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***Office of Environmental Planning and Historic Preservation
(OEHP) Climate Resilience Support***

**Technical Proposal, Volume I
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TABLE OF CONTENTS

1	Technical Approach Overview	1
2	Detailed Technical Approach	1
2.1	Objective 1: Program Management and Administrative Support.....	2
2.2	Objective 2: Meeting Support, Process Design, and Facilitation	5
2.3	Objective 3: Communications and External Engagement.....	7
2.4	Objective 4: Knowledge and Change Management.....	10
2.5	Objective 5: Technical Product and Document Development.....	10
2.6	Objective 6: Data Mining, File GeoDatabase Development, and Management of Climate-related Geospatial Data.....	11
3	Staffing Approach & Key Personnel.....	14
3.1	Key Personnel.....	14
3.2	Subject Matter Experts	16
3.3	Resource Information	20

1 TECHNICAL APPROACH OVERVIEW

The Federal Emergency Management Agency (FEMA) is charged with advancing climate resilience and environmental justice to help alleviate human suffering, physical and economic damages, Disaster Relief Fund expenditures, and National Flood Insurance Program claims. The Climate Team is responsible for ensuring FEMA is positioned to most effectively incorporate climate resilience into the execution of the FEMA Mission by providing technical subject matter expertise, data and analytical expertise, project management, meeting planning, preparation, facilitation and documentation. As the Climate Team moves toward being established as a formal division within the Resilience Strategy Directorate (RSD), and the Climate Adaptation Enterprise Steering Group (ESG) sunsets, there is a need for the Climate Team to become the central coordinator of climate information and activity within FEMA.

Team Strategic Resolution Experts (SRE) has more than 15 years of experience supporting FIMA's priorities, including nearly 2,000 actions over the past 11 months (e.g., meetings, documents, reports, visualizations, and presentations). SRE is comprised of SRE, as the Prime contractor, and Guidehouse as subcontractor. SRE is an award-winning Service-Disabled Veteran-Owned Small Business (SDVOSB), Woman-Owned Small Business (WOSB), and SBA-certified Historically Underutilized Business Zone (HUBZone) Small Business that provides organizational strategy and human capital services to the federal government. Guidehouse is a trusted advisor to FIMA and has supported all FIMA directorates and offices and all major FEMA components and programs.

SRE is well-positioned to provide the support the Climate Team needs to most effectively incorporate climate resilience into the execution of the FEMA Mission.

Representative Climate Team Experience

- **Meeting Facilitation:** Facilitated and supported more than 375 Climate Team meetings to drive decision-making and strategic alignment.
- **Communications Support:** Supported the *Climate Team Regional and Component Engagement and Listening Session Tour*, built the Climate Team SharePoint site, supported the standing up of the Climate Community of Practice, and developed *Climate Essentials for Emergency Managers and Climate Definitions Directive*.
- **Policy Support:** Supported the planning, drafting, and coordination of the *Extreme Temperatures Executive Action Brief*, *Community-Driven Relocation Paper*, *Climate Mitigation Issue Paper*, and *Financing Climate Resilience Report*.
- **Strategic Direction:** Supported 3 Climate Team Offsites, the creation of the *Operations Plan & Implementation Roadmap*, and produced the *Climate Team Year in Review* document showcasing the Climate Team's CY 2022 Accomplishments.

2 DETAILED TECHNICAL APPROACH

The FEMA Climate Team leads, communicates about, advises on, and advocates for the operationalization of climate science to empower decision-making and action across all mission areas. SRE has supported the Climate Team in its goals to advance climate resilience at FEMA through 1) strategic planning and implementation in alignment with Goal 2 of the *FY2022-2026 FEMA Strategic Plan: Lead Whole of Community in Climate Resilience*, 2) responding to requests for support from Resilience related to that office's internal climate resilience implementation efforts, and 3) laying the administrative and organizational groundwork for a FEMA Climate Division within Resilience. Over the next year, SRE will assist the Climate Team with its strategic priorities to:

- Build the foundation of a lasting Climate Division, including adequate infrastructure, processes, staff, and legitimacy, that will withstand evolving organizational structures and leadership priorities.
- Lead in developing and advancing strategic coordination on climate change policy and activity.
- Increase climate literacy across the FEMA workforce and emergency management community requiring partnerships across programs and with interagency partners.
- Advise programs on how to “Lead the Whole Community in Climate Resilience,” ensuring FEMA’s programs and policies are updated and implemented with a climate lens.

SRE will execute the activities in the following sections to address the statement of objectives.

2.1 Objective 1: Program Management and Administrative Support

SRE has the expertise and institutional knowledge to support the Climate Team’s program management and administrative support functions. SRE is equipped to support project planning, tracking, product development, and presentation. SRE’s administrative support includes email inbox management, calendar maintenance, and project task tracking.

2.1.1 Project Management

SRE will leverage concepts, activities, and tools grounded in the Project Management Institute’s (PMI) *Project Management Body of Knowledge* (PMBOK) to provide project management support at the Climate Team Division level. This includes development of roles and responsibilities documents; workflow processes and timelines for assignments and tasks; decision flow documents; plans for risk management, communication, and escalation; tools and dashboards.

Tasks and Activities

Work Plan Development and Tracking

- Work with the Climate Team to identify and define the audience, scope, key stakeholders, and format for formal deliverables.
- Develop a work plan to identify tasks, task owners, sequencing, and timeframes for formal deliverables. Formal deliverables include the work plan (Objective 1), partnering strategy (Objective 3), Inflation Reduction Act (IRA) implementation strategy (Objective 5), formal presentations (Objectives 5 and 6), financial strategies for climate resilience implementation (Objective 5), Nature-Based Solutions Strategy (Objective 5), future climate conditions tools guide (Objective 6), and future climate condition tools case studies (Objective 6).
- Submit the draft work plan for review and feedback.
- Finalize the work plan.
- Track and report progress and risks for work plan tasks and activities.

Project Document Development

- Work with the Climate Team to identify, analyze, and refine existing documents, as needed.
- Work with the Climate Team to identify and define the audience, scope, and key stakeholders for new project management documents and tools.
- Submit the draft product for review and feedback.
- Conduct product review sessions with key stakeholders, as needed, to gather feedback.
- Adjudicate feedback and finalize the product.
- Upload the final product to the appropriate repository.

Tasks and Activities

Briefing and Training

- Determine the audience and key outcomes for the project management document briefing or training.
- Design briefing or training materials to assist in knowledge transfer of project management documents.
- Coordinate briefing or training logistics to include scheduling and material distribution.
- Deliver the briefing or training.

Workstream Meetings

- SRE will support up to two ad hoc meetings daily for each of the Climate Team's four (4) workstreams to discuss and collaborate on concepts, products, prioritization, and decision-making. Currently, the workstreams include Operations, Communications, Policy, and Data & Analytics.

Deliverables	Work Products	Activities
<ul style="list-style-type: none"> • Project workplan for formal deliverables 	<p>SRE will deliver a total of 13 products per month (this is inclusive of products for Objective 1 and Objectives 3-6).</p> <p>Formal products are expected at a rate of 3/month. For formal products, deliverables include an outline, draft, pre-final and final versions with adjudication meetings after government comment on each version.</p> <p>Informal Products, e.g., data updates, presentation drafts, visual aids are expected at a rate of 10/month.</p> <p>Work products may include:</p> <ul style="list-style-type: none"> • Roles and responsibilities • Project workflow processes for completing project assignments and project tasks • Timelines for project assignments and tasks • Project risk management plans • Project decision flow and documentation and escalation plans • Project communication plans 	<ul style="list-style-type: none"> • Conduct ad hoc workstream meetings (at least twice daily for each workstream).

Assumptions

Tasks and Activities

- The government will have three working days to provide feedback on lower-level final submissions, and five days to provide feedback on final submissions, unless other specific Government review times are documented and agreed to via the workplan. If SRE receives no feedback within those timeframes, the final submission will be considered accepted by the government.

2.1.2 Administrative Support

SRE understands the importance of ensuring consistent day-to-day operations within the Climate Team. SRE will provide management and coordination support for the Climate Team shared email inbox and calendar, including Climate Team Action Office taskers. In addition, SRE will update, manage, and support weekly reviews of the *Project management tool (Project Tracker)*.

Tasks and Activities

Email Inbox and Calendar

- Monitor, route, and respond to messages daily.
 - Ensure all incoming communications are distributed to and received by the appropriate Climate Team respondent on a daily basis.
 - Ensure communications are filed accurately.
 - Execute pre-approved responses for repeat communications.
 - Work with Climate Team members to identify, respond to, and escalate incoming requests.
- Send Climate Team meeting invitations from the Climate Inbox, as requested.
- Manage CAESG calendar invitations from the Climate Adaptation mailbox, including adding/removal of participants as well as attaching meeting materials to the invite. (*Note: The CAESG will be sunset in June 2023.*)
- Assist the Policy Workstream Lead to document, coordinate, track, and submit Climate Team Action Office requests.
 - Review and route incoming taskers to the appropriate workstream lead.
 - Add taskers to the *Climate Tasker Tracker*.
 - Coordinate, follow-up, and compile tasker responses from Climate Team stakeholders.
 - Obtain approval for tasker submission response from Climate Team leadership.
 - Notify relevant parties when taskers are completed.
- Maintain the Climate Team shared calendar for high-level Climate Team commitments, events-of-interest, and recurring internal Climate Team meetings with an outlook of at least three months.

Planning and Tracking

- The contractor shall explore tools and present options for an alternative program management tools/dashboard and transition the MS Task Tracker to a more functional platform upon approval by the Government POC, COR (and Contracting Officer if additional costs would be incurred).
- Update the *Project management tool (Project Tracker)* to reflect new tasks and task updates.
- Maintain the *Project management tool (Project Tracker)* in accordance with the *Task Tracker SOP*; update the SOP, as needed to reflect tool and process changes.
- Support the review of the *Project management tool (Project Tracker)* with Climate Team members on a weekly basis.
- Compile *Project management tool (Project Tracker)* inputs for the *Climate Year in Review* document at the end of the calendar year.

Deliverables	Work Products	Activities
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Tasks and Activities		
<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Three-month look ahead calendar of high-level Climate Team commitments/events of interest 	<ul style="list-style-type: none"> Manage inbox/calendar on a daily basis. Update tools and dashboards (ex. <i>Climate Tasker Tracker</i> and <i>Project management tool (Project Tracker)</i>). Provide review to support document clearance.
Assumptions		

2.2 Objective 2: Meeting Support, Process Design, and Facilitation

SRE has significant experience planning and facilitating meetings of varying sizes, both face-to-face and virtually, for a wide range of government and commercial clients. A successful meeting employs the appropriate technology, encourages participation, and manages issues as they arise. SRE helps the Climate Team achieve its strategic objectives by executing effective meetings; ensuring relevant stakeholder involvement; coordinating meeting logistics; preparing meeting materials (including agendas, presentations, meeting summaries that capture action items); and arranging technology. We have worked with all our clients to create innovative solutions that leverage technology to support virtual engagement and collaboration. SRE will provide support as listed below for meetings to support key decision-making and strategic alignment.

Frequency	Total	Meeting Name/Type	Task and Activities
Weekly	156	Up to three (3) Climate Team Coordination Meetings (for example, <i>Climate Team - Bi-weekly Connect</i> and <i>Climate Team Sync meetings</i>)	<ul style="list-style-type: none"> SRE will provide agenda templates to be crowd-sourced by Climate Team members. SRE will provide note taking support (notes and action items captured in OneNote).
Weekly	156	Up to three (3) External Meetings (for example, OEA and DHS Coordination)	<ul style="list-style-type: none"> SRE will provide materials production (read aheads, PowerPoint presentation files), and note taking support (notes, key takeaways, decisions, and action items).
Quarterly	4	Formal Meetings Requiring Facilitation (Quarterly)	<ul style="list-style-type: none"> SRE will facilitate formal meetings for the Climate Team. Each meeting is anticipated to be 2-4 hours with up to 40 people. SRE will provide pre-meeting support to include up to three pre-meetings, as needed. Pre-meeting 1 will determine the agenda; pre-meeting 2 will be a process walkthrough with the Climate Team members on the final agenda; and pre-meeting 3 will be a walkthrough with the Climate Team leadership and meeting presenters, as needed. Each pre-meeting will be scheduled for 30 minutes; no pre-meeting will exceed one hour.

Frequency	Total	Meeting Name/Type	Task and Activities
			<ul style="list-style-type: none"> SRE will provide scheduling support, materials development (agenda, read aheads, PowerPoint presentation files), and note taking support (notes and Summary of Conclusions).

SRE proposes the following tasks to support Meeting Support, Process Design, and Facilitation.

Tasks and Activities		
Meeting Support, Process Design, and Facilitation <ul style="list-style-type: none"> Work with Climate Team members to identify the purpose, audience, and desired outcomes for the meeting. Provide scheduling, prepare the agenda, and develop materials; coordinate the review and approval of meeting materials. Facilitate meetings (as required). Provide note taking support and deliver notes, action items, and Summary of Conclusions (as required). <p><i>Note:</i> Reference the previous table for specific support requirements for each meeting.</p>		
Deliverables <ul style="list-style-type: none"> N/A 	Work Products <ul style="list-style-type: none"> Materials (e.g., support and content development of agenda and slide decks). Meeting notes Summary of conclusions (SOC) documentation that specifically identifies meeting decisions and actions items 	Activities <ul style="list-style-type: none"> Schedule, plan, coordinate, and facilitate 2-hour to 4-hour quarterly meetings for up to 40 people. Use OneNote and/or Microsoft products to capture and deliver meeting notes within two (2) business days of the meeting; provide final notes within two (2) business days of receiving comments from the Government.
Assumptions <div></div>		

2.3 Objective 3: Communications and External Engagement

SRE understands the critical role that communications and external engagement play in the Climate Team enacting whole of agency climate adaptation within FEMA. SRE proposes the following tasks to support communications and external engagement.

Tasks and Activities
<p>Communication Strategy</p> <ul style="list-style-type: none"> • Develop draft outline of product to ensure alignment with purpose and vision, as applicable. • Coordinate with product POC, as required, to iterate on product outline, as applicable. • Draft and develop products to align with the vision of the product POC and in alignment with FEMA branding and style guidelines. • Obtain any additional feedback from Climate Team members through meetings and internal document review, as applicable. • Conduct final formatting review, quality assurance and quality control review, and compliance check to ensure all feedback is incorporated appropriately. • Deliver and archive the final product.
<p>Guidance and Support for Communication and External Engagement/Public Affairs Strategies</p> <ul style="list-style-type: none"> • Work with the Climate Team to understand Climate Team priorities and existing and desired external engagements, including identifying relevant stakeholders and barriers to communication and engagement. • Identify key information and messaging required to support Climate Team priorities and external engagement. • Provide insights and recommendations to align communications and engagement strategies with the Climate Team's <i>Communication Strategy</i> and FEMA's Public Affairs guidance.
<p>Support Development of Climate Team Communications Products</p> <ul style="list-style-type: none"> • Work with Climate Team members to determine the audience, purpose, content, and target delivery date for the product, which may include fact sheets, storytelling work products, videos, web content, graphics, presentations, reports, directives, thought papers, talking points, documents for publication, press releases, briefing memos, or strategic external messaging via FEMA websites and other public-facing tools. • Draft and develop products using an iterative process to obtain and incorporate feedback. • Ensure product alignment with FEMA and Climate Team branding. • Perform 508 compliance reviews. • Archive and maintain presentation materials in MS Teams repository.
<p>Presentation of Materials</p> <ul style="list-style-type: none"> • Determine the audience and key outcomes for the presentation. • Design and develop presentation materials. • Work with the Climate Team to finalize presentation materials. • Deliver the presentation.
<p>Partnering Approach and Strategy</p> <ul style="list-style-type: none"> • Develop and support implementation of a partnering strategy. <ul style="list-style-type: none"> ○ Develop draft outline of product to ensure alignment with purpose and vision, as applicable. ○ Coordinate with product POC, as required, to iterate on product outline, as applicable. ○ Draft and develop products to align with the vision of the product POC and in alignment with FEMA branding and style guidelines. ○ Obtain any additional feedback from Climate Team members through meetings and internal document review, as applicable.

Tasks and Activities

- Conduct final formatting review, quality assurance and quality control review, a 508 compliance check, and compliance check to ensure all feedback is incorporated appropriately.
- Deliver and archive the final product.
- Provide meeting support.
 - Develop meeting materials (for example, agendas and slide decks).
 - Capture and deliver notes.
- Support strategic priority setting.
 - Design and facilitate strategy sessions to help the Climate Team identify strategic priorities.
 - Consolidate strategies and recommendations; work with the Climate Team to finalize the list of priorities.
 - Work with the Climate Team to document and validate goals, objectives, owners, and the approach and frequency for reporting information about strategic priorities.
 - Provide support to report progress, challenges, and risks.
- Support MOU/MOA development.
 - Work with the point of contact to understand the purpose, scope, type of agreement, and requirements for the agreement.
 - Work with key stakeholders to draft the agreement.
 - Participate in meeting(s) to review and revise the agreement.
 - Capture and adjudicate feedback.
 - Finalize and submit the agreement to the designated point of contact.
- Assist in the development of an internal, external, and interagency engagement approach.
 - Work with the Climate Team to identify stakeholders.
 - Review existing engagement strategies to determine effectiveness and gaps.
 - Develop recommendations for improvement.
 - Collaborate with stakeholders to identify goals and objectives for engagement.
 - Work with the Climate Team to prioritize recommendations.
 - Assist the Climate Team to document an engagement approach.

Communications Management

- Establish and report communication metrics.
 - Work with the Climate Team to identify communication goals, objectives, and key performance indicators (KPIs).
 - Document and validate communication goals, objectives, and metrics.
 - Design and develop tools, report formats, and reporting cadences to communicate progress.
 - Monitor metrics and report on progress and metrics via regularly scheduled meetings and reports.
 - Conduct periodic strategic performance reviews to discuss feedback, progress, challenges, and risks.
 - Work with the Climate Team to address deficiencies.
- Monitor and control communication risks and quality.
 - Work with the Climate Team to capture and communicate challenges and recommendations to mitigate risks that impact the quality of communication products.
 - Develop a process and tools for monitoring communication risks and quality.
 - Review products and make recommendations to improve the readability, consistency, accuracy, and effectiveness of communication products.
 - Coordinate with the Climate Team to finalize changes.
- Provide guidance, design, and development for collaboration tools.

Tasks and Activities		
<ul style="list-style-type: none"> ○ Provide subject matter expertise for how the Climate Team can best leverage collaboration tools, including Microsoft SharePoint, Teams, Power Automate, and Power Apps to easily access information; centralize, automate, and integrate content; and incorporate FEMA-compliant branding into design templates. ○ Provide design, development, implementation, and maintenance support for collaboration tools, including intranet site integration, list and library development, workflows, and reporting. ○ Periodically review collaboration tools to identify opportunities and recommendations for improvement. ● Support development of strategic external messaging. <ul style="list-style-type: none"> ○ Determine the audience, key outcomes, medium, review process, and inputs for external messaging. ○ Draft the external messaging utilizing existing approved messaging as applicable. ○ Work with the Climate Team to develop the messaging, incorporate feedback, and finalize the messaging. ○ Review messaging to confirm quality, accuracy, and completeness. ○ Submit the messaging, as applicable, for external review (such as the Office of External Affairs). ○ Provide messaging to the appropriate stakeholder for distribution or posting. ○ Archive and maintain messaging in MS Teams repository. 		
Deliverables	Work Products	Activities
<ul style="list-style-type: none"> ● <i>Partnering Strategy</i> (internal and external stakeholder engagement and relation strategy) 	<p>Work products may include:</p> <ul style="list-style-type: none"> ● Talking points, briefing memos/packets, and press releases ● Executive-level speech materials, including drafting and revising scripts and presentations ● Fact sheets, storytelling work products, infographics, videos, web, and graphic design content 	<ul style="list-style-type: none"> ● Develop and support implementation of the partnering strategy. ● Track metrics for communication activities, messaging work products, and stakeholder engagement. ● Support OEA climate landing page. ● Manage internal FEMA SharePoint pages related to Climate.
Assumptions		
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2.4 Objective 4: Knowledge and Change Management

Tasks and Activities		
Provide Knowledge Management Support <ul style="list-style-type: none"> • Manage MS Teams file sharing and OneNote to maintain and archive project-related content. • Collaborate with Climate Team members to update and document requirements for knowledge management processes. • Support general Climate Team knowledge sharing, communication, and training, as needed. • Provide onboarding/offboarding training and support transition planning and implementation. 		
Provide Change Management Support <ul style="list-style-type: none"> • Support the Climate Team with the Road to Resilience reorganization by integrating change management best practices into knowledge management. • Update documentation such as operational plans, strategies, communications, and onboarding/offboarding products to reflect organizational changes. 		
Deliverable <ul style="list-style-type: none"> • N/A 	Work Products <ul style="list-style-type: none"> • Updates to operational plans, strategic planning, internal team communication development and deployment, onboarding/offboarding and training (on a quarterly basis, after initial development) 	Activities <ul style="list-style-type: none"> • Manage, maintain, and archive program-related content on a daily basis.

2.5 Objective 5: Technical Product and Document Development

SRE is well-positioned to support the Climate Team to execute product development tasks across all workstreams, including presentations, reports, briefing memos, data updates, and visual aids.

SRE proposes the following approach to support formal product development within each workstream.

Tasks and Activities
Policy Analysis <ul style="list-style-type: none"> • Review FEMA’s strategic and program documentation to identify opportunities and gaps related to climate resilience, sustainability, future conditions, and nature-based solutions. • Review and case studies/industry best practices from public, non-governmental organizations, and private sectors. • Research, track, and analyze policy issues, proposals, guidance, and legislative provisions related to climate and nature-based solutions to understand implications and identify unintended consequences. • Work with FEMA and Climate Team Subject Matter Experts (SMEs) to assess the implications of final guidance and provisions adopted by the White House, National Security Council, Congress, DHS, and FEMA components; evaluate alignment with FEMA strategic goals and objectives existing Climate Team priorities and activities; and recommend implementation approaches. • Develop communications products and materials to capture, organize, and communicate climate information and recommendations.
Nature Based Solutions (NBS) Strategy for Resilience/FEMA <ul style="list-style-type: none"> • Coordinate with the Climate Team to determine the product point of contact (POC). • Conduct working session with product POC(s) to define the purpose, scope, requirements, due date, timeline for review, and associated deadlines. • Establish and confirm the approach for tracking and managing feedback and edits; determine the coordination and content approval process for coordination with Resilience and the agency.

<ul style="list-style-type: none"> • Review background materials. • Develop an outline and coordinate with the product POC to ensure alignment with purpose and vision. • Schedule and conduct interviews with stakeholders within Resilience and the agency to discuss nature-based strategies and stakeholder engagement approaches. • Draft and develop products to align with the vision of the product POC and in alignment with FEMA branding and style guidelines. • Consult internal Climate Team subject matter expert(s) and external stakeholders in product development planning, as required. • Facilitate an iterative review process to obtain any additional feedback from Climate Team members through meetings and internal document review, as applicable. • Conduct final formatting review, quality assurance and quality control review, and compliance check to ensure all feedback is incorporated appropriately. • Deliver and archive the final product. 		
<p>Research, Coordination, and Product/Document Development to Support Climate Priorities (e.g., a Unified Strategy for the Implementation of IRA, a Unified Approach to Address Extreme Heat, a Community-Driven Relocation Framework, and a Resource for Financial Strategies to Implement Climate Resilience Measures)</p> <ul style="list-style-type: none"> • Coordinate with the Climate Team to determine the product point of contact (POC). • Conduct working session with product POC(s) to define the purpose, scope, requirements, due date, timeline for review, and associated deadlines. • Establish and confirm the approach for tracking and managing feedback and edits. • Review background materials. • Develop an outline and coordinate with the product POC to ensure alignment with purpose and vision. • Draft and develop products to align with the vision of the product POC and in alignment with FEMA branding and style guidelines. • Consult internal Climate Team subject matter expert(s) and external stakeholders in product development planning, as required. • Facilitate an iterative review process to obtain any additional feedback from Climate Team members through meetings and internal document review, as applicable. • Conduct final formatting review, quality assurance and quality control review, and compliance check to ensure all feedback is incorporated appropriately. • Deliver and archive the final product. 		
<p>Deliverable</p> <ul style="list-style-type: none"> • Unified strategy for implementation of the requirements of the Inflation Reduction Act (IRA) • Resource describing financial strategies (based on case studies) to implement climate resilience measures • <i>Nature Based Solutions Strategy</i> for Resilience/FEMA 	<p>Work Products</p> <p>Work products may include presentations (formal and informal), reports and briefing memos.</p>	<p>Activities</p> <ul style="list-style-type: none"> • Support implementation of a unified approach to addressing effects of extreme heat and support creation of a federal community driven relocation framework.

2.6 Objective 6: Data Mining, File GeoDatabase Development, and Management of Climate-related Geospatial Data

As the Climate Team evolves to an independent Division within FEMA, there is increased demand to mature data analysis and visualization capabilities to enhance communication and awareness and accomplish strategic priorities. SRE has partnered with the Climate Team for two

years and understands the significance of delivering high quality data management, visualization, and analysis capabilities of both geospatial and non-geospatial data. SRE will provide data expertise to the Climate Team through the proposed tasks and activities listed below.

Tasks and Activities
<p>Geospatial Data Management: Data Mining, File Geodatabase Development and Management</p> <ul style="list-style-type: none"> • Conduct a current state assessment, to determine the availability of internal datasets, analytic needs, and desired end-state. • Perform an external and internal data landscape analysis to identify relevant geospatial datasets both within and external to FEMA. • Create an underlying File Geodatabase to serve as a repository for relevant geospatial datasets identified in the current state assessment and data landscape analysis, as well as online web layer services for data visualization. • Coordinate with stakeholders to develop standards for dataset formatting and cleaning protocols to inform the development of extract-transform-load (ETL) processes and permit efficient dataset ingestion into the File Geodatabase. • Define a metadata tagging strategy to document dataset origins, data recency, data applications, attribution requirements, or any other useful dataset contextual characteristics that will support better filtering and expedited reporting on data quality and accuracy. • Build spatial ETL functionalities to ensure standardized, accurate geospatial data is available for downstream visualization and analytical applications. • Provide interactive and code-based interfaces to the spatial ETL pipeline to enable users to conduct exploratory data analysis and data mining tasks. • Integrate File Geodatabase development and management with the Enterprise Data Analytics and Modernization Initiative's (EDAMI's) forthcoming cloud-based FEMA Data Exchange (FEMADex) solution and support the migration of data and reports into FEMADex with adherence to EDAMI's requirements and best practices. • Ensure all dataflows to and from any application comply with FEMA's data security standards. • Work with stakeholders from across FEMA to define performance metrics and develop metric dashboards and reports to monitor and validate suitable system performance and quality control. • Implement solutions within approved FEMA geospatial, data analytics, visualization, and reporting software, such as Esri ArcGIS products, R, Python, and GIS relational database applications such as MySQL, PostgreSQL, and PostGIS. • Coordinate with Climate Team stakeholders and FEMA's Office of the Chief Information Security Officer (OCISO) to assess the need for novel software and initiate approval processes if required.
<p>Spatial Analysis: Coding Data, Applying Advanced Statistical Techniques</p> <ul style="list-style-type: none"> • Use spatial tools, statistical tools, and coding languages (ArcGIS, Python, R) to interpret data set trends and patterns that could be valuable for diagnostic and predictive analytic efforts. • Conduct raster and vector spatial analysis of relevant datasets, incorporating advanced spatial statistical techniques (such as spatial regression, hot spot analysis, network analysis). • Consolidate both analytical and software engineering expertise to create clean, thoroughly documented code. • Apply comprehensive code management in conducting model testing, forecast validation, model improvements, and code modifications to mitigate the significant risk of the loss of audit trail that goes back to the analysis, intended model features, and capabilities. • Craft written documentation to supplement code repositories that outlines the analytical and data processing techniques performed by scripts, describes any associated assumptions to statistical techniques, and provides step-by-step instructions for running the code and making necessary modifications to ensure continuity of analytical capabilities.
<p>Data Visualization: Interpreting Data, Preparing Reports, Creating Stakeholder Documentation</p>

Tasks and Activities

- Perform use case analysis to identify data model requirements for climate data and visualization requests.
- Prepare reports and dashboards using tools such as Microsoft Power BI, Tableau, and ArcGIS Dashboard that effectively communicate trends, patterns, and predictions using relevant data to create buy-in within leadership across FEMA and other relevant stakeholders and agencies.
- Develop static and interactive maps to clearly communicate findings to technical and non-technical audiences.
- Utilize the climate File Geodatabase to provide near real-time data to be displayed within visualizations and reports.
- Train Climate Team personnel, as needed, to connect to the climate File Geodatabase and develop dashboards and reports that visualize climate data in both 2D and 3D.
- Collect and inventory existing visualization programs in a central location on an internal website to make them easily searchable.
- Catalog each visualization program with a brief description and tags to promote their discoverability and usage.
- Create appropriate documentation that allows stakeholders to understand the steps and results of the climate data analysis and easily use and interpret the resulting reports and dashboards.
- Integrate developed dashboards and reports within EDAMI's forthcoming cloud-based FEMADex solution to promote their usage enterprise-wide, with adherence to EDAMI's requirements and best practices.

Deliverables	Work Products	Activities
<ul style="list-style-type: none"> • Guide about application of future climate condition tools into FEMA programs • Case studies describing the application of future climate condition tools in preparedness, response, recovery, and mitigation 	<p>Work products may include:</p> <ul style="list-style-type: none"> • Baseline of tools about future climate conditions that are relevant to FEMA • Methodology to conduct a gap analysis to learn about data tool needs relevant to FEMA for emergency management and resilience building • Analysis to support implementation of the Community Disaster Resilience Zones Act • Presentations (formal and informal), reports and briefing memos 	<ul style="list-style-type: none"> • N/A

Assumptions

