



SPACE NEEDS SUMMARY  
for  
La Crosse Fire Department

January 9, 2017

ARCHITECTURAL DESIGN FOR PUBLIC SAFETY

Overview and Executive Summary

Station #1

- Description of Station #1
- Opinion of Probable Construction Costs
- Space Needs: Station 1 and Building Inspection
- Existing Plans

Station #2

- Description of Station #2
- Opinion of Probable Construction Costs
- Space Needs
- Existing Plans

Station #3

- Description of Station #3
- Opinion of Probable Construction Costs
- Space Needs
- Existing Plans

Station #4

- Description of Station #4
- Opinion of Probable Construction Costs
- Space Needs
- Existing Plans

Future Station #5

- Description of Station #5
- Opinion of Probable Construction Costs
- Space Needs

## OVERVIEW and EXECUTIVE SUMMARY

In June of 2016, ADG / Five Bugles Design was retained by the City of La Crosse, Wisconsin to provide a facility analysis and space needs assessment for each of the City's current four Fire Stations. The following requirements were required to complete the need analysis:

- Visiting each station and meeting with shift personnel to obtain feedback with respect to the strengths and weaknesses of each station:
  - Physical size
  - Date of construction
  - Station site dimensions;
- Recommendations regarding the potential for improving/upgrading each station to bring the building into compliance with current building codes, including the Americans with Disabilities Act, energy/thermal performance, and industry standards for the fire service;
- Perform a space programming assessment of each station to establish the potential square footage of a newly constructed building that meets operational, housing and functional considerations;
- Provide current day cost estimates, based on the program results of the potential costs of new construction for replacing stations that no longer meet current response and housing demands.

Five Bugles Design were also charged with programming space needs for a possible 5<sup>th</sup> fire station. The proposed site for Station #5 has not determined but in probability would serve an area of the City with less than desirable response times.

To meet these goals, our methodology included providing a space needs analysis for each of the existing stations as well as documenting current facility conditions. The information contained herein has been developed with the cooperation and participation of the La Crosse Fire Department, with representation at all levels. Our team meet with station crews at each of the four (4) stations on three separate occasions to include input from each of the three shifts; A shift, B shift, C shift. Results of the Space Needs Analysis are included in the in the summary of each station as well as scale plans of each of the four stations.

An inclusive list of staff provided deficiencies has been included for review.

### General

- Larger/more energy efficient windows and natural lighting
- New speaker system integrated into alerting system
- Station HVAC with negative pressure system to reduce living quarter contamination
- New flooring station wide appropriate for each area
- More electrical outlets station wide
- Updated proper wiring station wide

### General Continued

- New emergency generator
- Laundry room
- Decontamination room
- Outlets on roof and exterior of station for ease of access

### Apparatus Bay

- Roof vents
- New gear lockers
- Gear drying rack
- Gear washing machine
- Decon shower and proper decon room

### Office

- More functional office space
- Washers and dryers at all stations
- Gender equity in bathrooms
- A real EMS decon area
- More storage room both on the apparatus floor and in locker room
- More parking at stations needed
- Workout rooms at all stations
- Extra vehicle parking/storage at all stations. Drive thru stations not being used that way.

The following is a synopsis of the recommendations of our facility analysis and space needs programming efforts. Our study found that each of the stations have serious concerns, both in required space needs and physical condition of the facilities.

## EXECUTIVE SUMMARY OF RECOMMENDATIONS

As a general statement, all four La Crosse's fire stations have exceeded, or nearly exceeded their expected life cycles. In terms of asset management, it is evident that La Crosse has funded station upgrades and repairs on emergency needs basis. Modifications to bring the stations into compliance with current codes would be difficult and in our opinion not prudent financially. Each of the four (4) stations suffer from numerous deficiencies including inadequate station size, lack of energy performance related to both inadequate insulation and dated inefficient HVAC systems, ADA compliance, living quarter conditions ( gender equity issues, sleeping quarters, rest room facilities), lack of onsite training, lack of onsite physical training areas, lack of proper vehicle exhaust systems in three of the four (4) stations, and of immediate concern, health issues regarding decontamination and cleaning of blood borne pathogens.

Firefighting apparatus has growth steadily and considerably in the last 50 years to match an ever-increasing mission creep. Apparatus is now arguably manufactured to the allowable maximum size and still function within US infrastructure i.e.; street width and allowable height of highway overpasses. Industry standards for firefighting apparatus currently is based on 18'-0" bays with centered 14'x14' doors. None of the La Crosse stations meet this standard. Nor is there sufficient site size at any of the stations to accommodate additions to correct the situation.

Purchasing additional land adjacent to an existing station for an addition is not an adequate solution. Wisconsin State Statutes will require upgrading the station(s) into compliance with all State codes. Given the size of an addition, this would mandate meeting ADA and energy codes. ADA compliance in all stations would be problematic and expensive, with a value proposition of little gained in the Stations mission for the investment. Space needs analysis recommends serious improvement in the functionality of the stations including apparatus bay size, sleeping quarters, rest room facilities, and classroom training areas, physical training areas, and gender equity issues. Given the existing state of affairs, Five Bugles Design recommends that the City of La Crosse begin budgeting for replacement of the four existing stations. We have provided cost estimates for each station based on recommended station size and current cost data. We understand a site location study is underway for a proposed Station #5. We would encourage city officials to begin discussions regarding the site locations of the four existing stations as well. Site acquisition remains the largest hurdle in a new station. In La Crosse's case, none of the existing sites are large enough to accommodate their respective building program, and the stations must remain fully operational 24/7 during any construction.

Existing conditions in the stations pose immediate health concerns that should be addressed immediately. Three of the four (4) stations lack vehicle exhaust control (Station #1 has a limited exhaust system), with living/sleeping quarters in direct contact with exhaust on a continuous basis. None of the stations have adequate decontamination areas with blood borne pathogens being cleaned in station common areas. Only station 1 is equipped the washer/dryers.

#### Recommended Immediate Actions:

- Installation of an encapsulated vehicle exhaust system in Stations #1, #3 and #4.
- Renovation of adequate decontamination areas into each of the four (4) stations.
- Installation of washer/dryers in Stations #2, #3, and #4.

#### Opinion of Probable Cost Based on 2017 Cost Data

Station #1	\$8,809,349
Station #2	\$5,532,485
Station #3	\$5,550,829
Station #4	\$4,038,227
Station #5	\$4,038,227

The above estimates do not include site acquisition costs.



# **LA CROSSE FIRE DEPARTMENT FIRE STATION COMPARISON DATA**

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No FFE, Site Acquisition, A/E Fees, etc.



## **Verona Fire Station and EMS Facility Verona, WI**

Year Built: 2014-2015

Square Footage: 46,701

Building and Site Work Costs: \$9,281,317

Cost Per SF: \$198



## **Janesville Fire Station Janesville, WI**

Year Built: 2015-2016

Square Footage: 31,525

Building and Site Work Costs: \$5,948,750

Cost Per SF: \$188

# LA CROSSE FIRE DEPARTMENT

## FIRE STATION COMPARISON DATA

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No FFE, Site Acquisition, A/E Fees, etc.



**Chippewa Falls Fire Station**  
**Chippewa Falls, WI**

Year Built: 2016 - Current

Square Footage : 20,450 SF

Building and Site Work Cost: \$4,152,974

Cost Per SF: \$203



**Ashland Fire Station**  
**Ashland, WI**

Year Built: 2015

Square Footage: 22,273

Building and Site Work Costs: \$4,304,634

Cost Per SF: \$193



## Description of Station #1

Constructed in 1967

Total Existing Area: 15,700 SF plus 8,900 SF Basement

Total Program Space Requirement: 34,049 SF

Station #1 is located 726 5<sup>th</sup> Avenue South

## Space Needs Analysis

Space Needs Analysis of Station #1 reveals a significant lack of recommended space. 34,049 SF recommended vs 24,622 SF existing (of which 8,900 SF is substandard basement). Included in the space needs analysis is the relocation of the City's Building Inspection Department into a central fire station.

## Existing Conditions

The two-story station with a basement is arguably in the best condition of the City's four fire stations. The Station received a new HVAC system, structural floor slab replacement of the mechanic's bay, along with minor remodeling in 2009. Cost of the upgrade was approximately \$1,000,000. However, serious facility issues remain. At 49 years old, the Station is nearing the expected 50-year life cycle. The construction of existing exterior walls is 12" masonry walls. Wall insulation is inadequate and does not meet current energy code.



The existing windows are extremely narrow, single pane units built literally into the masonry wall assembly. Window replacement would be cost prohibitive and not recommended due to the resulting small amount of glazing area. The apparatus doors are 12'x12'; not an adequate size for current apparatus (14'x14' door size is recommended). Quint 1 has only several inches of space to exit the station. Snow buildup during a

major snowfall could cause impact when exiting. Overhead door spacing is also not adequate to allow internal circulation around apparatus. 4'-0" between doors is recommend. To meet size limitations, new apparatus is specified on size requirements rather than mission requirements. This results in newer apparatus procured without all desired new technology. Additionally, current space limitations prohibits the transfer of certain apparatus between stations.



In general, Station #1 was designed and constructed when fire apparatus was considerably smaller in both length and height. The number and type of apparatus, along with mission statements of fire departments, have evolved significantly over the years.

### **Existing Site Limitations**

As problematic, Station #1 is plagued by severe site limitations. The current site does not allow adequate off street staff parking. The situation is remedied only by an understanding neighbor owning the adjacent bowling alley. A condition that could change at any time. Off street parking for the public is non-existent. There is not adequate space available for exterior apparatus staging, training simulations, or vehicle drive through bays. Site acquisition is a significant hurdle for the construction of a new station. Recommended site acquisition costs frequently exceed \$1,000,000



### **ADA Compliance**

Station #1 does not meet current ADA requirements in circulation and toilet/shower rooms. Any remodeling/renovation of significant scope would require building modifications to bring the facility into ADA compliance.

### **Station #1 Functionality**

Station #1's crew living and working spaces have doors/sliding poles connected directly to the apparatus bays; resulting in exhaust gases coming into the sleeping/living areas posing a serious health issue. Station #1 is equipped with a limited encapsulated exhaust systems for apparatus (one bay).



Dormitory accommodations are substandard to the fire industry and lack gender considerations, isolation of health issues, and privacy (snoring). Likewise, shower/toilet rooms are not gender specific, and are gender shared. Noise issues affecting full time living conditions are brought on by poor building insulation/construction combined with high road traffic.

The 2009 limited remodeling did allow for a staff training room in the basement. However, the space is constructed around imposing structural concrete columns that result in problematic sightline issues, as well as ADA issues.

Station #1 suffers from inadequate storage rooms, causing equipment to be stored wherever there may be space, such as electrical/HVAC rooms. This is particularly true in regards to the lack of medical storage. Station #1 suffers from inadequate biohazard decontamination rooms. Blood Borne Pathogens are currently cleaned in common areas of the station.

## **Recommendations – Station #1**

Station #1 functions as the City of La Crosse's Central Fire Station. In both physical condition of the station and function, Station #1 provides a higher degree of service to the fire department than the remaining three stations. In that respect, we view it as a lower priority for improvements. However, the Station is nearly 50 years ago, insufficient by in program space by 9,427 SF of recommended space, plagued by site limitations, lack of handicap accessibility, gender equity, dormitory issues, inefficient thermal insulation, health and safety issues, and lack of adequate medical storage. Even with additional property purchased, we do not anticipate a building addition being a viable financial option to address all the problems/existing conditions listed in our report. It is our recommendation the City begin planning for a replacement Central Fire Station.

### **Immediate Concerns:**

- Lack of a fully functional encapsulated exhaust system
- Lack of adequate decontamination rooms
- Lack of adequate medical storage

We recommend the City correct existing health safety issues concerning the lack of a complete apparatus exhaust system and adequate decontamination areas. Installation of an encapsulated exhaust system currently cost approximately \$10,000 to \$12,000 per vehicle drop. On the upside, a large portion of installed system can be salvaged and relocated to a new station.

We have provided a preliminary planning estimate based on our understanding of current market conditions for stations of similar scope.



## Opinion of Probable Construction Costs

PROJECT: City of La Crosse Fire Station #1 Replacement  
 LOCATION: La Crosse, WI  
 PHASE: Study Estimate

Anticipated Construction Costs	Estimated Construction Cost		\$7,150,290
	Bidding Contingency	5%	\$357,515
	Probable Construction Cost		\$7,507,805
	Construction Contingency	5%	\$375,390
	<b>Total Construction Cost</b>		
	Not Including Site Acquisition Cost		\$7,883,195

ADDITIONAL (SOFT) COSTS / REIMBURSABLES	<b>Soft Cost</b>		\$630,655
	Architecture/Engineering Fee @ 8%		
	<b>Possible Additional Services</b>		
	(Should LEED Certification be desired)		
	Sustainable Design (LEED)		\$37,000
	Commissioning		\$20,000
	Technology		\$8,000
	TOTAL - ADDITIONAL SERVICES		\$65,000
	<b>Reimbursables (estimated)</b>		
	PRINTING - EXISTING DOCUMENTS		
	PRINTING - REVIEW DOCUMENTS		\$3,500
	PRINTING - BID DOCUMENTS		\$9,000
	PROJECT WEBSITE (dfm)		\$3,000
	POSTAGE / UPS		
	SITE SURVEY (Topo & Historical)		\$8,500
	SOIL TESTING		\$5,000
	CONSTRUCTION TESTING		\$15,000
	LEED Certification Fees		\$6,500
	<b>TOTAL - REIMBURSABLES</b>		\$50,500
	<b>Other Project Costs</b>		
	LAND ACQUISITION		
	External SITE Costs		\$15,000
	INTERIOR SIGNAGE & GRAPHICS		
	*TECH., TELECOM, SECURITY		\$85,000
	*FURNITURE & EQUIP		\$145,000
	Programming		
	OTHER		
	<b>TOTAL OTHER COSTS</b>		\$245,000
	<b>TOTAL ADDITIONAL COSTS</b>		\$926,155

**\*Technology (Provided by Owner)**  
 Network, Comp, Phone  
 Video Surveillance In Constrction  
 AV Equipment In Construction  
 Alerting Wiring In Costruction  
 Alerting  
 Radio

**\*Furniture & Equipment (Provided by Owner)**  
 Furniture  
 Gear Lockers  
 Plymovent  
 SCBA Comp & Fill  
 Extractor

<b>TOTAL PROJECT COST (Not Including Site Acquisition)</b>	<b>\$8,809,349</b>
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## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #1

Date:

20-Jun-16

### Apparatus Floor

Spaces	Existing	Length	x	Width	=	Ft <sup>2</sup>	Quantity	Total Ft <sup>2</sup>	Proposed Bay	Notes
Engines		45	x	16	=	720	2	1440		
Quint		90	x	16	=	1440	1	1440		75" Quint
Engine Reserve		90	x	16	=	1440	0	0		
Trailers		30	x	16	=	480	3	1440		Trench & Heavy rescue
Boat/Trailer		40	x	16	=	640	1	640		18" Boat
Arson Unit		45	x	16	=	720	0	0		
Utility/Pickup		22	x	16	=	352	6	2112		
Haz Mat		22	x	16	=	352	0	0		
ATV/Trailer			x		=	0	0	0		
Firefighter Rehab Unit			x		=	0	0	0		
Rescue		50	x	16	=	800	0	0		
Command Vehicle		35	x		=	0	0	0		
Portable Lighting		24	x	16	=	384	0	0		
Squad		45	x	16	=	720	0	0		
Brush Buggy #31		24	x	16	=	384	0	0		
Mass Casualty		24	x	16	=	384	0	0		
Vehicle Maintenance Bay		40	x	16	=	640	1	640		Not high enough for vehicles
Wash Bay		70	x		=	0	1	0		
Portable air and light unit		24	x	16	=	384	0	0		
EMS										
EMS Command Vehicle			x		=	0	0	0		
Future Bay		20	x	80	=	1600	1	1600		Future consideration
Mass Casualty Trailer			x		=	0	0	0		
								9,312	<b>Subtotal (Ft<sup>2</sup>)</b>	
								1,862	Efficiency Ratio of 20%	
								11,174	<b>Apparatus Floor Total (Ft<sup>2</sup>)</b>	

The City of La Crosse currently does not provide a City operated EMS service. EMS service has been the topic of discussion for several years. A future bay has been included in our needs analysis.

= Existing Equipment  
 = Future Equipment

See also Training for other Apparatus and Large Equipment

Apparatus Sizing Table (Ft <sup>2</sup> )							9,312
Number of Bays		3	4	5	6	7	8
		Length					
Depth	80	4800	6240	7680	9120	10560	12000
	80	6400	8320	10240	12160	14080	16000
	100	8000	10400	12800	15200	17600	20000
	100	8000	10400	12800	15200	17600	20000

Located in the flood plain

Not in correct GIS location

Mice, frogs, vermin throughout the building

35,650	<b>Overall Space Estimate (Ft<sup>2</sup>)</b>
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## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #1

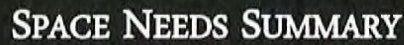
Date:

20-Jun-16

### Apparatus Support

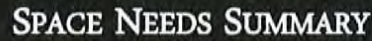
Spaces	Existing	Length	x	Width	=	Ft <sup>2</sup>	Quantity	Total Ft <sup>2</sup>	Notes
Protective Gear Locker		2	x	2	=	4	60	240	24" by 24"
Dirty Restroom		8	x	8	=	64	1	64	
Hose/Training Tower		30	x	20	=	600	1	600	If Possible
Mezzanine		80	x	20	=	1600	0	0	
Detached garage			x		=	0	0	0	
Walk-in med check/ed space		6	x	8	=	48	0	0	
Work Room/SCBA		8	x	11	=	88	1	88	
SCBA Clean and Fill Room		8	x	12	=	96	1	96	
Gear Dryer			x		=	0	1	0	
Commercial Laundry Room		10	x	10	=	100	1	100	
Vehicle Maintenance Room		10	x	12	=	120	1	120	Welding, cutting etc.
EMS Report Writing		8	x	12	=	96	1	96	
EMS Storage		8	x	20	=	160	1	160	
Regulated Storage		6	x	6	=	36	1	36	
Bio Hazard Control/Deconl		6	x	6	=	36	1	36	
Janitors Closet		6	x	4	=	24	1	24	
Equipment Decon		8	x	10	=	80	1	80	
Vehicle Lift									* Included in Mechanic Bay
Maintenance storage									* Included in Mechanic Bay
Lub dispensing									* Included in Mechanic Bay
Mechanic work area									* Included in Mechanic Bay
								1,740	Subtotal (Ft <sup>2</sup> )
								348	Efficiency Ratio of 20%
								2,088	Apparatus Support Total (Ft <sup>2</sup> )





20-Jun-16





20-Jun-16

Battalion Chief Suite consists of the following: Open office space with 3 work stations, single-bed sleeping room, toilet room with shower.

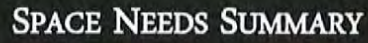




20-Jun-16

Building D04, Suite 202 | 800 Wisconsin St, Mailbox 2 | Eau Claire, WI 54703 | 715.832.4848 | [fivebuglesdesign.com](http://fivebuglesdesign.com)





Date: June 21, 2016

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## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #1

Date:

20-Jun-16

### Totals

Apparatus Bays	11,174
Apparatus Bay Support	2,088
Training	4,020
Administration	5,043
La Crosse Building Inspectors	4,005
Living Quarters	4,670
Training - Tempered	0

31,000 Station Footprint (Ft<sup>2</sup>) Sub Total

4,650 Infrastructure (M & E) Space Factor 15%

35,650 TOTAL PROGRAM SPACE REQUIREMENT



## AREA LEGEND

<span style="display: inline-block; width: 20px; height: 10px; background-color: yellow; border: 1px solid black;"></span>	ADMINISTRATION
<span style="display: inline-block; width: 20px; height: 10px; background-color: lightblue; border: 1px solid black;"></span>	APPARATUS BAY SUPPORT
<span style="display: inline-block; width: 20px; height: 10px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); border: 1px solid black;"></span>	CORRIDOR / CIRCULATION
<span style="display: inline-block; width: 20px; height: 10px; background-color: orange; border: 1px solid black;"></span>	STORAGE / MECHANICAL
<span style="display: inline-block; width: 20px; height: 10px; background-color: lightblue; border: 1px solid black;"></span>	TRAINING

## BUILDING SQUARE FOOTAGE

LOWER LEVEL TOTAL	=	8,900 SF
MAIN LEVEL TOTAL	=	8,900 SF
SECOND LEVEL TOTAL	=	6,800 SF
OVERALL TOTAL	=	24,600 SF

## 1 LOWER LEVEL

1/16" = 1'-0"



# LA CROSSE FIRE STATION STUDY

STATION 1

12.01.2016



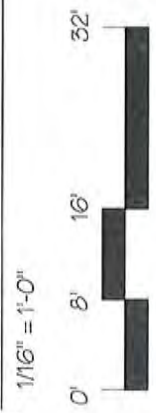


**AREA LEGEND**

- ADMINISTRATION
- APPARATUS BAY
- APPARATUS BAY SUPPORT
- CORRIDOR / CIRCULATION

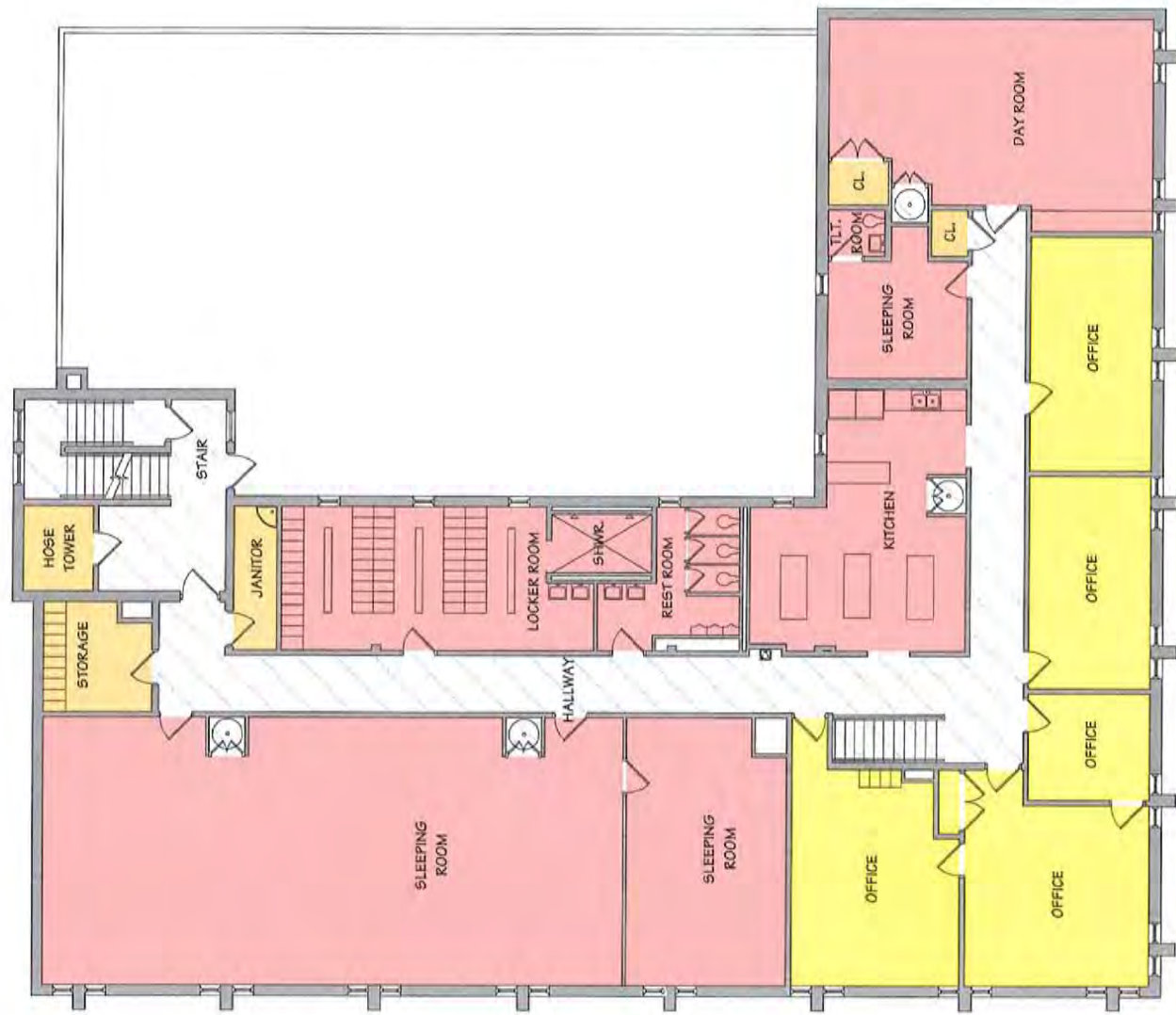
BUILDING SQUARE FOOTAGE			
LOWER LEVEL TOTAL	=	8,900 SF	
MAIN LEVEL TOTAL	=	8,900 SF	
SECOND LEVEL TOTAL	=	6,800 SF	
OVERALL TOTAL	=	24,600 SF	

**1 MAIN LEVEL**



**LA CROSSE FIRE STATION STUDY**

STATION 1  
12.01.2016



# **AREA LEGEND**

- ADMINISTRATION
- CORRIDOR / CIRCULATION
- LIVING QUARTERS
- STORAGE / MECHANICAL

BUILDING SQUARE FOOTAGE			
LOWER LEVEL TOTAL	=	8,900 SF	
MAIN LEVEL TOTAL	=	8,900 SF	
SECOND LEVEL TOTAL	=	6,800 SF	
OVERALL TOTAL	=	24,600 SF	

## **1 SECOND LEVEL**

1/16" = 1'-0"



# **LA CROSSE FIRE STATION STUDY**

STATION 1

12.01.2016



## Description of Station #2

Constructed in 1956  
Total existing area 8,163 SF  
Total Program Space Requirement 20,944 SF  
Station #2 is located at 626 Monitor Street.

## Space Needs Analysis

The station size is inadequate. The Space Needs analysis recommends a station size of 20,144 SF as contrasted by the existing building area of 8,163 SF; a recommended increase of 12,781 SF.

## Existing Conditions

The single-story facility is constructed of with masonry walls; brick on the original 1956 portion and EFIS clad walls on the single bay addition. Moisture problems and mold are constant issues, and evident in the building envelope. Frogs, snakes and other vermin are also frequent problems. Ventilation/HVAC systems in the stations are dated and inefficient. In Station #2, the HVAC system is enormously ineffective and in some cases during severe winter weather, never turns off. Windows have been infilled and do not allow adequate daylighting.



## Existing Site Limitations

The existing site will not allow a building increase of the recommended 12,000 SF increase. According to a recent GPS Study; the site location does not allow for adequate emergency response times. The site does allow drive through bay operation, but is limited for any future growth/expansion. Station #2 site efficiencies are numerous. The site is in a flood plain and suffers from frequent moisture and flooding issues.

## ADA Compliance

Station #2 does not meet current ADA requirements for toilet/shower facilities. Any remodeling/renovation of significant scope will require building modifications to bring the facility into ADA compliance.

## Station #2 Functionality

Station #2's crew living and working spaces have doors connected directly to the apparatus bays. Resulting exhaust gases coming into the station continue to pose a serious health issue.





The apparatus doors are 12'x12'; not an adequate size for current apparatus (14'x14' door size is recommended). Quint 2 has only several inches of space to exit the station. Snow buildup during a major snowfall could cause impact when exiting. To meet size limitations, new apparatus is specified on size requirements rather than mission requirements.

There are no training accommodations in Station #2; crews have to train on the apparatus floor; in the day room, or the kitchen.

There are no exercise/fitness areas other than ones the crew has tried to develop. These are on the apparatus floor, in bedroom areas or storage areas.

Station #2 suffers from inadequate Biohazard Decontamination rooms. Blood Borne Pathogens are currently cleaned in common areas of the station. Station #2 is not equipped with an in-house washer/dryer, posing health issues for decontamination.

Dormitory accommodations are substandard to the fire industry and lack gender considerations, isolation of health issues, and privacy (snoring). Likewise, shower/toilet rooms are not gender specific and are gender shared. Noise issues affecting full time living conditions are brought on by poor building insulation/construction combined with high road traffic.



## Recommendations – Station #2

Station #2 is in the worst condition of the City's four fire stations. In both physical condition and function as a fire station, we view it as the highest priority for improvement/replacement. The station is 60 years old, insufficient in recommended program space by nearly 12,000 SF, plagued by severe potential health issues (mold) along with a lack of decontamination rooms, vehicle exhaust, lacks handicap accessibility, lack of medical storage, lacks gender equity, dormitory issues, inefficient thermal insulation and inadequate HVAC and electrical systems. It is our recommendation the City begin planning for a replacement Fire Station #2 immediately. Even with additional adjacent property being purchased, we do not anticipate a building addition being a viable financial option to address all the problems identified with the existing conditions listed within the body of this report. Given recent GPS studies indicating site location response issues, we recommend the City begin a search for a new site in accordance with location recommendations outlined in the GPS study.

We have provided preliminary planning estimate based on our understanding of current market conditions for stations of similar scope.

Immediate Concerns:

- Lack of adequate decontamination rooms
- Lack of adequate medical storage
- Lack of on-site washer and dryer

We recommend the City correct existing health safety issues concerning the inadequate decontamination areas.



## Opinion of Probable Construction Costs

PROJECT: City of La Crosse Fire Station #2 Replacement  
 LOCATION: La Crosse, WI  
 PHASE: Study Estimate

Anticipated Construction Costs	Estimated Construction Cost		\$4,398,240
	Bidding Contingency	5%	\$219,912
	Probable Construction Cost		\$4,618,152
	Construction Contingency	5%	\$230,908
	<b>Total Construction Cost</b>		
	Not Including Site Acquisition Cost		\$4,849,060

ADDITIONAL (SOFT) COSTS / REIMBURSABLES	Soft Cost		\$387,925
	Architecture/Engineering Fee @ 8%		
	<b>Possible Additional Services</b> (Should LEED Certification be desired)		
	Sustainable Design (LEED)	\$37,000	
	Commissioning	\$20,000	
	Technology	\$8,000	
	TOTAL - ADDITIONAL SERVICES	\$65,000	
	<b>Reimbursables (estimated)</b>		
	PRINTING - EXISTING DOCUMENTS		
	PRINTING - REVIEW DOCUMENTS	\$3,500	
	PRINTING - BID DOCUMENTS	\$9,000	
	PROJECT WEBSITE (dfm)	\$3,000	
	POSTAGE / UPS		
	SITE SURVEY (Topo & Historical)	\$8,500	
	SOIL TESTING	\$5,000	
	CONSTRUCTION TESTING	\$15,000	
	LEED Certification Fees	\$6,500	
	TOTAL - REIMBURSABLES		\$50,500
	<b>Other Project Costs</b>		
	LAND ACQUISITION		
	External SITE Costs	\$15,000	
	INTERIOR SIGNAGE & GRAPHICS		
	*TECH., TELECOM, SECURITY	\$85,000	
	*FURNITURE & EQUIP	\$145,000	
	Programming		
	OTHER		
	TOTAL OTHER COSTS		\$245,000
	<b>TOTAL ADDITIONAL COSTS</b>		\$683,425

### \*Technology (Provided by Owner)

Network, Comp, Phone  
 Video Surveillance In Construction  
 AV Equipment In Construction  
 Alerting Wiring In Construction  
 Alerting  
 Radio

### \*Furniture & Equipment (Provided by Owner)

Furniture  
 Gear Lockers  
 Plymovent  
 SCBA Comp & Fill  
 Extractor

**TOTAL PROJECT COST** **\$5,532,485**





## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #2

Date:

20-Jun-16

### Apparatus Floor

Spaces	Existing	Length	x	Width	=	Ft <sup>2</sup>	Quantity	Total Ft <sup>2</sup>	Proposed Bay	Notes
Engines		45	x	16	=	720	0	0		
Quint		90	x	16	=	1440	1	1440		
Telesquirt		90	x	16	=	1440	0	0		
Rescue #2		30	x	16	=	480	1	480		
Boat/Trailer		40	x	16	=	640	1	640		21' Boat & trailer
Arson Unit		45	x	16	=	720	0	0		
Utility/Pickup		22	x	16	=	352	2	704		
Haz Mat		22	x	16	=	352	0	0		
Haz Mat-Diking/Booming		22	x	16	=	352	2	704		Trailer outside, housing for R & R trailer
Foam Trailer		22	x	16	=	352	1	352		
Snowmobile/ATV/Trailer		22	x	16	=	352	1	352		
Firefighter Rehab Unit			x		=	0	1	0		
Tanker		50	x	16	=	800	1	800		
Command Vehicle		35	x		=	0	0	0		
Portable Lighting		24	x	16	=	384	0	0		
Rescue Squad		45	x	16	=	720	0	0		
Brush Buggy #31		24	x	16	=	384	0	0		
Mass Casualty		24	x	16	=	384	0	0		
Vehicle Maintenance Bay		40	x	16	=	640	0	0		
Wash Bay		70	x		=	0	0	0		
Portable air and light unit		24	x	16	=	384	0	0		
EMS										
EMS Command Vehicle			x		=	0	0	0		
Future Bay		80	x	20	=	1600	1	1600		
De-Tox Sauna		10	x	10	=	100	1	100		Crew safety issue suggestion
Dive Trailer		25	x	16	=	400	1	400		Unclear where it will end up
								7,572		Subtotal (Ft <sup>2</sup> )
								1,514		Efficiency Ratio of 20%
								9,086		Apparatus Floor Total (Ft <sup>2</sup> )

The City of La Crosse currently does not provide a City operated EMS service. EMS service has been the topic of discussion for several years. A future bay has been included in our needs analysis.

■ = Existing Equipment  
■ = Future Equipment

See also Training for other Apparatus and Large Equipment

Apparatus Sizing Table (Ft <sup>2</sup> )							7,572
Number of Bays		3	4	5	6	7	8
		Length					
Depth	80	4800	6240	7680	9120	10560	12000
	80	6400	8320	10240	12160	14080	16000
	100	8000	10400	12800	15200	17600	20000

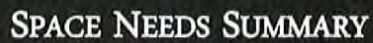
Located in the flood plain

Not in correct GIS location

Mice, frogs, vermin throughout the building

21,248

Overall Space Estimate (Ft<sup>2</sup>)



20-Jun-16



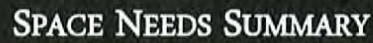


20-Jun-16

## Training

Building D04, Suite 202 | 800 Wisconsin St, Mailbox 2 | Eau Claire, WI 54703 | 715.832.4848 | [fivebuglesdesign.com](http://fivebuglesdesign.com)





20-Jun-16

2,995	Administration/Office Spaces Total (Ft <sup>2</sup> )
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20-Jun-16

## SPACE NEEDS SUMMARY

**Project LaCrosse Fire Department**

Location    **Station #2**

Date: June 20, 2016

## Site

[illegible]





## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #2

Date:

20-Jun-16

### Totals

Apparatus Bays	9,086
Apparatus Bay Support	1,800
Training	2,025
Administration	2,995
Living Quarters	2,570
Training - Tempered	0

18,476 Station Footprint (Ft<sup>2</sup>) Sub Total

2,771 Infrastructure (M & E) Space Factor 15%

21,248 TOTAL PROGRAM SPACE REQUIREMENT

## AREA LEGEND

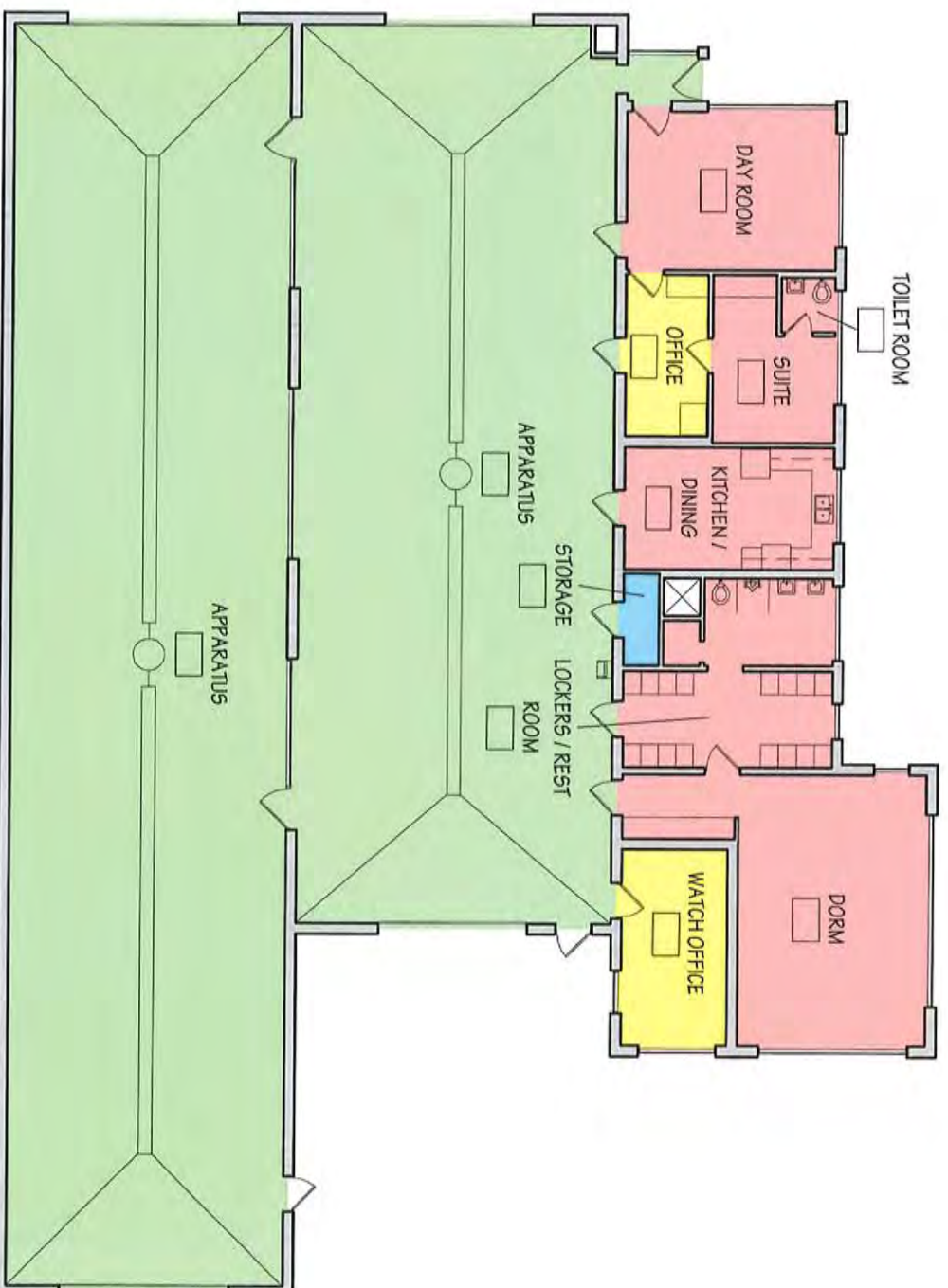
- ADMINISTRATION
- APPARATUS BAY
- APPARATUS BAY SUPPORT
- LIVING QUARTERS

## BUILDING SQUARE FOOTAGE

OVERALL TOTAL = 8,140 SF

## 1 MAIN LEVEL

1/8" = 1'-0"



# LA CROSSE FIRE STATION STUDY

STATION 2

12.01.2016



PROJECT: 16-039

### Description of Station #3

Constructed in 1967  
Total Existing Area: 7,807 SF  
Total Program Space Requirement: 20,917 SF  
Station #3 is located at 1710 Losey Boulevard South

### Space Needs Analysis

Station #3 size is inadequate. The Space Needs Analysis recommends a station size of 20,144 SF as contrasted by the existing building area of 7,807 SF. The existing site will not allow a building increase of that scope.



### Existing Conditions

The two-story facility is constructed with single width brick walls, much in the manner of Station #1's masonry walls. Ventilation/HVAC systems in the stations are dated and inefficient. The existing windows are extremely narrow, single pane units built literally into the masonry wall

assembly. Window replacement would be cost prohibitive and not recommended due to the resulting small amount of glazing area.



### Existing Limitations

The site does allow drive through bay operation, but is limited for any future growth/expansion. A storage building for fire department operations is planned for the near future. The Losey Boulevard site is challenged by the location on Losey Boulevard and peak time traffic build up. Ramp areas in the front of the stations are too small for safe exiting from the station.



### ADA Compliance

Station #3 does not meet current ADA requirements for circulation and toilet/shower areas. Any remodeling/renovation of significant scope will require building modifications to bring the facility into ADA compliance.



### Station #3 Functionality

Station #3's crew living and working spaces have doors connected directly to the apparatus bays; resulting in exhaust gases coming into the living and sleeping areas continue to pose a serious health issue. The station is not equipped with an encapsulated exhaust systems for apparatus.

The apparatus doors are 12'x12'; not an adequate size for current apparatus (14'x14' door size is recommended). The quint has only several inches of space to exit the station. Snow buildup during a major snowfall could cause impact when exiting. To meet size limitations, new apparatus is specified on size requirements rather than mission requirements.



There are no training accommodations in Station #3; crews have to train on the apparatus floor; in the day room, or the kitchen.



There are no health and fitness areas other than ones the crew tried to develop. These are on the apparatus floor, in bedroom areas or storage areas.

Station #3 suffers from inadequate Biohazard Decontamination rooms. Blood Borne Pathogens are currently cleaned in common area of the station.

Station #3 is not equipped with an in-house washer/dryer, posing health issues for decontamination.

Dormitory accommodations are substandard to the fire industry and lack gender considerations, isolation of health issues, and privacy (snoring). Likewise, shower/toilet rooms are not gender specific and are gender shared. Noise issues affecting full time living conditions are brought on by poor building insulation/construction combined with high road traffic.



### **Recommendations – Station #3**

Station #3 is 49 years old, and was built in conjunction with Station #1. The common thread of the stations architecture is evident. Like Station #1 is insufficient in recommended program space, in this case by 13,140 SF. Like La Crosse's other stations, Station #3 is additionally lacking in training areas (classroom, site specific, and wellness), gender equity, dormitory issues, health and safety issues, inefficient thermal insulation and inadequate HVAC, electrical systems and handicap accessibility. It is our recommendation the City begin planning for a replacement Fire Station #3. Even with additional property being purchased, we do not anticipate a building addition being a viable financial option to address all the problems identified with the existing conditions listed within the body of this report.

#### **Immediate Concerns:**

- Lack of encapsulated exhaust system
- Lack of adequate decontamination rooms
- Lack of adequate medical storage
- Lack of on-site washer and dryer

We recommend the City correct existing health safety issues concerning the lack of apparatus exhaust and adequate decontamination areas. Installation of an encapsulated exhaust system currently cost approximately \$10,000 to \$12,000 per vehicle drop. On the upside, a large portion of installed system can be salvaged and relocated to a new station.

We have provided an opinion preliminary planning estimate based on our understanding of current market conditions for stations of similar scope.



## Opinion of Probable Construction Costs

PROJECT: City of La Crosse Fire Station #3 Replacement  
 LOCATION: La Crosse, WI  
 PHASE: Study Estimate

<b>Anticipated Construction Costs</b>	Estimated Construction Cost		\$4,398,870
	Bidding Contingency	5%	\$219,944
	Probable Construction Cost		\$4,618,814
	Construction Contingency	5%	\$230,941
	<b>Total Construction Cost</b>		
	Not Including Site Acquisition Cost		\$4,849,754

<b>ADDITIONAL (SOFT) COSTS / REIMBURSABLES</b>	Soft Cost		\$405,575
	Architecture/Engineering Fee @ 8%		
	<b>Possible Additional Services (Should LEED Certification be desired)</b>		
	Sustainable Design (LEED)	\$37,000	
	Commissioning	\$20,000	
	Technology	\$8,000	
	<b>TOTAL - ADDITIONAL SERVICES</b>	<b>\$65,000</b>	
	<b>Reimbursables (estimated)</b>		
	PRINTING - EXISTING DOCUMENTS		
	PRINTING - REVIEW DOCUMENTS	\$3,500	
	PRINTING - BID DOCUMENTS	\$9,000	
	PROJECT WEBSITE (dfm)	\$3,000	
	POSTAGE / UPS		
	SITE SURVEY (Topo & Historical)	\$8,500	
	SOIL TESTING	\$5,000	
	CONSTRUCTION TESTING	\$15,000	
	LEED Certification Fees	\$6,500	
	<b>TOTAL - REIMBURSABLES</b>		<b>\$50,500</b>
	<b>Other Project Costs</b>		
	LAND ACQUISITION		
	External SITE Costs	\$15,000	
	INTERIOR SIGNAGE & GRAPHICS		
	*TECH., TELECOM, SECURITY	\$85,000	
	*FURNITURE & EQUIP	\$145,000	
	Programming		
	OTHER		
	<b>TOTAL OTHER COSTS</b>		<b>\$245,000</b>
	<b>TOTAL ADDITIONAL COSTS</b>		<b>\$701,075</b>

**\*Technology (Provided by Owner)**  
 Network, Comp, Phone  
 Video Surveillance In Construction  
 AV Equipment In Construction  
 Alerting Wiring In Construction  
 Alerting  
 Radio

**\*Furniture & Equipment (Provided by Owner)**  
 Furniture  
 Gear Lockers  
 Plymovent  
 SCBA Comp & Fill  
 Extractor

**TOTAL PROJECT COST** **\$5,550,829**





## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #3

Date:

20-Jun-16

### Apparatus Floor

Spaces	Existing	Length	x	Width	=	Ft <sup>2</sup>	Quantity	Total Ft <sup>2</sup>	Proposed Bay	Notes
Quint		45	x	16	=	720	0	0		
Reserve		90	x	16	=	1440	2	2880		
Telesquirt		90	x	16	=	1440	0	0		
Trailers		30	x	16	=	480	0	0		
Boat/Trailer		40	x	16	=	640	0	0		
Arson Unit		45	x	16	=	720	0	0		
Utility/Pickup		22	x	16	=	352	0	0		
Haz Mat		22	x		=	0	0	0		
Haz Mat-Diking/Booming		22	x		=	0	0	0		
Portable Pump/Trailer			x		=	0	0	0		
Snowmobile/ATV/Trailer			x		=	0	0	0		
Firefighter Rehab Unit			x		=	0	0	0		
Tanker		50	x	16	=	800	0	0		
Command Vehicle		35	x		=	0	0	0		
Portable Lighting		24	x	16	=	384	0	0		
Rescue Squad		45	x	16	=	720	1	720		Rescue #3
Brush Buggy #31		24	x	16	=	384	0	0		
Mass Casualty		24	x	16	=	384	0	0		
Vehicle Maintenance Bay		40	x	16	=	640	0	0		
Wash Bay		70	x		=	0	0	0		
Portable air and light unit		24	x	16	=	384	0	0		
EMS										
Future Bay		80	x	20	=	1600	1	1600		Future
Mass Casualty Trailer			x		=	0	0	0		
Tech Rescue Trailers		25	x	16	=	400	2	800		Close to bluffs
								6,000		Subtotal (Ft <sup>2</sup> )
								1,200		Efficiency Ratio of 20%
								7,200		Apparatus Floor Total (Ft <sup>2</sup> )

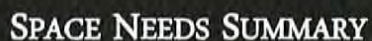
The City of La Crosse currently does not provide a City operated EMS service. EMS service has been the topic of discussion for several years. A future bay has been included in our needs analysis.

Existing outside storage OK  
Needs a third bay

Existing Equipment  
Future Equipment  
See also Training for other Apparatus and Large Equipment

Apparatus Sizing Table (Ft <sup>2</sup> )							6,000
Number of Bays		3	4	5	6	7	8
		Length					
Depth	80	4800	6240	7680	9120	10560	12000
	100	6400	8320	10240	12160	14080	16000
	120	8000	10400	12800	15200	17600	20000

21,521 Overall Space Estimate (Ft<sup>2</sup>)



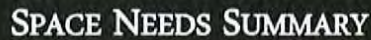
20-Jun-16

Training capacity: Station #4 can't train w/o without moving apparatus from another station to cover their response area









20-Jun-16



20-Jun-16

Building D04, Suite 202 | 800 Wisconsin St, Mailbox 2 | Eau Claire, WI 54703 | 715.832.4848 | [fivebuglesdesign.com](http://fivebuglesdesign.com)



## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #3

Date: June 21, 2016

### Site

Spaces	Existing	Quantity	Notes
Fire Staff Parking		12	Includes shift change
Administrative Staff Parking		0	
Public Parking		2	
Other Parking needs		0	
Fire Apparatus Apron		0	
EMS Apparatus Apron		0	
Outdoor Training		1	
Outdoor Patio		0	
Enclosed Dumpster		0	
External Generator		0	
Storm Water Treatment		0	
Extrication pavement		0	
Other			
Other			
Other			
Other			





## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #3

Date:

#VALUE!

### Totals

Apparatus Bays	7,200
----------------	-------

Apparatus Bay Support	2,376
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Training	2,175
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Administration	4,148
----------------	-------

Living Quarters	2,815
-----------------	-------

Training - Tempered	0
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18,714	Station Footprint (Ft <sup>2</sup> ) Sub Total
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2,807	Infrastructure (M & E) Space Factor 15%
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21,521	TOTAL PROGRAM SPACE REQUIREMENT
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## AREA LEGEND

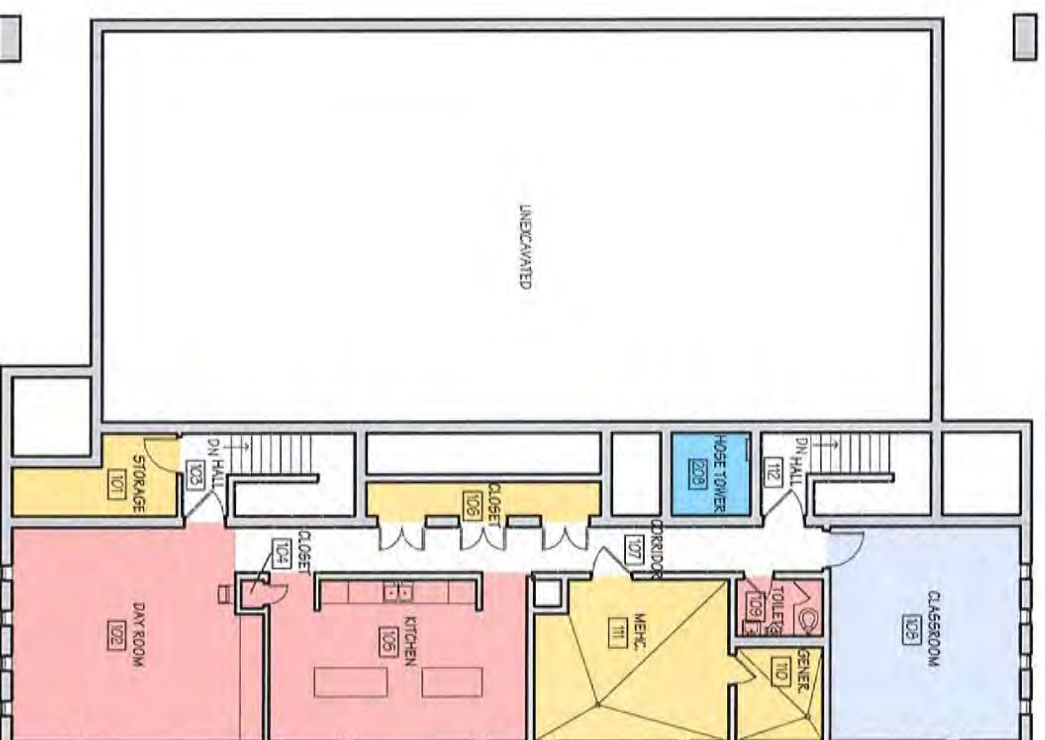
	APPARATUS BAY SUPPORT
	CORRIDOR / CIRCULATION
	LIVING QUARTERS
	STORAGE / MECHANICAL
	TRAINING

## BUILDING SQUARE FOOTAGE

LOWER LEVEL TOTAL	=	2,600 SF
MAIN LEVEL TOTAL	=	3,310 SF
UPPER LEVEL TOTAL	=	2,150 SF
OVERALL TOTAL	=	8,060 SF

## 1 LOWER LEVEL

1/8" = 1'-0"



# LA CROSSE FIRE STATION STUDY

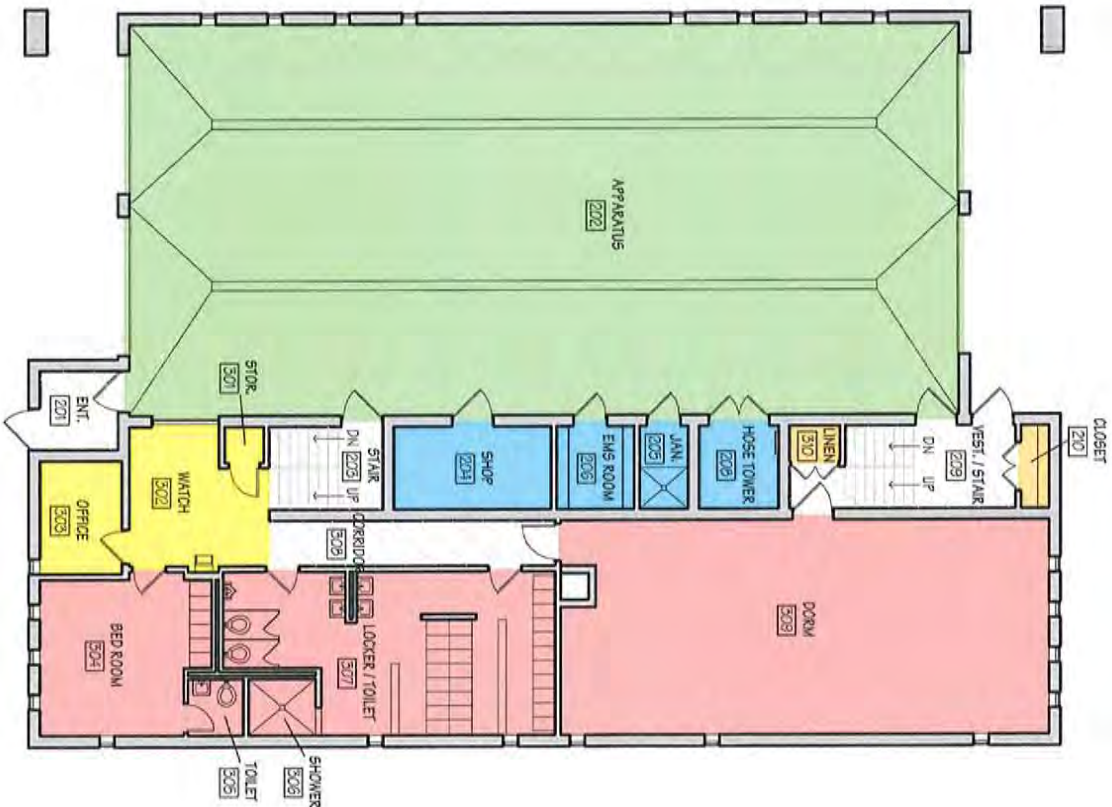
STATION 3  
12.01.2016

# AREA LEGEND

- ADMINISTRATION
- APPARATUS BAY
- APPARATUS BAY SUPPORT
- CORRIDOR / CIRCULATION
- LIVING QUARTERS
- STORAGE / MECHANICAL

BUILDING SQUARE FOOTAGE		
LOWER LEVEL TOTAL	=	2,600 SF
MAIN LEVEL TOTAL	=	3,310 SF
UPPER LEVEL TOTAL	=	2,150 SF
OVERALL TOTAL	=	8,060 SF

MAIN / UPPER LEVEL  
 1/16" = 1'-0"  
 0' 8' 16' 32'



## LA CROSSE FIRE STATION STUDY

STATION 3  
 12.01.2016



## Description of Station #4

Constructed in 1940

Total Existing Area: 7,807 SF

Total Program Space Requirement: 14,924 SF

Station #4 is located at 906 Gillette Street

## Space Needs Analysis

The size of Station #4 is inadequate. The Space Needs Analysis recommends a station size of 14,924 SF as contrasted by the existing area of 7,807 SF a recommended increase of 7,116 SF.



## Existing Conditions

The two-story station with a basement is the oldest of the City's four (4) fire stations.

The construction of existing exterior walls is brick masonry walls. Wall insulation is inadequate and does not meet current energy code. The existing windows are inadequate

## Existing Site Limitations

Station #4's site does allow for off street parking, but the facility does not provide drive through bays.

Station #4's site will not allow building additions to meet the program requirements.



## ADA Compliance

Station #4 does not meet current ADA requirements. Any remodeling/renovation of significant scope would require building modifications to bring the facility into ADA compliance.



### Station #4 Functionality

Station #4 functions as a two bay station with a single overhead door. The apparatus door is not an adequate, for current apparatus (14' door height is recommended). The single bay width is not adequate to allow internal circulation around apparatus. 8'-0" between is recommended. To meet size limitations, new apparatus is purchased to meet building size limitations rather than mission requirements.

In general, Station #4 was designed and constructed when fire apparatus was considerably smaller in both length and height. The number and type of apparatus, along with mission statements of fire departments, have evolved significantly over the years.

Station #4's crew living and working spaces having doors/sliding poles connected directly to the apparatus bays. Resulting exhaust gases coming into the station continue to pose a serious health issue. The Station is not equipped with an encapsulated exhaust systems for apparatus.

Dormitory accommodations are substandard to the fire industry and lack gender considerations, isolation of health issues, and privacy (snoring). Likewise, shower/toilet rooms are not gender specific, and are gender shared. Noise issues affecting full time living conditions are brought on by poor building insulation/construction.



Station #4 suffers from inadequate storage rooms, causing equipment to be stored wherever there may be space, such as electrical/HVAC rooms. This is particularly true for medical storage.

Station #4 suffers from inadequate Biohazard Decontamination areas. Blood Borne Pathogens are currently cleaned in the common areas of the station.

## **Recommendations – Station #4**

Station #4 is 76 years old. Like La Crosse's other stations, Station #4 is insufficient in recommended program space, in this case by 12,610 SF. Also, like La Crosse's other stations, Station #4 is additionally lacking in training areas (classroom, site specific, and wellness), gender equity, dormitory issues, inefficient thermal insulation and inadequate HVAC, electrical systems and handicap accessibility. It is our recommendation the City begin planning for a replacement Fire Station #4. Even with additional property being purchased, we do not anticipate a building addition being a viable financial option to address all the problems identified with the existing conditions listed within the body of this report.

We have provided an opinion preliminary planning estimate based on our understanding of current market conditions for stations of similar scope.

### **Immediate Concerns:**

- Lack of encapsulated exhaust system
- Lack of adequate decontamination rooms
- Lack of adequate medical storage
- Lack of on-site washer and dryer

We recommend the City correct existing health safety issues concerning the lack of apparatus exhaust and adequate recontamination areas. Installation of an encapsulated exhaust system currently cost approximately \$10,000 to \$12,000 per vehicle drop. On the upside, a large portion of installed system can be salvaged and relocated to a new station.





## Opinion of Probable Construction Costs

PROJECT: City of La Crosse Fire Station #4 Replacement  
 LOCATION: La Crosse, WI  
 PHASE: Study Estimate

Anticipated Construction Costs	Estimated Construction Cost @ \$210 SF (Smaller Size)	\$3,143,300
	Bidding Contingency 5%	\$157,165
	Probable Construction Cost	\$3,300,465
	Construction Contingency 5%	\$165,023
	<b>Total Construction Cost</b>	
	Not Including Site Acquisition Cost	\$3,465,488

ADDITIONAL (SOFT) COSTS / REIMBURSABLES	Soft Cost	\$277,239
	Architecture/Engineering Fee @ 8%	
	<b>Possible Additional Services</b>	
	(Should LEED Certification be desired)	
	Sustainable Design (LEED)	\$37,000
	Commissioning	\$20,000
	Technology	\$8,000
	TOTAL - ADDITIONAL SERVICES	\$65,000
	<b>Reimbursables (estimated)</b>	
	PRINTING - EXISTING DOCUMENTS	
	PRINTING - REVIEW DOCUMENTS	\$3,500
	PRINTING - BID DOCUMENTS	\$9,000
	PROJECT WEBSITE (dfm)	\$3,000
	POSTAGE / UPS	
	SITE SURVEY (Topo & Historical)	\$8,500
	SOIL TESTING	\$5,000
	CONSTRUCTION TESTING	\$15,000
	LEED Certification Fees	\$6,500
	<b>TOTAL - REIMBURSABLES</b>	\$50,500
	<b>Other Project Costs</b>	
	LAND ACQUISITION	
	External SITE Costs	\$15,000
	INTERIOR SIGNAGE & GRAPHICS	
	*TECH., TELECOM, SECURITY	\$85,000
	*FURNITURE & EQUIP	\$145,000
	Programming	
	OTHER	
	TOTAL OTHER COSTS	\$245,000
	<b>TOTAL ADDITIONAL COSTS</b>	\$572,739

### \*Technology (Provided by Owner)

Network, Comp, Phone  
 Video Surveillance In Construction  
 AV Equipment In Construction  
 Alerting Wiring In Construction  
 Alerting  
 Radio

### \*Furniture & Equipment (Provided by Owner)

Furniture  
 Gear Lockers  
 Plymovent  
 SCBA Comp & Fill  
 Extractor

**TOTAL PROJECT COST**

**\$4,038,227**



## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #4

Date:

20-Jun-16

### Apparatus Floor

Spaces	Existing	Length	x	Width	=	Ft <sup>2</sup>	Quantity	Total Ft <sup>2</sup>	Proposed Bay	Notes
Engines		45	x	16	=	720	1	720		
Ladder/Snorkel		90	x	16	=	1440	0	0		
4WD Land Access Vehicle		45	x	16	=	720	1	720		
Trailers		30	x	16	=	480	0	0		
Boat/Trailer		40	x	16	=	640	0	0		
Arson Unit		45	x	16	=	720	0	0		
Utility/Pickup		22	x	16	=	352	0	0		
Haz Mat		22	x		=	0	0	0		
Haz Mat-Diking/Booming		22	x		=	0	0	0		
Portable Pump/Trailer			x		=	0	0	0		Inflatable stored in a bag
Snowmobile/ATV/Trailer			x		=	0	0	0		
Firefighter Rehab Unit			x		=	0	0	0		
Tanker		50	x	16	=	800	0	0		
Command Vehicle		35	x		=	0	0	0		
Portable Lighting		24	x	16	=	384	0	0		
Rescue Squad		45	x	16	=	720	0	0		
Brush Buggy #31		24	x	16	=	384	0	0		
Mass Casualty		24	x	16	=	384	0	0		
Vehicle Maintenance Bay		40	x	16	=	640	0	0		
Wash Bay		70	x		=	0	1	0		
Portable air and light unit		24	x	16	=	384	0	0		
EMS										
EMS Command Vehicle			x		=	0	0	0		
Future Bay		80	x	20	=	1600	1	1600		Future
Mass Casualty Trailer			x		=	0	0	0		
Phsysc Unit		25	x	16	=	400	0	0		
								3,040		Subtotal (Ft <sup>2</sup> )
								608		Efficiency Ratio of 20%
								3,648		Apparatus Floor Total (Ft <sup>2</sup> )

The City of La Crosse currently does not provide a City operated EMS service. EMS service has been the topic of discussion for several years. A future bay has been included in our needs analysis.

Existing = Existing Equipment  
Future = Future Equipment

See also Training for other Apparatus and Large Equipment

Apparatus Sizing Table (Ft <sup>2</sup> )							3,040
Number of Bays		3	4	5	6	7	8
		Length					
Depth	60	4800	6240	7680	9120	10560	12000
	80	6400	8320	10240	12160	14080	16000
	100	8000	10400	12800	15200	17600	20000

14,924

Overall Space Estimate (Ft<sup>2</sup>)

Would like Drive through bays





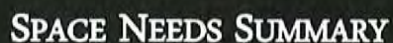




20-Jun-16







20-Jun-16



## SPACE NEEDS SUMMARY

**Project: LaCrosse Fire Department**

Location: Station #4

Date: June 21, 2016

## Site

[illegible]



## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #4

Date:

20-Jun-16

### Totals

Apparatus Bays	3,648
Apparatus Bay Support	1,584
Training	3,150
Administration	2,523
Living Quarters	2,073
Training - Tempered	0

12,977 Station Footprint (Ft<sup>2</sup>) Sub Total

1,947 Infrastructure (M & E) Space Factor 15%

14,924 TOTAL PROGRAM SPACE REQUIREMENT

# AREA LEGEND



CORRIDOR / CIRCULATION



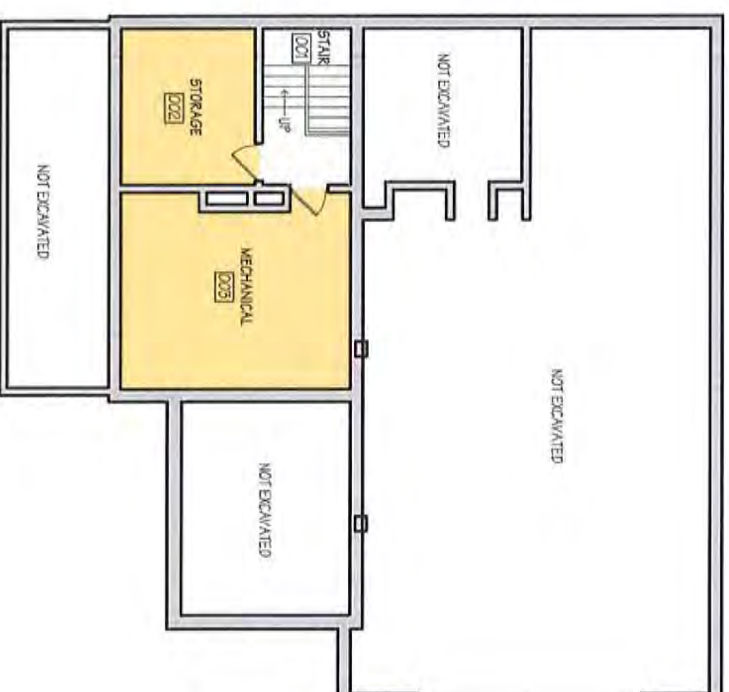
STORAGE / MECHANICAL

## BUILDING SQUARE FOOTAGE

LOWER LEVEL TOTAL	=	780 SF
MAIN LEVEL TOTAL	=	3,420 SF
SECOND LEVEL TOTAL	=	1,400 SF
OVERALL TOTAL	=	5,600 SF

## LOWER LEVEL

1/16" = 1'-0"



# LA CROSSE FIRE STATION STUDY

STATION 4  
12.01.2016



**AREA LEGEND**

- ADMINISTRATION
- APPARATUS BAY
- APPARATUS BAY SUPPORT
- CORRIDOR / CIRCULATION
- LIVING QUARTERS

BUILDING SQUARE FOOTAGE		
LOWER LEVEL TOTAL	=	780 SF
MAIN LEVEL TOTAL	=	3,420 SF
SECOND LEVEL TOTAL	=	1,400 SF
OVERALL TOTAL	=	5,600 SF



**LA CROSSE FIRE STATION STUDY**

STATION 4

12.01.2016

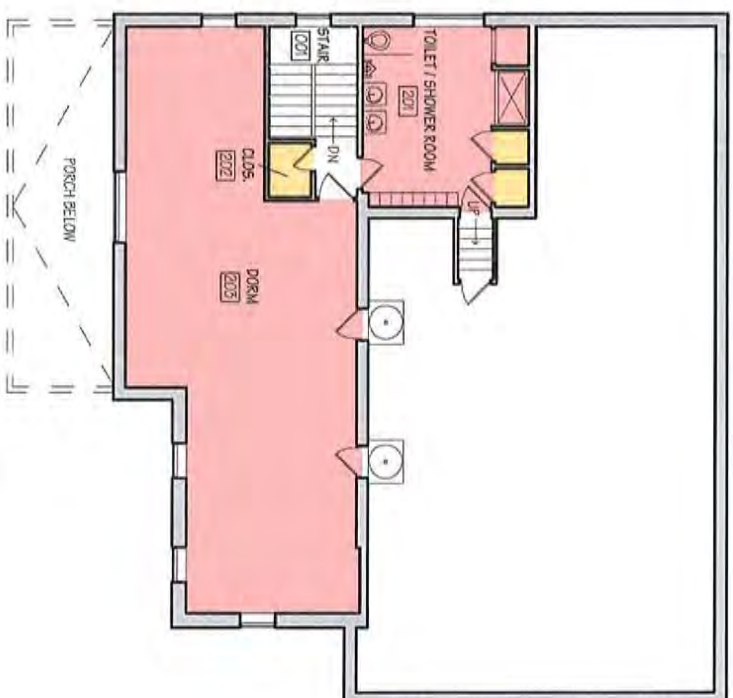


PROJECT: 16-039

# AREA LEGEND

- CORRIDOR / CIRCULATION
- LIVING QUARTERS
- STORAGE / MECHANICAL

BUILDING SQUARE FOOTAGE		
LOWER LEVEL TOTAL	=	780 SF
MAIN LEVEL TOTAL	=	3,420 SF
SECOND LEVEL TOTAL	=	1,400 SF
OVERALL TOTAL	=	5,600 SF



## LA CROSSE FIRE STATION STUDY

STATION 4  
12.01.2016

## **Future Station #5**

Location: Site Selection in Progress

A future Station #5 is proposed to improve emergency service response times to an area currently under served. The actual site for Station #5 has not been selected. A space needs analysis suggests a recommended building size of 14,924 SF.

Optimally, a site of 2.5 acres is ideal for a State of the Art Fire Station. Such a site would allow drive through bays, adequate staff and public parking, adequate apparatus bay aprons to allow exterior vehicle staging (70' recommended), and on-site training. Such sites are rare in urban areas and frequently require a protracted acquisition process.

As a value proposition, Five Bugles Design recommends the City of La Crosse consider a single story, masonry fire station. In our opinion, a masonry structure offers the best cost us life cycle performance. We have provide an opinion of probable cost at \$4,038,277 based on current 2017 cost models.





## Opinion of Probable Construction Costs

PROJECT: City of La Crosse Future Fire Station #5  
 LOCATION: La Crosse, WI  
 PHASE: Study Estimate

Anticipated Construction Costs	Estimated Construction Cost @ \$210 SF		\$3,143,300
	Bidding Contingency	5%	\$157,165
	Probable Construction Cost		\$3,300,465
	Construction Contingency	5%	\$165,023
	<b>Total Construction Cost</b>		
	Not Including Site Acquisition Cost		\$3,465,488

ADDITIONAL (SOFT) COSTS / REIMBURSABLES	Soft Cost		\$277,239
	Architecture/Engineering Fee @ 8%		
	<b>Possible Additional Services</b> (Should LEED Certification be desired)		
	Sustainable Design (LEED)		\$37,000
	Commissioning		\$20,000
	Technology		\$8,000
	TOTAL - ADDITIONAL SERVICES		\$65,000
	<b>Reimbursables (estimated)</b>		
	PRINTING - EXISTING DOCUMENTS		
	PRINTING - REVIEW DOCUMENTS		\$3,500
	PRINTING - BID DOCUMENTS		\$9,000
	PROJECT WEBSITE (dfm)		\$3,000
	POSTAGE / UPS		
	SITE SURVEY (Topo & Historical)		\$8,500
	SOIL TESTING		\$5,000
	CONSTRUCTION TESTING		\$15,000
	LEED Certification Fees		\$6,500
	<b>TOTAL - REIMBURSABLES</b>		\$50,500
	<b>Other Project Costs</b>		
	LAND ACQUISITION		
	External SITE Costs		\$15,000
	INTERIOR SIGNAGE & GRAPHICS		
	*TECH., TELECOM, SECURITY		\$85,000
	*FURNITURE & EQUIP		\$145,000
	Programming		
	OTHER		
	TOTAL OTHER COSTS		\$245,000
	<b>TOTAL ADDITIONAL COSTS</b>		\$572,739

**\*Technology (Provided by Owner)**  
 Network, Comp, Phone  
 Video Surveillance In Constrction  
 AV Equipment In Construction  
 Alerting Wiring In Costruction  
 Alerting  
 Radio

**\*Furniture & Equipment (Provided by Owner)**  
 Furniture  
 Gear Lockers  
 Plymovent  
 SCBA Comp & Fill  
 Extractor

**TOTAL PROJECT COST** **\$4,038,227**



## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #5

Date:

20-Jun-16

### Apparatus Floor

Spaces	Existing	Length	x	Width	=	Ft <sup>2</sup>	Quantity	Total Ft <sup>2</sup>	Proposed Bay	Notes
Engines		45	x	16	=	720	1	720		
Ladder/Snorkel		90	x	16	=	1440	0	0		
4WD Land Access Vehicle		45	x	16	=	720	1	720		
Trailers		30	x	16	=	480	0	0		
Boat/Trailer		40	x	16	=	640	0	0		
Arson Unit		45	x	16	=	720	0	0		
Utility/Pickup		22	x	16	=	352	0	0		
Haz Mat		22	x		=	0	0	0		
Haz Mat-Diking/Booming		22	x		=	0	0	0		
Portable Pump/Trailer			x		=	0	0	0		Inflatable stored in a bag
Snowmobile/ATV/Trailer			x		=	0	0	0		
Firefighter Rehab Unit			x		=	0	0	0		
Tanker		50	x	16	=	800	0	0		
Command Vehicle		35	x		=	0	0	0		
Portable Lighting		24	x	16	=	384	0	0		
Rescue Squad		45	x	16	=	720	0	0		
Brush Buggy #31		24	x	16	=	384	0	0		
Mass Casualty		24	x	16	=	384	0	0		
Vehicle Maintenance Bay		40	x	16	=	640	0	0		
Wash Bay		70	x		=	0	1	0		
Portable air and light unit		24	x	16	=	384	0	0		
<b>EMS</b>										
EMS Command Vehicle			x		=	0	0	0		
Future Bay		80	x	20	=	1600	1	1600		Future
Mass Casualty Trailer			x		=	0	0	0		
Phsync Unit		25	x	16	=	400	0	0		
								<b>3,040</b>		<b>Subtotal (Ft<sup>2</sup>)</b>
								<b>608</b>		<b>Efficiency Ratio of 20%</b>
								<b>3,648</b>		<b>Apparatus Floor Total (Ft<sup>2</sup>)</b>

The City of La Crosse currently does not provide a City operated EMS service. EMS service has been the topic of discussion for several years. A future bay has been included in our needs analysis.

Existing = Existing Equipment  
Future = Future Equipment

See also Training for other Apparatus and Large Equipment

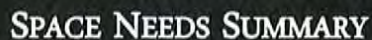
Apparatus Sizing Table (Ft <sup>2</sup> )							3,040
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		Length					
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14,924

Overall Space Estimate (Ft<sup>2</sup>)

Would like Drive through bays





20-Jun-16

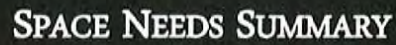




20-Jun-16







20-Jun-16

Building D04, Suite 202 | 800 Wisconsin St, Mailbox 2 | Eau Claire, WI 54703 | 715.832.4848 | [fivebuglesdesign.com](http://fivebuglesdesign.com)





## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #5

Date: June 21, 2016

### Site

Spaces	Existing	Quantity	Notes
Fire Staff Parking		12	Includes shift change
Administrative Staff Parking		0	
Public Parking		2	
Other Parking needs		2	
Fire Apparatus Apron		0	
EMS Apparatus Apron		0	
Outdoor Training		0	
Outdoor Patio		0	
Enclosed Dumpster		0	
External Generator		0	
Storm Water Treatment		0	
Extrication pavement		0	
Other			
Other			
Other			
Other			



## SPACE NEEDS SUMMARY

Project: LaCrosse Fire Department

Location: Station #5

Date:

20-Jun-16

### Totals

Apparatus Bays	3,648
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Apparatus Bay Support	1,584
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12,977	Station Footprint (Ft <sup>2</sup> ) Sub Total
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1,947	Infrastructure (M & E) Space Factor 15%
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14,924	TOTAL PROGRAM SPACE REQUIREMENT
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ARCHITECTURAL DESIGN FOR PUBLIC SAFETY