



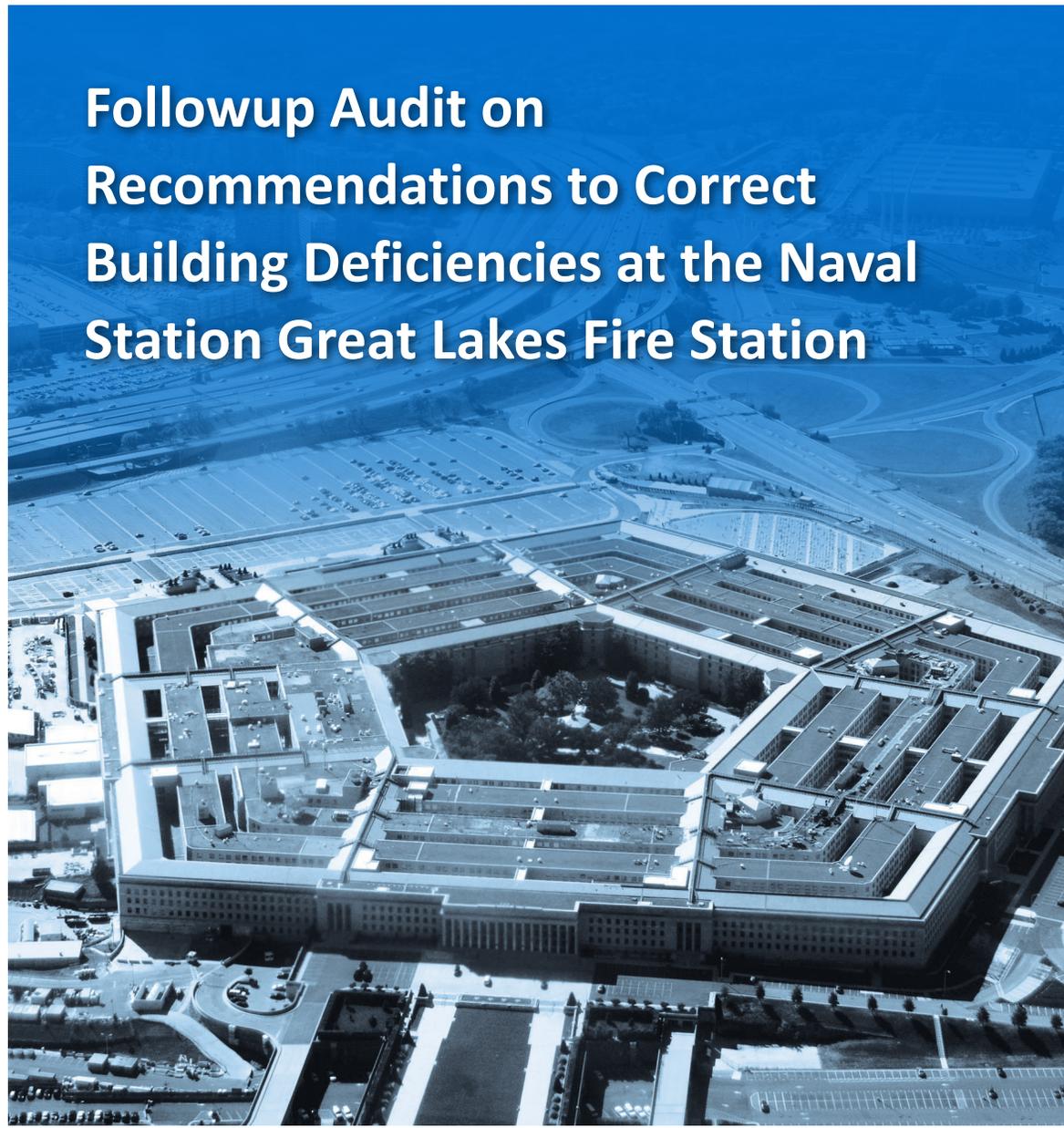
# INSPECTOR GENERAL

*U.S. Department of Defense*

AUGUST 13, 2020



## Followup Audit on Recommendations to Correct Building Deficiencies at the Naval Station Great Lakes Fire Station



INTEGRITY ★ INDEPENDENCE ★ EXCELLENCE





# Results in Brief

## *Followup Audit on Recommendations to Correct Building Deficiencies at the Naval Station Great Lakes Fire Station*

**August 13, 2020**

### Objective

The objective of this followup audit was to determine whether Navy officials corrected deficiencies identified in Report No. DODIG-2012-132, "Project Planning Resulted in Outstanding Building Deficiencies and Decreased Functionality of the Main Fire Station at Naval Station Great Lakes," September 14, 2012. In addition, we determined whether other fire station building deficiencies existed and whether the Commander of the Navy Region Mid-Atlantic established oversight procedures to ensure that firefighters had access to safe and compliant facilities.

We also received a DoD Hotline complaint with allegations claiming that the issues identified at building 106 in Report No. DODIG-2012-132 remain unresolved and did not comply with the Unified Facilities Criteria (UFC), which provide a standard for all technical criteria and specifications related to planning, designing, constructing, operating, and maintaining real property facilities.

### Background

The main fire station, building 106, and the second station, building 2801, at Naval Station Great Lakes provide 24-hour emergency services to over 20,000 military and civilian personnel. In 2012, Report No. DODIG-2012-132 substantiated claims that the 2010 building 106 renovation project did not comply with the UFC and that it would have been more economical to replace the facility than renovate. To address these findings, the DoD OIG made five recommendations.

### Background (cont'd)

In the 2012 report, the DoD OIG recommended that the Regional Fire Chief, Commander, Navy Region Midwest, and the Public Works Officer (PWO) identify existing deficiencies and implement appropriate actions to correct the deficiencies (prior report Recommendation 1).

In addition, the DoD OIG recommended that the Commander of the Navy Region Midwest issue guidance requiring:

- planners to provide sufficient detail in the "Impact If Not Provided" section on the DD Form 1391, "Military Construction Data" to ensure that officials reviewing and approving the form fully understand the impact to the mission, quality of life, safety and health that would occur if the project were not funded (prior report Recommendation 2.a); and
- Naval Facilities Engineering Command (NAVFAC) and Public Works Department Great Lakes officials to use the checklist provided in NAVFAC P-442, "Economic Analysis Handbook," October 1993, to ensure a thorough and accurate review of the DD Form 1391 and supporting documentation (prior report Recommendation 2.b).

The DoD OIG further recommended that the Commander of the Navy Region Midwest and Commanding Officer of NAVFAC Midwest review the actions of personnel involved in preparing and reviewing planning documentation, supporting documentation, and the request for proposal. Based on that review, the Commander should determine which personnel failed to exercise due diligence when planning projects to correct existing fire station deficiencies and take appropriate administrative action (prior report Recommendations 3.a and 3.b).

### Finding

During this followup audit, we determined that Navy officials had taken some corrective actions in response to the five recommendations made in Report No. DODIG-2012-132. Specifically, Navy officials:

- partially implemented the prior report's Recommendation 1 by correcting 24 of 31 building deficiencies but did not take sufficient actions to



# Results in Brief

## *Followup Audit on Recommendations to Correct Building Deficiencies at the Naval Station Great Lakes Fire Station*

### **Finding (cont'd)**

- correct the remaining 7 deficiencies. For example, the PWD Great Lakes officials did not procure a generator capable of providing 100-percent emergency backup power;
- fully implemented the prior report's Recommendation 2.a to issue guidance for officials reviewing and approving DD Forms 1391 by updating project planning guidance in the Business Management System;
  - did not implement the prior report's Recommendation 2.b to require use of the economic analysis checklist when updating NAVFAC P-442 and instead relied on the use of training, which is not required, to reinforce the use of the economic analysis checklist; and
  - fully implemented the prior report's Recommendations 3.a and 3.b by addressing the performance of the personnel who failed to exercise due diligence when planning the building 106 renovation project and taking appropriate administrative actions.

In addition to the building deficiencies identified in the prior report, in this followup audit, we identified 17 new deficiencies at building 106 and a lack of oversight procedures for Navy personnel to ensure proper maintenance of the building. Of the 17 deficiencies, 7 deficiencies were not identified by the Navy because Navy officials did not perform a complete building assessment in April 2012, as recommended. The other 10 deficiencies were not identified by the Navy because Navy officials did not ensure that a building monitor was properly designated and trained to maintain building 106, in accordance with Navy policy.

Furthermore, during our site visit, we toured the Naval Station Great Lakes second fire station, building 2801, and identified potential health and safety concerns in building 2801 that were similar to those identified in Report No. DODIG-2012-132 for building 106.

While Navy officials have made improvements to building 106, the outstanding health and safety deficiencies continue to expose personnel living and working there to potential illness and injury, such as exposure to vehicle exhaust fumes and increased trip and fall hazards.

### **Recommendations**

Among other recommendations, we recommend that the Commander of the Navy Region Mid-Atlantic and the Commanding Officer of the Naval Station Great Lakes coordinate with the Public Works Department Great Lakes to assess and correct deficiencies identified in this report to ensure compliance with current UFC and National Fire Protection Association (NFPA) requirements.<sup>1</sup>

In addition, we recommend that the PWO of the Public Works Department Great Lakes coordinate with the Director of the Facilities Management Division to develop and implement a building monitor training program in accordance with Navy policy.

We also recommend that the Commander of Navy Region Mid-Atlantic, in coordination with the PWO of the Public Works Department Great Lakes, inspect building 2801 for noncompliance with current:

- UFC 4-730-10 and incorporate corrective actions into the planned renovation project for building 2801; and,
- NFPA requirements and take corrective actions.

### **Management Comments and Our Response**

This report contains seven recommendations addressed to the NAVFAC Commander, the Commander of Navy Region Mid-Atlantic, the Commanding Officer of

<sup>1</sup> The prior report's Recommendation 1 remains closed because we are making a new recommendation to correct all building deficiencies.



# Results in Brief

## *Followup Audit on Recommendations to Correct Building Deficiencies at the Naval Station Great Lakes Fire Station*

### **Comments (cont'd)**

Naval Station Great Lakes, the PWO, Public Works Department Great Lakes, and the District Fire Chief, Fire and Emergency Services Great Lakes. Of the seven recommendations, five are resolved but will remain open until further actions are taken, and two are closed. Below is a description of the management comments to three of the resolved recommendations. Please see the management comments and our response section of the report for additional details on the other recommendations.

The Commanding Officer of Naval Station Great Lakes, responding for the Commander of Navy Region Mid-Atlantic and the PWO of the Public Works Department Great Lakes, partially agreed with the recommendation to ensure compliance with current UFC and NFPA requirements, stating that Naval Station Great Lakes plans to correct all remaining deficiencies identified in the 2012 audit report, and 14 of 17 additional deficiencies identified during this audit. The Commanding Officer stated that repairs to correct the remaining 3 of 17 deficiencies identified during this audit would be costly, and would provide no direct increase in functionality to the fire station. However, the Commanding Officer also stated that he may develop an on-site mitigation strategy or seek a waiver to exempt them from compliance with UFC and NFPA requirements to address the remaining three deficiencies. The Commanding Officer addressed the specifics of the recommendation; therefore, the recommendation is resolved. We will close this recommendation once we verify that the actions taken to address each deficiency from the prior report and this audit were completed.

The Commanding Officer of Naval Station Great Lakes, responding for the PWO of the Public Works Department Great Lakes, agreed with the recommendation to develop and implement a building monitor training program in accordance with Navy policy, stating that a

curriculum for the building monitor training program was being developed, and the PWO would implement the training in accordance with Commander, Navy Region Mid-Atlantic Instruction 11000.2A in FY 2021. The Commanding Officer's comments addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close this recommendation once we receive the training curriculum used and verify it contains the information required by the Instruction.

The Commanding Officer of Naval Station Great Lakes, responding for the Commander, Navy Region Mid-Atlantic, agreed with the recommendations to inspect building 2801 for noncompliance with current UFC 4-730-10 and NFPA requirements. The Commanding Officer also stated that an inspection of building 2801 would be conducted in accordance with UFC and NFPA requirements and that required modifications resulting from the inspection would be completed either individually or as part of an overall building renovation by FY 2022. The Commanding Officer's comments addressed the specifics of the recommendations; therefore, the recommendations are resolved but will remain open. We will close these recommendations when we receive documentation showing that actions were taken to address each deficiency.

Please see the Recommendations Table on the next page for the status of recommendations.

## Recommendations Table

Management	Recommendations Unresolved	Recommendations Resolved	Recommendations Closed
Commander, Naval Facilities Engineering Command	None	2.a	2.b
Commander, Navy Region Mid-Atlantic	None	1, 5.a, 5.b	None
Commanding Officer, Naval Station Great Lakes	None	1	None
Public Works Officer, Public Works Department Great Lakes, Naval Facilities Engineering Command, Mid-Atlantic	None	1, 4, 5.a, 5.b	None
District Fire Chief, Fire and Emergency Services Great Lakes, Commander, Navy Region Mid-Atlantic	None	None	3

**Note:** The following categories are used to describe agency management’s comments to individual recommendations.

- **Unresolved** – Management has not agreed to implement the recommendation or has not proposed actions that will address the recommendation.
- **Resolved** – Management agreed to implement the recommendation or has proposed actions that will address the underlying finding that generated the recommendation.
- **Closed** – OIG verified that the agreed upon corrective actions were implemented.



**INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
4800 MARK CENTER DRIVE  
ALEXANDRIA, VIRGINIA 22350-1500**

August 13, 2020

MEMORANDUM FOR AUDITOR GENERAL, DEPARTMENT OF THE NAVY  
COMMANDER, NAVY INSTALLATIONS COMMAND  
COMMANDER, NAVAL FACILITIES ENGINEERING COMMAND

SUBJECT: Followup Audit on Recommendations to Correct Building  
Deficiencies at the Naval Station Great Lakes Fire Station  
(Report No. DODIG-2020-113)

This final report provides the results of the DoD Office of Inspector General's audit. We previously provided copies of the draft report and requested written comments on the recommendations. We considered management's comments on the draft report when preparing the final report. These comments are included in the report. Management's comments and associated actions addressed Recommendations 2.b and 3, and we consider them closed.

The Commanding Officer, Naval Station Great Lakes, responding for the Commander, Navy Region Mid-Atlantic, agreed to address Recommendations 1, 5.a, and 5.b presented in the report; therefore, we consider the recommendations resolved and open. The Commanding Officer, Naval Station Great Lakes, responding for the Public Works Officer, Public Works Department Great Lakes, Naval Facilities Engineering Command, Mid-Atlantic, agreed to address Recommendation 4 presented in the report; therefore, we consider the recommendation resolved and open. The Inspector General, Naval Facilities Engineering Command, responding for the Commander, Naval Facilities Engineering Command, agreed to address Recommendation 2.a presented in the report; therefore, we consider the recommendation resolved and open. As described in the Recommendations, Management Comments, and Our Response section of this report, we will close the recommendations when you provide us documentation showing that all agreed-upon actions to implement the recommendations are completed. Therefore, please provide us within 90 days your response concerning specific actions in process or completed on the recommendations. Your response should be sent to either [followup@dodig.mil](mailto:followup@dodig.mil) if unclassified or [rfunet@dodig.smil.mil](mailto:rfunet@dodig.smil.mil) if classified SECRET.

We appreciate the cooperation and assistance received during the audit. If you have any questions, please contact me at [REDACTED]

A handwritten signature in black ink that reads "Theresa S. Hull".

Theresa S. Hull  
Assistant Inspector General for Audit  
Acquisition, Contracting, and Sustainment

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# Introduction

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## Objective

The objective of this followup audit was to determine whether Navy officials corrected deficiencies identified in Report No. DODIG-2012-132, “Project Planning Resulted in Outstanding Building Deficiencies and Decreased Functionality of the Main Fire Station at Naval Station Great Lakes,” September 14, 2012. In addition, we determined whether other building deficiencies existed and whether the Commander, Navy Region Mid-Atlantic (CNRMA) command established oversight procedures to ensure that firefighters had access to safe and compliant facilities. See Appendix A for our scope and methodology and prior audit coverage.

## ***DoD Hotline Allegation Related to Report No. DODIG-2012-132***

We received a DoD Hotline complaint with allegations that the deficiencies identified at building 106 in Report No. DODIG-2012-132 remained unresolved. Additionally, the complainant alleged that the fire station still did not meet requirements specified by the Unified Facilities Criteria (UFC), which provides planning and designing criteria for fire stations.<sup>2</sup> The complainant provided no other details.

Our audit substantiated the complainant’s allegations. See the Finding section in this report for a discussion of the unresolved deficiencies for building 106 and remaining concerns with the Naval Facilities Engineering Command (NAVFAC) project planning process.

## Background

Naval Station Great Lakes (NSGL) was opened in 1911, supporting over 50 tenant commands and organizations, including the Navy’s Recruit Training Command, and over 20,000 military and civilian personnel.<sup>3</sup> The NSGL mission is to enable and sustain fleet, family, and fighter by providing superior, integrated base operating support for all tenant commands and organizations on the installation. The NSGL has 1,153 buildings on 1,628 acres, using over 50 miles of roadway to provide access to base facilities.

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<sup>2</sup> UFC 4-730-10, “Fire Stations,” June 15, 2006. In 2006, the DoD established the UFC program to unify all technical criteria and guide specifications related to planning, designing, constructing, operating, and maintaining real property facilities. The DoD requires all Military Departments, Defense agencies, and field activities to use the UFC for planning, designing, constructing, sustaining, restoring, and modernizing facilities.

<sup>3</sup> A tenant is the receiver or user of a facility or service, usually a unit or command that occupies facilities provided by a host activity.

The CNRMA Fire and Emergency Services Department Great Lakes (NSGL Fire Department) provides 24-hour emergency services to NSGL personnel and property. Specifically, the NSGL Fire Department provides pre-planning, structural rescue, fire response, emergency medical services, environmental risk response and spill control, specialized rescue, and community training. According to the District Fire Chief, NSGL, the NSGL Fire Department currently has 44 fire station personnel and 2 fire stations that service the NSGL.<sup>4</sup> Specifically, the NSGL has a main fire station, building 106, which was built in 1939 and was most recently renovated in 2010, and a second fire station, building 2801. See Figure 1 for the main fire station, building 106.

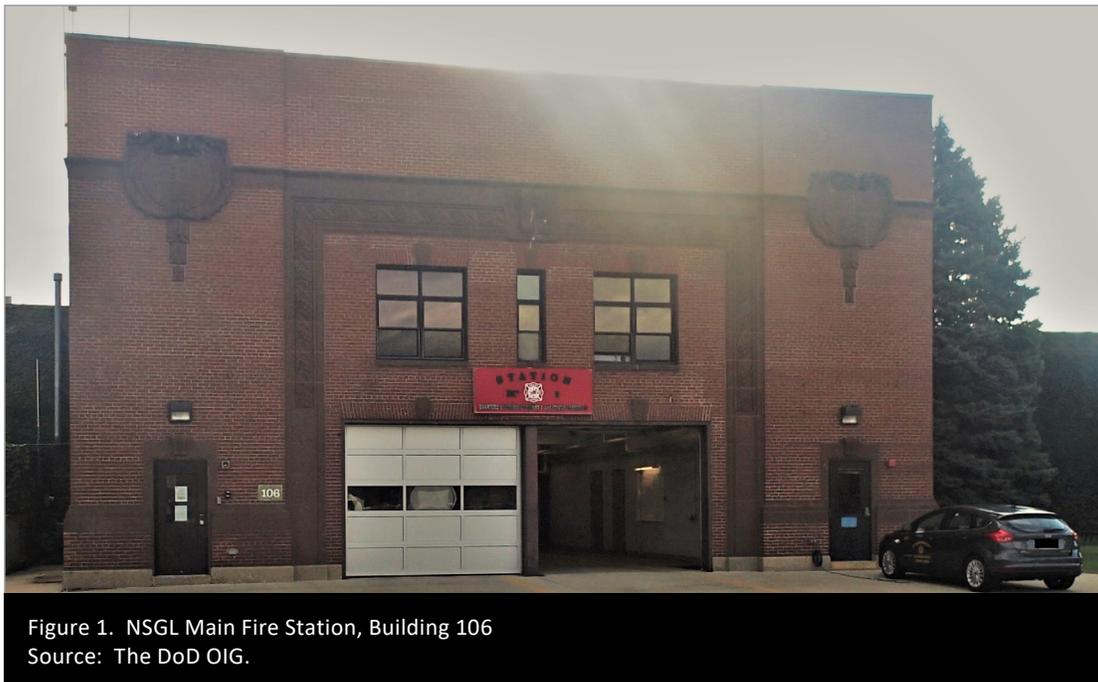


Figure 1. NSGL Main Fire Station, Building 106  
Source: The DoD OIG.

### ***Commander, Navy Installations Command***

The Commander, Navy Installations Command (CNIC) reports to the Chief of Naval Operations and is responsible for designing and developing solutions for Navy shore installation sustainment and management. As the shore installation budget submitting office for the Navy, CNIC is responsible for requirements generation, requirements assessments, resource allocation, and regional coordination to meet fleet requirements. In addition, CNIC coordinates policy, planning, budgeting, and reporting for all Navy regions and shore installations.

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<sup>4</sup> Fire station personnel include both firefighters and emergency medical technicians; however, for the purposes of this report, we will refer to all personnel as firefighters.

### ***Commander, Navy Region Mid-Atlantic***

CNRMA is 1 of 11 regions under CNIC and is responsible for all shore-based naval personnel and activities in the Mid-Atlantic region. CNRMA encompasses 20 states and 14 installations, including the NSGL Fire Department. CNRMA oversees the operations of the NSGL Fire Department by establishing, planning, maintaining, and budgeting programs that conform to Fire and Emergency Services requirements.<sup>5</sup> CNRMA is also responsible for developing fire department policy and emergency response procedures. Additionally, CNRMA provides the resources required for operations and is responsible for ensuring personnel are professionally qualified Fire and Emergency Services staff to ensure programs are effectively implemented.

CNRMA officials approve funding for projects that are performed at installations, including NSGL. Specifically, CNRMA officials provide NAVFAC Mid-Atlantic (MIDLANT) and Public Works Department (PWD) officials with the approved funding amount for the installation. According to CNRMA officials, the sustainment funding level for each base is based on the age, size, and facility type of each building on an installation. Installation PWDs develop a prioritized list of projects for execution, which is approved by the installation commanding officer and then provided to CNRMA for approval. According to CNRMA officials, they review the PWD prioritized lists to ensure they align with the funding priorities outlined in the CNIC Operations Plan. CNRMA officials will then monitor execution of the installations plans to ensure they are meeting execution goals.

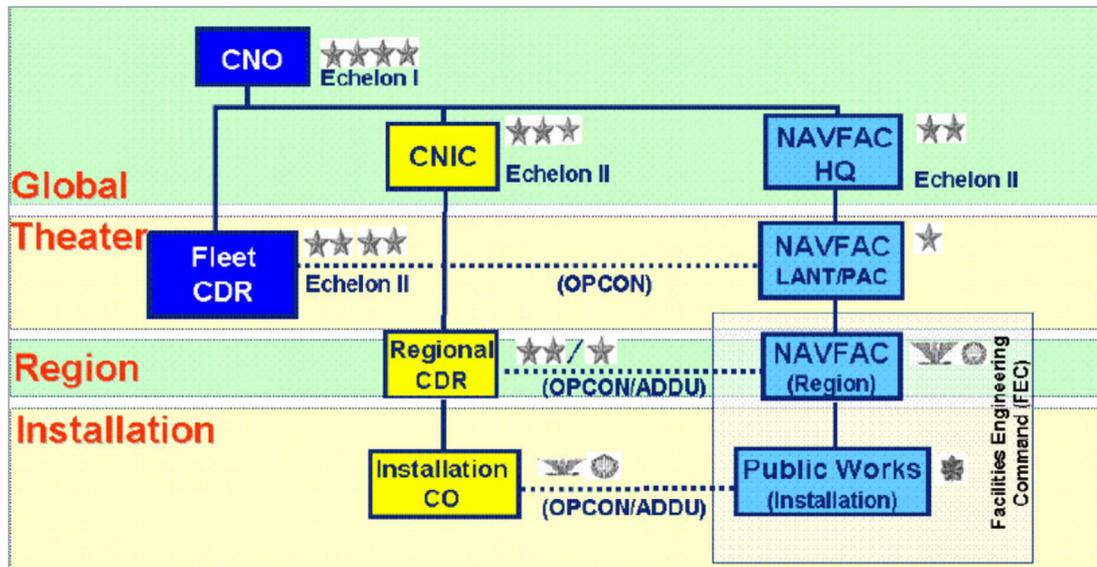
### ***Naval Facilities Engineering Command***

NAVFAC is a global command that reports to the Chief of Naval Operations and provides engineering support for the Navy, Marine Corps, and other DoD facilities. NAVFAC manages and executes the planning, design, construction, and public works support for naval facilities. NAVFAC strengthens combat readiness by providing support to facilities throughout their life cycle. NAVFAC, in partnership with CNIC, ensures that the Navy's installations enable and sustain fleet, fighter, and family readiness. NAVFAC oversees the condition of the fire stations, including the NSGL Fire Department, while CNIC oversees the fire department operations.

NAVFAC is composed of the Headquarters command; four regional component commands and specialty centers, including NAVFAC Atlantic; and nine Facilities Engineering Commands. NAVFAC Atlantic aligns operationally with the Navy's Atlantic Fleet. NAVFAC Atlantic oversees four Facilities Engineering Commands. Each Facilities Engineering Command aligns operationally with one of the Navy's regional commands under CNIC. See Figure 2 on the next page for the organizational chart of the relationship between CNIC and NAVFAC, with corresponding military ranks of each position.

<sup>5</sup> DOD Instruction 6055.06, "DoD Fire and Emergency Services Program," October 3, 2019.

Figure 2. CNIC and NAVFAC Organizational Chart

**Legend**

ADDU	Additional Duty
CDR	Commander
CO	Commanding Officer
LANT	Atlantic
OPCON	Operational Control
PAC	Pacific

Source: NAVFAC P-1205, "Public Works Department Management Guide," October 2008.

**NAVFAC Mid-Atlantic**

NAVFAC MIDLANT is one of four Facilities Engineering Commands that reports directly to NAVFAC Atlantic. As a Facilities Engineering Command, NAVFAC MIDLANT provides products and services to tenant commands and facilities at over 182 Navy sites, including the NSGL. NAVFAC MIDLANT business areas include expeditionary, asset management, capital improvements, environmental, and public works.<sup>6</sup>

The PWD provides support to CNIC for utilities, facilities sustainment and management, facility support contract management, and facility services. Specifically, the PWD manages the condition of facilities on the installation by providing engineering and management, utilities engineering and acquisition, technical support, and transportation equipment management.

<sup>6</sup> NAVFAC's expeditionary business area includes products and services that address the generation and documentation of warfighter requirements, subsequent fulfillment of those requirements, and sustainment of pre-positioned and fielded materiel.

## Summary of Report No. DODIG-2012-132

Report No. DODIG-2012-132, “Project Planning Resulted in Outstanding Building Deficiencies and Decreased Functionality of the Main Fire Station at NSGL,” September 14, 2012, was conducted in response to an allegation to the DoD Hotline. The DoD OIG substantiated the following allegations made by the complainant regarding the NSGL main fire station, building 106 renovation project.

1. The renovation project resulted in a fire station that did not meet the needs of the fire department because the contract design did not incorporate UFC 4-730-10, “Fire Stations,” June 15, 2006.<sup>7</sup>
2. Replacing the fire station was more economical than renovating it because a new facility would cost the same or less than a renovation.
3. The Navy would incur additional costs for basic infrastructure items that were not included in the contract.

### ***Finding***

Report No. DODIG-2012-132 identified that facility improvements at NSGL building 106 were justified; however, the renovation project did not mitigate all potential health and safety risks to fire station personnel. This occurred because NAVFAC Midwest and PWD Naval Station Great Lakes (PWD Great Lakes) officials did not properly plan efforts to rebuild or renovate the fire station. For example, officials did not:

- provide accurate information on the DD Form 1391 and supporting documents to justify funding for the renovation project;<sup>8</sup>
- include design requirements for fire stations, such as multiple UFC and NAVFAC requirements; or
- perform effective reviews of planning documentation to identify errors and inaccurate data on the DD Form 1391 and supporting documentation.

<sup>7</sup> UFC 4-730-10, “Fire Stations,” June 15, 2006, applies to all new construction projects, including additions, alterations, and renovation projects. The guidance states that alteration and renovation projects should update existing facilities to meet the guidance within budgetary constraints. UFC 4-730-10 is intended to reduce the initial cost of design and reduce costs associated with the redesign of facilities that do not meet minimum UFC standards.

<sup>8</sup> The Office of the Chief of Naval Operations Instruction 11010.20G, “Facilities Projects Instruction,” October 14, 2005, required preparation of the DD Form 1391 for all projects over \$500,000 and included guidelines for project planners to provide adequate DD Form 1391 project justification packages. The DD Form 1391, Military Construction Project Data, is the military construction project data sheet used to state the requirements and justifications in support of funding requests for military construction projects across the DoD. The title of the DD Form 1391 changes based on the current fiscal year and the type of funding requested. For example, our report discusses special projects and therefore, the title is DD Form 1391, “FYXX Special Project Program.” The form is submitted for all projects requiring Office of the Secretary of Defense approval, including major and minor new construction and certain projects involving operations and maintenance, restoration of damaged facilities, and nonappropriated fund construction.

As a result, the DoD OIG determined that over a 32-year period, building a new fire station would have cost \$6.16 million less than renovating the existing 70-year-old structure, causing the Navy to invest additional funds to make the fire station compliant with required design criteria, address remaining maintenance problems, and improve fire station functionality. In addition, the renovation resulted in changes to the fire station layout, increasing the average emergency response times of firefighters by 17 to 18 percent.

Furthermore, the DoD OIG identified firefighter health, safety, and UFC 4-730-10 compliance deficiencies at building 106. Specifically, the report identified the following five deficiencies, as stated below, that related to UFC 4-730-10 noncompliance.

- Personal protective equipment (PPE) was not stored in a negatively pressurized room and was exposed to sunlight, which could cause the PPE to deteriorate or damage and potentially expose firefighters to gaseous emissions.<sup>9</sup>
- The firefighter alert system was outdated and automatic lighting was slow to activate, causing potential trip hazards and delayed response to emergency calls.
- The dorm rooms did not have adequate heating, ventilation, and air conditioning (HVAC) because they did not have proper climate control. Also, the dorm rooms were not well insulated to provide a sound barrier from exterior noises, which affected the firefighters' ability to sleep.
- The protective clothing laundry room was not located in a separate, negatively pressurized room that would also provide proper ventilation, which exposed personnel to hazardous gaseous emissions from the washer and dryer exhaust and excessive noise which can result in hearing loss.
- The wash and disinfection room did not have a dedicated wash area, and a multi-compartment sink, which potentially exposed personnel to hazardous chemicals while washing and disinfecting equipment.

The DoD OIG also determined that NAVFAC Midwest officials did not include other applicable UFCs and policies during project planning. If the total cost of a major renovation project exceeds 50 percent of the plant replacement value, officials must plan the project in compliance with additional design requirements.<sup>10</sup> The DoD OIG determined that, based on the DD Form 1391 for the renovation project, the plant

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<sup>9</sup> PPE is equipment worn to minimize exposure to serious workplace injuries and illnesses resulting from contact with chemical, radiological, physical, electrical, mechanical or other hazards. PPE includes items such as respirators, gloves, hard hats, and full body suits.

<sup>10</sup> Plant replacement value is the cost to replace an existing facility with a generic facility that can perform the same function(s). The replacement facility is generally understood to be the same size and occupy the same site as the existing facility and is understood to be constructed to current standards of material and design.

replacement value was \$9.75 million, and the estimated cost of the renovation was \$7.78 million. Therefore, the total cost of the project was 79.8 percent of the plant replacement value; however, the design of the renovation project did not include the additional UFC design criteria.

### ***Recommendations, Management Comments, and Follow Up***

Report No. DODIG-2012-132 had five recommendations. The Commanding Officer, NAVFAC Midwest, in coordination with the Commander, Navy Region Midwest, concurred with all recommendations.

The DoD OIG recommended that the Regional Fire Chief, Commander of the Navy Region Midwest, and the Public Works Officer (PWO) identify existing deficiencies, such as those identified in the report related to UFC 4-730-10 and quality of life requirements, and implement appropriate actions to correct the deficiencies (prior report Recommendation 1).<sup>11</sup>

In addition, the DoD OIG recommended that the Commander of the Navy Region Midwest issue guidance requiring:

- planners to provide sufficient detail in the “Impact If Not Provided” section on the DD Form 1391 to ensure that officials reviewing and approving DD Forms 1391 fully understand the impact to the mission, quality of life, safety and health that would occur if the project were not funded (prior report Recommendation 2.a); and
- NAVFAC and PWD Great Lakes officials use the checklist provided in NAVFAC P-442, “Economic Analysis Handbook,” October 1993, to ensure a thorough and accurate review of DD Forms 1391 and supporting documentation (prior report Recommendation 2.b).

Furthermore, the DoD OIG recommended that the Commander of the Navy Region Midwest, and the Commanding Officer of NAVFAC Midwest, review the actions of personnel involved in preparing and reviewing planning documentation, such as the DD Form 1391, supporting documentation, and the request for proposal. Based on that review, the DoD OIG recommended that Navy officials determine which personnel did not exercise due diligence when planning projects to correct existing fire station deficiencies; and take appropriate administrative actions (prior report Recommendations 3.a and 3.b).

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<sup>11</sup> The five UFC deficiencies that Report No. DODIG-2012-132 identified that required corrective actions are listed in the bullets above, in the preceding section.

The DoD OIG closed all recommendations by October 2014. See Table 1 for the recommendations and when the DoD OIG closed each recommendation.<sup>12</sup> See Appendix B for Report No. DODIG-2012-132's management comments.

*Table 1. Report No. DODIG-2012-132 Recommendation Status*

Recommendation	Responsible Official(s)	Date Closed
1	Regional Fire Chief, Navy Region Midwest	10/8/2014
	Public Works Officer, PWD Great Lakes, NAVFAC, Midwest	
2.a and 2.b	Commander, Navy Region Midwest	4/1/2013
3.a and 3.b	Commander, Navy Region Midwest	9/28/2012
	Commanding Officer, NAVFAC, Midwest	

Source: The DoD OIG.

### ***Disestablishment of Navy Region Midwest and NAVFAC Midwest***

The recommendations made in Report No. DODIG-2012-132 were directed to two commands: the Commander, Navy Region Midwest and NAVFAC Midwest. In May 2013, the Chief of Naval Operations directed Navy commands to identify flag officer billets that could be considered for elimination. In January 2014, the CNIC decided that Navy Region Midwest would be eliminated. Effective September 30, 2014, the flag officer billet for the Commander of the Navy Region Midwest was eliminated, and, therefore, the entire command was disestablished. As a result, all Navy Region Midwest functions, subordinate commands, and activities were consolidated, eliminated, or realigned with other Navy regional commands, including CNRMA. Consequently, NAVFAC Midwest was also disestablished and realigned with CNIC regional commands, effective October 1, 2014. Therefore, the responsibility for correspondence related to recommendations made in Report No. DODIG-2012-132 transferred from Commander, Navy Region Midwest to CNRMA and from NAVFAC Midwest to NAVFAC MIDLANT.

As a result of the disestablishment, our followup audit focused on identifying Navy Region Midwest and NAVFAC Midwest prior actions to implement the recommendations from Report No. DODIG-2012-132 and whether CNRMA and NAVFAC MIDLANT performed any actions to correct the identified deficiencies. In addition, we reviewed current CNRMA and NAVFAC MIDLANT processes and policies for planning projects to determine whether CNRMA and NAVFAC MIDLANT implemented processes in response to the prior report.

<sup>12</sup> Report No. DODIG-2012-132 made five recommendations; however, recommendation three included multiple parts that we combined as an overall recommendation because the corrective actions implemented would address both parts of the recommendation.

## NAVFAC Project Planning Guidance

### ***NAVFAC Business Management System***

In 2006, the Commander of NAVFAC established the NAVFAC Business Management System (BMS) to implement the governing policy and assign responsibilities for the management of the BMS.<sup>13</sup> The BMS is a systematic method for the management of business processes, common practices, and process quality improvements that is designed to produce and support the most efficient and effective delivery of NAVFAC products and services. The BMS includes applicable, appropriate, and current policies, guidance, forms, and information. NAVFAC requires all employees to use the BMS and to recommend improvements to existing NAVFAC business processes. Commanders and Commanding Officers are required to ensure conformance with NAVFAC Instruction 5200.38.

### ***NAVFAC Publication P-442, “Economic Analysis Handbook”***

NAVFAC P-442, “Economic Analysis Handbook,” November 14, 2013, provides guidance for preparing economic analyses used to guide facilities investment decisions. An economic analysis evaluates all life-cycle cost and benefit options to determine the most long-term economical alternative for executing projects. NAVFAC P-442 provides economic analysis policy and procedures to be used by Navy commands and field offices that prepare and review facility economic analyses. Office of the Chief of Naval Operations (OPNAV) Instruction 11010.20H requires that project planners use NAVFAC P-442 when performing an economic analysis.<sup>14</sup> The Handbook includes a checklist to aid economic analysts and reviewers in ensuring that economic analyses are correct, complete, and well documented.

## Review of Internal Controls

DoD Instruction 5010.40 requires DoD organizations to implement a comprehensive system of internal controls that provides reasonable assurance that programs are operating as intended and to evaluate the effectiveness of the controls.<sup>15</sup> We identified that internal control weaknesses remain in NAVFAC project planning processes and CNRMA and PWD Great Lakes’ procedures for providing oversight and maintenance of their facilities. We will provide a copy of the report to the senior officials responsible for internal controls in the Department of the Navy.

<sup>13</sup> NAVFAC Instruction 5200.38, “NAVFAC Business Management System,” January 30, 2006.

<sup>14</sup> OPNAV Instruction 11010.20H, “Navy Facilities Projects,” June 24, 2015.

<sup>15</sup> DoD Instruction 5010.40, “Managers’ Internal Control Program Procedures,” May 30, 2013.

## Finding

### **Navy Officials Took Some Corrective Actions, but Building Deficiencies Remain and Additional Oversight Procedures Are Needed**

During this followup audit, we determined that Navy officials had taken some corrective actions in response to the five recommendations made in Report No. DODIG-2012-132 by implementing three recommendations and partially implementing one recommendation, but did not implement the remaining recommendation.<sup>16</sup> Specifically, Navy officials:

- partially implemented the prior report's Recommendation 1 by correcting 24 of 31 deficiencies at building 106, such as adding a new personal protective equipment (PPE) storage room, PPE laundry room, and wash and disinfection room. However, Navy officials did not take sufficient actions to correct the remaining 7 building deficiencies. For example, the PWD Great Lakes officials did not procure a generator capable of providing 100 percent emergency backup power;<sup>17</sup>
- fully implemented the prior report's Recommendation 2.a to issue guidance for officials reviewing and approving DD Forms 1391 by updating project planning guidance in the BMS;<sup>18</sup>
- did not implement the prior report's Recommendation 2.b to require use of the economic analysis checklist when they updated NAVFAC P-442, "Economic Analysis Handbook," in November 2013. Instead, Navy Region Midwest and NAVFAC Midwest officials relied on the use of training which is not required to reinforce the use of the economic analysis checklist; and
- fully implemented the prior report's Recommendations 3.a and 3.b by addressing the performance of the personnel who failed to exercise due diligence when planning the building 106 renovation project and took appropriate administrative actions.

<sup>16</sup> Report No. DODIG-2012-132 directed their recommendations to Navy Region Midwest and NAVFAC Midwest. While those commands performed some work, they were disestablished, and CNRMA and NAVFAC Mid-Atlantic have also performed work to implement the recommendations; therefore, we capture all CNIC and NAVFAC commands as "Navy officials."

<sup>17</sup> In response to Recommendation 1 in Report No. DODIG-2012-132, the NSGL PWO, Assistant PWO, and the Regional Fire Chief identified 26 additional building deficiencies. We combined the 5 deficiencies identified in Report No. DODIG-2012-132 and the 26 building deficiencies that NAVFAC Midwest identified in their management comments, totaling 31 building deficiencies that required corrective action.

<sup>18</sup> The BMS provides a standardization of all NAVFAC processes, including project planning processes for preparing a DD Form 1391.

In addition to the building deficiencies identified in the prior report, in this followup audit we identified 17 new building deficiencies at building 106 and a lack of oversight procedures for Navy personnel to ensure proper maintenance of the building. Of the 17 building deficiencies, 7 deficiencies were not identified by Navy officials because Navy officials did not perform a complete building assessment, as recommended; and 10 deficiencies were not identified by Navy officials because Navy officials did not ensure that a building monitor was designated and trained to maintain building 106 in accordance with Navy policy.<sup>19</sup>

Furthermore, during our site visit, we toured the second NSGL fire station, building 2801, and identified potential health and safety concerns in building 2801 that were similar to those identified in Report No. DODIG-2012-132 for building 106, and should be further reviewed, such as a lack of negative pressure in the PPE storage room and sunlight exposure to PPE gear.

While Navy officials have made improvements to building 106, the outstanding health and safety building deficiencies and lack of oversight confirmed that the NSGL firefighters continue to be exposed to potential illness and injury while living and working at the fire station. For example, two dorm rooms did not have the required separation from the apparatus bays, potentially exposing occupants to vehicle exhaust fumes and affecting the health of fire station personnel. In addition, the facility's alert system did not have the required corridor lighting from the dorm rooms to the apparatus bays, which increases trip and fall hazards as firefighters respond to emergency calls at night.

## **Navy Officials Took Some Corrective Actions but Did Not Implement One Recommendation**

Navy officials took some corrective actions in response to the five recommendations from Report No. DODIG-2012-132 by implementing three recommendations, partially implementing one, but did not implement the remaining recommendation. Specifically, Navy officials:

- partially implemented the prior report's Recommendation 1 by correcting 24 of 31 building deficiencies, but did not correct the remaining 7 building deficiencies, as recommended because the specific actions that PWD Great Lakes officials took were not sufficient, such as, the PWD Great Lakes officials did not procure a generator capable of providing 100 percent emergency backup power.

<sup>19</sup> Commander, Navy Region Mid-Atlantic Instruction 11000.2A, "Building Monitor Program," September 10, 2019, requires each installation's commanding officer to establish a building monitor program to identify, report, and monitor facility and energy discrepancies, ensuring CNRMA facilities are safe, habitable, and energy and water efficient.

- fully implemented the prior report’s Recommendation 2.a to issue guidance for officials reviewing and approving DD Forms 1391 by updating the project planning guidance in the BMS.
- did not implement the prior report’s Recommendation 2.b to require use of the economic analysis checklist and instead, relied on the use of training, which was not required for project planners, to reinforce the use of the economic analysis checklist.
- fully implemented the prior report’s Recommendations 3.a and 3.b by taking appropriate administrative actions to address the performance of the personnel who failed to exercise due diligence when planning the building 106 renovation project.

***Navy Officials Partially Implemented the Recommendation to Correct Building 106 Deficiencies***

Navy officials partially implemented Recommendation 1 from Report No. DODIG-2012-132 by correcting 24 of 31 deficiencies at building 106; however, PWD Great Lakes officials actions were not sufficient to correct the remaining 7 building deficiencies. Report No. DODIG-2012-132 identified 5 deficiencies and NAVFAC Midwest officials identified 26 additional building deficiencies in their management comments to the report. Although the DoD OIG earlier determined that this recommendation was closed, based on our followup review, we determined that the recommendation was not fully implemented. However, the recommendation will remain closed because we developed a new recommendation in this report to address all building 106 deficiencies. Specifically, of the 31 total deficiencies, Navy officials corrected 3 deficiencies identified in the prior report and 21 deficiencies identified by Navy officials. While Navy officials implemented actions to correct all 31 deficiencies, 7 deficiencies still require action. See Table 2 for the total number of building deficiencies that were identified in the prior report, and by NAVFAC Midwest officials.

*Table 2. Building 106 Deficiencies Identified in Report No. DODIG-2012-132*

Building Deficiencies	Number Corrected	Number Still Requiring Action	Total
Identified in Report No. DODIG-2012-132	3	2	5
Identified by NAVFAC Midwest	21	5	26
<b>Total</b>	<b>24</b>	<b>7</b>	<b>31</b>

Source: The DoD OIG.

We reviewed the service request and work order logs, project design documentation, contract information, and conducted a building inspection at building 106 to verify the corrective actions taken by PWD Great Lakes, NAVFAC MIDLANT officials.<sup>20</sup> We compared the PWD Great Lakes officials' corrective actions to the UFC 4-730-10 requirements in place at the time of the 2010 renovation and applicable National Fire Protection Association (NFPA) requirements.<sup>21</sup> See Appendix C for the specific building deficiencies and our determination of whether PWD Great Lakes officials corrected the deficiency.

### ***PWD Great Lakes Officials Corrected Three of Five Building 106 Deficiencies Identified in Report No. DODIG-2012-132***

PWD Great Lakes officials corrected three of the five deficiencies that the DoD OIG identified in Report No. DODIG-2012-132, as recommended. UFC 4-730-10 required the PPE storage area, PPE laundry room, and wash and disinfection room to be negatively pressurized, and it required the PPE storage room and laundry room to have dedicated exhaust systems vented to the outside to prevent firefighters from being exposed to potentially hazardous gaseous emissions. To address these requirements, PWD Great Lakes officials built a dedicated:

- PPE storage room that properly stored PPE gear to protect the gear from deterioration and damage,
- PPE laundry room with a commercial-grade washer and dryer that protected personnel from hazardous emissions, and
- wash and disinfection room to safely clean equipment.

Figure 3 on the next page from Report No. DODIG-2012-132 shows the PPE stored in an open bay and exposed to direct sunlight, prior to building the new dedicated PPE storage room.

<sup>20</sup> A service request differs from a work order because a service request is the initial step that either the building monitor or PWD official can submit into the Maximo system to request maintenance, while a work order has been vetted through the NAVFAC PWD to identify the appropriate category and classification of work required to resolve the problem.

<sup>21</sup> UFC 4-730-10, "Fire Stations," June 15, 2006, was the applicable UFC during the 2010 renovation project and Report No. DODIG-2012-132.

The National Fire Protection Association is a nonprofit organization devoted to eliminating injury, property and economic loss due to fire, electrical and related hazards and publishes codes and standards designed to minimize the risk and effects of fire.



Figure 3. Storage of PPE Exposed to Sunlight Before a Dedicated PPE Storage Room Was Added  
Source: The DoD OIG.

See Figure 4 below for the building 106 new PPE storage room.



Figure 4. The New PPE Storage Room at Building 106  
Source: The DoD OIG.

The new rooms complied with UFC 4-730-10 because all three rooms were negatively pressurized, and the PPE storage and laundry rooms had dedicated exhaust systems vented to the outside, among other UFC requirements. In addition, the PPE gear was no longer exposed to sunlight, as identified by Report No. DODIG-2012-132. Therefore, these deficiencies were corrected.

### ***PWD Great Lakes Officials Corrected 21 of 26 Building 106 Deficiencies Identified in Management Comments to the Prior Report***

PWD Great Lakes officials corrected 21 of the 26 building deficiencies that NAVFAC Midwest identified in response to Report No. DODIG-2012-132, as recommended. Report No. DODIG-2012-132 recommended that the Regional Fire Chief, Navy Region Midwest, and the PWO, PWD Great Lakes, identify and correct any additional building deficiencies related to UFC and quality of life. In April 2012, the PWO, Assistant PWO, and Navy Region Midwest Regional Fire Chief met to discuss the building 106 deficiencies identified in the report. During the April 2012 meeting, they identified 26 additional building deficiencies and included them in their management comments to Report No. DODIG-2012-132. To correct these deficiencies, PWD Great Lakes officials completed repair projects and responded to work orders. For example, PWD Great Lakes officials:

- installed 24-hour lighting in apparatus bays 106, 111, and 113 to improve the visibility;
- re-routed two roof drains to fix drainage problems;
- repaired or installed new manholes to correct flooding on the east side of the facility; and
- installed a doorway between rooms 101H and 101D to provide separation between these office spaces.

While PWD Great Lakes officials improved living conditions at building 106 by correcting 24 of 31 deficiencies identified in the prior report and NAVFAC Midwest management comments, their actions to correct the remaining 7 deficiencies were not sufficient.

### ***PWD Great Lakes Corrective Actions Were Not Sufficient to Correct 7 of 31 Building 106 Deficiencies From Report No. DODIG-2012-132***

While Navy officials implemented actions to correct all 31 building deficiencies, 7 of 31 building 106 deficiencies identified in the prior report and NAVFAC Midwest management comments were not corrected. This occurred because the specific

corrective actions taken by Navy officials to address each of the seven deficiencies were not sufficient. Specifically, PWD Great Lakes officials' corrective actions for the following seven deficiencies were not sufficient.

- Outdated firefighter alert system
- Dorm room HVAC and acoustic levels
- HVAC issues remain for second floor dorm areas
- Building has a pest infestation
- Building generator is insufficient to serve department needs
- Apparatus bay 111 heater is insufficient for the space
- Room 121 paint was blistering

MIL-STD-3007E, "Standard Practice for Unified Facilities Criteria and Unified Facilities Guide Specifications," December 13, 2006, allowed commands to request waivers and exceptions to certain UFC requirements and required NAVFAC to maintain a complete record of all waiver and exception requests, including whether they were approved or disapproved. However, as of April 2020, NAVFAC MIDLANT could not provide a waiver or exception that authorized the 2010 building 106 renovation project to deviate from UFC 4-730-10. In addition, while 2 of the 7 uncorrected deficiencies were noncompliant with UFC-4-730-10, June 15, 2006, this policy was superseded by UFC 4-730-10, May 8, 2019; however, the requirements remained the same. Therefore, because these deficiencies still require corrective actions, we are making a new recommendation to correct the building deficiencies in accordance with the updated UFC 4-730-10, dated May 2019. Accordingly, the CNMRA, and Commanding Officer, NSGL, in coordination with the PWO, PWD Great Lakes, should assess and correct the deficiencies discussed in this report to comply with current UFC 4-730-10 and NFPA standards. We discuss each of the seven deficiencies and why the actions taken by the Navy officials were not sufficient to correct each deficiency below.

#### *Outdated Firefighter Alert System*

PWD Great Lakes officials did not correct the building deficiency related to the outdated firefighter alert system, as recommended in Report No. DODIG-2012-132. UFC 4-730-10 required the alert system to have light and audible control for the dorm rooms and corridor lighting from the dorm rooms to the apparatus bay. In addition, the UFC required the dorm rooms to have a dedicated alert light fixture with a red-tinted bulb or lens.

In 2010, PWD Great Lakes officials developed a project that would update the alert system to comply with UFC 4-730-10. Specifically, the project required the installation of corridor lighting from the sleeping quarters to the apparatus

bay and provided red-alert notification lights and speakers for each dorm room. However, PWD Great Lakes actions were not sufficient to correct the deficiency because the replacement project was not funded due to a lack of assigned responsibility for funding alert systems in Navy policy. PWD Great Lakes officials stated that, because the alert system was equipment, the Fire Department was responsible for funding the project. However, CNIC officials stated that NAVFAC should be responsible because the alert system was an integral part of the facility. The funding responsibility was not outlined in policy until the FY 2019 CNIC Operations Plan, which stated that fire station alerting systems were part of the UFC for fire stations. According to the Assistant PWO, NAVFAC receives sustainment funds, which can now be used to maintain fire station alerting systems. Therefore, NAVFAC has responsibility for replacing or upgrading the firefighter alert system.

While PWD Great Lakes officials took action to install additional speakers throughout building 106, during our building inspection, we identified that 2 of the 20 dorm rooms had either nonexistent or inoperable alert lights, and there was no corridor lighting from the dorm rooms to the apparatus bays. Therefore, this

*During our building inspection, we identified that 2 of the 20 dorm rooms had either nonexistent or inoperable alert lights, and there was no corridor lighting from the dorm rooms to the apparatus bays.*

deficiency still requires corrective actions. PWD Great Lakes officials submitted a work order to update the fire alert system to comply with UFC 4-730-10 on February 4, 2020, with a projected start date in FY 2021.

#### *Dorm Room HVAC System and Acoustic Levels*

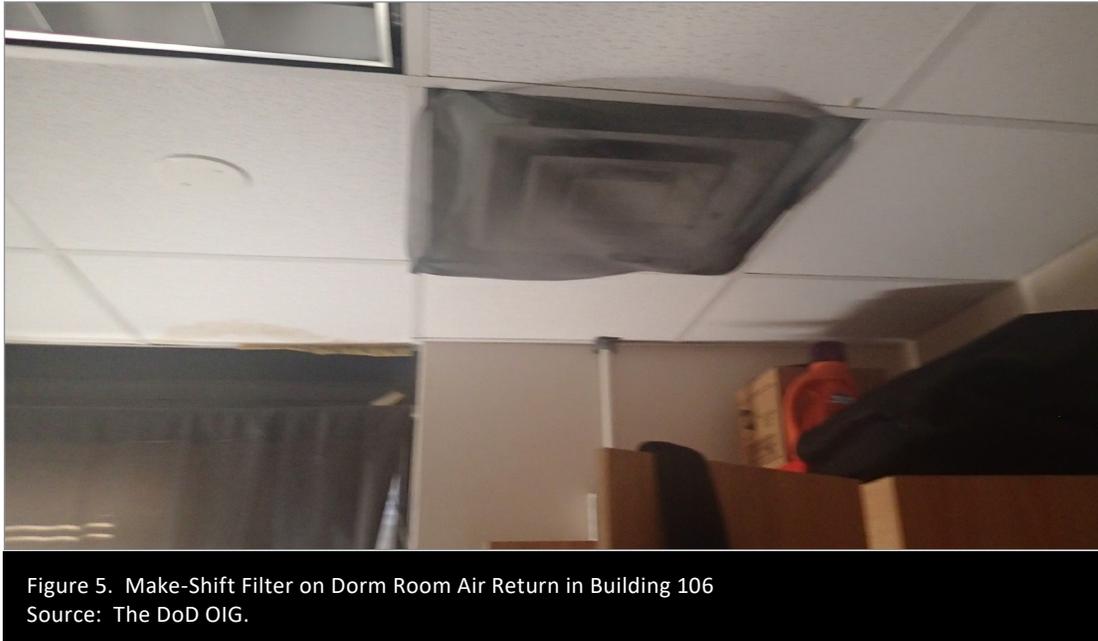
PWD Great Lakes officials did not correct the UFC-compliance dorm room building deficiency, as recommended in Report No. DODIG-2012-132. UFC 4-730-10 required the dorm rooms to be a comfortable, inviting space that promotes relaxation. In addition, the UFC required dorm rooms to have individual thermostats and acoustical privacy (sound reduction) between rooms.<sup>22</sup>

While PWD Great Lakes officials took action to address the HVAC deficiencies in the dorm rooms identified in Report No. DODIG-2012-132 by installing a new boiler system; testing, balancing, and adjusting the HVAC system; and completing 192 HVAC-related work orders since 2009, their actions were not sufficient to provide dorm rooms that were a comfortable space, as required by UFC.

<sup>22</sup> Report No. DODIG-2012-132 identified UFC noncompliance with the dorm rooms HVAC and acoustic levels as one deficiency, and NAVFAC Midwest identified an additional HVAC deficiency in response to the prior report related to air flow in the dorm rooms; therefore, we are discussing these issues within this section.

For example, PWD Great Lakes officials completed numerous repairs when the heating and air conditioning were inoperable, repaired HVAC water leaks, and replaced HVAC fans and motors. However, PWD Great Lakes still had not installed individual thermostats in the dorm rooms, in accordance with UFC 4-730-10. PWD Great Lakes officials submitted a service request to install individual thermostats in the dorm rooms to ensure the dorm rooms comply with UFC 4-730-10 on January 29, 2020, with a projected start date in FY 2021.

In addition, PWD Great Lakes officials did not correct the additional HVAC deficiency specific to the second floor dorm areas that NAVFAC Midwest officials identified in their management comments to Report No. DODIG-2012-132. To address this deficiency, PWD Great Lakes officials installed a door vent to aid in air flow; however, this did not correct the air flow concerns. The HVAC system for the firefighter dorm rooms remains one of the firefighters' top concerns. In 2019, there were 17 HVAC-related work orders, and during our building inspection, we identified additional evidence of continuous HVAC issues, such as dirty air diffusers, fans, humidifiers, and dehumidifiers. The NSGL firefighters stated that their air ducts are dirty, so they installed make-shift filters on the air returns to prevent dust and debris from entering the room. Therefore, this deficiency still requires corrective actions. PWD Great Lakes officials submitted a service request to replace the air handler unit at building 106, with a projected start date in FY 2021. See Figure 5 for the make-shift filter in the dorm rooms.



Additionally, PWD Great Lakes officials did not take any actions to address the dorm room acoustic (noise) levels identified in Report No. DODIG-2012-132 because according to the PWD Great Lakes officials, they were not aware of the particular sound transmission class rating requirement to address the deficiency. The UFC required a sound transmission class rating of 50-55 for acoustical privacy in the dorm rooms.<sup>23</sup> The prior report found that the 2010 renovation project did not improve the acoustics in the dorm rooms and firefighters could not properly rest because of the noise from adjacent rooms.

According to the PWO, he was not aware of the acoustical privacy deficiency, and PWD Great Lakes officials could not provide documentation to support any corrective actions taken to address the acoustical privacy of the dorm rooms. While no acoustical testing has been performed in the dorm rooms to determine the sound transmission class rating, the assigned NSGL Fire Department building monitor stated that the acoustical privacy in the dorm rooms has not been resolved. Therefore, this deficiency remains a concern and should be further reviewed for correction.

#### *Pest Infestation*

PWD Great Lakes officials did not correct the pest infestation that NAVFAC Midwest officials identified in their management comments to Report No. DODIG-2012-132. We conducted a survey with the firefighters, and they identified pests as one of their top concerns with building 106. In addition, based on our building inspection and interviews with building 106 firefighters, the pest infestation deficiency was not corrected. We found that building 106 personnel placed tape over ceiling cracks, air diffusers, and fluorescent lights to prevent pests, such as cockroaches, from entering their dorm rooms. See Figure 6 on the next page for the taped ceiling fluorescent light.

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<sup>23</sup> A sound transmission class rating is used to rate partitions, doors, windows, and other acoustic dividers in terms of their relative ability to provide privacy against intrusion of speech or similar type sounds.



Figure 6. Tape Placed Around Ceiling Light to Block Insects  
Source: The DoD OIG.

While NAVFAC officials awarded a facility service contract for pest control services, pests remain a concern at building 106, as evidenced by the statements from NSGL firefighters and the ongoing actions by firefighters that we observed, including taping gaps in the ceiling tiles to prevent pests from entering their rooms.<sup>24</sup>

*A NSGL firefighter stated that he was awakened by insects falling on him.*

Specifically, a NSGL firefighter stated that he was awakened by insects falling on him. The facility service contract requires pest control services to be

performed on a recurring basis at NSGL facilities, as well as non-routine services to address emergent issues. The contract specifies that pest control services occur every 2 weeks at building 106. PWD Great Lakes officials stated that if building occupants want additional pest control services, they should contact the PWD and request them on a more frequent basis at the building. Therefore, this deficiency still requires corrective action. As of March 2020, no service request or work order was submitted to address the pest infestation at the facility. See Appendix E for the survey responses.

<sup>24</sup> The Federal Acquisition Regulation Subpart 37.1, states, "A service contract is a contract that directly engages the time and effort of a contractor whose primary purpose is to perform an identifiable task rather than to furnish an end item of supply."

### *Insufficient Emergency Backup Generator*

PWD Great Lakes officials did not correct the insufficient building generator deficiency that NAVFAC Midwest officials identified in their management comments to Report No. DODIG-2012-132. Specifically, NAVFAC Midwest officials identified that the building's generator was insufficient to serve fire department needs. We reviewed supporting documentation for a project related to the generator, which identified that the problem was not with the generator; rather, the building's emergency electrical system was not large enough to use the generator to the extent it was intended.

To address this deficiency, PWD Great Lakes officials upgraded the building's emergency electrical system to fully use the backup generator; however, their actions were insufficient to correct the deficiency because the generator still did not provide 100-percent emergency backup power, as required by UFC. According to the Assistant PWO, no building on NSGL had 100-percent emergency backup generator power. He also stated that it was not "a common practice" for most Navy building types to have 100-percent backup power.

*According to the Assistant PWO, no building on NSGL had 100-percent emergency backup generator power.*

In addition, PWD Great Lakes officials stated that buildings are not required to meet current UFC standards unless the planned project would exceed 50 percent of the plant replacement value. They stated that since the building was not renovated beyond the 50-percent threshold, there was no requirement to upgrade the facility to current UFC standards. However, according to the UFC 4-730-10 applicable in 2010, all renovation projects should update existing facilities to meet UFC, within budgetary constraints. Furthermore, the prior report determined that the 2010 renovation project for building 106 exceeded the 50 percent plant replacement value. Specifically, the prior report found that the plant replacement value for the renovation project was \$9.75 million, and the estimated cost of renovating the fire station was \$7.78 million, which resulted in a cost that was 79.8 percent of the plant replacement value.

While PWD Great Lakes officials implemented corrective action to address concerns with the emergency backup generator, such as completing a project to address the electrical system, they did not provide a generator that supplied 100-percent emergency backup power to the building, as required by UFC 4-730-10. Therefore, this deficiency still requires corrective action. PWD Great Lakes officials submitted a work order to install a new generator capable of providing 100-percent backup power to comply with UFC 4-730-10 on February 4, 2020, with a projected start date in FY 2021.

*Insufficient Heaters in the Apparatus Bay*

PWD Great Lakes officials did not correct the inadequate heaters in apparatus bay 111 that NAVFAC Midwest officials identified in their management comments to Report No. DODIG-2012-132. Specifically, NAVFAC Midwest officials identified that the heater in apparatus bay 111 was inadequate for the space. To correct this deficiency, PWD Great Lakes officials installed an extra overhead heater in the apparatus bay; however, according to the assigned NSGL Fire Department building monitor, the addition of the overhead heater was not effective in heating the apparatus bay. UFC required that apparatus bays maintain a minimum of 68 degrees Fahrenheit; however, the assigned NSGL Fire Department building monitor and the Assistant PWO recorded temperatures below 68 degrees in January 2020.

While PWD Great Lakes officials did install another heater to address this deficiency, their actions were not sufficient to keep the apparatus bay heated, in accordance with UFC requirements. Therefore, this deficiency still requires corrective actions. As of March 2020, PWD Great Lakes officials could not provide documentation to support that any actions were planned to address the apparatus bay heaters.

*Paint Blistering on the Dorm Room Walls*

PWD Great Lakes officials did not correct the blistering paint deficiency that NAVFAC Midwest officials identified in their management comments to Report No. DODIG-2012-132. To correct this deficiency, PWD Great Lakes officials repainted the walls in room 121; however, when we inspected the facility, the paint was beginning to peel off again. According to the assigned NSGL Fire Department building monitor, the paint on the walls in room 121 is a constant issue. He explained that, according to PWD Great Lakes officials, the bricks used to build the walls have a glaze on them which causes the paint to bubble and eventually peel off. See Figure 7 on the next page for the blistering paint in room 121.



Figure 7. Peeling Wall Paint in Room 121  
Source: The DoD OIG.

While PWD Great Lakes officials addressed the deficiency by repainting the walls of room 121, this deficiency still requires corrective actions because the paint that they used continues to result in paint peeling off the wall. Therefore, this deficiency still requires corrective action. As of March 2020, PWD Great Lakes officials could not provide documentation to support any planned actions to address the blistering paint.

### ***Navy Officials Implemented Project Planning Guidance Recommendation to Improve the DD Form 1391 Review and Approval***

Navy officials implemented the prior report's Recommendation 2.a by updating project planning guidance, the BMS, to improve the preparation and review of the DD Form 1391. In Report No. DODIG-2012-132, we recommended that Commander of the Navy Region Midwest officials issue guidance requiring NAVFAC PWD project planners and reviewers to provide sufficient detail in the "Impact If Not Provided" section on the DD Form 1391 for officials that review and approve projects to fully understand the impact to the mission, quality of life, safety, and health that would

occur if the project were not funded. NAVFAC officials updated the BMS to include additional procedures and resources for processes that project planners perform when developing and approving special projects.<sup>25</sup>

### ***NAVFAC Officials Updated Special Projects Planning Processes***

In response to the recommendations from Report No. DODIG-2012-132, NAVFAC officials updated the project planning processes in the BMS, which outlined best practices for all NAVFAC commands to use with links to applicable, appropriate, and up-to-date policies, guidance, and forms, to improve the preparation of the DD Form 1391. In addition, in March 2014, NAVFAC officials further updated special project procedures and resources for project planners and reviewers by consolidating prior BMS sections and added procedures. Specifically, the updates included procedures and resources available to verify information on the DD Form 1391 and the adequacy of economic analyses, if required.<sup>26</sup>

#### *Current Procedures for Developing Special Projects*

As of March 2014, the BMS requires the following procedures for project planners to perform while planning special projects:

- prepare a full economic analysis based on detailed cost estimates (if required per OPNAV Instruction 11010.20G, Facilities Project Manual);
- prepare project 1391 forms that include all required justification data (such as the “Impact If Not Provided” section), cost data, and post applicable planning documents in the system;
- develop and enter all required supporting data into the Electronic Project Generator system to complete the planning package, including the economic analysis, if required;
- develop and enter additional information into the Electronic Project Generator system, as applicable, such as design requirements, planned design agency and estimated design costs, detailed cost estimate, and acquisition strategy;
- complete the Special Projects Review Checklist, which includes assessment of the “Impact If Not Provided” section and economic analysis;

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<sup>25</sup> We reviewed BMS Section B-25.6.1, “Special Project Development,” because the prior report reviewed the 2010 renovation project, which was considered a special project.

<sup>26</sup> Project planners are required to perform an economic analysis for special projects that are estimated to cost greater than 50 percent of the facility plant replacement value, or if they exceed \$2 million. Plant replacement value is the cost to replace an existing facility with a generic facility that can perform the same function(s). The replacement facility is generally understood to be the same size and occupy the same site as the existing facility and is understood to be constructed to current standards of material and design.

- verify that the DD Form 1391 includes proper classifications and sources of funds, adequacy of technical solution, completeness of scope and statement, adequacy of economic analysis (if required), and environmental and safety compliance; and
- submit for review and approval by the PWO, who then submits the project to Navy Region and to CNIC, if required.<sup>27</sup>

According to PWD Great Lakes officials, project reviewers use the same processes as planners when reviewing and approving projects. PWD Great Lakes officials stated that each project is reviewed multiple times, from multiple levels within the PWD Great Lakes and Navy Region, including working groups that review project justifications to ensure they fully understand the impact of the project to the mission and quality of life. NAVFAC officials stated that reviewers use their experience and the project documentation required in the BMS B-25.6.1 to validate accuracy and completeness of the DD Form 1391. For example, the Special Projects Review Checklist that is completed by NAVFAC Facilities Management Division reviewers and referenced in the BMS, includes assessment of the “Impact If Not Provided” section. Therefore, NAVFAC project planning officials have implemented processes to ensure that officials who review and approve the DD Form 1391 fully understand the impact to the mission, quality of life, safety, and health that would occur if the project were not funded.

*BMS Section B-25.6.1, “Special Project Development,” is Outdated*

While NAVFAC officials updated BMS processes for planning projects since Report No. DODIG-2012-132 was issued, the current version of section B-25.6.1, dated March 2014, references outdated guidance. Navy policy requires NAVFAC officials to review key business processes and update those processes every 3 years.<sup>28</sup> However, NAVFAC officials have not updated their BMS processes in 5 years. Specifically, the BMS processes reviewed did not reference the most current policy updates related to project planning. For example, BMS B-25.6.1, “Special Project Development,” March 4, 2014, referenced the OPNAV Instruction 11010.20G, “Navy Facilities Projects,” dated October 14, 2005, even though the current policy is OPNAV Instruction 11010.20H, dated June 24, 2015.

<sup>27</sup> OPNAV Instruction 11010.20H, “Navy Facilities Projects,” June 24, 2015, provides policy, guidance, and command responsibilities for the classification, preparation, submission, review, programming, approval, and reporting of real property facilities work at Navy shore installations and sites. In addition, the Instruction requires project planners to use the NAVFAC P-442, “Economic Analysis Handbook,” when performing an economic analysis.

The Special Projects Review Checklist is used to assess completeness and accuracy of projects during project development, including general DD Form 1391 information, cost estimates, economic analysis, and technical reviews.

<sup>28</sup> NAVFAC Instruction 5200.38A, “NAVFAC Business Management System (BMS),” August 25, 2014.

According to the Process Owner Team, Lead, for BMS section B-25.6.1, he has received multiple requests to update the BMS but has been working on other priorities. He stated that he would complete his updates by June 2020. Therefore, NAVFAC Headquarters officials should update the BMS, in accordance with NAVFAC Instruction 5200.38A, to include the most current guidance for project planners to use when planning projects.

### ***Navy Officials Did Not Implement Recommendation to Require Use of the Economic Analysis Checklist***

Navy officials did not implement the prior report's Recommendation 2.b to require use of the economic analysis checklist when they updated NAVFAC P-442, "Economic Analysis Handbook," in November 2013 because Navy officials relied on the use of training that is not required to reinforce the use of the checklist. Report No. DODIG-2012-132 found that NAVFAC Midwest officials misled decision makers by presenting the 2010 building 106 renovation project as the most cost-effective option to meet fire station needs because of ineffective documentation reviews. Specifically, the prior report found that if PWD officials had used the economic analysis checklist to prepare and review project planning documentation, they would have identified inaccurate cost figures for the renovation project. Therefore, to improve reviews and ensure accuracy of the information in the DD Form 1391 and project planning documentation, the DoD OIG recommended that the Commander of the Navy Region Midwest officials issue guidance requiring NAVFAC PWD project planners and reviewers to use the checklist provided in NAVFAC P-442, "Economic Analysis Handbook," November 14, 2013.

To address this recommendation, NAVFAC officials relied on training to require use of the checklist, instead of updating NAVFAC P-442 to require its use in the November 2013 update.<sup>29</sup> Although the DoD OIG earlier determined that this recommendation was closed; based on our followup review, we determined that the recommendation was not implemented. However, the recommendation will remain closed because we developed a new recommendation in this report to update current NAVFAC guidance for project planners and reviewers.

### ***NAVFAC Officials Did Not Require Use of the Economic Analysis Handbook Checklist***

NAVFAC officials updated NAVFAC P-442, "Economic Analysis Handbook," in November 2013, after Report No. DODIG-2012-132 was issued; however, they did not update the Handbook to require use of the checklist when preparing

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<sup>29</sup> Report No. DODIG-2012-132 referenced NAVFAC P-442, "Economic Analysis Handbook," October 1993; however, NAVFAC officials updated this document on November 14, 2013.

economic analyses. NAVFAC P-442 refers to the checklist as an aid to economic analysts and reviewers to ensure that economic analyses are correct, complete, and well-documented. According to the author of the NAVFAC Economic Analysis Handbook, he was not aware of any request to update guidance to require use of the checklist.

### ***Navy Officials Relied on Training to Reinforce Use of Economic Analysis Checklist***

NAVFAC officials did not require use of the economic analysis checklist when they updated NAVFAC P-442, “Economic Analysis Handbook” in November 2013 because the Commander, Navy Region Midwest command and NAVFAC Midwest relied on the use of training that is not required, to reinforce the use of the economic analysis checklist. The NAVFAC “Economic Analysis” training is part of the NAVFAC facility planner training matrix; however, this matrix is not required, but encouraged, through the NAVFAC Asset Management Community Management Plan.<sup>30</sup>

NAVFAC MIDLANT and PWD Great Lakes officials stated that project planners received training on performing a thorough and accurate economic analysis through the Naval Education and Training Command’s Civil Engineer Corps Officers School “Economic Analysis” course.<sup>31</sup> The course was developed based on NAVFAC P-442 content and provides information necessary for the preparation of an economic analysis. This training course is part of the NAVFAC facility planner training courses matrix that NAVFAC officials track staff member attendance; however, completing training from the training matrix is not required.

NAVFAC MIDLANT officials stated that the economic analysis training requires the use of NAVFAC P-442; however, based on the supporting documentation provided, the checklist was not mentioned. Therefore, NAVFAC officials still did not require project planners to use the checklist, as recommended in Report No. DODIG-2012-132. In December 2019, the Economic Analysis Handbook author stated that he agreed planners could benefit from required use of the checklist when preparing economic analyses because the checklist is comprehensive and would help make sure that the economic analysis was accurate and complete. He stated that he would update the Handbook to require use of

<sup>30</sup> The NAVFAC Asset Management Community Management Plan is a document that serves as a roadmap for career development addressing training, education, experience, and qualifications for positions across the asset management business line. The Community Management Plan lists core courses for planners to attend based on their skill level.

<sup>31</sup> Civil Engineer Corps Officers School’s course A-4A-0020, “Economic Analysis,” is a 4-day training course that covers fundamental principles used in the economic analysis process. The course focuses on the economic analysis process for Navy MILCON and Special Projects programming in accordance with the NAVFAC P-442, “Economic Analysis Handbook,” November 14, 2013.

the checklist. Because this action has not been completed, we are making a new recommendation to address this earlier issue. Therefore, NAVFAC Headquarters officials should update NAVFAC P-442, Economic Analysis Handbook, to require use of the checklist when developing economic analyses during project planning to ensure an accurate review of DD Forms 1391 supporting documentation.

### ***NAVFAC Midwest Officials Implemented the Recommendations to Address the Performance of Project Planning Personnel***

NAVFAC Midwest officials implemented Recommendations 3.a and 3.b of Report No. DODIG-2012-132 by taking administrative actions to address the performance of personnel who failed to exercise due diligence when planning the building 106 renovation project. According to the prior NAVFAC Midwest supervisors, they reviewed the actions of personnel involved in the preparation and review of the DD Form 1391 for the building 106 renovation project and took appropriate administrative actions.

### **Additional Building 106 Deficiencies and Oversight Procedure Weaknesses Identified**

In addition to the building deficiencies from Report No. DODIG-2012-132, in this followup audit, we identified 17 new building deficiencies at building 106 and a lack of oversight procedures for Navy personnel to ensure proper maintenance of the building. Of the 17 deficiencies that we identified:

- 7 deficiencies were not identified by Navy officials because Navy officials did not perform a complete building assessment in April 2012, as recommended; and
- 10 deficiencies were not identified because Navy officials did not ensure that a building monitor was properly designated and trained, in accordance with Commander, Navy Region Mid-Atlantic (COMNAVREG MIDLANT) Instruction 11000.2A.

See Appendix D for the complete listing of the 17 deficiencies.

### ***September 2019 UFC- and NFPA-Compliance Building Deficiencies***

We identified 17 additional deficiencies at the fire station during our inspection in September 2019. Of the 17 deficiencies, 7 did not comply with UFC or NFPA standards and were not identified by Navy officials because Navy officials did not perform a complete building assessment in April 2012 or correct these deficiencies, as recommended. NSGL officials did not identify the following seven UFC- and NFPA-compliant building deficiencies.

- The main apparatus bay floor drains were not installed in accordance with UFC 4-730-10, creating potential slip and fall hazards.

- All apparatus bays did not have a Fire Apparatus Vehicle Exhaust Removal System (vehicle exhaust system), as required by UFC 4-730-10, resulting in fire station personnel at risk for being exposed to cancer-causing vehicle exhaust emissions.
- The apparatus bay door widths were less than the 14 feet minimum, as required by UFC 4-730-10, creating the risk that vehicles could be damaged by backing into walls.
- The self-contained breathing apparatus (SCBA) maintenance room was not positively pressurized, preventing contaminated air seeping into SCBA tanks, as required by UFC 4-730-10.
- The SCBA maintenance room did not have an emergency alert speaker, as required by with UFC 4-730-10, resulting in emergency alert messages not being heard by fire station personnel while operating equipment in the room.
- A majority of the electrical outlets in the apparatus bays were located lower than the minimum height of 36 inches from the finished floor, as required by UFC 4-730-10, resulting in electrocution risks.
- Dorm rooms 115 and 115A were located within the ambulance bay and did not have proper separation from vehicle exhaust emissions, as required by NFPA 1500, causing fire fighters in the dorm rooms to be exposed to cancer-causing vehicle exhaust emissions.<sup>32</sup>

As of March 2020, PWD Great Lakes or the assigned NSGL Fire Department building monitor submitted a service request or a work order to address three of the seven UFC and NFPA-compliance deficiencies found during our September 2019 inspection, as noted below.

### ***Apparatus Bay Floor Drains Not Properly Installed***

The apparatus bay floor drains were not properly installed in accordance with UFC 4-730-10. Floor drains are required to be parallel to the centerline of each vehicle parked inside the apparatus bay. However, the slope of the floor installed in the main apparatus bay in building 106 was designed to drain from one side of the bay to the other. Therefore, when water drained, it created potential slip and fall hazards as it crossed a passageway inside the apparatus bay. The assigned NSGL Fire Department building monitor submitted a service request to install proper floor drains in the apparatus bays on January 11, 2020; however, as of March 2020, it has not been completed. See Figure 8 on the next page for improper water drainage through a passageway inside the apparatus bay.

<sup>32</sup> NFPA 1500, "Standard on Fire Department Occupational Safety, Health, and Wellness program," 2018 edition, identifies the requirements for an occupational safety, health, and wellness program for a fire department.

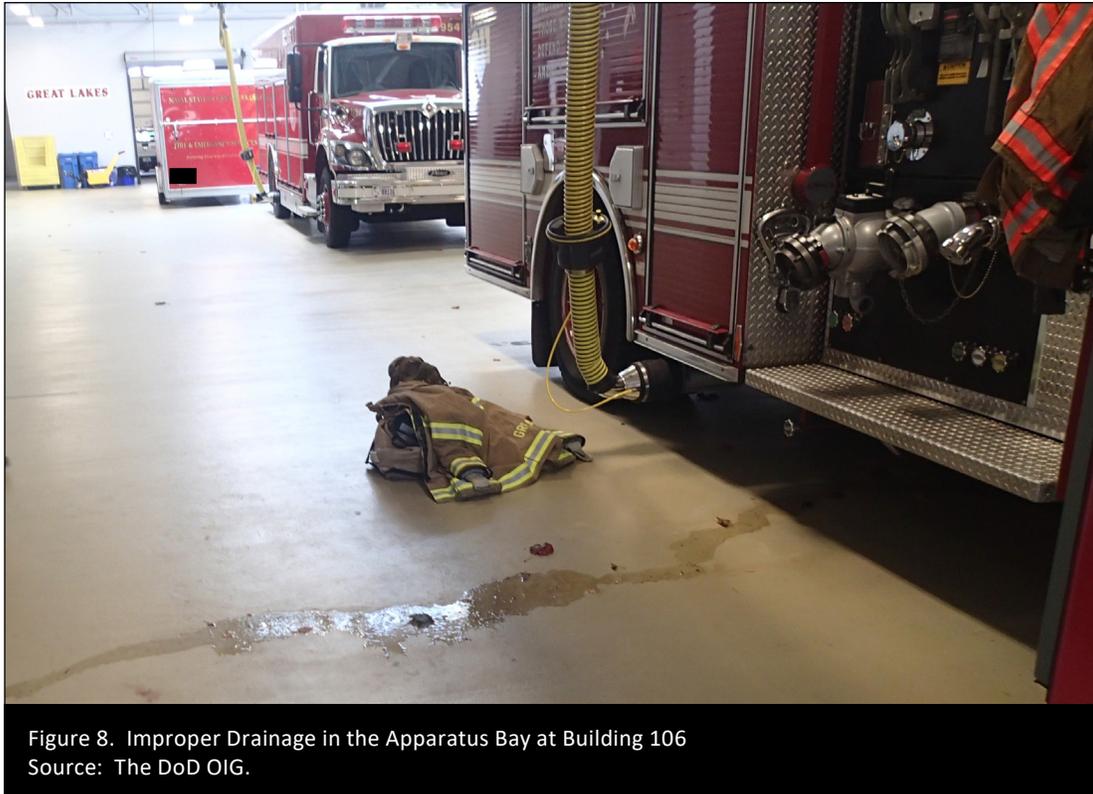


Figure 8. Improper Drainage in the Apparatus Bay at Building 106  
Source: The DoD OIG.

### ***Apparatus Bays Did Not Have Vehicle Exhaust Systems***

Building 106 did not have vehicle exhaust systems installed in all apparatus bays. UFC 4-730-10 required apparatus bays to use a vehicle exhaust removal system to eliminate vehicle exhaust emissions. However, one apparatus bay did not have a vehicle exhaust system and three emergency vehicles did not have the tailpipe connector attachments necessary to use system. By not having an installed vehicle exhaust system in all apparatus bays or the components necessary to connect vehicles to the system, fire station personnel risk being exposed to cancer-causing vehicle exhaust emissions. According to the Assistant PWO, a project is being developed to install vehicle exhaust systems; however, as of March 2020, a service request or work order has not been submitted to address the vehicle exhaust systems.

### ***Apparatus Bay Doors Were Too Narrow***

All seven apparatus bay doors were too narrow, according to UFC 4-730-10. Apparatus bay doors are required to be at least 14 feet wide. All seven apparatus bay doors ranged from 10 to 12 feet, creating the risk that vehicles could be damaged by backing into walls. PWD Great Lakes officials submitted a work order to widen apparatus bay doors on February 4, 2020, and have a proposed start date for FY 2022.

### ***Maintenance Room for the Self-Contained Breathing Apparatus Was Not Positively Pressurized***

The SCBA maintenance room in building 106 was not positively pressurized to prevent contamination of the air in the SCBA tanks, as required by UFC 4-730-10.<sup>33</sup> A SCBA provides breathable air to firefighters in the performance of their duties. Because the SCBA maintenance room was not positively pressurized, contaminated air may enter the room and contaminate the air in the SCBA tanks used while responding to emergencies. PWD Great Lakes officials submitted a work order to install positive pressure in the SCBA maintenance room on January 27, 2020, with a projected start date in FY 2020.

### ***Maintenance Room for the Self-Contained Breathing Apparatus Did Not Have an Emergency Alert Speaker***

The SCBA maintenance room did not have an emergency alert speaker to ensure that fire station personnel could hear emergency alert messages, as required by UFC 4-730-10. By not having a speaker installed in the room, emergency alert messages may not be heard by fire station personnel while operating equipment in the room. While PWD Great Lakes officials did not submit a work order or service request specific to the SCBA maintenance room, they submitted a work order to update the fire alert system in building 106 to comply with UFC 4-730-10 on February 4, 2020, with a projected start date in FY 2021.

### ***Electrical Outlets Lower Than Required Height***

A majority of the electrical outlets were 7.25 inches lower than the minimum required height from the finished floor. UFC 4-730-10 requires electrical outlets to be higher than 36 inches. Outlets that are placed close to floor level create a safety hazard as the risk of electrocution could occur from contact with water while firefighters are washing their vehicles. As of March 2020, no service request or work order has been submitted to install electrical outlets at the minimum required height of 36 inches from the finished floor.

### ***Dorm Rooms Located Within Ambulance Bay***

Dorm rooms 115 and 115A were located within the ambulance bay and did not have proper separation from vehicle exhaust emissions. NFPA 1500 required separation between the apparatus bay and living quarters.<sup>34</sup> Consequently, firefighters occupying these dorm rooms may be exposed to cancer-causing vehicle exhaust emissions. As of March 2020, no service request or work order has been submitted to address the location of dorm rooms 115 and 115A. See Figure 9 on the next page for dorm room 115 located within the ambulance bay.

<sup>33</sup> Positive pressure is air or gas pressure that is greater than that of the atmosphere.

<sup>34</sup> NFPA 1500, "Standard on Fire Department Occupational Safety, Health, and Wellness Program," 2018 Edition.

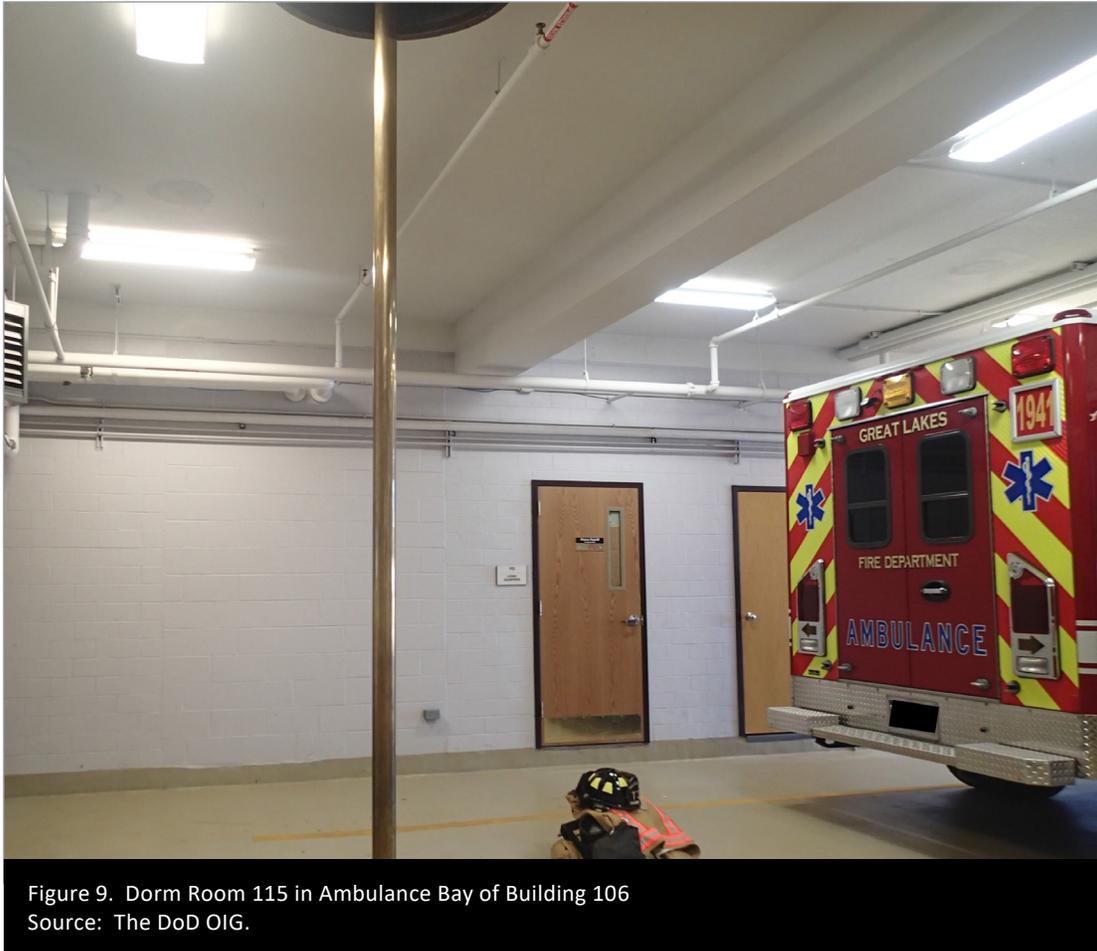


Figure 9. Dorm Room 115 in Ambulance Bay of Building 106  
Source: The DoD OIG.

### ***Navy Officials' April 2012 Building 106 Assessment Was Not Complete***

Navy officials did not identify or correct the seven additional UFC or NFPA-compliance building deficiencies because Navy officials did not perform a complete building assessment in April 2012, as recommended. Specifically, Report No. DODIG-2012-132 recommended that the Regional Fire Chief, Navy Region Midwest, and the PWO, PWD Great Lakes, identify existing deficiencies, such as those identified in the report related to the required UFC and quality of life, and take appropriate action to correct the deficiencies.

In April 2012, the PWO, Assistant PWO, and the Regional Fire Chief met to discuss the discrepancies noted in the prior report and conducted an assessment of building 106. As a result of their April 2012 assessment, they identified 26 additional deficiencies that needed correction; however, we identified 7 UFC and NFPA-compliance deficiencies during our September 2019 inspection that would have existed in April 2012, but were not identified and then corrected by the PWD Great Lakes. For example, we identified that electrical outlets did not meet the minimum height of 36 inches from the finished floor, as required by UFC 4-730-10. Although Navy officials could not provide the methodology used by

the PWO, Assistant PWO, and Regional Fire Chief from their April 2012 assessment to identify existing deficiencies in response to the prior report recommendation, this deficiency would have existed in 2012 when NAVFAC Midwest and PWD Great Lakes officials performed their building inspection in response to the prior report and should have been identified.

In addition, the dorm rooms located within the ambulance bay was related to NFPA 1500-compliance and would have existed when NAVFAC Midwest and PWD Great Lakes officials performed their 2012 inspection. NFPA 1500 established requirements for firefighter occupational health and safety. Therefore, this deficiency should have been identified during the April 2012 assessment and corrected by the PWD Great Lakes.

While the new deficiencies that we identified were mostly noncompliant with UFC 4-730-10, June 15, 2006, this policy was superseded by UFC 4-730-10, May 8, 2019; however, the requirements remained the same. Therefore, we are making a new recommendation to correct the building deficiencies in accordance with the updated UFC 4-730-10, May 2019. Accordingly, the Commanding Officer, NSGL, and CNRMA, in coordination with PWD Great Lakes officials, should take action to address the 7 additional building deficiencies to ensure compliance with current UFC 4-730-10 and NFPA 1500 requirements.

### ***September 2019 Building Deficiencies Identified From Improper Maintenance***

We identified that 10 of the 17 deficiencies were a result of improper maintenance of the facility because Navy officials did not ensure that a building monitor was properly designated and trained, in accordance with Navy policy. See Appendix D for the complete list of the 17 deficiencies identified during our September 2019 inspection. Some of these deficiencies included:

- several emergency exit lights were not functional when tested, which could cause visibility to be impaired during an emergency;
- minor separation and cracking of the exterior wall on east side of the facility, which could expand and lead to eventual collapse;
- many electrical receptacles on the exterior of the building were missing weatherproof covers, which could cause possible electric shock;
- missing or inoperable emergency alert speakers around the exterior of the building, which could cause firefighters to not hear emergency alert messages; and
- an abandoned electrical outlet with wiring in apparatus bay 3, which could cause possible electrocution.

As a result of our building inspection, the assigned NSGL Fire Department building monitor submitted service requests to the PWD Great Lakes to correct the 10 deficiencies. For example, the assigned NSGL Fire Department building monitor submitted service requests to correct the damaged roof drain cover, non-functioning emergency exit lights, and the weatherproof covers on electrical receptacles on the exterior of the building. The assigned NSGL Fire Department building monitor stated 7 of 10 deficiencies related to improper maintenance were corrected, and we identified work orders that were completed to correct these 7 deficiencies. We also identified work orders that were issued to correct the remaining three deficiencies related to improper maintenance.

### ***Navy Officials Did Not Provide Proper Oversight of Maintenance Procedures***

Navy officials did not identify the 10 deficiencies related to improper maintenance of the facility because Navy officials did not properly designate a building monitor or provide training, as required, because he was new to the position and not aware of the Navy policy.<sup>35</sup> According to Navy policy, commands and departments are required to assign a building monitor to maintain each building occupied by their command or department.<sup>36</sup> A building monitor is required to walk through assigned spaces on a daily basis, perform monthly inspections using standard checklists, and submit work order requests to correct building deficiencies.

### ***CNRMA Officials Did Not Properly Designate a Building Monitor***

While the District Fire Chief, NSGL Fire and Emergency Services Great Lakes, did assign a firefighter responsible for submitting service requests and monitoring work orders, this individual was not properly designated to include the full list of building monitor responsibilities required by COMNAVREG MIDLANT Instruction 11000.2A. This occurred because the District Fire Chief, NSGL, was new to the fire station and was not aware of the Instruction. The Instruction requires tenant commands and departments to designate a building monitor, using an enclosed memorandum template, for each building occupied by their respective functional area, command, or department. The Instruction includes a list of all building monitor responsibilities and a monthly inspection checklist to use while walking through assigned spaces performing inspections. The checklist requires a building monitor to inspect various categories of the interior and exterior of an assigned building, such as doors, walls, plumbing, lights, and heating and cooling systems. The checklist also requires inspection of safety equipment such as electrical switches and fire extinguishers.

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<sup>35</sup> COMNAVREG MIDLANT Instruction 11000.2A.

<sup>36</sup> COMNAVREG MIDLANT Instruction 11000.2A.

A checklist would have helped the NSGL Fire Department building monitor identify the 10 deficiencies we found during our September 2019 building inspection. For example, we identified electrical outlets that were not properly covered, which was an item on the monthly inspection checklist. Specifically, the first section of the checklist requires a building monitor to “check that electrical switches and receptacles are properly covered.” The checklist includes a section under each category for the building monitor to determine whether specific items within that category are satisfactory, unsatisfactory, not applicable, and comments for corrective actions. The Regional Fire Chief, CNRMA, acknowledged that he did not ensure building monitor requirements in the Instruction were communicated to the District Fire Chief, NSGL. As of January 2020, the District Fire Chief, NSGL, had not designated the building monitor in accordance with the Instruction. Therefore, the District Fire Chief, NSGL, should designate a building monitor in accordance with COMNAVREG MIDLANT 11000.2A.

### ***Assigned Building Monitor Was Not Trained***

Navy officials did not identify and correct 10 deficiencies related to improper maintenance of the facility because PWD Great Lakes officials did not provide training to the assigned NSGL Fire Department building monitor, in accordance with COMNAVREG MIDLANT Instruction 11000.2A. The Instruction requires the Facility Management Division, PWD, to provide training to building monitors and institute a training program that includes quarterly meetings to discuss new policies and procedures, review work performance, and discuss upcoming projects. According to the assigned NSGL Fire Department building monitor, he received training on how to use the work order submission system. According to PWD Great Lakes, Facility Management Division officials, training was not offered to NSGL building monitors due to the high turnover of building monitors for the installation’s facilities.

The building monitor is key to successful facility management and is responsible for maintaining the assigned facility. The building monitor is a liaison between commands, and the PWD that services them, to expedite facility service work. A building monitor who was properly designated and trained, in accordance with the Instruction, would have used the monthly inspection checklist that should have identified the improper maintenance deficiencies related to the facility while performing required duties that we identified during our inspection, and reported them to the PWD Great Lakes for correction. However, because the assigned NSGL Fire Department building monitor was not fully aware of his responsibilities or the requirement to use the checklist for building inspections, he did not perform the inspections necessary to identify building deficiencies at the fire station and report the deficiencies to the PWD Great Lakes for correction. Therefore, PWD Great Lakes officials should develop and implement a building monitor training program for NSGL in accordance with COMNAVREG MIDLANT Instruction 11000.2A.

## Deficiencies Identified at the Second Fire Station, Building 2801

Prior to our site visit, we conducted a survey with the firefighters who stated that the second NSGL fire station, building 2801, had similar deficiencies to those found at building 106. During our visit to NSGL and inspection of building 106, we visited the second fire station, building 2801, and identified potential health and safety concerns in building 2801 that were similar to the UFC deficiencies identified in Report No. DODIG-2012-132 at building 106.

While we did not inspect building 2801 for UFC and NFPA compliance, we toured the facility and observed areas that should be further reviewed. Specifically, the PPE storage room was not negatively pressurized, as required by UFC 4-730-10, and PPE gear was not stored in a space to prevent exposure to direct sunlight, as required by NFPA 1851.<sup>37</sup> Sunlight exposure to PPE gear could cause their PPE to degrade and expose firefighters to gaseous materials. In addition, the second station did not have a separate wash and disinfection room to prevent exposure to hazardous chemicals, as required by UFC 4-730-10 and NFPA 1581.<sup>38</sup> However, building 2801 was built in 1999 and UFC 4-730-10 was not established until June 2006; therefore, these requirements did not exist when building 2801 was built. As such, the building is not required to comply with the UFC until a renovation project is performed.

Currently, building 2801 has a special project pending approval for \$1.6 million, expected to be executed in FY 2023, which will perform minor renovations on the building. Therefore, CNRMA and PWD Great Lakes officials should inspect building 2801 for noncompliance with applicable UFC and NFPA requirements and take corrective actions or incorporate corrective actions into the planned renovation project for building 2801 for any deficiencies identified. See Appendix E for a copy of the survey provided to the firefighters and consolidated survey responses.

## Firefighters Were Exposed to Health and Safety Hazards

The outstanding health and safety deficiencies continue to expose the NSGL firefighters to potential illness and injury while living and working at the fire station. For example, one vehicle bay did not have the vehicle exhaust removal system, and two dorm rooms did not have adequate separation from the ambulance

<sup>37</sup> NFPA 1851, "Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting," 2014 Edition.

UFC 4-730-10, "Fire Stations," May 8, 2019.

<sup>38</sup> NFPA 1581, "Fire Department Infection Control Program," 2015 Edition.

bay, which potentially exposed firefighters to cancer-causing vehicle exhaust fumes. In addition, the facility alert system did not have corridor lighting from the dorm rooms to the apparatus bays, which increased trip and fall hazards as firefighters respond to emergency calls at night.

## Additional NSGL Concerns

During our visit to the NSGL and inspection of building 106, we identified other matters of interest that need CNRMA and NAVFAC MIDLANT attention. Specifically, we identified a sinkhole outside of building 106 that resulted from the poor infrastructure of the installation's storm water system. We also identified an improvement that could be made to the effectiveness of the emergency alert system in the building 106 laundry room, even though the laundry room currently meets UFC 4-730-10 requirements.

### ***Naval Station Great Lakes Collapsed Storm Drains Cause Sinkholes***

During our inspection of building 106 in September 2019, we identified a sinkhole in the parking lot to the south of the facility. According to the NSGL PWO, the sinkhole found outside of building 106 resulted from storm water eroding surrounding soil due to a collapsed storm drain. The NSGL PWO stated that the installation's storm drainage structures were constructed of brick, which eventually erode and collapse, eliminating their ability to carry storm water and clogging the storm water pipes. See Figure 10 for a picture of the sinkhole that is located outside of building 106.



Figure 10. A Sinkhole Located Outside of Building 106  
Source: The DoD OIG.

In January 2020, PWD Great Lakes officials stated that they fixed the sinkhole by digging out the collapsed material, refilling the hole, and then resurfacing the area. In addition, according to the assigned NSGL Fire Department building monitor, another project was completed nearby to add drainage for that drain. However, the NSGL PWO stated that the sinkhole issue was broader than the area surrounding the building. As previously stated, the storm drains on the main side of the installation were constructed of brick, rather than concrete, which eventually collapse, eliminating the ability to carry storm water. In addition, the PWO stated that he was unable to maintain a comprehensive set of drawings identifying where the storm drains, pipes, and outfalls were located on the installation.<sup>39</sup> He stated that the storm water outfalls were not properly maintained and resulted in backups, collapsed drains, and localized flooding.

According to the NSGL PWO, a study had never been conducted to provide the PWD visibility over where these issues still remain. The PWD Great Lakes currently has a planned study to provide a detailed survey of existing stormwater piping infrastructure throughout the entire main side section of NSGL. This stormwater survey would include detailed piping width and length measurements and associated coordinates, continuous video of the survey, and a piping condition assessment. Therefore, CNRMA officials should consider funding the PWD Great Lakes planned stormwater survey to identify the existing stormwater infrastructure, assess, and resolve any current and future sinkholes impacting the NSGL.

### ***Suggest Adding Visual Element to Improve Effectiveness of Emergency Alert System***

During our inspection of building 106 in September 2019, we observed a potential improvement related to the effectiveness of the alert system in the laundry room. UFC 4-730-10 requires that PPE laundry rooms have a speaker. While the PPE laundry room at building 106 complied with the UFC, the noise levels while the washer and dryer operate prevent the firefighters from hearing and understanding the alert tones. Therefore, although not a UFC requirement, adding a visual alert element in this room, such as a flashing light, would alert firefighters to emergency calls while the laundry room is in operation.

## **Conclusion**

We substantiated the allegation made to the DoD Hotline that some of the issues identified at building 106 in Report No. DODIG-2012-132 remained unresolved. While Navy officials have addressed most of the issues found in the prior report

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<sup>39</sup> An outfall is the point where a storm sewer discharges to the waters of the United States.

and implemented processes to improve project planning, they did not correct all the building deficiencies from the prior report, additional building deficiencies exist, and the building is still not compliant with UFC 4-730-10. In addition, NAVFAC officials did not require use of the checklist when preparing economic analyses, which could result in missing important steps and inaccurate information when presenting the most cost-effective option to decision makers.

Furthermore, during our visit to NSGL and inspection of building 106, we identified potential health and safety concerns in the second NSGL fire station, building 2801, that were similar to deficiencies identified in Report No. DODIG-2012-132 at building 106 that should be further reviewed. These concerns include a lack of negative pressurization in the PPE storage room and sunlight exposure to PPE gear, which could cause their PPE to deteriorate and expose firefighters to gaseous materials, and proper storage of PPE gear can extend its life, maintain its performance, and reduce potential health hazards; and a separate wash and disinfection room to prevent exposure to hazardous chemicals while disinfecting equipment.

Therefore, while the Navy has made improvements to the building and living conditions for the firefighters, the fire station still poses a risk to firefighters' health and safety and does not comply with UFC 4-730-10. CNRMA and NAVFAC MIDLANT officials should take corrective actions to provide a safe and compliant facility for the firefighters.

## Recommendations, Management Comments, and Our Response

### ***Recommendation 1***

**We recommend that the Commander, Navy Region Mid-Atlantic, and Commanding Officer, Naval Station Great Lakes, in coordination with the Public Works Officer, Public Works Department Great Lakes, Naval Facilities Engineering Command, Mid-Atlantic, assess and correct the deficiencies identified in this report to ensure compliance with current Unified Facilities Criteria and National Fire Protection Association requirements.**

### ***Naval Station Great Lakes Comments***

The Commanding Officer, NSGL, responding for the Commander, Navy Region Mid-Atlantic and the PWO, PWD Great Lakes, partially agreed with the recommendation, stating that the NSGL plans to correct the 7 remaining deficiencies identified from the prior report in 2012, and 14 of 17 additional deficiencies found during the September 2019 inspection. Specifically, the

Commanding Officer stated that the repairs required to correct the remaining 3 of 17 deficiencies (main apparatus bay floor drains, the widths of the apparatus bay garage doors, and the height of the electrical outlets in the apparatus bays) would be costly in nature and provide no direct increase in functionality to the fire station. The Commanding Officer stated that to address the remaining three deficiencies, he may develop an on-site mitigation strategy or seek a waiver exempting them from compliance with the UFC. Furthermore, the Commanding Officer stated that these deficiencies were not directly linked to a personal health or life and safety risk. The Commanding Officer did not provide an estimated completion date.

### *Our Response*

Comments from the Commanding Officer addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. The Commanding Officer did agree to correct all prior report deficiencies, and 14 of 17 additional deficiencies found during the September 2019 inspection. We agree that the work required to resolve the three remaining UFC 4-730-10 compliance deficiencies could be costly in nature; however, we disagree that these deficiencies are not directly linked to a personal health or life and safety risk or provide no direct functional increase to the fire station. As stated in the report, the electrical outlets in the apparatus bays were located lower than the minimum height of 36 inches from the finished floor, creating a safety hazard as the risk of electrocution could occur from contact with water while firefighters are washing their vehicles. In addition, the main apparatus bay floor drains were not installed in accordance with UFC 4-730-10, creating potential slip and fall hazards. Furthermore, because the apparatus bay door widths were less than the 14 feet minimum, this results in the risk that vehicles could be damaged by backing into walls.

All new construction projects, including additions, alterations, and renovation projects are required to comply with UFC 4-730-10; however commands can request waivers and exceptions to certain UFC requirements. Therefore, we agree with the Commanding Officer's proposed actions to develop an on-site mitigation strategy and obtain an exemption from compliance with the UFC for these specific deficiencies.

We will close this recommendation after we receive documentation from the PWD Great Lakes showing that actions were taken to address each deficiency and verification from subject matter experts and the NSGL Fire Department building monitor that the actions taken were completed and resolved the deficiency. In addition, for the three remaining deficiencies that the Commanding Officer

stated will not be corrected, we will close these deficiencies once we receive a mitigation strategy that outlines how fire station personnel will be protected from the risks caused by these outstanding deficiencies and an approved exemption from NAVFAC allowing NSGL to deviate from the specific requirements set forth in the UFC 4-730-10.

## ***Recommendation 2***

**We recommend that the Commander, Naval Facilities Engineering Command, update the:**

- a. Business Management System processes, to include section B-25.6.1, Special Projects Development, with the most current guidance for project planners to use when planning projects, in accordance with NAVFAC Instruction 5200.38A.**

### ***Naval Facilities Engineering Command Comments***

The NAVFAC Inspector General, responding for the Commander, NAVFAC, agreed with the recommendation, stating that NAVFAC plans to update the BMS processes in accordance with NAVFAC Instruction 5200.38A, to include the correct guidance for project planners to use when planning projects. In addition, the Inspector General stated that this update will also require planners to use the applicable UFC section to identify deficiencies and to document project planning using the DD Form 1391. The Inspector General estimated that the BMS updates would be completed by August 2020.

### ***Our Response***

Comments from the Inspector General addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once we receive supporting documentation and verify that the BMS processes were updated to include the most current guidance for project planners to use when planning projects, in accordance with NAVFAC Instruction 5200.38A.

- b. NAVFAC P-442, "Economic Analysis Handbook," November 2013, to require Naval Facilities Engineering Command and Public Works Department Great Lakes officials to require use of the checklist when preparing economic analyses during project planning.**

### ***Naval Facilities Engineering Command Comments***

The NAVFAC Inspector General, responding for the Commander, NAVFAC, agreed with the recommendation, stating that NAVFAC updated the NAVFAC P-442, "Economic Analysis Handbook," on May 29, 2020, to require economic analysts

and reviewers to use the handbook's checklist to ensure that economic analyses were correct, complete, and well-documented. In addition, the Inspector General provided the updated NAVFAC Handbook to support that their actions were completed.

### ***Our Response***

Comments from the NAVFAC Inspector General addressed the specifics of the recommendation; therefore, the recommendation is closed. We reviewed the updated version of the NAVFAC P-442, "Economic Analysis Handbook," May 29, 2020, and verified that it requires economic analysts and reviewers to use the checklist when preparing economic analyses during project planning.

### ***Recommendation 3***

**We recommend that the District Fire Chief, Fire and Emergency Services, Great Lakes, Commander, Navy Region Mid-Atlantic, designate a building monitor in accordance with Commander, Navy Region Mid-Atlantic Instruction 11000.2A.**

### ***Naval Station Great Lakes Comments***

The Commanding Officer, NSGL, responding for the District Fire Chief, Fire and Emergency Services, Great Lakes, CNRMA, agreed with the recommendation, stating that the District Fire Chief designated the NSGL Fire Station building monitor using the designation letter format required by COMNAVREG MIDLANT Instruction 11000.2A on April 24, 2020. In addition, the CNIC Inspector General provided the designation letter to support that their actions were completed.

### ***Our Response***

Comments from the Commanding Officer addressed the specifics of the recommendation; therefore, the recommendation is closed. We reviewed the designation letter issued by the District Fire Chief on April 24, 2020, and verified that he designated a building monitor in accordance with COMNAVREG MIDLANT Instruction 11000.2A.

### ***Recommendation 4***

**We recommend that the Public Works Officer, Public Works Department Great Lakes, Naval Facilities Engineering Command, Mid-Atlantic, in coordination with the Director, Facilities Management Division, Public Works Department Great Lakes, Naval Facilities Engineering Command, Mid-Atlantic, develop and implement a building monitor training program for Naval Station Great Lakes in accordance with Commander, Navy Region Mid-Atlantic Instruction 11000.2A.**

### ***Naval Station Great Lakes Comments***

The Commanding Officer, NSGL, responding for the PWO, PWD Great Lakes, agreed with the recommendation, stating that the PWD officials were developing the curriculum for the building monitor training program and would implement training in accordance with COMNAVREG MIDLANT Instruction 11000.2A. The Commanding Officer estimated that the building monitor training program would be implemented in FY 2021, pending COVID-19 restrictions.

### ***Our Response***

Comments from the Commanding Officer addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once we receive the training curriculum used, verify it contained the information required by COMNAVREG MIDLANT Instruction 11000.2A, as well as training rosters to verify that the NSGL Fire Department building monitor attended the Building Monitor training.

### ***Recommendation 5***

**We recommend that the Commander, Navy Region Mid-Atlantic, in coordination with the Public Works Officer, Public Works Department Great Lakes, Naval Facilities Engineering Command, Mid-Atlantic, inspect building 2801 for noncompliance with current:**

- a. **Unified Facilities Criteria 4-730-10 and incorporate corrective actions into the planned renovation project for building 2801; and,**

### ***Naval Station Great Lakes Comments***

The Commanding Officer, NSGL, responding for the Commander, Navy Region Mid-Atlantic, agreed with the recommendation, stating that a facilities inspection of building 2801 would be conducted in accordance with the UFC. The Commanding Officer stated that required building modifications resulting from the inspection would be completed either individually or as part of an overall building renovation and estimated completion by FY 2022.

### ***Our Response***

Comments from the Commanding Officer addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once we receive supporting documentation of the inspection methodology, a prioritized list of deficiencies identified, PWD Great Lakes corrective actions taken for each deficiency, and verification from subject matter experts and the NSGL Fire Department building monitor that the actions taken were completed to resolve the deficiency. We will confirm that

the methodology documentation identified the scope of the inspection, specific UFC sections used, the individuals involved in the inspection, a cure plan, and an estimated time frame for when each deficiency would be corrected.

**b. National Fire Protection Association requirements and take corrective actions.**

***Naval Station Great Lakes Comments***

The Commanding Officer, NSGL, responding for the Commander, Navy Region Mid-Atlantic, agreed with the recommendation, stating that a facilities inspection of building 2801 would be conducted in accordance with current sections of the NFPA requirements. The Commanding Officer stated that required building modifications resulting from the inspection would be completed either individually or as part of an overall building renovation and estimated completion by FY 2022.

***Our Response***

Comments from the Commanding Officer addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. While the Commanding Officer's comments addressed the specifics of the recommendation, the health and safety concerns at building 2801 should be identified and corrected as soon as possible. We request that the Commanding Officer perform the NFPA inspection earlier than FY 2022. NFPA standards are established to eliminate injury, property and economic loss due to fire, electrical and related hazards, and are designed to minimize the risk and effects of fire. We will close the recommendation once we receive supporting documentation of the inspection methodology, a prioritized list of deficiencies found, and documentation from the PWD Great Lakes showing that actions were taken to address each deficiency, and verification from subject matter experts and the NSGL Fire Department building monitor that the actions taken were completed and resolved the deficiency. We will confirm that the methodology documentation identified the scope of the inspection, specific NFPA requirements used, the individuals involved in the inspection, a cure plan, and an estimated time frame for when each deficiency would be corrected.

***Unsolicited Management Comments***

Although not required to comment, the Director of Facilities and Environment, CNIC, concurred with the Commanding Officer, NSGL and CNRMA responses to Recommendations 1, 3, 4, 5.a, and 5.b.

***Our Response***

We acknowledge and appreciate the concurrences received by the Director of Facilities and Environment.

## Appendix A

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### Scope and Methodology

We conducted this performance audit from August 2019 through July 2020 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

### Work Performed

We distributed a survey to firefighters to collect information on current structural, functional, or health and safety concerns that they experience. We met Navy officials responsible for implementing policies and procedures to address NSGL building deficiencies and concerns. Specifically, we visited NSGL to identify roles, responsibilities, processes, and procedures to determine whether corrective actions were taken to ensure proper oversight of the project planning process and that the actions taken by planning personnel responsible for the building 106 renovation project were reviewed.

We met with the following personnel to determine whether NAVFAC established oversight procedures to ensure NSGL firefighters had access to safe and compliant facilities.

- Commanding Officer, NSGL
- Public Works Officer, PWD Great Lakes
- NAVFAC Facilities Management Division personnel
- NAVFAC Facilities Engineering and Acquisition Division personnel
- Assistant Public Works Officer, PWD Great Lakes
- District Fire Chief, NSGL
- Assigned NSGL Fire Department Building Monitor
- NSGL Industrial Hygienist
- NSGL Safety Manager
- NSGL firefighters

We also met with CNRMA, NAVFAC MIDLANT, and NAVFAC Atlantic officials to clarify their roles and responsibilities with oversight of maintenance and sustainment of NSGL building 106 and to identify current policies in place for planning and approving projects.

In addition, we conducted an inspection of building 106 at NSGL to verify that the Navy adequately addressed Report No. DODIG-2012-132's identified deficiencies, whether any additional building deficiencies exist, and requested supporting documentation.

To determine whether the building 106 deficiencies were corrected and no other building deficiencies existed, we:

- inspected building 106 by conducting a walk-through of the facility using technical assistance from the Research and Engineering Directorate and validated whether deficiencies were resolved and whether any other noncompliance or health and safety deficiencies exist;
- identified the actions NAVFAC has taken to correct unresolved UFC and other health and safety issues identified in the prior report by reviewing supporting documentation and consulting with NAVFAC engineers and our Research and Engineering Directorate;
- identified repairs and renovations made to building 106 by requesting project planning documents, construction drawings, construction and renovation contracts, and other project documentation prepared since the fire station renovations were completed in November 2010; and
- compared the 2006 version of UFC 4-730-10 to the updated 2019 version to determine whether the requirements have changed for the uncorrected and additional deficiencies that we identified; and since there were no changes in requirements and the regulation was updated, we made recommendations to comply with current policy.

To determine whether the Navy addressed the recommendation in Report No. DODIG-2012-132 to update procedures for preparing the DD Form 1391 and the Economic Analysis Handbook, we requested documentation and interviewed personnel from CNRMA, NAVFAC MIDLANT, and PWD Great Lakes. We identified some corrective actions the PWD Great Lakes had taken to ensure proper oversight of the project planning process.

To determine whether the Navy addressed the recommendations in Report No. DODIG-2012-132 to review the performance of the project planners involved with planning building 106's renovation project, we met with prior NAVFAC Midwest officials who reviewed the actions of the personnel responsible for planning the renovation of building 106.

## Use of Computer-Processed Data

We used computer-processed data to perform this audit. Specifically, we obtained facility maintenance and safety information from the following sources.

- **Maximo Asset Management.** A computerized maintenance management system that NAVFAC uses to report, track, and analyze contractor man-hours, mishaps, and incidence rate information. The system also tracks each building's life-cycle sustainment from construction to demolition.
- **Enterprise Safety and Management System.** A safety management system that manages all safety and health programs, including training, mishap reports, hazard analysis, among others. The Enterprise Safety and Management System enables Navy personnel to demonstrate full compliance with Safety and Occupational Health and Occupational Safety and Health Administration regulations.

We obtained and reviewed maintenance records from the Maximo Asset Management system for NSGL's building 106. We used this data to determine whether NAVFAC MIDLANT corrected building deficiencies identified in Report No. DODIG-2012-132 and implemented oversight procedures to ensure timely and effective maintenance of building 106. To assess the reliability of the Maximo Asset Management system data, we compared work statuses listed in the Maximo Asset Management system to observations taken during our site visit, and client provided documentation. We determined that the Maximo Asset Management data was sufficiently reliable for the purpose of our review.

We used the Enterprise Safety and Management System information to identify workplace safety hazards, and identify fire protection deficiencies. We determined the reliability of the Enterprise Safety and Management System information by comparing fire protection deficiencies with respective work order logs from the Maximo Asset Management system. We determined that the computer processed data we used from the Enterprise Safety and Management System were sufficiently reliable for the purpose of our review.

## Prior Coverage

No prior coverage has been conducted on project justification and planning during the last 5 years. However, prior to the last 5 years, the DoD OIG issued one report that addressed allegations made to the Defense Hotline on the justification and planning of fire station renovations. The unrestricted DoD OIG report can be accessed at <https://www.dodig.mil/reports.html/>.

## **DoD OIG**

Report No. DODIG-2012-132, “Project Planning Resulted in Outstanding Building Deficiencies and Decreased Functionality of the Main Fire Station at Naval Station Great Lakes,” September 14, 2012

The DoD OIG determined that improvements to the main fire station at Naval Station Great Lakes were justified, but the renovations did not mitigate all potential health and safety risks to fire station personnel. Additionally, the DoD OIG substantiated Defense Hotline allegations that the main fire station renovation design did not incorporate the appropriate criteria, the renovation project was less economical than a replacement project, and the Navy would incur additional costs for basic items not included in the renovation plan. The DoD OIG recommended that the Regional Fire Chief, Navy Region Midwest, and the Public Works Officer, Public Works Department Great Lakes, identify existing building deficiencies and initiate appropriate actions to correct the deficiencies. In addition, the DoD OIG recommended that the Commander, Navy Region Midwest, issue guidance requiring project planners to include sufficient detail in the “Impact If Not Provided” section of DD Form 1391 and issue guidance requiring the use of the checklist provided in NAVFAC P-442. The DoD OIG also recommended that the Commander, Navy Region Midwest, and the Commanding Officer, NAVFAC Midwest, take appropriate administrative actions to address the performance of personnel responsible for planning and reviewing documentation for the building 106 renovation project.

## **Use of Technical Assistance**

We received technical assistance from an engineer from the Research and Engineering Directorate to inspect NSGL building 106 to verify whether the Navy corrected deficiencies identified in Report No. DODIG-2012-132 and whether additional health and safety risks or noncompliance exists.

We also received assistance from the DoD OIG Quantitative Methods Division to develop and distribute a firefighter survey. Specifically, the Quantitative Methods Division representative helped us develop a survey distribution strategy and methods for compiling and reporting results.

## Appendix B

### Report No. DODIG-2012-132's Management Comments

Report No. DODIG-2012-132 had five recommendations. The Commanding Officer, NAVFAC Midwest, in coordination with Commander, Navy Region Midwest, responded to the report and concurred with all recommendations. All recommendations were closed by October 2014. See Figure 11 for a copy of comments received.

Figure 11. Report No. DODIG-2012-132's Management Comments

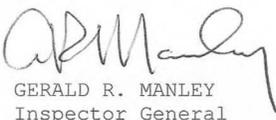
	<p><b>DEPARTMENT OF THE NAVY</b>          COMMANDER, NAVY INSTALLATIONS COMMAND          716 SICARD STREET, SE, SUITE 1000          WASHINGTON NAVY YARD, DC 20374-5140</p>	<p>5041          Ser N00G/12U72262          6 Jul 12</p>
<p>SECOND ENDORSEMENT on NAVFAC MW ltr 5041 Ser RE/0898 of 5 Jul 12</p>		
<p>From: Commander, Navy Installations Command          To: Inspector General, Department of Defense</p>		
<p>Subj: PROJECT PLANNING RESULTED IN OUTSTANDING BUILDING DEFICIENCIES AND DECREASED FUNCTIONALITY OF THE MAIN FIRE STATION AT NAVAL STATION GREAT LAKES (PROJECT NO. D2010-D000LC-0236.000)</p>		
<p>1. Forwarded. Concur with Commanding Officer, Naval Facilities Engineering Command Midwest (NAVFAC MW) response.</p>		
<p>2. The findings of the subject audit highlight several deficiencies in the project planning, design and contract award process. These deficiencies were, in part, a result of Navy funding limitations and resource allocation priorities that impacted both planning and facility projects.</p>		
<p>3. The immediate renovation project was executed to prevent firefighters from operating in a severely degraded facility. Due to the Military Construction (MILCON) project prioritization process, it is highly unlikely a MILCON replacement project would be supported. Accordingly, a Special Project was programmed and funded within the boundaries of available resources to provide relief from the very poor facility conditions our firefighters were operating in. CNIC and NAVFAC MW made the best possible attempt to execute a project that was a critical need for Naval Station Great Lakes. While there were errors made in the project development and design, processes have been improved to prevent a reoccurrence.</p>		
 GERALD R. MANLEY Inspector General		
<p>Copy to:          NAVFAC          NAVFAC MW          CNRMW</p>		

Figure 11. Report No. DODIG-2012-132's Management Comments (cont'd)



**DEPARTMENT OF THE NAVY**  
COMMANDER, NAVY REGION MIDWEST  
2601B PAUL JONES STREET  
GREAT LAKES, ILLINOIS 60088-2845

5041  
Ser N4/0175  
5 Jul 12

FIRST ENDORSEMENT on NAVFAC MW ltr 5041 Ser RE/0898 of 5 Jul 12

From: Commander, Navy Region Midwest  
To: Inspector General, Department of Defense  
Via: Commander, Navy Installations Command

Subj: PROJECT PLANNING RESULTED IN OUTSTANDING BUILDING  
DEFICIENCIES AND DECREASED FUNCTIONALITY OF THE MAIN  
FIRE STATION AT NAVAL STATION GREAT LAKES (PROJECT NO.  
D20 10-DOOOLC-0236.000)

1. Forwarded. Fully concur with NAVFAC Midwest response.

  
R. L. WILLIAMSON

Copy to:  
NAVFAC MW

4

Figure 11. Report No. DODIG-2012-132's Management Comments (cont'd)



DEPARTMENT OF THE NAVY  
 NAVAL FACILITIES ENGINEERING COMMAND  
 MIDWEST  
 201 DECATUR AVENUE, BUILDING 1-A  
 GREAT LAKES, ILLINOIS 60088-2801

5041  
 Ser RE/ 0898  
 5 Jul 12

From: Commanding Officer, Naval Facilities Engineering Command,  
 Midwest  
 To: Inspector General, Department of Defense  
 Via: (1) Commander, Navy Region Midwest  
 (2) Commander, Navy Installations Command

Subj: PROJECT PLANNING RESULTED IN OUTSTANDING BUILDING  
 DEFICIENCIES AND DECREASED FUNCTIONALITY OF THE MAIN FIRE  
 STATION AT NAVAL STATION GREAT LAKES (PROJECT NO. D20 1  
 0-DOOLC-0236.000)

Ref: (a) Department of Defense Office of Inspector General  
 Report of 12 Jun 12

Encl: (1) Comments on Report Findings

1. This letter is in response to Naval Facilities Engineering  
 Command Midwest (NAVFAC MW) review of reference (a). As a  
 result of our analysis, we agree with the three recommendations  
 provided in the report and have taken or will take the actions  
 listed below.

**Recommendation #1:** "We recommend that the Regional Fire Chief,  
 Navy Region Midwest, and the Public Works Officer, Public Works  
 Department Great Lakes, Naval Facilities Engineering Command,  
 Midwest, identify existing deficiencies, such as those we  
 identified in this report related to the required unified  
 facilities criteria and quality of life, and implement  
 appropriate actions to correct the deficiencies."

**Response #1:** Concur. The Naval Station Great Lakes Public Works  
 Officer (PWO), Assistant PWO (APWO), and the Regional Fire Chief  
 met on 25 April 2012 to discuss the project and current  
 discrepancies as noted on the draft DoDIG report. All  
 discrepancies were noted with either Service Requests submitted  
 for correction or with projects inputted into the Work Induction  
 Board to be designed. The Naval Station Great Lakes APWO is  
 tracking the status of 26 items (14 have been closed, six (6) in  
 progress, and six (6) on the list for future funding) and have  
 been given priorities for correction. All of the projects  
 identified are local funding authority that can be approved at  
 the installation level.

"FOR OFFICIAL USE ONLY"

Figure 11. Report No. DODIG-2012-132's Management Comments (cont'd)

**Recommendation #2:** "We recommend that for future projects, the Commander, Navy Region Midwest:

a. Issue guidance requiring planners to provide sufficient detail in the "Impact If Not Provided" section on the Forms 1391 to ensure that officials reviewing and approving Forms 1391 fully understand the impact to the mission, quality of life, safety and health that would occur if the project were not funded."

**Response #2a:** Concur. Navy Region Midwest (N4) has issued guidance via NAVFAC Midwest Chain of Command to Public Works Department planners at all Region installations. This guidance requires planners to follow the UFC when preparing the 1391s, in the identification of deficiencies process, and documenting this in the 1391. This guidance will be reinforced as part of our Quarterly AM Community meetings. Additionally, this guidance was issued to the Integrated Product Team, Facilities Engineering and Acquisition Division, and Capital Improvements personnel. NAVFAC MW will reinforce utilization of the Business Management System (BMS) processes during the MILCON and Special Project planning cycles. The BMS processes were not in place when project was originally proposed.

a. "Issue guidance requiring Naval Facilities Engineering Command and Naval Station Great Lakes Public Works Department officials to use the checklist provided in Naval Facilities Engineering Command P-442, "Economic Analysis Handbook," October 1993, to ensure a thorough and accurate review of Forms 1391 and supporting documentation."

**Response #2b:** Concur. NAVFAC MW will re-enforce following the P-442 process when developing economic analysis. This will also be done as part of next Quarterly Project Planners Community Meeting to re-enforce our project development process. Additionally, Economic Analysis training will be requested specifically for NAVFAC MW as part of the rollout of a new version of Economic Analysis software. In addition, NAVFAC MW has already implemented project review processes that were not in-place when this project was under development. The POM process now requires many levels of documented project review which will be analyzed to determine if additional improvements can be made. NAVFAC also has a process for project review for MILCON projects (MTP3) and Anti-Deficiency Act reviews for SRM projects, which continue to re-enforce planning guidance and are part of the NAVFAC BMS's (B-2.1.5 Special Project Development

Figure 11. Report No. DODIG-2012-132's Management Comments (cont'd)

and B-11.3.2 Regular Cycle Navy "Blue" MCON Region/FEC Team 1391). Each BMS does contain a checklist, which is recommended for use by Installation Planners. These BMS's were updated and put in place after this project was developed.

**Recommendation #3:** "We recommend that Commander, Navy Region Midwest, and Commanding Officer, Naval Facilities Engineering Command Midwest review the actions of personnel involved in preparing and reviewing planning documentation, such as the Forms 1391, supporting documentation, and the request for proposal, and based on that review:

a. Determine which personnel failed to exercise due diligence when planning a project to correct existing fire station deficiencies."

**Response #3a:** Concur. We reviewed the actions of the personnel involved in the preparation of the 1391s and have counseled both the Project Planner and the IPT Design Manager.

a. "Take the appropriate administrative actions."

**Response #3b:** No further administrative actions are required at this time. NAVFAC MW has incorporated the numerous procedural safeguards as previously mentioned and inserted relevant training into the training plan for all current and future project planners.

2. For items and findings that we disagree with, we are providing comments to address each item and finding in enclosure (1).

3. My point of contact is [REDACTED] NAVFAC MW Command IG, who may be reached at [REDACTED].

  
R. O. WORDEN

## Appendix C

### Report No. DODIG-2012-132's Building 106 Deficiencies

We determined whether building 106 deficiencies were resolved by conducting an inspection of the facility using technical assistance from the Research and Engineering Directorate. See Table 3 for the building 106 deficiencies and our determination if the deficiency was corrected.

*Table 3. Building 106 Deficiencies and Auditor Determination*

	Building 106 Deficiencies	NAVFAC Corrective Actions	Auditor Determination
1.	PPE equipment was not stored in a negatively pressurized room and was exposed to sunlight.	Relocation and replacement of PPE Room via contract action.	Corrected
2.	Firefighter alert system was outdated and automatic lighting was slow to activate.	Outdoor alert station installed. Installed two alerting speakers in Room 115 and 115A. E-project # 1110912 - Fire station informed 9/21/2010 that the alerting system is classified as equipment, not construction, therefore they are responsible for funding.	Not corrected
3.	Dorm rooms did not have adequate HVAC and were not well insulated to provide acoustical privacy.	Multiple work orders to correct deficiencies. Building heating system replaced during base wide steam decentralization project.	Not corrected
4.	PPE laundry room was not located in a separate, negatively pressurized room.	Relocation and replacement of PPE Room via contract action.	Corrected
5.	The wash and disinfection room was inadequate.	Relocation and replacement of PPE Room via contract action.	Corrected
6.	101E north window leaks.	No response	Corrected
7.	Bay 113 ambulance bay door keeps dropping.	Doors were adjusted to remove redundancy interlocks as per manufacture's recommendation.	Corrected
8.	Bay 106 apparatus bay door keeps dropping.	Doors were adjusted to remove redundancy interlocks as per manufacture's recommendation.	Corrected
9.	East side kitchen window seal leaks.	Kitchen window replaced.	Corrected
10.	Southeast exterior door sweep falling off.	New weather stripping installed.	Corrected
11.	Room 138 ceiling tiles water stained.	Walked through all spaces and replaced all stained ceiling tiles.	Corrected

Table 3. Building 106 Deficiencies and Auditor Determination (cont'd)

	Building 106 Deficiencies	NAVFAC Corrective Actions	Auditor Determination
12.	PPE storage room door trim not connected.	No response	Corrected
13.	Electrical room door needs a sweep to keep the water from entering area.	No response	Corrected
14.	West apparatus bay 111 heater inadequate for space.	Installed extra overhead heater to northwest truck bay.	Not Corrected
15.	Apparatus bays 111, 113, 106 need 24 hour lighting.	Installed 24 hour lighting in the bays of Bldg. 106 that did not already have it.	Corrected
16.	Room 121 walls paint blistering.	Tuck point outside of room 121 in Bldg. 106.	Not Corrected
17.	Room 121 exit door leaks.	Door needs to be slushed, room 121 has leak issue with door, might be an issue with tuck-point or gaps in the door.	Corrected
18.	Room 115/115A renovation needs to be conducted.	Renovation of rooms 115 and 115A.	Corrected
19.	Room 114 laundry room and PPE dryer need to be co-located in room due to excessive noise level.	Relocate the PPE Washer from room 114 to room 107, South Wall.	Corrected
20.	Building generator insufficient to serve department needs.	Installed new generator.	Not corrected
21.	Fire alarm panel damaged due to heat pump leak.	Multiple work orders relating to fire alarm panel.	Corrected
22.	HVAC issue continues for second floor berthing areas.	Multiple work orders relating to HVAC.	Not corrected
23.	Emergency Medical Service area hot water delay still outstanding issue.	Go over to 106 and figure out how to get a better supply of hot water to the Emergency Medical Service housing side.	Corrected
24.	East side HVAC damper control continuously in operation.	Multiple work orders relating to HVAC.	Corrected
25.	Room 102D light motion sensors inoperative.	Install light switch sensors do not work/ lights always on, Rm 102D fitness room.	Corrected
26.	Room 137A lights turn off while restroom is in use.	Have room 137A lights looked at. Fire Department states the time does not allow the lights to remain on while using the head.	Corrected
27.	East side flooding still at risk.	Excavate/install storm sewer. Storm Drain Repairs	Corrected
28.	Roof slope does not allow for drainage.	Re-route two roof drains.	Corrected

*Table 3. Building 106 Deficiencies and Auditor Determination (cont'd)*

	<b>Building 106 Deficiencies</b>	<b>NAVFAC Corrective Actions</b>	<b>Auditor Determination</b>
29.	Fire Chief Office needs receptacle installed per NFC electrical code.	Outlet installed.	Corrected
30.	Install doorway between rooms 101H and 101D.	Installed door.	Corrected
31.	Roach infestation.	Multiple work orders and recurring pest control services.	Not corrected

## Appendix D

### New Building Deficiencies Identified During September 2019 Building 106 Inspection

We determined whether any new noncompliance or health and safety deficiencies exist at building 106 by conducting a walk-through of the facility using technical assistance from the Research and Engineering Directorate. See Table 4 for the list of the deficiencies identified during the September 2019 inspection.

*Table 4. New Deficiencies Found at NSGL Fire Station, Building 106*

	Deficiency Identified During Inspection of Building 106	Deficiency Type
1.	Main apparatus bay floor drains were not properly installed	UFC-compliance
2.	Numerous apparatus bays did not have an operational vehicle exhaust system	UFC-compliance
3.	Apparatus bay garage door widths were less than the required 14 feet minimum	UFC-compliance
4.	SCBA maintenance room was not positively pressurized	UFC-compliance
5.	SCBA did not have an emergency alert system speaker	UFC-compliance
6.	Numerous electrical outlets in apparatus bays do not meet the height minimum of 36 inches above the finished floor	UFC-compliance
7.	Dorm rooms 115 and 115A were located within ambulance bay	NFPA-compliance
8.	Numerous emergency exit lights were not functional throughout the facility	Improper Maintenance
9.	Minor crack/separation on exterior wall on eastside of the facility	Improper Maintenance
10.	Numerous electrical outlets on exterior of building 106 were missing weatherproof cover	Improper Maintenance
11.	Missing/inoperable emergency alert speakers around the exterior of the fire station	Improper Maintenance
12.	Abandoned electrical outlet with wiring in apparatus bay 3	Improper Maintenance
13.	Broken roof drain cover	Improper Maintenance
14.	Electrical panel in apparatus bay 6 did not have required clearance around it	Improper Maintenance
15.	Numerous minor foundation cracks on exterior walls of the facility	Improper Maintenance
16.	Monthly fire extinguisher inspections were not conducted as required	Improper Maintenance
17.	Oil spill in SCBA compressor room	Improper Maintenance

## Appendix E

### Consolidated Survey Responses

We distributed a survey to 44 firefighters at NSGL to identify their concerns with the fire station, building 106. See Figure 12 for a copy of the DoD OIG survey. We also consolidated the responses to these survey questions and presented them in this appendix.

Figure 12. DoD OIG Survey of the NSGL Firefighters



**Firefighter Survey for the Naval Station Great Lakes**  
**Fire Station, Building 106**  
 Project No. D2019-D000AH-0197.000

DoD Office of Inspector General  
 Audit - Acquisition, Contracting, and Sustainment  
 4800 Mark Center Drive  
 Alexandria, VA 22350-1500

---

We appreciate you taking the time to complete the following voluntary survey. This 8-question survey should take approximately 15 minutes of your time. We will keep all of your responses confidential and will not identify any response by individual. We will ensure to remove any information provided that could be connected to a particular person, and include any reported concerns in general terms in our report. We will compile all responses and analyze them as a group for potential inclusion in our report.

Please complete only one questionnaire per person and send your completed questionnaire to [REDACTED] by September 6, 2019. If you have any questions or concerns, please contact [REDACTED].

1. How long have you worked at the Naval Station Great Lakes fire station?  
 < 1 yr.     1 - 3 yrs.     3 - 5 yrs.     5 - 10 yrs.     > 10 yrs.
  
2. How would you classify your level of safety while living at the fire station?  
 1 (poor)     2     3 (neutral)     4     5 (excellent)  
 Please give specific examples.
  
3. How would you classify the living conditions at the fire station?  
 1 (poor)     2     3 (neutral)     4     5 (excellent)  
 Please give specific examples

*Figure 12. DoD OIG Survey of the NSGL Firefighters (cont'd)*

4. How does the fire station affect your ability to respond to emergencies?

- 1 (worse)     2     3 (no impact)     4     5 (better)

Please give specific examples.

5. How does the fire station affect your quality of life?

- 1 (worse)     2     3 (no impact)     4     5 (better)

Please give specific examples.

6. How would you rate the Public Works Department's response time to service requests?

- 1 (poor)     2     3 (neutral)     4     5 (excellent)

Please give specific examples.

*Figure 12. DoD OIG Survey of the NSGL Firefighters (cont'd)*

7. Describe any changes you feel should be made to building 106 to improve its functionality, safety, and/or your quality of life.

8. List any other concerns that you may have about building 106.

Source: The DoD OIG.

### ***Time of Employment at Naval Great Lakes Fire Station***

Question one of the DoD OIG survey was related to how long the respondent had worked at the NSGL Fire Department. The answer choices ranged from less than 1 year to more than 10 years of experience. Of the 28 respondents, 14 indicated more than 10 years of experience. Table 5 summarizes the experience levels of the 28 respondents.

*Table 5. Time of Employment at NSGL Fire Department*

<b>Years of Experience</b>	<b>Number of Respondents</b>
Less than 1 year	2
Between 1 and 3 years	5
Between 3 and 5 years	3
Between 5 and 10 years	4
More than 10 years	14
<b>Total</b>	<b>28</b>

Source: The DoD OIG.

### ***Level of Safety While Living at the Fire Station***

Question two of the DoD OIG survey was related to the level of safety perceived by firefighters while living at the fire station. We asked firefighters to rate their responses on a scale of one to five, one indicating “poor,” three indicating “neutral,” and five indicating “excellent.” The firefighters’ average response to this question was 2.54.

We also asked firefighters to provide specific examples of their concerns related to the level of safety at the fire station while they live there. Table 6 on the next page lists the top 10 concerns, in descending order of frequency, that firefighters identified in response to the question.

Table 6. Concerns Identified in Response to Question 2

Firefighter Concerns	Frequency (out of 28 surveys)
HVAC/Air Quality	7
No Response	7
Work Schedules	7
Vehicle Exhaust	6
Mold	5
Pests	5
Drainage	3
General Statement	3
Functionality	3
Structure	2
<b>Total</b>	<b>48</b>

Note: In certain instances individual respondents identified multiple concerns when providing examples. As a result, the total number of concerns is greater than the number of individual respondents.

Source: The DoD OIG.

### ***Living Conditions at the Fire Station***

Question three of the DoD OIG survey was related to the adequacy of living conditions at the fire station. We asked firefighters to rate their responses on a scale of one to five, one indicating “poor,” three indicating “neutral,” and five indicating “excellent.” The firefighters’ average response to this question was 2.11.

We also asked firefighters to provide specific examples of their concerns related to the living conditions at the fire station. Table 7 on the next page lists the top 10 concerns, in descending order of frequency, that firefighters identified in response to this question.

Table 7. Concerns Identified in Response to Question 3

Firefighter Concerns	Frequency (out of 28 surveys)
Pests	13
HVAC/Air Quality	12
Mattresses	6
General Statement	6
No Response	3
Lighting	2
Mold	2
Paint	2
Drainage	2
Dorms	2
<b>Total</b>	<b>50</b>

Note: In certain instances individual respondents identified multiple concerns when providing examples. As a result, the total number of concerns is greater than the number of individual respondents.

Source: The DoD OIG.

### ***Fire Stations' Effect on Ability to Respond to Emergencies***

Question four of the DoD OIG survey was related to the fire station's effect on the ability of the firefighters to respond to emergencies. We asked firefighters to rate their responses on a scale of one to five, one indicating "worse," three indicating "no impact," and five indicating "better." The firefighters' average response to this question was 1.68.

We also asked firefighters to provide specific examples of their concerns related to the effect of the fire stations on their ability to respond to emergencies. Table 8 on the next page lists the top 10 concerns, in descending order of frequency, that firefighters identified in response to this question.

*Table 8. Concerns Identified in Response to Question 4*

Firefighter Concerns	Frequency (out of 28 surveys)
Size of Building 106	15
Layout of Building 106	7
Alert System	6
No Response	3
Traffic	2
General Statement	2
Functionality	2
Dispatch	1
HVAC/Air Quality	1
Stair Rail	1
<b>Total</b>	<b>40</b>

Note: In certain instances individual respondents identified multiple concerns when providing examples. As a result, the total number of concerns is greater than the number of individual respondents.

Source: The DoD OIG.

### ***Fire Stations' Effect on Quality of Life***

Question five of the DoD OIG survey was related to the fire station's effect on the firefighters' quality of life. We asked firefighters to rate their responses on a scale of one to five, one indicating "worse," three indicating "no impact," and five indicating "better." The firefighters' average response to this question was 1.79.

We also asked firefighters to provide specific examples of their concerns related to how the fire station affects quality of life while working at the fire station. Table 9 on the next page lists the top 10 concerns, in descending order of frequency, that firefighters identified in response to this question.

Table 9. Concerns Identified in Response to Question 5

Firefighter Concerns	Frequency (out of 28 surveys)
HVAC/Air Quality	9
Mattresses	6
No Response	5
General Statement	4
Size of Building 106	3
Dorms	3
Pests	3
Lack of Sleep	3
Privacy	2
Sickness	2
<b>Total</b>	<b>40</b>

Note: In certain instances individual respondents identified multiple concerns when providing examples. As a result, the total number of concerns is greater than the number of individual respondents.

Source: The DoD OIG.

### ***Public Works Department's Response Time to Service Requests***

Question six of the DoD OIG survey was related to the PWD's response time to service requests. We asked firefighters to rate their responses on a scale of one to five, one indicating "poor," three indicating "neutral," and five indicating "excellent." The firefighters' average response to this question was 1.89.

We also asked firefighters to provide specific examples of their concerns related to the PWD's response time to service requests. Table 10 on the next page lists the top 10 concerns, in descending order of frequency, that firefighters identified in response to the question.

*Table 10. Concerns Identified in Response to Question 6*

Firefighter Concerns	Frequency (out of 28 survey)
Delays	13
No Response	7
General Statement	4
Inadequate Repairs	4
Service Ticket Closed Without Being Fixed	3
Unfinished Projects	2
Funding	2
Poor Coordination	1
Understaffed	1
Training	1
<b>Total</b>	<b>38</b>

Note: In certain instances individual respondents identified multiple concerns when providing examples. As a result, the total number of concerns is greater than the number of individual respondents.

Source: The DoD OIG.

### ***Suggested Changes to Improve the Functionality, Safety, and Quality of Life at the Fire Station***

Question seven of the DoD OIG survey asked firefighters to describe any changes that should be made to the fire station to improve its functionality, safety, and the quality of life for firefighters. This question was open-ended and did not have any answer choices. Table 11 on the next page lists the top 10 items, in descending order of frequency, that firefighters identified in response to the question.

Table 11. Suggested Areas of Change to Improve Building 106

Suggested Areas of Change	Frequency (out of 28 surveys)
HVAC/Air Quality	9
Construct New Fire Station	8
No Response	4
Pests	4
Size of Building 106	4
Layout of Building 106	4
Drainage	3
Mattresses	3
General Statement	3
Alert System	3
<b>Total</b>	<b>45</b>

Note: In certain instances individual respondents identified multiple concerns when providing examples. As a result, the total number of concerns is greater than the number of individual respondents.

Source: The DoD OIG.

### Other Concerns Regarding Building 106

Question eight of the DoD OIG survey asked the firefighters to list any area or areas of concern regarding building 106. The question was open-ended and did not have any answer choices. Table 12 lists the top 10 areas of concern, in descending order of frequency, that firefighters identified in response to the question.

Table 12. Other Areas of Concerns Regarding Building 106

Firefighter Concerns	Frequency (out of 28 surveys)
No Response	11
Size of the Building 106	5
Drainage	4
General Statement	4
Dorms	2
Renovation of Building 106	2
Age of Building 106	2
Alert System	2
Privacy	1
HVAC/Air Quality	1
<b>Total</b>	<b>34</b>

Note: In certain instances individual respondents identified multiple concerns when providing examples. As a result, the total number of concerns is greater than the number of individual respondents.

Source: The DoD OIG.

# Management Comments

## Naval Facilities Engineering Command Comments



DEPARTMENT OF THE NAVY  
NAVAL FACILITIES ENGINEERING COMMAND  
1322 PATTERSON AVENUE, SE SUITE 1000  
WASHINGTON NAVY YARD DC 20374-5065

7540  
Ser 09IG/033  
25 June 2020

From: Commander, Naval Facilities Engineering Command  
To: Department of Defense, Office of the Inspector General, Program Director for Audit  
Acquisition, Contracting, and Sustainment

Subj: MANAGEMENT RESPONSE TO DODIG AUDIT REPORT D2019-D000AH.0197.000  
FOLLOWUP AUDIT ON RECOMMENDATIONS TO CORRECT BUILDING  
DEFICIENCIES AT THE NAVAL STATION GREAT LAKES FIRE STATION

Ref: (a) DoDI 7650.03

Encl: (1) Follow-up Status for Report D2019-D000AH.0197.000  
(2) P-442 Economic Analysis Handbook

1. Per reference (a), enclosures (1) and (2) are submitted for your review. Enclosure (1) provides management responses for recommendations 2a and 2b. NAVFAC requests closure of recommendation 2b.

2. My point of contact is [REDACTED]

JASON B. FAUNCE  
By direction

## Naval Facilities Engineering Command Comments (cont'd)

**NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)  
MANAGEMENT RESPONSE TO DOD OIG AUDIT REPORT D2019-D000AH.0197.000  
FOLLOWUP AUDIT ON RECOMMENDATIONS TO CORRECT BUILDING  
DEFICIENCIES AT THE NAVAL STATION GREAT LAKES FIRE STATION  
DATED: 26 MAY 2020**

**RECOMMENDATION 2a:** We recommend that the Commander, Naval Facilities Engineering Command, update the Business Management System (BMS) processes, to include section B-25.6.1, Special Projects Development, with the most current guidance for project planners to use when planning projects, in accordance with NAVFAC Instruction 5200.38A.

**CURRENT STATUS:** Concur. NAVFAC will update BMS processes in accordance with NAVFAC Instruction 5200.38A, Business Management System, to include the most correct guidance for project planners to use when planning projects. The update will also require planners to use pertinent Unified Facilities Criteria (UFC) to identify deficiencies and to document project planning using DD Form 1391.

**DATE COMPLETED/ESTIMATED COMPLETION DATE:** 31 August 2020

**RECOMMENDATION 2b:** We recommend that the Commander, Naval Facilities Engineering Command, update the NAVFAC P-442, "Economic Analysis Handbook," November 2013, to require Naval Facilities Engineering Command and Public Works Department Naval Station Great Lakes officials to require use of the checklist when preparing economic analyses during project planning.

**CURRENT STATUS:** Concur. NAVFAC updated P-442, Economic Analysis Handbook, on 29 May 2020. Section 13.3 requires economic analysts and reviewers to use the Handbook's checklist to ensure that economic analyses are correct, complete, and well-documented. See enclosure (2). NAVFAC considers this action complete.

**COMPLETION DATE:** 29 May 2020

Enclosure (1)

## Commander, Navy Region Mid-Atlantic Comments



**DEPARTMENT OF THE NAVY**  
COMMANDER  
NAVY REGION MID-ATLANTIC  
1510 GILBERT STREET  
NORFOLK, VA 23511-2325

IN REPLY REFER TO:  
11100  
N00  
01 JUL 2020

FIRST ENDORSEMENT on NAVSTA Great Lakes memo 11100 memo N30/228 of 15 Jun 20

From: Commander, Navy Region Mid-Atlantic  
To: Commander, Navy Installations Command

Subj: FOLLOWUP AUDIT ON RECOMMENDATIONS TO CORRECT BUILDING  
DEFICIENCIES AT NAVAL STATION GREAT LAKES FIRE STATION  
(PROJECT NO. D2019-D000AH-0197.000)

1. Forwarded, recommending approval.

A handwritten signature in black ink, appearing to read "C. W. Rock", is positioned above the printed name.

C. W. ROCK

## Naval Station Great Lakes Comments



DEPARTMENT OF THE NAVY  
NAVAL STATION GREAT LAKES  
2601E PAUL JONES STREET  
GREAT LAKES, IL 60088-2845

11100  
Memo N30/228  
15 Jun 20

### MEMORANDUM

From: Commanding Officer, Naval Station Great Lakes  
To: Commander, Navy Installations Command  
Via: Commander, Navy Region Mid-Atlantic

Subj: FOLLOWUP AUDIT ON RECOMMENDATIONS TO CORRECT BUILDING  
DEFICIENCIES AT NAVAL STATION GREAT LAKES FIRE STATION  
(PROJECT NO. D2019-D00AH-0197.000)

Ref: (a) DoDIG WASHINGTON DC memo of 26 May 20

Encl: (1) NRMA F&ES GREAT LAKES memo of 24 Apr 20

1. Reference (a) was reviewed, and the following comments are provided for recommendations 1, 3 and 4 therein:

a. Recommendation 1: We recommend that the Commander, Navy Region Mid-Atlantic, and Commanding Officer, Naval Station Great Lakes, in coordinating with the Public Works Officer, Public Works Department Great Lakes, Naval Facilities Engineering Command, Mid-Atlantic, assess and correct the deficiencies identified in this report to ensure compliance with current Unified Facilities Criteria and National Fire Protection Association requirements.

Comment: Partial Concur. NSGL shall take action to address and/or remedy the seven deficiencies remaining from the 2012 audit (Appendix C, Table 3). Furthermore, NSGL shall take action to address and/or remedy all but three of the deficiencies identified in the most recent audit (Appendix D, Table 4). NSGL may provide on-site mitigation and may seek a waiver for items 1, 3 & 6. The costly corrections related to those deficiencies provide no direct functional increase in capability and/or are not directly linked to a personal health or life-safety issue.

b. Recommendation 3: We recommend that the District Fire Chief, Fire and Emergency Services, Great Lakes, Commander, Navy Region Mid-Atlantic, designate a building monitor in accordance with Commander, Navy Region Mid-Atlantic Instruction 11000.2A.

Comment: Concur. District Chief Feltner designated Mr. Babcock as the building monitor in writing on 9 September 2019. The documentation was developed per Naval Station Great Lakes Fire Department policy and format. Pursuant to direction provided by the Inspector General staff, Mr. Babcock was re-designated as the building monitor (enclosure (1)) in the format outlined per Commander, Navy Region Mid-Atlantic Instruction 11000.2A.

Completed/Estimated Completion Date: Complete

## Naval Station Great Lakes Comments (cont'd)

Subj: FOLLOWUP AUDIT ON RECOMMENDATIONS TO CORRECT BUILDING DEFICIENCIES AT NAVAL STATION GREAT LAKES FIRE STATION (PROJECT NO. D2019-D00AH-0197.000)

c. Recommendation 4: We recommend that the Public Works Officer, Public Works Department Great Lakes, Naval Facilities Engineering Command, Mid-Atlantic, in coordination with the Director, Facilities Management Division, Public Works Department, Naval Facilities Engineering Command, Mid-Atlantic, develop and implement a building monitor training program for Naval Station Great Lakes in accordance with Commander, Navy Region Mid-Atlantic Instruction 11000.2A.

Comment: Concur. NSGL has begun developing curriculum for the building monitor training program and shall implement the program in accordance with COMNAVREG MIDLANT Instruction 11000.2A. Furthermore, the Public Works Department (PWD) planned to conduct the training April 2020, but execution of the training has been delayed due to the mass gathering restrictions brought on by COVID-19. Considering upcoming relaxation of COVID restrictions, it is expected that the building monitor training program will be incorporated in fiscal year 2021.

Completed/Estimated Completion Date: Fiscal Year 2021

d. Recommendation 5a: We recommend that the Commander, Navy Region Mid-Atlantic, in coordination with the Public Works Officer, Public Works Department Great Lakes, Naval Facilities Engineering Command, Mid-Atlantic, inspect building 2801 for non-compliance with applicable Unified Facilities Criteria 4-730-10 and incorporate corrective actions into the planned renovation project for building 2801.

Comment: Concur. NSGL will conduct a top-down facilities inspection of building 2801 as recommended and in accordance with the applicable Unified Facilities Criteria. Required building modifications will be executed individually or holistically completed via overall building renovation.

Completed/Estimated Completion Date: Fiscal Year 2022

e. Recommendation 5b: We recommend that the Commander, Navy Region Mid-Atlantic, in coordination with the Public Works Officer, Public Works Department Great Lakes, Naval Facilities Engineering Command, Mid-Atlantic, inspect building 2801 for non-compliance with applicable National Fire Protection Association requirements and take corrective actions.

Comment: Concur. NSGL will conduct a top-down facilities inspection of building 2801 as recommended and per applicable sections of the NFPA. Required building modifications will be executed individually or holistically completed via overall building renovation.

Completed/Estimated Completion Date: Fiscal Year 2022



R. C. LEUNG

Copy to:  
NAVSTA GREAT LAKES IL (N30, N4)

## Commander, Navy Installations Command Comments



**DEPARTMENT OF THE NAVY**  
COMMANDER, NAVY INSTALLATIONS COMMAND  
716 SICARD STREET, SE, SUITE 100 WASHINGTON  
NAVY YARD, DC 20374-5140

11100  
Ser N4/20U080  
2 Jul 2020

SECOND ENDORSEMENT on CNRMA ltr 11100 Ser N00 of 01 Jul 2020

From: Commander, Navy Installations Command  
To: Inspector General, Department of Defense

Subj: FOLLOWUP AUDIT ON RECOMMENDATIONS TO CORRECT BUILDING  
DEFICIENCIES AT THE NAVAL STATION GREAT LAKES FIRE STATION  
(PROJECT NO. D2019-DOOOAH-O 197.000)

Ref: (a) DoDIG Project No. D2019-D000AH-0197.000 of 26 May 20

1. Forwarded. Concur with Commander, Navy Region Mid-Atlantic (CNRMA) response.
2. Naval Station Great Lakes has been tasked to provide additional detail on recommendations 1, 3, and 6 in their next update.
3. The technical point of contact is [REDACTED]

BARTOE,KEVIN.JO  
HN [REDACTED]

Digitally signed by

K. J. Bartoe  
By direction

Copy to:  
CNIC (OIG)  
NAVAUDSVC

## Acronyms and Abbreviations

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<b>BMS</b>	Business Management System
<b>CNIC</b>	Commander, Navy Installations Command
<b>CNRMA</b>	Commander, Navy Region Mid-Atlantic
<b>HVAC</b>	Heating, Ventilation, and Air Conditioning
<b>NFPA</b>	National Fire Protection Association
<b>NAVFAC</b>	Naval Facilities Engineering Command
<b>NAVFAC MIDLANT</b>	Naval Facilities Engineering Command, Mid-Atlantic
<b>NSGL</b>	Naval Station Great Lakes
<b>OPNAV</b>	Office of the Chief of Naval Operations
<b>PPE</b>	Personal Protective Equipment
<b>PWD</b>	Public Works Department
<b>PWO</b>	Public Works Officer
<b>SCBA</b>	Self-Contained Breathing Apparatus
<b>UFC</b>	Unified Facilities Criteria

## Glossary

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**Apparatus Bay.** This is where the fire fighting and emergency response vehicles are stored.

**Business Management System.** A system that outlines NAVFAC's business processes and describes the work performed to deliver NAVFAC products and services. It includes associated resources and identified roles and responsibilities for NAVFAC personnel.

**DD Form 1391.** The military construction project data sheet used to state the requirements and justifications in support of funding requests for military construction projects across the DoD. The form is submitted for all projects requiring Office of the Secretary of Defense approval, including major and minor new construction and certain projects involving operations and maintenance, restoration of damaged facilities, and non-appropriated fund construction.

**Economic Analysis.** A systematic approach to the problem of choosing how to employ scarce resources and an investigation of the full implications of achieving a given objective in the most efficient and effective manner.

**National Fire Protection Association.** A nonprofit organization devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards and publishes codes and standards designed to minimize the risk and effects of fire.

**Negative Pressure.** A ventilation system designed so air flows into an isolation room, but contaminated air from the isolation room does not pass to other parts of the facility.

**Outfall.** The point where a storm sewer discharges to the waters of the United States.

**Personal Protective Equipment.** Equipment worn to minimize exposure to serious workplace injuries or illnesses resulting from contact with chemical, radiological, physical, electrical, mechanical or other hazards. PPE includes items such as respirators, gloves, hard hats, and full body suits.

**Plant Replacement Value.** The cost to replace an existing facility with a generic facility that can perform the same function(s). The replacement facility is generally understood to be the same size and occupy the same site as the existing facility and is understood to be constructed to current standards of material and design.

**Self-Contained Breathing Apparatus.** A respirator for which the breathing air source is designed to be carried by the user.

**Tenant.** A tenant is the receiver or user of a facility or service, usually a unit or command that occupies facilities provided by a host activity.

**Unified Facilities Criteria.** The Unified Facilities Criteria provides a standard for all technical criteria and specifications related to planning, designing, constructing, operating, and maintaining real property facilities. The DoD requires all military departments, defense agencies, and field activities to use the Unified Facilities Criteria for planning, designing, constructing, sustaining, restoring, and modernizing facilities.

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