

EXISTING CONDITIONS AND CONCEPT STUDY FOR THE VILLAGE OF
PALMYRA PUBLIC SAFETY DEPARTMENT

PALMYRA, WI

MARCH 2026



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INTRODUCTION

PROJECT BACKGROUND:

The Palmyra Public Safety Department (PPSD) which includes Palmyra Fire Rescue (PFR) and the Palmyra Police Department (PPD) has engaged Five Bugles Design (FBD), a Wendel Companies, to perform: an existing conditions assessment of the existing station; space needs analysis and conceptual planning to identify current and projected space needs for the next 20 years. The intention of the existing conditions assessment is to determine if the existing facility can be renovated and expanded to create a combined facility that meets the needs of PPSD, or if the existing station should be razed, with a new facility to be built, either in its place or at another location. The project was a dynamic, team effort between members of PFR, PPD, Palmyra City Administration, and FBD to provide the following:

- To review the existing physical conditions and structures of the existing station to determine if the building could be renovated to meet the needs of the department - both for PFR and PPD as a combined Public Safety Department.
- A space needs analysis to determine the Departments' needs when designing and constructing (or renovating the existing station into) a new Public Safety Facility.
- Provide conceptual design(s), considering needs, site and future growth.
- Provide potential costs associated with the conceptual designs.

PALMYRA PUBLIC SAFETY DEPARTMENT HIGHLIGHTS INCLUDE:

- The Palmyra Police Department and the Palmyra Fire Department were combined into a single Public Safety Department in 2016
- Provides coverage for the Village and Town of Palmyra; approximately 37 square miles
- Population of approximately 3,426 people
- Total current Police Department staffing includes:
 - Three (3) full-time staff
 - Three (3) part-time staff
- Total current Fire Department staffing includes:
 - One (1) part-time Chief
 - Six (6) full-time firefighter- EMTs
 - 10 (10) part-time fire fighter-EMTs
- One Station, located in the Village of Palmyra
- Police Apparatus Includes:
 - Two (2) squads
- Fire Apparatus Includes:
 - One (1) engine
 - One (1) tender
 - Two (2) ambulances
 - One (1) brush truck
 - One (1) utility pick-up
 - One (1) ATV with trailer
- PPSD has responded to an average of 275 calls annually for the past five years.

There were several meetings (in-person and virtual) held to establish and meet the expectations of the Department and community. These meetings included a programming session to determine the space needs of the PPSD for a combined facility; concept reviews; tours of PPSD's existing facilities to review conditions; review of metal building restrictions; and meetings to determine the desired format and timeline for this report.



SPACE NEEDS ANALYSIS

SPACE NEEDS ANALYSIS

A buildings space needs analysis is often called its Building Program. In the winter of 2026, a programming session was completed to determine the individual room and overall square footage needs for a potential new public safety building for PPSD, while at the same time addressing the needs and concerns of the community. This guided discussion was led by FBD’s Emergency Services Specialist, a retired fire chief, and was attended by members of PPSD, and members of the FBD team.

We view programming as the fundamental basis of design and attribute the success of projects to this strong foundation. The spaces, sizes, and relationships identified in the program sessions are what we base all concepts on throughout the course of the project.

Within any contemporary fire station, there are six different categories that spaces are divided into, based on relationships and function. Similarly, the police department is divided into ten categories, though not all categories are needed by all departments. These categories are based on relationships, function, and access control. The following table identifies the totals of these areas. Greater detail of individual spaces can be found in Appendix.

If the project continues past the conceptual design phase, tours will be given to the building committee members, as well as any members of the Village. These tours help to provide a greater sense of what sizes of spaces in a new station could look and feel like, how it functions, and to confirm the spaces are right-sized for your departmental needs.

FIRE PROGRAM

SPACE	20-YEAR NEED
Apparatus Bays	12,850
Apparatus Support	3,390
Training	2,030
Administration	2,565
Living Quarters & Support	4,375
Mechanical, Electrical & Circulation	3,785
TOTAL NEW CONSTRUCTION	28,995

SPACE NEEDS ANALYSIS

POLICE PROGRAM

SPACE	20-YEAR NEED
Command Staff	880
Administration & Support Staff	2,205
Public	760
Patrol	1,175
Investigations	115
Operational	2,155
Evidence & Property	1,215
Fleet Support	2,670
Booking	385
Court	0
Mechanical	2,310
TOTAL NEW CONSTRUCTION	13,875



EXISTING CONDITIONS

ARCHITECTURE

EXISTING CONDITIONS: ARCHITECTURE



EXISTING STATION

The existing Palmyra Public Safety Department at 126 N 1st Street was designed and constructed in 1953. Two building additions were added in 1997. The original building is approximately 4,800 s.f., single story, constructed of concrete block bearing walls with heavy timber beams, and steel joists supporting a flat membrane roof.

The addition is comprised of two parts. The first addition is 3,400 s.f. and expanded the apparatus bays on the northwest side of the original building. It is one-story plus a basement and is constructed of precast concrete floor planks, concrete block bearing walls and steel bar joists supporting a membrane roof.

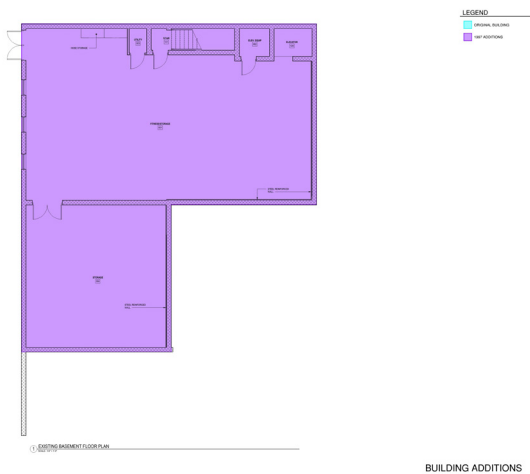
The second addition is 684 s.f. and is comprised of a vestibule, dispatch office with bell tower above and watch office on the southeast side of the building and is constructed of concrete block walls with steel bar joists supporting a membrane roof. The bell tower has a standing seam metal roof.



Palmyra Fire & Rescue
Existing Conditions
126 N. 1st Street
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EXISTING STATION: FIRST FLOOR PLAN



Palmyra Fire & Rescue
Existing Conditions
126 N. 1st Street
Palmyra, WI, 53156



EXISTING STATION: BASEMENT

The plans on the left identify which area of the building will be referred to as the original building and which areas will be referred to as the addition. Full scale plans are included in Appendix B.

On the surface, the building appears in acceptable condition, but a closer inspection reveals the facility is beyond its useful life. Structural damage, continued water infiltration and rampant deferred maintenance would require significant cost and effort to correct.

Also, if this same building were to be constructed today, it would not meet

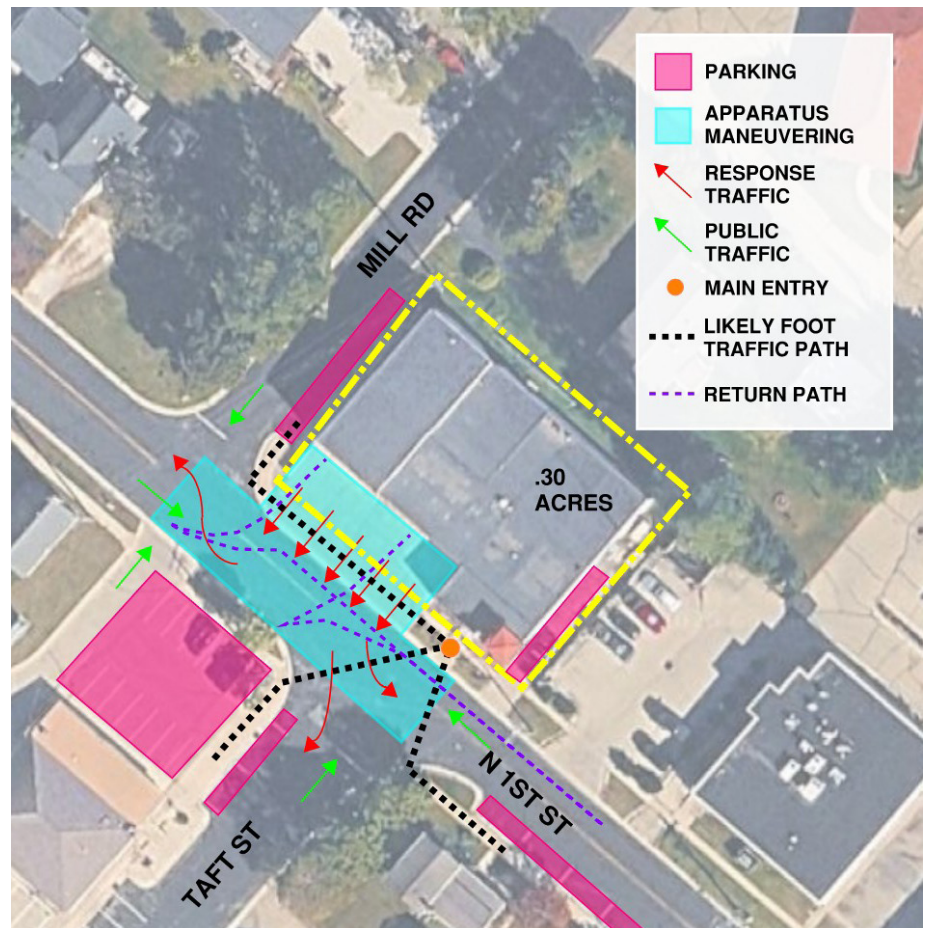
EXISTING CONDITIONS: ARCHITECTURE

the current International Building Code (IBC) or the Americans With Disabilities Act (ADA) requirements. If any renovations or additions are made to the facility, non-compliant items will likely need to be brought up to code.

In addition to IBC and ADA, the station does not meet the NFPA guidelines for a contemporary fire station, nor does it meet the functions and space needs of a contemporary public safety facility.

SITE: GENERAL LAYOUT

The building is located on a small lot at the intersection of N 1st Street and Mill Road at the end of Taft Street. The lot is .30 acres in size. The building appears to have been placed as close to the northwest and southwest property lines as allowable and even appears to potentially be located beyond the zoning setbacks along 1st Street and Mill Road.



EXISTING STATION: SITE

The building is nestled between a residential neighborhood and a main commercial zone and is completely landlocked with no room for expansion.

At the north corner of the current building, along the northwest property line, is a steep grade change and a retaining wall. This grade change continues to slope downward along Mill Road towards the south and creates an awkward condition at the apparatus bay apron. Apparatus exiting the two west most bays must pull out far into the street and make wide turns to ensure they do not hit the retaining wall.

The response apron has additional challenges as well. It is too shallow and too steep with a slope of almost 10% at the steepest point. Many of the apparatus cannot be parked on the apron without sticking out into the street. When exiting the building, due to uneven pavement and awkward turns, vehicles have to move very slowly to prevent vehicle or building damage which can impact response times. Also, because the bays are back-in, the apparatus block traffic when



RETAINING WALL AND STEEP SLOPE AT APPARATUS BAY APRON

EXISTING CONDITIONS: ARCHITECTURE



NARROW DRIVE / PARKING ON SOUTHEAST SIDE

they are maneuvering to back into the bays. This is major safety concern and should be avoided.

The location of the retaining wall on the east/northeast side of the response apron is also particularly dangerous because responders leaving for a call may not see a pedestrian who is coming up the hill on the other side of the wall. This blind corner is particularly hazardous.

Ideally apparatus bays are designed to be drive-thru, but if that is not possible, the response apron should be deep enough to allow apparatus to turn around completely on the apron prior to backing up into the bays instead of having to block the street. Also, the site should be designed to prevent foot traffic coming from parking areas from crossing the response apron to access the building entry.

The only on-site area for parking is a narrow drive on the southeast side of the building that can fit two or three vehicles single-file without blocking the sidewalk, but it is not ideal if the first-in vehicle must leave with other vehicles parked behind it.



LOOKING SOUTHEAST ON N 1ST ST. - NO SIGNS, OR MARKINGS WARNING OF RESPONSE TRAFFIC

The remainder of the available parking spaces are across the street towards the southwest in the Village Hall parking lot or alongside the northwest side of the building on Mill Road. This requires visitors and staff to cross the path of responding vehicles if they are arriving at the building during an active call. There are also no pavement markings, arrows, signs or signals warning pedestrians or vehicle traffic of potential response traffic.

For paid-on-call (POC) responders who arrive at the building prior to responding to a call in progress, this is not only unsafe, but it can also add valuable minutes to response times. Additionally, N 1st St. is uncontrolled and a marked truck route but there are no crosswalks or signs reminding drivers to slow down for pedestrians.



LOOKING NORTHWEST ON N 1ST ST. - NO SIGNS, OR MARKINGS WARNING OF RESPONSE TRAFFIC

Accessible, ADA compliant parking was not identified in the immediate area surrounding the building, however, the sidewalk in front of the main entry that leads to the street has an ADA ramp at the curb and the adjacent two corners across N First St. on both sides of Taft St. also have ADA ramps where the sidewalks meet the street.

EXISTING CONDITIONS: ARCHITECTURE



MAIN ENTRY SECURITY

The main, public entry to the building is accessible off of N 1st St.. On the sidewalk in front of the building is a red X where visitors must stand to be allowed entry into the building due to the location of the security camera. This process is awkward and requires visitors to first step up close to the building and use the voice intercom to explain to department staff the purpose of their visit. Because there are no windows that look out onto the entry door area, visitors then need to step back onto the red X to be seen by a security camera before being allowed to enter the secured vestibule.

When only fire department staff are in the building, the main entry is not monitored which is a potential security issue but also a safety issue if a visitor is arriving to the building because they are experiencing an emergency.

Another awkward condition at the main entry is that when the flag is flown at half-staff, it gets caught on the building because the pole is anchored very close to the wall.

SITE: GENERAL CONDITIONS

The concrete sidewalks at the building entry are mostly even and level, and appear to be ADA compliant, although the response apron asphalt is poor condition. It has extensive deterioration and cracking throughout. Ideally the apron would be lengthened, replaced with heavy duty asphalt with a more gradual slope between the building and the street. It should include proper traffic indicator striping and signage for responder and non-responder safety and ADA guidelines.



RETAINING WALL CRACKING

At the overhead doors, the thresholds are cracking and in poor condition at the two newer bays which has caused leaks in the basement. The concrete stoop in front of these bays is also in poor condition and is sloped differently from the adjacent asphalt creating a trip hazard.

The retaining wall on the west side of the property along the response apron shows signs of water infiltration. There is deterioration at the connections between the guardrail and the wall allowing water to infiltrate and crack the retaining wall due to freeze/thaw cycles. To prevent further structural damage and potential wall failure, the railing should be replaced, and the top of the wall should be crowned to force water to drain off. Cracks should be properly repaired and sealed.



SITE EROSION AT BASEMENT DOORS

As the site slopes downhill to the north along the northwest side of the building, it begins to slope back up slightly just beyond a set of double doors that leads into the basement of the building at the northwest corner. This creates a drainage issue and there is evidence of water infiltration at the building under the doors and dirt and debris washed down from the adjacent landscape area seen in front of the doors. Ideally the grade at the doors would be flat at the building and slope away towards the street to direct water north down Mill Rd. where it can be collected in the storm sewer.

Along the northeast side of the building, the site begins to slope back upward towards the east. There is a wood retaining wall along the property line on this side

EXISTING CONDITIONS: ARCHITECTURE

separating the site from the adjacent residence. The grade adjacent to the wall is severely deteriorated which has undermined a concrete stoop that is outside an emergency exit door. This is not code compliant and is an extremely dangerous condition. This side of the building should be completely re-graded, the retaining wall should be replaced and a new code-compliant, structurally sound exit stoop constructed. Underground drainage should be re-designed to ensure it is adequate and installed properly to direct water away from the foundation.



WOOD RETAINING WALL AND ADJACENT SITE EROSION

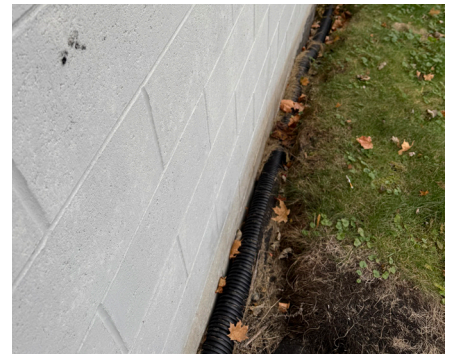
Site drainage along this northeast wall is also a concern. While the grade at the building technically slopes away from the wall, drain tiles that connect the downspouts together have become exposed and have eroded to create a lower spot along the foundation, effectively forming a swale that collects surface water and directs it down along the foundation wall rather than away. This has caused serious and significant structural foundation damage. This water infiltration has been impacting the foundation for many years, requiring numerous repairs to shore up the foundation walls from the inside to ensure structural integrity.



UNDERMINED EXIT STOOP

This side of the building should be completely re-graded, the retaining wall should be replaced and a new code-compliant, structurally sound stoop constructed. Stormwater management should be re-evaluated and re-designed for proper drainage to prevent further failure of the building foundation.

Along the southeast side of the building, the narrow driveway is covered in asphalt that extends between the building and a small stone retaining wall on the adjacent property. The asphalt is relatively flat, and the building downspouts drain to grade about 8" away from the building foundation. This is a hazard for staff who use the driveway for parking if ice accumulates and is not best practice for proper drainage away from the building. Poor foundation drainage can cause water to infiltrate around the foundation, which can cause structural damage. Ideally the downspouts would tie into an underground storm management system in addition to sloping the adjacent grade away from the building.



FOUNDATION DRAINAGE EROSION



DOWNSPOUT DRAINS AT GRADE AT PARKING

EXISTING CONDITIONS: ARCHITECTURE



NORTHEAST WALL CONDITION FROM WATER RUNOFF



RUST ON DOOR AT NORTHEAST WALL



SOUTHEAST WALL PAINT PEELING OFF CMU

EXTERIOR ENVELOPE

The exterior envelope of the building is comprised of split face concrete block masonry (CMU) at the two 1997 additions laid out in a traditional running bond pattern and smooth face concrete block masonry (CMU) laid out in a stacked bond pattern at the original 1953 building. Long-term maintenance is needed across the entire envelope including, but not limited to, replacing caulk and sealants at masonry joints and windows and doors, painting, and overall cleaning. While not necessarily the cause of some of the current building issues, overall, a stacked bond wall has less structural integrity than a traditional running bond. Any modifications made to these existing walls could require additional support to maintain structural integrity.

The original building roof is tapered to the back (northeast side) of the building. There are no gutters to collect water, so water sheet drains off the roof, down the face of the wall and splashes to grade. This has caused significant dirt and mildew to form on the CMU, erosion of the CMU in various locations, rusting lintels and damage to stone windowsills. This is also a contributing factor to the grading issues along this wall. Gutters and downspouts that are right sized for the watershed needs should be added to this wall to prevent further damage. The walls should also be cleaned and then protected with a waterproof but breathable sealer, windowsills repaired, masonry joints resealed and window sealants replaced.

The windows on this wall are residential-style, double-hung windows which appear to be in acceptable condition for their age, however if any remodeling were to occur, they are likely nearing the end of their useful life and should be replaced.

The west addition roof is also tapered to the back (northeast) of the building, but gutters and downspouts have been installed to collect rainwater. They do not appear to be right-sized, however, as evidenced by notable rusting on the face of the metal door and the pronounced degradation of the site grading and the undermining of the concrete stoop on this side of the building. Gutters and downspouts here should be replaced and right sized for the watershed needs of the building and the site re-graded as indicated previously.

Along the southeast side of the building, the paint is peeling off the CMU and there is cracking and rusting of steel lintels and metal doors and frames. This is possibly caused by water if the wrong kind of paint/sealer was used and improper flashing above the door frame and the location of the door frame within the wall being flush with the exterior face. Because the building is constructed of single-wythe CMU, there is no drainage cavity for moisture in the wall, so any water that is absorbed by the masonry will either be pushed to the interior or exterior of the building. The existing paint should be removed, and new paint or sealer applied that repels rain but also lets moisture from the wall escape as needed.

The windows on this wall are commercial aluminum windows, one of which was part of the addition, and the others appear to have been replaced when the

EXISTING CONDITIONS: ARCHITECTURE

additions were put on in 1997. With proper maintenance, these types of windows can last upwards of 40 years, so they may still have useful life. However, significant energy efficiencies have been developed in the last 30 years along with energy code requirements that may make replacing the windows necessary should major remodeling be considered. At a minimum, caulks and sealants should be replaced because they degrade over time.

The entry addition on the south side of the building is in average condition overall. There is some cracking of the split-face CMU and sealants are cracking and failing and should be replaced. The cause of the cracking should be investigated to ensure it is not due to water infiltration / foundation settling. There is some discoloration under the windowsills that is indicative of water infiltration. The source should be investigated and corrected or structural damage could occur.

The overhead doors on the southeast elevation appear to be past their useful life cycle, with signs of denting, warping and staining. These doors account for a very large portion of the exterior envelope. It is recommended and may be required by current energy codes that the doors get replaced, if any major remodeling were to occur, with doors that have higher thermal efficiency ratings.

The walls in this area show normal signs of wear and staining with the jambs at the original building showing damage where vehicles have hit them entering or exiting the building.



CRACKING & SEALANT FAILURES AT ENTRY

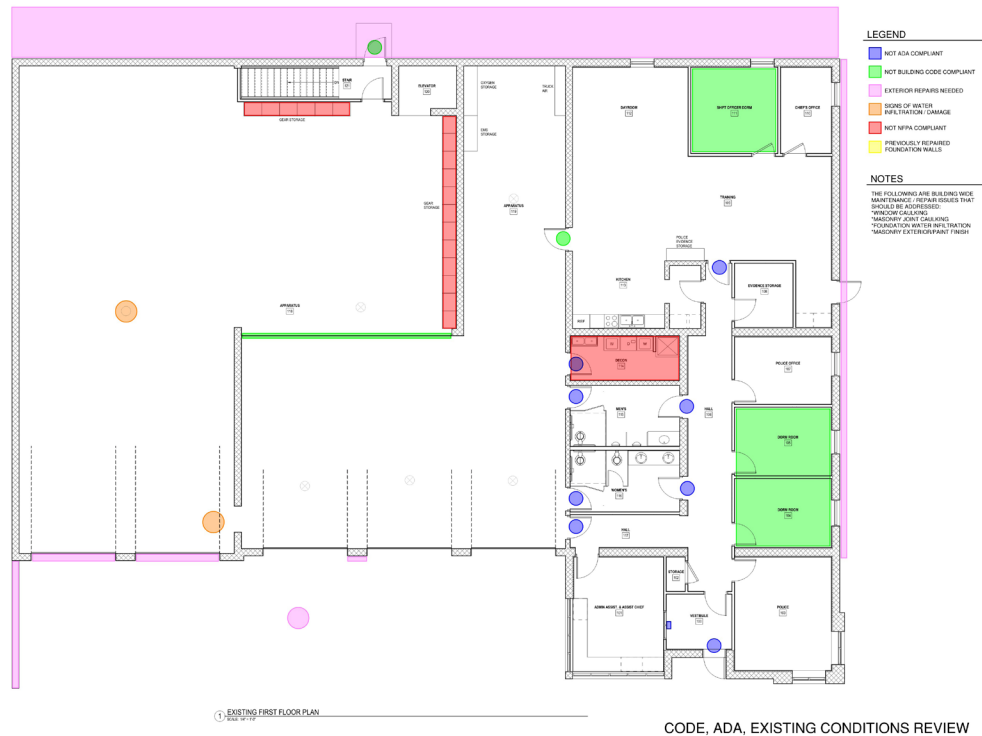


OVERHEAD DOOR



DAMAGE TO OVERHEAD DOOR JAMBS

EXISTING CONDITIONS: ARCHITECTURE



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 Existing Conditions
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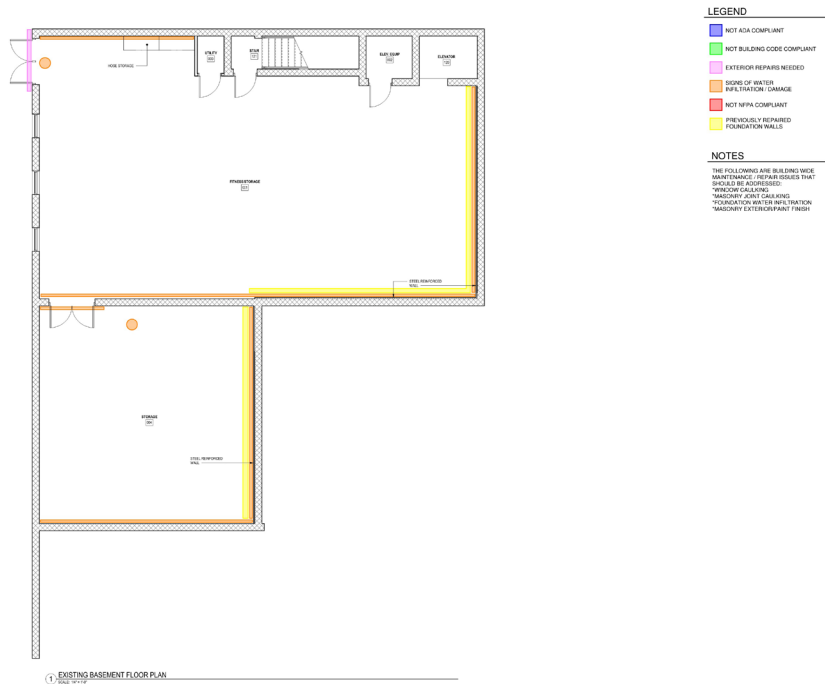
EXISTING STATION: FIRST FLOOR EXISTING CONDITIONS

INTERIOR CONDITIONS: BUILDING CODE (IBC) AND AMERICAN DISABILITIES ACT (ADA)

In general, this facility does not meet current ADA guidelines and does not meet the current Wisconsin Building Code (IBC). It also has significantly deferred maintenance items. The above plan indicates areas that either do not meet the IBC or ADA guidelines or require maintenance or repair. These issues include, but are not limited to:

- Non-ADA compliant push/pull clearances at multiple doors
- Some non-ADA compliant door hardware
- Missing code required fire ratings at walls and doors separating living and sleeping spaces from other building areas
- Path of egress travel is not code nor ADA compliant
- Basement has significant evidence of continued water infiltration from floor above and from the exterior
- Elevator is not functional
- Kitchen is not ADA compliant
- Toilets are missing code required grab bars
- Shower is not ADA compliant
- An automatic sprinkler system is not installed in dwelling and sleeping areas

EXISTING CONDITIONS: ARCHITECTURE



CODE, ADA, EXISTING CONDITIONS REVIEW

Palmyra Fire & Rescue

Existing Conditions
128 N. 1st Street
Palmyra, WI 53156
PROJECT NUMBER



EXISTING STATION: BASEMENT EXISTING CONDITIONS

Regardless of the age of a facility, prior to any renovation, the State of Wisconsin requires an inspection for asbestos containing materials. Due to the age of this facility, it is possible that it could contain such materials. If asbestos containing materials are discovered, it would require abatement per state guidelines.

Areas that can contain asbestos or mastic fibers often include, but are not limited to:

- Asbestos tile flooring
- Asbestos ceiling tiles
- Insulation around piping and ductwork
- Glue behind mirrors
- Grout in ceramic tiles

The interior conditions including non-code compliant items, non-ADA compliant items and maintenance / condition issues are discussed in more detail in the following pages along with an analysis of the following:

- Operational challenges and inefficiencies
- Safety hazards
- NFPA recommendations and best practices

EXISTING CONDITIONS: ARCHITECTURE



Palmyra Fire & Rescue
Existing Conditions
128 N. 1st Street
Palmyra, WI 53156



SPACE TYPE DESIGNATIONS

INTERIOR CONDITIONS: USE AS A CONTEMPORARY PUBLIC SAFETY FACILITY

This facility contains five total apparatus bays, three in the original building and two in the addition. The bays (indicated in orange) are located on the east side of the building. A small support area for laundry and decontamination (shown in green) is on the west side of the building along with living and admin spaces. Police admin spaces are indicated in blue, dedicated fire department spaces are indicated in red, and shared spaces are shown in yellow.

The following pages will further break down the different spaces and discuss how they currently compare to the actual needs of a contemporary public safety facility along with any code compliance and condition issues.

APPARATUS BAYS:

The apparatus bays are used mainly by the fire department, but the police department does park a squad pickup truck in the first bay. Ideally the police department would be able to park two police squads inside of the building. The current arrangement has the police squad parked in front of an ambulance which could impact ambulance response times.

In a contemporary public safety facility, the fire department bays and the police bays would be separate to allow each department to respond as needed in a safe, efficient manner.

All five apparatus bays in the building are back-in bays of slightly varying depths but at the deepest point are 68' deep. Ideally a fire station would have drive-through bays for safety and ease of use, though it is not always feasible due to site constraints. These bays should be a minimum of 75' deep to maximize apparatus placement to allow enough space between them for safety and access. It is recommended that double stacked, non-ambulance type vehicles have 8' in front of and behind each vehicle and 12' is recommended for vehicles that have a gurney.

The facility overhead doors are 12' wide with 2'-8" between them. 12' doors are sufficient for drive-through bays, but 14' doors are recommended for all back-in scenarios. It is also recommended to have 3'-0" between the doors to allow for safe movement around the apparatus and through the bays. This also allows for clearances necessary for truck cleaning



PD SQUAD PARKED IN FRONT OF AMBULANCE



NOT ENOUGH ROOM TO MANEUVER AROUND APPARATUS

EXISTING CONDITIONS: ARCHITECTURE



APPARATUS BAY LOW CEILINGS



INADEQUATE LIGHTING LEVELS IN APP BAY



DAMAGED SLAB EDGE & LIKELY LOCATION FOR WATER INFILTRATION INTO BASEMENT

and maintenance on all sides.

The overhead doors in the original building are 10' high, and in the addition, they are 14' high. 14' is industry standard, with 20' clear minimum from the floor to the underside of the structure to allow responders to tip a cab to perform maintenance on the apparatus. The original building has 11'-8" at the highest point, and only 10'-6" at the connection point between the addition and the original building. The addition has varying clear heights, the lowest of which is approximately 14'-8".

The lighting in the bays is nearly 100% artificial, the only windows being the very small single row of openings in the overhead doors. While the lighting placement overall is fairly good, being placed between the apparatus in most cases, the quantity and lighting levels are poor leaving dark areas and shadows. This makes general maintenance difficult.

Proper consideration should be given for placement of all lighting, speakers and mechanical equipment placed in the structure of the bays, This will allow the space to be lit without shadows and for maintenance to be done to all equipment without injury or interference.

The floors in the apparatus bay are painted and have a number of different challenges. In addition to cracking, the addition floor is slightly higher than the original building floor creating a trip hazard along the middle of two of the bays. The edge of the slab at the overhead doors is chipping and cracking, along with the thresholds. Despite caulking the floor cracks, the department can no longer wash vehicles inside the bays because water infiltrates the cracks and leaks down into the basement. Also, inside the overhead door of one of the bays in the addition, there is evidence of standing water on the floor.

There is a small floor drain in each bay in the original building, one under where each vehicle would park for a total of four drains. The addition only has two floor drains, neither of them positioned under where vehicles park, and one of which is missing a cover which is a hazard for responders who are moving quickly when responding during a call.

Ideally each bay would have its own trench drain, running parallel with the vehicles and placed directly under the

EXISTING CONDITIONS: ARCHITECTURE



NON-ADA COMPLIANT EXIT DOOR

apparatus. This would allow water runoff from the vehicles to be kept off of the bay floor, which helps with the safety of the responders, and also the longevity of the vehicles.

Along the back of the bays in the addition part of the building, is a stair that also serves as an exit door to the exterior of the building, and an elevator. The stairs and elevator lead down into the basement. The exit door does not meet ADA required push/pull clearance, and as mentioned in the site conditions portion of this report, the stoop outside the door is structurally undermined and unsafe.

The overhead doors are in average condition for their age, but the small vision panels barely provide any natural light into the bays. Only two of the doors have safety elements installed, which is a hazard for responders and can cause damage to the apparatus. It is recommended to upgrade and replace the doors with high-speed openers and proper safety features.

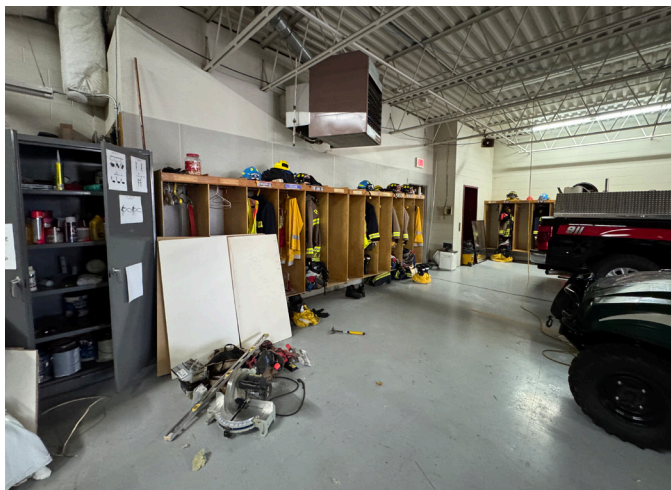


PPE ON BAY FLOOR & CLOSE TO APPARATUS

There is a large chain link dog kennel stored on the apparatus bay floor in the addition part of the building. Stray dogs get dropped off at the police department and are temporarily kenneled until they can be claimed or sent to a rescue. This is not a safe situation for the animals; it also creates a safety issue for responders as they navigate the bay to don their gear and then leave for a call.

APPARATUS SUPPORT:

Due to a lack of space in the non-apparatus bay portion of the facility, the department has lined the apparatus bay walls with the personal protective equipment (PPE) lockers and various other support items such as EMS storage and tools, equipment and other storage items.



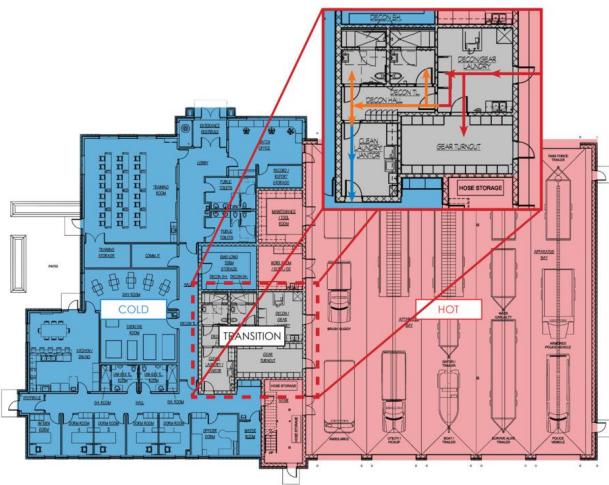
PPE AND TOOLS ON BAY FLOOR

Personal Decontamination (Decon) and PPE storage requirements and NFPA guidelines have changed significantly since the design and construction of this facility and its addition. The placement of the PPE storage on the apparatus bay floor causes the gear to be exposed to harmful UV light (though this is not an issue in this particular location because of the lack of natural light), which deteriorates the gear at an accelerated pace. More importantly for Palmyra FD, it exposes the PPE to harmful carcinogens caused by exhaust fumes from the apparatus. Additionally, with the locker's adjacency to the apparatus, it can cause congestion and safety concerns which

EXISTING CONDITIONS: ARCHITECTURE



SMALL DECON ROOM WITH NON-ADA COMPLIANT SHOWER



STATION HOT - COLD ZONE TRANSITION EXAMPLE



TRAINING ROOM USED FOR FIRE ADMIN / REPORT WRITING

add to response times.

Best practice would allow responders to clean their PPE and keep it clean by storing it in a designated room, located off of the apparatus bay. This room would be sized accordingly so individuals can don their PPE without being overcrowded, provide proper ventilation, and would limit the exposure of PPE to UV lighting.

The current facility is equipped with a small decon / gear laundry room that contains a gear extractor, a residential style washer and dryer, a shower (which is not ADA compliant) and a utility sink. The space is small and inefficient, and because responders have to re-enter the apparatus bays with their clean gear to put it away and to access the admin and living spaces of the facility, it is not per NFPA recommendations.

Current best practice for fire department decon is to divide the facility into what are referred to as hot and cold zones of contamination, with a transition / warm zone in between. These zones are compartmentalized and have mechanical systems with positive and negative pressured systems to keep carcinogens and contaminants contained in designated areas.

Hot zones are those with a high level of contamination potential, including the apparatus bay, workshop, and any mezzanines. These spaces are negatively pressurized and are designed to have higher levels of fresh air intake into the mechanical systems. The transition / warm zone and all cold zones are positively pressurized.

Transition zones include gear laundry, gear turnout (PPE lockers), decon hallway(s), decon toilet / showers, SCBA cleaning, and clean / residential laundry. The cold zones are all of the living and administration areas. The mechanical systems, in addition to the overall design and layout of this facility, do not allow for a proper decon process.

The facility does not have a traditional watch room for the fire department, instead, report writing is done in the training area at the back of the building adjacent to the kitchen and day room.

A new or renovated station would have a watch room for the fire department that is right sized for department members to serve as an open office space for report writing. It should be

EXISTING CONDITIONS: ARCHITECTURE



NON-ADA COMPLIANT EXIT DOOR

located near the primary response bay but in the cold zone and have views of the bays and out onto the front apron.

The final additional apparatus support space necessary for a contemporary fire station would be a workshop. This space should be right sized in order to perform general maintenance, it should be located off the bay floor and should be properly ventilated. The current building does not have a workshop, instead various tools and equipment sit along the walls and floor of the apparatus bay and in the basement.

POLICE ADMINISTRATION

The non-apparatus spaces of the Palmyra Public Safety Facility that serve the police department include a police dispatch office, a shared administrative assistant and assistant police chief office, an office for the director of public safety / police chief, and evidence storage room with some supplemental evidence storage in a cabinet adjacent to the fire department training room.



MAIN ENTRY VESTIBULE NON-ADA COMPLIANT TRANSACTION WINDOW

Directly off the building's vestibule is the shared assistant police chief / administrative assistant's office. This vestibule is secured so visitors do not have full access to the facility once they are buzzed into the vestibule from the outside. There is a pass-through / transaction window for visitors to be able to speak to someone from the department, and a second secure door that leads to the rest of the admin area. The main door into the building is not ADA compliant on the interior, nor is the transaction counter below the service window.

The police dispatch room is just past the secure entry vestibule. It is too small for the department's needs and currently serves multiple functions. The facility does not have a secure area for evidence processing or fingerprinting, this is all handled in the dispatch room. Ideally there would be a secure, separate, dedicated space for each of these functions. The room shows signs of water damage to the ceiling tiles, but staff indicated that it was from old leaks that have since been repaired.



POLICE DISPATCH DAMAGED CEILING TILES

While the department does not have a need for a holding cell, a separate soft interview room is needed. This room serves to protect the privacy and integrity of an investigation. It should be a quiet, sound-proof, comfortable space where children and victims can feel welcome and safe. Ideally it should be located away from any booking, intake, or hard interview

EXISTING CONDITIONS: ARCHITECTURE



POLICE CHIEF OFFICE WALL LINED WITH ELECTRICAL PANELS

rooms to prevent the opportunity for re-victimization.

Further down the hallway from the dispatch room, past two of the fire department's dorm rooms, is the police chief's office. The room was not designed to be an office; one wall is lined with electrical panels. While the code doesn't specifically disallow this, the arrangement of the room is not code compliant with regards to clear space and other requirements.

In an ideal setup, though this is a public safety department and there is a lot of overlap between the two services, the police department and fire department should have some separation within the building for efficient communication and workflow. Other spaces are unable to be shared, such as secured storage and the police department should have its own secure server. The fire department's responder living and sleeping spaces should be separated from all admin functions to allow on-duty staff to get the rest that they need.



TRAINING ROOM SHARED WITH PD

Past the police chief's office is a small evidence storage room. This room is about half of the size that it needs to be to serve the department, and they have some overflow storage in a cabinet next to the dining area of the fire department living space.

FIRE ADMINISTRATION & LIVING QUARTERS

The fire department has one dedicated office for the fire chief at the back of the building. This office is located right outside an open office area that is used for report writing and training activities for both the police and fire departments. Right next to the chief's office is the shift officer's dorm room, with two additional dorms located outside this area between the police dispatch office and the police chief's office. There are numerous ADA compliance issues within these spaces.



KITCHEN SHARED WITH PD IS NOT ADA COMPLIANT

The kitchen, dining and day room are adjacent to the open office / training area with no separation between them and the police department also uses these spaces. The kitchen is undersized both for function and for modern appliances and is not designed to serve a career department, especially because it also serves as a break room for the entire public safety department. The kitchen is also not ADA compliant, and with the layout and function of this facility, it is required by code to be ADA accessible.

EXISTING CONDITIONS: ARCHITECTURE



NON-ADA COMPLIANT EXIT DOOR

Palmyra FD is a career fire department and proper, separate, administration and living quarter spaces should be provided for the responders. These are the places responders spend more than a third of their lives, and when on duty the living spaces function as their homes. Proper consideration should be given to providing healthy, clean, compliant, and safe accommodation.

In addition to space deficiencies, there are code compliance issues with the living quarters. Code requires dwelling and sleeping units to be separated from adjacent occupancies with fire partitions that extend up to the structure above. No fire rated doors were identified and the walls at the shift officer's dorm appear to stop at the ceiling, they do not extend to the structure above. The living spaces are also required to be fully sprinklered; this building does not have an automatic sprinkler system.

The building has two multi-user toilet rooms, one men's and one women's that serve the entire facility, neither fully meet current ADA requirements. They also do not have showers, which means that staff must go through the apparatus bay to the decon laundry room in order to take a shower while on duty. Best practice would provide single-user, non-gender-specific toilet rooms with showers that can be accessed directly from the living space.



NON-CODE COMPLIANT EXIT AND UNSAFE PATH OF RESPONSE TRAVEL

On duty staff, when responding to a call, will either be responding from the two dorm rooms nestled between the police dispatch office and the police chief's office or from the living quarters at the back of the building. Because the building is small, response times aren't a huge issue, but two of the doors in the response path do not swing in the direction of travel. This can be a hindrance and a safety issue.

The door from the living quarters that accesses the apparatus bay directly does swing in the direction of travel, however, there is an ambulance parked right behind the door that prevents the door from opening beyond 45 degrees. During an emergency call, this can cause congestion, injury and damage to the apparatus. This does not meet code, and in addition the door hardware and the push clearance are not ADA compliant.

Ideally a contemporary fire station would be designed for on-duty staff to safely respond to a call, don their gear, and enter their vehicles as quickly as possible.

EXISTING CONDITIONS: ARCHITECTURE



TWO PREVIOUS STRUCTURAL REPAIRS ALONG BASEMENT WALLS

BASEMENT

Access to the basement is by a stair at the back of the addition portion of the apparatus bay. There is an elevator, but it does not function. The stairs show clear signs of water infiltration along the walls.

The basement was originally designed to contain the living spaces for the fire department. This would have alleviated many of the issues with the current layout discussed previously. However, the basement has experienced significant structural damage due to water infiltration and has been repaired at two separate times with steel reinforcing.

This reinforcing appears to have provided structural stability to the foundation walls but based on visual site observations and evidence of continued water infiltration into the building, the cause of the damage has not been corrected. Until site grading and water runoff has been addressed, water will continue to infiltrate the building and further degrade the foundation.

The basement is divided into two main spaces, housing mainly mechanical items and various random storage. The main room contains exercise equipment, tools, hose racks, training equipment and some public education materials. There are windows on the southeast wall along with a double door to the exterior. There is evidence of water infiltration under the door, and along the tops and bottoms of the wall. There is also significant efflorescence on the northeast wall which is another sign of water infiltration.

At the interior basement wall that separates the basement into two rooms, more signs of water infiltration can be seen at the top of the wall and running down the face of it. The lintel above the opening into the second room of the basement is rusting.

The smaller room of the basement contains overflow gear storage, confidential police records, computer equipment and much more. This room also houses mechanical equipment including a furnace and water softener system. Water infiltration is even more significant in this area, some of it coming from the floor above, likely when apparatus return from calls during rain or snowstorms and it leaks through the cracks in the floor above.



EVIDENCE OF WATER INFILTRATION AT BASEMENT WALLS



EXISTING CONDITIONS

STRUCTURAL



Structural Engineering Report

Date: February 28, 2026

Project: Palmyra Fire & Safety – Existing Structure Review.
126 N First Street, Palmyra, WI 53156

Recipient: Laura Eysnogle, AIA CID - Wendel

Email: leysnogle@wendelcompanies.com

Phone: 715-832-4848

Regarding: **NCE # 26-060 – Existing Structure – Condition and Capacity Review with Professional Opinions**

Dear Laura:

It is our understanding that Wendel is preparing a professional study related to several design options for improving facilities for the Palmyra Fire & Safety Department. As part of this study, NCE was asked to provide a structure condition and capacity review of the existing structure and foundation. The three parts of this review are summarized below representing our limited scope.

1. Site Visit:

We have visited the site on 2-23-2026 in order to:

- a) Observe the existing structure and compare the visible structure with the original construction drawings.
- b) Document any signs of distress, severe deflection or performance issues related to the structure, the foundation, the floor slab and site pavements.
- c) Document our discussions with the users of the facility related to structural performance.
- d) Measure the existing exposed roof framing of the original building to facilitate determination of approximate roof load capacity.

2. Sample Structural Calculations:

We have performed sample calculations to review the stated design loads listed on the certified construction drawings for the 1997 Addition and renovation of the building. We have reviewed the capacity of the original roof framing as well. We have compared those apparent original design loads with the current code prescribed design loads under the new WI Commercial code referencing the 2021 IBC and ASCE7-16.

3. Written Report:

The following report is to document our findings and to provide our professional opinions related to:

- a) The observed condition of the structural members (floor, roof and foundation systems) including any noted or discussed structural performance concerns.
- b) Exterior paving performance and exterior site grading concerns were reviewed in regard to how those issues relate to the building structure performance.

A) Structure Description:

Primary, secondary and foundation systems:

1. The east portion of the building is the original structure (construction date is unknown). It is an approximately 4800 SF single story structure. The floor is a ground supported concrete slab. The roof structure over the original office areas is 2x10 roof joists supported by a steel girder and load

EXISTING CONDITIONS: STRUCTURAL

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bearing masonry walls. The roof structure over the original apparatus bays is heavy timber beams with tectum (gypsum) roof panels supported by load bearing masonry walls. The foundation system for this original building is ground supported footings under the load bearing masonry walls.

2. The 1997 Addition consisted of two parts.
 - a) A small 684 SF, single story office and entry addition at the southeast corner of the facility. The floor of this addition is a ground supported concrete slab. The exterior walls are load bearing concrete masonry with a ground supported concrete footing system. The roof structure is steel bar joists and metal deck supported on the masonry load bearing walls.
 - b) A larger 3400 SF single story addition with a full basement to the west of the original building. The lower level (basement) floor is a ground supported concrete slab. The main floor is precast concrete floor plank with a 2" concrete topping. The roof structure of this addition is steel bar joists with metal decking supported by a combination of steel girders and load bearing masonry walls. The foundation is load bearing masonry walls with ground supported footings. The exterior grade along the north side of this addition slopes downward toward the west which allows direct walk-out access to the west side of the lower level of the structure.

B) Results of Sample Calculations:

- a) The design roof snow load capacity is approximately 25 psf to 30 psf. This capacity meets the current code required capacity for this facility in this location.
- b) Based on the certified 1997 structural drawings, the design floor load capacity for the main floor is 80 psf. Based on our analysis, in my professional opinion, this corresponds to maximum axle loads of approximately 10,000# to 15,000# range. Current Federal Highway Administration recommendations that for the design of emergency vehicles, consider up to a 24,000# steering axle, and up to a 33,500# single drive axle (or a 62,000# tandem drive axle).

C) Structural Observations:

- a) The roof structure for both the original structure and the 1997 addition, appear to be performing well. We did not observe any signs of severe deflection or deterioration of the visible structural members or systems.
- b) The exterior masonry load bearing walls and footings of the building appear to be performing adequately.
- c) The foundation walls of the original structure that now act as basement walls of the 1997 addition, have experienced lateral displacement in the past. These walls have since been reinforced with heavy steel systems and appear to be performing adequately since that reinforcing was completed. However, the upper / main level floor slabs adjacent to these walls have experienced localized downward settlement in these regions due to this basement wall displacement (creating a slope on the surface of the slabs and also a gap for water to enter in these locations).
- d) The surface of the precast plank floor system in the apparatus bays appears to be painted rather than a waterproof epoxy coating. We observed several cracks that have been caulked on this floor. The owners stated that they no longer wash vehicles in the apparatus bays due to water infiltration concerns in the basement space below.
- e) In the basement, we observed evidence of water infiltration along most exterior walls. This infiltration appears to be due to both surface water from vehicles (entering from cracks and gaps) but also from exterior sources, indicating poor waterproofing of the basement walls where resisting earth.
- f) Exterior Observations:
 1. We observed a timber, earth retaining wall structure that appears to be failing (north of the north exterior building wall). An exit door stoop, located along this north building wall is unsupported due to downward movement / settlement of the soil due to the failure of this retaining wall.
 2. We observed damaged concrete surfaces at the vehicle entry doors on the south side of the building.
 3. We observed the masonry retaining wall at the southwest corner of the building entry. The base of the steel handrail assembly is embedded in the wall. The base of these handrails is severely deteriorated due to long-term exposure to salts and freeze / thaw cycles.
 4. We observed a large hole in the masonry walls at the SE corner of the Bell Tower.

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5. We did not observe signs of settlement or frost heave of the exterior building walls. We did note that the coatings and caulked control joints of the exterior walls are in poor condition in many locations.

D) Professional Opinions

1. Design Load concerns / recommendations:

- a) The existing vehicle loading should be further reviewed, and maximum loads posted for each apparatus bay with a precast concrete-floor framing system (1997 addition). In my professional opinion, the stated design loads of the precast plank may not provide adequate factors of safety when loaded with potential actual vehicle loads in these bays (heavy vehicles).

2. Deferred Maintenance Concerns / recommendations:

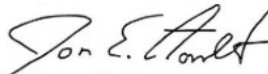
- a) The handrail along the southwest exterior retaining wall is deteriorated at the base and should be replaced / repaired. The masonry retaining wall is cracked vertically due to water infiltration, and freeze thaw cycles. After removing the existing railing, the cracks should be ground out, and caulked to prevent further damage. A top flashing should be added to prevent moisture intrusion from the top of the wall.
- b) The exterior coatings on the masonry are deteriorated in many locations and should be replaced around the entire perimeter.
- c) The exterior caulk joints are generally in poor condition in many locations and should be inspected and replaced as required around the entire perimeter.
- d) The below-grade water-proofing systems do not appear to be adequate and should be replaced particularly along the north and south walls of the 1997 addition.
- e) The hole in the exterior masonry walls of the bell tower should be repaired to prevent moisture intrusion which will damage the structure.
- f) The concrete surface of the 1997 apparatus bay floors:
 1. Review the capacity of the systems as described above.
 2. The floor slabs should be leveled using a below slab foam injection system by a qualified installation contractor.
 3. Remove loose portions of topping such as at the south entry doors, and replace.
 4. Seal / caulk all joints.
 5. Install an industrial traffic coating / water proofing coating system on the floor and extend up the perimeter walls. This system will need to be maintained as required to protect the precast plank structure below.

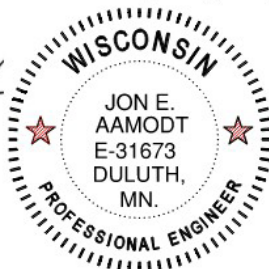
3. Other Structural Concerns:

- a) The existing site retaining wall to the north of the building is failing and is a concern for the stability of the north wall of the original portion of the structure as well as for the stoop at the north exit door of the 1997 addition. Ownership of the wall should be determined. The wall will need to be completely or partially replaced depending on what type of new door-stoop or stairway is installed on this north wall of the building.
- b) The north exit door stoop is not supported by earth and therefore is not a safe exit in my opinion. This stoop slab should be closed, removed and replaced. If final grade were lowered along the north wall, this could become a steel exterior stair system, potentially independent of the failing timber retaining wall. (note lowering of grade is limited due to maintaining proper earth cover for the building footings.) However lowering grade would reduce the pressure on this failing wall and make replacement more manageable.

Please call with any questions or comments regarding this project at (218) 727-5995.

Sincerely,


Jon E. Aamodt, P.E.
Principal Partner



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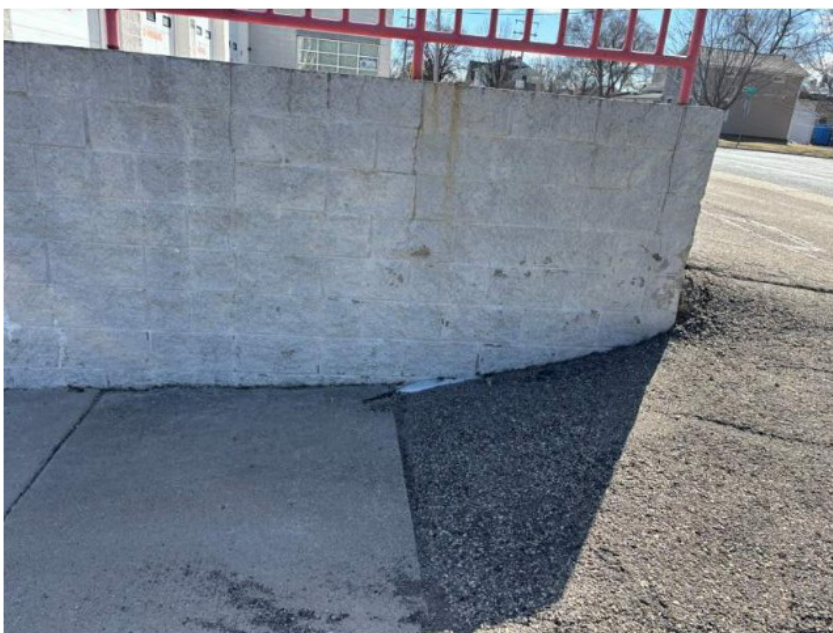
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Attached, Site photos: - From our visit on 2-23-2026



Photo 1 and 2 : Southwest Corner – Retaining wall – The Base of the railings is deteriorated, the wall itself is performing adequately, however the deteriorating handrail columns allow water into the wall, which freezes and cracks the masonry from within. The railings should be replaced, and cracks routed out and caulked, the cap should have flashing and the masonry should be re-coated.



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Photo 3 and 4 – West exterior wall – Joints appear to be performing adequately, however the masonry coating and caulk joints are in need to replacement.



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Photo 5: East exterior wall looking southwest – note deteriorated masonry coatings, exhaust vent should extend further out etc. to protect the integrity of the masonry walls.



Photo 6: Caulk Joints on the Sills are in poor condition, allowing moisture into the wall, which if not corrected, will deteriorate the masonry walls.

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Photo 7: Exterior wall coatings are in poor condition.



Photo 8: South exterior wall o pavements are in poor condition, transition concrete toppings at the overhead doors are cracked and should be replaced and coated with a traffic coating to prevent water intrusion. Waterproofing along this wall appears to also be inadequate (see basement photos)

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Photo 9: South Apparatus Bay doors – close-up view of threshold – damaged topping allows water to penetrate. Topping should be repaired / replaced and coated to prevent moisture intrusion.

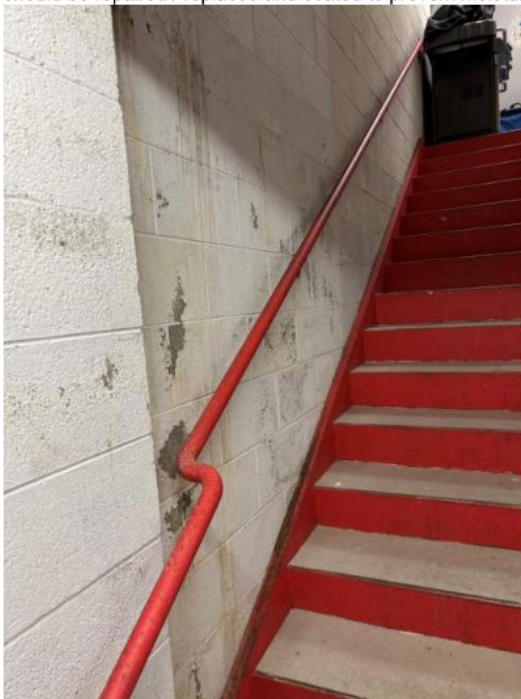


Photo 10: North Basement wall: Note evidence of inadequate waterproofing below grade on this north wall.

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Photo 11: Interior of 1997 Apparatus Bay – Note cracks have been sealed, however the users report that they do not wash in the bays due to excessive leaks. The floor should properly coated with a traffic coating / waterproofing to protect the floor plank. Note vehicles parked in the bays are not excessively heavy, but we did not observe signage for guidance on maximum axle loads.

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EXISTING CONDITIONS: STRUCTURAL



Photo 12: Original roof structure – timber with gypsum panel decking, appears to be performing adequately.



Photo 13: Roof structure above the meeting room space.

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Photo 14: Bell Tower Structure at SE corner of the building. Note a large hole in the masonry should be repaired to prevent water infiltration.



Photo 15: Exterior pavements are in poor condition.

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Photo 16: Transition at original floor (ground supported floor) to precast plank floor – The ground supported floor has settled due to lateral movement of the basement walls below. The floor should be leveled using foam injection, then properly sealed and coated to prevent moisture intrusion.

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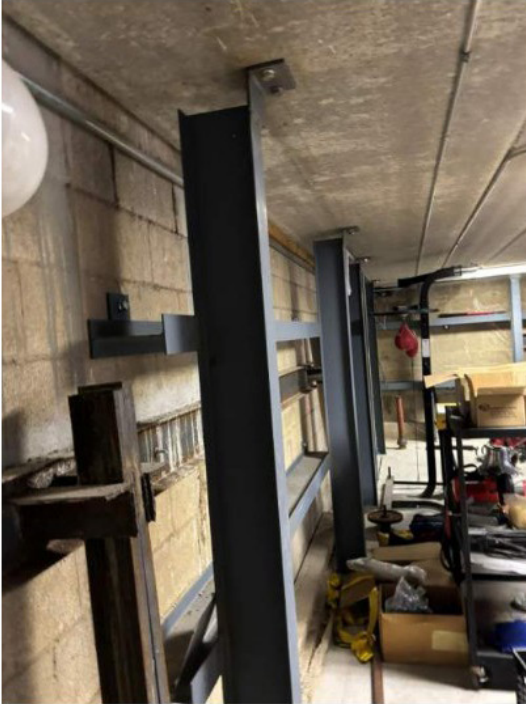


Photo 17 and 18: Heavy Steel reinforcing to prevent further movement of the original foundation systems. We did not review the adequacy of the design, but the owner stated it was designed by a professional engineer, and it does appear to be performing adequately.



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Photo 19: South Exterior wall. Evidence of water infiltration from the floor above and from outside water sources.

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Photo 20 and 21: Northeast corner of the basement – note evidence of water infiltration from outside sources and from the floor above.



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Photo 22 and 23: North exterior wall looking east: The existing wood retaining wall on the left is failing, causing settlement of the ground surface under the stoop slab. The slab is not supported and therefore not safe. It appears that the wall could potentially be eliminated, or minimized by lowering grade and constructing a steel stair for exiting.



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Photo 24: North exterior wall, note inadequate drainage, waterproofing system appears deteriorated, surface water would be directed to the wall surface.



Photo 25: Stoop slab is not supported and therefore not safe as an exit. It should be closed off, until it can be repaired or replaced.

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Photo 26 and 27: Exterior surface coatings are deteriorated.



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EXISTING CONDITIONS MECHANICAL & PLUMBING

EXISTING CONDITIONS: M/P

ARCHITECTURE | ENGINEERING | ENERGY EFFICIENCY | CONSTRUCTION MANAGEMENT



December 04, 2025

Mr. Mike Gartzke
Palmyra Public Safety Chief Fire/EMS
126 N. First Street
Palmyra, WI 53156

SUBJECT: Palmyra Fire / EMS Station Mechanical Systems Inspection

Dear Mr. Gartzke,

Wendel WD Architecture, Engineering, Surveying & Landscape Architecture, P.C. (Wendel), conducted an inspection on 12/02/2025 of Palmyra's Fire/EMS station mechanical and electrical systems at 126 North First Street. Following are the details of that inspection.

Primary Team Present:

Mark Calicchia, PE	Wendel
Vadim Belous	Wendel
Mike Gartzke	Palmyra Chief Fire / EMS

Mechanical System Existing Conditions Review

Performed by:
Mark Calicchia, PE
518-818-4752
mcalicchia@wendelcompanies.com

Executive Summary - (Items that require further action)

- Natural Gas Piping should be inspected for proper grounding / bonding and painted,
- All HVAC Units are beyond their useful life, should be replaced, and building ventilation rates checked;
 - Payne - Model PG96VTA - Located above 1st Floor Bathrooms,
 - Payne - SN 0817A59604 - Located in the basement of fire station,
 - Carrier - Model 48KCFA - Located outside the buildings south wall,
 - Modine - Model PDP200 - Located on the 1st floor in the bottle filling area,
 - Modine - UH - Located on the 1st floor, west truck bay,
 - Renzor - UH - Located on the 1st floor, middle truck bay,
- Domestic Hot Water Heater - AO Smith - replacement, relocation, recirculation system is recommended
- Floor Drain System - leaks observed, repair is recommended
- Ventilation - Apparatus Bay Area - decontamination area, vehicle exhaust extraction, CO & NO2 detection system recommended. Evaluate Kitchen stove - exterior exhaust recommended. Verify bathroom exhaust systems are working properly and meet current codes

The initial focus of the inspection was the primary utilities servicing the building.

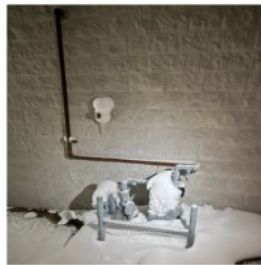
427 New Karner Road, 2nd Floor, Suite 2, Albany, NY 12205 p 877.293.6335 w wendelcompanies.com

EXISTING CONDITIONS: M/P

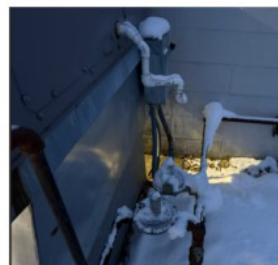


Natural Gas Service (Medium Pressure)

The building is equipped with a *medium-pressure* (2psig) natural gas system which enters the building from Mill Road. The gas piping appears in acceptable condition, adequately sized (1-1/2"), and installed with acceptable materials of construction (black iron), however *the natural gas system should be inspected for proper grounding/bonding and all piping painted.*



Natural Gas Service – Mill Rd



Natural Gas Piping – to Carrier HVAC unit – East Side

Building Heating, Cooling & Ventilation (HVAC)

The building consists of several separate heating and cooling systems. These systems appear operational, however they are beyond their useful life, should be replaced and building ventilation rates verified.



Carrier WeatherMaker® packaged rooftop gas heat and electric cool unit – ground mounted



Rooftop Condenser & vents

EXISTING CONDITIONS: M/P



Payne HVAC Unit – 1st floor Office Area



Payne HVAC Unit – Basement Area



Unit Heater – HVU1 – Left Bay



Unit Heater – HVU2 – Middle Bay



Unit Heater – bottle area

Vent pipes on these Unit Heaters should be checked to ensure they are installed per manufacturers' recommendations and current code requirements.

Domestic Water System

A 3" copper domestic water service enters the building under the original buildings 1st floor slab and continues to the basement of the building addition. A 1" line branches off into a 1" water meter and water softening system and that line continues on into the buildings bathrooms and kitchen areas. The 3" line enters a 3" Watts backflow preventer (RPZ) that feeds a truck filling station on the 1st floor. Based on the number of fixtures a 3" water service is sufficient; however water pressure may be limited for truck filling operations, and no pressure reducing valve appears to be installed. *Special note: no potable water connections are to be made between RPZ and truck filling station.*

EXISTING CONDITIONS: M/P



Water Service

Domestic Hot Water System

The domestic hot water for the building is an electric AO Smith unit located above the 1st floor bathrooms. This unit is installed in a crawl space and is difficult to access and service, relocation should be considered along with a recirculation system. This unit may have been installed approximately 12 years ago and is likely at the end of its useful life. There also appears to be no leak detection for this unit and the pressure relief valve and piping was not accessible.



AO Smith electric domestic hot water tank

Compressed Air System / Bottle Filling Station

The main compressor for the building is a Speed Aire, single stage, compressor in good condition. It is located on the 1st floor at the back of the middle bay bottle filling station. The distribution system piping that was visible appeared to be copper pipe.



Speed Aire – Single Stage - Air Compressor & Bottle Filling Station

Fire Sprinkler System

The building, currently, does not have a fire sprinkler system.

Storm Drain System

The building roof drainage is handled via gutters and downspouts. Refer to architectural sections of this report for more information on the gutter system. There was no interior storm drainage piping observed within the building.

Sanitary Waste and Vent System

The sanitary waste and vent system visible was PVC pipe in acceptable condition. Most may have been replaced during the 1997 building renovations

Floor Drain System

The building apparatus bays have a floor drain system that leak onto the basement HVAC equipment. Repair is recommended. Also, assure these drains empty to a catch basin per code requirements.



Payne HVAC Unit – Basement Area

1st Floor Kitchen

In the kitchen, it is recommended that the stove exhaust be vented to the exterior of the building.

EXISTING CONDITIONS: M/P



1st Floor Bathrooms / Washer-Dryer / Shower

The fixtures are in good condition, however based on the apparent age of these fixtures, it is unlikely the flow rates of these fixtures meet current energy code.

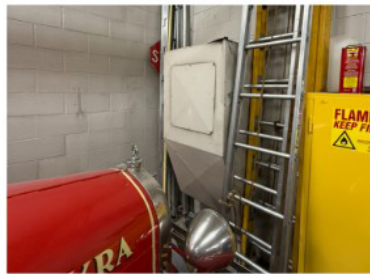


Men's / Woman's Rooms

W / D - Shower Room

Ventilation - Apparatus Bays

The back of the apparatus bay is equipped with one (1) wall mounted exhaust fan. This fan does not provide continuous ventilation and does not meet current code requirements. It is recommended that this area be evaluated for the installation of a continuous ventilation system, and a CO & NO2 detection system.



Existing Wall Exhaust Fan

A vehicle exhaust system is also a recommended best practice. There are various types of systems ranging from air scrubbers to direct connect capture systems.

Typical ASHRAE equipment service life expectancies

- Exhaust fans: 20 years
- Furnaces: 18 years
- Boilers: 25 years
- Unit heaters: 13 years
- Compressors: 20 years
- Motors: 18 years
- Water Heaters: 12 years



EXISTING CONDITIONS

ELECTRICAL

EXISTING CONDITIONS: ELECTRICAL



Electrical System Existing Conditions Review

Performed by:
Vadim Belous
716-570-9898
vbelous@wendelcompanies.com

General

The building electrical is served by WE Energy with the main service equipment located in the training room. Communications consist of phone and internet service.

Assessment Process

The purpose of the electrical assessment is to determine the configuration of existing normal and emergency power distribution systems throughout the fire station as well as determining possible deficiencies and general equipment conditions of the backup generator, lighting, fire alarm system, communications, and security systems. The assessment began with a visual examination during a walk-through with staff on December 2nd, 2025. The visual examination was limited to the main equipment and systems that were easily accessible and visible. Any electrical equipment or wiring located above ceilings or in walls was not included in this assessment.

Existing Systems Descriptions

Power Distribution

The existing service based off the 100kVA seems to be a 300 Amp, 240/120VAC, 3-phase, 4-wire service derived from an overhead distribution on N 1st St. The existing pole mounted transformer is located on a pole. Service enters the building underground at the side of the building and terminates at a self-contained meter socket located on the exterior of the building.

The power feed then continues and terminates at an automatic transfer switch (ATS) as the service disconnect located in the training room. From there the power is extended into the main distribution panelboard located next to the ATS. The transfer switch is configured to back up the entire facility.



ATS and Main Panel

EXISTING CONDITIONS: ELECTRICAL



From the main panel the power is distributed throughout the building. It feeds various other panelboards via breakers and feeder taps via disconnect switches.

Most of the electrical distribution equipment appears to have been installed around 1997. In general, the distribution equipment is in good condition. However, at 30 years old this equipment is at the end of its useful life and should be considered as replacement.

Standby Power (Generator)

Standby power system consists of a natural gas fueled genset exterior to the building and automatic transfer switch mentioned previously in this report. Size could not be confirmed, as no nameplate could be located during site visit. As previously mentioned, it appears the entire station is backed up by the generator.

The generator and its appurtenances appear to be in fair condition, as the enclosure has begun to show signs of rusting. No known issues with the system have been noted by the facility personnel. The generator is a Generac generator. In general, the generator seems to be good condition. However, assuming it was also installed in 1997 and at 30 years old this generator is at the end of its useful life and should be considered as replacement



Meter on Exterior Wall



Generator

Lighting

Most of the interior lighting has been upgraded to LED tubes in the existing luminaires. For the most part, illumination levels appear to be sufficient for the spaces they are utilizing. We recommend that any lighting that hasn't been upgraded be replaced with more modern LED luminaires to take advantage of possible energy savings.

Lighting controls throughout consisted of standard manual wall switches. The location of the switches are placed in user friendly area that makes it obvious what lights are controlled. Our recommendation is that automatic controls such as occupancy sensors are provided where required by current code.

Emergency egress lighting is served via the backup generator.



Typical Light Fixture

EXISTING CONDITIONS: ELECTRICAL



Exterior lighting consisted of a few wall packs at the overhead doors to supplement lighting levels for fire truck apparatus entering and exiting the building. Most exterior lights appear to be LED type. It appears majority of the exterior lighting was not working. As only a few of the lights were in operation during the site visit.

Exterior code required illumination is provided at the egress doors.

Specialty Systems

Communication/Data – A few data and telephone outlets and Wi-Fi devices are provided throughout. For the most part no known issues were noted. Generally, it appears that the system works well without any issues noted. A lot of data wiring is improperly supported, many instances of loose data wiring strung all over the place. For the most part it's not installed in a workmanlike manner which is a violation of the NEC.

Fire Alarm System – The building, currently, does not have a fire alarm system. There are standalone smoke detectors located in various areas. Some were believed to be CO/smoke combos.

Commentary

In general, the facility electrical systems are functional with a few noted issues. Some require immediate attention and some that should be planned to be addressed in the relatively near future. A few issues that need to be addressed to bring the building into full code compliance are as follows:

- 1) Install an addressable fire alarm system with proper initiating devices and notification devices.
- 2) Code required GFCI receptacles are not provided everywhere they are needed. Typically, any receptacle located within 6ft of source of water such as a sink is required to be GFCI protected. Also, receptacles in the apparatus bays, mechanical, kitchens, and similar spaces should be GFCI protected. We recommend replacing standard duplex receptacles in these spaces with GFCI type.
- 3) Lighting controls throughout the building do not meet the current International Energy Conservation Code. It is recommended that code compliant lighting controls be installed.



Exterior Lighting



Data wiring not properly supported



PRE-ENGINEERED METAL BUILDING

PRE-ENGINEERED METAL BUILDING

The Village of Palmyra requested the consideration of utilizing a partially manufactured pre-engineered metal building (PEMB) for the new Public Safety Facility. The FBD team worked with the metal building manufacturer and our structural engineer to determine :

- Could this partially manufactured building could be used?
- What modifications would need to be done in order to make this facility viable?
- Would the department not only fit, but function in this facility?
- What would this retrofit cost, in comparison to designing a new structure to meet the needs of the department?

As an executive summary, these questions can be simplified to the following answers, with additional information on the following pages.

- Could this partially manufactured building could be used?
 - Yes, it could be modified to meet the structural design loads necessary for the appropriate risk category of an emergency services facility.
- What modifications would need to be done in order to make this facility viable?
 - The building would need to be re-certified by the metal building manufacturer; additional doors and windows would need to be placed in the exterior envelope to meet functional needs of the department; skylights would need to be added into the roof system to meet the newly implemented building code; and a second floor would need to be created within a portion of the facility to meet the space needs of the department.
- Would the department not only fit, but function in this facility?
 - A concept plan was created to show that the spaces necessary for each department could be placed within this facility. However, with the existing restrictions, the functionality of this space would be poor for police, fire, and EMS operations.
- What would this retrofit cost, in comparison to designing a new structure to meet the needs of the department?
 - Because of the amount of modifications needed to retrofit this facility into a public safety facility, it is unlikely that this option would be less expensive than designing and constructing a new facility to meet the needs of the Palmyra Public Safety Department.

PRE-ENGINEERED METAL BUILDING

STRUCTURAL ANALYSIS:

Page 1 of 2

102 S. 21st Avenue West, Suite 1, Duluth, Minnesota 55806
218.727.5995 | www.nce-engineers.com



Structural Engineering Report

Date: February 11, 2026

Project: Palmyra Fire Department – Re-Use of a Previously Fabricated Pre-engineered metal building Frame System

Palmyra, WI

Recipient: Laura Eysnogle, RA, CID, Wendel

Email: Leysnogle@wendelcompanies.com

Phone: 715-832-4848

Regarding: **NCE Job # 26-060 – Review Re-using a previously fabricated pre-engineered metal building Frame System.**

Dear Laura:

This report is to document our review of the pertinent engineering related information, our discussions with the metal building manufacturer and our professional opinions related to the economical viability of re-using these frames. Specifically, we were asked to:

- a) Review the Design / Erection drawings for the 160'x160' single story, pre-engineered metal building. The Palmyra fire department is considering utilizing the primary steel framing of this building for a new facility or part of a new facility.
- b) Determine the required design loads for an essential use facility in Palmyra, Wisconsin and compare to the original design loads for the building.
- c) Discuss the situation, options, availability and economics of re-use with the original pre-engineered metal building supplier.
- d) Provide our professional opinions and recommendations as to the viability of re-use and considerations related to economics of doing so.

We reserve the right to amend or supplement this report upon further investigation of the site and any additional information that may become available to us, after the date of this report.

Discussion:

1. The original Building
 - a) The primary steel framing for the 160'x160' x 26'-9" eave, pre-engineered metal building were originally designed to be erected in Winona MN. The building was to be a warehouse facility, rather than an essential facility.
 - b) The Design snow load was 35 psf.
 - c) The design wind load was 108 mph wind.
 - d) The roof collateral load (added roof load due to items such as HVAC / Lighting etc) was 3 psf.
 - e) The seismic (earthquake design) category was A (does not control lateral loading for this building).
2. The proposed building would be required to resist the following loads in Palmyra, WI.
 - a) Design snow load = 25 psf.
 - b) Design wind speed = 119 mph.
 - c) Design seismic category C (still not likely to control for this type of building)
 - d) This building would be sprinkled, therefore we would need a collateral load of 3 psf plus a sprinkler load of 4 psf.
3. In order to re-use this building, in a different location, Code will require that a new set of certified drawings and calculations be prepared for this use in the proposed location.

Results of Discussions:

1. The manufacturer, Foremost Buildings was willing to review the calculations, and to discuss the viability of re-use.
2. If the primary steel framing system were to be utilized as part or whole of a new building, purchased by Palmyra Fire Department, the manufacturer stated that yes, they would be willing / able to provide

Structural | Civil | Forensic Engineering

PRE-ENGINEERED METAL BUILDING

Page 2 of 2



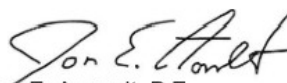
- revised certified pre-engineered metal building drawings and calculations for this location and for this use.
3. The manufacturer has discussed this with their engineer and stated that the primary steel framing would likely be able to be re-used without significant modification (based on the design loads provided by NCE).
 4. Economics: The manufacturer provided an example project quote for a new building of similar size located in Jefferson, WI. This 160'x162' x 26'-9" eave building was quoted as \$450,000, however the manufacturer stated that material prices must be marked up approximately 19% for today's market. Therefore, the estimated value of a new building of this size is approximated at \$540,000 or \$20.00 per square foot. This is fabricated and delivered to the site.
 5. The manufacturer estimated that the re-used frames would represent approximately 25% of the value of this building package. Therefore, we estimate that the value of the frames is approximately \$135,000 or approximately \$5.27 per square foot.

Professional Opinions: Based on our review and discussions:

1. Based on the above discussion, Yes the previously fabricated building framing can very likely be re-used without significant modification (as included in a new building by Foremost Buildings).
2. It is our understanding that Palmyra Fire Department could reduce the cost of the delivered structure by as much as 25% by utilizing and designing around the use of this already fabricated primary structural system. Saving as much as \$5.27 per square foot.
3. In my professional opinion, the total cost of finished open space would likely exceed \$200.00 per square foot. (Others will decide an overall budget and there are a lot of things that influence this total price). However, in my opinion, this budget serves to illustrate the point.
4. Based on \$200 / SF, the potential construction cost savings is 3%.
5. Therefore, if this structure meets the needs of the owner, without adding costs, without sacrificing function, and without significantly increasing operating costs, then re-using the frames and designing around the available system would be a viable consideration in my professional opinion.
6. We want to note that we are very appreciative of the work that Foremost buildings did to help our team to properly evaluate this opportunity.

Please call with any questions or comments regarding this project at (218) 727-5995.

Sincerely,

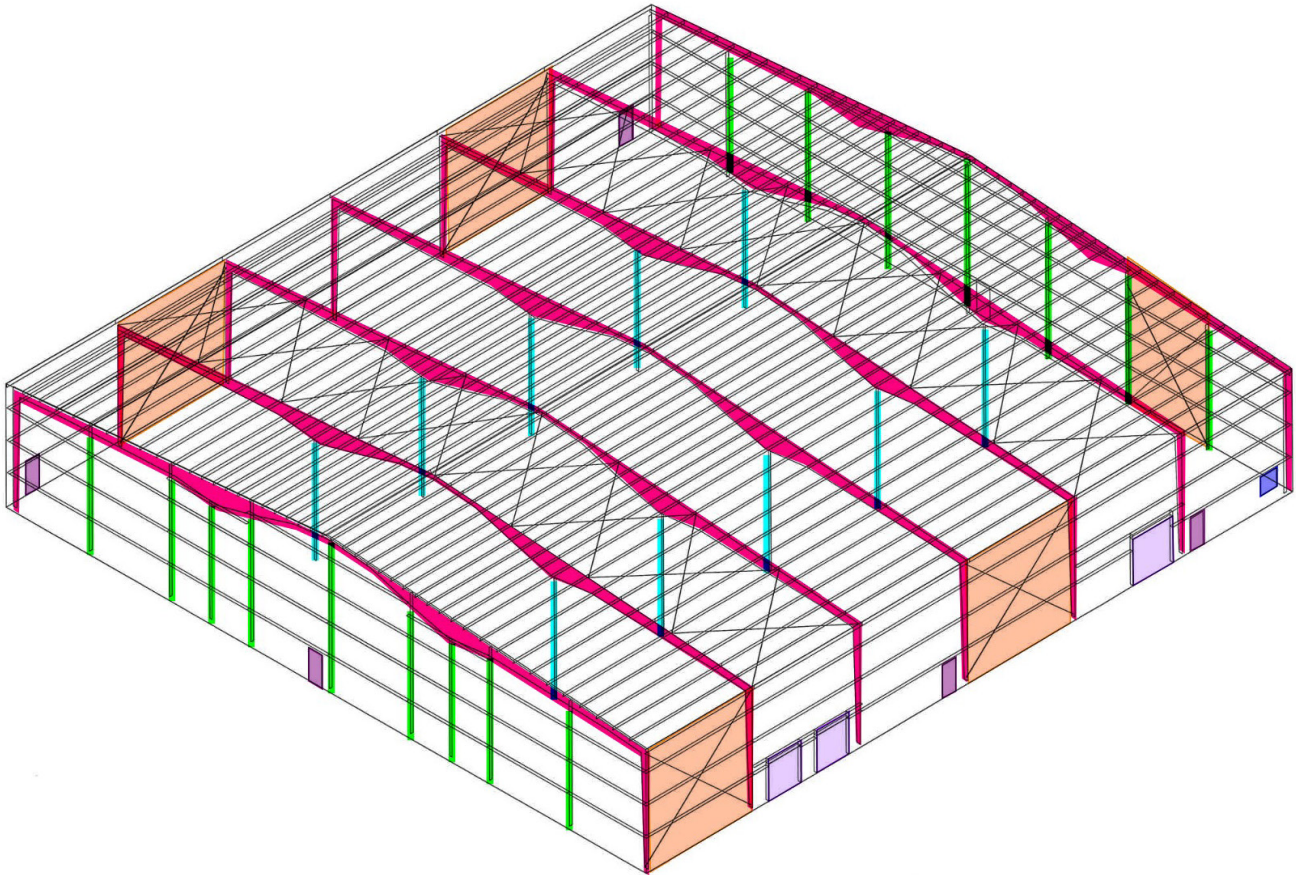

Jon E. Aamodt, P.E.
Principal Partner



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PRE-ENGINEERED METAL BUILDING

ARCHITECTURAL ANALYSIS & CONCEPT DESIGN:



PEMB STRUCTURAL ELEMENTS

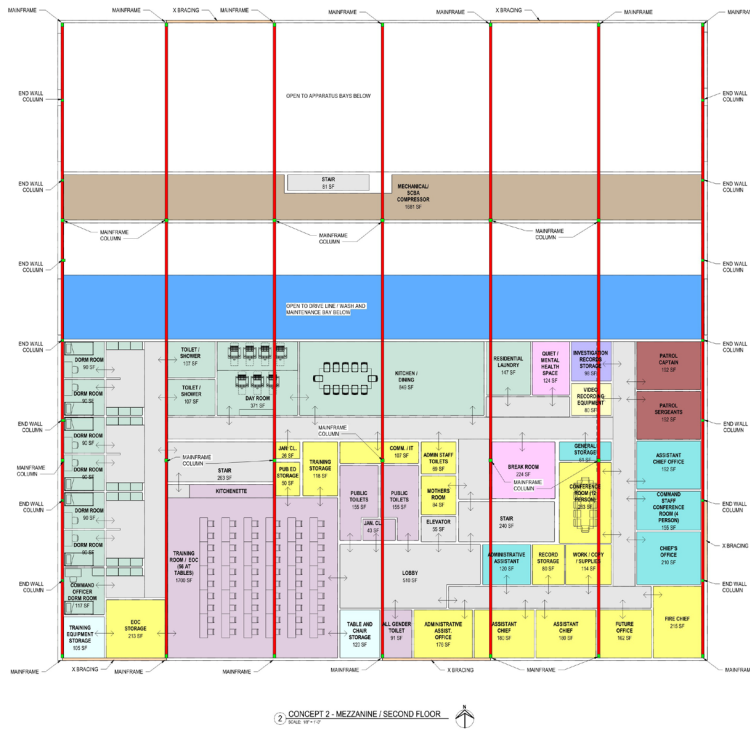
After determining that the structure could be retrofitted to house an emergency services facility, the existing building was then considered architecturally.

Above is a 3D view of the metal building, as initially designed. Highlighted are different structural and architectural components that need to be considered. If any of these are to move, or change, additional costs would occur to make this modification.

Color code for elements noted above:

- Magenta: Mainframe
- Cyan: Internal Columns
- Green: Perimeter columns
- Orange: Cross Bracing
- Purple: Envelope penetrations, such as windows and doors

PRE-ENGINEERED METAL BUILDING



PEMB CONCEPT PLAN - SECOND FLOOR

The second floor of the facility includes a community zone with public toilet rooms, a training room, and access to the departments administrative assistants.

Leaving the community zone, the administration for the department wraps the southern and eastern exterior walls, allowing most occupied spaces the opportunity for natural light.

The northern and western areas of the second floor are occupied by the fire departments living quarters. With the dorms located on the outside wall with windows, as required by code, the kitchen, dining, and day room are all to be located on the northern wall. In order to allow natural light into these spaces, either skylights will need to be installed, or windows will be placed to view into the fleet garage, therefore receiving borrowed light.

PRE-ENGINEERED METAL BUILDING

COST ANALYSIS:

Working with the PEMB manufacturer, the cost of purchasing the metal building today, all structural steel included, would be \$531,493. Since the frames are already produced, the manufacturer is offering to provide those for free. The cost of that component is \$83,152 a 16% discount.

This discount does not take into consideration any of the modifications that would be required to make this facility work for the department, nor does it take into consideration the additional costs with creating a second story within this facility.

It is also important to note that although the metal building would be a portion of the cost associated with this project, it is not the full cost of the project.

Historically, the cost comparison between PEMB's and traditional masonry for use by an emergency services is an overall cost difference of about 15%.

CONCLUSION & RECOMMENDATION FOR THE EXISTING PEMB:

Though this building could be retrofitted to serve the needs of the public safety department, the constraints of the facility cause any concept to sacrifice function and response. The departments would also be at capacity immediately, without a cost-effective way to add onto the structure.

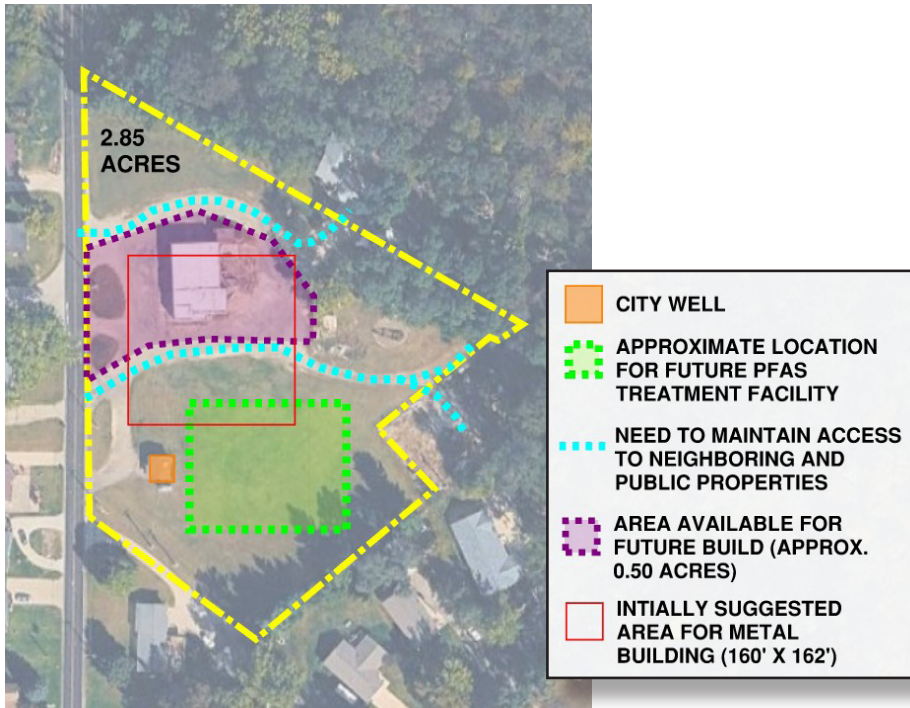
The costs associated to modify this structure to meet today's needs would make this retrofit more expensive than designing a new PEMB facility.

It is therefore recommended that the department consider a new construction project. This new project could be designed as a PEMB, if desired by the department and village, or other methods of construction could be considered, with cost and life-cycle analysis completed to determine the best balance of initial costs, maintenance, and function.



SITE CONSIDERATIONS

SITE CONSIDERATIONS



FORMER PUBLIC WORKS SITE:

The site of the former public works facility was recommended as a consideration for a new facility. Upon initial review, the site, which is approximately 2.85 acres, seemed right-sized for the public safety departments needs. However, there are numerous site restrictions that need to be considered on this property, which greatly reduce the area in which a new facility could be constructed. These restrictions, as noted on the image to the left are: the existing well for the Village of Palmyra, access to a residential property to the north and to the southeast, and access to public property to the east. This site is also in consideration for the construction of a new PFAS treatment plant, to be located near the well.

FORMER PUBLIC WORKS SITE - RESTRICTIONS



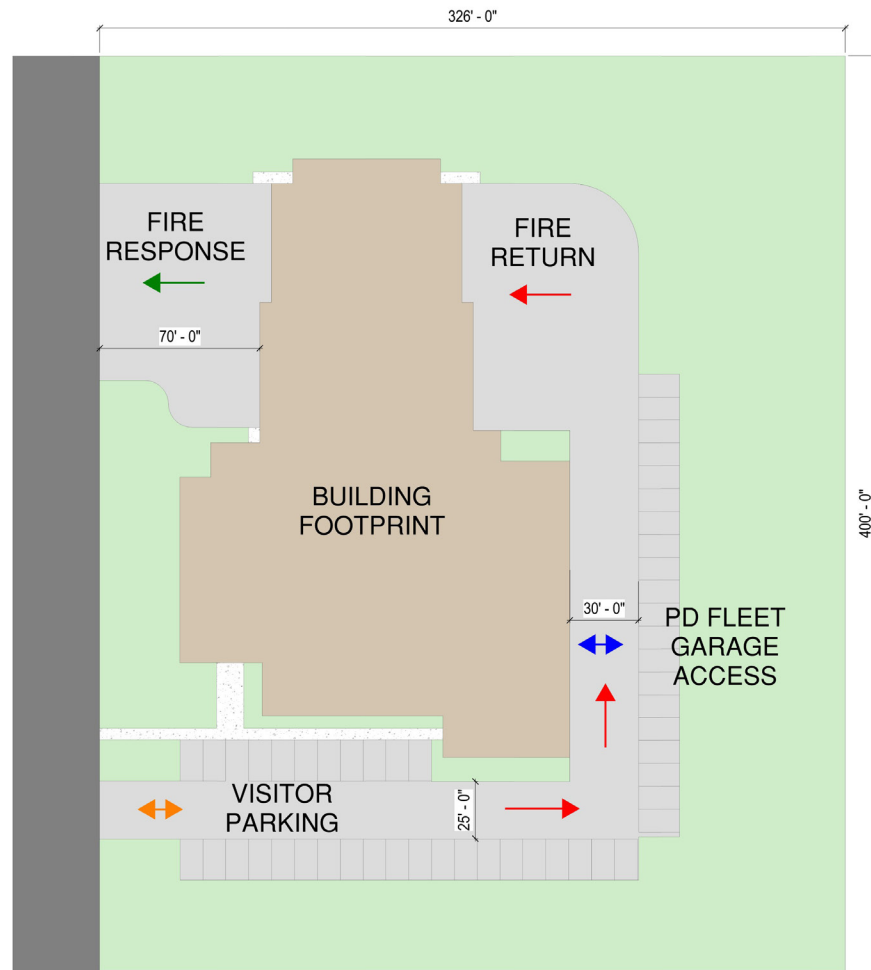
Once reduced to the potential constructable area, this 2.85-acre site becomes about 0.5 acres.

This 0.5-acre site would allow the fire department to have a response apron sized to allow the department to back into the bays, without pulling out into traffic. It would also provide the opportunity to make these bays into drive-through bays for safer response. However, this facility would still need to be several stories to accommodate program and would require more than the available 0.5 acres in order to accommodate the police fleet garage, parking, and wastewater management.

It is not recommended to consider this property, with its current site restrictions, for a new public safety facility.

FORMER PUBLIC WORKS SITE - FIRE APPARATUS BAYS ON SITE.

SITE CONSIDERATIONS



POTENTIAL SITE LAYOUT.

IDEAL SITE:

To accommodate a contemporary public safety facility, that will be single-story, and house the full public safety department's space needs, driving and apparatus maneuverability, parking, and wastewater management, a site of 3-acres would be required.

As shown in the image above, a 3-acre site would allow for designated visitor parking, staff parking, and right-sized parking aprons for fire return and response. If allowable by a potential site, it would be even more ideal to have another access for the emergency responders to use, without having to return through the visitor parking lot.



CONCEPTUAL DESIGN

This section will be complete in a future phase.



OPINION OF PROBABLE COSTS

OPINION OF PROBABLE COSTS

This section will be complete in a future phase, once concepts are complete.



CONCLUSION & RECOMMENDATION

CONCLUSION & RECOMMENDATION

This section will be complete in a future phase.



APPENDIX



APPENDIX A

SPACE NEEDS ANALYSIS



APPENDIX B

EXISTING BUILDING PLANS



APPENDIX C

NOTED EXISTING BUILDING PHOTOS



APPENDIX D

PRE-ENGINEERED METAL BUILDING STUDY



APPENDIX E

SITE CONSIDERATIONS



APPENDIX F

CONCEPT PLANS



APPENDIX G

OPINION OF PROBABLE COSTS



APPENDIX H

DATABASE OF ALL PHOTOS