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RE: Modernization of Army Civil Works Policy Priorities Request for Input

The following comments are being provided by the American Society of Civil Engineers (ASCE) in response to the U.S. Army Corps of Engineers' Request for Input on the modernization of Army Civil Works policy priorities published on June 3, 2022. The following comments are being submitted during the noticed public comment period, which closes on August 2, 2022.

Founded in 1852, ASCE is the nation's oldest civil engineering organization and represents more than 150,000 civil engineers from private practice, government, industry, and academia. ASCE is committed to the advancement of the science and practice of engineering. Our members are dedicated professionals who hold paramount public health, safety, and welfare as they design, build, construct, operate, and maintain the built environment.

ASCE understands that since the publication and adoption of *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (Principles & Guidelines – or “P&Gs”)* published in 1983, USACE was required to calculate the benefits of flood damage reduction projects using the value of avoided damages – largely based on the value of properties removed or partially removed from flood risk areas. The Water Resources Development Act (WRDA) of 2007 directed the Army to update the 1983 *P&Gs* to include consideration of a broader set of benefits, including social, environmental, and economic factors. This work was completed in 2014 and the new document was entitled *Principles, Requirements and Guidelines (“PR&Gs”)*. Implementation of the PR&Gs was halted until the passage of WRDA 2020 which directed the Army to develop and implement agency specific procedures for the PR&Gs. Our comments in response the Army's Request for Input published in the Federal Register are presented below.

1. Planning Process Changes

USACE should adopt a rule that requires an update to Engineer Regulation (ER) 1105-2-100 to help implement the PR&Gs. ER 1105-2-100 was last updated in April 2000, seven years before the passage of WRDA 2007 which required an update to the P&Gs, the creation of the PR&Gs, and updated the national water resources planning policy to encourage sustainable economic development and to protect the environment by seeking to maximize sustainable economic development, avoiding unwise use of floodplains and flood-prone areas, and by protecting and restoring the functions of natural systems and mitigating any unavoidable

impacts. WRDA 2020 required the development of agency specific procedures to implement the PR&Gs.

USACE should update the planning process in the following ways, consistent with the 2014 PR&Gs and Interagency Guidelines:

- **Update Federal Objective:** USACE should replace the national economic development (NED) and national ecosystem restoration (NER) objective with the new Federal Objective set forth in WRDA 2007 and included in the PR&Gs.
- **Update “Accounts” Used to Evaluate Alternatives:** USACE should replace the use of the national economic development, environmental quality, regional economic development, and other social effects accounts with the accounts specified in the PR&G. Specifically, we urge USACE to define the use of three main accounts: economic, social, and environmental accounts. ASCE defines sustainability as a set of economic, environmental, and social conditions -- also known as the "The Triple Bottom Line" (TBL) -- in which all of society has the capacity and opportunity to maintain and improve its quality of life indefinitely without degrading the quantity, quality, or the availability of economic, environmental, and social resources. Sustainable development is the application of these resources to enhance the safety, welfare, and quality of life for all of society. We believe that federal water resources investments should be directed towards projects that enhance the net benefits across these three accounts – that those investments should maximize the TBL. This maximizes the overall return on investment and secures multiple benefits from each project. Each account should be defined as outlined below:
 - **Economic Outcomes Account:** The economic account should include consideration of benefits and costs like those currently considered in the national economic development and regional economic development accounts. Benefits should include avoided property damage, increased shipping revenues, increased land value, and similar items. Costs should include planning, design, construction, operations, maintenance, and similar items. Benefits and costs should be monetized using methods described in recent peer-reviewed literature that have been pre-approved for civil works planning use, a transparent set of assumptions, and a process created with stakeholder input.
 - **Social Outcomes Account:** The social outcomes account should include consideration of benefits and costs like those currently considered in the other social effects account. Benefits should include reduced risk of injury or death (life safety), increased employment, increased job skills and training, increased recreational opportunities, increased quality of life, enhanced public safety and health, support for disadvantaged communities, advancement of equity and social justice, restoration of historic or culturally important sites, providing for environmental justice, and similar items. Costs should include increased risk of injury or death (life safety), reduced employment, community displacements, diminished health and safety, loss of historic or culturally important sites, and similar items. Benefits and costs should be monetized using methods described in recent peer-reviewed literature that have been pre-approved for

civil works planning use, a transparent set of assumptions, and a process created with stakeholder input.

- **Environmental Outcomes Account:** The environmental outcomes account should rely on an *ecosystem services* approach defined in the PR&G Interagency Guidelines to estimate benefits and costs. Ecosystem services are provisioning, regulating, and cultural services provided by the environment to the people of our nation. For example, the oxygen we breathe is a vital provisioning service we obtain from the chlorophyll in green plants. Benefits should include increased wildlife habitat, enhanced water supply, increased biodiversity, increased floodwater storage, improved surface water quality, remediated brownfield sites, reduced noise pollution, and similar items. Costs should include increased carbon emissions, reduced habitat, increased water use, reduced air quality, more noise pollution, and similar items. Benefits and costs should be monetized using methods described in recent peer-reviewed literature that have been pre-approved for civil works planning use, a transparent set of assumptions, and a process created with stakeholder input. Including *Environmental Outcomes Account* will help implement the PR&Gs call to elevate the use of ecosystem services in evaluating alternatives.

This recommendation is consistent with ASCE’s *Principles of Sustainable Development*¹ and *Policy Statement 418 – The Role of the Civil Engineer in Sustainable Development*².

ASCE *Principles of Sustainable Development* call on civil engineers to focus on the needs and benefits that the project aims to address and to consider more alternatives before projects and programs are conceived, executed, and operated—in other words, to “do the right project.” The principles also call on engineers to develop, adopt and use new standards and procedures to plan, design, build, and operate more sustainable and resilient infrastructure.

Policy Statement 418 defines sustainability as a set of economic, environmental, and social conditions (aka "The Triple Bottom Line") in which all of society has the capacity and opportunity to maintain and improve its quality of life indefinitely without degrading the quantity, quality, or the availability of economic, environmental, and social resources. The policy, in part, calls on civil engineers to quantify the economic, environmental, and social effects of the project; minimize use of non-renewable resources; and plan for the impact natural and man-made disasters and changing conditions can have on economic, environmental, and social resources.

- **Update Planning Process to Estimate the Net Benefits Among the Three Proposed Accounts:** Consistent with the PR&Gs, the planning process should require project planning teams to estimate the benefits and costs associated with each of the three “triple bottom line” (TBL) accounts noted above for each considered project alternative. Planning

¹ American Society of Civil Engineers, *Roadmap to Sustainable Development: Four Priorities for Change*, <https://www.asce.org/communities/institutes-and-technical-groups/sustainability/sustainability-roadmap>

² American Society of Civil Engineers, *Policy Statement 418- The Role of the Civil Engineer in Sustainable Development*, <https://www.asce.org/advocacy/policy-statements/ps418---the-role-of-the-civil-engineer-in-sustainable-development>

teams should be required to engage stakeholders in an open process to identify the assumptions and the process needed to quantify all benefits and costs across all accounts. Planning teams should be required to engage stakeholders to identify how to weigh the net benefits in each account. Planning teams should be required to publish a weighted decision matrix that clearly indicates how the TBL benefits have been considered to evaluate and select project alternatives. This will allow all stakeholders and the public at large to understand the trade-offs made to arrive at the selected alternative. It will allow the public to understand how the various benefits and costs were weighed in the decision-making process.

- **Elevate the Locally Preferred Plan (LPP):** The planning process should be revised to require the development and evaluation of at least one LPP alternative. The LLP alternative should be evaluated using the same TBL accounts proposed above. A LPP alternative may be excluded from consideration only if the local sponsor and local stakeholders agree in writing to evaluating alternatives without a LPP.
- **Elevate the Nonstructural Plan:** The planning process should be revised to require the development and evaluation of at least one nonstructural plan. The nonstructural plan should be evaluated using the same TBL accounts proposed above.
- **Promote More Collaboration:** The revised planning process should start by asking residents and other stakeholders what problems and opportunities they directly experience in an area that has been identified for a possible new activity under a USACE mission or program. The process should allow for “blank page” input from stakeholders rather than merely allowing stakeholders to provide feedback on a project concept developed by planners and engineers. Stakeholder should be asked what they see are the key benefits and costs within the social, environmental, and economic outcome accounts. Stakeholders should be prompted to respond on a quantitative scale that reflects the magnitude of their agreement or disagreement with various social, environmental, and economic aspects of current conditions and desired post-project conditions. Once stakeholder desires are understood, then the problem and the opportunities can be identified. Public participation should seek to meet the “*Empower*” level as defined by the International Association of Public Participation (IAP2) Spectrum which defines five levels of public participation, ranging from Inform, Consult, Involve, Collaborate, and Empower.
- **Acknowledge Trade-Offs and Choices:** The planning process should be revised to require documentation of both policy choices and engineering choices. Many stakeholders may not recognize which trade-offs and choices were made for policy reasons and which were made for engineering reasons. The planning process should be revised to make these distinctions more transparent. We suggest the planning process be revised to include the following steps:
 - **Determine Evaluation Criteria and Weights:** Using a process like that described in our comment urging more collaboration, stakeholders should have a significant role in determining the evaluation criteria and the relative weight given to each during

alternative evaluations. Evaluation criteria and weights should be established through an engagement process that will allow all stakeholders to provide meaningful input.

- **Formulate Alternative Plans:** The planning process should be revised to require that alternative plans be developed that provide net positive triple bottom line benefits. Alternative plans should include at least one locally preferred plan and at least one nonstructural plan. Planners should be required to obtain stakeholder input on plan formulation. To explicitly acknowledge trade-offs and choices the economic, social, and environmental accounts of each plan should be summarized. Each plan should include a concise description of the significant benefits it provides and the significant costs it will incur (across all three TBL accounts).
- **Evaluating Alternative Plans:** The planning process should be revised to require the preparation and publication of an evaluation matrix and a narrative discussion of its contents. The evaluation matrix should include the raw evaluation scores, the weighted scores, the weighted sum, and the weighted rank for all alternative plans. The rubric used to score each evaluation factor must be clearly explained. For example, if various alternatives were removing people from the 100-year floodplain, the rubric might assign the alternative removing the most people from the floodplain a 10 and the least people a 0.
- **Elevate Sustainable Economic Development:** In the context of public infrastructure, we believe that sustainable economic development is synonymous with sustainable development. We believe the planning process and pending regulations should adopt the definition of sustainable development as development that provides an appropriate level economic, social, and environmental benefits today and far into the future. If the proposed regulations and planning process incorporates the TBL accounts as outlined above, the new regulations and planning process will elevate sustainable economic development as called for in the PR&Gs.
- **Elevate Floodplain Preservation:** USACE should revise the planning process to require that evaluations of all flood damage reduction activities include a floodplain preservation alternative. This recommendation is consistent with ASCE *Policy Statement 421 – Floodplain Management*³ which calls for efforts to avoid future risk through land use controls that keep people out of and property from being built in harm's way through prohibitions and required protection levels; reduce existing risk through structural projects such as channel improvements, levees, detention and other flood control structures or projects; mitigate individual property risk through programs such as elevation of existing structures and demolition, and rebuilding of non-compliant structures; and restore, natural floodplains and riparian zones primarily through buyouts and restoration activities.

³ American Society of Civil Engineers, *Policy Statement 421- Floodplain Management*, <https://www.asce.org/advocacy/policy-statements/ps421---floodplain-management>

2. Applicable Missions, Programs, and Investments

We believe the PR&Gs should apply to all new activities under all USACE Civil Works missions, programs, and investment types, particularly flood damage reduction; hurricane and storm damage reduction; and ecosystem restoration.

Existing activities should be allowed to proceed under the existing P&Gs and planning guidance if they have progressed in the planning process beyond a certain point, unless the local sponsor wishes to switch to a process governed by the PR&G and is committed to fund the rework.

3. Addressing Uncertainties

Planning efforts should be required to document uncertainties and these uncertainties should be shared with stakeholders throughout the planning process, including the establishment of evaluation criteria and weights.

4. Considering All Benefits Equally

Planning efforts should be required to consider all benefits and costs holistically as outlined in the discussion about the economic, social, and environmental outcome accounts as well as in our discussion about tradeoffs and choices. We believe if evaluation criteria and weights are developed with stakeholder input, benefits can be considered unequally. One community might want to consider green space and habitat restoration as more important than removing commercial property from a floodplain area.

5. Comprehensive Documentation of Benefits in Decision Document (January 5, 2021)

We support the concepts outlined in the January 5, 2021 memorandum and we believe some of its provisions should be carried forward into the pending rulemaking. In particular we support the memorandum's call for a "comprehensive consideration of total project benefits including economics, environmental, and social categories." This is consistent with our prior comments.

We also support the call to "evaluate and provide a complete accounting, consideration and documentation of the total benefits of alternative plans across all benefit categories. Total benefits involve a summation of monetized and/or quantified benefits, along with a complete accounting of qualitative benefits, for project alternatives across national and regional economic, environmental and social benefit categories."

We support the requirement under social effects for planning teams to take into account "who benefits as well as who is adversely affected" by each plan alternative. This is particularly important to advance equity and social justice.

Conclusion

ASCE appreciates the opportunity to provide comment to USACE on modernization of Army Civil Works policy priorities. As professionals who play a large role in planning, designing, construction, and managing much of the nation's transportation infrastructure, civil engineers' work will be affected by USACE's implementation of its *Principles, Requirements and Guidelines* document. We look forward to working with USACE as implementation progresses.