

Senator Heinrich FY21 NDAA Provisions

New Mexico Space Missions

Small Satellite Manufacturing and Innovation Center

Provides \$3 million to support follow-on funding for a Small Satellite Manufacturing and Innovation Center in Albuquerque that would be accessible by government agencies and cleared industry partners. New Mexico is home to leading small satellite innovators and critical space acquisition agencies for the federal government. The center will establish a manufacturing environment that encourages collaboration between industry, academia, and the government and will include a shared satellite prototyping and software laboratory that enables access to capital equipment, industry, academia, and government with classified meeting capabilities. Senator Heinrich and Senator Tom Udall secured funding in last year's defense spending bill to begin preliminary design work for the Center.

Supporting Small Satellite Industry

Senator Heinrich supported an increase of \$10 million aimed at supporting the small satellite industrial base throughout New Mexico and the country. The targeted increase over the funding level requested by the Trump administration is aimed at taking advantage of the revolution in commercial space innovation by seamlessly integrating small satellite capabilities with existing and future government space systems. This blending of government and commercial capabilities is referred to as "hybrid space architecture" and will enable new capabilities to be added quickly, affordably, and in large numbers to improve U.S. resiliency in space.

Small Satellite Mission Operations Facility

Senator Heinrich secured \$3 million for the establishment of a Small Satellite Mission Operations Facility in Albuquerque. The number of national security and commercial small satellites in orbit has dramatically increased over the past several years, and that number is expected to grow exponentially in the coming decades. Currently, each small satellite program must invest in a mission operations capability charged with controlling the satellite and ensuring deconfliction in space. This amendment provides funding to provide small companies in New Mexico and their government customers with a cost-effective way to operate their satellite platforms at all classification levels.

Tactically Responsive Space Launch

Senator Heinrich supported the inclusion of a provision requiring the Secretary of the Air Force to implement a program aimed at making space launch more adaptable and responsive to changing national security requirements. The Tactically Responsive Space Launch program will develop tactics, training, and procedures needed to ensure space launch mission assurance in a rapidly changing threat environment. The conferenced NDAA included \$5 million for this critical program.

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Maintain the Independence of the Space Rapid Capabilities Office

Senator Heinrich included a provision in the Report that accompanied the Senate-passed NDAA that recognized the independent nature of the Space Rapid Capabilities Office (Space RCO, located at Kirtland Air Force Base). Senator Heinrich led an effort in the Fiscal Year 2018 National Defense Authorization Act to establish the Space RCO as an independent organization with unique acquisition authorities and a direct reporting chain to the Secretary of the Air Force. These characteristics have enabled the Space RCO to push the bounds of performance rapidly develop and field space capabilities at the best cost to the taxpayer.

Establishment of the Space Training and Readiness Command

Senator Heinrich led a provision included in the Report that accompanied the Senate-passed NDAA that encourages the Space Force to establish a Space Training and Readiness command. New Mexico, already a leader commercial and defense-oriented space innovation, stands to benefit from the establishment of the Space Force. As the new service continues to organize, this provision calls for the stand up of a Space Training and Readiness Command – similar to the Army’s Training and Doctrine Command – that would focus on space training and education, space warfighting concepts, and overall readiness. The provision further calls for the command to be placed in an area of the country resembling Albuquerque – one with proximity to leading space acquisition and management directorates and leading space industry partners.

Satellite Power Sourcing

Senator Heinrich included a provision also in the Senate Report that directs the Secretary of Defense to outline the vulnerabilities and risks associated with foreign sources of satellite solar power technology and provide a set of recommended investments, policy changes, or other steps deemed appropriate to support this segment of the national security space industrial base. The provision responds to concerns that U.S. adversaries may be subsidizing satellite power sourcing technology as part of an effort to ensure their components are installed on U.S. national security satellites. Such critical components have the potential to disrupt national security satellites while in orbit. New Mexico is home to several companies leading the way in this important satellite technology.

Addressing Satellite Cyber Vulnerability

Senator Heinrich secured a provision in the Senate Report that would require the Air Force to provide a briefing on the cyber vulnerabilities of the Air Force’s Satellite Control Network which commands and controls a large array of national security space satellites. The network which was first deployed in the 1970s, well before there was a full understanding of the current cyber threats and necessary cyber security protections.

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New Mexico Test Range Infrastructure

Directed Energy Test Range Infrastructure

Senator Heinrich secured \$15 million for White Sands Missile Range in order to improve infrastructure needed to accommodate the increase in demand for directed energy testing workloads. A lack of funding for increased directed energy testing is a serious issue, given that the workload and number of directed energy demonstrations and exercises have increased significantly since 1975. The projected directed energy workload for the coming years is growing, and has expanded to include high-powered microwave testing. Yet, for the ranges to meet this demand has remained flat. Senator Heinrich secured the funds necessary to meet the growing demand and support the appropriate test workloads.

Establishment of Additional Joint Electronic Warfare Training Ranges

Senator Heinrich secured a requirement in the Senate Report for the Secretary of Defense to develop a plan to establish one or more Joint Electronic Warfare (EW) Training Ranges. The military services use EW ranges to rapidly test and field new weapons systems and better understand how they would perform in a combat environment. Increased demand and spectrum encroachment at current EW training ranges have rendered these facilities inadequate to meet the needs of the department's EW test and training workload over the next several years.

The Air Force currently conducts EW training and testing at the Playas Training and Research Center in Playas, New Mexico. The Playas range stands to benefit from new designations of EW training ranges which could bring additional resources to Southwest New Mexico.

Inland Spaceport Utilization and Improvements

The Report that accompanied the Senate-passed bill included language offered by Senator Heinrich that encourages the military services, in coordination with the Department of Defense's Test Resources Management Center, to invest in the testing infrastructure that will be necessary to ensure inland spaceports like Spaceport America have the capability and capacity to test the military services' next generation technologies. Inland spaceports have several important benefits for military testing including their remote location for sensitive national security missions.

New Mexico Air National Guard

Increase Air Force Utilization of 150th Special Operations Wing

The Senate Report also included language that requires the Secretary of the Air Force, in consultation with the Chief of the National Guard Bureau, to report back to the committee with a plan to better utilize Air National Guard assets like the 150th Special Operations Wing stationed at Kirtland Air Force Base.

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New Mexico is one of three states – New Mexico, Virginia, and Washington – that have an operational flying mission, but due to the classic associate construct they lack ownership of aircraft. The Air National Guard enterprise is based on established Capstone Principles that notionally set the foundational framework for mission allocation in the 54 states and territories. One of those Capstone Principles is to allocate at least one unit-equipped wing and flying squadron to each state.

The New Mexico congressional delegation is dedicated to working with the Air Force and the National Guard Bureau to ensure a unit-equipped flying squadron for the New Mexico Air National Guard (NMANG). New Mexico's outstanding flying weather, airspace and ranges around Kirtland Air Force Base (KAFB) offer excellent training capabilities. KAFB's location in central New Mexico allows for important co-training opportunities with Cannon and Holloman Air Force Bases, White Sands Missile Range, and Fort Bliss, Texas. Having hosted aircraft for decades, appropriate infrastructure such as runways and hangars are already in place that can save taxpayer dollars and accommodate additional aircraft.

New Mexico's National Laboratories and WIPP

Los Alamos National Laboratory (LANL) Environmental Cleanup

Senator Heinrich secured an increase of \$100 million above the president's request for soil and water remediation and removal of legacy radioactive waste at LANL. The president's FY21 budget had proposed cutting funding for LANL cleanup from \$220 million this year to only \$120 million for fiscal year 2021. Restoring full funding will assure there are no delays in completing important cleanup milestones, including ongoing remediation of the hexavalent chromium and RDX plumes in groundwater in Los Alamos.

NNSA Laboratory Directed Research and Development (LDRD)

Senator Heinrich supported a legislative provision in the bill that extends for five additional years a suspension of the overhead burden on NNSA labs for LDRD that currently double-taxes Sandia National Laboratories and Los Alamos National Laboratory. LDRD is a strategic research and development program that is critical to maintaining the scientific vitality of the national laboratories. In last year's NDAA Congress suspended the overhead burden on the labs' LDRD through the end of fiscal year 2020.

Funding for New Mexico's National Security Laboratories

Senator Heinrich supported full funding authorization for the NNSA's nuclear weapons and security programs. For fiscal year 2021, the bill authorizes \$2.6 billion for Sandia National Laboratories, an increase of \$330 million over fiscal year 2020. For Los Alamos National Laboratory, the bill authorizes FY21 funding of \$3.22 billion, up from \$2.3 billion in fiscal year 2020. Within NNSA's funding, Senator Heinrich supported full

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funding of \$2.7 billion for modernization of the stockpile, including Life Extension Programs as executed by Sandia and Los Alamos National Laboratories. The increase of \$550 million over FY20 for modernization will maintain the existing weapons stockpile and assure its safety and security.

Los Alamos National Laboratory's Plutonium Mission

Senator Heinrich again supported full funding to secure Los Alamos National Laboratory's (LANL) role as the nation's Center of Excellence for Plutonium Research. The bill authorizes \$1.1 billion for LANL's ongoing plutonium operations and pit production programs. The funding supports personnel, equipment and other activities at LANL to meet pit production requirements by 2026; highlights include, \$611 million for plutonium operations, \$226 million to support pit production, \$30 million to construct new fire-control panels in PF-4, \$27 million for fire protection and equipment, power and communications improvements in PF-4, \$37 million for a new transuranic liquid waste handling and \$169 million for upgrades related to replacing the outdated Chemistry and Metallurgy Research (CMR) building at LANL.

Emergency Operations Center for Sandia National Laboratories

Senator Heinrich supported second-year funding of \$36 million for a new emergency operations center at Sandia National Laboratories (SNL). The construction project will provide a new 24,000-31,000 square foot facility to improve the labs' ability to respond to emergencies and provide emergency assistance so that appropriate response measures and notifications are taken to protect workers, the public, the environment, and national security. Emergency Response Operations at SNL are currently housed in the basement of a substandard facility built in 1949. Construction is expected to begin next year and take two years. The full cost of the project is \$40 million.

Waste Isolation Pilot Plant (WIPP)

The bill authorizes full funding of \$390 million to operate the Waste Isolation Pilot Plant (WIPP) to support disposal operations, regulatory and environmental compliance actions, the Central Characterization Project, transuranic waste transportation capabilities, and continued progress on repairing or replacing infrastructure, modernizing underground equipment to zero-emission battery-electric vehicles or very low emission Tier IV Final diesel powered equipment. The authorization includes \$22 million for critical infrastructure repair and replacement projects and line-item funding for two capital asset projects: \$50 million for a new utility shaft and \$10 million for a new project to expand underground hoisting capability.

Preserving DOE's Budget Planning Authority

The conference agreement removed provisions from the Senate's original bill that would have stripped the Secretary of Energy of the ability to manage preparation of DOE's annual budget request for nuclear security programs, including New Mexico's two national labs. Such sweeping changes could impact civilian control of our nation's

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nuclear weapons programs and limit Congressional oversight. The proposed transfer of DOE's annual budget planning to DoD could also imperil future funding for other critical DOE responsibilities such as WIPP operations and ensuring cleanup of the nation's nuclear weapons complex.

Independent Cost Estimating and Reviews for all New Nuclear Weapons Systems

Senator Heinrich secured an amendment that will require NNSA to submit to Congress an independent cost estimate at each phase of development for any future nuclear weapons system. Independent cost reviews at each stage, from feasibility through initial production, provide additional transparency, improve efficiency, and reduce costs. The required cost estimates will be prepared by an organization independent from NNSA's program managers and the national security laboratories.

Defense Nuclear Facilities Safety Board

Senator Heinrich supported the full funding request of \$28.8 million for the independent Defense Nuclear Facilities Safety Board (DNFSB) to support 114 staff members, including two resident inspectors based in New Mexico. Congress created the DNFSB in 1988 to provide oversight of public health and safety at the defense nuclear facilities managed by the Department of Energy, including Los Alamos and Sandia National Laboratories and WIPP. The bill also clarifies the board's statutory responsibility for oversight, including full access to all DOE defense nuclear facilities, and directs DOE to work with the board to improve the interface between the agencies.

Non-Department of Energy Items of Interest to New Mexico

DoD Energy Siting Clearinghouse for Wind and Solar Power

Senator Heinrich championed a provision that clarifies the notification requirements for DoD's Siting Clearinghouse, which must review and approve plans for all wind energy projects to prevent impairment of military operations. The Heinrich provision ensures that if DoD's Siting Clearinghouse determines that a proposed energy project will not have an adverse impact on military readiness, the Clearinghouse will promptly notify the project developer and the governor of the state in writing. The amendment will help improve coordination among the different federal and state-government entities that oversee siting of energy projects. Reducing or eliminating any potential impact of energy projects on military radar, training or operations will help protect the missions of New Mexico's Air Force Bases and the White Sands Missile Range.

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Artificial Intelligence

The FY21 NDAA includes the most significant advancements for Artificial Intelligence (AI) ever included in a defense policy bill. The NDAA authorizes versions of four major pieces of legislation championed by Senator Heinrich. Specifically, the bill includes:

Artificial Intelligence Initiative Act (AI-IA)

The FY21 NDAA includes a modified version of the Artificial Intelligence Initiative Act (AI-IA) aimed at bolstering U.S. leadership in Artificial Intelligence (AI) research and development. Senators Heinrich and Rob Portman (R-Ohio) introduced the original bill (S.1558) in 2019. The AI-IA included in the NDAA will stand up a National Artificial Intelligence Initiative Office to coordinate ongoing AI R&D and demonstration activities among civilian agencies, DOD and the Intelligence community. The bill also establishes the National Artificial Intelligence Advisory Committee to provide expert advice to policymakers and the Initiative Office. The legislation will also task the National Science Foundation with examining how the present and future U.S. workforce can better prepare for and integrate AI systems. Finally, the bill authorizes nearly \$400 million over the next five years to enable the National Institutes of Standards and Technology (NIST) to advance collaborative frameworks, standards, guidelines, and associated methods and techniques for AI and to support the development of technical standards and guidelines that promote trustworthy AI systems.

Artificial Intelligence for the Armed Forces Act

The conferenced NDAA included two provisions part of S. 3965, the Artificial Intelligence for the Armed Forces Act of 2020, co-introduced by Senator Heinrich. The bill is aimed at advancing the Department of Defense's Artificial Intelligence capabilities. Specifically, the provisions will:

- Add an additional examination to the Armed Services Vocational Aptitude Battery (ASVAB) test to better recognize recruits with exceptional computational skills relevant to military applications. Every potential recruit must take the ASVAB test before being accepted into the Armed Services, this provision will help ensure that these valuable skills are part of recruiting the best and brightest minds in AI from around the country.
- Require the Secretary of Defense to provide guidance on the use of existing direct hiring processes for artificial intelligence professionals and other data science and software development personnel. Existing direct hiring authorities enable the Department of Defense to onboard talented, in-demand AI professionals quickly.

National AI Research Resource Task Force Act

The bill also includes a version of the National AI Research Resource Task Force Act (S. 3890) originally introduced by Senators Heinrich and Portman. The provision in the FY21 NDAA will establish a task force to develop a detailed roadmap for the development of a national cloud computer for Artificial Intelligence (AI) research. The cloud would give researchers and entrepreneurs around the country access to

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supercomputing capability once reserved only for national laboratories and universities – democratizing a critical component for AI R&D. Specifically, the legislation will convene a group of technical experts across academia, government, and industry to develop recommendations for how the United States can build, deploy, govern, and sustain the national research cloud.

Deepfakes Report

The conferenced NDAA includes a version of S. 2065 originally introduced by Sens. Heinrich and Portman. The provision in the FY21 NDAA requires the Department of Homeland Security to report on the state of digital content forgery technology – commonly known as “deepfakes”. The report will include an assessment of the underlying technologies used to create or propagate such forgeries and an assessment of how foreign governments, and the proxies and networks thereof, use (or could use) deepfakes to harm U.S. national security.

National Artificial Intelligence Research Institutes

Finally, the FY21 NDAA authorizes the National Science Foundation to establish a program to award financial assistance for the planning, establishment, and support of a network of institutes focused on multidisciplinary AI applications. Specifically, the institutes will work to develop AI-enabled economic and social sector advancements in the areas of health, education, manufacturing, agriculture, security, energy and environment. Importantly, the institutes will also work on cross-cutting challenges for AI systems including trustworthiness and foundational science.

New Mexico Innovation

3-D Printed Electronics Army Innovation Hub for Next Generation Additive Manufacturing

Senator Heinrich secured an additional \$2 million for additive manufacturing (AM), which is already making innovative technological leaps that could yield major advances in more lethal and longer-ranged fires. New Mexico Tech and University of Texas at El Paso are leading entities in 3-D printing. This technology can combine existing and new materials into 3-D printed circuit architectures, producing smarter, lighter, and denser constructs to enable projectiles to double current ranges while achieving higher precision.

Counter-UAS Technology

Senator Heinrich secured a provision in the Senate Report requiring the Secretary of the Army to provide a briefing on the advances in imaging sensors, stabilization components, microelectronics, and lasers that make it easier to track and target unmanned aircraft systems (UAS) operated by our nation’s adversaries. New Mexico is home to companies that specialize in the research and development of

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compatible stabilized gimbal systems that are capable of providing target detection, identification, and designation.

Counter-Drone Center of Excellence

Senator Heinrich included a provision in the Senate Report that encourages the Department of Defense to establish a counter-drone center of excellence. Currently, the nation faces a shortage of engineering graduates with the skills, clearances and education necessary to work on counter-UAS technology. Each military service is pursuing counter UAS research, development, test, and engineering activities that are independent of each other creating a need for a core team to bring all the efforts and partners (academic, industrial and government) together. The center would provide a centralized planning hub to better utilize scarce human and financial resources.

Classified Workforce

Senator Heinrich included a requirement in the Senate Report for the Secretary of Defense to provide a briefing on how it can partner with Hispanic-serving, land-grant institutions to create a talent development program that provides experiential learning through internship programs and co-op programs with the military services and the Department of defense. The briefing will include information on how such programs can include pathways for security clearances that would serve both DoD and the students upon their entry into the workforce.

New Mexico Military Construction Projects

Defense Threat Reduction Agency

The FY21 NDAA includes over \$46 million in military construction funding for a new administrative building for the Defense Threat Reduction Agency (DTRA). DTRA enables the Department of Defense to prepare for and combat weapons of mass destruction and improvised threats and to ensure nuclear deterrence. The construction project on the grounds of Kirtland Air Force Base will take several years and will bring considerable engineering and construction jobs to the Albuquerque area.

Holloman Air Force Base MQ-9 Training Facility

Senator Heinrich included language in the Senate Report that encourages the Air Force to move forward with the construction of a new, \$85 million military construction project that would host a Formal Training Unit (FTU) for MQ-9 unmanned aerial vehicle (UAV) operators. Last year, the Trump administration transferred over \$3 billion in military construction funding, including all funding for the Holloman MQ-9 facility, to finance the costly and ineffective wall along the Southwest border. The current Holloman FTU trains 100 percent of our nation's MQ operators and is structurally unsound for continued operations.

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Environment and Energy Resiliency

Increased funding for Energy Resilience and Conservation Investment Program

Senator Heinrich supported full funding for the Department of Defense's Energy Resilience and Conservation Investment Program (ERCIP). The conference report included nearly \$290 million for ERCIP projects both within and outside the continental United States. The Department of Defense is the largest energy consuming organization in the world and the ERCIP was designed to fund projects that improve energy resilience, contribute to mission assurance, save energy, and reduce DoD's energy costs. ERCIP accomplishes these goals through construction of new, high-efficiency energy systems and technologies or through modernizing existing energy systems.

Senator Heinrich also supported a successful effort to increase funding for the Readiness and Environmental Protection Initiative by \$25 million. The REPI program is a key governmental tool that helps remove or avoid land-use conflicts near installations.