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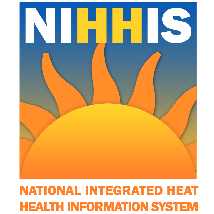
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**Section I:** Meeting Summary, Highlights, and Overview

# Overview

On September 26-28, 2023, representatives from 23 federal agencies and the White House participated in a two and a half day meeting to merge the efforts of the NIHHIS National Steering Committee with the White House Extreme Heat IWG and formulate a National Heat Strategic Plan. Additional Federal agency capabilities joining the two established groups included representatives from: transportation, agriculture, parks, and recreation, international, census, housing, defense, national security, and labor. A list of attendees is provided in [Appendix A](#_Appendix_A:) of this report.

The meeting was facilitated by Lynne Carbone & Associates, Inc. The Consultants, Lynne Carbone, and David Bidwell designed and facilitated the NIHHIS strategic planning process and brought continuity to the effort.

The desired results of the meeting were to:

* Reconnect with existing NIHHIS members and onboard IWG and other new agency members.
* Recap and transition the NIHHIS strategic plan to be the National Heat Plan.
* Share member perspectives on the "stories" that the plan should convey to the nation.
* Add themes to reflect additional strategies and federal commitments to action.
* Identify high interest candidate projects for the next 12-24 months.
* Agree on next steps and implementation activities.

There were approximately ten participants each day who attended virtually. It should be noted that there were significant audio issues as well as limited screen viewing capability which greatly impeded engagement with virtual participants throughout the two and a half days. Morgan Zabow, NIHHIS, monitored the chat and alerted the in-person participants when a virtual member had a comment and wished to be recognized. Despite the impediments, the virtual participants provided valuable input to help shape the draft National Heat Strategic Plan.

# White House and Agency Leadership Panel

## Juli Trtanj, Co-Chair of the NIHHIS Steering Group and the Extreme Heat IWG

Juli Trtanj welcomed White House officials and agency leaders to provide opening remarks to set the stage for the important work ahead for agency participants. A high-level summary of panel member remarks follows.

## [Brenda Mallory,](https://www.linkedin.com/in/brenda-mallory-535258131) Chair, Council for Environmental Quality, CEQ

*Note: Unfortunately, there was an audio problem when Chair Mallory provided opening remarks. Some attendees were unable to hear her valuable message and a recording was not captured. However, a summary of her remarks has been requested of her office and will be provided in an updated version of this report.*

Brenda Mallory is the Chair of the Council on Environmental Quality (CEQ). As Chair, she advises the President on environmental and natural resources policies that improve, preserve, and protect public health and the environment for America’s communities. She is focused particularly on addressing the environmental justice and climate change challenges the nation faces while advancing opportunities for job growth and economic development. The CEQ Chair has convened stakeholders to promote action to address the urgent need to prioritize mitigation of urban heat, which especially impacts low-income communities and communities of color, as temperatures continue to soar in cities across the country. Furthermore, since urban heat intersects with environmental justice, built environment, health, and community resilience. To impact this critical challenge, integrated action is required to improve the quality of life for the most vulnerable in our cities to improve the resilience of vulnerable communities and building infrastructure. As part of a whole-of-government approach, the White House launched an Extreme Heat Interagency Working Group that brings together health, scientific, and environmental resources to develop both short- and long-term strategies to reduce the impact of extreme heat on vulnerable communities.

## Jainey Bavishi, Assistant Secretary of Commerce for Oceans and Atmosphere and Deputy NOAA Administrator

Jainey Bavishi began by acknowledging the significance of this meeting, bringing heat experts together from more than 20 agencies to focus on a long-overlooked issue, adding that we will one day look back and see this as a critical transitional moment. Ms. Bavishi shared that if we get it right, we can show how to change society and infrastructure to avert harm from heat. She acknowledged that we are not starting from scratch with a very solid foundation from the exceptional services provided by all the agencies present today. She noted that this collective body can build on historic investments from the IRA and CHIPS Acts and recently passed legislation. She applauded the effort in front of this multi-agency group to make this country stronger in the face of heat and climate change by developing and implementing a comprehensive heat strategy to achieve long term resilience guiding how institutions must grow and change to meet the challenge.

## Kristen Avery, Extreme Heat IWG Chair, CEQ

Ms. Avery began by acknowledging that we had multiple agencies working together through NIHHIS and the Extreme Heat Working Group, and that this effort has now added housing, transportation, and energy. There is a strong need for interagency coordination to identify solutions. She acknowledged that undertaking a national heat strategy is not a trivial thing. Ms. Avery thanked the agencies represented in the meeting and virtually and the Biden Administration for its support. She explained that the White House would encourage the multi-agency team to think more broadly than the prepare and respond paradigm and look into the future integrating adaptation to realize a healthy and resilient future. She emphasized that the continuum is awareness, preparedness, response, assessment, and adaptation. Ms. Avery relayed that the national climate resilience framework was going to be released shortly with implications for heat and its huge impact on people, the environment, education, food supply, and more across every aspect of our daily lives. The Extreme Heat IWG Chair affirmed that the group had a big job ahead but reiterated that the White House is here to support you. She thanked the agency members and noted that there would be several White House representatives rotating through the meeting because of their interest and commitment to this national critical challenge.

## Victoria Salinas, Deputy Administrator, FEMA, Resilience

Victoria Salinas shared that she has been with the Biden Administration for two years. Her experience has been at the big intersection of heat and health at the state and local level. She noted how the federal level is critical for instilling equity in the approach to the environment and management. The Deputy Administrator emphasized how great it is to see a real commitment nationally to this issue. Even in one year, she noted huge progress seeing different parts of different agencies contributing to heat and addressing this hazard which is at the core of many inequities in this county. Ms. Salinas thanked the group for inviting her and shared her intention to spend the day engaging and conversing on challenges and the way forward.

# Opening Remarks by Co-Chairs of NIHHIS and Extreme Heat IWG

Juli Trtanj thanked Chair Mallory for her leadership and offered opening remarks followed by each Co-Chair from the NIHHIS Committee and Extreme Heat IWG, respectively.

## Juli Trtanj, NIHHIS Co-Chair/IWG Co-Chair, OAR/NOAA

Juli Trtanj offered a brief history of NIHHIS starting with NWS and CDC as Co-Chairs because of the time scales involved and the need to better coordinate across the federal government with a focus on heat impacts on health. The Integrated Information Systems (IIS) model was applied and focuses on users’ needs, who needs them, and when. The draft NIHHIS plan that we are working on today is structured around the IIS. She highlighted that the current Administration has been enthusiastic in its support for this national issue and the White House IWG has clearly elevated the issue and raised national awareness of its importance. Juli noted how exciting it is to merge efforts with the Extreme Heat IWG and integrate other agencies to work together on shaping and implementing a national strategy and plan.

## Kim McMahon, NIHHIS Co-Chair, NWS/NOAA

Kim McMahon joined NIHHIS in 2021 as a Co-Chair. She shared how exciting it is to see the federal community coming together on this important work and reiterated the commitment by the National Weather Service to not just reach at the federal level, but down to state, local, and tribal communities and at all time scales. She highlighted the need to reach those that are disproportionately impacted by understanding their needs and finding the best ways to reach them and communicate in ways that lead to action.

## Paul Schramm, NIHHIS Co-Chair, CDC/HHS

Paul Schramm offered how pleased he is to be Co-Chairing NIHHS and shared his commitment to continued active involvement of CDC. He explained that the impacts of heat on health is key to CDC focus on health equity and other important factors which intersect with heat. Paul explained that CDC is leaning into this and interested in further integrating and supporting the other federal partners in meeting the heat challenge. CDC is tracking the increasing health impacts of heat and he expressed that it is great to see how many other agencies are recognizing the issues and interested in working together to address them.

## John Balbus, Extreme Heat IWG Co-Chair, OCCHE/HHS

Dr. John Balbus offered that three trajectories brought agency members together on this effort: 1) government, 2) hazards, and 3) people.

He explained that on the government side, in 2009, there was a recognition that climate and health should be addressed and shortly thereafter, NIHHIS emerged. Currently, there are four to five community working groups generating an explosion of federal activity. This meeting’s purpose is to close the trajectory and integrate and coordinate these efforts.

The hazard driver also brings us here because we are not doing well addressing the impacts of unprecedented heat. Heat deaths have nearly doubled, and we have found that heat does not follow the normal disaster rules driving the need to move away from preparing and responding to long term resilience and adaptation.

The third driver is people where the numbers of heat related deaths are outstanding – with high numbers among drug users, people with mental health issues and people working in hot environments. Dr. Balbus emphasized the need to step up public health efforts with intentional integration of relevant human services from multiple federal partners who can have an impact where it is critical and will be meaningful.

## Jeanne Briskin, Extreme Heat IWG Co-Chair, EPA

Jean Briskin shared her history of involvement working with NOAA and DOE back in 1990-1995 on understanding the effects of heat on air pollution and potential energy savings by addressing heat. She offered that the EPA is pleased to be part of moving towards a federal strategy to meet public health needs but also to address industrial policies where industry success depends on heat. She highlighted and example of the cascading impacts of heat on systems in places such as chemical plants and how heat impacts which can lead to blowing of pressure release values and toxic gas leaks which then have the cascading impacts on farmlands, communities, transportation, and overall ecosystems.

# Process Overview

## Introductions and Expectations

Lynne Carbone and David Bidwell of Lynne Carbone & Associates, Inc. provided an agenda and process overview for the multi-day meeting. Participants engaged in a round of introductions. In addition to each member providing name, agency, and role, they were asked to complete the sentence, *“I will be energized and invested in implementing this plan if….”*  The list of both in-person and virtual participant responses may be found in [Appendix B](#_Appendix_B). Meeting participants not listed in this icebreaker may have attended other parts of the 2 ½ day meeting. This summary only reflects the expectations of the participants who were in attendance on the morning of September 26th.

Some key themes emerged from member introductions and overarching expectations for inclusion in the new merged plan were:

* Role clarity: Ensure agencies can see where they fit and then effectively integrate and coordinate with others.
* Long-Term Resilience: Create a long-term compelling vision for long term resilience and heat reduction.
* Disproportionately Impacted Populations: Address the underserved, people with special needs and disproportionately impacted populations.
* Beyond People and Health: Expand beyond heat impacts on people and address places, wildlife, and the environment.
* Resources: Ensure that there are dedicated resources available and effectively deployed across agencies.
* Time Horizons: Address short- and long-term challenges.
* Data: Fill data gaps.
* Policies and Research: Focus policies and research on addressing hot spots, not only long-term resilience.
* Cascading Impacts: Make connections with drought and fire.
* Education and Outreach: Seize opportunities for public education and outreach.

Themes from participant expectations continued to be conveyed throughout the strategic plan development over the two and a half days and were incorporated during plenary sessions and reflected in the National Heat Plan mission, vision, strategies, principles and/or introduction and background.

# NIHHIS Vision, Mission, and Draft Strategic Plan

Juli Trtanj offered a summary of the draft NIHHIS Strategic Plan which would serve as the launch point for expanding to include the Extreme Heat IWG strategies as well as strategies to integrate from other agencies new to the process.

Ms. Trtanj summarized the NIHHIS current draft eight-year strategic plan and explained that the NIHHIS Steering Committee was scheduled to complete its implementation plan on the dates reserved for this meeting until it was decided to merge with the Extreme Heat IWG and expand to a National Heat Strategic Plan.

The NIHHIS vision, mission and strategic goals are:

## NIHHIS Mission

NIHHIS builds societal understanding of heat risks, develops science-based solutions,   
improves capacity, communication, and decision-making   
to reduce heat-related illness and death.

## NIHHIS Vision

A heat resilient nation

empowered to effectively address extreme heat and its impacts.

## Strategic Goals

## 

## Overall Feedback

Early on, agency representatives indicated the need to broaden the scope of the NIHHIS strategic plan beyond health and impacts on people to encompass impacts on places, the environment, wildlife, businesses, and infrastructure. These messages consistently emerged and are reflected in the many changes to the NIHHIS strategic plan.

### Mission and Vision Feedback

Preliminarily, comments about the mission and vision statements emerged in discussions. It was agreed that the statements needed adjustments including:

* Expand the statements to be more inclusive and beyond people and health impacts.
* Clarify the beneficial impacts provided.
* Recognize that “place” matters.
* Convey protection of people, animals, wildlife, places, building, housing, businesses, environment.

Using a live polling tool, participants were asked to vote on preferred options for the mission and vision draft statements. The polling results are:

Based on the voting, the new statements for the new National Heat Strategic Plan are:

### Draft Mission

We build societal understanding of heat risks,

develop science-based solutions, and improve capacity, communication, and decision-making   
to reduce heat related impacts.

### Draft Vision

A thriving heat resilient nation.

## Stories the Plan Should Convey and Gaps in Draft Plan

With introductions, shared expectations, and background information reviewed, the facilitators requested that each member share their perspectives on the “story” that the National Heat Strategic Plan should convey and offer gaps that they perceive in the NIHHIS draft plan. While each person spoke, the rest of the participants documented ideas that they were hearing as gaps in the current plan through a live polling tool. Participants expressed gaps under the four draft goals and additional comments in an “other” category. Documentation and sorting of all live polling inputs are provided in [Appendix C](#_Appendix_C:).

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**Section II:**Identification of Gaps by Goal

# Overview

Before the day ended, the collective group identified the major gaps by goal that would need to be addressed the next day in breakout groups. The specific topics identified through the live polling and noted as gaps to be addressed in breakout groups follows:

# Goal 1: Society – Plenary Gap Identification

### Understand needs and perceptions, expand awareness, and inspire action to address the impacts of heat.

## Scope of Goal

* Not just inspire – compel to take action (goal).
* Shift mindset to be open to heat solutions in schools.
* Education as an objective on its own, not only as part of outreach – e.g., developing curriculum.

## Stakeholders

* State and National Parks.
* Businesses and utility providers as stakeholders and audiences of comms.
* Revise environmental justice objective (1.2).
* Really important that we are 508 compliant and support the visually impaired – including people with disabilities.
  + Compliance with ADA, linguistic services, and other frameworks need to be more explicitly clear. How does this plan show those frameworks?
  + Pregnant people are also at higher risk and need to be considered.
* Impacts on individuals but also on innovation and economic implications (not only negative, but on opportunities to address these concerns).

## Tailored and Enhanced Approaches for Engagement and Communications

* Tailored comms to each audience including within business.
* Proactive engagement and mechanisms to communicate with tribal, state, and local communities.
* Bi-directional communication, and how are we hearing from them? Provide mechanisms to hear from others.
* Provide ways to better engage and communicate with local and state entities.
* Tailored approaches and messaging.
* Need to reach people by social media.

# Goal 2: Science – Plenary Gap Identification

### Advance understanding of heat and its impacts to develop science-based services and solutions for enhanced resilience.

## Who/What Is Impacted

* Understanding the impacts on businesses and the economy. Think about different types of business and industry – what are the impacts and how best to communicate with them.
  + Business risk research could be done to ID if certain industries are more or less at risk for extreme heat and connections to management.
  + Business innovation as well; the positive impacts as well as negative.
* Built environment.

## New or Expanded Strategies

* How equity is implemented – need demographic data; combine heat data with population data.
* Calling out acting on information – policy evaluation and validating effectiveness. (2.4)
* One health (heat lens) including animal and environmental health, built materials, and transportation.
  + Ecological/ecosystem may be a better term than one-health.
* Expand data monitoring and observations – be more inclusive of the economy, energy use/burden, costs, infrastructure (e.g. buckling roads and walkways).
* Highlight existing best practices in research.

### Measuring Results and Benefits of Efforts

* Research on methodologies for measuring the results and benefits of activities.
* Indicators and metrics of all efforts (research) create generalized knowledge.

### International

* International research – incorporate/collaborate.
* Innovation and heat risk reduction financing – some examples internationally.

## Implementation Guidance

* Steering Committee to guide research priorities (implementation note).
* Make sure we are not duplicating work – understand other working groups and efforts underway.

# Goal 3: Solutions – Plenary Gap Identification

### Improve and facilitate an integrated approach and access to heat health information, services, and solutions to support international, national, state, local, territorial, tribal, and individual actions.

## Solutions

### Technical Assistance and Integrated Planning

* Include rural areas in solution sets into integrated planning.
* Place-based technical assistance to identify design and implement solutions.
* Community capacity building.

### Built Infrastructure

* Temporary housing (strategy in the midst of a heat event); affordable housing (longer term solutions).
* Built environment; materials; innovation. Include builders in planning and decision making.

### Heat Islands

* Addressing heat islands at a larger scale. A lot of cities have been trying to deal with heat islands and not making big strides – want to have a big-time push to really overhaul and implement solutions.

### Multiple Lifelines

* Solutions should be oriented to cover as many lifelines as possible; coordinate ESFs and ensure efficient use of resources and greatest impact.

### Migratory Corridors

* Restore migratory corridors: There is a lot of funding available to support migratory species and there is a huge climate benefit and impact to restoring and supporting these species. We can adjust language in the plan to capitalize on this movement. Re-establishing ecosystems.

### Grants

* Helping populations apply for grants in an equitable way.
* Grant opportunities but changing the way we put restrictions on grant use – knowing what grants are available and reducing overall administrative burdens.

## Effectiveness and Impacts

* Exercising and testing the system. We (FEMA) are committed to this with OMB including for extreme heat.

### Impacts of Solutions

* Assess solutions against their positive or negative impacts on climate change overall – for example staying cool with air conditioning that is powered by fossil fuels is not a solution on the decadal scale.
* Who are we hitting with these solutions, but also WHEN? What is the short term, medium-, and long-term solution and impact. (Matrix of solutions and timescale).
  + Blended impacts – there should be a blended measure of short and long term good or bad.
* Indicators and metrics of all efforts (solutions) are making real impacts.

### Cascading Impacts

* Making sure we do not have any unintended negative impacts, e.g., planting trees (type?), and materials (neg externalities).
  + Think about the benefits and drawbacks to other climate hazards and challenges beyond heat only.
* Cascading impacts wildlife and ecosystem. (Consider true wildlife; domesticated animals; even pets)

## Access and Delivery Systems for Solutions

* CDC and FEMA models incorporated as a common framework Human service, transportation services.
* Public health and healthcare delivery.
* Utility services and reliability; continuity of operations.
* Fill in gap of how people access and are made aware of solutions and opportunities.

# Goal 4: Support – Plenary Gap Identification

### Strengthen the foundations of NIHHIS success to ensure continuity as the primary integrated federal source for heat-related health information and solutions.

## Plan Execution

* How are we actually going to execute and facilitate all these actions? Funding, agreements, infrastructure – how will it be operationalized?

## Metrics

* Metrics and indicators – institutionalizing checklists and evaluation of

## Role Clarification

* We go further together – we need to capitalize on the energy behind this topic and stay in alignment and come to agreement on where we are going, and how we will get there. How we will all play an important part.
  + At some point we should be hearing from the newest members – how can we more fully bring you onboard and make sure you stay? And how can you help us innovate?

## Governance, Office and Staff

* We will be more sustainable if we can create some type of heat office to really bring dedicated agency resources and staff.
  + Sometimes heat departments exist, but they are siloed and not on the radar – how do you identify and bring in these very knowledgeable experts.
  + Unlikely to have each agency have its own heat office but can embed heat into all operations. Designated staff.
  + Siloes of excellence exist, we need to bring them together and execute to make them meaningful.
* Governance of this interagency body. How will the work get done?
  + Sub governance structure to focus on certain hubs and make concrete connections and responsibilities. Who to go for and for what.
* ESFs and Lifelines – coordination and structuring; it is systems within systems and can be streamlined and redundancy reduced.

## Expanded Mission and Scope

* Concerning that the entire plan focuses on broader effects of heat to the extent they affect humans; can we go further and reflect things about the environment and animals and ecosystem that do not directly impact people?

## Enhanced Coordination and Collaboration

* International collaboration.

## Streamlining Administrative Burden

* Streamlining federal requirements and reducing administrative burden (in terms of federal grants and other resources).
* Workforce development and training – national level training from response managers to other industries. Capacity to function and implement strategy.

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**Section III:** Strategic Plan Adjustments   
and Draft Priorities/Initiatives

# Strategic Plan Adjustments to Fill Gaps

## Breakout Groups: Recommendations to Address Gaps

On September 27, day two of the federal meeting, participants were invited to select a goal for breakout group work to address gaps identified in the Plenary session on the previous day. The breakout group tasks were to review and validate the gaps and recommend new strategies or adjustments to existing strategies to fill the identified gaps.

Breakout group leads were asked to facilitate and ensure completion of the task. Members for each goal and virtual participation are listed in the grid below. The virtual team members were facilitated by Maggie Allen, (NIHHIS, NOAA) and Morgan Zabow, (NIHHIS, NOAA). The virtual participants were tasked to review all four goals and provide inputs to fill gaps, as appropriate.

### Breakout Group Participants

|  |  |  |
| --- | --- | --- |
| Goal # | Lead/Facilitator | Team Members |
| 1 - Society | Maggie Jarry (SAMHSA, HHS) | Ed Ahearn (ACL, HHS); Heather Jones (ACF, HHS); Sara Newman (DOI, NPS); Victoria Salinas (FEMA) |
| 2 - Science | Hunter Jones (NIHHIS, NOAA) | Brenda Jacklitsch (NIOSH); Tom Osborne (VA); Bethany DeSalvo (Census Bureau); Jim Vorheis (Census Bureau) |
| 3 - Solutions | Kim McMahon (NWS, NOAA) | Jeanne Briskin (EPA); Nick Shufro (FEMA), Lauren Jensen (HHS, OCCHE) |
| 4 - Support | Paul Schramm (HHS, CDC)  John Balbus (HHS, OCCHE) | Andrew Dolan, DHS; Leanne Spaulding, (DOT, OST); Juli Trtanj (NIHHIS, NOAA) |
| All Goals (Virtual Participants) | Morgan Zabow, (NIHHIS, NOAA); Maggie Allen (NIHHIS, NOAA) | Victoria Ludwig (EPA); Ashley Bieniek-Tobaso (OSHA); Lisa Bothwell (ACL, HHS); Lynn Owens (OSHA); Jenna Davis (USAID); Erica Burrin (HHS).  Alexis Pelosi (HUD); Akm Rahman (HHS/ACF); Hamid Ghasemi (OST, DOT); Lisa Brennan (DOT) |

The participants embarked on the process to develop the new plan by iterating on a draft plan that had been formulated by the NIHHIS Committee. The process instructions were:

* Review gaps list from plenary session and understand details in polling results.
* Where possible, modify a current objective or add a new objective.
* Ensure that you provide the “what and why” for each objective.

Each team completed their respective task. The report by each group consisted of recommendations to fill assigned gaps. Each group presented using an edited version of the draft plan. Plenary members asked questions for clarification and provided feedback. Ultimately, the collective body voted a “thumbs up” to accept each proposed change. In some cases, existing objectives were modified or deleted, and new objectives were added to fill identified gaps.

All proposed and affirmed changes to all goals are included in the updated draft strategic plan attached to this report as a separate document. Additionally, a version of the draft plan with notes captured throughout the two-and-a-half-day engagement is also attached.

## Final Plan Format and Flow

Based on the live polling and throughout the two-and-a-half-day discussions, feedback was provided to inform the National Heat Strategic Plan. It was agreed that the plan horizon would be 10 years with a two-year implementation action plan. The final draft National Heat Strategic Plan 2024-2034 is included as a separate attachment to this report. Additionally, a copy of the draft plan with notes on suggested changes is also attached.

### Plan Introduction and Backdrop

Throughout the engagement to develop the national strategy, members offered ideas about the plan context, backdrop, underlying principles, and cross cutting themes to convey in the introduction. Key messages for consideration to introduce the national plan are:

#### Foundations

* **Start with “why”**, explain why we do what we do – it is a “unified effort to address environmental heat to empower a healthy and prosperous nation”.
* The government cares about making sure **the nation is resilient to heat and has adequate resources** to handle heat, and this is what we are going to do about it.
* The federal government is **supporting state, local, and tribal governments** to implement heat resilience policies and projects - for people, places, and environment.

#### Cross-Cutting Themes

* **Apply an equity-based approach** to reach disproportionately affected and disproportionately impacted populations (including, but not limited to workers, socioeconomically disadvantaged, older adults, people with disabilities, unhoused persons, communities of color, children, and rural communities).
* There are some **overlapping topic categories**: 1) Health (people, animals, crops/plants, environment), 2) Economy (infrastructure, homes, business), 3) Security (food, power, water), and 4) Conflict (crime, war).
* **“Why place matters”** as a crosscut.
* “Thriving” as a nation in the vision statement is all encompassing and **includes both life and economic wellbeing**.
* Evaluation of all solutions must account for and **anticipate unintended consequences** across timescales including optimizing co-benefits.
* Highlight **benefits to stakeholders**.
* Address **all time scales** in plan strategies.

#### Operating Principles

Core operating principles which emerged and should be considered for inclusion in the front of the plan or background and introduction section. Some principles identified were:

* Scientific Integrity.
* One Health.
* Nature Based Solutions.
* Environmental Justice.
* Measuring Impacts to inform science and solutions.

### Implementation Considerations

* Identify **things communities can do right now** from current resources – not everything is a heavy lift.
* The need to have real **mandates/authority and funding**; we must formalize these mandates into law and span across administrations.
* There is need for **joint-budget planning** to implement this plan with several budget examiners with support from our leadership to really drill into how much funding we need to do these specific tasks like research topics and more. There needs to be accountability.
* Think about **criteria/metrics to evaluate progress** towards protecting wellbeing and reducing health harms from extreme heat, for each objective in the strategic plan.
* Should the plan under development here go to some **external review/comment forum** for completeness, such as the National Science Foundation? It would take time, but potentially improve scope, clarity and increase the visibility, believability/willingness of decisionmakers to pay attention.
* Given the new scope of the federal heat strategy, **should NIHHIS be renamed** if it is the home or umbrella for the federal heat strategy?
* **Clarify actions underway** and “low hanging fruit” versus more aspirational and significant investments.
* Include text box explanations, as needed to ensure reader understanding.
* Include an index of acronyms as a reference.

## Strategic Goals – 10-Year Overarching Outcomes

The four strategic goal structure and topics remained the same in the updated draft National Heat Strategic Plan. The goals are:

Goal 1 – Society: Understand needs and perceptions, expand awareness, and inspire action to address the impacts of heat.

Goal 2 – Science: Advance understanding of heat and its impacts to develop science-based services and solutions for enhanced resilience.

Goal 3 – Solutions: Improve and facilitate an integrated approach and access to heat health information, services, and solutions to support international, national, state, local, territorial, tribal, and individual actions.

Goal 4 – Support: Strengthen the foundations for NIHHIS success to ensure continuity as the primary integrated federal source for heat-related health information and solutions.

# Draft Near-Term Priorities/Initiatives

The last collaboration invited participants to use the live polling tool and identify near-term priority projects that they would be energized to take on in the short term (12-24 months). Twenty total projects were identified. Attendees were asked to vote on three that they considered the greatest priorities. Three tiers of voting are shown below followed by the graph of vote distributions. When the newly formed National Heat cross-federal group comes together for implementation planning in the new year, these projects should be considered along with other carryover items from both the NIHHIS plan and the Extreme Heat IWG two-year plan.

### Top Voted Tier of Projects for Implementation **(Bolded)**

* Option A: Guidance document on effectiveness of adaptations for heat-health (e.g., "what works" for protecting health).
* Option B: Promote cooling assistance and residential weatherization through the Low-Income Home Energy Assistance Program in late spring and summer.
* Option C: Annual heat communications/messaging plan.
* Option D: Collaboration (CDC, Census, NOAA, HHS-OCCHE) to further refine fine scale vulnerability indicators for heat health outcomes that agencies can use to target resilience and heat mitigation investments.
* Option E: Leveraging existing data to identify, quantify, and inform the most pressing heat related issues to solve.
* Option F: A single website that allows a user to identify all federal grants with eligibility related to heat mitigation.
* Option G: Review and incorporate IWG 2-year action plan.

### Second Tier of Voted Projects

* Option H: Advocate for a mandate and authority for NIHHIS to lead this effort (Law).
* Option I: Develop a framework for evaluating the thermal comfort impacts of green and gray resilient infrastructure investments and proposals.
* Option J: Create Community Resilience Estimates (vulnerability and maybe hazard exposure, build environment, capacity) for Heat. Using this as a jump off: <https://www.census.gov/data/experimental-data-products/cre-heat.html>.
* Option K: Mapping heat related federal investment on a base map of heat-vulnerable census tracts in CEJST.
* Option L: Incorporating economic impacts into heat.gov (e.g., pull in the number of establishments/employment by industry from county business patterns).
* Option M: Research and new prototype data products on heat exposure and heat risk for businesses (and/or people's exposure at work).

### Bottom Tier Voted Projects

* Option N: Micro level evidence on the intersection of imperviousness, tree canopy and surface temperature.
* Option O: Add a research library to heat.gov with information from federal partners including heat/climate work they have done or supported that can be accessed by internal and external partners.
* Option P: Customize culturally sensitive messaging to Native American tribal areas.
* Option Q: Update LIHEAP and Extreme Heat website.
* Option R: Prototype real time demographic profiles of the population exposed to extreme heat events (using the Census environmental impacts frame + formal privacy techniques).
* Option S: Using linked microdata to develop research on the intersection of poor housing quality and heat exposure.
* Option T: Federal agencies establish a coordinated "lead by example" activity to reduce the impacts of their buildings and facilities on extreme heat, i.e., all GSA, Post Office, DoD, etc. buildings have cool roofs and less pavement around them.

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**Section IV:** Closing Remarks, Follow-Up Actions, and Summary of Meeting Evaluations

# Closing Remarks

## Draft Schedule

Juli Trtanj offered a proposed schedule for next steps by activity and timeframe starting with the goal of a finished and approved National Heat Strategic Plan by March 2024. The suggested schedule by activity and month to achieve goal was:

* **November 2023:** Streamline and edit draft plan
* **December 2023:** Complete draft National Heat Strategy
* **January 2024:** Develop Implementation Plan
* **February 2024:** Obtain Agency clearances
* **March 2024:** Present National Heat Strategic Plan
* **Heat Season:** Implement of Top 10 Near-Term Projects

She articulated the expectation that member agencies who attended this meeting to remain committed as an integral part of making this plan happen. She emphasized the commitment to work together, learn from one another, and make this vision and plan a reality. She reiterated NOAA’s deep commitment to the national heat crisis and that the agency is in this for the long term.

## Continued Engagement

John Balbus, Co-Chair of the Extreme Heat IWG expressed how exciting it was to have new people involved and engaged. He challenged the group to convert this energy into actions and resources. He noted that this body needs to be ready to quickly and clearly respond when asked about what we are doing. He requested candid feedback from new agency members to let the collective group know if this all makes sense and is achievable.

## Final Thoughts

Participants who remained until the end of the meeting were each asked to provide closing remarks at the end of a challenging 2 ½ days. Highlights of the summary statements included:

* Recognition that it is amazing that all of the diverse agency missions have come together to address this challenge, but the bigger challenge will be informed by the business, tribes and other communities that our efforts will impact. (CDC/HHS)
* Appreciation for being able to represent the needs and perspectives of the lower income and vulnerable populations. (ACF/HHS)
* Recognition that this is invisible to so many people but appreciated all that has already been done and being able to onboard quickly and enable us to help be part of working together on this real crisis. (NPS)
* The opportunity to offer our partnership and capabilities in terms of data, research and solutions and gain the context for the work that we do. (Census Bureau)
* Grateful to personally and professionally see the passion demonstrated together to address the most important and impactful issue of our time. (VA)
* Assurance that this effort does not continue falling through the cracks and that we are showing up and building resources and commitment to do our part. (DOT)
* Better integrated this information and increase collaboration in this community of practice. (USDA/FS)
* Inspired that this work will Inform our agency internal planning to build momentum and communicate to agency leadership the support for this effort from 23 agencies. (EPA)
* The ability to keep elevating this issue because people that we represent are suffering and dying from it. I continue to represent our agency’s strong commitment. (SAMSHA)
* The added value of the specific ideas contributed by all members, but especially the new agencies to the process will strengthen the plan and impacts. Excited for the connections and new relationships formed at the meeting. (NIHHIS/NOAA)
* Recognition that it takes everyone to take protective actions and implement what we are trying to do—the connections, shared efforts and resources will make a difference. (NWS/NOAA)

Juli Trtanj closed by offering special thanks to all participants and especially to the virtual participants who in spite of audio/visual challenges made huge contributions to the National Heat Strategic Plan. She noted that it will be critical to work with the Co-Chairs from both NIHHIS and the IWG to implement the follow up action including creating an effective and nimble structure through which to effectively operate.

# Follow-Up Actions

Based on discussions, follow-up actions initiated by the Joint Group Co-Chairs are documented below.

|  |  |  |
| --- | --- | --- |
| Follow-Up Actions | Who | By When |
| Report Out   1. Produce a briefing deck to report results to the White House. | Co-Chairs | Immediately |
| Finalize Plan for Agency Reviews   1. Form a “writing team” to finalize:    1. Determine a name for the merged group and plan. Consider “Federal Heat Action Plan”.    2. Frame strategic plan in visionary/outcome terms at the high level.    3. Streamline number of objectives by bundling and form higher level objectives retaining the existing set for implementation planning. 2. Create a 5-page document which tells a concise “story” about the National Heat Plan for “public” understanding. 3. Distribute for Agencies for review and approval | Writing Team  Writing Team  Co-Chairs | Oct/Nov  Dec  Jan-Feb |
| Governance and Membership   1. Meet as Co-Chairs to determine Governance and operating principles for the new merged groups. 2. Clarify decision-makers versus participants in the process. The final plan will need each agency’s approval. | Co-Chairs  Co-Chairs | Dec  Dec |
| Reality Check – Resource Requirements   1. Secure resources to successfully execute is a major dependency for any movement. Consider recommending an Executive Order with callouts to agencies to ensure commitment and implementation. | Co-Chairs | Jan |
| Implementation Planning   1. Reconstitute membership with decision makers to attend implementation planning. 2. Meet to develop an achievable two-year plan starting with the priorities identified at the end of the meeting. | National Heat Committee  National Heat Committee | March  March |

# Summary of Meeting Evaluations

Thirteen meeting participants submitted evaluations. The summary of the evaluations may be referenced in [Appendix D.](#_Appendix_E)  A rating scale of 1-5 was applied (1=highly dissatisfied and 5= highly satisfied).

The overall meeting average rating was 4.15. Comments on the overall meeting included appreciation for being part of the process but shortfalls with audio and full accessibility for in person participants.

The average rating for group interaction and abilities to meet desired objectives was a 3.85. Again, the significant limitations for the virtual participants with audio and engagement throughout the process were indicated by both virtual and in person member comments as major shortfalls. The comments included appreciation for the process, time management and diversity of inputs.

Themes which emerged from comments offered on what participants experienced as most productive include working as a full group through each goal, the mission/vision refinement, the use of the live polling tool, breakout group work/discussions and reports and overall collaboration with colleagues across agencies.

Themes which emerged on biggest disappointments included AV/connectivity issues, lack of accessibility for wheelchair requirements and hearing impaired, lack of refreshments, ineffective hybrid approach and perceived lack of clarity by some of the meeting purpose and desired output.

Suggestions for future meetings included better preparation in advance by participants based on clear objectives and communications by convenors. Additionally, suggestions included provide better space, refreshments, use breakout group formats, have less sitting and have either an all-virtual meeting or all in person for this effort. Hybrid is not experienced as effective a format for this effort.

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**Appendix A:**National Heat Strategy Meeting Attendees

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Email | Agency | Attendance |
| Abby Hall | hall.abby@epa.gov | U.S. EPA | Virtual |
| Akm Rahman | akm.rahman@acf.hhs.gov | HHS/ACF/OCS | Virtual |
| Alexis Pelosi | Alexis.M.Pelosi@hud.gov | HUD | Virtual |
| Andrew Dolan | andrew.dolan@hq.dhs.gov | FEMA | In-person |
| Ashley Bieniek-Tobasco | bieniektobasco.ashley@dol.gov | OSHA | Virtual |
| Bethany DeSalvo | bethany.desalvo@census.gov | Census Bureau | In-person |
| Brenda Jacklitsch | gwe6@cdc.gov | NIOSH | In-person |
| Deb Loomis | deborah.loomis@navy.mil | Department of the Navy | In-person |
| Edward (Ed) Ahern | Edward.ahern@acl.hhs.gov | HHS ACL | In-person/virtual |
| Erica Burrin | erica.burrin@acf.hhs.gov | HHS | In-person |
| Hamid Ghasemi | hamid.ghasemi@dot.gov | OST-R | Virtual |
| Heather Holsinger | heather.holsinger@dot.gov | U.S. DOT - Office of Policy | Virtual |
| Heather Jones | heather.jones@acf.hhs.gov | DHHS OCS LIHEAP | In-person |
| Hunter Jones | hunter.jones@noaa.gov | NOAA | In-person |
| Janet Li | janet.x.li@hud.gov | HUD | Virtual |
| Jeanne Briskin | briskin.jeanne@epa.gov | US EPA | In-person |
| Jenna Davis | jendavis@usaid.gov | USAID | Virtual |
| John Balbus | john.balbus@hhs.gov | HHS OCCHE | In-person |
| John Haynes | jhaynes@nasa.gov | NASA | Virtual |
| John Voorheis | john.l.voorheis@census.gov | US Census Bureau | In-person |
| Juli Trtanj | juli.trtanj@noaa.gov | NOAA | In-person |
| Kathleen Votava | Kathleen.Votava@acl.hhs.gov | HHS ACL | Virtual |
| Katie Green | kathryn.green@acf.hhs.gov | HHS/ACF/OCS | Virtual |
| Kim McMahon | kimberly.mcmahon@noaa.gov | NOAA | In-person |
| Kimberly Thigpen Tart | kimberly.thigpentart@nih.gov | NIH/NIEHS | Virtual |
| Kristen Averyt | Kristen.B.Averyt@ceq.eop.gov | White House CEQ | In-person |
| Krystal Laymon | krystal.laymon@fema.dhs.gov | FEMA | In-person |
| Lauren Jensen | lauren.jensen@hhs.gov | HHS/OCCHE | In-person |
| Leanne Spaulding | leanne.spaulding@dot.gov | DOT - OST | In-person |
| Lisa Bothwell | Lisa.Bothwell@acl.hhs.gov | HHS ACL | Virtual |
| Lisa Brennan | lisa.brennan@dot.gov | US DOT | Virtual |
| Lisa Long | long.lisa@dol.gov | OSHA | Virtual |
| Lynn Owens | owens.vanessa.l@dol.gov | OSHA | Virtual |
| Maggie Allen | maggie.allen@noaa.gov | NOAA | In-person |
| Maggie Jarry, M.Div. | maggie.jarry@samhsa.hhs.gov | DHHS SAMHSA | In-person |
| Marisa Lowe | Marisa.C.Lowe@who.eop.gov | White House | In-person |
| Marissa McInnis | marissa.k.mcinnis.civ@mail.mil | DOD | In-person |
| Michael Fucci | Michael.Fucci@hhs.gov | HHS ASPR | Virtual |
| Morgan Zabow | morgan.zabow@noaa.gov | NOAA | In-person |
| Nick Shufro | nick.shufro@fema.dhs.gov | FEMA | In-person |
| Paul Schramm | imw3@cdc.gov | CDC | In-person |
| Peter Ibsen | pibsen@usgs.gov | USGS | Virtual |
| Phillip Rodbell | phillip.rodbell@usda.gov | USDA FS | In-person |
| Ryan Harris | harris\_ryan@bah.com | DoD | Virtual |
| Sara Newman | Sara\_newman@nps.gov | NPS | In-person |
| Shubhayu Saha | ssaha@cdc.gov | CDC | Virtually |
| Smita Rawoot | smita\_rawoot@ios.doi.gov | DOI | In-person |
| Steve Wurzelbacher | srw3@cdc.gov | CDC-NIOSJ | Virtual |

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| --- | --- | --- | --- |
| Name | Email | Agency | Attendance |
| Sunny Wescott | Sunny.wescott@cisa.dhs.gov | DHS | Virtual |
| Thomas Osborne | thomas.osborne@va.gov | VA | In-person |
| Veronica Garrison (HUD) | Veronica.E.Garrison@hud.gov | HUD/PD&R | Virtual |
| Victoria Ludwig | ludwig.victoria@epa.gov | U.S. EPA | In-person |
| W. Jon Williams | aun7@cdc.gov | NIOSH/CDC | Virtual |

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**Appendix B:**Icebreaker Day One

|  |  |  |  |
| --- | --- | --- | --- |
| Last Name | First Name | Agency | “I will be energized and invested in implementing this plan if….” |
| Ahern | Ed | HHS ACL | People with disabilities and needs are included and central to all aspects of the plan. |
| Allen | Maggie | NOAA | The plan continues to incorporate engagement and education. |
| Averyt | Kristen | White House CEQ | We consistently have 23 agencies involved in this process!!! |
| Balbus | John | HHS OCCHE | We can do the 2-5 year, and 5-8-year plans. A plan that addresses immediate needs better because there is a real crisis, but also that forward thinking piece into the future. |
| Bieniek-Tobasco | Ashley | OSHA | All the agencies can recognize how they fit into this plan. |
| Bothwell | Lisa | HHS ACL | We continue to work together to find ways to engage with everyone involved. |
| Brennan | Lisa | DOT | For the national transportation and recovery program, since all disasters are local and most transportation systems are not federally owned and operated, we develop tools that allow partners to reduce impacts and build resilience. |
| Briskin | Jeanne | US EPA | We can bring in people from OMB and budget so there are real resources available when we get to implementation. There is a limit to what we can do with our current resources, and that is why getting more agencies involved is so important. Getting a true evolution to a federal heat strategy and being clear about what is practical and possible now vs aspirational will be important. |
| Burrin | Erica | HHS | I understand our role and how we can contribute to our ultimate customers. |
| Cary-Kothera | Lori | White House CEQ | For the plan to really outline some adaptation strategies and actions that state and local communities can take, and to close the knowledge gap on this issue. And there are data gaps around heat and subsequently drought and wildfire so being able to better understand the issue and find solutions. |
| DeSalvo | Bethany | Census Bureau | People create measures that are public facing and are developed in tandem with all agencies that has real utility and is lasting. |

|  |  |  |  |
| --- | --- | --- | --- |
| Last Name | First Name | Agency | “I will be energized and invested in implementing this plan if….” |
| Fucci | Michael | HHS ASPR | We can make sure there is engagement with underserved and vulnerable and disproportionately impacted communities. |
| Green | Katie | HHS/ACF/OCS | The plan identifies ways to bravely blend funds and services across the federal government. |
| Harris | Ryan | DoD | There are clear roles and responsibilities, metrics for success, and resource strategies. |
| Holsinger | Heather | DOT/Office of Policy | We can really tell the story of how our communities can utilize all the available federal funding to make their communities more resilient to heat. |
| Jacklitsch | Brenda | NIOSH | The consideration of workers moving forward. There is a lot of opportunity for NIOSH to participate and really help other agencies with their future research and implementation plans. |
| Jarry, M. Div | Maggie | HHS, SAMHSA | We find a way to measurably show the cascading benefits of actions. Reduction in deaths in people with mental health, substance abuse, reduced new mental health conditions due to heat, and more. |
| Jensen | Lauren | HHS/OCCHE | Developing data driven solutions that address health concerns of the most vulnerable. |
| Jones | Hunter | NOAA | I am hoping everyone in this room and online walks out excited about a new idea and with new colleagues. |
| Jones | Heather | HHS, OCS, LIHEAP | Being able to help low-income households in managing heat as they face these challenges and keep them safe during these events. |
| Li | Janet | HUD | Housing can be called out, specifically in this plan. |
| Loomis | Deb | Department of the Navy | We can lay out a compelling vision for cooling our communities and planet. |
| Lowe | Marisa | White House | Advancing our understanding of vulnerable and disproportionately impacted populations. |

|  |  |  |  |
| --- | --- | --- | --- |
| Last Name | First Name | Agency | “I will be energized and invested in implementing this plan if….” |
| Ludwig | Victoria | U.S. EPA | The plan can build out that long term aspect and particularly make our cities cooler, so heatwaves are less damaging and there are fewer emergencies. Long term resilience for people in urban and suburban areas. |
| McMahon | Kim | NOAA | Having a strategic plan that we can all embrace and are energized by! if we leave not only with 23 agencies but are really seen for the vital role we are playing. Those that are disproportionately impacted and vulnerable – understanding their needs and how to reach them and communicate with them in a way that leads to action. |
| Newman | Sara | National Park Service | Millions of outdoor visitors to parks- real opportunity for education and programing to advance the work we are doing. |
| Osborne | Thomas | VA | To provide the best healthcare possible for our veterans. If we can better understand the impacts to provide better services |
| Owens | Lynn | OSHA | We are energized to be here and part of the process and NIHHIS objectives align with what OSHA is trying to accomplish. |
| Rahman | Akm | HHS/ACF/OCS | We can get commitments from State and Tribal Partners. |
| Saha | Shubhayu | CDC | The possibility of working with social scientists to better work with those who are at risk of heat and continue to find ways to support them. Also really integrating data across different agencies. And utilizing these tools to channel these investments where they are most needed. |
| Schramm | Paul | CDC | We can get to a heat strategy! We all want to get to one place. The Netherlands MIGHT have a heat plan, but we will be the first or second. |

|  |  |  |  |
| --- | --- | --- | --- |
| Last Name | First Name | Agency | “I will be energized and invested in implementing this plan if….” |
| Shufro | Nick | FEMA | People understand FEMAs role and opportunity to help in raising awareness and reducing mortalities and injuries from extreme heat.  Other notes: We do have a process for declaring disasters. There have been some questions of declaring heat as a federal disaster to go beyond state to federal funding and response. There is nothing in the Stafford act that precludes us from being engaged. There have been three attempts to declare heat disasters, and in all three cases there was not enough dollar impact to qualify as a disaster. We have been doing several things that can help contribute and do a lot around awareness. We do a lot of messaging and work with people across the government about what individuals and communities can do. We are here, engaged, and think this is a serious issue. |
| Spaulding | Leanne | Transportation - OST | We see policies that can address thermal safety and additional research into materiality, hot spots, and how best to deploy resources. |
| Trtanj | Juli | NOAA | We stay together, keep working together, and plan together not just developing the plan on paper – let’s really implement it all together on the same page. I can’t wait to get to the doing part, and to see this come together. |
| Voorheis | John | US Census Bureau | We can bring this statistical perspective to this group which can be helpful. |
| Wescott | Sunny | DHS | Understanding and supporting vulnerable communities and making it easier to access resources. |
| Williams | Jon | NIOSH/ CDC | I can see how our research in this area of PPE integrates into other agencies, and how we can maintain occupational health. How this can be applied even more broadly to citizens and society. |
| Zabow | Morgan | NOAA | The number of agencies involved and making new connections with you all. |

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**Appendix C:**Live Polling of Gaps

# Goal 1: Society – Potential Gaps, Stories, and Commitments

## Goal 1: Plenary Gap Identification

### Scope of Goal

* Not just inspire – compel to take action (goal).
* Shift mindset to be open to heat solutions in schools.
* Education as an objective on its own, not only as part of outreach – e.g. developing curriculum.

### Stakeholders

* State and National Parks.
* Businesses and utility providers as stakeholders and audiences of comms.
* Revise environmental justice objective (1.2).
* Really important that we are 508 compliant and support the visually impaired – include people with disabilities.
  + Compliance with ADA, linguistic services, and other frameworks need to be more explicitly clear. How does this plan show those frameworks?
  + Pregnant people are also at higher risk and need to be considered.
* Impacts on individuals but also on innovation and economic implications (not only negative, but on opportunities to address these concerns).

### Tailored and Enhanced Approaches for Engagement and Communications

* Tailored comms to each audience including within business.
* Proactive engagement and mechanisms to communicate with tribal, state, and local communities.
* Bi-directional communication, and how are we hearing from them? Provide mechanisms to hear from others.
* Provide ways to better engage and communicate with local and state entities.
* Tailored approaches and messaging.
* Need to reach people by social media.

## Goal 1: Slido Brainstorming Results

### Community Approach to Problem Definition

* ASPR: Engage environmental justice communities, workers, and other disproportionately affected populations to facilitate protective actions. [3]
* Jeanne Briskin US EPA: Need buy-in from industry to address risks at their facilities. [2]
  + Janet Li: What industry sectors are you thinking of -- all?
* Kim McMahon NOAA: Add working/engagement with private sector to communicate impacts beyond health (e.g. utilities) including how. [2]
* Lisa Brennan (USDOT): 1.2 Revise: Engage in culturally competent dialogue with disproportionally affected communities to understand their perspectives, contexts, and needs to increase environmental justice, equity, and reduce the burdens imposed by the impacts of heat on those communities and their individual members. [2]
* Hamid Ghasemi: Infrastructure Resiliency, understanding the stakeholders’ current state of practice (including assessment and mitigation). [1]
* Lisa Brennan (USDOT): Include industry associations (all sectors) for 1.3 and 1.8. [1]
* Sara Newman: I would add under community approach how to engage communities, businesses, and stakeholders in heat resilient actions/programming.
* Marisa, White House GPC: Engaging healthcare workers, including doulas and midwives.
* Lisa Brennan (USDOT): Each federal D/A has a set of stakeholders and partners. Add a tailored messaging item for D/As to conduct messaging with their stakeholder groups Ie FEMA w/ National Voluntary Organizations Active in Disasters, USDOT works with the American Association of State Highway and Transportation Officials.
* Lisa Brennan (USDOT): 1.5 Recognize differences in how people access information. Determine communications methods appropriate for the audience, including language, distribution means (internet, pamphlet, message boards), format, and language.
* Sunny Wescott, DHS CISA: Engaging community volunteer groups with information on roof painting using the reflective paint or white paint in general and how those groups can help by doing small steps in this realm but having a larger impact as they gain momentum. more power to the communities /climate volunteer groups.
  + Jeanne Briskin US EPA: See work by LNBL on cool roofs. More than roof painting. (They also did work on cool pavements - useful for local/state govt road building and private sector parking lots
* [ACL] Apply an equity-based approach to reach disproportionately affected and disadvantaged populations including, but not limited to: workers, socioeconomically disadvantaged, older adults, people with disabilities, unhoused persons, communities of color, children, and rural communities.

### Tailored Messaging

* ACL: Coordinate fed, state, local, and tribal agencies to promote their available resources in a coordinated, culturally appropriate, accessible manner. Accessible info reqs the use of plain language, easy-read formats, accessible electronic info and tech, and effective comms w auxiliary aids/services. [3]
* ACL: Recognize differences in how people take in info and determine the best comms methods to encourage behavior change including language access (i.e., providing info in the preferred language of different populations, such as Spanish, American (and regional) Sign Language, Chinese, Korean, Arabic, etc.). [1]
* Sara Newman: Section 1.8 should include local, state and national parks. [1]
* Lisa Brennan (USDOT): 1.11 Enhance accessible communications on long-term preparedness, mitigation, and adaptation for specific communities and levels of government, as well as individuals, to promote heat-resilience.
* Sara Newman: 1.12 In addition to developing consistent messaging can we add that aligned messaging and communication will be shared so we are aligned in our messaging. (I.e. talking points we rely on and share based on development of messaging.
* Lisa Brennan (USDOT): 1.9 Add "territorial".
* Marisa, White House GPC: Engaging healthcare workers, including doulas and midwives.
* Lisa Brennan (USDOT): Each federal D/A has a set of stakeholders and partners. Add a tailored messaging item for D/As to conduct messaging with their stakeholder groups Ie FEMA w/ National Voluntary Organizations Active in Disasters, USDOT works with the American Association of State Highway and Transportation Officials.
* Lisa Brennan (USDOT): 1.5 Recognize differences in how people access information. Determine communications methods appropriate for the audience, including language, distribution means (internet, pamphlet, message boards), format, and language.
* Ryan Harris: How is Tailored Messaging different from Communication of Impacts in this goal? Recommend either combining or differentiating somehow if two independent LOEs/Focus Areas.
  + Kim McMahon NOAA: Tailored messaging is reaching the audience you are targeting but communicating impacts will differ. E.g. Limited English communities may need translations but impacts will differ depending on their situation (urban vs rural, outdoor worker vs indoor with AC).
* Lisa Brennan (USDOT): 1.3 and 1.8 can be combined as they are related. The same groups in 1.3 can be leveraged for innovation and approaches.

### Communication of Impacts

* ASPR: Enhance communications during and immediately after extreme heat incidents to educate on the standalone, compounding, and cascading nature of climate change and heat impacts with real world examples. [3]
  + Maggie Jarry: With actions people can take to protect their health in situations where they cannot access transportation (i.e., not focusing only on cooling centers as they way for vulnerable populations to retain health).
* Heather Jones: Including utility companies concerning prevention and disconnection of services. [3]
* Jeanne Briskin US EPA: Demonstrate benefits to all stakeholders, especially those for whom investments to prevent and address heat is expensive (relatively high upfront costs) or for aspects victim to the tragedy of the commons. [1]
* Janet Li: I think the impact of heat on the economy should also be part of the story. As well as addressing market drivers that are contributing to the status quo of a heat-vulnerable nation. [1]
  + Janet Li: Do we use carrots or sticks? should we require developers to meet certain tree canopy requirements or use reflective roofs, etc.? or provide incentives for them to do so? I understand many of these policy levers are at the local level, so we need to consider what we can do at the federal level.
* Sunny Wescott, DHS CISA: How to get society to understand it doesn’t need to be their area under extreme heat for the impacts to cascade to them, maybe a flow chart of the impacts heat in one area can have on so many downstream sectors. [1]
* ASPR: Enhance communications on long-term preparedness, mitigation, and adaptation to promote heat-resilience.
* ASPR: Communicate the current and projected costs of heat, including lost wages and productivity, ecosystem impacts, health impacts, healthcare costs, critical infrastructure losses, and deaths.
* Paul Schramm, CDC: How heat impacts businesses.

### Education

* ACL: Develop heat health lessons, content, and engagement opportunities for schools, and educational institutions, and non-traditional educational settings (e.g., senior centers and community-based organizations) to promote lifelong heat resilience. [4]
  + Should building heat curriculum in school be its own separate strategy? This can be a whole different process and approach than creating heat education content for other institutions.

### Event Driven Communications

* ACL: Enhance accessible communications during and immediately after extreme heat incidents to educate on the standalone, compounding, and cascading nature of climate change and heat impacts with real world examples.
* Akm Rahman: Do we need to add temporary housing as a sub-topic? How do we move people from unsafe housing during extreme heat events?
  + Sunny Wescott, DHS CISA: Also how do we de-incentivize moving into these threat zones for higher heat areas with the wet bulb threat, or enforce purchasing into a threat area that xyz resilience methods be implemented to reduce that homes heat footprint with reflective paint, shade, etc.

### Capacity Building

* ASPR: Provide capacity building and training to support stakeholders working on the health impacts of heat, with a focus on emergency managers, public health professionals, healthcare providers (including nursing home staff), and climate scientists. [5]
  + Maggie Jarry: Explicitly name behavioral health providers (given the disproportionate impact on populations accessing behavioral health services).
* ACL: Provide capacity building and training to support stakeholders working on the health impacts of heat, with a focus on emergency managers, public health professionals, healthcare providers (including long-term services and support staff, family caregivers, nursing home staff), and climate scientists.

# Goal 2: Science – Potential Gaps, Stories, and Commitments

## Goal 2: Plenary Gap Identification

### Who/What Is Impacted

* Understanding the impacts on businesses and the economy. Think about different types of business and industry – what are the impacts and how best to communicate with them.
  + Business risk research could be done to ID if certain industries are more or less at risk for extreme heat and connections to management.
  + Business innovation as well; the positive impacts as well as negative.
* Built environment.

### New or Expanded Strategies

* How equity is implemented – need demographic data; combine heat data with population data.
* Calling out acting on information – policy evaluation and validating effectiveness. (2.4)
* One health (heat lens) including animal and environmental health, built materials, and transportation.
  + Ecological/ecosystem may be a better term than one-health
* Expand on data monitoring and observations – be more inclusive of the economy, energy use/burden, costs, infrastructure (e.g. buckling roads and walkways).
* Highlight existing best practices in research.

#### Measuring Results and Benefits of Efforts

* Research on methodologies for measuring the results and benefits of activities.
* Indicators and metrics of all efforts (research) create generalized knowledge.

#### International

* International research – incorporate/collaborate.
* Innovation and heat risk reduction financing – some examples internationally.

### Implementation Guidance

* Steering Committee to guide research priorities (implementation note).
* Make sure we are not duplicating work – understand other working groups and efforts underway.

## Goal 2: Slido Brainstorming Results

### Research Priorities

* Tom Osborne: Gap: how will we decide/direct the areas or topics researched. Do we need a way to prioritize the efforts? A steering committee/brain trust?
* Akm Rahman: Can we highlight existing best practices in research?

### Research

* Jeanne Briskin US EPA: Consider renaming "Science" to "Science and Research". [1]
* Alexis M. Pelosi, HUD: Under research, when talking to heat-related lived experience need to also include lived experience related to energy insecurity. [1]
* Marisa, White House GPC: Including research on heat's impact on prescription medication and drugs (and vice versa, the impact of medication on a person's vulnerability to heat).
* John Voorheis (Census): Going beyond just documenting, and further empowering research to understand the causes of differences in heat exposure across demographic groups (which itself requires disaggregated microdata on individual economic and sociodemographic characteristics).
* Paul Schramm, CDC: Understand impacts and potential responses to ambient heat - e.g. heat exposure outside of the disaster context or a declared heat event.
* Jeanne Briskin US EPA: Assess and decide if more info needed or info exists and needs update/dissemination on relationship between heat and air pollution, heat and energy efficiency.
* Jeanne Briskin US EPA: Info on negative feedback between heat/air conditioning demand (which requires hi GWP gases which exacerbates climate change which exacerbates heat, and locally throws heat into the local outdoor environment).
* Nick Shufro, FEMA: FEMA Risk Analysis Planning and Information Directorate supports physical scientific research to improve understanding, modeling, and prediction of heat-related variables for planning, decision-making, and solutions (Federal Heat Plan objective 2.06)

#### Health Impacts

* Alexis M. Pelosi, HUD: Need to add in something about housing and how need to study heat and housing - to pull data and information to be able to craft policies. Perhaps add language to sec. 2.8 - (including differences based on housing quality and workforce sectors). [2]
* Marisa, White House GPC: Under health impacts, including references to pregnant and elderly people.
* Akm Rahman: We may want to highlight heat impacts on people who are outdoor (such as construction and farm workers) and indoor (home bound for various reasons) population.

#### Economic Impacts

* Sunny Wescott, DHS CISA: When listing plans for resilience methods, finding a healthy middle ground in costs and private sector benefits too. Energy star ratings, leed certification, etc. and listing those recommendations by cost for communities vs companies to engage locals and businesses by showing who can do what.

#### Ecological Impacts

* Sara Newman: Section 2.12 should include monitoring the ecosystem in terms of incidence of wildfire smoke and fire impacts.
* Jeanne Briskin US EPA: Animal health, ecosystem impacts, interplay between environmental impacts and human health, economic impacts, impact on innovation, impact on shifts in definition of strategic resources (are new/different minerals/materials likely to come into play?).

#### Infrastructure Impacts

* Ann Kosmal, GSA: Understand and project heat-related impacts on infrastructure and their effects on health outcomes, and work with agencies that focus on critical infrastructure such as DHS’s Cybersecurity and Infrastructure Security Agency and other agencies with duties in federal real property assets. [5]
* Sunny Wescott, DHS CISA: A need for a damage list, what has taken damage both nationally and internationally from what temperature thresholds and what materials those are, what kinds of sites will be at risk due to the material thresholds-where are these in use here, what industries may see prolonged impact, etc. [1]
* Sara Newman: Section 2.12 should include monitoring the ecosystem in terms of incidence of wildfire smoke and fire impacts.
* Alexis M. Pelosi, HUD: As CISCA does not have housing as one of their 16 critical infrastructure sectors recommend calling out housing separately as critical infrastructure.
* Sunny Wescott, DHS CISA: More freeze thaw freeze documentation for threats to pipes, sites foundations, canals, roads, etc. as heating through winter on the backend of the winter storm freezes can be increasingly more damaging.
  + Jeanne Briskin US EPA: The same on materials specifications with respect to high heat.
* Lisa Brennan (USDOT): Add under Infrastructure Impacts: Analyze the impacts of extreme heat and heatwaves on construction and preventive maintenance "seasons" for transportation (and other sectors), including effects on worker safety and potential economic costs.
* Nick Shufro, FEMA: FEMA Risk Analysis Planning and Information Directorate supports development of climate-scale predictions and information for city planning and infrastructure investments including attributes of heat and heat waves (Federal Heat Plan objective 2.14).

#### Compounding and Cascading Impacts

* Hunter Jones: How heat affects businesses, not just the economy. [1]
* Nick Shufro, FEMA: FEMA Risk Analysis Planning and Information Directorate supports advancement of science to improve understanding of the intersection of heat with other hazards and their compounding and cascading effects (Federal Heat Plan objective 2.16).
* Victoria Ludwig, EPA: Understand how heat impacts the private sector.

#### Disaster and Conflict Impacts

* Michael Fucci, HHS/ASPR: 2.18 mentions integrating heat emergencies into the Stafford Act, this should also include discussion of HHS declared public health emergencies.
* Ryan Harris: 2.18 requires Congressional action and can't be unilaterally done by Federal Agencies without teeth/resources. This LOE/Focus Area should explicitly articulate that the Executive Branch (either White House or FEMA) will work with Congress to update the Stafford Act.
* Marisa, White House GPC: Under Disaster and Conflict Impacts, ensuring that the needs of disproportionately impacted populations, including pregnant people, new breastfeeding parents, unhoused, and LGBTQI+ folks are incorporated into disaster and emergency response planning, such as plans for emergency cooling centers.
* Marisa, White House GPC: Under Conflict Impacts, including research on links to gender-based violence, including domestic/intimate partner violence. See Pillar 6 of the U.S. National Plan to End Gender-Based Violence.
* Lisa Brennan (USDOT): 2.18 and 2.19-Suggest broadening these to be inclusive of other federal statutory authorities that relate to emergency response, but don't require a Stafford Act declaration.

#### Community Impacts

* Maggie Allen: An impacts section just focused on community/social impacts (socio-ecological). Example - what about the impacts on the food sector (including seafood) beyond ecological and economical? [3]

### Decision Science

* Shubhayu Saha: Better understand individual/community perceptions on risk from extreme heat to wellbeing, integrate that knowledge in heat action planning and guide investments in heat resilience. [4]
* Nick Shufro, FEMA: Climate Risk and Resilience Portal (ClimRR) FEMA, in collaboration with DOE and AT&T, developed the ClimRR Portal. The portal provides free access to cutting-edge science for climate projections to help improve United States preparedness for future climate extremes, including extreme heat.

### Data, Monitoring and Observations

#### Observations and Monitoring

* John Voorheis (Census): Collecting and disseminating real time information on the exposed/vulnerable population during extreme events is currently missing from the plan (vs. backward looking equity focused research).

#### Data

* Tom Osborne: Create and leverage data informed decisions to have the greatest positive impact. Transform data into information. Information to knowledge, and knowledge into wisdom. [1]
* Shubhayu Saha: Continued interagency collaboration to integrate data and create decision support tools that provides actionable information to track heat risk, impacts and investments in solutions. [1]
* Marisa, White House GPC: Disaggregating data (by race, ethnicity, gender) so we can build out the intersection.

### Resilience

* Nick Shufro, FEMA: Resilience Analysis and Planning Tool (RAPT)RAPT, a FEMA developed application, allows users to understand local-scale climate risks (e.g. extreme heat) in the context of existing community demographics and infrastructure, including the location of vulnerable populations and critical infrastructure.

### Success Indicators on Effectiveness of Actions

* Jeanne Briskin US EPA: Funding for research on effectiveness of actions (evaluation of investments) is important, not just funding to support actions. [1]
* Tom Osborne: Something about assessing change over time or continual assessment of key issues.

# Goal 3: Solutions – Potential Gaps, Stories, and Commitments

## Goal 3: Plenary Gap Identification

### Solutions

#### Technical Assistance and Integrated Planning

* Include rural areas in solution sets into integrated planning.
* Place-based technical assistance to identify design and implement solutions.
* Community capacity building.

#### Built Infrastructure

* Temporary housing (strategy in the midst of a heat event); affordable housing (longer term solutions).
* Built environment; materials; innovation. Include builders in planning and decision making.

#### Heat Islands

* Addressing heat islands at a larger scale. A lot of cities have been trying to deal with heat islands and not making big strides – want to have a big-time push to really overhaul and implement solutions.

#### Multiple Lifelines

* Solutions should be oriented to cover as many lifelines as possible; coordinate ESFs and ensure efficient use of resources and greatest impact.

#### Migratory Corridors

* Restore migratory corridors: There is a lot of funding available to support migratory species and there is a huge climate benefit and impact to restoring and supporting these species. We can adjust language in the plan to capitalize on this movement. Re-establishing ecosystems.

#### Grants

* Helping populations apply for grants in an equitable way.
* Grant opportunities but changing the way we put restrictions on grant use – knowing what grants are available, and reducing overall administrative burdens.

### Effectiveness and Impacts

* Exercising and testing the system. We (FEMA) are committed to this with OMB including for extreme heat.

#### Impacts of Solutions

* Assess solutions against their positive or negative impacts on climate change overall – for example staying cool with air conditioning that is powered by fossil fuels is not a solution on the decadal scale.
* Who are we hitting with these solutions, but also WHEN? What is the short term, medium-, and long-term solution and impact. (Matrix of solutions and timescale).
  + Blended impacts – there should be a blended measure of short and long term good or bad.
* Indicators and metrics of all efforts (solutions) are we making real impacts.

#### Cascading Impacts

* Making sure we do not have any unintended negative impacts, e.g., planting trees (type?), and materials (neg externalities).
  + Think about the benefits and drawbacks to other climate hazards and challenges beyond heat only.
* Cascading impacts wildlife and ecosystem. (Consider true wildlife; domesticated animals; even pets)

### Access and Delivery Systems for Solutions

* CDC and FEMA models incorporated as a common framework Human service, transportation services.
* Public health and healthcare delivery.
* Utility services and reliability; continuity of operations.
* Fill in gap of how people access and are made aware of solutions and opportunities.

## Goal 3: Slido Brainstorming Results

### Heat Health Information

#### Integrated Information Portal

* ACL: Establish and maintain heat.gov as the central federal information hub that is accessible by people with disabilities for curated, timely, integrated heat health data, information, tools, and services to enhance individual and community resilience. [1]

#### Federal Resources Available

* Andrew Dolan: Consolidate/share information on available federal resources for community resilience (e.g. BRIC and other grants programs), as well as information on navigating application processes. Consider ways to reduce the administrative burdens associated with accessing resilience resources, where applicable. [2]
* Leanne Spaulding: Connecting local, state, and Tribal leadership to appropriate federal resources to address extreme heat and assisting then in accessing funds. [2]
* Nick Shufro, FEMA: FEMA Emergency Management Performance Grant (EMPG) provides support to SLTT govt partners to assess & enhance response capability, capacity & training. EMPG funds can help SLTTs develop heat emergency plans, test effectiveness, & train emergency managers/first responders on roles/responsibilities.
* Nick Shufro, FEMA: FEMA National Exercise Program (NEP) offers state, local, tribal, & territorial jurisdictions no-cost assistance for exercise design, development, conduct & evaluation to validate capabilities across all mission areas to prepare against all hazards (e.g., extreme heat).
* Nick Shufro, FEMA: FEMA develops a number of preparedness tools available at community.fema.gov & ready.gov/heat including the Extreme Heat Data Digest for Emergency Managers, Extreme Heat Hazard Information Sheet, FEMA’s Protective Actions Research for Extreme Heat, FEMA’s Guide for Alerts and Warnings and more.
* Nick Shufro, FEMA: The Hazard Mitigation Assistance program recently released a factsheet sharing the many ways the Hazard Mitigation Assistance grant program can be used to plan for and mitigate risks posed by natural hazards, including extreme heat and cold temperatures.
* Kristen Averyt: Empowering communities.
* Lisa Brennan (USDOT): Adjusting grant allowability where policy permits and statute does not restrict to ensure eligibility for extreme heat related projects.
* Sunny Wescott, DHS CISA: DHS AEP - implications of extreme weather on ESRI experience integrates interagency reports, funding, graphics, factsheets, etc. with a focused section dedicated for extreme heat with resiliency methods that are mentioned or funded by federal agencies.

### Planning and Decision Making

* Alexis M. Pelosi, HUD: When discussing planning and decision making need to include builders - specifically to increase awareness around passive cooling strategies - and housing providers to expand awareness around weatherization strategies. [6]
* Paul Schramm, CDC: Make sure solutions don't cause more problems. E.g. are trees planted to reduce urban heat island allergenic (causing respiratory health impacts), do new heat-resilient building materials create novel pollution from new manufacturing processes. [2]
  + Ensuring the tree varieties are diverse to prevent mass tree die off during pest or disease spreads which would trigger new threats.
* Marisa, White House GPC: Under disproportionately impacted populations under 3.8, include pregnant people and infants. [1]
* Sunny Wescott, DHS CISA: Ensuring transparency in trail and error of climate resilience planning. Things that work in some areas may cause new issues in other areas. Like solar panels creating localized heat fields or wind turbines causing cooling effects at the surface that may not be ideal in some areas/ecologies.
* Kristen Averyt: Integrated planning: land use, transportation, commercial, residential.

### Early Warning Systems

* ACL: New goal: Ensure that such alerts are accessible by people with disabilities such as through providing accessible maps.
* Lisa Brennan (USDOT): Early warning systems should also be accessible to those without access to the internet or who may not have a smart phone or social media.

### Safety Measures

* ASPR: Increase awareness and adoption of heat safety measures by individuals, communities, employers, and other local stakeholders to prevent and reduce heat-related illnesses, injuries, and deaths.
* Heather Jones: 3.12 add safe indoor temperatures, unsafe cooling practices, and young children needs to be added who are impacted by extreme heat.

### Infrastructure Solutions

* Victoria Ludwig, EPA: Address heat islands at a large scale - advance federal level programs to get more green roofs, cool pavements, etc. built (GSA and DOD are required to put cool roofs on all their buildings). [5]
* John Balbus, HHS: Heat and Human Services (LIHEAP/HHS-ACF; USDA?). [2]
  + Plus allowable costs within block grants across several HHS agencies to allow for adaptations or built environments as part of service delivery systems and as part of services to people and families who are the clients.
* Sunny Wescott, DHS CISA: CISA extreme weather outreach offers engagement with critical infrastructure owners and operators to be able to understand their threat evolution, resources available, and resiliency advocation with PSA direct support and information exchange.
* Sunny Wescott, DHS CISA: Best practice stories, a material that did exceptionally well or particular building shapes (domes vs squares, tall vs short) that have a better energy impact while staying cooler or offering dual benefits of shade/roofing safeguards if the roof is slopes or not flat.
* Sunny Wescott, DHS CISA: Listing dual benefit solutions, “this solution reducing heat, improves rainfall absorption, provides wind breaks,” or any of that so we can list ideal solutions with multi weather assists.

### Nature-Based Solutions

* Kristen Averyt: Nature based solutions.

### Mitigation

* Abby Hall: Tell more stories about the multiple benefits of heat mitigation investments - especially for places and the environment. Trees and green streets are great investments for lots of reasons, heat protection just being one reason. [1]

### Sector Specific Solutions

#### Workforce

* Janet Li: The plan needs to say something about addressing heat for various workforce sectors that are based outdoors. [1]

#### Communities /Social Networks

* Leanne Spaulding: Addressing cooling energy cost burden, supporting/resourcing/amplifying role of social infrastructure which are locations where communities build networks and social cohesion critical to local heat response.
* Nick Shufro, FEMA: Engage with faith based organizations that are seen as trusted members of communities to broaden messaging and engaging individuals on heat risk and solutions.

#### Health Care

* ACL: Expand heat awareness training and data collection for health care practitioners, medical societies, hospitals, public health professionals, and other healthcare providers (including long-term services and support providers, family caregivers, and nursing home staff).

#### Disproportionately Impacted Populations

* John Balbus, HHS: Heat and protection of vulnerable populations (thinking this would be something we embellish in a national plan, to have focused sections on each identifiable vulnerable population, e.g., people exp. Homelessness, people with disabilities, etc.). [4]
* ACL: Create targeted engagement, planning, and decision guides for disproportionately impacted populations such as older adults, youth, people experiencing homelessness, people with disabilities including those with service and support animals, individuals with acute medical conditions, those with pre-existing behavioral health conditions, and those on chronic medications. [1]
* John Balbus, HHS: How the social and human services sectors can help protect people, especially those most vulnerable, from extreme heat, both in the short term and the long term.
* Leanne Spaulding: Materiality and waste heat, thermal safety guidance and thresholds particularly as it pertains to vulnerable populations.

#### Outdoor Worker Protection

* Kristen Averyt: Protections for indoor and outdoor workforce.
* John Balbus, HHS: Heat and worker protection (OSHA, NIOSH, USDA?)

#### Housing

* John Balbus, HHS: Heat and Housing (HUD). [3]
* Alexis M. Pelosi, HUD: Need to add housing providers to discussion around heat awareness training and data collection. [2]
* Nick Shufro, FEMA: Any discussions of housing should include mention of availability, access, equity, affordability, and operations (heating, cooling and weatherization).
* Morgan Zabow: Adding temporary housing as a sub-topic: how do we move people from unsafe housing during extreme heat events?
  + This is a more complex topic that it appears. It is a regular practice now in a number of contexts and it’s often layered with its own complexities and can lead to deeper challenges. So it’s not an underlying solution.

#### Land Cover/Surfaces/Urban

* John Balbus, HHS: Heat and Land Cover/Surfaces/Urban planning (DOT, EPA, NIST, USDA, DOI). [1]
* John Balbus, HHS: Heat and Roads/Transportation (DOT). [1]

#### Agriculture

* John Balbus, HHS: Heat and Agriculture/Food Systems (USDA).

#### Energy

* John Balbus, HHS: Heat and Energy (DOE). [1]
  + John Balbus, HHS: Heat and Energy: what is the federal plan to both protect the electricity grid from increasingly extreme heat and also assure continuous energy supply in the setting of extreme heat to critical facilities, such as hospitals and other health facilities.
* Victoria Ludwig, EPA: Work with utilities to coordinate programs for disadvantaged people.

#### Environment/Ecosystem

* Jeanne Briskin US EPA: Impacts of heat on key ecosystems, leading to loss of key plant and animal species, drinking water resources, fisheries (fresh and salt water). [3]
* Jeanne Briskin US EPA: Need for air conditioning in homes, schools. But closing up buildings with underlying interior environmental issues (asbestos, PCBs, mercury, pesticides etc.) can increase toxic exposures to people indoors. So not only air conditioning, but building remediation is needed.
* Jeanne Briskin US EPA: Impact of heat on industrial sites, leading to environmental and public health risks from leaks of toxic materials and from explosions.
* Jeanne Briskin US EPA: Heat exacerbates air pollution and impacts of air pollution.
* Jeanne Briskin US EPA: Heat exacerbates frequency, severity of drought and wildfire.

#### Supply Chain/Manufacturing

* Kristen Averyt: Supply chain issues (eg medicine sensitive to heat).

#### Education – Students and Teachers

* Kristen Averyt: Guidance for protecting students and educators in the classroom and during outdoor activities during excessive heat.

#### Native American Reservations

* Akm Rahman: Consider customized solutions for Native American reservations and adjacent land.

### Other

#### Federal Authorities

* John Balbus, HHS: How is the federal government using existing or expanding authorities to better protect people and businesses? This includes possible rethinking of Stafford Act criteria (people vs. dollars) as well as the use of occupational health regulations to protect workers.
* Nick Shufro, FEMA: Inflation Reduction Act (IRA) allows FEMA funding to cover costs of low-carbon materials, even if costs are higher. Implementing IRA at FEMA will lead to a reduction in GHG emissions/reduction of urban heat island effect/enhancement of energy efficiency/improvement of thermal comfort in buildings.

# Goal 4: Support – Potential Gaps, Stories, and Commitments

## Goal 4: Plenary Gap Identification

### Plan Execution

* How are we actually going to execute and facilitate all these actions? Funding, agreements, infrastructure – how will it be operationalized?

### Metrics

* Metrics and indicators – institutionalizing checklists and evaluation of

### Role Clarification

* We go further together – we need to capitalize on the energy behind this topic and stay in alignment and come to agreement on where we are going, and how we will get there. How we will all play an important part.
  + At some point we should be hearing from the newest members – how can we more fully bring you onboard and make sure you stay? And how can you help us innovate?

### Governance, Office, and Staff

* We will be more sustainable if we can create some type of heat office to really bring dedicated agency resources and staff.
  + Sometimes heat departments exist, but they are siloed and not on the radar – how do you identify and bring in these very knowledgeable experts.
  + Unlikely to have each agency have its own heat office but can embed heat into all operations. Designated staff.
  + Siloes of excellence exist, we need to bring them together and execute to make them meaningful.
* Governance of this interagency body. How will the work get done?
  + Sub governance structure to focus on certain hubs and make concrete connections and responsibilities. Who to go for and for what.
* ESFs and Lifelines – coordination and structuring; it is systems within systems and can be streamlined and redundancy reduced.

### Expanded Mission and Scope

* Concern that the entire plan focuses on broader effects of heat to the extent they effect humans; can we go further and reflect things about environment and animals and ecosystem that do not directly impact people?

### Enhanced Coordination and Collaboration

* International collaboration.

### Streamlining Administrative Burden

* Streamlining federal requirements and reducing administrative burden (in terms of federal grants and other resources).
* Workforce development and training – national level training from response managers to other industries. Capacity to function and implement strategy.

## Goal 4: Slido Brainstorming Results

### Foundational Underpinnings

* Alexis M. Pelosi, HUD: Add federal funding alignment to this list as need to align federal funding resources coupled with streamlining federal requirements. Communities with lower capacities find it challenging to understand and comply with the different requirements from different federal programs. [6]
  + Andrew Dolan: Completely agree—administrative burden reduction where possible fits here too I think.
* John Balbus, HHS: Explicitly building up all the other agencies with funds and capabilities. [4]
* Jeanne Briskin, US EPA: Disruption to transportation of people and goods (roads and rails buckling, impact on safe airplane flight, too hot to bicycle or walk. [1]
* Victoria Ludwig, EPA: Set up a governance structure for NIHHIS that all member agencies follow - I.e. if they start a new extreme heat program or project, involve other member agencies in it. [1]
* Jeanne Briskin, US EPA: Billions in new funding needed to address issues. (both items covered in original NIHHIS scope as well as items from expanded all of government federal scope.
* Juli Trtanj, NOAA: To ensure we are driven by user needs at sltt and private sector ensure we have mechanisms to sustain engagement with those partners.

### National Communication Engagement

#### Communications and Stakeholder Outreach

* Lisa Brennan (USDOT): For National Communication and Engagement-Leverage existing stakeholder and partner relationships of federal Departments and Agencies to amplify messaging from Goal 1.
* Kim McMahon, NOAA: Add to 4.13 “communications and messaging strategies”.

### Resources

* Jeanne Briskin US EPA: Need OMB leadership for resources. [5]

#### Plan Implementation

* Tom Osborne: For goal 1: how are we going to empower/facilitate this plan in a way that is sustainable? (Resourcing/funding/membership agreements/consistency). [1]
  + Victoria Ludwig: I wonder if this falls under goal 4 better?
* Juli Trtanj, NOAA: Links to sltt.
* Tom Osborne: For goal 4… (but all goals) we need to be explicit/specific about how are we going to execute/empower/facilitate this plan in a way that is effective and sustainable? (Resourcing/funding/partnerships/membership/agreements/consistency).

#### International Collaboration

* Ryan Harris: What is "nation to nation" engagement and collaboration? International collaboration? Or is it Tribal nation focused? If international, it should be separated from Tribal. [3]

#### Leveraging Others

* Sunny Wescott, DHS CISA: Leveraging the CISA PSA program for outreach with communities and infrastructure owners and operators to further information and factsheets from interagency groups and be able to follow up about implemented resiliency measures and best practice stories in various sectors. [2]
* Kristen Averyt: Metrics and indicators of success.

## Other

### The Overarching Story

* Ashley Bieniek-Tobasco: The most general story should be: the government cares about making sure the nation is resilient to heat and has adequate resources to handle heat, and this is what we are going to do about it. [3]
* Abby Hall: Story about how the federal government is supporting state, local, and tribal governments to implement heat resilience policies and projects - for people, places, and environment. [1]
* Tom Osborne: For the why (but also integrated throughout)… here is a list of some overlapping topic categories: \*Health (people, animals, crops/plants, environment). \*Economy (infrastructure, homes, business) \*Security (food, power, water) \*Conflict (crime, war). [1]
* Jeanne Briskin, US EPA: Given the new scope of the federal heat strategy, should NIHHIS be renamed if it is the home or umbrella for the federal heat strategy?
* Jeanne Briskin, US EPA: Update mission should mention health, environment, economy. For example, "Prevent and reduce heat related impacts to health, the environment, and the economy."
* Jeanne Briskin, US EPA: People will want to see their interests reflected. some will see thriving to apply to human life, not understand thriving to apply to economy.
* Juli Trtanj, NOAA: Need the who and when to create heat resilient nation.
* Tom Osborne: Overall strategy: start with why. Explain why we do what we do. “unified effort to address environmental heat to empower a healthy and prosperous nation.

### Mission/Vision

* Ryan Harris: Overall, I think the Mission & Vision are actually just fine as currently written with minor tweaks to Vision: A heat resilient nation empowered to effectively address and reduce extreme heat impacts. The term "thriving" seems problematic to add (grow vigorously/gain wealth according to Webster's).
* Ryan Harris: As currently written in the draft plan, the Goals do not explicitly state that they are related to Society, Science, Support, and Solutions. These words should be explicitly stated/attached to each goal.

### Plan Structure and Title

* Ryan Harris: Title...is this the NIHHIS plan or the Federal plan? I propose removing NIHHIS from the title and leaving the comment that NIHHIS supports this national plan by convening Federal agencies... New Suggested Title: Federal Heat Resilience Strategic Plan. Similarly, remove "NIHHIS" in front of Mission. [2]
* Kim McMahon, NOAA: Need a terms of reference.
* Ryan Harris: Admin comment: rather than a laundry list of 1-n items in each Goal, each Line of Effort or Focus Area beneath the goals should be grouped together. Goal 1: Understand needs... LOE/Focus Area 1.1 Community Approach...then 1.1.1.
* Ryan Harris: Replace all "resiliency" with "resilience"...more accurate and consistent with the Title and Mission/Vision.
* ACL: Note on 508 compliance: appendix graphics need alt text.

### Simple Messages

* Hunter Jones: Identify simple things communities can do right now from current resources. Not everything is a heavy lift. [1]
* Juli Trtanj, NOAA: Plan Narrative feedback: Benefits to stakeholders, funding. Part of whole plan gap in reaching private sector.
* Juli Trtanj, NOAA: Why place matters, crosscut.
* Ryan Harris: Need to replace mitigate/mitigation from this document unless it is referring to climate/GHG mitigation. Use "reduce" to minimize confusion with the climate science term "mitigation." The EM community sees this through lens of risk reduction.
* Ryan Harris: In Appendix A, "Response" should come before "Recovery"...response is shorter-term, followed by recovery actions, then preparation and planning. Of note, I heard earlier from our CEQ opening remarks that we need to include "Adaptation" into this document more than the normal preparedness/planning.

### Assessment of Progress

* Shubhayu Saha: Think about criteria/metrics to evaluate progress towards protecting wellbeing and reducing health harms from extreme heat, for each objective in the strategic plan. [1]
* Jeanne Briskin, US EPA: Should the plan under development here go to some external review/comment forum for completeness, such as the National Science Foundation. It would take time, but potentially improve scope, clarity and increase the visibility, believability/willingness of decisionmakers to pay attention.

### Implementation Planning

* Jeanne Briskin, US EPA: We should document current, ongoing work relevant to this strategy, work which is funded and will start soon, and items that need funding to happen (which is a lot). The strategy should include list of actions underway as an appendix, to make it very clear about what still requires investment.
* Jeanne Briskin, US EPA: Please clarify that commitments from the May meeting need to be revisited. EPA understood many of those ideas as aspirational, but we lack resources to actually implement several ideas that we expressed interest in participating in.
* Jeanne Briskin, US EPA: Perhaps there are some quotes from Ministry for the Future by Kim Stanley Robinson that would vividly illustrate the consequences if our actions are inadequate or missing.
* Jeanne Briskin, US EPA: It would help to put time frames on each action suggestion (when to start, likely duration of work for timely outcome.
* Jeanne Briskin US EPA: Clarify actions/solutions as underway, planned and funded, or aspirational.
* Jeanne Briskin US EPA: Classify solutions as "low hanging fruit" - easy/low cost to implement, vs those needing $$, and those that are technically difficult (such as air conditioning 100+ year old school buildings).

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**Appendix D:**Workshop Evaluations

# Session Evaluations

*Please note that LCA has documented all submissions exactly as written.*

## Overall, my rating of the meeting is:

4

1

2

3

5

Highly **Dissatisfied**

Highly **Satisfied**

1 0 2 3 7

13 Submissions

Average = 4.15

* Lot of difficult with the audio for people attending online, which made it difficult to participate or understand what was going on. I also understand that there may have been no accessible bathroom in Cohen. [Virtual Participant]
* Great meeting, glad to be a part of this initiative.
* In general, it’s good to be in person – however, this needs to be accessible for people in person and for people participating virtually.

## My rating of the group interaction and our abilities to meet our desired objectives is:

4

1

2

3

5

Highly **Dissatisfied**

Highly **Satisfied**

2 1 1 2 7

13 Submissions

Average = 3.85

* I think that for this meeting, unfortunately, the integration between the in-person participants and virtual participants wasn't as smooth or productive as I have experienced in other meetings. I think this was mostly due to the technical challenges related to sound and the set up in the room, but I think that there were also some missed opportunities in terms of how the virtual participants were engaged in the conversation happening in the room. [Virtual Participant]
* The online group wasn't adequately included in the goal discussions by having us address them all separately because our input became an afterthought. [Virtual Participant]
* We would like to see the plan draft and make additional edits. We could not fully participate here. [Virtual Participant]
* Kudos to David and Lynne for tight organization, “just right” time management, great skill capturing input. Very well ran meeting.
* Lots of “lost in the weeds” moments.
* Really well done, excellent, diverse input.

## The part of the meeting I found most productive was:

* Going through and working as a whole group to refine each goal and the respective objectives. [Virtual Participant]
* First, refining the vision discussion of the principles because it allowed for dialogue on what it was we all wanted collectively and whether we thought we were getting there. Second, discussion goal four to really hash out how we can ensure the plan is a survivable, living document. [Virtual Participant]
* I appreciated the online polling. [Virtual Participant]
* Pulling in new agencies/revisiting the goal areas
* Breakout groups
* Breakouts
* Collaboration, wonderful people.
* All voices were brought to the table; viewpoints incorporated. Process was well laid out. Slido was a good way to capture input.
* Reviewing goals and adding gaps.
* Being pushed along, strong and well-informed chairs.
* The engagement on each goal was really great – very productive – but the whole session.
* Breakout groups and report out.
* The small group discussions of the goals on day two.

## My biggest disappointment was:

* This isn't to say that progress wasn't made, but there was a very big challenge amongst the group of understanding the goal of the meeting, it seemed. There did not seem to be consensus as to what a strategic plan is and so much of the meeting was spent having discussions about implementation level versus strategic level that it made it difficult to feel like buy-in was being achieved at any level. The process felt like a group re-write but without a mutual understanding of what we are writing to or aiming for. [Virtual Participant]
* The accessibility was extremely limiting due to the difficulty for interpreters to hear and the closed captions being absent and then not able to pick up the in-room conversations. [Virtual Participant]
* The hybrid approach was very difficult for those attending online. [Virtual Participant]
* Limited food/internet issues.
* Some niche interests inserted marginal/irrelevant content.
* AV and remote team disconnect.
* Hard for people online to engage due to IT.
* The room and building, very disappointed in disability access including men’s restroom
* Not being more helpful – yet.
* No coffee or food in the room!
* More time needed.
* The meeting not being accessible to people who use a wheelchair and people who are deaf and hard of hearing.

## My suggestions for future meetings are:

* Because of the unique circumstances surrounding this meeting, it's difficult to say, but, I think more extensive preparation of participants so that the goals and objectives of the meeting are clear to everyone in advance. Some of the exercises could have been done as pre-work, or there could have been more extensive briefing of new participants, so that the group could have used more of the group time to build consensus about proposed changes to the plan during the meeting. Finally, earlier invites and a clearer focus with specific decision points laid out in advance might allow for more engaged participation from higher level agency officials. [Virtual Participant]
* Hybrid is always difficult. Although it's a pain, I would suggest choosing in person only or virtual only because they seem to provide more equitable participation access. [Virtual Participant]
* Online only meeting. [Virtual Participant]
* Continue having large group breakouts.
* Less sitting.
* None.
* A room where coffee is permitted.
* Schedule a series of meetings, having a government shutdown.