



**UNITED STATES DEPARTMENT OF COMMERCE**  
National Institute of Standards and Technology  
Gaithersburg, Maryland 20899

June 10, 2024

MEMORANDUM FOR THE RECORD

From: Mark Liao  
NEPA Coordinator  
National Institute of Standards and Technology

Subject: Finding of No Significant Impact

Project: Green Engineering and Materials Factory of the Future

Location: University of Maine  
Orono, Maine 04469

The National Environmental Policy Act (NEPA) and associated implementing regulations (40 CFR Parts 1500-1508) require that all major federal actions be reviewed with respect to their environmental consequences. The National Institute of Standards and Technology (NIST) is providing two congressionally directed funding grants for the construction of the Green Engineering and Materials Factory of the Future at the University of Maine. Consequently, NEPA and the associated implementing regulations apply to this project.

An Environmental Assessment (EA) was prepared by the grant recipient for this project and provided for public review. The EA (Environmental Assessment of the Construction and Operation of the Green Engineering and Materials Factory of the Future, Woodard and Curran, May 28, 2024) is incorporated by reference. This memorandum summarizes the impacts identified and the mitigation proposed in the EA, and documents a finding of no significant environmental impact (FONSI) for the Green Engineering and Materials Factory of the Future project.

## **Description of the Action**

This action includes the construction and operation of the Green Engineering and Materials Factory of the Future (GEM FoF) on the campus of the University of Maine (UMaine).

The GEM FoF will be constructed in a 46,970 square foot (SF) addition to the existing Maine Advanced Structures and Composites Center (ASCC) building. The majority of the addition will be dedicated to the GEM FoF (26,000 SF), with support spaces occupying the remaining 20,970 SF. The GEM FoF is divided into two large manufacturing labs, each ~65' x 260', including one lab that can be secured for sensitive projects. The addition will include a main entrance plaza area, a sidewalk extension, new pavement that will provide a vehicle maneuvering area for large trucks, and storage area for the large-scale materials and products to be used at the facility. The project is being planned in two phases.

The Purpose of this project is to provide workforce training and manufacturing equipment demonstrations for additive manufacturing using wood-derived biomaterials with the goal of demonstrating scalability and replicability for use elsewhere in the state. The project will provide innovative manufacturing research supporting key goals in the State of Maine's 10-Year Economic Development Plan. It will provide active learning spaces for the Maine College of Engineering and Computing where students can interact with and program equipment in a safe and controlled manner and thus develop critical skills to improve Maine's workforce.

## **Summary of Impacts and Mitigation**

This FONSI is predicated on the implementation of mitigation measures summarized below:

### **Aesthetics and Visual Resources**

The new building addition will be consistent in scale and design to the existing UMaine buildings.

### **Historic/Cultural Resources**

The Maine Historic Preservation Commission (MHPC) has reviewed this project and confirmed that no historic resources exist on or near the project site that could be impacted by this project (Attachment A). The area is not considered sensitive for archeological resources.

The Tribal Historic Preservation Officer for the Mi'kmaq Nation has requested the following:

During the course of excavation/construction activities, if human remains, artifacts, or any other evidence of Native American presence are discovered, site activities in the vicinity of the discovery shall immediately cease, pending notification to the Mi'kmaq

Nation. This would allow any artifacts to be documented with appropriate detail. If human remains were discovered, they will be reburied at a distinctive and respectable site with the appropriate respect for the remains.

UMaine will meet this request.

### **Greenhouse Gas Emissions**

Greenhouse Gas Emissions are expected to increase due to the heating and cooling demands of the new GEM FoF addition. UMaine policy is to meet certain standards in new construction based on the Second Nature Carbon Commitment Pledge to eliminate greenhouse gas emissions over time, and the Regional Climate Action Planning Process. The construction of this project will meet or exceed LEED silver standards reducing the related greenhouse gas emissions.

The GEM FoF facility will be primarily built using mass timber. The use of timber significantly reduces the carbon footprint of the building compared to use of alternative materials such as steel or concrete. To further reduce the building's carbon footprint, wood fiber insulation is proposed as a substitute for petroleum-based foam insulation.

### **Hazardous Materials**

Any existing hazardous materials (i.e., asbestos, lead based paint, PCBs) that may be disturbed in the existing ASCC building will be abated and properly disposed of in accordance with State and Federal regulations.

Hazardous waste generated by the operation of the new building will be properly disposed of off-site by licensed haulers/disposal facilities in accordance with State and Federal regulations.

### **Wetlands**

The site proposed for this project has three existing emergent, old-field, wetland areas. The project will require filling a total of 26,496 SF of wetlands. In accordance with regulations and procedures in place with the Maine Department of Environmental Protection (MeDEP) and the U.S. Army Corps of Engineers, compensation for any wetland impact from this project will be made under the In-Lieu Fee (ILF) program. UMaine will pay the ILF prior to the beginning of construction as required by the program. The total ILF is \$113,667.84.

### **Stormwater**

The GEM project will convert 1.2 acres of vegetated area into impervious surfaces (pavement and building). All stormwater runoff generated by this project will be treated using best management practices (BMPs) approved by the MeDEP. Excess stormwater treatment capacity will be provided by the BMPs planned improving the quality of stormwater runoff from the site.

Construction disturbance can cause erosion of site soils and sedimentation of local streams. These impacts will be mitigated through the implementation of BMPs approved by the MeDEP.

### **Floodplains**

The project site is not located in a 100 or 500-year floodplain. The nearest 500-year floodplain is located approximately 2,700 feet west of the project site at an elevation of approximately 82.5'. The elevation of the project site ranges from approximately 112' to 119'. No areas of localized flooding exist on the UMaine campus or in the project area. No flood hazards are expected for the GEM FoF project and no impacts to flood zones are expected.

### **Conclusion**

NIST hereby adopts the EA prepared by the award recipient for the Green Engineering and Materials Factory of the Future project. After reviewing the EA and the supporting materials, NIST finds that the EA properly documents the project's environmental impact. NIST has determined, with the mitigation measures described above, that the proposed action will have no significant impact on the quality of the human environment. With this FONSI, an environmental impact statement will not be prepared.

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Mark Liao  
NIST NEPA Coordinator

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Date

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Robert C. Vaughn  
NIST Chief Facilities Management Officer

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Date

Attachment A

Maine Historic Preservation Commission Letter

Via Electronic Mail

May 5, 2022

RECEIVED  
MAY 05 2022  
By 0719 -22



Kirk F. Mohney  
Director and State Historic Preservation Officer  
Maine Historic Preservation Commission  
55 Capitol Street  
65 State House Station  
Augusta, ME 04333-0065

Re: Economic Development Administration (EDA) Grant applications  
for The University of Maine, Orono, Maine

Dear Mr. Mohney:

The University of Maine (UMaine) has applied for grants for two projects on their Orono Campus that are in proximity to one another. The EDA has requested UMaine ask SHPO for an updated review letter for this area of campus; the last review was in 2011. Both additions will be connected to existing buildings and built over existing pavement and vegetated areas. They will expand the existing research facilities for these two important research centers at UMaine.

The first project is an addition to Jenness Hall that houses the Process Development Center, a research facility that provides technical services and resources for clients in traditional pulp and paper and in emerging process technologies and materials science. The second project is another addition to the Advanced Structures and Composites Center (ASCC) which is a center for research, education, and economic development encompassing material sciences, manufacturing, and the engineering of composites and structures.

Could you please review the site for any known or suspected resources of historic significance so we can provide this information to the EDA in support of their NEPA process? Please feel free to contact me at (207) 632-5039 or snicholson@woodardcurran.com if you have any questions or need additional information. Thank you for your assistance.

Sincerely,

WOODARD & CURRAN, INC.

Sarah Nicholson, P.E.  
Technical Manager

SSN/

Enclosure(s) Campus Map, Site Sketch

PN: 0230171

**Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.**

Kirk F. Mohney,  
State Historic Preservation Officer  
Maine Historic Preservation Commission

5/16/22  
Date