

PMC-ND  
(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY  
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY  
NEPA DETERMINATION**



**RECIPIENT:** NREL

**STATE:** CO

**PROJECT TITLE:** Research and Innovation Laboratory (RAIL) at the South Table Mountain Campus-NREL; NEPA Tracking No. 20-034

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
	DE-AC36-08GO28308	NREL-20-034	GO28308

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

**CX, EA, EIS APPENDIX AND NUMBER:**

Description:

**DOE/EA-1968 (NREL STM)**      SITEWIDE ENVIRONMENTAL ASSESSMENT, U.S. DOE NATIONAL RENEWABLE ENERGY LABORATORY, SOUTH TABLE MOUNTAIN CAMPUS, GOLDEN, COLORADO

Rationale for determination:

The U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) proposes to design, construct, and operate the Research and Innovation Laboratory (RAIL) at the NREL South Table Mountain (STM) campus in Golden, Colorado.

The purpose of the proposed project is to construct a new research facility with state-of-the-art, highly integrated, interdisciplinary laboratory space. The RAIL would house flexible laboratory spaces capable of supporting active collaboration across many disciplines, including materials science, biological systems science, chemical science, advanced computing, and mechanical, chemical, and electrical engineering. The RAIL facility would be located to the southeast of the Field Test Laboratory Building (FTLB) and to the northwest of the NREL Café.

**RAIL Facility**

The RAIL would be a 15,000 to 17,000 square foot, single story laboratory building and would be up to 36 feet tall. The building would have a mechanical penthouse, parapet wall, and a below-ground crawl space. The RAIL would support 2 to 3 wet chemistry laboratories, hoteling office space, huddle room(s), and restrooms. Building occupancy would range from 30 to 60 workers.

Laboratories would be equipped with standard laboratory equipment and would include walk-in-hoods/enclosures and modular casework with overhead utilities which can be reconfigured as needed. The building would include laboratory support areas for specialized equipment including autoclaves, refrigerators, freezers, and other equipment as needed. The RAIL would have a chemical storage room, a loading dock with outdoor gas storage, a freight elevator, and a nitrogen tank installed on an outdoor pad.

Laboratory utility systems would include: ventilation and other mechanical systems; IT systems; gas distribution and detection; electrical power; and emergency generator backup power. Building infrastructure needed to support the facility include electrical, mechanical/HVAC, hot/chilled water, domestic water, and wastewater. These systems would connect to existing systems on the STM campus: domestic and fire water would connect to the existing water main lines; electrical power would connect to NREL's existing electrical grid; hot/chilled water would connect to the NREL campus loop; wastewater would connect to NREL's sewer lines; and storm water would drain to the central arroyo drainage system. Walkways, access driveways, ramps, fencing, and landscaping would also be installed.

**Future Expansions**

The building would be designed to accommodate a potential future building expansion of 4,000 to 5,000 square feet of additional flexible, modular wet chemistry laboratory space. Additional items that could be added include an expanded outdoor meeting area to the east of the building, expanded ADA paving and building access, and a future gas pad adjacent to the northwest corner of the building. The gas pad would be used for outdoor gas storage. Future expansions would increase the worker occupancy of the RAIL.

**Construction**

The estimated total area of disturbance, including exterior support areas, areas of construction disturbance, and landscaping is approximately 40,000 to 80,000 square feet. (0.92-1.84 acres). Construction laydown and storage

would be located at the surface parking lot to the west of the parking garage and areas immediately adjacent to the construction site and is intended to minimize the overall disturbance of the project. A traffic plan would be developed and implemented to minimize traffic disruption on the STM campus.

#### Operation and Maintenance

Research processes and materials used at the RAIL would be like those already occurring in laboratories on the STM campus. Bench scale research utilizing various organic and inorganic chemicals would be performed, and the types and quantities used would vary depending on the nature of the research being conducted in the building at that time. Research occurring at the RAIL would also include testing various research articles and equipment. Operation of the RAIL would also include routine maintenance and repair of building systems, utilities, and research equipment.

Construction of the RAIL is proposed to begin in September 2021, with project completion in June 2023. The building would be a permanent feature on the STM campus, with a specification of approximately 50 years of useful life. At the end of the building's useful life, it would be remodeled, repurposed, or demolished.

#### Impacts Analysis

All ground disturbance would occur in areas previously disturbed during the development of the STM campus, specifically during the construction of the café and demolition of former parking lots. Construction activities would be conducted in accordance with existing NREL policies and procedures that guide such work. Erosion control measures would be implemented and maintained during construction to minimize any potential erosion and/or stormwater impacts, and in accordance with the EPA Construction General Permit. All disturbed areas would be restored and revegetated as appropriate.

DOE initiated consultation with the Colorado State Historic Preservation Officer (SHPO) on April 16, 2021 per Section 106 of the National Historic Preservation Act for potential impacts to historic properties. The SHPO concurred with DOE's finding of "No Historic Properties Affected" on May 17, 2021.

Construction and operation of the RAIL would increase the use of water at the STM campus. During development of the STM Sitewide Environmental Assessment (DOE/EA-1968), DOE consulted with the USFWS on impacts to Platte River Water depletions resulting from operations at the NREL STM Campus. The consultation process established water usage thresholds for the STM campus. The additional water needed to support the RAIL would not exceed the USFWS consultation threshold.

Operation of the RAIL would increase the use of energy at the STM campus. The design of the RAIL would integrate both the 2016 Guiding Principles for Sustainable Federal Buildings and Smart Lab principles to improve overall laboratory energy efficiency; various control and sensor technologies would be used to minimize the overall use of energy in the facility.

Project activities would not affect threatened or endangered species, wetlands, floodplains, or prime farmlands. A migratory bird nesting survey would be completed if project activities involving ground disturbance occur between March 15 and September 15. If nests or eggs are found, the area would be cordoned off with a proper buffer until nestlings fledge.

The following permits would be required for construction and operation, which would be obtained prior to commencing project activities: EPA Construction General Permit; West Metro Fire Rescue Fire for Life Safety Systems; and Air Pollution Emission Notice to Colorado Department of Public Health and Environment. Additional permits may be needed; if so, all applicable permits shall be obtained prior to commencing project activities.

All waste generated (during both construction and operation) would be reused, recycled, or disposed of in accordance with applicable regulations and NREL policy and procedures. Clean topsoil unearthed from excavation activities would be staged onsite for future use. Mobile air emissions from construction equipment would be short-term and minor and are not anticipated to appreciably contribute to the local load of air pollutants. Construction-related noise would consist of a short-term, intermittent increase in ambient noise levels and would follow applicable noise ordinances.

Individuals working on this project could be exposed to various physical, chemical, and electrical hazards during construction and operation. Existing corporate health and safety policies and procedures would be followed including employee training, work/worker authorization, proper protective equipment, engineering controls, and monitoring, as well as obtaining a Safe Work Permit. Additional policies and procedures would be implemented as necessary if new health and safety risks are identified.

Based on the review of the project, DOE has determined that the proposed project fits within the scope of activities that were analyzed in Section 3.2.1, "Research Activities, Laboratory Activities, and Site Operations Enhancements", of the 2014 Final Site-Wide Environmental Assessment of the NREL STM (DOE/EA-1968). DOE has determined that

the proposed project is bound by the environmental impact analysis contained in this EA and its respective FONSI, and no further NEPA review is required.

#### NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

A migratory bird nesting survey shall be completed if project activities involving ground disturbance occur between March 15 and September 15.

All required permits shall be obtained prior to commencing project activities.

Notes:

NREL  
Nicole Serio, 6/8/2021

#### SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: \_\_\_\_\_

 Electronically  
Signed By: Lisa Jorgensen  
NEPA Compliance Officer

Date: 6/8/2021

#### FIELD OFFICE MANAGER DETERMINATION

- ☒ Field Office Manager review not required  
☐ Field Office Manager review required

#### BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: \_\_\_\_\_

Field Office Manager

Date: \_\_\_\_\_