9″ x 9′-7″)(18'x30' bay)	218 s.f.	-	540 s.f.	-	540 s.f.
Drive-Thru 2					
(Medic 22′-9″ x 9′-7″)(18'x30' bay)	218 s.f.	-	540 s.f.	-	540 s.f.
Drive-Thru 3					
(Spare Medic 22′-9″ x 9′-7″)(18'x30' bay)	218 s.f.	-	540 s.f.	-	540 s.f.
Drive-Thru 4					
(Engine 35′-3″ x 8′-9.5″)(18'x50' bay)	312 s.f.	-	900 s.f.	-	900 s.f.
Drive-Thru 5					
(Spare Engine 37′-3″ x 9′-11")(18'x50' bay)	370 s.f.	-	900 s.f.	-	900 s.f.
Drive-Thru 6					
(Ladder 45′-6″ width 10′-0")(18'x50' bay)	455 s.f.	-	900 s.f.	-	900 s.f.
Drive-Thru 7					
(Utility w/boat 42′-0″ x 5′-9″)(18'x50' bay)	242 s.f.	-	900 s.f.	-	900 s.f.
Command Garage					
(5+ Vehicles @ 17′ x 7′-2″)(350 sf/ stall)	125 s.f.	-	1,750 s.f.	-	1,200 s.f.
Subtotal Vehicle Storage		-	**6,970 s.f.**	-	**6,420 s.f.**
Department Net to Gross Factor		x	1.15 s.f.	x	1.15 s.f.
Total Gross Square Footage Vehicle Storage			**8,016 s.f.**		**7,383 s.f.**

Fire Station Total Net Square Footage		**27,380 s.f.**		**24,053 s.f.**
Building Net to Gross Factor	x	1.25 s.f.	x	1.25 s.f.
Fire Station Total Gross Square Footage		**34,225 s.f.**		**30,066 s.f.**

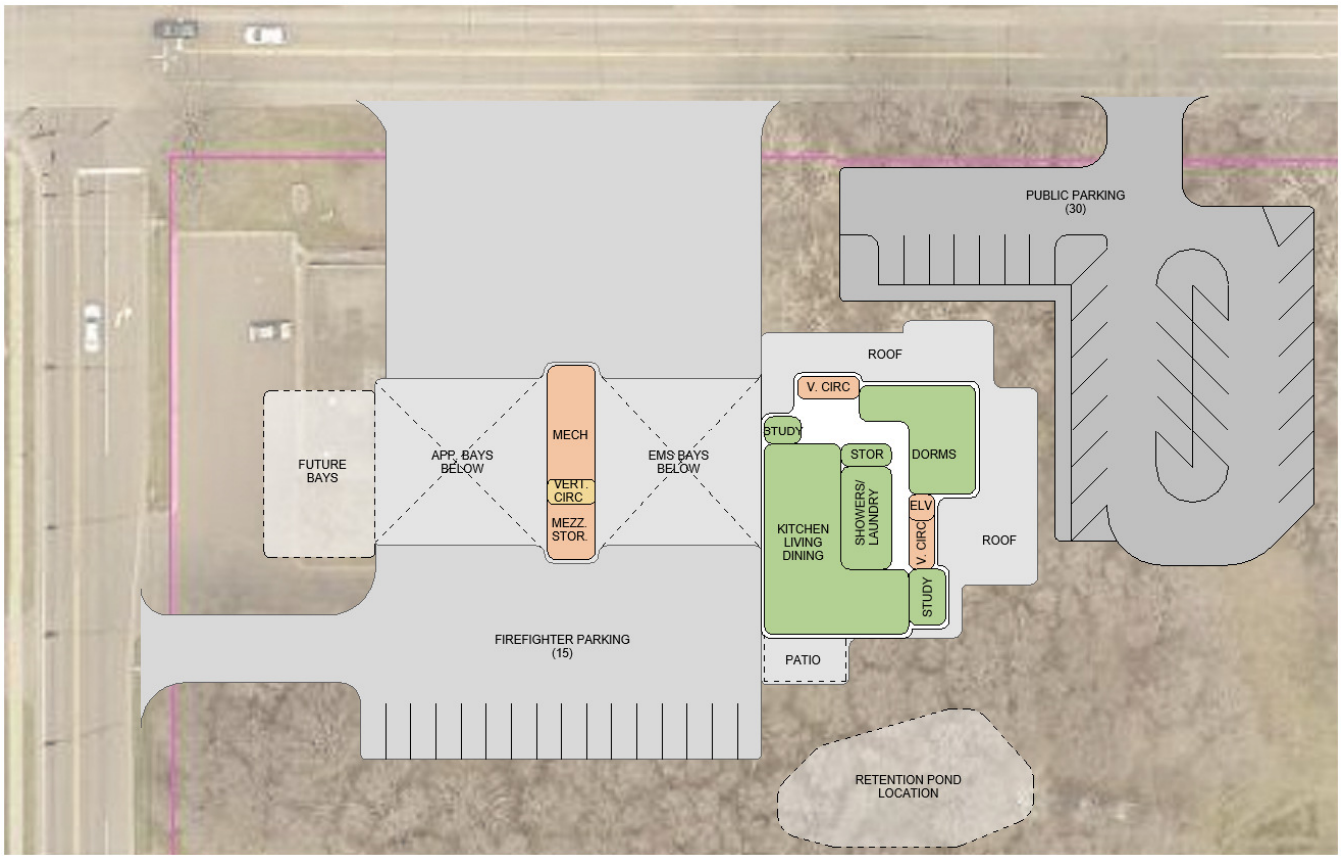
Appendix B: Supporting Diagrams

Preliminary Planning Diagram

Space Planning – Lower Level

Preliminary Planning Diagram

Space Planning – Upper Level



Design Concept

Hot Zone Design