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In 2004, he was selected to join the Strategist Career Field and graduated from the Basic Strategic Art Program at the Army War College (AWC). Over the next two years, he focused on counterinsurgency and was a contributing author for the dual-service Army and Marine Corps field manual Counterinsurgency, published in 2006.

In 2007, he began working as a Strategic Analyst at Joint Forces Command. His focus areas included building partnership capacity and grand strategy, as well as supporting the Commander’s Quadrennial Defense Review Red Team and Transformation Advisory Group. He was also selected as a Fellow for the Service Chiefs Program at the Defense Advanced Research Projects Agency.

From 2011 to 2014, LTC Westen was assigned as a Strategic Planner, serving first as a War Plans Branch Chief and then as Strategic Plans/Concepts/Doctrine Branch Chief in the G-3/5 of the Army Headquarters. In this capacity he worked global posture and regional issues for both U.S. Central Command and U.S. Pacific Command. His duties included completing the 2014 Army Strategic Planning Guidance for the Secretary of the Army and the Chief of Staff, Army. He also deployed to Afghanistan, where he led a team in developing the planning and execution order for the retrograde of U.S. forces through 2014.

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Foreword

Among the many threats to the security of the United States and its allies, few loom larger than existing chemical, biological, radiological and nuclear (CBRN) capabilities and the nation-states and non-state actors who covet or already possess them. Add to that U.S. adversaries’ active pursuit of genetically engineered pathogens and other nontraditional agents and this globalized and complex world appears to be fraught with danger.

Faced with that reality in this fiscally constrained environment, the Department of Defense (DoD) recently created a new strategy for countering weapons of mass destruction (CWMD). However, that strategy is not without risk for the Army as the provider of specialized CBRN units and general-purpose forces that must be able to conduct operations in a contaminated environment.

This Land Warfare Paper, derived from the author’s U.S. Army War College Program Research Project, provides a background for viewing the new DoD CWMD strategy. It describes the risks posed by current and future CBRN threats, identifies how the Army is institutionally meeting the DoD CWMD strategy and makes recommendations for the Army and DoD to mitigate the risks.

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Introduction

The modern advent of weapons of mass destruction (WMD) employment took place one hundred years ago as chlorine gas drifted across the plains of Flanders Fields into the trenches of the unsuspecting French Army. By the end of the day, 1,200 soldiers were dead from the effects of the gas and the accompanying attack.¹ Based on that success, most militaries viewed chemical weapons as a potential means to gain advantage and used them for the remainder of World War I. In the early 21st century, the threats from such WMD have only worsened and the risks are much greater.

Growing threats exist in our globalized and complex world from both nation-states and non-state actors coveting or possessing existing chemical, biological, radiological and nuclear (CBRN) capabilities. Even worse, potential U.S. adversaries are actively pursuing new advanced threats in the form of genetically engineered pathogens and nontraditional agents.² The United States is now facing these growing threats while also dealing with the impacts of the recent recession, which has led to reduced funding for the military. In this fiscally constrained environment, the Department of Defense (DoD) recently created a new strategy for Countering Weapons of Mass Destruction (CWMD).³

Has this new CWMD strategy created a dangerous resources shortfall in the U.S. Army’s ability to mitigate the growing risks of current and new CBRN threats? For the Army as the provider of Strategic Landpower for CWMD, this is a valid question. Many of the foundational and sustaining capabilities needed by the joint force—including specialized CBRN units as well as general-purpose forces (GPF) that must be able to operate in a contaminated environment to provide the required warfighting functions—come from the Army.⁴ This monograph provides a background for viewing the new DoD CWND strategy, describes the risks the Army faces in current and future CBRN threats, identifies how the institutional Army is meeting the DoD CWMD strategy and makes recommendations for the Army and DoD to lower risks.

Background

By 2013, there was a growing perception with some in the Joint Staff⁵—and in the Office of the Secretary of Defense (OSD)—that the United States had entered into a semblance of
an interwar period where the demand for landpower forces would be smaller. Operation Iraqi Freedom had ended, and a retrograde plan to leave Afghanistan by the end of 2014 was already established. In fact, OSD was already laying out plans to cut the Army Total Force to pre-World War II levels. It was during this timeframe that hints of a new DoD CWMD strategy began to appear.

In April 2013, the Assistant Secretary of Defense for Global Strategic Affairs—ASD(GSA)—addressed DoD’s changing approach to CWMD. As the DoD lead for CWMD, the ASD(GSA)’s primary purpose for testifying before the Senate Subcommittee on Emerging Threats and Capabilities was to address DoD’s CWMD progress over the past year. She also took the opportunity to preview the changing emphasis of DoD efforts as a result of the new fiscally constrained environment. DoD would now focus resources toward “preventing acquisition, countering the most likely threats” and “prioritizing capabilities that counter operationally significant risks.” The Secretary of Defense used this exact wording when he addressed strategic CWMD changes the following year.

In June 2014, DoD released the new fiscally constrained CWMD strategy. It laid out a strategic framework that the U.S. Army is currently determining how to implement. This framework consists of three end states and four priority objectives to address the WMD threat. The intent is to shape the environment—while leveraging allies and partners—to address WMD concerns before their use.

The new CWMD strategy has established three lines of effort (LOEs) and one strategic enabler for the Army—and the rest of DoD—to achieve the priority objectives. The first LOE is to prevent acquisition—to keep these capabilities out of the hands of anyone who does not already possess them. The second LOE is to contain and reduce threats—specifically the ones that are already developed. The third LOE—to respond to crises—focuses on being able to mitigate all potential WMD events from combat operations to attacks inside the homeland. The strategic enabler to prepare—an ongoing process to ensure DoD is developing the needed capabilities—backs all three of these LOEs. Since the majority of DoD CWMD occurs on land, the Army Total Force will be responsible for using these lines of effort to achieve the majority of the DoD priority objectives that address the WMD challenge. This requires a common

![Figure 1: Objectives and the WMD Challenge](image-url)
understanding between DoD and the Army regarding current and future CBRN threats, as well as when and where leaders will accept risks.

The new CWMD strategy leaves room for interpretation on where DoD is willing to accept risk with CBRN threats in an operating environment. This has many implications for the Army Total Force since the new fiscally-constrained strategy will resource capabilities to counter only what are perceived to be valid, large-scale risks. The strategy says:

The Department will accept risk in areas where WMD use is implausible, infeasible or would have limited effects, allowing DoD to prioritize capabilities that facilitate efforts to preclude WMD acquisition and use.\(^{15}\)

This statement begs the question of how DoD defines—and what are the inherent assumptions of—the terms “implausible,” “infeasible” and “limited effects.” Knowing that OSD determined to drastically reduce resources and the Army Total Force in 2013—based in part on invalid assumptions for force-sizing constructs—it is worth looking at what this implies for the Army.\(^{16}\)

For current threats, DoD’s acceptance of CBRN risks with “limited effects” in the CWMD strategy raises concerns. Both chemical and radiological threats affect relatively small areas.\(^{17}\) This potentially means that the Army Total Force will face increased risks from adversary usage of chemical and radiological threats, since the DoD CWMD strategy implies that efforts will focus more toward biological and nuclear threats. However, chemical-weapon use is on the rise—contrary to the direction of the CWMD strategy.

**Current chemical threats.** A look at the current environment shows that the nation-state norms against current chemical weapons continue to deteriorate. In 2013, the Syrian regime used Sarin gas but succeeded in eroding international will for removing it by signing the Chemical Weapon Convention (CWC).\(^{18}\) In 2014, the Organization for the Prohibition of Chemical Weapons (OPCW) declared Syria chemical weapon-free. However, the Syrian regime continues to establish a new norm by employing dual-use chlorine gas against its people.\(^{19}\) The non-state use of current chemical weapons is also now a norm in the globalized world.

The current environment enables non-state actors to have access to WMD capabilities that once resided only with nation-states. This includes the ability to develop and obtain viable chemical weapons—and other WMD capabilities—in both governed and ungoverned territories. The Islamic State of Iraq and the Levant (ISIL) has likely used chemical weapons in the ungoverned areas of northwestern Iraq, and they are continuing efforts to acquire additional chemical weapons.\(^{20}\) Also, there are potentially thousands of ISIL sympathizers in the United States.\(^{21}\) Such individuals or groups could present chemical threats in the homeland much as the Aum Shinrikyo cult used Sarin gas in Tokyo subways 20 years ago.\(^{22}\) However, DoD’s potential acceptance of risk with future threats is a greater concern for the Army.

**Future chemical threats.** DoD’s nonspecific acceptance of risk for CBRN threats it considers “implausible” or “infeasible” creates the potential for false assumptions that could greatly increase the U.S. Army’s risks from future threats. The former ASD(GSA) admitted in congressional testimony that assessing the proliferation capabilities of nation-states—such as Iran and North Korea—as well as non-state actors is extremely difficult.\(^{23}\) Considering the U.S. inability to truly understand what potential adversaries are doing in CBRN threat development, it is worth looking at what today’s rapidly advancing technology is going to make plausible and feasible for future threats—specifically future chemical, biological and combination threats.
Future chemical threats provide a number of plausible and feasible threats based on what is available from open-source information. There is an ongoing globalization of chemical manufacturing skills and technology.24 The ability to quickly test vast numbers of different chemical compounds with chemical weapon (CW) potential has grown with the advent of supercomputers.25 State and non-state actors will gain access to purer and more deadly CW agents through the use of microreactors—small factories an individual could set up in a basement.26 A major concern is with future chemical weapon threats that skirt around the restrictions of the CWC.

Loopholes in the CWC create the potential for state actors to produce and maintain stockpiles of future chemical threats that are outside the convention’s defined parameters. One example of this is Russia’s creation, in the 1990s, of a nontraditional agent (NTA) designed specifically to comprise dual-purpose precursors that could just as commonly appear in agriculture applications.27 Open-source documentation says that it could be resistant to conventional antidotes and may be difficult for CW detection devices to discover.28 Another example is Russia’s use, in 2002, of what they termed a “psycho-chemical gas.” Russia used this previously unknown chemical agent to immediately incapacitate Chechen terrorists who held hostages in a Moscow theater.29 Described in articles as an incapacitant, this agent also killed 130 hostages due to the dosage levels used.30 However, the CWC does not cover incapacitating agents used by law enforcement, so there was little outcry when Russia announced that they had used the chemical agent.31 Both of these examples show how future chemical threats can bypass the intent of the CWC and allow continued development. In fact, Russian Prime Minister Vladimir Putin noted in 2012 that the future will see a further development of new weapons based on “psycho-physical” principles that will “provide entirely new instruments for achieving political and strategic goals.”32 In fact, future CW threats will increase as dispersion methods begin to incorporate nanotechnology and encapsulation—technologies future biological threats will also employ.33

Future biological threats. Globalization and rapidly advancing technology are also increasing what is feasible and plausible with future biological weapon (BW) threats. Bioengineering and genetic modification capabilities are lowering the requirements for state and non-state actors to create existing BW threats—such as smallpox—from scratch or potentially create entirely new pathogens.34 As an example, researchers in 2001 were able to use available technology to add the immune response gene interleukin-4 to a virus similar to smallpox to create a new pathogen that killed animals previously vaccinated against the disease.35 Fifteen years of technological advancements have lowered the cost of entry for state and non-state actors who wish to create future biological threats and are also creating the potential for combination threats at this very moment.

Future combination threats. All of these new technologies are likely to contribute to the creation of combination threats—new and viable weapons that will consist of a variety of agents in a single device.36 These new weapons could be mixtures of different chemical agents, different biological agents or even mixtures of both chemical and biological agents.37 Efforts to identify such a wide variety of potential combination threats will be more challenging, as will be the efforts to counter their multiple and simultaneous effects.38 Armed with a holistic understanding of how rapidly advancing technology and CWC loopholes are increasing the feasibility—and plausibility—of future CBRN threats, it is appropriate to analyze how the institutional Army is adapting to the changing operational environment and the new direction of the 2014 DoD CWMD strategy.
Army Institutional Efforts

The institutional Army maintains an ongoing effort to fulfill its Title 10 requirements and support joint force commanders with needed CWMD forces and capabilities. In light of the growing complexity and uncertainty in the operational environment, the Army has increased its efforts toward addressing CBRN threats. Of note, the Chief of Staff, Army’s (CSA’s) personal think tank—the Strategic Studies Group (SSG)—looked at the issue in earnest in 2013. Based on this effort—and a review of the Army Total Force’s CWMD enterprise—the CSA directed the U.S. Army Training and Doctrine Command (TRADOC) to look at ways to address institutional shortfalls in CWMD. TRADOC’s Army Capabilities Integration Center (ARCIC) took the lead in this effort. By the summer of 2014, ARCIC had developed a white paper that was in keeping with the new DoD CWMD strategy.

ARCIC’s CWMD white paper focused TRADOC’s effort across their Centers of Excellence (CoEs). The white paper established a new baseline for TRADOC’s efforts in developing the future force and looked at how the Army would conduct CWMD in the 2018–2030 time frame. ARCIC leveraged a number of ongoing Army efforts to look at the CWMD problem, such as the identification of CWMD as “the most prominent gap.” ARCIC discussed the need for new capabilities to address shortfalls in executing CWMD, including counterproliferation. In keeping with joint and Army concepts, the ARCIC white paper made clear that the Army must be able to counter CBRN threats and to operate within CBRN environments to support joint force commanders and protect the homeland. Only by achieving both sets of capabilities could the Army prevent, shape and win as described in the Army Strategic Planning Guidance (ASPG). ARCIC’s CWMD report also looked at next steps for a total Army approach to developing the needed capabilities to address future CBRN threats.

Although the Mission Support Center of Excellence (MSCoE) has the lead for CWMD in TRADOC, ARCIC understood that addressing the requirements would take a holistic effort across all the warfighting functions. As an enduring mission for the Joint Force, CWMD also became one of the Army Warfighting Challenges in the new Army Operating Concept. In this context, the ARCIC CWMD white paper addressed the need for a holistic institutional Army analysis of doctrine, organization, training, materiel, leadership and education, personnel, facilities and policies (DOTMLPF-P). The CWMD white paper concluded by noting that the threats went beyond the current Army’s capabilities and capacities and that the Army needs a true CWMD Strategy. However, this effort was already well underway.

Headquarters, Department of the Army (HQDA) is currently conducting the arduous task of developing a holistic service-level CWMD strategy to focus the institution to meet its Title 10 requirements and develop the capabilities and forces needed to support current and future joint force commanders. In keeping with the DoD CWMD strategy, the Army sees the three LOEs—prevent acquisition, contain and reduce threats and respond to crises—as directed toward the combatant commanders who operationally lead the joint force. The Army’s primary role is in line with the strategic enabler prepare.

Under the strategic enabler prepare, the Army’s CWMD strategy provides a framework for continuing to holistically address how to mitigate the risks presented by current and future WMD in the increasingly complex and uncertain global environment. As per the DoD CWMD strategy, the Army’s strategy addresses the Title 10 aspects of training and equipping the Army Total Force to conduct CWMD and to develop not only the needed capabilities to shape the environment to prevent the use of CWMD but also the capabilities that will enable Army
forces to continue operating in the event of WMD employment. The current Army CWMD vision says:

The Army will lead CWMD missions in the land domain. The Army provides the preponderance of forces to support DoD CWMD efforts in the homeland and [outside the contiguous United States] as part of joint and interagency requirements. With agile and adaptive conventional forces, special operations forces and technical CBRN forces, the Army provides a unique mix of tailorable and scalable capabilities to support the full spectrum of joint CWMD operations: from planning and regional support though all phases of combatant commanders’ Theater Campaign Plans.

Understanding that the Army plays the largest role in CWMD, the strategy looks to develop an Army Total Force with greater readiness to address (a) current and future threats posed by traditional state actors and (b) threats posed by non-state actors who will leverage ungoverned spaces and technology proliferation to gain CBRN capabilities. To focus Army efforts toward achieving the Army CWMD vision—as well as on the DoD strategic enabler prepare—the current Army CWMD strategy also presents a strategic framework.

This framework shows how the Army sees its CWMD vision being realized. The Department of the Army is ensuring that it is in keeping with TRADOC’s ongoing effort to address future capability development through the Force 2025 and Beyond initiative. Focused on translating the DoD CWMD strategy to Army institutional processes, the framework connects institutional means to CWMD ends through the use of LOEs.

The first LOE—synchronize—incorporates a number of the institutional Army’s ongoing efforts. This includes Army Plan and Army Council for CWMD (ACCWMD) efforts to ensure that Army leaders apply limited resources efficiently to meet the DoD CWMD strategy and the Title 10 requirements to support the joint force.

The second LOE—develop CWMD capabilities—addresses more than just what is required by dedicated CBRN units. This line of effort—based on the understanding that the entire Army Total Force has a role in CWMD—is directed toward development and prioritization
of the capabilities needed to mitigate risks to conventional forces from feasible and plausible emerging threats. Using the new Army Operating Concept (AOC) and other Army Functional Concepts (AFCs), the Army will conduct Capability Portfolio Reviews and Capability-Based Assessments to identify gaps and propose solutions. Ensuring these processes account for emerging threats will enable the effective development of solutions and prioritization of materiel capabilities for “threat detection, intelligence fusion, situational awareness, hazard assessment, protective equipment, medical programs and WMD elimination.”

The third LOE—*equip the force for CWMD*—is consistent with the Army Equipment Modernization Strategy and addresses the process of putting the materiel resources into the hands of Soldiers who must counter current and future CWMD threats. This includes the resources Army units need to support the joint force commander’s counterproliferation efforts.

The final LOE—*ensure readiness of the force for CWMD*—applies to all efforts to increase the combat effectiveness of Army Soldiers and units. Army units must be prepared to conduct most of what is called for in the DoD CWMD Strategy; this applies to regionally aligned forces conducting forward-deployed expeditionary operations as well as to those protecting the homeland. For joint force commanders to properly execute the DoD CWMD strategy’s LOEs, the institutional Army must resource Soldiers and units so they are trained and ready. In addition
to these four LOEs of the Army CWMD Strategic Framework, the current strategy also directs the institutional Army—responsible for Title 10 requirements—to develop plans to implement the guidance.63

In looking at DoD and Army CWMD strategies, the institutional Army is painfully aware of the risks posed by reduced DoD funding for Army CWMD capabilities. The requirements for Strategic Landpower are growing among joint force commanders. Simultaneously, Congress continues to question the funding the Army needs to maintain trained and ready forces capable of maintaining overmatch against current and future CBRN threats. In looking at various aspects of the institutional Army, a number of risks resulting from the ongoing lack of DoD funding become apparent. The first issue manifests in the reduction in force structure.

The Army Total Force is not properly sized to meet simultaneous CWMD events involving feasible and plausible future threats—or even the current CBRN threats. Based on the lessons learned from the September 2001 terrorist attacks on the United States, there is a large CBRN response force structure that works under the U.S. Northern Command (USNORTHCOM) to protect the homeland.64 However, many other CBRN events could emerge simultaneously in the United States and abroad, and the Army bears the responsibility for resourcing all the joint force commanders with capabilities to address current and future CBRN threats. As an example, to reflect growing threats, OSD force planning constructs have recently changed, increasing the demands for Strategic Landpower. To meet the new requirements, the Army Total Force could be put into a situation where it would not only have to mobilize the National Guard but would also have to deploy units for the duration without rotation.65 In fact, a recent RAND study showed that the requirements for WMD elimination (WMD-E) in North Korea are so large that it could take all of the Army’s ground maneuver forces and all of the assault aviation forces.66 The requirement would be so substantial that RAND suggested DoD should start using the WMD-E mission as a criterion to better understand the risks associated with reductions to the Army force size.67 The Army Total Force may be facing greater risks as it gets smaller, but analysis shows a different assessment of how dedicated CBRN forces are organized.

The Army is in the process of restructuring and resourcing CBRN units to better meet the requirements of joint force commanders, in line with the Army’s efforts to meet the DoD CWMD strategy. Older CBRN force structures were based on an understanding that they would operate in rear support areas and did not need internal sustainment and other capabilities. In fact, close to three-quarters of the current CBRN force is still dedicated to decontamination efforts and biological agent detection.68 However, CBRN units now understand they may have to operate forward on the battlefield as combat units seize objectives that are on a WMD site list. Discussions with the Army Headquarters staff reveal that these concerns have already been addressed in approved force design updates.69 CBRN company units will now have their own organic maintenance capability and battalion CBRN units will now have their own distribution sections to support CBRN resupply and dismounted reconnaissance.70 However, there is a question as to whether the Army is sufficiently funded to neutralize or eliminate CBRN threats.

Discussions with the DoD Chemical and Biological Defense Program (CBDP) Office—in the institutional Army’s G-8 (Deputy Chief of Staff, Programming, Materiel Integration and Management)—shows that there are capability gaps for CWMD that will require funding to address current and future threats. For instance, the Army was able to assist the joint force in destroying Syria’s chemical weapon stockpiles of Sarin gas by using the revolutionary field-deployable hydrolysis system (FDHS). Such a field-deployable capability does not currently exist.
to destroy biological weapons.\textsuperscript{71} It should also be noted that there is a capability gap in remediating contaminated human remains for final interment.\textsuperscript{72} If the Army has to fight in a contaminated environment, the need to address this issue and have an established plan in place is likely to arise. There is also a need for a system to neutralize chemical and biological agents through incineration.\textsuperscript{73} Capability gaps in regard to nuclear materials are also currently unfunded.

The Army has identified a number of capability gaps related to radioactive threats that must be addressed as part of the effort to prepare units to support joint force commanders as directed by the DoD CWMD strategy. There is a need for advanced radiation/isotope identification equipment so units deployed in the field can discriminate between the extremely dangerous radioactive threats and other less dangerous isotopes in the field.\textsuperscript{74} There is also a gap in nuclear material containment that CWMD forces will need for a number of contingencies. Currently, the Army does not have the ability to contain, package and remove nuclear material while conducting operations in a nonpermissive environment.\textsuperscript{75} A third capability gap exists with the inability to conduct standoff nuclear detection.\textsuperscript{76} To better detect nuclear weapon threats, the Army needs to have this capability as well. There are also capability gaps for protecting the homeland.

A number of Army capability gaps exist in the enduring mission \textit{protect the homeland}. Of note, there is a requirement to have a “real-time analytical platform” to detect chemical agents at Army chemical depots to ensure there are no incidents.\textsuperscript{77} Currently the ability to do this at the standards required by the Department of Health and Human Services does not exist. There also does not seem to be a holistic funding plan to modernize the Army’s CBRN infrastructure. Recent long-range planning shows only near-term efforts to build and upgrade the West Desert Test Center at the U.S. Army Dugway Proving Ground in Utah.\textsuperscript{78} Without any other efforts on the horizon until at least 2048, the aging infrastructure may be prone to increased risks over time. There are a number of recommendations to resource the Army to mitigate all of these problems—and meet the requirements of joint force commanders.

\textbf{Recommendations}

\textbf{Create a common understanding of future CBRN threats.} The U.S. Army Nuclear and CWMD Agency (USANCA) must continue to engage OSD on the challenges of the future threats posed by the proliferation of new technologies into the hands of state and non-state actors. DoD must engage in detailed discussions regarding what is feasible and plausible for future CBRN threats, to ensure continued funding for essential mitigation efforts. Faulty assumptions by OSD on potential threats could have disastrous consequences. This common understanding should also incorporate a reexamination of the classification of emerging CBRN threat terminology. The maintaining of security classifications may no longer have the same utility if the emerging threats are already being widely discussed in open-source documentation.

\textbf{Develop counters for emerging agent commonalities.} Technological advances are going to enable state and non-state actors to create multiple variants of different chemical and biological threats. We will no longer be able to rely on one counter to one variant of a disease or chemical. DoD must fund efforts to counter commonalities of threats, much as Tamiflu is viable against multiple influenza strains.

\textbf{Make the Chemical, Biological Defense Program Office the Executive Agent (EA) for all CBRN Program Objective Memorandums (POMs) to enable funding synchronization.} The HQDA G-8 is already the EA for the DoD CBDP. As fiscal resources are expected
to continue to decline, it makes sense to have one EA that can visualize and synchronize all—there are at least ten—of the different CBRN POMs across DoD. This action may help prevent duplication of some efforts and enable the resourcing of needed capabilities such as the field-deployable biological agent destruction system.

**Update force-sizing constructs to include the WMD-E mission and future CBRN threats.** As noted by RAND, the WMD-E mission in Korea is substantial enough that the Army should incorporate it fully into force-sizing constructs. In addition, a jointly agreed-upon understanding of future threats should inform development of scenarios to reflect the true impacts, including a reduction in operational tempo caused by the CBRN environment. This effort may also provide impetus for DoD to revisit the drawdowns to the Army, since the need for Strategic Landpower has not diminished and the interwar period did not materialize as some on the Joint Staff projected. A better understanding of the true demands of WMD-E and emerging future threats may change DoD’s current understanding of the growing CBRN risks.

**Develop a comprehensive Army CBRN infrastructure modernization plan.** As fiscal resources continue to shrink, funding modernization will become increasingly difficult. The Army must develop a CBRN infrastructure modernization plan so the requirements can compete for resources. Since 2012, the Army has been using a Long-Range Investment Requirements Analysis (LIRA) to help with the planning of sustainment strategies over a thirty-year period. Using the LIRA process, the Army must show DoD the requirements for upgrading aging CBRN facilities to address future emerging threats.

**Create requirement documentation for all Army CWMD capability gaps.** The only way to measure the gap between needed CWMD capabilities and required resources is to develop requirement documents to compete for funding. TRADOC should complete a capability-based assessment of operational requirements in an environment contaminated by emerging future threats. The Army has not had to operate in such an environment since World War I, and the hazards presented by current and anticipated CBRN capabilities require a review. Only then can DoD make informed decisions on how to resource capabilities that will mitigate emerging CBRN threats.

**Conclusion**

The risks of WMD continue to rise as technology proliferation provides non-state actors with the capabilities to access, produce and deliver existing and emerging WMD capabilities against U.S. armed forces and U.S. interests at home and abroad. State actors still possess the ability to employ dual-use precursors that avoid the restrictions of the Chemical Weapons Convention to create new feasible and plausible CBRN threats. The ability to create capabilities to counter these new CBRN threats cannot be developed quickly; long-term investment is required to ensure the Army and the nation maintain overmatch against potential adversaries. As the primary provider of CWMD capabilities for the joint force, the Department of Defense must continue to fund the development, fielding and modernization of Army capabilities to counter feasible and plausible emerging chemical and biological threats as well as radiological and nuclear WMD. DoD must also reassess its current plan to shrink the Army as well, by looking at how emerging CBRN threats will impact force-planning scenarios. If state or non-state actors use emerging CBRN threats in future conflicts, the Army Total Force must be prepared, as required by the DoD CWMD strategy, to operate in contaminated environments. DoD must resource the Army to do just that.
Endnotes


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54 DA, “U.S. Army CWMD Strategy,” p. 3.
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