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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense **Date:** March 2024

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 2: Applied Research</i>	R-1 Program Element (Number/Name) PE 0602675D8Z I <i>Social Sciences for Environmental Security</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	3.854	4.718	5.456	-	5.456	6.045	6.341	6.479	6.609	Continuing	Continuing
046: <i>Providing Research and End-user Products to Accelerate Readiness and Environmental Security (PREPARES)</i>	0.000	3.854	4.718	5.456	-	5.456	6.045	6.341	6.479	6.609	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiative to Build Sustainable and Long-Term Advantage.

This program funds Department of Defense (DoD) physical climate and social science applied research. Climate and environmental change will impact the full range of U.S. military operating environments. DoD capabilities, until recently, have been aligned toward the historical environmental and geopolitical record; failure to anticipate and plan for the security effects of climate and environmental change holds significant potential to not only degrade DoD readiness and effectiveness but also compound the frequency and scope of novel geostrategic risks and surprises. Efforts under this program will focus on interdisciplinary science and technology that spans physical climate modeling and forecasting and social sciences capable of yielding tangible decision support tools that empower operational planners to prepare for and adapt to the complicated, interconnected security and stability challenges of climate and environmental change. Insights derived from this program will enable Combatant Commands to better engage key partners and allies in efforts to plan for and mitigate risks and promote global peace and stability.

The program includes studies, investigations, and non-system specific technology efforts directed toward general military needs with a view toward developing and evaluating the feasibility and practicality of proposed solutions and determining their parameters.

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B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	4.000	4.718	5.500	-	5.500
Current President's Budget	3.854	4.718	5.456	-	5.456
Total Adjustments	-0.146	0.000	-0.044	-	-0.044
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.146	-			
• Program Adjustments	-	-	-0.055	-	-0.055
• Economic Assumptions	-	-	0.011	-	0.011

Change Summary Explanation

A reduction of \$0.055 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of \$0.011 million in FY 2025 for Economic Assumptions.

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Appropriation/Budget Activity 0400 / 2				R-1 Program Element (Number/Name) PE 0602675D8Z / <i>Social Sciences for Environmental Security</i>				Project (Number/Name) 046 / <i>Providing Research and End-user Products to Accelerate Readiness and Environmental Security (PREPARES)</i>				
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
046: <i>Providing Research and End-user Products to Accelerate Readiness and Environmental Security (PREPARES)</i>	0.000	3.854	4.718	5.456	-	5.456	6.045	6.341	6.479	6.609	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program will leverage and integrate expertise from operational end users, physical climate scientists and models, tools, and datasets, and social scientists with deep understanding of designated regional and local communities to anticipate and respond more quickly and precisely to climate and environmental change risks and opportunities. The program aims to explore how specific environmental and social indicators might inform strategic reviews to adapt warfighter training and planning in anticipation of climate global trends. The research program will build upon the products of the 6.1 Minerva Research Initiative (program element 0601110D8Z) with a focus on end-user defined mission, geographic, and timescale priorities to forecast local and regional climate and environmental change effects, assess and predict likely societal impacts and responses, and ultimately provide operations planners technically-relevant and operationally precise scenarios to incorporate into Contingency Plans (CONPLANS) and Operational Plans (OPLANS) and Intelligence, Surveillance, and Reconnaissance (ISR) requirements related to climate change.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2023	FY 2024	FY 2025
Title: Providing Research and End-user Products to Accelerate Readiness and Environmental Security (PREPARES)	3.854	4.718	5.456
<p>Description: PREPARES will leverage and build upon Minerva products by incorporating their findings into operationally-relevant planning scenarios that accelerate the Department’s understanding of the social, cultural, behavioral, and political dynamics most likely to be affected by climate and environmental change in strategically important areas of the world. By aligning research objectives with the priorities of operational end users who can apply the tools and knowledge products to their areas of responsibility, the proposed enhancement would translate and integrate results from 6.1 strategic and global-centric analyses to provide operational and tactical assessments to inform CONPLAN and OPLAN, focusing on specific regions and detailed scenarios for the warfighter. PREPARES uniquely applies research to integrate physical climate and social sciences and accelerate “research to operations”, directly impacting military operational planning and preparations to mitigate the security risks from climate and environmental change. This effort also will rapidly produce the tools and products the end-users need to sustain data-informed planning and analysis for operations and engagements with partners and allies.</p> <p>FY 2024 Plans: Second year activities will focus on continued research in the pilot priority scenario studies selected during FY 2023. The development of a data product concept, the development of a data product prototype, and opportunities for working meetings will ensure synchronization and coordination among the end users, social scientists, and physical scientists.</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2023	FY 2024	FY 2025
<p>As the initial technical feasibility research phase wraps, the activity will coordinate with end users, including the SOCOM Enterprise, affected Commands, and Civil Affairs operational planners, social scientists, and physical scientists. Coordination will provide insights and lead to the selection for development of one or more specific data products to support data-informed planning. Initial analysis for operations and engagements with partners and allies will focus on risks related to climate and environmental change. A data product concept and development process will be drafted in FY 2024, with the following general themes:</p> <ul style="list-style-type: none"> • End users provide needs/insights for product and subsequent analysis; • Physical scientists evaluate recent climate modeling at the regional level and select appropriate data inputs for use in social science modeling in areas of geopolitical importance; • Physical scientists/forecasters use knowledge and skills to provide insights for weather-climate predictability over a 12 to 18-month period; • Physical scientists/forecasters create software or products by which the hazard forecast is communicated and provided to social scientists, including a range of probabilities; • Social scientists determine what types of weather-climate hazards over a 12 to 18-month period serve as proxy for instability/conflict in areas of interest; • Social scientists use the physical science environmental output and indicator information to weigh the risks of compounding threats that are likely to emerge or have already emerged within a year to several years; • Social scientists apply weights and/or determine severity of instability/conflict due to multiplicative compound threats within a year to several years; • Social scientists provide analysis of possible scenarios on timescale and in areas of interest to end users with relative probabilities and degrees of severity to help inform which areas require immediate planning actions, which need heightened surveillance, and which do not need further action at the current time; and • End users receive a data product(s) that aids in decision making by the results of this cycle. <p>FY 2025 Plans: Third-year activities will focus on continued research in the pilot priority scenario studies selected during FY 2023 and FY 2024. Resources will be applied to the design and refinement of the user interface to support subject matter specifics and human factors for ease of use and trainability.</p> <p>Coordination with stakeholders and end users will become more targeted and formalized. Data products and workflows will be rigorously defined and integrated into a working testbed. User-defined scenarios will be explored and evaluated.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement:</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
The increase of \$0.738 million between FY 2024 and FY 2025 supports continued research, analysis, and development of a data product concept and prototype. Specifically, analysis of integration and architecture options for back-end alignment with existing and predicted instances in target Programs of Record.			
Accomplishments/Planned Programs Subtotals	3.854	4.718	5.456

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

NA