



Remedy Protectiveness and Climate Resilience in Site Cleanups: Policies, Guidance and Implementation Tools

As of November 8, 2021

A product of the Fall 2021 meeting of the Federal Remediation Technologies Roundtable

(Information in this summary is current up to November 8, 2021)

*Federal agencies working together in accordance with
2021 Executive Order 14008, Tackling the Climate Crisis at Home and Abroad*

Agency	Agency Overview	Relevant Plans, Policies and Directives	Implementation Reports and Tools
<p>Department of Defense</p>	<p>Tackling the Climate Crisis; https://www.defense.gov/Spotlights/Tackling-the-Climate-Crisis/source/GovDelivery/</p> <p>DoD Climate and Security Resources; https://climateandsecurity.org/resources/u-s-government/defense/</p>	<p>Department of Defense Climate Risk Analysis; October 2021; https://media.defense.gov/2021/Oct/21/2002877353/-1/-1/0/DOD-CLIMATE-RISK-ANALYSIS-FINAL.PDF</p> <p>Department of Defense Climate Adaptation Plan; September 2021; https://media.defense.gov/2021/Oct/07/2002869699/-1/-1/0/DEPARTMENT-OF-DEFENSE-CLIMATE-ADAPTATION-PLAN-2.PDF</p> <p>DoD Directive 4715.21, Climate Change Adaptation and Resilience; August 2018; https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/471521p.pdf; pursuant to Executive Order 13653 reinstated by 2021 Executive Order 13990</p> <p>2014 Climate Change Adaptation Roadmap; https://www.acq.osd.mil/eie/downloads/CCARprint_wForward_e.pdf; undergoing update per 2021 National Defense Authorization Act (NDAA)</p> <p>Unified Facilities Criteria (UFC) FC 2-100-2, Installation Master Planning; September 2020; updates for energy and climate resilience and updates to incorporate climate change effects, as required by 2021 NDAA; https://www.wbdg.org/FFC/DOD/UFC/ufc_2_100_01_2020.pdf</p> <p>Unified Facilities Criteria (UFC) 3-201-02, Landscape Architecture; UFC 3-201-01, Civil Engineering; UFC 1-200-02, High Performance and Sustainable Building Requirements; updates to incorporate climate change and climate resilience; https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc</p>	<p>DoD Installation Exposure to Climate Change at Home and Abroad; April 2021; https://media.defense.gov/2021/Apr/20/2002624613/-1/-1/1/DOD-INSTALLATION-EXPOSURE-TO-CLIMATE-CHANGE-AT-HOME-AND-ABROAD.PDF; pursuant to 2021 Executive Order 14008 requirement for climate risk analysis</p> <p>DoD Climate Assessment Tool; https://media.defense.gov/2021/Apr/05/2002614579/-1/-1/0/DOD-CLIMATE-ASSESSMENT-TOOL.PDF</p> <p>DoD Regional Sea Level Database; https://drsl.serdp-estcp.org/</p>
<p>Department of Defense: Air Force</p>	<p>Climate Preparedness and Resilience; https://www.afimsc.af.mil/Portals/89/Documents/IMSC%20Connections/2021%20Editions/MAY%202021/PSU_MAY_AFCEC%20CP.pdf?ver=8zvZxJ8I6AUQQYt99G2GLQ%3d%3d</p> <p>Air Force Civil Engineer, vol. 25, no. 1, 2017, p4-7, "Air Force Fosters Climate-Resilient Installations; https://www.afcec.af.mil/Portals/17/documents/CE-Online/vol%2025%20NO%201%20final%20for%20web.pdf?ver=2017-04-26-152640-747</p>	<p>Air Force Policy Directive (AFPD) 90-20, Mission Sustainment, https://static.e-publishing.af.mil/production/1/saf_ie/publication/afpd90-20/afpd90-20.pdf, and Air Force Instruction (AFI) 90-2001, Mission Sustainment, https://static.e-publishing.af.mil/production/1/saf_ie/publication/afi90-2001/afi90-2001.pdf; climate/weather is one of seven hazard categories required to be assessed and mitigated as part of a broader installation assessment of risk to mission sustainment</p> <p>AFI 32-1015, Integrated Installation Planning; https://static.e-publishing.af.mil/production/1/af_a4/publication/afi32-1015/afi32-1015.pdf; requires assessment and management of risks associated with the effects of a changing climate on built and natural infrastructure, requires consideration of energy and climate resiliency in planning documents, and addresses flood hazards</p>	<p>Air Force Civil Engineer Severe Weather/Climate Hazard Screening and Risk Assessment Playbook; April 24, 2020; https://cs2.eis.af.mil/sites/10041/CEPlaybooks/SevereWeather/Pages/default.aspx (closed access, see https://www.dvidshub.net/news/377409/directorate-civil-engineers-solicits-installation-assistance-screen-severe-weather-climate-hazards-af-installations)</p> <p>Climate resilience to be integrated in all master plans within 5 years; see http://afcs.wbdg.org/installation-elements/comprehensive-planning/installation-development-plan/index.html for relevant practices e.g. open space buffers</p>

<p>Department of Defense: Army/Corps of Engineers</p>	<p>Climate Preparedness and Resilience; https://www.usace.army.mil/corpsclimate/Climate_Preparedness_and_Resilience/</p>	<p>USACE Climate Action Plan; 2021; https://www.sustainability.gov/pdfs/usace-2021-cap.pdf</p> <p>Army Directive 2020-08, US Army Installation Policy to Address Threats Caused by Changing Climate and Extreme Weather; September 2020; https://api.army.mil/e2/c/downloads/2020/09/14/a6aa8a40/ad-2020-08-u-s-army-installation-policy-to-address-threats-caused-by-changing-climate-and-extreme-weather.pdf</p> <p>USACE Climate Change Adaptation Policy Statement; June 2011; http://cdm16021.contentdm.oclc.org/utis/getfile/collection/p266001col1/id/5256</p>	<p>Army Climate Resilience Handbook; August 2020; https://www.asaie.army.mil/Public/ES/doc/Army_Climate_Resilience_Handbook_Change_1.pdf</p>
<p>Department of Defense: Navy</p>	<p>-</p>	<p>Policy for Optimizing Remedial and Removal Actions at All DON Environmental Restoration Program Sites; April 2012; https://www.navfac.navy.mil/navfac_worldwide/specialty_centers/exwc/products_and_services/ev/go_erb/program-support/optimization.html</p> <p>U.S. Navy Climate Change Roadmap; 3000 Ser N09/10U103021; April 2010; https://www.hsdl.org/?abstract&did=8466</p>	<p>Department of the Navy Environmental Restoration Program Manual; 2018; https://www.navfac.navy.mil/navfac_worldwide/specialty_centers/exwc/products_and_services/ev/go_erb/resources.html</p> <p>DON Guidance on Green and Sustainable Remediation; April 2012; https://www.navfac.navy.mil/navfac_worldwide/specialty_centers/exwc/products_and_services/ev/go_erb/program-support/optimization.html</p> <p>SiteWise™ Tool Version 3.2; For a copy of this tool, please send an e-mail to amy.hawkins@navy.mil or EXWC_T2@navy.mil</p>
<p>Department of Energy</p>	<p>Climate Change; https://www.energy.gov/science-innovation/climate-change</p>	<p>Department of Energy 2021 Climate Adaptation and Resilience Plan; August 2021; https://www.energy.gov/sites/default/files/2021-09/DOEClimateAdaptationandResiliencePlanSept21.pdf</p> <p>DOE Climate Change Adaptation Plan; 2016 interim update; https://www.energy.gov/sites/prod/files/2017/01/f34/2016%20DOE%20Climate%20Adaptation%20Plan_0.pdf</p>	<p>U.S. Department of Energy Sustainability Reporting, Vulnerability Assessment and Resilience Planning Guidance; https://www.energy.gov/management/spd/us-department-energy-sustainability-reporting</p>

<p>Department of Interior: US Geological Survey</p>	<p>Climate Change Adaptation: Department of the Interior; R46694; Congressional Research Service; February 2021; https://sgp.fas.org/crs/misc/R46694.pdf</p>	<p>Department of the Interior Climate Action Plan; 2021; https://www.sustainability.gov/pdfs/doi-2021-cap.pdf</p> <p>Secretarial Order 3399, Department-Wide Approach to the Climate Crisis and Restoring Transparency and Integrity to the Decision-Making Process; April 2021; https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3399-508_0.pdf; pursuant to Executive Order 14008, Executive Order 13990, and other authorities</p> <p>Secretarial Order 3398, Revocation of Secretary’s Orders Inconsistent with Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis; April 2021; https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3398-508_0.pdf</p>	<p>Using Information from Global Climate Models to Inform Policymaking—The Role of the U.S. Geological Survey; Open-File Report 2020–1058; 2020; https://doi.org/10.3133/ofr20201058</p>
<p>Department of Transportation</p>	<p>US Climate Resilience Toolkit: Transportation https://toolkit.climate.gov/topics/built-environment/transportation</p>	<p>Department of Transportation Climate Action Plan; August 2021; https://www.sustainability.gov/pdfs/dot-2021-cap.pdf</p> <p>Federal Highway Administration (FHWA) Order 5520 - Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events; December 2014; https://www.fhwa.dot.gov/legisregs/directives/orders/5520.cfm</p> <p>Federal Aviation Administration (FAA) Desk Reference (Complement to FAA Order 1050.1F, Environmental Impacts: Policies and Procedures): Section 3.5, Climate Adaptation; February 2020; https://www.faa.gov/about/office_org/headquarters_offices/apl/environment_policy_guidance/policy/faa_nepa_order/desk_ref/media/desk-ref.pdf</p>	<p>FHWA Vulnerability Assessment and Adaptation Framework, Third Edition; FHWA-HEP-18-020; November 2017; https://rosap.ntl.bts.gov/view/dot/36188</p> <p>FHWA Resilience Pilots; https://www.fhwa.dot.gov/environment/sustainability/resilience/pilots/</p> <p>FHWA Climate Change Adaptation Guide for Transportation Systems Management, Operations, and Maintenance; FHWA-HOP-15-026; November 2015; https://ops.fhwa.dot.gov/publications/fhwahop15026/fhwahop15026.pdf</p> <p>Federal Transit Administration (FTA) Transit and Climate Change Adaptation: Synthesis of FTA-Funded Pilot Projects; FTA Report No. 0069; August 2014; https://www.transit.dot.gov/sites/fta.dot.gov/files/FTA_Report_No._0069_0.pdf</p> <p>FAA Green and Sustainable Remediation Guidance (<i>Draft under development – Final expected 2022</i>)</p> <p>Resilience and Disaster Recovery Tool Suite (pilot expected 2022 release): enables evaluation of return on investment for and ranking of road and bridge resilience infrastructure projects based on network performance under a range of hazard conditions</p>

<p>Environmental Protection Agency</p>	<p>Climate Change; https://www.epa.gov/climate-change</p> <p>Climate Change Adaptation Resource Center (ARC-X); https://www.epa.gov/arc-x</p> <p>Superfund Climate Resilience; https://www.epa.gov/superfund/superfund-climate-resilience</p>	<p>Environmental Protection Agency Climate Adaptation Plan; EPA 231R21001; October 2021; https://www.epa.gov/sites/default/files/2015-08/documents/adaptationplans2014_508.pdf</p> <p>U.S. EPA Office of Land and Emergency Management Climate Change Adaptation Implementation Plan; 2014 (update expected 2022); https://www.epa.gov/superfund/oswer-climate-change-adaptation-implementation-plan</p> <p>Office of Superfund Remediation and Technology Innovation memo to EPA regional offices on consideration of climate resilience for non-federal NPL sites; June 2021</p>	<p>Climate Resilience Technical Fact Sheet(s):</p> <ul style="list-style-type: none"> Contaminated Sediment Sites; 2019; https://www.epa.gov/superfund/climate-resilience-technical-fact-sheet-contaminated-sediment-sites Contaminated Waste Containment Systems; 2019; https://www.epa.gov/superfund/climate-resilience-technical-fact-sheet-contaminated-waste-containment-systems Groundwater Remediation Systems; 2019; https://www.epa.gov/superfund/climate-resilience-technical-fact-sheet-groundwater-remediation-systems <p>Evaluation of Remedy Resilience at Superfund NPL and SSA Sites; August 2018; analysis of 2017 hurricane season; https://www.epa.gov/sites/default/files/2019-02/documents/evaluation-of-remedy-resilience-at-superfund-npl-and-saa-sites.pdf</p>
<p>National Aeronautics and Space Administration</p>	<p>Global Climate Change; https://climate.nasa.gov/</p> <p>Solutions: Sustainability and Government Resources; https://climate.nasa.gov/solutions/resources/</p>	<p>National Aeronautics and Space Administration Climate Action Plan; NP-2021-08-2979-HQ; September 2021; https://www.sustainability.gov/pdfs/nasa-2021-cap.pdf</p> <p>National Aeronautics and Space Administration 2020 Sustainability Report and Implementation Plan; https://www.sustainability.gov/pdfs/nasa-2020-sustainability-plan.pdf</p>	
<p>National Institute of Environmental Health Sciences: Superfund Research Program</p>	<p>Climate Change and Human Health; https://www.niehs.nih.gov/health/topics/agents/climate-change/index.cfm</p> <p>Climate Change and Human Health Literature Portal; https://tools.niehs.nih.gov/cchl/index.cfm</p>	<p>Climate Change and Health Request for Information (NOT-ES-21-009) was released on July 30, 2021 to seek information to identify research gaps and priorities in the following priority areas of research on human health and climate change:</p> <ul style="list-style-type: none"> Innovative Research that Addresses Climate Change and Human Health Scientific Infrastructure to Address Human Health and Climate Change Research and Community Partnerships to Address Environmental Injustice and Foster Resilience Rapid Research Response Capacity to Address Human Health and Climate Change Diverse Workforce to Address Human Health and Climate Change Translation and Dissemination of Research Findings and Health Protective Strategies 	<ul style="list-style-type: none"> NIEHS funds university-based grants for tools assessing vulnerable populations, links between climate change and environmental justice, impacts of natural disasters on human health, implementing disaster research response including disaster response worker training, impacts of natural disasters on fate, transport, and exposures to contaminants; https://www.niehs.nih.gov/research/programs/climatechange/index.cfm NIEHS is convening a special National Advisory Environmental Health Sciences Council (NAEHSC) meeting to consider a NIH-wide Climate Change and Health Concept on November 29, 2021; https://www.niehs.nih.gov/about/boards/naehsc/agenda/index.cfm