



S&T Chemical, Biological, Radiological, Nuclear Defense Research, Development, Testing & Evaluation Strategy 2021-2025

September 2021



**Homeland
Security**

Science and Technology

Letter from DHS Science and Technology Leadership

Addressing Chemical, Biological, Radiological, and Nuclear (CBRN) threats to the homeland was a driving force for the establishment of the Department of Homeland Security (DHS). Today we continue to battle the COVID-19 pandemic, which is destructive not only from a world-wide health perspective, but has magnified many interrelated issues that require mending within the fabric of our global community. One such issue, lacking infrastructure for addressing globally relevant bio-threats, and by extension CBRN threats, has brought CBRN Research, Development, Testing & Evaluation (RDT&E) to the forefront once again. The DHS Science and Technology Directorate (S&T) has recognized and furthered progress specific to these threats for the entirety of its existence and is proud to support enduring DHS laboratory capacities and integral interagency relationships essential to understand, identify, prepare for, and respond to highly specialized CBRN risks, hazards and threats. In addition to the ongoing COVID-19 surge efforts, S&T is developing and enhancing risk awareness and tools intended to improve operational efficiencies required to deter, detect and disrupt the use of CBRN agents to protect against other human and animal health security dangers, including pandemic threats, threats to the food supply, and accidental or intentional chemical releases.

I am proud to introduce the S&T CBRN RDT&E Strategy for 2021-2025, which describes S&T's vision, goals and priorities for our efforts and investments in the CBRN domains to safeguard our nation by responding to the threats of today and emerging threats of tomorrow through science, technology and innovation. Applying this strategy will enable S&T to cohesively and collaboratively support and advise our Component partners, their operators, and first responders in service of the DHS mission to safeguard the American people, our homeland and our values.



Kathryn Coulter Mitchell

Kathryn Coulter Mitchell

Senior Official Performing the Duties of the Under
Secretary for Science and Technology
U.S. Department of Homeland Security

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Purpose

The Homeland Security Act of 2002 outlines the Department of Homeland Security (DHS) key missions to prevent terrorist attacks within the United States and its territories, reduce vulnerability to chemical, biological, radiological, and nuclear (CBRN) attacks, minimize damage, and assist with recovery from terrorist attacks. The DHS Science and Technology Directorate (S&T) provides risk awareness to address operational and strategic needs for DHS components; other federal departments and agencies (e.g., HHS, NIH, EPA, DoD); state, local, territorial, and tribal stakeholders; and international partners, collectively known as the Homeland Security Enterprise (HSE), by collaboratively developing, transitioning, and transferring knowledge products, scientific data, tools, and devices that support each respective mission. S&T identifies and closes mission capability gaps through research, development, test, and evaluation (RDT&E) activities, modeling and simulation, hazard characterization, technical advice and information sharing, standards development, and other analyses.

This document articulates S&T's vision and goals supporting customer missions to assess, prevent, detect, prepare for, respond to, and recover from incidents involving CBRN threats and hazards. The vision and goals of this strategy are in accordance with national strategy documents and Presidential Directives that define S&T's roles and responsibilities and are consistent with the authorities and responsibilities delegated to the Under Secretary for S&T (USST) by the Homeland Security Act of 2002. All authorities, directives, strategies, and policies guiding S&T CBRN defense are highlighted in the Authorities section of this document.

In collaboration with other departments and agencies, and in alignment with specific agreements and operating principles in place to integrate the authorities and responsibilities of S&T with DHS Countering Weapons of Mass Destruction Office (CWMD) regarding CBRN mission in support of DHS and the HSE, S&T will:



(1) guide, advise, and collaborate with DHS, its operational components, and the HSE to recommend missions, authorities, needs, and policies to ensure S&T CBRN capabilities meet the needs of all stakeholders;



(2) invest in early-stage research and development (R&D) across the HSE (S&T, interagency, academia, international, and industry) to execute and enhance a portfolio of capabilities that identify and characterize present, exigent, and future CB threats;



(3) conduct activities and prioritize technological infrastructure and capabilities to execute, maintain, and continuously improve CBRN risk analysis capabilities and knowledge management to enable risk awareness knowledge products and scientific data accessibility across the HSE;



(4) leverage CBRN data, knowledge products, subject matter experts (SMEs), and RDT&E facilities, standards, and other tools to enable applied RDT&E and reach-back in support of systematic response and coordinated training in support of DHS and federal, state, local, territorial, tribal (FSLTT) partners to assess, prevent, detect, interdict, prepare for, respond to and recover from incidents involving CBRN hazards; and



(5) consult and partner to support CBRN information sharing and ensure public and legislative awareness of S&T CBRN activities that enable risk awareness, preparedness, resilience, response, and recovery.

S&T accomplishes its goals through engaging stakeholders regularly; employing a systematic requirements development process; providing tailored program and project management for all research and development efforts, to include compliance with all regulatory requirements; investing in characterization capabilities; using a formalized transition strategy; deliberate test and evaluation events; developing assessments for detection and technology capability performance in both the laboratory and the field; and transitioning and transferring knowledge products to support DHS and FSLTT planning and decision making for CBRN incidents or events. S&T also retains technical SMEs and maintains laboratory capabilities and equipment to identify, investigate, and characterize chemical and biological materials of interest.

Vision

Safeguard the American public, economy, and infrastructure from CBRN threats.

Mission

Prioritize, collaborate in, and execute CBRN RDT&E to protect the American public, economy, and infrastructure from CBRN threats and hazards associated with natural, intentional, or unintentional events.

Organizational Values

We value:

- The safety and security of America
- The free flow of legitimate people and commerce
- The protection of privacy, transparency, civil rights, and civil liberties
- Innovation needed to anticipate and defend against CBRN threats
- Planning, technical expertise, and guidance needed to prepare for, respond to, and recover from CBRN threats
- Diversity of technical expertise to stay abreast of research and applications involving CBRN science and technology
- Collaboration throughout HSE to deliver the latest scientific knowledge and capabilities and minimize unnecessary duplication of efforts
- Transparency of organizational decision-making processes
- Thoughtful, value-based, and efficient alignment of resources to operational needs and longer-term research goals



Goals and Objectives



Goal 1: Guide, advise, and collaborate with the department: Analyze and recommend missions, authorities, requirements, and policies related to CBRN capabilities to enable risk awareness for DHS through partnership and coordination with key Component, interagency, and broader HSE partners.

Objective 1.1: Analyze legislation and directives regarding CBRN RDT&E to identify opportunities to fully leverage S&T delegated authorities, recommend additional authorities, and shape future investments.

Objective 1.2: Leverage S&T CBRN subject expertise to anticipate, forecast, advise, and participate in the development of DHS CBRN policy, standards, and enduring capabilities.

Objective 1.3: Coordinate with DHS leadership, DHS Integrated Product Teams (IPT), Joint Requirements Council (JRC), CWMD, and other DHS components and stakeholders to identify and prioritize capability gaps and requirements that inform investment decisions to prevent, respond to, and recover from CBRN threats and incidents.

Objective 1.4: Identify S&T staffing and training needs to support CBRN defense mission needs and recruit, develop, and retain a cadre of technical experts who can advise and guide DHS, its components, and the HSE regarding CBRN hazards and risks and feasible technological solutions.

Key Activities

1. Recommend CBRN investment priorities to S&T senior leadership based on analysis of CBRN risk and associated sensitive parameters, in adjunct with known Component gaps and requirements.
2. Recommend to S&T Office of the Undersecretary (OUS) future investment opportunities for increased or enhanced capabilities through laboratory, Office of University Programs or Federally Funded Research and Development Center investments.
3. Participate in Component, S&T, and interagency working groups, tabletop exercises, steering committees, and collaborative efforts to define operating principles to execute CBRN authorities, policies, presidential directives and investment priorities.
4. Create and update CBRN architectures and operational view graphic(s), in collaboration with DHS partners, to provide DHS with an integrated visualization of CBRN R&D, including basic research, technical application, and acquisition/transition of capabilities to inform investment prioritization.
5. Identify emerging technologies that require early-stage RDT&E for CBRN defense.
6. Provide data-driven S&T staffing recommendations and requests based on analysis of CBRN research pipelines, identified future threats, and identified HSE partner gaps and requirements.
7. Develop and apply a standardized approach to review emerging chemical- and bio-technology research advancements for dual-use and other legal, policy, or privacy concerns.

Expected Outcome(s)

1. Enhance established role as an authority and leader in major, inter-Component and Department-wide CBRN research and development priorities, decisions, and resourcing.
2. Strengthen preparedness and resilience in the CBRN domain.
3. Provide and coordinate national and international advice to leadership and Components that accounts for legal, policy, and privacy considerations.



Goal 2: Characterize chemical and biological (CB) hazards to strengthen and inform understanding of potential threats, hazards, and risks to the homeland: Experimentally generate defensible data to enable accurate, credible, and technically defensible assessments to support HSE decision-makers.

Objective 2.1: Maximize impact of S&T characterization research by coordinating with intelligence, interagency, and international partners to identify and prioritize characterization needs and share data, methods, and materials.

Objective 2.2: Invest in S&T laboratory characterization capabilities and necessary infrastructure to execute basic and applied defensive-based research of current, urgent, and emerging CB hazards to inform risk-assessment modeling of future threats and requirements.

Objective 2.3: Characterize chemical and biological hazards, pre-cursors, select agents, narcotics, and toxic industrial chemicals and materials (TIC/TIM) according to national prioritizations and Component requirements, to inform and facilitate R&D activities, hazard gap analysis, infrastructure investments, and risk awareness for DHS.



Plum Island Animal Disease Center / PIADC scientists examine materials.

Key Activities

1. Collaborate with the HSE to identify and maintain an inventory of key intelligence, interagency, academia, and international partners with CB characterization capabilities and relevant threat data, and coordinate to ensure adequate CB capabilities are available to DHS to address gaps.
2. Prioritize threat agent characterization activities across DHS and establish re-evaluation cycle to account for evolving threats, hazards, and risks.
3. Execute laboratory and field trials to characterize current, urgent, and emerging biological, chemical, and non-traditional agents informed by HSE needs.
4. Execute horizon scanning activities to identify and analyze technological advances and developments that may affect the CB hazards and risks on the homeland or our ability to mitigate.
5. Develop and apply a standardized approach to inform the legal, policy, and privacy functions of current, urgent, or emerging understanding of potential threats, hazards and risks to the Homeland.

Expected Outcome(s)

1. Capabilities to characterize CB hazards and rapidly respond to national security and DHS priorities.
2. Understanding of current state of knowledge regarding known CB hazards to inform risk analysis and decision-making with visibility into any legal, policy or privacy concerns.
3. Identify capability efficiencies across DHS and interagency to reduce RDT&E costs through collaboration.
4. Critical characterization information available to the HSE, partners, and FSLTT to make informed decisions on planning, preparedness, response, mitigation, and recovery activities.



Chemical Security and Analysis Center / CSAC Lab Director Shannon Fox explaining details of the Jack Rabbit chlorine release trials.



Goal 3: Execute, improve access to, maintain and enhance CBRN risk analysis capabilities: Utilize CBRN threat and hazard characterization data, computing technology, and data infrastructure to execute, maintain, and improve CBRN risk analysis capabilities and facilitate knowledge management and access to risk analysis tools.

Objective 3.1: Invest in technological infrastructure to ensure storage, access, and dissemination of CBRN threat data libraries, risk assessments, and consequence modeling and simulation tools to meet the needs of DHS and HSE partners.

Objective 3.2: Execute CBRN risk assessments and tailored analyses, leveraging CB characterization data, to enable decision support to DHS components and interagency partners across prevention, preparedness, mitigation, response, and recovery activities.

Objective 3.3: Develop and enhance CBRN risk analysis capabilities to improve risk and tailored assessments to address the dynamic CBRN mission space in support of HSE partner needs.

Objective 3.4: Adapt existing knowledge products, standards, technologies, and other technical capabilities from academic, commercial, governmental, industrial, and intelligence domains to counter, prepare for, respond to, and recover from an event or incident involving CBRN hazards and risks.

Key Activities

1. Produce CBRN homeland risk assessments that provide a risk baseline for CBRN threats, provide data and models needed to conduct tailored analyses for specific risks and sectors, and maintain and enhance risk analysis capability.
2. Develop a system to host, archive, consolidate, centralize, transition, and transfer knowledge products and other resources needed to evaluate CBRN hazards.
3. Create list of HSE partners and stakeholders with assigned relevant risk assessments and knowledge products for CBRN scientific data to be transitioned and transferred for risk awareness.
4. Partner with international and interagency stakeholders to identify computing, modeling, and simulation capabilities that could enhance baseline CBRN risk analysis capability.
5. Identify areas in current delivery of CBRN mission directly impacted by limitations in present data management and computing capabilities.
6. Leverage CB characterization data to identify capability gaps and facilitate CB capability investments.
7. Assess the state of radiological and nuclear risk analysis tools available to S&T and implement a capability comparable to the established chemical and biological capabilities.
8. Develop and apply a standardized approach to inform the legal, policy, and privacy functions of plans to execute, maintain, enhance, and improve access to CBRN risk analysis capabilities and facilitate knowledge management and access to risk analysis tools.

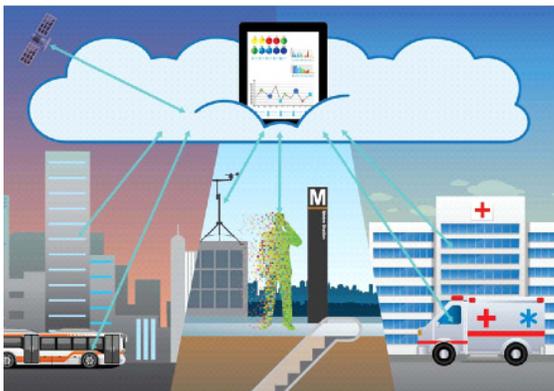
Expected Outcome(s)

1. Threat, hazard, and risk information available to the HSE, partners, and FSLTT agencies, allowing them to compare and prioritize specific risk mitigation options and make informed decisions on infrastructure investments, response, mitigation and recovery activities.
2. Agile and responsive reach-back capabilities to support real-time incident/crisis response activities.
3. A network of CBRN data and modeling capabilities to support CBRN-related decisions across the HSE.



Goal 4: Apply CBRN data, analyses and expertise to develop, transition and transfer solutions to operational users: Provide CBRN scientific and technical expertise to inform, develop, and transition knowledge products and technological solutions to support operational users in preventing, detecting, interdicting, preparing for, responding to, and recovering from a CBRN incident.

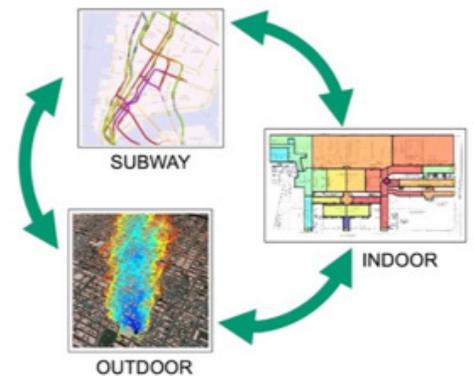
- Objective 4.1:** Research, develop, adapt, test, evaluate, transition and transfer products to stakeholders that protect human life, critical infrastructure and key resources, and national economic interests during all phases (prevent, detect, prepare, respond, and recover) of a potential CBRN event or incident.
- Objective 4.2:** Provide knowledge products, training, and technical advice to HSE partners to enable and inform effective and efficient decision-making in response to, and recovery from, CBRN incidents.
- Objective 4.3:** Partner with industry to leverage unique capabilities to commercialize and transfer specific CB detection, sensing, and monitoring devices for both national security events and potential CBRN incidents.
- Objective 4.4:** Provide key knowledge products in easily accessible formats for use by industry and the American public to protect human life, the U.S. economy, and transportation systems.



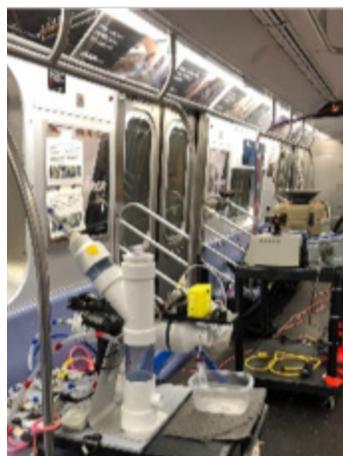
Operational View of Environmental Monitoring System via SenseNet

The final modeling package enables analysis across environmental domains to:

- 1) Inform integrated detector placement;
- 2) Perform integrated source inversion analysis;
- 3) Provide decision support to inform response and recovery actions



Urban Modeling Integration Project's Biological Dispersion Event Modeling



The Urban Security Initiative Aerosol Dispersion Test

Key Activities

1. Execute mission analyses to inform HSE CBRN defensive capabilities for DHS component gaps, requirements, and acquisition decisions.
2. Execute deliberate test and evaluation of CBRN technologies, tools, and devices according to Component and FSLTT partner prioritized needs.
3. Execute operational field assessments to ensure efficacy and usability of CBRN technologies, tools, and devices for Component and FSLTT operational users.
4. Identify, adapt, transition and transfer CBRN technology, tools, and device solutions to partners for meeting DHS component, FSLTT and interagency requirements and acquisition decisions, where appropriate.
 - a. Leverage unique and creative contracting mechanisms, such as SBIR, prize competitions, commercialization acceleration, and tech transfer.
5. Develop training, knowledge products, test and evaluation guidelines, and best practices for detection of CBRN threats for use by operational users and FSLTT partners.
6. Develop and apply a standardized approach to review these activities for dual use and other legal, policy, or privacy concerns.

Expected Outcome(s)

1. Strengthen CBRN RDT&E capability and coordination DHS-wide.
2. Increase S&T involvement in CBRN capability enhancement, delivery, and acquisition.
3. Facilitate informed and effective operational Component and partner acquisition decisions of CBRN defense capabilities.
4. Provide operational capabilities to protect the public, ensure resilience of critical infrastructure, secure supply chains, prevent terrorism, and mitigate natural and unintentional incidents involving CBRN agents, threats, hazards, and risks.
5. Lead and collaborate in CBRN capability development oversight, research capabilities, standardization, and RDT&E infrastructure.



Goal 5: Ensure awareness and communicate impact: Proactively communicate accomplishments and impacts of CBRN efforts to keep legislative stakeholders and the public informed and secure mission capability.

Objective 5.1: Promote communication and awareness of CBRN defense activities by and between S&T, the HSE, and international organizations to establish, maintain, and strengthen CBRN partnerships.

Objective 5.2: Communicate to stakeholders the selection and assessment process for CBRN efforts in each S&T portfolio to ensure transparency and minimize redundant activities.

Objective 5.3: Collaborate with partners to communicate impact and successes of whole-of-government approach to CBRN defense.

Objective 5.4: Support effective communication to legislative stakeholders and the American public by providing subject matter expertise to communicate impact of CBRN investments, research, partnerships, and technology transition and transfer.

Key Activities

1. Support annual reporting requirements for CBRN, specifically the annual CBRN Report required by Countering Weapons of Mass Destruction Act of 2018 (Pub. L. 115-387) and Annual R&D Projects required by National Defense Authorization Act.
2. Provide HSE partners with the CBRN requirements selected and executed through the S&T Business Process Flow, and describe decision-making process, where appropriate.
3. Partner with S&T Communications and Outreach Division (COD) to deliver timely and relevant CBRN knowledge products – promoting the mission through impactful communication products to inform all identified stakeholders of CBRN RDT&E activities planned and conducted by S&T, either directly or in partnerships with other agencies.
4. Communicate to Congress, S&T, DHS, and other stakeholders an integrated, prioritized set of CBRN-related R&D and capability investment needs to inform budgetary and program decisions. (Also meets Goal 1)
5. Communicate technology transition, technology transfer, and intellectual property successes in CBRN RDT&E delivery.

Expected Outcome(s)

1. Impactful communications to HSE stakeholders, general public, and industry regarding CBRN emerging trends, hazards, incidents, and associated response measures.
2. Clear Component and interagency partner understanding of all S&T CBRN capabilities that could support their needs or bridge gaps in their capabilities.
3. Congressional and public understanding of S&T CBRN capabilities' measurable impact on CBRN defense, public safety, and awareness and that these capabilities sustain and do not erode individuals' privacy or impact other interests protected by law or policy.
4. Defensible budgetary requirements and rationales to DHS leaders and Congress to ensure continued mission capability.

Assumptions and Authorities

Assumptions

Future Leadership Decisions and Emerging/Exigent Threat Environment

The S&T CBRN RDT&E Strategy Working Group acknowledges that this CBRN RDT&E Strategy is an iterative document and must maintain a level of flexibility to meet the evolving needs of the HSE. While the present strategy has been constructed such that the CBRN RDT&E Goals and Objectives are non-circumstantial, the annual Key Activities and Expected Outcome(s) may require adjustment based on administration priorities, updated DHS Strategic Plans, DHS component partnerships and authorities, leadership transitions, and emerging or exigent threats to the homeland. An extensive, but not exhaustive, list of assumptions follows:

- As DHS and DHS component strategies and priorities are updated under a new administration and appointed departmental leadership, this Strategy may require updates by the S&T Office of the Undersecretary (S&T OUS) in collaboration with the S&T Strategy and Policy Office (S&T SPO). Any changes therein would be discussed with S&T senior leadership and identified members of the S&T CBRN Strategy Working Group.
- Subject to CWMD and S&T operating principles established in Memoranda for the Record (MFRs) and codified by the future FY2021 Memoranda of Understanding (MOU).
 - To meet the requirements and authorities of CBRN defense and risk awareness, CWMD and S&T will establish MFRs to define the operating principles between the two Components in all shared CBRN mission areas. These efforts will directly impact CBRN priority activities and investments.
 - As these operating principles and mutual priorities are established, S&T will adjust this strategy and update Key Activities & Expected Outcome(s) accordingly.
 - S&T will utilize the present version of this Strategy until impactful changes to its content are codified by an S&T and CWMD MOU, and then utilize the version control table to effectively communicate updates.
- Key Activities may require updates as the threat environment changes and/or urgent threats of considerable scope emerge (e.g., SARS-CoV-2).
 - To address substantial changes required by a new threat to the homeland, the S&T OUS and S&T SPO will call upon appropriate SMEs from the S&T CBRN RDT&E Strategy Working Group to add and update RDT&E Key Activities against urgent needs.

Classified Augmentation

The Working Group also acknowledges that a comprehensive defense of the HSE from potential CBRN threats, risks, and hazards may require objectives and activities addressed at classified levels. Classified Objectives, Key Activities, and Expected Outcomes may be developed, as directed by leadership, and will be documented through individual implementation plans, and coordinated with the legal, policy, and privacy functions.

S&T's CBRN RDT&E activities fulfill DHS and S&T authorities relevant to addressing CBRN incidents as outlined in the following:

- 21st Century Cures Act
- Agricultural Improvement Act of 2018
- DHS Delegation 10001: [Delegation to the Under Secretary for Science and Technology](#)
- DHS Directive 069-02: Integrated Product Teams for Research and Development Coordination
- DHS Directive 107-01: Joint Requirements Integration and Management System
- DHS Directive 107-02: The Joint Requirements Council (JRC)
- DHS Directive -26-01: Care, Use, and Transportation of Animals in Research
- DHS Directive 026-02: Oversight of Life Sciences Dual Use Research of Concern
- DHS Directive -26-03: Safeguarding Select Agents and Toxins
- DHS Directive 026-06: Test and Evaluation
- DHS Directive 026-04: Protection of Human Subjects
- DHS Directive 041-01: Arms Control Compliance for Chemical and Biological Defense Activities
- DHS Directive 066-02: Biosafety
- DHS Management Directive 10120: Science and Technology Requirements Council
- DHS Directive 047-01: Privacy Policy and Compliance
- DHS Directive 140-06: Privacy Policy for Research Programs and Projects
- FEMA Protection Federal Interagency Operational Plan [2016](#)
 - Subsections C.1-6, Subsection C.3-14, and Subsection C.6-6
- FEMA National Response Framework
 - Emergency Support Function Annex #1: [Transportation](#)
 - Emergency Support Function Annex #2: [Communications](#)
 - Emergency Support Function Annex #4: [Firefighting](#)
 - Emergency Support Function Annex #5: [Information & Planning](#)
 - Emergency Support Function Annex #6: [Mass Care, Emergency Assistance, Temporary Housing, and Human Services](#)
 - Emergency Support Function Annex #7: [Logistics](#)
 - Emergency Support Function Annex #9: [Search & Rescue](#)
 - Emergency Support Function Annex #10: [Oil & Hazardous Material Response](#)
 - Emergency Support Function Annex #11: [Agriculture & Natural Resources](#)
 - Emergency Support Function Annex #15: [External Affairs](#)
- FEMA Response Federal Interagency Operational Plan [2016](#)
 - Subsection B-6 3a and Subsection C.3-2
 - Nuclear/Radiological Incident Annex to the Response and Recovery Federal Interagency Operational Plans [2016](#)
- FEMA Recovery Federal Interagency Operational Plan [2016](#)
 - Subsection E-10 through E-16
- [Fiscal Year 2021 Administration Research and Development Budget Priorities](#)
- Homeland Security Act of [2002](#)
 - Subsections 181 through 195F, Subsection 321q, and Subsections 592a through 596a



Authorities *(continued)*

- Homeland Security Presidential Directive-4: [National Strategy to Combat Weapons of Mass Destruction](#)
- Homeland Security Presidential Directive-5: [Management of Domestic Incidents](#)
- Homeland Security Presidential Directive-7: [Critical Infrastructure Identification, Prioritization, and Protection](#)
- Homeland Security Presidential Directive-9: [Defense of the United States Agriculture and Food](#)
- Homeland Security Presidential Directive-10: [Biodefense for the 21st Century; superseded by the National Biodefense Strategy 2018 \(see below\)](#)
- Homeland Security Presidential Directive-14: [Domestic Nuclear Detection](#)
- Homeland Security Presidential Directive-18: [Medical Countermeasures against Weapons of Mass Destruction](#)
- Homeland Security Presidential Directive-21: [Public Health and Medical Preparedness](#)
- Homeland Security Presidential Directive-22: [Domestic Chemical Defense](#)
- [Implementing Recommendations of the 9/11 Commission Act of 2007](#)
- [National Biodefense Strategy 2018](#)
- [National Oil and Hazardous Substances Pollution Contingency Plan 2015](#)
- [National Security Strategy 2017](#)
- [National Strategy for Biosurveillance 2012; supersedes HSPD-10](#)
- [A National Strategy for CBRNE Standards](#)
- [Project Bioshield Act of 2004](#)
- [Presidential Memorandum on the Support for National Biodefense 2018](#)
- [Presidential Policy Directive-2: National Strategy for Countering Biological Threats](#)
- [Presidential Policy Directive-8: National Preparedness](#)
- [Presidential Policy Directive-21: Critical Infrastructure Security and Resilience](#)
- [Securing our Agriculture and Food Act](#)
- [S&T and CWMD IPT Charter](#)
- [S&T and CWMD Memorandum for the Record 2021– Establishment of Operating Principles between DHS Science & Technology Directorate \(S&T\) and DHS Countering Weapons of mass Destruction Office \(CWMD\) to Collaborate on Chemical, Biological, Radiological, Nuclear \(CBRN\) Risk Assessments](#)