



Satellite Fire Station Space Needs Study



CITY OF RED WING

Space Needs Analysis Report

October 21, 2009

Satellite Fire Station Space Needs Study



Mission

- To determine current and future space needs and provide possible site layout options with recommendations.



Population

History & Projections

Year

1980	13,762
1990	15,097
2000	16,116
2005	16,552
2010	16,883
2020	17,564
2030	18,273

Process

Step 1

- Current and Future Operations
- Space Needs Analysis
- Facility and Site Analysis

Step 2

- Program – Space Requirements
- Site Selection
- Site Options
- Probable Costs



Satellite Fire Station Space Needs Study



Process

Staff Involvement

- Fire Chief
- Fire Department Staff
- Fire Marshall
- Public Works Deputy Director

Guiding Principals and Strategy Implementation

- The facility, by design and location, enables firefighters a quick response time.
- The facility, by design and looks, displays a functional, professional, long-lasting public image.
- The fire facility to meet the recommendations of the RW Sustainability Commission.
- The building is designed to provide a healthy and safe work environment.
- The building is built to be energy efficient and ecologically responsible.
- The building is constructed of durable, long-lasting materials.
- The facility meets public fire and rescue needs for today and 15-20 years.
- The facility to provide adequate training capabilities for firefighters.
- Protection of equipment from the effects of weather elements.
- The facility is designed for efficient, functional, and organized fire fighting activities.
- Natural day-lighting for apparatus bay and offices / administrative spaces.



Satellite Fire Station Space Needs Study



City of Red Wing Satellite Fire Station Space Needs Study					
Room Name	Function	Equipment	Adjacent Rooms	Dimensions	Net Sq. Ft.
Office / Administration / Public Areas					
Entry / Vestibule	Air Lock secured entry	Card Reader, heater	Lobby / Waiting Area	8' x 10'	80.0
Lobby	Waiting Area	Chairs, 2 - 3	Reception Area, Offices Public Restrooms	12' x 15'	180.0
Men's Toilet Room	Shared Staff and Public Restroom	1 sink, 1 WC, 1 urinal	Offices, Training Room	10' x 13'	130.0
Women's Toilet Room	Shared Staff and Public Restroom	1 sink, 2 WC	Offices, Training Room	10' x 13'	130.0
Janitor's Closet	Maintenance, cleaning	Floor sink, mop rack shelving	Restrooms	6' x 10'	60.0
Station Office	Staff Office - 3 Officers and Radios	3 workstations (8' x 8')	Entry, Open Office area	16' x 20'	320.0
Open Office Area	Shared office area / reports	2 workstations (8' x 8'), with desk & computer area for shared use / reports	Station Office, Copy / Fax Room	10' x 20'	200.0
Copy / Fax / Mail Workroom Supplies	copies, fax, supplies sort incoming & outgoing staff & dept. mail	Copier-scanner-fax machine counter with base and wall cabinets.	Open offices	8' x 12'	96.0
Conference Room	smaller meeting room, one-on-one meetings	table & 4 chairs, network telephone	Open Office, Station Office	12' x 14'	168.0
Training Room	training, classroom 49 person capacity	tables, chairs, network audio-video, clg. Projector	Kitchen, toilets	32' x 42'	1,344.0
Red Wing Fire Station # 2		Total Dept. Net Sq. Footage			2,708.0
Office / Administration / Public Areas		Total Dept. Gross Sq. Footage (multiplier of 35%)		1.35	3,655.8



Satellite Fire Station Space Needs Study



Room Name	Function	Equipment	Adjacent Rooms	Dimensions	Net Sq. Ft.
Firefighter's Support					
Kitchen Kitchen Pantry Dining	Staff Food prep & dining personal food stores Staff dining, break room	1- 4 burner stove, 3 microwaves 20 - 24 lockable cubicles 2 standard refrig. w/ ice, freezer	Dayroom, Training Room table & chairs for 8, 4 barstools	22' x 30'	660.0
Dayroom	Staff break area, relaxation	Easy-chairs, couch, TV network, table & chairs	Kitchen / dining	18' x 24'	432.0
Fitness / Exercise Room	Staff exercise	exercise equipment, stationary	Offices, Dayroom	16' x 22'	352.0
General Storage Recycling / trash	storage of miscellaneous equipment, supplies, recycling	Metal shelving recycling bins	along outside wall with overhead door	12' x 16'	192.0
EMS Supply Room	Storage of EMS supplies, equipment	Metal shelving	EMS / SCBA / Laundry Rm. off the Apparatus Bays	10' x 18'	180.0
Mechanical Equipment Room	HVAC systems	domestic hot water, boiler heat recovery system		16' x 20'	320.0
Electrical Equipment Room	Main Elec. Service Entrance/ Distribution	Electrical Panels, Breaker Boards		12' x 16'	192.0
IT / Computer/ Tele. Communications	Incoming network services / distribution	computer racks / networks high-speed modem	near offices for easy access	10' x 12'	120.0
Sprinkler Riser Room	Bldg. Fire Protection entrance & distribution	water meter	near exterior wall	8' x 12'	96.0
Red Wing Fire Station # 2		Total Dept. Net Sq. Footage			2,544.0
Firefighter's Support Areas		Total Dept. Gross Sq. Footage (multiplier of 35%)		1.35	3,434.4

Room Name	Function	Equipment	Adjacent Rooms	Dimensions	Net Sq. Ft.
Living Quarters / Dormitory					
Dormitory Rooms 6 rooms of 11.5' x 14'	Sleeping Quarters/ Single shared per shifts; Shifts A, B, C	1 bed, nightstand, phone, 3 wardrobes, desk & chair 3 drawer file cabinet	Toilet/Showers, Laundry	11.5' x 14' 6 thus(161')	966.0
Men's Shower / Toilet Room	Staff Only - male	2 shwr, 2WC, 2 urinals 2 sinks	Dorm rooms, Laundry	15' x 25'	375.0
Women's Shower / Toilet Room	Staff Only - female	2 shwr, 2WC, 2 sinks	Dorm rooms, Laundry	15' x 25'	375.0
Laundry / Linen Supply Room	Cleaning of stationwear & bedding	1 HD washer, 1 HD dryer linen closet w/ shelving	Dorm Rooms, showers	10' x 12'	120.0
Janitor's Closet	Maintenance, cleaning	floor sink, mop rack			-
Red Wing Fire Station # 2		Total Dept. Net Sq. Footage			1,836.0
Living Quarters / Dormitory		Total Dept. Gross Sq. Footage (multiplier of 35%)		1.35	2,478.6



Satellite Fire Station Space Needs Study



Room Name	Function	Equipment	Adjacent Rooms	Dimensions	Net Sq. Ft.	
Apparatus Bays / Support						
Apparatus Bays Double Deep (1 thus)	Dbl. Door Drive-Thru vehicle / equip. storage	2 apparatus trucks air, water-fill, elec. drops		18' x 88'	1,584.0	
Apparatus Bays Double Deep (2 thus) (Provide wall mounted maps near staff entrance, in glass display case.)	Single door, back-in vehicle / equip. storage	4 trucks, flammable wastetrap air, water-fill, elec. drops	wider bays to accomodate turn-out gear racks (Provide 2 Eye-Wash / Haz-Mat Shower Units at perimeter walls.)	22' x 88' 1,936sq.ft.	3,872.0	
Gear Racks	turn-out gear, individual firefighters equipment	24 open lockers @ 24"W x 20"D x 74"T	mounted on perimeter walls			
SCBA / Wash / EMS Clean / Laundry Room	Gear washing, cleaning EMS Equip. SCBA equip.	stainless steel dbl. Sinks, drainboards, countertops, HD washer & dryer	Apparatus Bays, EMS Supply Rm.	12' x 18'	216.0	
Workroom / Tools Shop / Storage	tool storage, parts, equip.	counter-tops, tool cabinets	Apparatus Bays	12' x 15'	180.0	
Compressor Room	Fill SCBA air tanks, storage of tanks	compressor, tank racks	Apparatus Bays, SCBA wash	8' x 12'	96.0	
Toilet - Unisex	Staff restroom	1 sink, 1 WC, 1 urinal	Apparatus Bays	7' x 10'	70.0	
General Storage	Station general storage tables & chairs, equip.	open space	Apparatus Bays, could be mezzanine open to bays	15' x 45'	675.0	
Red Wing Fire Station # 2		Total Dept. Net Sq. Footage			6,693.0	
Apparatus Bays / Support Areas		Total Dept. Gross Sq. Footage (multiplier of 15%)			1.15	7,697.0

Red Wing Fire Station # 2 - Space Needs Study		Building Totals		
Department		Net Square Feet	Multiplier	Gross Square Feet
Office / Administration / Areas	assumed 1st Floor Level	2,708.0	1.35	3,655.8
Firefighter Support Areas	assumed 1st Floor Level	2,544.0	1.35	3,434.4
Apparatus Bays / Support Areas	assumed 1st Floor Level	6,693.0	1.15	7,697.0
Living Quarters / Dormitory	assumed 1st Floor Level	1,836.0	1.35	2,478.6
TOTALS		13,781.0		17,265.8
City of Red Wing Fire Station # 2 - Satellite Station				
Total Gross Square Footage		17,266 Gross Sq. Ft.		

Selected Fire Station Site

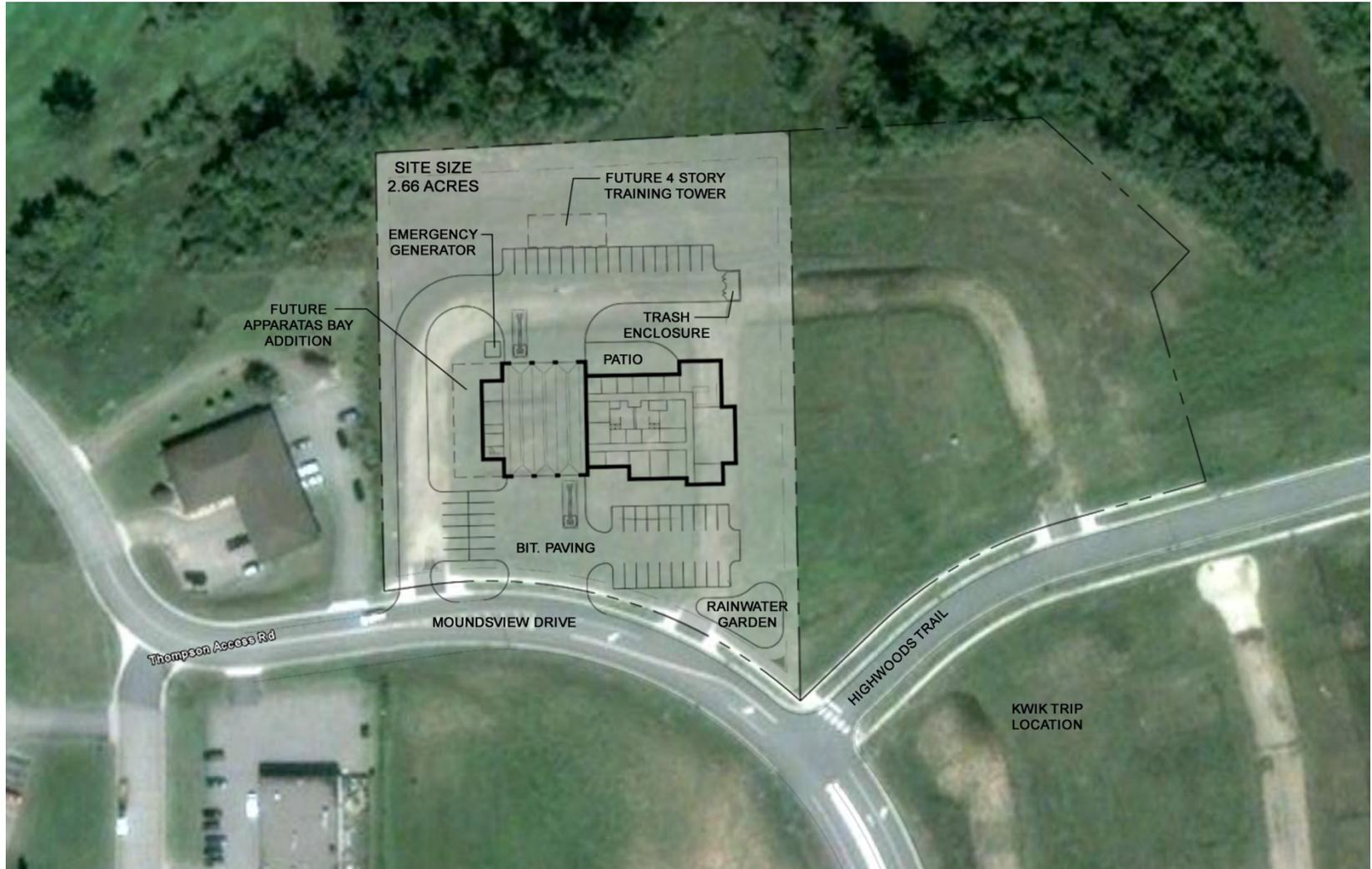
Moundview Drive at Hwy 61



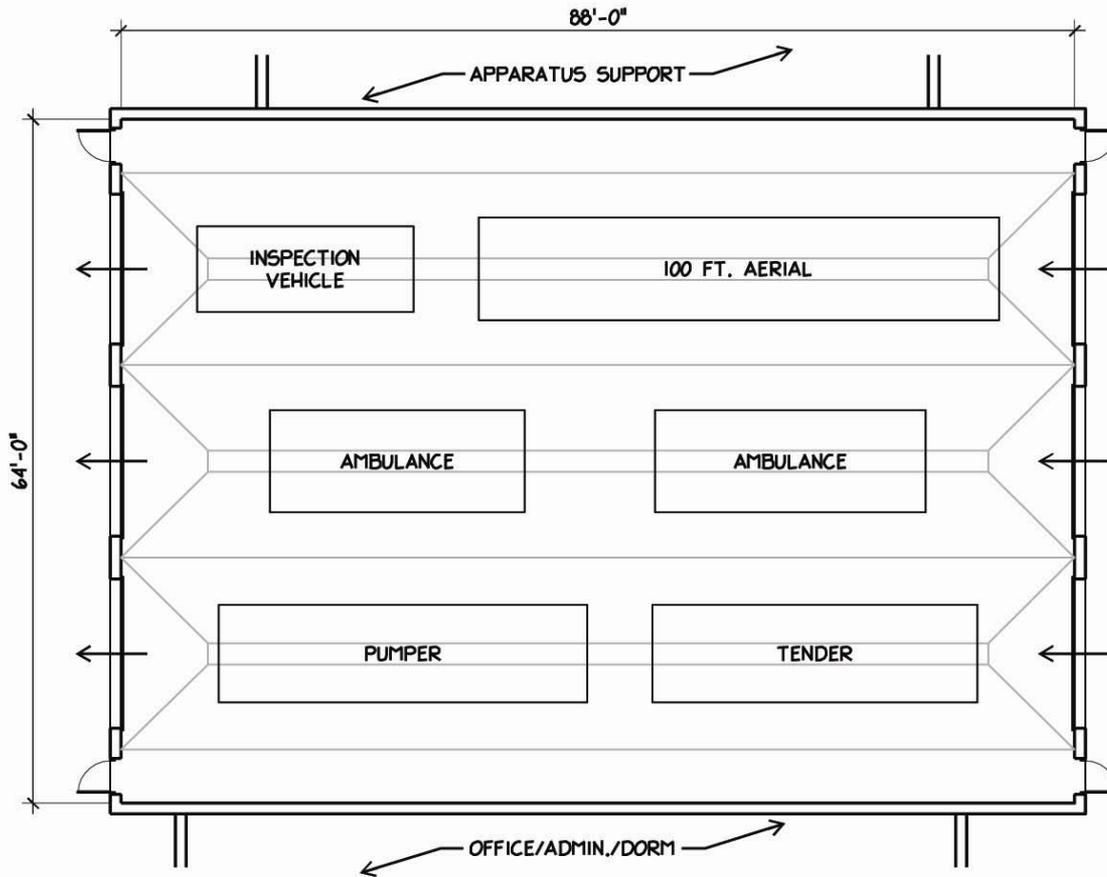
Satellite Fire Station Space Needs Study



Selected Fire Station Site



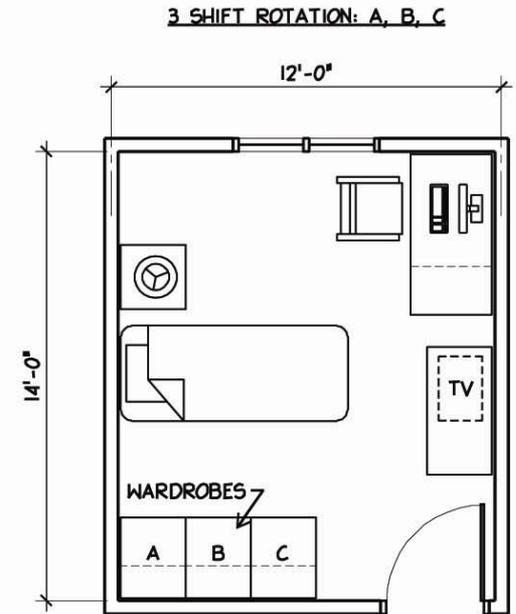
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APPARATUS BAYS

SCALE: 1/16" = 1'-0"

DRIVE-THRU BAYS



TYP. DORM. RM.

SCALE: 3/16" = 1'-0"



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Probable Costs

Hard Costs - Construction

• Office / Administration:	3,656 G.S.F. x \$175/sq. ft. = \$	639,800
• Firefighter Support Areas:	3,435 G.S.F. x \$175/sq. ft. =	566,775
• Living Quarters / Dorms:	2,479 G.S.F. x \$150/sq. ft. =	371,850
• Apparatus Bay / Support Areas:	7,700 G.S.F. x \$105/sq. ft. =	808,500

Construction Cost \$2,286,925

Project Soft Costs

• Site Topographic Survey	5,000
• Soil Borings / Geotechnical Report	8,000
• Legal Fees / City Attorney	6,000
• Permits / Plan Approvals	2,500
• Design Fees	185,000
• Printing – Reimbursables	9,000
• FFE (Furniture, Fixtures & Equipment)	20,000
• IT / Technology	30,000

Soft Costs \$265,500

OVERALL PROJECT BUDGET \$2,652,425

- Does not include land purchases
- Based on 2009 construction costs. Add 4-5% inflation per year.
- LEED NC Certification costs.....\$48,000
- Future Training Tower Cost.....\$675,000

