# Comments on the Proposed Amendment to the Fifth National Climate Assessment

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I appreciate the opportunity to comment on the proposed amendment and clarification to the Fifth National Climate Assessment (NCA5).

I submit these comments based on more than two decades of work across federal, state, and local government, disaster resilience, climate risk, infrastructure, insurance, and public policy, including service in senior roles in the U.S. House of Representatives, the Federal Emergency Management Agency, and the Executive Office of the President, and as former co-chair of the Subcommittee on Climate Services within the National Science and Technology Council's (NSTC) Committee on Environment, overseen by the White House Office of Science and Technology Policy.

I support the principle the amendment states. High-emissions scenarios should not be described as expected, likely, central, or business-as-usual futures where the evidence does not support those characterizations. Federal science is most useful when assumptions, uncertainties, and intended uses are communicated clearly.

My concern is with the instrument, not the principle. As drafted, the amendment contains an exception that cannot be satisfied and a screening criterion that does not track the risk it is meant to address, and it rests on a premise about NCA5's own language that the notice does not substantiate. Most consequentially, two undefined terms carry it out of the assessment and into federal engineering practice, leaving agencies unable to determine whether standing requirements such as the Corps of Engineers' sea level change regulation, which directs evaluation across low, intermediate, and high rates, survive it. These are correctable defects, and I recommend specific corrections below.

## 1. The exception in the operative sentence cannot be satisfied

The amendment provides that results dependent on high-emissions pathways "should not be presented as expected, baseline, business-as-usual, likely, central, or ordinary Federal planning futures unless the same result is independently reproduced under a presently plausible scenario and evaluated against observations."

That condition excludes the class of results to which it applies. A result that depends materially on a high-emissions pathway will not reproduce under a lower-emissions pathway. If it did reproduce, it would not depend materially on the pathway, and the rule would not reach it in the first place. The clause reads as a safety valve and operates as a lock.

USGCRP should resolve this one way or the other. If the rule is meant to operate categorically, the final amendment should say so plainly and defend that choice on the record. If a workable exception is intended, the amendment must specify what "the same result" requires: the same magnitude, the same direction, the same threshold exceedance, the same timing, and within what tolerance. A projection that reproduces in direction but not in magnitude either satisfies the condition or does not, and the text provides no way to determine which.

The related term "presently plausible scenario" is also undefined. Plausibility depends on time horizon, application, and the physical outcome at issue. Absent transparent criteria, agencies will apply the

standard inconsistently, and nonfederal users will not know which assumptions will be accepted for federal funding or approval.

The requirement that results be "evaluated against observations" presents a distinct problem. Observations are indispensable for evaluating models, trends, and present conditions. They cannot validate a projected condition that has not yet occurred. Applied to a 2075 or 2100 projection, the requirement is not demanding; it is impossible, and it would foreclose the long-horizon analysis the Global Change Research Act directs the assessment to perform. See 15 U.S.C. § 2936(3) (assessment shall "project major trends for the subsequent 25 to 100 years"). The final amendment should state that observational evaluation applies to model performance and historical trends, not to the prospective projection itself.

## 2. Two undefined terms carry the amendment beyond labeling

The amendment reaches "NCA5 statements, figures, tables, traceable accounts, regional summaries, public summaries, and derivative Federal communications that rely materially on RCP8.5, SSP5-8.5, SRES A2, or analogous high-emissions pathways."

Two phrases in the operative text extend the rule past the question of how a result is described. "Derivative Federal communications" carries it from the assessment to agency products built on the assessment. "Ordinary Federal planning futures" carries it from characterization to use. Neither term is defined, and together they determine whether this amendment is a labeling correction or a change to federal planning practice.

The practical question is concrete. A Corps district engineer selecting a design condition for a coastal levee, a FEMA regional office reviewing a mitigation project, or a base commander scoping an installation vulnerability assessment cannot tell from this text whether selecting a high-end condition constitutes adopting an "ordinary Federal planning future." If it does, the amendment displaces existing engineering standards. If it does not, the amendment should say so expressly.

Engineer Regulation 1100-2-8162 requires that potential relative sea level change "be considered in every USACE coastal activity as far inland as the extent of estimated tidal influence," and directs that alternatives be evaluated across "low," "intermediate," and "high" rates of change. The high curve there is not a supplementary stress test; it is a required design condition in a binding federal engineering regulation. The interagency sea level rise scenarios used by NOAA, FEMA, and the Corps operate the same way. An amendment that leaves engineers uncertain whether these requirements survive will produce delay, inconsistent application, and litigation risk, none of which serves its stated purpose.

## 3. The amendment screens by emissions pathway; the risks it addresses are defined by physical outcome

This substitution causes the amendment to miss in both directions. Severe physical outcomes do not require high emissions. The upper end of climate sensitivity, marine ice-sheet instability, and compound and cascading extremes can produce high-consequence conditions under SSP2-4.5 or SSP3-7.0, scenarios the amendment treats as presently plausible. The federal sea level rise scenarios are constructed on exactly this understanding: they are defined by projected physical outcome rather than by an emissions pathway, so that they remain usable regardless of which emissions trajectory materializes. Screening by emissions label does not reach these outcomes at all.

Conversely, many results derived from RCP8.5 are modest, and many are near-term, where scenarios diverge little. Restricting them serves no purpose the amendment identifies.

An instrument that sorts by emissions label therefore restricts information the amendment has no reason to restrict and leaves untouched information that raises the concern the amendment is meant to address. If the objective is to prevent overstatement of certainty, the screen should run on how a result is characterized and disclosed, not on which pathway generated it.

## 4. Prediction and risk management are different exercises

A central estimate may be appropriate for forecasting. It is often insufficient for risk management.

Engineers do not design critical infrastructure around average conditions. Emergency managers do not prepare only for the most common disaster. Insurers and reinsurers do not evaluate solvency against expected annual losses. Dam and levee safety programs, utilities, financial institutions, and military planners routinely examine severe events, because sound risk management weighs consequence alongside probability.

Roads, bridges, ports, dams, levees, water systems, hospitals, military installations, and public buildings may remain in service for fifty, seventy-five, or one hundred years. For assets on those timelines, the most probable emissions trajectory is not an adequate description of the conditions the asset will encounter. The relevant questions are what conditions could reasonably occur across the service life, where the thresholds lie beyond which failure becomes catastrophic or irreversible, what additional protection costs today compared with retrofit or replacement later, and which decisions can be revisited as conditions are observed. These are not predictions. They are the ordinary questions of infrastructure risk management and answering them requires access to the upper end of the scientifically defensible range.

The cost asymmetry is the reason. Modestly overestimating a future condition buys an increment of additional protection. Underestimating it can mean loss of life, catastrophic infrastructure failure, or prolonged interruption of essential services. Removing or obscuring information about the upper end does not reduce that risk. It transfers the risk to communities, infrastructure owners, and emergency managers.

The amendment's preservation of “sensitivity analyses, bounding exercises, or stress tests” is the right instinct. The final amendment should make that provision operative rather than permissive and should state affirmatively that a scenario need not represent the most likely future to be appropriate for infrastructure design, emergency management, fiscal risk analysis, or national security planning.

## 5. Fiscal exposure argues for stress testing, not for analytic blind spots

The federal government is simultaneously an infrastructure owner, insurer, lender, grant maker, provider of disaster assistance, and financial backstop after catastrophic events. Decisions that underestimate future hazards create liabilities that return to the federal balance sheet.

The Government Accountability Office has carried Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks on its High-Risk List since 2013, and reports that the demonstrated progress criterion remains unmet. In the ten years through fiscal year 2024, appropriations for disaster assistance totaled at least $448 billion, with an additional $110 billion in supplemental appropriations in fiscal year 2025 alone. Flood infrastructure illustrates the scale: from 2014 through 2023 the Army Corps of Engineers dedicated at least $19 billion in annual appropriations to flood risk management, and Congress provided at least another $46.1 billion in supplemental appropriations for repairs to damaged flood risk management infrastructure and related activities.

A stress test does not commit the government to spend against the highest scenario. It produces the information necessary to determine when additional protection is cost-effective, when adaptive or staged design is appropriate, and when accepting a risk is reasonable. Good budgeting requires knowing the

exposure before deciding whether to pay to reduce it. Uncertainty is likewise not a reason to default to the lower-risk assumption; depending on the decision, it may argue for monitoring, staged investment, flexible design, or a larger margin of safety.

## 6. Nonfederal governments depend on authoritative federal information

State, local, Tribal, and territorial governments rely on federal hazard data, models, maps, technical guidance, engineering practice, and grant requirements. Most cannot replicate federal scientific capacity independently.

Federal policy requires them to do forward-looking work. FEMA's hazard mitigation planning guidance directs state, local, Tribal, and territorial governments through risk assessment, and FEMA's Tribal mitigation guidance specifically instructs Tribal governments to consider how future conditions, including climate change, land use, and population change, could alter impacts to people, property, infrastructure, sacred sites, subsistence areas, and other resources. The federal government should not require nonfederal partners to perform forward-looking risk assessment while narrowing the authoritative information available to perform it.

Tribal Nations and territories warrant particular attention. Many face substantial exposure to flooding, wildfire, drought, extreme heat, coastal hazards, and infrastructure disruption with limited capacity to substitute for federal science, and for Tribal Nations these risks may affect treaty-protected resources, subsistence practices, and community continuity.

Inconsistent implementation is the foreseeable consequence. If agencies, grant programs, and technical offices read the amendment differently, nonfederal users will face conflicting requirements, duplicated analyses, and delayed projects.

## 7. National security planning rests on the same reasoning

National security institutions do not prepare exclusively for the single most probable future. They examine alternative futures, vulnerabilities, cascading failures, adversarial opportunities, and low-probability events with severe consequences.

Climate-related hazards affect military installations, energy and transportation systems, supply chains, water availability, population displacement, Arctic access, and geopolitical stability, often through compound effects across installations, infrastructure, and supply networks.

Whatever any Administration concludes about particular climate policies, the underlying principle should be durable. Strategic surprise is not prevented by declining to examine an adverse scenario. Agencies responsible for defense, homeland security, emergency management, critical infrastructure, and continuity of government should retain access to scientifically defensible high-end information for vulnerability assessments, exercises, and continuity planning.

## 8. The notice does not substantiate its premise as to NCA5

The amendment is directed at the presentation of high-emissions results as expected or business-as-usual futures. NCA5 does not present them that way. Appendix 3 labels SSP5-8.5 a “very high scenario” and describes very high scenarios as “useful tools when considering a range of plausible greenhouse gas concentrations.” It does not characterize that scenario as expected, likely, central, or business as usual.

If OSTP has identified NCA5 statements or figures that do, the final amendment should quote them and correct them specifically. If it has not, the record does not support a document-wide interpretive rule, and

the appropriate action is narrower than the one proposed. Broad restrictions premised on an unidentified defect create uncertainty about applications of scenario analysis that no party has questioned.

## 9. The process should match the significance of the change

NCA5 was developed under 15 U.S.C. ch. 56A over approximately four years, through multiple public review periods, formal response to public comments, and independent peer review by the National Academies. Its own information quality appendix records that OMB's Final Information Quality Bulletin for Peer Review "sets the minimum peer-review requirements for documents with the HISA designation, including the National Climate Assessment."

An amendment that changes how the assessment's findings may be interpreted and applied, including by other federal agencies, is a substantive change to that product. It has been offered through a short comment window, without an accompanying scientific basis document, without identification of the specific passages at issue, and without peer review. That asymmetry is not well supported on the merits and will be difficult to sustain.

USGCRP should either support the final amendment with a documented scientific basis and a review process commensurate with the one that produced NCA5 or resume work on the Sixth National Climate Assessment and address scenario characterization there. The Act requires an assessment not less frequently than every four years. Scenario selection and characterization are among the questions an assessment cycle exists to resolve, through the review the Act contemplates, rather than by amendment to a completed report. USGCRP should also explain the amendment's effect on existing federal datasets, models, standards, grant programs, technical guidance, and completed plans, and how users should interpret it alongside prior assessments.

## 10. Recommended revisions

**1. Repair or delete the "unless" clause.** As drafted it cannot be satisfied. If a genuine exception is intended, define what "the same result" requires and within what tolerance. If not, state the rule directly.

**2. Define "ordinary Federal planning futures" and "derivative Federal communications," or delete them.** These terms determine whether this is a labeling correction or a change to federal planning practice. Users are entitled to know which.

**3. Add an express savings clause.** The amendment does not purport to repeal any engineering standard, and I assume it is not intended to. But agency staff will read it alongside the standards they are obligated to apply, and silence about the relationship between the two will be resolved conservatively by people who do not want to be second-guessed. The predictable result is not better scenario characterization. It is design engineers, grant reviewers, and regional offices quietly declining to evaluate high-end conditions they remain required to evaluate, with no record of the choice and no occasion to correct it.

One sentence forecloses that outcome. Suggested text:

> "Nothing in this amendment limits or supersedes the consideration of high-end or low-probability future conditions where required or authorized by statute, regulation, engineering standard, or agency policy governing public safety, infrastructure design and operation, dam and levee safety, disaster mitigation, floodplain management, fiscal risk management, or national security. This amendment governs how results are characterized and disclosed. It does not govern which future conditions an agency may evaluate in carrying out those responsibilities."

The second and third sentences do the essential work. They place the amendment where OSTP says it belongs, in characterization, and they remove the inference that a rule about labeling silently constrains analysis. The clause protects ER 1100-2-8162 and its analogues at FEMA, the Bureau of Reclamation, and the Department of Defense without requiring OSTP to inventory them, and it concedes nothing: an agency that mislabels a high-end result as an expected future is still in violation.

**4. Screen on characterization, not on pathway.** Suggested substitute for the operative sentence: "Results shall identify the scenario used, its material assumptions and limitations, and whether the result is presented as a central estimate, an alternative scenario, a sensitivity analysis, a bounding exercise, or a stress test. Results shall not be characterized as expected, likely, central, or business-as-usual futures except where the evidence supports that characterization." This achieves the amendment's stated purpose without the definitional problems above.

**5. Identify the specific NCA5 material requiring correction.** Quote and correct the passages at issue rather than issuing a document-wide interpretive rule.

**6. Provide a scientific basis and review commensurate with the change,** and explain implementation effects on existing federal products, standards, grant programs, and completed plans.

## Conclusion

Scientific rigor, fiscal responsibility, public safety, and prudent risk management point in the same direction here.

High-emissions scenarios should be characterized accurately and should not be presented as the expected future where the evidence does not support that conclusion. But "not the most likely future" does not mean "not a relevant risk," and uncertainty does not justify withholding information decision-makers need to evaluate irreversible consequences, long-lived investments, compound hazards, and low-probability events with severe impacts.

The purpose of risk management is not to predict one future correctly. It is to make decisions that perform acceptably across a range of futures, particularly where lives, critical infrastructure, national security, and substantial public resources are at stake.

The revisions recommended above would accomplish what the amendment sets out to do, correcting scenario characterization where it is inaccurate, without displacing federal engineering standards, creating interpretive uncertainty for nonfederal partners, or leaving new blind spots in the systems Americans rely on for protection.

Respectfully submitted,

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## Selected authorities and sources

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