NREL Adds Lab Space With New Building, Preps Other Projects

May 23, 2023 | By Wayne Hicks | Contact media relations

U.S. Secretary of Energy Jennifer Granholm (center) cuts the ribbon during a ceremony for NREL's newly constructed Research and Innovation Laboratory (RAIL) building in Golden, Colorado. Accompanying her in the front row are (from left) NREL Director Martin Keller, U.S. Senator John Hickenlooper, Colorado Governor Jared Polis, and Brian Holland, director of business development for M.A. Mortenson Company, which did the construction on the building. *Photo by Werner Slocum, NREL*

The sprawling campus of the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) is dotted with buildings dedicated to the many sciences needed to power the country's push toward clean energy.

Researchers inside one building explore the dynamics of harnessing the sun for energy. Those in another are determining the best ways to convert biomass into sustainable aviation fuel. In still another, scientists explore the pathway to integrating various technologies onto the nation's electrical grid.

Even with the many laboratories inside all these buildings, space is at a premium.

Now, with a snip of an oversized ceremonial pair of shears, a new phase has begun for NREL.

The ribbon-cutting by Energy Secretary Jennifer Granholm and Colorado Gov. Jared Polis marked the official opening of NREL's newest building, the Research and Innovation Laboratory (RAIL). RAIL, which will house multipurpose lab space, is the first laboratory building to open at NREL's Golden, Colorado, campus since the fall of 2013.

The opening dovetails with the Biden-Harris administration goals of having the nation powered by 100% clean electricity by 2035 and reaching net-zero carbon emissions by 2050.

"NREL, with its goals of getting to net zero, is amazing," Granholm said. "We have real-world impacts that come out of this lab, and it's only getting better thanks to the expansion that we're here to celebrate."

The addition of RAIL will fill a need on campus, that of not having enough “wet” lab space where chemistry experiments can be performed.

“We actually have curtailed our research activities as a function of not having that wet lab space,” said Dan Beckley, NREL’s associate laboratory director for Facilities and Operations.

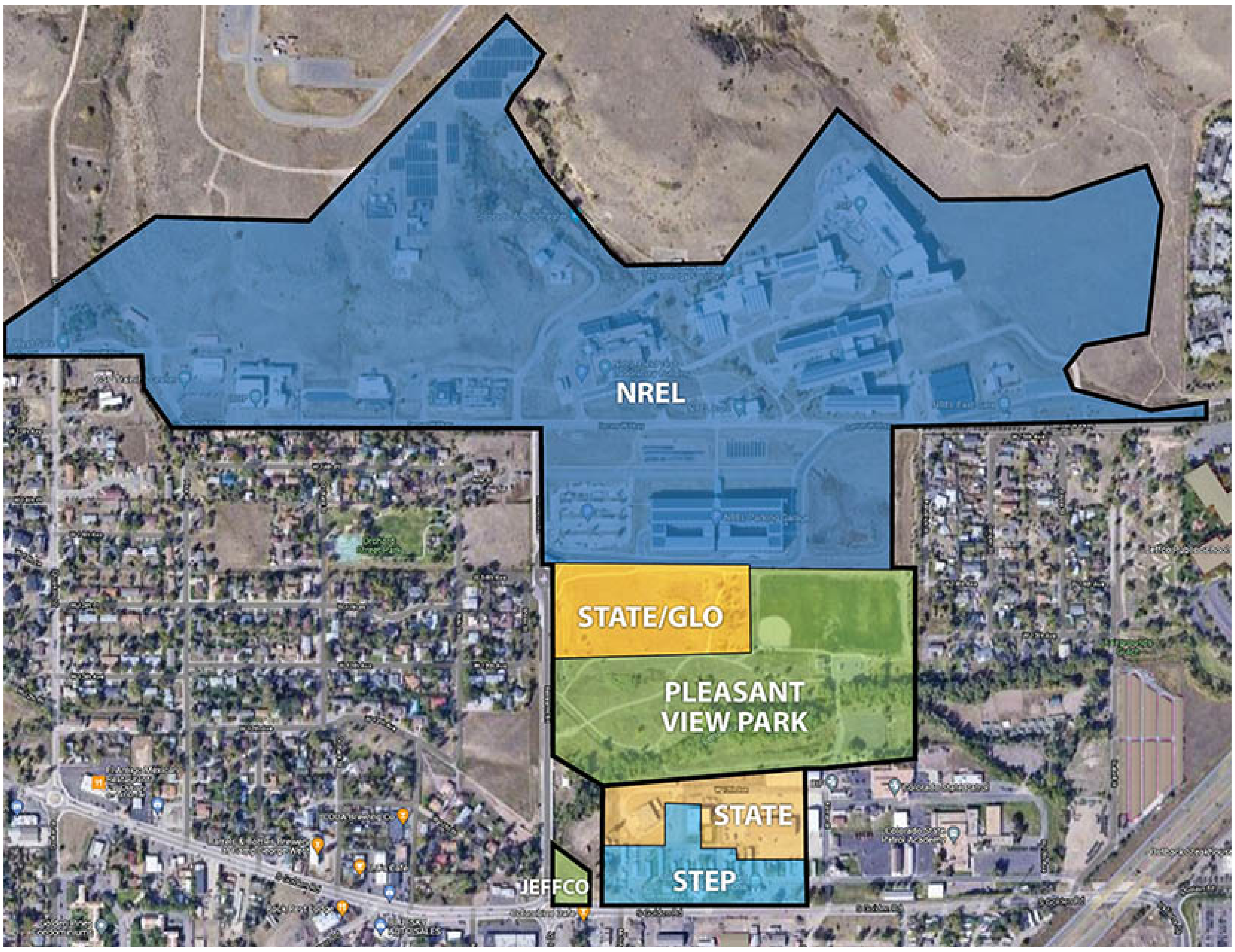
Adding about 15,000 square feet to the Golden campus, RAIL will help alleviate the problem. The facility is designed for ease of expansion to the north with the ability to add more wet lab space in the future. On a 178-acre campus dotted with research buildings devoted exclusively to a single field—batteries, biofuels, and solar, to name a few—RAIL will provide space for collaboration. Research efforts within RAIL will focus on plastics upcycling, next-generation batteries, and advanced energy materials.

“We have never had a lab envelope so big that it could entertain a collaboration exchange. Most of the time, those labs are very limited,” said Michelle Slovensky, the [Intelligent Campus](#) program manager at NREL. “This is unique, and we're going to see what that exchange produces.”

Land Swap Opened Doors to STEP

RAIL is not the only change happening at NREL. A land swap with the state of Colorado earlier this year gave the Department of Energy another 6.6 acres south of the existing campus. Once known as Camp George West, the Camp George West area was originally used 120 years ago as training grounds for the Colorado National Guard. The portion of Camp George West acquired under the land swap was most recently a correctional facility.

Renovations will transform the property into the South Table Mountain Energy Park (STEP). Initial tenants will be employees of NREL, such as Facilities and Operations staff. Work will be undertaken to renovate the interiors of the 26 buildings, upgrade all utilities, and prepare spaces for research purposes. STEP will eventually become home to NREL’s Innovation and Entrepreneurship Center and Net Zero World Action Center.



The planned Glo Park will be immediately south of the NREL campus, while STEP is further south. *Image from NREL*

Sandwiched between STEP and NREL’s main campus will be the state of Colorado’s Global Energy Park (Glo Park), an undeveloped parcel that is expected to become home to young companies working in the clean technology space. The state of Colorado swapped land with Jefferson County to acquire the parcel. Development of the site will start later this year with a projected opening date in early 2026.

“As its name implies, this state-of-the-art facility will be a global destination,” said NREL Director Martin Keller. “I am very much looking forward to the new partnerships it will create, as well as the collaborations that will become deeper with proximity.”

“The big vision from the governor to Martin to the federal government is they are trying to create this cleantech center, similar to that of a Silicon Valley,” Beckley said. “They’re trying to put a mark on the map that this is the go-to place for clean energy.”

Slovensky said she envisions this clean energy center with NREL as the epicenter and its influence radiating outward with job creation and workforce development all part of the process. Young companies will be able to graduate from the incubator nursery at STEP to lease space at Glo Park.

“There are so many collaborators that want to sit with us in our labs, and we can’t afford to do that because we have to serve our own researchers first,” Slovensky said. “The fact that they can reside in Glo Park and come up the hill, if you will, or go down to STEP, it gives them a home within the energy ecosystem.”

IRA Funds Financing NREL Projects

On the NREL campuses, many of the various projects already underway and on the drawing board are funded by $150 million in funding allocated by the federal Inflation Reduction Act (IRA). The funding will support 19 projects, from renovations within existing buildings to ground-up construction on new facilities, between the South Table Mountain Campus in Golden and the Flatirons Campus near Boulder. The money has been earmarked this way:

- $93 million for modernizing research infrastructure
- $51 million for laboratory renovations and deferred maintenance
- $6 million for project management including planning, execution, and oversight.

A sizable investment will be made to the Integrated Biorefinery Research Facility (IBRF), located near the western edge of the Golden campus. Home to research into biofuels, the 75,930-square-foot building saw the addition of the North High Bay in 1994 and the South High Bay in 2010. The modernization project will see the older addition gutted and remodeled and research capabilities expanded.

“We’re putting about a $20 million refurbishment into that facility, and it's going to give us the ability to use a wider variety of feedstocks and produce a wider array of fuels and chemicals,” said Adam Bratis, the associate laboratory director for Bioenergy Science and Technology.

Researchers at the IBRF previously were limited to using corn stover and other agricultural residues for their feedstock, which in simple terms yields sugars that are then fermented and produce ethanol.

“Now we’re opening up to a bunch of other feedstocks,” Bratis said. “We can use plastics. We can use CO_2. We can use waste materials. We're going to have the ability to use all kinds of waste carbon sources as our feedstocks to make fuels and chemicals and will have the increased biosafety level requirements to do that.”

Additionally, the renovations will enable production of a wider array of finished fuels and chemicals than what NREL can produce today. Specifically, the laboratory will have the capability to use hydrogen in the facility and make flammable products such as on-spec sustainable aviation fuel and other industrially relevant fuels and chemicals in sufficient amounts to be tested in downstream applications including aircraft engines.

Tom Foust, director of the National Bioenergy Center at NREL, said the renovation will also give the laboratory the opportunity to replace what is now outdated equipment.

“As a national lab, you have got to have the latest and greatest facilities,” he said. “You just can’t be at the cutting edge of science if your facilities are outdated. To our credit, we did as good as we could, but a 30-plus-year-old facility is not really at the cutting edge of research.”

This aerial view looking northeast shows NREL's South Table Mountain Energy Park (STEP) campus. *Photo by Joshua Bauer and Bryan Bechtold, NREL*

Additional Buildings On Drawing Board

"Every campus has an evolution, and the needs grow," Slovensky said. "Think about cybersecurity. Advanced materials. Along the path you discover where you had gaps in research, and then you need more space to be able to complete that."

NREL is already planning another new building, although the proposed Energy Materials and Processing at Scale (EMAPS) facility is still in the earliest stages. Anticipated to measure 120,000 square feet and cost $165 million, EMAPS is likely to be built on the east side of the campus. The building is expected to be ready in three years. The new laboratory space is designed to help researchers minimize barriers to technology scale-up for new energy materials, processes, and devices for market.

About 25 miles north of the Golden campus, the NREL Flatirons Campus is preparing additional facilities as well. The 305-acre site once known as the National Wind Technology Center has expanded its capabilities beyond harnessing power from breezes. Research underway there involves renewable energy produced from solar and water as well as from wind. Flatirons is also home to the research platform known as ARIES, which stands for Advanced Research on Integrated Energy Systems. Among its other capabilities, ARIES allows researchers to explore how the continual connection of new devices will affect the electrical grid.

Construction is expected to start later this year on a Control Center facility, an 8,000-square-foot structure that will become the centerpiece of the campus upon completion in 2025. NREL is also adding a water line connecting the campus to a public water supply, which will end the need to truck water in. This will enable the Flatirons Campus to continue to grow and support more research work involving hydrogen.

"The Department of Energy's Flatirons Campus investment is making it possible to continue to expand our scientific research into the reliability of scaling variable renewable energy resources, energy storage systems, transportation electrification, hydrogen technologies, building and industrial decarbonization, and new energy management systems and controls," said Johney Green, associate laboratory director for Mechanical and Thermal Engineering Sciences.

"Our researchers need an integrated platform to conduct real-time, large-scale simulations and demonstrations," Green said. "The expansion of the Flatirons Campus provides the facilities and infrastructure needed to help our nation meet its energy decarbonization goals."

GOLDEN TRANSCRIPT
(/)

GOLDEN TRANSCRIPT

Jeffco Commissioners approve rezoning for 353-unit development in Golden

Concept Site Plan

Site Area	14.4 acres
Apartments	283 units
Townhomes	70 units
Total Residential	353 units
Commercial/ Retail	20,000 SF
Outdoor Event Space	12,300 SF
Naturalized Green Space	32,990 SF

(/uploads/original/20230125-173828-JT_0202_Golden rezoning - CMYK.JPG)

The current concept site plan for the development off South Golden Road in Golden by development company REVA.
IMAGE COURTESY OF JEFFERSON COUNTY

Posted Monday, January 30, 2023 12:53 pm

Andrew Fraieli (http://coloradocommunitymedia.com/detail.html?sub_id=4276d0efab)
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Jefferson County Commissioners have unanimously approved the rezoning of five plots of land in Golden that was needed to allow construction of a 353-unit, mixed-use development off South Golden Road to begin.

The site is being developed by Chicago-based company REVA — which has developed other sites in the metro area such as Avere on the High Line — east of the King Soopers on the northern side of South Golden Road.

The 14-acre site is expected to be split into two parts, said Matthew Nix, a managing partner of REVA, at the commissioners meeting on Jan. 24.

The northern portion of the site, closest to the neighborhood of single-family homes, will have residential including more single-family homes, duplexes and townhomes, with a maximum height of 40 feet. The southern portion is expected to have an apartment complex with a max of 300 residents, 60 feet in height, and commercial space on the ground floor facing South Golden Road.

“It's attainable housing, and it's really offering a broader array, broader spectrum of housing options,” Nix said in response to a commissioner's question about affordability. He continued that they were aiming for 80% to 120% of area median income, with the median household income in Golden being $83,976 in 2021.

Dozens of residents spoke against the development at public comment in the meeting, citing issues with the height of the buildings, city infrastructure's capability to host the extra traffic, the development not fitting the “character” of the community and issues with there being renters in the community at all.

Astrid Makowitz spoke against the development in public comment, believing, “instead, I think commercial zoning with single-family homes helps attract the type of people we want in our community.”

Makowitz was not alone. Deborah Myer believed renters would come and go with no investment in the community.

Matt Burde was the only resident to speak in any form of support for the project, speaking specifically in defense of renters, citing the community garden he started in 2009 and how its current leader is a renter in Jefferson County.

“In 15 years of running a community garden, everyone there is a rente
They can come and go, they could be gone next year, and they're phe

Other resident complaints were with the shadow potentially caused by
explained in the meeting would mainly fall upon itself.

Nelson continued that local public schools informed the county they would have excess capacity even if the rezoning was approved for the development and that the development is not proposing any deviations from zoning resolutions about light pollution.

One resident stated there was no enforcement for what the developers promised to do — such as utilizing plantings typical of wetlands to offset the wetland area displaced by the development. Nelson said that was false.

“If (the developers) come in for a site development plan with 354 dwelling units, we’re going to come back here and see you again because we have to rezone that property to allow 354 dwelling units instead of 353,” he said. “Anything that’s not listed in that official development plan, the applicants can’t do. That’s what they are held to.”

In terms of traffic, Christina Lane, senior transportation planner for Jeffco transportation and engineering, rebutted resident complaints that intersections were failing — calling it an “inaccurate statement” — and that traffic would become worse.

She explained that ways to mitigate the traffic had already been found through a traffic study “to make sure that the traffic can operate at an acceptable service.” Part of that mitigation includes adding more lanes to roundabouts on Ulysses, Quaker and Moss, with a roundabout being designed for the front of the site on South Golden Road as well.

Nelson also made the point that the next phase — site development — will include further research and more detailed studies, such as on the infrastructure to make sure the architecture in the site meets expectations from the county. It will include the fire department checking if their trucks can make all turns in the site and reach all buildings, creating plans for the water district, checking drainage grading, and doing a more complex traffic analysis.

Keywords

jeffco, golden, development, rezoning

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Dennis Ridsdale

This project is in Pleasantview not Golden.

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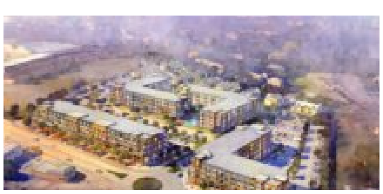
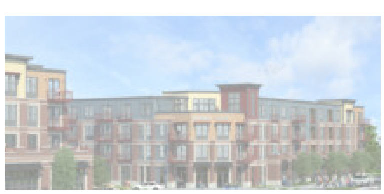
Duty. Dedication. Sacrifice. Those words describe the firefighters who worked to save Americans after the terrorist attacks on New York City, at the Pentagon and in Pennsylvania on Sept. 11, 2001.

REVA Development Partners, LLC

AVERE ON SOUTH GOLDEN Golden, Colorado





OVERVIEW

Project Type:
Multifamily & Retail

Project Stats:
14 acres, 359 units

Product:
Rental apartments, townhomes and street-level retail along South Golden Road

Completion:
Construction is expected to begin in Q4 2023 with completion in Q4 2025.

TEAM

Developer(s):
Developer: REVA Development Colorado

Architect(s):
Architect: BSB Design & Lakota Group
Engineer: Baseline

- **AVERE on South Golden** is an approved 359-unit purpose built rental apartment and townhome development in Golden, CO. REVA will redevelop five contiguous parcels totaling 14 acres located just east of the city limits of Golden, CO, along South Golden Road. REVA is currently in for zoning approval with Jefferson County to rezone from a combination of R-2 (single family residential) and C-2 (Commercial) to High Density Multifamily/Mixed Use PUD.
- The development plan proposes 286 apartment units within two mixed-use apartment buildings and 76 rental townhomes backing to the residential uses on the north end of the site. There will also be a combination of project amenities, retail, and commercial space within the two mixed-use buildings along South Golden Rd and an extensive mix of public and private outdoor amenities (pool, green space, gathering areas) within the community.
- The Golden, CO multifamily submarket has seen relatively little new supply during the most recent wave of multifamily development despite very high demand due to its coveted location close to the mountains. In addition to addressing the lack of supply of traditional apartment units, the for-rent attached single-family product we're offering is a great long-term solution for renters given the increasingly relevant benefits of direct-access garages and entrances, larger units with quality living spaces/finishes and room for a home office, and no enclosed common spaces.
- In addition to limited new supply the Golden submarket, there are many demand drivers in the immediate area including:
    - Close proximity to NREL (National Renewable Energy Laboratory) and the newly announced GLO Park

Engineer: Baseline Engineering

(globalenergypark.com) which is set to commence construction in Q3 2023.

- Immediate access to countless outdoor activities including hiking, biking, fishing, camping, horseback riding, and golf.
- Cost prohibitive for-sale housing.
- Adjacent to I-70 for easy access to the mountains and various ski resorts.
- Close proximity to Colorado School of Mines, a public research university focused on science and engineering (6,000+ students).
- Strong drive-by traffic along S Golden Road with significant retail presence just NW of the site.
- Close proximity to downtown Golden and easy access to downtown Denver
- High concentration of employment nearby

REVA Development Partners LLC
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CONSTRUCTION DEVELOPMENT HOSPITALITY MULTIFAMILY

$35M GW Mixed-Use Development Opens in Golden

milehighcre — August 30, 2023

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A corner view of GW mixed-use development in Golden, courtesy of Confluence Companies.

Colorado-based Confluence Companies announced that leasing and sales efforts are underway for the $35 million GW mixed-use development in Golden. Designed by Craine Architecture, GW (which stands for “Going West”) includes 86 residential units, four of which are live-work spaces. Leasing starts at $2,137 per month for residential units. Of the 9,000 square feet of commercial space, only 2,200 square feet is still available for sale. Pancho & Jane, a 2,200-square-foot taco restaurant, managed by CoralTree Hospitality is planning to open in early 2024.

CoralTree currently manages The Eddy Hotel & Taproom, another Confluence Property, which is also located in Golden. The team from The Eddy recently won the “Denver Top Taco” competition’s Judges’ Choice award. This accolade is part of the inspiration for Pancho & Jane.

“Golden is a tremendous, well-established community with a rich Colorado heritage that gives the people who live and work here the ability to ‘have it all,’ ” said Matt McBride of Confluence Companies. “GW will provide access to Golden’s vibrant community and natural outdoor playground. It will feature timeless architecture, luxury finishes and plenty of options including one-, two-and three-bedroom units and live-work spaces. We’re very proud of this development and our ability to deliver it to the people and businesses who want to be in Golden.”

Interior features include luxury 1, 2, & 3-bedroom units, dramatic 9’ ceilings, full-size washers and dryers in all units, spacious walk-in shower or soaker bathtub, and expansive walk-in closets, patios and balconies in select units.

Community features include a 24-hour fitness center, resident parking garage, a clubroom featuring beer on tap, roof-top view lounge, onsite restaurant, and an onsite dog park.

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