Regulatory Impact Analysis for the Proposed Rule, U.S. Army Corps of Engineers Agency Specific Procedures to Implement the Principles, Requirements, and Guidelines for Water Resources Investments
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Executive Summary

This proposed rule establishes Agency Specific Procedures for the Corps of Engineers (the Corps) to implement the Principles, Requirements, and Guidelines for water resources investments. It provides a framework to govern how the Corps would evaluate proposed water resource investments, including identification of which programs and activities are subject to the Principles, Requirements, and Guidelines. The Corps is proposing this rule in response to congressional direction provided in the Water Resources Development Act of 2020.

The proposed changes are justified by the information included in the preamble and the proposed rule text. Together, these analyses constitute the reasonable basis for the proposed changes, which the Corps has determined is the option that provides the most net benefits to society by promoting informed, collaborative, and efficient agency decision making.

The Corps has considered the benefits and the costs of the proposed changes relative to a baseline and against alternative proposals it could have adopted. The Corps acknowledges the limitations of the data available to assess costs and benefits quantitatively. Given these circumstances, the discussion of costs and benefits is primarily considered qualitatively.

The proposed changes will have direct and indirect benefits for a variety of groups. The changes are likely to benefit Federal agencies, project sponsors, environmental stakeholders, and members of communities with environmental justice concerns. The proposed changes would help avoid and address interagency disputes and improve communication across agencies, which would reduce delay and duplication; promote more durable and climate-resilient projects and actions; foster better long-term decision making including through consideration of reasonably foreseeable climate change effects; and enhance more equitable distribution of environmental benefits and costs through public engagement and consideration of environmental justice.

The proposed changes provide that agencies should prepare informative yet concise environmental documents, including to address climate risk and provide for better public engagement. These provisions may result in agencies conducting more public engagement and more thorough analyses, which could result in additional costs. However, the long-term cost savings from sounder decisions, greater predictability, and potentially avoided litigation may exceed these upfront costs. The Corps invites comment on the analyses presented in this document and on this conclusion about the likely net benefit of finalizing the proposed changes.

The Corps considered several alternatives to the current proposed rule, including no action and pursuing guidance rather than regulation. The Corps has considered these alternatives and concluded that the preferred alternative, pursuing rulemaking to establish Agency Specific Procedures to implement the Principles, Requirements and Guidelines, (hereafter, the proposal) has the highest net benefits of the options considered.

I. Background

Since the Rivers and Harbors Appropriations Act of 1903 (Pub. L. 57-154), the Corps has been required to consider the benefits of water resources investments in relation to their costs. The Flood Control Act of 1936 (Pub. L. 74-738) called for the Federal government to improve navigable waters or their tributaries for flood control purposes if the benefits to whomever they may accrue exceed the estimated costs. Since then, the Corps has been developing tools and methods for developing and evaluating water resource plans and projects.

Multi-objective water resources planning concepts on a comprehensive and coordinated basis were central to the Water Resources Planning Act of 1965 (Pub. L. 89-80). Federal guidance reflects these concepts in the 1973 "Principles and Standards for Planning Water and Related Land Resources" (P&S) issued by the U.S. Water Resources Council (38 FR 24778). The P&S reflected two Federal objectives for water resources planning, which were to enhance national economic development and to enhance the quality of the environment.

Federal water policy moved away from the dual-objective concept with the 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G).[1] The P&G combined the two objectives of the P&S into a single integrated Federal objective "to contribute to national economic development consistent with protecting the Nation's environment, pursuant to national environmental statutes, applicable executive orders, and other planning requirements". The P&G were prepared by the U.S. Water Resources Council pursuant to section 103 of the Water Resources Planning Act of 1965 (Pub. L. 89-90).

Section 2031 of the Water Resources Development Act of 2007 (WRDA 2007) (Pub. L. 110-114 section 2031, 42 U.S.C. 1962-3) established a National Water Resources Planning Policy. The National Water Resources Planning Policy states that all water resource projects should reflect national priorities, encourage economic development, and protect the environment by: 1) seeking to maximize sustainable economic development; 2) seeking to avoid the unwise use of floodplains and flood-prone areas and minimizing adverse impacts and vulnerabilities in any case in which a floodplain or flood-prone area must be used; and, 3) protecting and restoring the functions of natural systems and mitigating any unavoidable damage to natural systems.

Section 2031 of WRDA 2007 also called for revision to the 1983 P&G for use in the formulation, evaluation, and implementation of water resources projects. WRDA 2007 required that the revisions to the P&G address the following: the use of best available economic principles and analytical techniques, including techniques in risk and uncertainty analysis; the assessment and incorporation of public safety in the formulation of alternatives and recommended plans; assessment methods that reflect the value of projects for low-income communities and projects that use nonstructural approaches to water resources development and management; the assessment and evaluation of the interaction of a project with other water resources projects and programs within a region or watershed; the use of contemporary water resources paradigms, including integrated water resources management and adaptive management; and, evaluation methods that ensure that water resources projects are justified by public benefits.

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[1] https://planning.erdc.dren.mil/toolbox/library/Guidance/Principles_Guidelines.pdf, accessed December 21, 2022.

In 2014, the Council on Environmental Quality completed an interagency effort to update the 1983 P&G. This effort led to the development of the Principles, Requirements and Guidelines (PR&G). The PR&G, which govern how Federal agencies evaluate proposed water resource developments, include the following three components: 1) Principles and Requirements for Federal Investments in Water Resources (P&R, 2013[2]), providing the overarching concepts that the Federal Government seeks to achieve through policy implementation and requirements for inputs into analysis of Federal investment alternatives; 2) Interagency Guidelines (IG, 2014[3]), providing more detailed guidance for affected Federal agencies, including the Departments of the Interior, Agriculture, and Commerce, Environmental Protection Agency (EPA), the Corps, the Federal Emergency Management Agency (FEMA), and the Tennessee Valley Authority, for determining the applicability of the P&R; and 3) ASPs providing agency specific guidance for identifying which programs and activities are subject to the PR&G.

Section 110 of the Water Resources Development Act of 2020 (WRDA 2020) (Pub. L. 116-260 Division AA) directs the Army to issue its final ASPs necessary for the Corps' Civil Works program to implement the PR&G. The section provides that the Army must develop Corps projects in accordance with the PR&G as well as Section 2031 of WRDA 2007. WRDA 2020 directs Army to provide notice and opportunities for engagement and public comments on the development of the ASPs. Therefore, the Army has decided to pursue rulemaking to develop the Corps' ASPs to demonstrate its commitment to the PR&G, ensure robust and meaningful Tribal and public engagement, and to make the implementing procedures durable.[4]

Codifying these procedures will help to ensure the Corps' ASPs will achieve its intended purpose. Although this proposed rule follows the framework laid out in the PR&G, the Corps also reviewed and considered the procedures developed by other Federal agencies in development of this proposed rule for general consistency across the government. This proposed rule, if finalized, would formalize the planning framework of the PR&G for the Corps in a transparent manner, ensuring that the public has a clear understanding of the new planning paradigm and its requirements.

The proposed ASPs would apply only to plans, projects, or programs that are initiated after any final rule may take effect. The Corps would also apply the ASPs to plans, projects, or programs that have not yet issued a Draft Environmental Impact Statement or similar level of documentation on or before any final rule effective date.

The Army received input from Tribes, Federal and State agencies, stakeholders, and other interested parties through the issuance of the Federal Register Notice of Virtual Public and Tribal Meetings Regarding the Modernization of Army Civil Works Policy Priorities; Establishment of a Public Docket; Request for Input (Modernize Civil Works) that was published on June 3, 2022, (87 FR 33756). The Notice solicited public comment on topics including the ASPs being considered for this proposed rulemaking. In response to the Notice, we received generally

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[2] https://obamawhitehouse.archives.gov/sites/default/files/final_principles_and_requirements_march_2013.pdf, accessed January 3, 2023.

[3] https://obamawhitehouse.archives.gov/sites/default/files/docs/prg_interagency_guidelines_12_2014.pdf, accessed January 3, 2023.

[4] Note that Army, through the Assistant Secretary of the Army for Civil Works, is responsible for policy direction of the Army's Civil Works program, whereas the Corps is responsible for implementing the program. Hence this document refers both to the Army (for policy direction) and the Corps (for implementation responsibility).

supportive comments on the policy revision concepts outlined in the Notice and the comments recognized the value of using more modern approaches for decision making. Many commenters mentioned the need to consider a broader set of benefits than can be captured by the Corps' traditional NED account, and many endorsed the effort to more fully incorporate climate change, to increase collaboration with Tribal, state, and local organizations, and to better incorporate the potential ecosystem costs and benefits of water resource investments.[5]

The Corps expects the impacts of these regulations could be significant under (Executive Order (E.O.) 12866 section 3(f)(1), as amended by E.O. 14094, given potential cost savings to the Federal Government as well as economy-wide impacts that could be catalyzed by this proposed rule. However, little standardized quantifiable information exists on the costs and benefits of the proposed action as it has not yet been implemented by the Corps, and other agencies' programs are not similar enough to draw comparison to the Corps or do not have costs and benefits provided. Additionally, the proposed rule's policy provisions only directly bind the Corps, and it is a procedural rule that does not mandate specific outcomes. These unique characteristics of this rulemaking, compared to rulemakings imposing substantive requirements on non-Federal entities, further support a largely qualitative analysis. The Corps also will consider input from the public and stakeholders, including additional qualitative information and quantitative data in assessing the impacts of the proposed rule.

II. Proposal

Description of the Proposal

This proposed rule establishes Agency Specific Procedures (ASPs) for the Corps' implementation of the Principles, Requirements, and Guidelines (PR&G) for water resources investments. It provides a framework to govern how the Corps would evaluate proposed water resource investments, including identification of which Corps programs and activities are subject to the Principles, Requirements, and Guidelines. The Corps is proposing this rule in response to congressional direction provided in the Water Resources Development Act of 2020.

Circular A-94 has not applied to Corps Civil Works projects, and the current draft under review retains this exclusion at Paragraph 4b(1), "Water resource projects (guidance for which is provided in the approved Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies)" are exempt from this guidance." The origin of the exemption is based upon a Congressional resolution and a series of laws that specifically direct how water resources development studies will be conducted. The first appearance of specific congressional direction is found in 1962 Senate resolution "Policies, Standards, and Procedures in the Formulation, Evaluation, and Review of Plans for Use and Development of Water and Related Land Resources", published as Senate Document 87-97. This resolution became known as Senate Document 97. Since 1962 Congress has passed a series of laws that direct how water resources development projects will be conducted. This continued with Section 2031 of WRDA 2007 leading to development of the PR&G and then Section 110 of WRDA 2020 directing the Army to issue agency specific procedures to implement the PR&G.

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[5] Summary document of comments received in response to the *Federal Register* Notice can be found at https://api.army.mil/e2/c/downloads/2022/12/01/d5bd08a7/written-comment-summary-for-prg-for-frn-to-modernize-civil-works.pdf, accessed December 21, 2022.

The Corps is reinforcing the PR&G and following the efforts of other agencies who are implementing the PR&G through their own agency specific procedures.[6] The Corps would still seek to maximize benefits, it would just focus on the full suite of public benefits rather than solely economic benefits. As a result, projects may look a bit different than before. Components may be included in a project which would not have been included under the P&G (since those components would have drawn down the net benefits, e.g., as a result of the component benefiting a predominantly low-income community). The P&G did not provide a comprehensive solution design process as elements to fully address the water resources problem at hand were not being recommended. In the end, this could result in long-term issues which would need to be addressed by local communities, other agencies, or the Corps in a follow-on action. This piecemealed approach could put communities at risk in the interim and result in more costs long-term especially if disaster response and recovery is employed. In general, projects would not cost more under the ASPs. Instead, the Corps may recommend different plans, depending on trade-offs between economic, environmental, and social benefits (and adverse impacts).

As for examples, the Corps is not currently implementing the PR&G, but our teams strive to fully account for impacts and benefits across a range of categories. Some studies have been put forth with NED exceptions (see Appendix 4), for which the supporting analyses were around economically disadvantaged communities, social justice/equity issues, and/or historic preservation.

Studies may cost a little more near term because the analysis required per the draft rule could have more and/or different types of work than the Corps is doing now under the P&G. There is an expected learning curve as all new rules are implemented. However, over time, as study teams become more familiar with the new requirements, we expect the Corps would become more efficient doing the planning work required by the ASPs.

Regarding the cost impact on the general public, non-Federal interests (NFI) willingly enter into agreements with the Corps to do studies and implement projects. NFI are making an informed choice about pursuing a Civil Works project, including the cost impact and how they would pay for it.

The current draft explains that this is a framework rule and that the public benefits are expected to exceed costs just by including the full consideration of benefits. Also, implementation of the rule is not mandated on the public for all actions but rather only congressionally authorized actions which are entered into willingly with NFI.

Proposals to Ensure Efficiency and Flexibility

The Corps proposes aspects of the new regulation to ensure the agency can efficiently implement the PR&G in a way that is most consistent with their regulatory, statutory, and budgetary limits. The Corps includes robust discussion on coordination and collaboration throughout the proposed regulation and preamble. This would improve flexibility for the agency, Tribal, local, and state governments, and stakeholder engagement and coordination. It would improve the development of documentation, stress early collaboration to ensure issues and concerns, as well as benefits, are identified early on, and promote the resolution of any issues

[6] Note: Other agencies did not undergo rulemaking and therefore did not need to conduct a Benefit Cost Analysis.

earlier in the process. This increased level of engagement and collaboration should reduce costs due to improved coordination across all interested parties.

Other provisions proposed in the regulation and preamble discuss the part of the process in implementing the ASPs where the Corps would determine the appropriate level of analysis. This provides transparency and guideposts for the factors the Corps would consider in determining the level of analysis for the ASPs. This discussion benefits the Corps and the public by giving transparency as to the level of analysis to occur, allowing the Corps and NFI to better predict and allocate resources for the planning process, and reducing confusion regarding the relevant factors under consideration.

The proposed regulation and preamble text also describes the integration of the ASPs with the NEPA process. This would codify the Corps' current best practices for environmental reviews. This clarity would improve efficiencies in the process, reduce duplication of effort, and thereby reduces costs to the Corps and the NFI.

The proposed regulation and preamble text describes the Corps' reliance on and leveraging of existing information to the extent relevant. This reliance would improve agency efficiency and predictability. It also furthers having a set of basic standards for the Corps to rely on which improves consistency. This may result in reduced costs to the Corps and the NFI.

The proposed regulation and preamble text also describes the Corps' use of innovative approaches to implement the ASPs. This can be seen regarding environmental justice, climate change, and collaboration topics throughout the proposal. This would improve agency flexibility and efficiency and indirectly benefit stakeholders by still ensuring the Corps meets the requirements of the planning process and environmental reviews. It would also improve the Corps' ability to adapt in implementation of the ASPs.

Proposals to Promote Better Comprehensive Water Resources Solutions

The Corps proposes language that would modernize the Civil Works program to better analyze the effects of climate change and greenhouse gas emissions and promote better environmental outcomes. The proposed rule would promote more comprehensive water resources solutions not constrained by the policies under P&G where certain elements to address a water resources problem may not be carried forward as a result of a focus on the economics of a project. Comprehensive solutions are a benefit to environmental resources as well as the general public as a more comprehensive community-driven solution can more fully address the problem at hand. It is also a benefit for the general public and reduces cost in the long-term as addressing the water resources problem upfront in a comprehensive manner can result in future cost savings as additional piecemealed projects may not be required.

The proposed regulation and preamble discuss how climate change must be considered in the planning process under the ASPs and including it in foreseeable trends. This required evaluation of climate change in the alternatives analysis which promotes indirect environmental benefits and project savings by considering climate change impacts affecting the project. Small increases in agency costs may accrue to conduct associated analyses to the extent these are not already conducted by the Corps. It may also result in reduced costs in the future related to disaster recovery and response.

The proposed regulation and preamble also discuss the requirement of analysis of a no action alternative. This would fully display any adverse environmental, economic, and social effects of the no action alternative, as well as any benefits. This approach promotes consideration of the effects if no action is taken providing increased transparency and awareness.

The proposed regulation and preamble discuss usage of data and reliable information. The language provides that the Corps is not required to undertake unreasonable new research to inform analyses but should disclose when there is uncertainty regarding existing data and information. This promotes indirect environmental benefits and better agency decision making with accurate and well-researched sources. This may reduce costs to the agency in leveraging existing resources. It also reduces costs by identifying high quality and accurate information and could positively affect NFIs due to increased data quality. In some circumstances, it may add agency costs if it is determined that additional analysis is necessary.

Definitions are provided to reduce ambiguity and increase clarity and consistency. The proposal amplifies the use of Indigenous Knowledge as a source of relevant expertise for the Corps. This can reduce information gathering costs to the Corps and benefits NFIs through use of Indigenous Knowledge to inform the evaluation of alternatives.

The proposal adds consideration of the duration of effects and the degree to which effects are highly uncertain, as well as the degree to which the action may have disproportionate and adverse effects on communities with environmental justice concerns, or effects upon the reserved rights of Tribal Nations. These proposed changes are consistent with the emphasis of the concepts of indirect and cumulative effects and would ensure reasonably foreseeable effects are considered beyond just the immediate area of the action, improving consideration of outcomes.

Proposed Language to Prioritize Meaningful Public Engagement, Including Advancing Environmental Justice, and Respecting Tribal Sovereignty

The Corps proposes language to emphasize the importance of engagement during the planning process. The Corps' proposal would clearly identify requirements related to public, State and Tribal engagement, as well as adding additional requirements intended to enhance public transparency. For example, the Corps proposes to include robust requirements for improved community engagement, encouraging early and robust public and community participation and stakeholder collaboration. This may save the Corps time and costs, benefitting the Corps and NFIs through improved stakeholder input during decision making resulting in a community-driven solution enabling community resilience.

Proposed revisions would encourage environmental justice remedies to the extent possible within Corps authorities. Broadly encouraging incorporation of measures that redress significant adverse human health and environmental effects of actions that disproportionately and adversely affect communities with environmental justice concerns. This may benefit environmental stakeholders and communities with environmental justice concerns. It could lead to additional agency costs when further consideration of measures is required; however, the proposal directs the Corps to use existing authorities, which should reduce burden to the Corps. The proposal requires consideration and analysis of effects and benefits to communities with environmental justice concerns in alternatives analysis. This may benefit environmental stakeholders by improving clarity and may lead to additional agency costs when further evaluation of impacts on community members with environmental justice concerns are required.

Proposed Language for Clarity and Consistency

The Corps has proposed structure to the regulations to improve clarity and ensure consistency and improve the readability of the regulations, which, in turn, would enhance the efficiencies of the regulation, including facilitating more and higher quality engagement from members of affected communities and the public. In addition, requirements for early engagement improves agency planning and decreases associated costs. It benefits environmental stakeholders through early engagement.

The proposed regulation discusses provisions on applicability and scope of action and analysis. It describes the Guiding Principles and other factors to be used in implementing the ASP providing transparency and fostering better decision making regarding a wider range of effects the Corps considers.

The proposed regulation and preamble also clarify the purpose of the ASP, including the federal objective, consistent with statutory direction and the PR&G. This would result in benefits from improved agency decision making regarding effects as the Corps considers a wider range of factors (i.e., economic, environmental, and social). It provides clear direction to the Corps on the primary purpose of implementing the ASPs to be consistent with authority. The proposal also describes requirements for creating concise and informative documentation to improve agency preparation of such documents providing clarity and transparency.

The proposed regulation encourages the agency to engage stakeholders early to address potential issues earlier in the process, which may benefit NFIs. The definitions provided improves the accuracy and informative value of data and information relied upon and documents and updates terms provided in the PR&G since issuance providing a flexible and nimble rule consistent with direction provided in statute and policy. This directly benefits agencies through clarifying such terms, including designation of lead and cooperating agencies.

The proposal also encourages the Corps to develop more durable and climate-resilient construction, thereby likely benefiting the general public, NFIs for any operations and maintenance responsibilities, and enabling community resilience. It also encourages the Corps to incorporate the best-available science, resulting in more informative environmental documents and better government decision making.

Proposed Language to Enhance Clarity in Civil Works Planning Processes

Many of the proposed changes would provide clarity in the regulations by articulating the intent of the planning process more clearly, defining roles and responsibilities, and codifying best practices for coordination and collaboration.

Benefits of Comprehensive Solutions. Seeking comprehensive solutions to water resources problems is supported in the PR&G. This approach opens a water resources investigation at a watershed scale and through collaboration it would help the Corps and its partners evaluate interconnected factors within the context of potential contributions to multiple missions. This offers opportunities of efficiency of scale as well as more resilient and sustainable benefits for communities. As noted in the preamble a “watershed approach lends itself to a water resources development project that considers the watershed comprehensively in developing alternative solutions that may result in a more complete range of holistic alternatives to achieve

multiple goals over the entire watershed." Also see 234.6(c)(6) in the proposed rule for further information on a watershed approach.

Benefits of Non-Federal Interest Involvement and Commitments. The proposed rule emphasizes collaboration between the Corps and NFIs. From a formal perspective these interests may serve as a project sponsor providing funding, real estate, and operations and maintenance commitments to implement a project. Others may be involved throughout the study and implementation phase but without the financial and legal commitments. For example, local community organizations may provide scoping input to frame a water resources study and may offer suggestions about potential solutions. Both types of these interest groups may be influential in seeking Congressional authorization for an investigation or construction authorization. As noted in the preamble "The Corps does not initiate any actions that may be undertaken under the proposed rule on their own but rather in response to engagements by a non-Federal interest or at Congressional direction." Also see 234.6(d) in the proposed rule **"Collaboration with Tribes, communities, and local and state governments is a critical element to help identify specific problems, opportunities, and significant constraints within the study area, and help establish planning goals and objectives that are consistent with the objectives of this regulation and are locally appropriate."**

Initial Tools and Training Lift. The expansion of perspective in formulating and evaluating water projects under the PR&G may require the development of new tools and the training of users to employ the tools in water resources investigations. The preamble addresses the costs of developing new tools and training planners to use the tools. "This new process will require additional trainings and development of tools and methods not currently available which may result in some minor additional costs to the Corps but those initial costs would be outweighed by long-term benefits of the Corps' implementation of the ASPs and efficiencies gained by the use of new tools and methods." Also see 234.7(c)(1) in the proposed rule where the use of **"Best available actionable science and commensurate level of detail"** is described across a range of technical areas that are potentially significant in considering project alternatives. The need for and use of new tools is clearly stated and described.

Environmental Justice Benefits Directly and Indirectly. The proposed rule identifies environmental justice as one of the guiding principles that the Corps will seek to promote in water resources investments. The principles also include floodplains, healthy ecosystems, public safety, sustainable development, and watershed planning. There is no hierarchy to the principles although elements of environmental justice considerations may be relevant within each of the other principles. The preamble notes "Each alternative analyzed would be transparent in the discussion of the effects as well as benefits to Tribal Nations and communities with environmental justice concerns, where applicable." Also see 234.6(c)(1) in the proposed rule **"The Corps shall also be transparent in fully displaying the potential effects of alternative actions on communities with environmental justice concerns."**

Environmental and Social Benefits. In discussing public benefits the preamble notes the more holistic view under the ASPs will enable more informed decision-making for Federal investments to truly identify in the final array of alternatives what will best enable resilience for the Nation. The proposed rule establishes a clear requirement for considering benefits beyond economic development.

III. Baseline for Analysis

To evaluate the costs and benefits of this rulemaking, the Corps will use the Principles and Guidelines policy framework as the baseline. The Corps evaluated recent work to help add context to the baseline. To set up a comparison the Corps describes the volume of work completed, the types of planning analysis performed, and the cost of recommended projects. This information baseline serves as the foundation for comparing the two frameworks.

Appendix 1 identifies the various Corps water resources planning authorities and programs. It displays the PR&G monetary threshold criteria to assess whether a program or authority would be included or excluded under the proposed procedures. This information helps refine the baseline for comparison.

Guidance to comprehensively document benefits in feasibility study decision documents was issued in April 2020. The guidance emphasized fully evaluating and documenting the benefits in all four accounts of the 1983 Principles and Guidelines (i.e., the NED, Regional Economic Development, Other Social Effects, and Environmental Quality accounts) and displaying any trade-offs evaluated. It was reinforced in a January 2021 memo from the Assistant Secretary of the Army for Civil Works ASA(CW) and in a March 2021 memo from the Director of Civil Works. Certain types of plans are required to be included in the final array of alternatives to be evaluated. In April 2021, the Chief of Planning and Policy issued a directive to capture the cost and time impacts of the comprehensive documentation of benefits in decision documents.

Appendix 2 identifies some of the methods and tools the Corps uses in conducting water resources planning studies. These further support the understanding of the baseline and offer insight into the information generated during the evaluation of water resource projects. The methods are categorized in the P&G four accounts to show how the information contributes to understanding the benefits, costs, and other factors relevant to a potential project.

USACE completed 57 Chief's Reports during 2020-2023 (Appendix 3). The Chief's Reports evaluated do not identify benefits in every account (Appendix 4). Seven of the reports documented benefits or impacts in more than one category. The Chief's Reports evaluation was inconclusive, and the analysis was expanded to review the content of the accompanying full feasibility reports completed in 2022. This review of the 2022 subset found nine reports addressed all four accounts (one was an AER plan), four reports included the required array of alternatives identified in the ASA(CW) January 2021 memo, and one report discussed a trade-off analysis. Evaluation of two new reports completed in 2023 shows those studies fully accounted for benefits across the four accounts. This is reflective of the agency's focus in meeting the comprehensive analytic requirements and better displaying the results for the public and decision-makers. Appendix 5 displays Chief's Reports that were granted a policy exception to select a plan other than the National Economic Development plan. Seven studies were granted exceptions from 2020-2023 and three studies in Alaska recommended plans based on criteria other than National Economic Development.

IV. Summary of Benefits and Costs

The Corps reviewed the level of analysis that may have been required for projects had the proposed ASPs been used (Appendix 3). The level of analysis would be guided by the monetary thresholds in the PR&G and in the ASP. For the 54 Chief's Reports issued in 2020-2022, a

standard analysis would have applied to (45) projects with a total recommended investment of $30.5B. Eight projects would have used a scaled level of analysis for investment recommendations totaling $122M. Two projects would have been excluded with recommended investments totaling $18M. The takeaway from this analysis is that most of the feasibility studies conducted by the Corps would undergo a standard analysis if the ASPs were adopted.

The benefits and costs of the proposal are summarized in Appendix 6. The Corps distinguishes between direct and indirect benefits and costs because certain effects are more closely related to the proposed changes than others. The Corps categorizes benefits and costs as direct when there is a specific link from the proposed change to an obligation on an agency or a course of action by an agency. The Corps categorizes other benefits and costs as indirect if they are foreseeable and likely, but not direct. Possible effects on project stakeholders and other members of the public generally fall into this category. The proposed rule prescribes procedural requirements for the Corps. A discussion of indirect benefits and costs accounts for the foreseeable and likely effects resulting from implementation of the proposed rule.

Appendix 7 supports the qualitative analysis by displaying the impacts of each section of the proposed rule. The information details the section of the proposal (section number and title), the expected result, and a qualitative assessment of potential costs.

Four case studies are presented in Appendices 8-11 to compare civil works planning work under the current and proposed frameworks. The examples were selected to show the variety of project types, sizes, and the geographic diversity of the work the Corps conducts with its partners. Each example presents considerations and results using both frameworks and highlights differences that could be expected if the proposed ASPs rule is adopted.

Appendix 8 presents a case study evaluating a completed Director's Report and comparing how the work in that project study would have been performed, and the results, under the two frameworks. The comparison of a project under the 1983 P&G and the hypothetical evaluation of the same project under the proposed ASPs is intended to provide insight into potential similarities and differences that are relevant to the regulatory impact analysis.

Another study example shows how the proposed rule might impact the civil works planning process and the decision making that leads to water resource project investment recommendations (Appendix 9). It compares the planning work performed for a large coastal project under the 1983 P&G and the PR&G. The focus is on National Economic Development analysis, a plan recommendation driver under the P&G, compared to the equal consideration of economic, social, and environmental analysis under the PR&G. The Coastal Texas Protection and Restoration study is used to derive the examples and comparisons.

Two additional appendices are provided to round out the comparisons to the baseline. Appendix 10 presents a case study of the Port of Nome, Alaska modification project. The original study was terminated because the benefit cost ratios of the evaluated alternatives were below unity. Implementation guidance for Section 2006 of WRDA 2007 enabled the Corps to recommend a project without demonstrating that the improvements are justified by National Economic Development benefits.

In another example we present a case study of applying the proposed procedures to an inland riverine flood and ecosystem project (Appendix 11). This offers a perspective on a smaller project in the flood risk management business line and how the ASPs would be applied in similar

studies. This example is based upon on evaluating solutions to flash flooding in a suburban community with environmental justice considerations.

Appendix 12 includes a map displaying the locations of Corps studies funded in the FY2023 Investigations Work Plan. A chart is also provided showing project study distribution by state over four budget years. It should be noted that single points on a map do not fully illustrate the watershed-scale impact of some Corps projects. In many cases projects have an impact across large areas beyond a work footprint and may influence water management in multiple states. Multiple factors influence the geographic distribution of Corps projects. These include historic locations of work (for example Corps reservoirs), priorities of Administrations (Everglades restoration), Congressional authority and direction (infrastructure projects), non-federal sponsor interests (Tribal Partnerships), and the input of the public and stakeholders (Sustainable Rivers Program). Adoption of the proposed ASPs rule would not be expected to change the geographic distribution of Corps work because the same factors would continue to influence project funding for investigations.

V. Benefits of the Proposed Action

The Corps expects that the proposed changes would have direct and indirect benefits in a variety of areas. The proposed changes are likely to benefit the Corps, NFIs, environmental stakeholders, and members of affected communities. The Corps acknowledges the limitations of the data available to address previous assumptions and assess costs and benefits. Given these circumstances, the discussion of benefits is primarily discussed qualitatively and includes specific examples to demonstrate the discussed and anticipated outcomes.

The Corps must comply with all Federal laws during the planning process environmental review, so some project timelines may be impacted by the related reviews under substantive Federal laws such as the Endangered Species Act, the Clean Air Act, or the Marine Mammal Protection Act, among others, and factors beyond the agency's control. This can also make it difficult to isolate the effects of implementation of the PR&G, including any additional time delays that may accrue, at least initially, when compared to the P&G. Active oversight and management of studies is the most effective way of ensuring the efforts remain on track and are completed withing the necessary scope and the budget limits.

Direct Benefits

The Corps assesses that the proposal will have direct benefits to the agency. The Corps discusses these benefits qualitatively. Direct benefits include improved communication and coordination among agencies, Tribes, state and local governments, and the affected communities. Other direct benefits are improved efficiencies in processes as well as improved coordination and efficiency throughout required procedures, leading to cost reductions to the Corps.

Agency Operations

The proposed changes would give the Corps greater flexibility to produce informative and transparent recommendations. Further, the regulation emphasizes the use of high-quality information, including best available science and data to describe future conditions, including climate change, allowing the Corps to leverage that knowledge for future actions. Therefore, this may save the Corps time and resources during similar analyses in the future.

Communication and Coordination

Proposed language for early engagement and coordination would encourage the Corps to seek ways to identify and resolve or address issues of concern early in the process to achieve efficient outcomes and potentially avoid costly and time-consuming challenges later. Proposed changes to increase transparency in the process and to better notify and engage the public earlier also could result in reduced litigation risk. The Corps also proposes language related to early agency coordination which may lead to quicker timelines and the associated reduced costs.

Efficiency

The Corps proposes language that would reduce agency costs by reducing duplication, including ensuring that the Corps' NEPA and ASPs implementation of the PR&G are aligned to the extent possible. The proposed changes also encourage the use of combined environmental documents, resulting in more efficient multi-agency decision making.

Direct Benefits to Members of Affected Communities and the Public

The language provides the planning process in regulatory text rather than policy memoranda; this improves clarity, increases transparency, and ensures consistency. The proposed rule includes several provisions that will increase transparency and allow members of the public to better understand agency decisions. The proposed language would require the Corps to tell the full story of costs and benefits, providing a complete picture of the disputed issues and trade-offs among alternatives. The language would require the Corps to analyze the future with and without project conditions including any impacts of a proposed action. This would provide more consistency in planning, increase transparency, and may improve decision making quality.

The requirements should not impose a significant burden, as the proposed rule directs the Corps to use existing authorities to implement the ASPs. Proposed language would ensure agencies provide the decision maker with reasonable options to ensure informed decision making, including identifying the required array of alternatives and allowing the Corps to consider reasonable alternatives not within their jurisdiction, which may result in more beneficial alternatives being adopted when the Corps is considering decisions. The public will have the opportunity to comment on alternatives, which also may help produce more informed decisions.

Under the proposed language the Corps would pursue innovative approaches to environmental reviews with extreme environmental challenges. This will maximize agency flexibility, creativity, and efficiency while still meeting the requirements of Federal laws and providing for sound environmental review. Finally, a benefit would result from the continued emphasis on cumulative effects in the proposed rule for improved decision making.

Indirect Benefits

This section discusses the expected indirect benefits resulting from improved efficiency and better agency decision making occurring from the proposed regulation, including benefits to the Corps, project sponsors, environmental stakeholders, and members of affected communities. These indirect benefits include improved outcomes in terms of better-designed projects that account for projected environmental trends like climate change, more effective mitigation measures, and resiliency.

Agencies

The Corps proposes language that would facilitate improved public engagement and encourage earlier public participation, which may result in indirect benefits to the agency. Improved public engagement can result in more transparent, efficient, and informed decision making, and allows agencies to identify problems earlier, thereby reducing administrative costs.

The proposed regulation will produce unquantifiable benefits by resulting in some decisions and actions that are more effective and durable. For example, proposed additions concerning climate change, resilience, and environmental justice serve to promote science-based decision making and lead to more sustainable and resilient projects on the ground, obviating the need for the Corps to devote resources to address problems that have been avoided. Improving the efficacy of Corps actions also will allow the Corps to achieve agency goals more efficiently, allowing the Corps to shift attention to other goals after an action has occurred.

Non-Federal Interests

Non-federal interests also may indirectly benefit from the proposed changes. Early interagency coordination and public engagement coupled with project schedules and clear deadlines would increase predictability in the planning process. Additionally, early identification and resolution of issues leading to more effective analysis would potentially reduce public controversy and litigation risk. This increased predictability would result in benefits to NFIs such as greater certainty in budgets and security in investments.

The proposed regulation would promote consideration of the effects of climate change and greenhouse gas emissions. These changes codify many of the Corps' current practices, creating consistency and predictability for the public and the non-federal interests. The inclusion of reasonably foreseeable climate impact analyses contributes to the available public information advancing climate modeling and expands the knowledge base for quantifying climate impacts. Additional public information will allow the Corps to improve evaluations from both an adaptation and mitigation standpoint. Considering changing extreme heat events, drought, wildfire, flood, and climate-related public health outcomes, as well as the greenhouse gas emissions impact of an investment or activity would facilitate more efficient and beneficial resource deployment across current and future generations.

By considering climate change, the Corps can continue to promote the development of more resilient projects that are better prepared to withstand climate impacts. These provisions would encourage more durable and climate-resilient construction, likely benefitting the public and non-federal interests through improved project outcomes. This is supported by research showing that relative to ordinary infrastructure projects, climate-resilient infrastructure projects would generate better outcomes, including increased reliability and efficiency of service provision, increased asset life coupled with reduced repair and maintenance costs, and co-benefits across environmental and societal levels.[7] In addition, the proposed regulation focuses on achieving greater community support and more durable project designs, saving non-federal interests money and resulting in an indirect project benefit.

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[7]Li, J., M. Mullan, and J. Helgeson, 2014. Improving the practice of economic analysis of climate change adaptation. Journal of Benefit-Cost Analysis, Volume 5, https://www.cambridge.org/core/journals/journal-of-benefit-cost-analysis/issue/A8B3A5EACFDFDEC44DE53BE8DE555D1B Issue 3: Special Issue: Perspectives on Implementing Benefit-Cost Analysis in Climate Assessment, December 2014, pp. 445-467.

Members of Affected Communities and the Public

The proposed regulation includes several provisions that will increase transparency and allow members of the public to better understand agency decisions. This would provide more consistency in mitigation planning, increase transparency for mitigation measures, and may improve decision making quality. These changes should not impose a significant burden to agencies, as the proposed rule directs agencies to use existing authorities to implement. The proposed regulation would ensure the Corps provides the decision maker with reasonable options to ensure informed decision making and allowing the agency to consider reasonable alternatives not within their jurisdiction, which may result in more beneficial alternatives being adopted. Further, by requiring that the full array of alternatives is provided for public review and comment, the public will have the opportunity to comment on the alternative, which also may help produce more informed decisions.

The proposed regulation provides an improved approach to establish more structure and consistency in the planning process and to improve the readability of the regulations. This would enhance the efficiencies of the regulation, including facilitating more and higher quality engagement from members of affected communities and the public.

Improved decision making resulting from the proposed changes is expected to result in an indirect benefit to stakeholders and the public. The proposed rule would encourage agencies to use the best available scientific data to inform both short- and long-term decision making resulting in more informative environmental documents, more scientifically accurate analyses, and better government decision making. This would indirectly lead to improved environmental, social, and economic outcomes that generate long-term benefits for stakeholders and the public.

Members of affected communities may indirectly benefit from the proposed changes due to better community engagement and increased consideration when determining the appropriate level of analysis. This would result in avoided costs, especially to members of affected communities with environmental justice concerns, including fewer harmful health impacts, reduced insurance premiums, and reduced opportunity costs.

Often, members of affected communities with environmental justice concerns, which may include communities of color, low-income communities, and Tribal Nations, suffer the largest adverse effects due to natural disasters and other environmental hazards. For example, members of low-income communities may be more proximate to areas prone to flooding due to extreme weather events.[8] Such trends compound the existing economic and social disadvantages these groups face. While Federal agencies already have direction by Executive Order to consider environmental justice impacts, the Corps' proposed regulation would incorporate environmental justice considerations directly into the planning process by providing the Corps with direction on how to coordinate with communities with environmental justice concerns in their planning process. The Corps' proposed regulation to require agencies to consider these communities' interests through public engagement and when determining the appropriate level of review and potential benefits as well as impacts may reduce the disproportionate distribution of significant effects of the Corps' decisions. Early public engagement would bring affected stakeholders

[8] Paul Mohai et al., *Environmental Justice*, 34 Ann. Rev. Env't & Res. 405 (Nov. 2009), *available at* https://doi.org/10.1146/annurev-environ-082508-094348.

together sooner and may avoid a lengthy adversarial process that could result if projects advanced before members of affected communities have had an opportunity to provide input.

Similarly, the proposed regulation emphasizes the consideration of communities with environmental justice concerns and the reserved rights of Tribal Nations. Greater consideration of these may help reduce the disproportionate environmental, health, and other socio-economic burdens that communities with environmental justice concerns often experience, as actions impacting these communities could be considered significant when evaluating the context and intensity of an effect and may require mitigation. Affected communities also may benefit to the extent the mitigation measures committed to in the planning process are implemented.

Lastly, the focus of the proposed regulation to produce recommendations that maximize public benefits is intended to result in projects which provide more public benefits than the costs of producing those benefits. The proposed rule is potentially re-distributive. As comprehensive alternatives are considered for water resource problems, areas that may not have been justified under a National Economic Development/National Ecosystem Restoration (NED/NER) focus in the P&G, could see elements become justified using other metrics. Those areas could accrue benefits that may not have been considered under an NED/NER focus for justification. The federal funding that would have been spent elsewhere would now result in regional economic impacts that could produce an increase in jobs and income. The P&G did have an allowance for an exception to policy to recommend the NED/NER plan and allow other plans to be recommended. That could have been used to recommend areas that were unjustified under economic metrics but may have justified under social, cultural, or environmental metrics.

VI. Costs of the Proposed Action

The Corps also assesses that the proposal may impose some costs on the agency and certain groups. The Corps discusses these costs qualitatively below. The Corps assesses that the proposal may have direct costs to the agency and indirect costs to NFIs, as well as indirect costs to members of the public interested in participation in the planning process.

Direct Costs

Agency Administrative Costs

In this segment, we detail the major direct costs associated with select sections under consideration. Including sections which emphasize the use of high-quality information, including best available science and data to describe reasonably foreseeable environmental trends, including climate change, and require discussions of environmental, economic, and social consequences may increase agency time and effort in preparing planning documents where the Corps has to conduct additional research or analyses. While this may increase some costs in the shorter term, over time the Corps expects the costs of incorporating this analysis will come down. The Corps expects these costs to decline due to efficiency gains the Corps is expected to develop over time as well as gaining increased familiarity with new data and scientific research. This may have the short-term effect of causing small time delays. The Corps invites comment from the public, agencies, and stakeholders on its assessment of costs.

Non-Federal Interest Costs

Cost-sharing requirements are established in law. As such, cost-share requirements will remain the same under the proposed rule until otherwise changed by Congress and enacted into law. In some cases the additional analysis described in the proposed rule may increase the costs of an investigation. Increased engagement could increase the costs of conducting some studies. This could be a factor in densely populated areas because of the potential for high and diverse interests in a project. It may also be a factor in more sparsely populated areas especially if communities are spread across a large watershed.

Congressional action could always reduce a non-federal interest's cost-share requirement. Those cases would potentially result in more comprehensive solutions supporting communities during the implementation phase. On occasion, Congress has reduced or eliminated local study cost share for some specifically authorized investigations. These are often associated with post-disaster recovery funding but are sometimes enacted independently of severe events. In some situations the Corps has authority from Congress to reduce or waive certain costs for eligible economically disadvantaged communities.[9] In 2022 the Assistant Secretary of the Army for Civil Works signed design agreements with two pueblos in the Albuquerque District for aquatic ecosystem restoration work.[10] It was the first to use the "ability to pay" provision for this type of project to significantly reduce the cost share of a tribal partner.

It is important to note that NFIs seeking Corps involvement in a solution to a water resources problem are willing partners. This willingness is an indication and recognition of the need for help in solving a problem that may beyond the capability of local interests acting alone. This willingness is also supported by the ability of the local interest to raise funds to meet its cost share, acquire lands, and agree to operate and maintain a project. Without the federal partnership, problems could remain unsolved, or solutions could take longer and incur higher costs because of longer implementation periods.

Indirect Costs

Non-Federal Interest Costs

The proposed regulation may result in additional review time for NFIs if the Corps determines that new studies and analyses are necessary to adequately disclose and analyze the effects and costs/benefits of their proposed actions using the "high-quality information, including best available science and data." However, NFIs and the public are expected to benefit from the predictability and transparency established by requiring improved coordination. Therefore, the net cost impact of the proposed change is uncertain and may be cost-beneficial to NFIs.

Other Stakeholders, Including the Public

Although the proposed regulations do not require the public to participate in the development of NEPA documents, the regulations do facilitate increased public participation and encourage agency outreach and additional engagement beyond the baseline. While not directly imposing additional costs to the public, enabling additional opportunities for participation could

[9] Section 8119 of WRDA 2022 provides for a waiver of fees for eligible economically disadvantaged communities, as defined by Section 160 of WRDA 2020.

[10] See https://www.spa.usace.army.mil/Media/News-Releases/Article/3222573/asacw-joins-two-pueblos-to-sign-first-of-its-kind-design-agreement-to-restore-h/.

lead the public to incur costs to the extent they choose to participate, and those increased costs could raise challenges for some Tribal Nations, local governments, or other under-resourced stakeholders. Although these speculative indirect costs cannot be quantified, it is important to acknowledge the potential burden on impacted communities that may not have the same kinds of resources as other stakeholders, such as State governments. However, benefits of increased engagement and coordination may result in improved community-driven solutions benefitting the communities which may supersede any incurred costs from participation in the process.

VII. Determination that the Benefits of the Proposed Action Justify the Costs

The Corps has enumerated direct and indirect benefits to the agency of the proposed action through enhanced coordination, transparent processes, and informed decision making. The Corps' analysis also shows indirect benefits to NFIs and stakeholders and increased engagement with members of affected communities. The Corps believes this proposal has benefits that occur in the largest magnitude and exceed any costs which may incur.

The Corps also finds that the proposed action may have slight direct costs for the Corps and indirect costs for non-federal interests. The Corps finds the costs are relatively low and unlikely to impose a significant burden. Overall, the Corps finds the benefits are greater than these costs because the benefits are likely to continue for a long time into the future and affect a wider set of individuals at a greater magnitude than the costs. The Corps arrives at this determination based on its extensive experience in implementing the planning process, and under the assumption that a better and more comprehensive process yields better results. As the Corps continues to implement the proposed rule, the Corps' processes will become more transparent, standardized, and predictable. The Corps invites comment on these conclusions and welcomes any specific examples regarding the scope and expansiveness of the benefits relative to the costs.

The Corps concludes that the incremental benefits exceed the incremental costs of the proposed action for the Corps, NFIs, and the public. Quantifiable data for benefits and costs are limited, so most of the costs and benefits are discussed qualitatively. The Corps has concluded that the unquantified benefits outweigh any unquantified costs of the proposed action.

VIII. Consideration of Alternatives

The Corps considered alternatives to the proposed rule. The Corps could implement PR&G with guidance rather than rulemaking; however, such procedures would not be binding on the Corps or the public as they would not have undergone Administrative Procedures Act rulemaking. The Corps could not develop procedures to implement PR&G and instead rely solely on the PR&G documents. This could result in confusion and a lack of consistency for the Corps and the public as to how and when to apply PR&G to Civil Works authorities. The Corps proposes to conduct rulemaking to ensure the PR&G implementing procedures are clear for the Corps and the public as well as binding, pursuant to congressional direction.

IX. Consideration of Costs and Benefits of the Proposed Action Relative to the Alternatives

The Corps prefers this alternative as the proposed rule complies with congressional direction and is consistent with the PR&G. At base, the proposal is likely to generate benefits due to better analysis that facilitates improved project outcomes relative to the baseline. The net effect is that the proposal should yield larger benefit increases and smaller cost increases than

either of the other two proposed alternatives, and therefore has the highest net benefits relative to the baseline. Additionally, the Corps believes the proposal has the greatest magnitude of net benefits, and over time will result in a better process that produces better outcomes. The Corps invites comment on the enumeration of costs and benefits in this Regulatory Impact Analysis.

Appendix 1 – Included and Excluded Corps Programs

Civil Works Planning - Agency Specific Procedures – Monetary Thresholds for Application				
Program or Planning Product	**Agency Specific Procedures Generally Required**	**Monetary Threshold Criteria and Levels of Analysis**		
		>$20 Million	**$10 - $20 Million**	**<$10 Million**
General Investigations - feasibility studies	Yes	Standard Analysis	Scaled Analysis	Excluded
General Re-evaluation reports	Yes	Standard Analysis	Scaled Analysis	Excluded
Major Rehabilitation reports	Yes	Standard Analysis	Scaled Analysis	Excluded
Continuing Authorities Program	Yes	Standard Analysis	Scaled Analysis	Excluded
Continuing Authorities Program - Section 14	Excluded	n/a	n/a	Excluded
Continuing Authorities Program - Section 103	Excluded	n/a	n/a	Excluded
Continuing Authorities Program - Section 107	Excluded	n/a	n/a	Excluded
Continuing Authorities Program - Section 111	Yes	n/a	Scaled Analysis	Excluded
Continuing Authorities Program - Section 204	Excluded	n/a	n/a	Excluded
Continuing Authorities Program - Section 205	Excluded	n/a	n/a	Excluded
Continuing Authorities Program - Section 206	Excluded	n/a	n/a	Excluded
Continuing Authorities Program - Section 208	Excluded	n/a	n/a	Excluded
Continuing Authorities Program - Section 1135	Excluded	n/a	n/a	Excluded
Re-allocation Studies - significant changes to operations	Yes	Standard Analysis	Scaled Analysis	Excluded
Section 216 - Flood Control Act of 1970 (Pub. L. 91-611)	Yes	Standard Analysis	Scaled Analysis	Excluded
Regulatory Program	Excluded from ASP	n/a	n/a	n/a
Section 408 Program - Rivers and Harbors Act of 1899 (33 U.S.C. 408)	Excluded from ASP	n/a	n/a	n/a
Planning Assistance to States	Excluded from ASP	n/a	n/a	n/a
Flood Plain Management Services	Excluded from ASP	n/a	n/a	n/a
Pub. L. 84-99 Program	Excluded from ASP	n/a	n/a	n/a
Water Infrastructure Finance and Innovation Act Program	Excluded from ASP	n/a	n/a	n/a
Environmental Infrastructure projects	Excluded from ASP	n/a	n/a	n/a
Land Management Plans	Excluded from ASP	n/a	n/a	n/a
Operations and Maintenance consistent with project authorization	Excluded from ASP	n/a	n/a	n/a
International and Interagency Support	Excluded from ASP	n/a	n/a	n/a
Support for Others Actions	Excluded from ASP	n/a	n/a	n/a
Research or Monitoring Activities	Excluded from ASP	n/a	n/a	n/a
Emergency Actions	Excluded from ASP	n/a	n/a	n/a

Appendix 2: Methods and Tools Used to Evaluate Water Resources Projects

The table below identifies some of the methods and tools the Corps uses in conducting water resources planning study evaluations. This supports the understanding of the baseline being used to compare the 1983 P&G to the proposed Agency Specific Procedures. These details offer insight into the information generated during the evaluation of a project. The methods are categorized in the P&G four accounts to show how information contributes to understanding the benefits, costs, and other factors relevant to a potential project. These are concise examples and are not intended to be a comprehensive list of tools or an extensive discussion of available planning methods.

National Economic Development	Environmental Quality
Displays changes in the economic value of the national output of goods and services.	***This account displays non-monetary effects on significant natural and cultural resources.***
Methods: Different Corps mission areas employ different approaches to assess NED benefits. For flood and coastal risk management projects benefits are calculated by capturing damages prevented compared to the costs of different alternative plans. In navigation studies transportation cost savings are calculated and compared to the cost of alternative plans. **Tools:** Resources from the Bureau of Economic Analysis such as industry indices may help project commodity flows on waterways. Independent studies also generate information along with interviews with user groups. Computer based analytical models such as HarborSym, the Ohio River Navigation Investment, and ship simulators are used in navigation studies. Flood and coastal studies utilize structure inventories, digital elevation maps, and hydrologic data to inform analysis. This information is fed into computer models such as the Hydrologic Engineering Center's Flood Damage Reduction Analysis HEC-FDA), River Analysis System (HEC-RAS) and LifeSim. Coastal teams use BeachFx, ADCIRC, and other software.	**Methods:** Approaches vary by topic but in general baseline conditions in a future without project scenario are compared to expected conditions in a future with project scenario. The differences in these scenarios over time define the impacts of alternative plans. These may be positive or negative and are displayed as non-monetary units. For example water quality changes can be captured in temperature changes or salinity increases or turbidity reductions. These results are then compared across alternatives and may be applied to other environmental considerations such as impacts to fish and wildlife populations. **Tools:** These vary by topic and are usually specific to one factor such as air quality, or noise levels, or habitat value. Examples include air quality standards, noise level measurements, and vegetation condition indexes. Many but not all tools are computer based. Frequently used software includes the Institute for Water Resources' Planning Suite for cost effectiveness and incremental cost analysis, various U.S. Fish and Wildlife Service habitat suitability indices, and the Engineer Research & Development Center's Surface-water Modeling System
Regional Economic Development	**Other Social Effects**
This account registers changes in the distribution of regional economic activity that result from each alternative plan.	***Registers plan effects from perspectives that are relevant to the planning process but are not reflected in the other three accounts.***
Methods: Measuring this aspect of economic activity involves assessing the funds expended to construct and operate a civil works project. Effects may be temporary or long lasting and may be challenging to discern particularly in large areas or urban centers. **Tools:** Regional Economic Systems (RECONS) is a Corps software tool for projecting economic outputs, jobs, income, and value added on local, regional, and national scales. Other more local independent research tools have been used in some studies as well. These may be Corps-developed, sponsor owned, academic, or private sector tools.	**Methods:** Identify and analyze social conditions and reflect the perspectives of stakeholder held identifications and analysis. "Consensus forming activities" help build common definitions of problems, opportunities, and constraints, and help determine planning objectives. Robust methods are heavily reliant on interaction and collaboration with affected communities. These efforts may identify parameters that are not traditionally considered such as cohesion, culture, or connection to place. **Tools:** Some tools exist that can be used to estimate quantified analysis of different social effects. The Social Vulnerability Index and EJScreen are examples. However, many of the tools used are qualitative in nature involving workshop inputs, historical analysis, and surveys.

Appendix 3: Chief's Reports 2020-2023 – Threshold Lookback Analysis

Div	Dist	Mission	Date	Study Name	Federal Cost	Standard	Scaled	Excluded
POD	POA	NAV	2/7/2020	Unalaska (Dutch Harbor) Channels, AK	$26,200,000	x		
NAD	NAP	CSRM/ENR	3/6/2020	Delaware Beneficial Use of Dredged Material for the Delaware River, DE	$169,600,000	x		
SPD	SPA	FRM	3/13/2020	Middle Rio Grande Flood Protection, Bernalillo to Belen, NM at Albuquerque, NM	$190,500,000	x		
NAD	NAP	CSRM/ENR	4/8/2020	New Jersey Beneficial Use of Dredged Material for the Delaware River, NJ	$162,900,000	x		
SAD	SAJ	ENR	4/8/2020	CERP - Loxahatchee River Watershed Restoration Plan, FL	$372,200,000	x		
SWD	SWT	FRM	4/23/2020	Tulsa and West-Tulsa Levee Feasibility Study, Tulsa County, OK	$86,700,000	x		
NAD	NAN	NAV	4/23/2020	New York and New Jersey Harbor Anchorages, New York, New Jersey	$18,900,000		x	
NAD	NAN	FRM	4/29/2020	Peckman River Basin, New Jersey Flood Risk Management Feasibility Study Report	$95,000,000	x		
NAD	NAN	FRM	5/7/2020	Westchester County Streams, Byram River Basin, Fairfield County, CT and Westchester County, NY	$14,700,000		x	
NAD	NAE	NAV	5/7/2020	New Haven Harbor Navigation Improvement Project, Connecticut	$53,400,000	x		
NAD	NAN	ENR	5/26/2020	Hudson-Raritan Estuary Ecosystem Restoration, NY and NJ	$408,100,000	x		
POD	POA	NAV	5/29/2020	Port of Nome Modifications, Nome, AK	$368,100,000	x		
NAD	NAN	CSRM	6/9/2020	Rahway River Basin, NJ Coastal Storm Risk Management	$46,700,000	x		
NAD	NAN	CSRM	7/9/2020	Fire Island to Montauk Point Reformulation, NY (P.L. 113-2)	$1,500,000,000	x		
LRD	LRC	ENR	7/9/2020	South Fork of the South Branch of the Chicago River, Bubby Creek, IL	$11,600,000		x	
SPD	SPL	FRM	7/9/2020	Westminster, East Garden Grove, CA	$314,500,000	x		
SAD	SAJ	FRM	8/13/2020	Rio Guayanilla, Guayanilla, Commonwealth of Puerto Rico	$100,800,000	x		
POD	POA	NAV	8/13/2020	St. George Harbor Improvement, St. George, Alaska	$143,700,000	x		
SAD	SAJ	FRM	8/17/2020	Turpentine Run, St. Thomas, United States Virgin Islands	$28,800,000	x		
SAD	SAJ	FRM	8/17/2020	Rio Culebrias at Aguadilla and Aguada, PR	$16,700,000		x	
SAD	SAJ	FRM	8/24/2020	Savan Gut Phase II, St. Thomas, USVI	$47,000,000	x		
NAD	NAO	NAV	8/25/2020	Atlantic Intracoastal Waterway, North Landing Bridge Replacement, Virginia	$98,400,000	x		
NAD	NAN	CSRM	8/25/2020	Raritan Bay and Sandy Hook Bay, Highlands, NJ	$105,700,000	x		
LRD	LRL	FRM	10/27/2020	Louisville Metropolitan Flood Protection System Reconstruction, Jefferson and Bullitt Counties, KY	$122,100,000	x		
SPD	SPL	ENR	11/13/2020	Malibu Creek Ecosystem Restoration, Los Angeles and Ventura Counties, CA	$172,200,000	x		
NWD	NWK	ENR	11/18/2020	Grand River Basin Ecosystem Restoration, Iowa and Missouri	$78,800,000	x		
SAD	SAJ	FRM	11/18/2020	Rio Grande de Manati Flood Risk Management, Ciales, Puerto Rico	$9,700,000			x
NAD	NAN	ENR	11/19/2020	Hudson River Habitat Restoration, NY	$44,600,000	x		
NAD	NAE	CSRM	1/19/2021	Fairfield and New Haven Counties, CT	$86,500,000	x		

POD	POA	NAV	3/12/2021	Elim Subsistence Harbor, AK	$72,600,000	x		
SPD	SPL	ENR	4/22/2021	Prado Basin Ecosystem Restoration, San Bernardino, Riverside and Orange Counties, California	$29,800,000	x		
SPD	SPK	FRM	6/21/2021	Lower Cache Creek, Yolo County, Woodland and Vicinity, California	$208,500,000	x		
NWD	NWP	FRM	8/20/2021	Portland Metro Levee System, Portland, Oregon	$71,800,000	x		
SAD	SAJ	CSRM	9/16/2021	San Juan Metropolitan Area, Puerto Rico, Coastal Storm Risk Management - 2021	$237,800,000	x		
SWD	SWG	CSRM/ENR	9/16/2021	Coastal Texas Protection and Restoration	$17,900,000,000	x		
SAD	SAJ	CSRM	9/24/2021	Florida Keys, Monroe County, Florida Coastal Storm Risk Management	$1,300,000,000	x		
SAD	SAM	CSRM	10/7/2021	Okaloosa County, Florida, Coastal Storm Risk Management	$19,800,000		x	
SAD	SAM	FRM	10/7/2021	Selma, Alabama, Flood Risk Management and Bank Stabilization	$11,900,000		x	
SPD	SPL	NAV	10/14/2021	Port of Long Beach Deep Draft Navigation, Los Angeles County, California	$71,900,000	x		
SAD	SAC	CSRM	10/26/2021	Folly Beach, South Carolina Coastal Storm Risk Management	$45,400,000	x		
SAD	SAJ	CSRM	10/29/2021	Pinellas County, Florida, Treasure Island and Long Key Segments, Coastal Storm Risk Management	$8,600,000			x
SAD	SAM	FRM	10/29/2021	Valley Creek Flood Risk Management, Bessemer and Birmingham, AL	$17,600,000		x	
NWD	NWO	FRM	1/24/2022	Papillion Creek and Tributaries Lakes, Nebraska	$91,400,000	x		
MVD	MVN	CSRM	1/28/2022	Upper Barataria Basin, Louisiana, Hurricane and Storm Damage Risk	$1,000,000,000	x		
SAD	SAS	NAV	3/11/2022	Brunswick Harbor Modifications, Glynn, County, Georgia	$10,700,000		x	
SWD	SWG	NAV	4/23/2020	Houston Ship Channel Expansion Channel Improvement Project, Harris, Chambers & Galveston Counties, TX	$462,800,000	x		
SAD	SAJ	CSRM	5/24/2022	Rio Guanajibo Flood Risk Management, Mayaguez, Hormigueros, and San German, Puerto Rico	$110,900,000	x		
LRD	LRL	FRM/ECO	5/24/2022	Three Forks of Beargrass Creek Ecosystem Restoration, Louisville, Kentucky	$71,800,000	x		
NWD	NWS	NAV	5/26/2022	Tacoma Harbor Navigation Improvement Project, Washington	$120,700,000	x		
SPD	SPL	NAV	5/31/2022	Port of Long Beach, California - Supplemental	$73,500,000	x		
NAD	NAN	NAV	6/3/2022	New York – New Jersey Harbor Deepening Channel Improvements	$2,100,000,000	x		
SAD	SAC	CSRM	6/10/2022	Charleston Peninsula, South Carolina, Coastal Storm Risk Management	$735,800,000	x		
MVD	MVN	CSRM	6/23/2022	South Central Coast, Louisiana Hurricane and Storm Damage Risk Reduction	$594,600,000	x		
SAD	SAJ	CSRM	9/26/2022	Miami-Dade County, Florida, Main Segment, Coastal Storm Risk Management	$168,900,000	x		
SWD	SWG	NAV	6/2/2023	Gulf Intracoastal Waterway, Coastal Resilience Study, Brazoria and Matagorda Counties, Texas	$204,200,000	x		
NAD	NAB	NAV	6/22/2023	Baltimore Harbor Anchorages & Channels Modification of Seagirt Loop Channel, City of Baltimore, MD	$63,942,000	x		
NAD	NAE	CSRM	9/28/2023	Rhode Island Coastline, Rhode Island, Coastal Storm Risk Management	$188,353,750	x		

Appendix 4: Comprehensive Documentation of Benefits - Chief's Reports 2020 - 2023

Div	Dist	Mission	Date	Study Name	Comprehensive Documentation of Benefits in Chief's Report?					Comprehensive Documentation of Benefits in Feasibility Report?					Includes Required Final Array Alternatives
					NED	RED	EQ	OSE	Trade-Offs	NED	RED	EQ	OSE	Trade-Offs	
POD	POA	NAV	2/7/2020	Unalaska (Dutch Harbor) Channels, AK	yes	no	no	no	no						
NAD	NAP	CSRM/ENR	3/6/2020	Delaware Beneficial Use of Dredged Material for the Delaware River, DE	yes	no	no	no	no	SEE REPORTS BELOW FROM 2022					
SPD	SPA	FRM	3/13/2020	Middle Rio Grande Flood Protection, Bernalillo to Belen, NM at Albuquerque, NM	yes	no	no	no	no						
NAD	NAP	CSRM/ENR	4/8/2020	New Jersey Beneficial Use of Dredged Material for the Delaware River, NJ	yes	no	no	no	no						
SAD	SAJ	ENR	4/8/2020	CERP - Loxahatchee River Watershed Restoration Plan, FL	no	no	no	no	no						
SWD	SWT	FRM	4/23/2020	Tulsa and West-Tulsa Levee Feasibility Study, Tulsa County, OK	yes	no	no	yes	no						
NAD	NAN	NAV	4/23/2020	New York and New Jersey Harbor Anchorages, New York, New Jersey	yes	no	no	no	no						
SWD	SWG	NAV	4/23/2020	Houston Ship Channel Expansion Channel Improvement Project, Harris, Chambers & Galveston Counties, TX	yes	no	no	no	no	yes	yes	yes	yes	no	
NAD	NAN	FRM	4/29/2020	Peckman River Basin, New Jersey Flood Risk Management Feasibility Study Report	yes	no	no	no	no						
NAD	NAN	FRM	5/7/2020	Westchester County Streams, Byram River Basin, Fairfield County, CT and Westchester County, NY	yes	no	no	no	no						
NAD	NAE	NAV	5/7/2020	New Haven Harbor Navigation Improvement Project, Connecticut	yes	no	no	no	no						
NAD	NAN	ENR	5/26/2020	Hudson-Raritan Estuary Ecosystem Restoration, NY and NJ	no	no	no	no	no						
POD	POA	NAV	5/29/2020	Port of Nome Modifications, Nome, AK	yes	no	no	yes	no						
NAD	NAN	CSRM	6/9/2020	Rahway River Basin, NJ Coastal Storm Risk Management	yes	no	no	no	no						
NAD	NAN	CSRM	7/9/2020	Fire Island to Montauk Point Reformulation, NY (P.L. 113-2)	yes	no	no	no	no						
LRD	LRC	ENR	7/9/2020	South Fork of the South Branch of the Chicago River, Bubby Creek, IL	no	no	no	no	no						
SPD	SPL	FRM	7/9/2020	Westminster, East Garden Grove, CA	yes	no	no	no	no						
SAD	SAJ	FRM	8/13/2020	Rio Guayanilla, Guayanilla, Commonwealth of Puerto Rico	yes	no	no	no	no						
POD	POA	NAV	8/13/2020	St. George Harbor Improvement, St. George, Alaska	yes	no	no	yes	no						
SAD	SAJ	FRM	8/17/2020	Turpentine Run, St. Thomas, United States Virgin Islands	yes	no	no	no	no						
SAD	SAJ	FRM	8/17/2020	Rio Culebrias at Aguadilla and Aguada, PR	yes	no	no	no	no						
SAD	SAJ	FRM	8/24/2020	Savan Gut Phase II, St. Thomas, USVI	yes	no	no	no	no						
NAD	NAO	NAV	8/25/2020	Atlantic lntracoastal Waterway, North Landing Bridge Replacement, Virginia	yes	no	no	no	no						
NAD	NAN	CSRM	8/25/2020	Raritan Bay and Sandy Hook Bay, Highlands, NJ	yes	no	no	no	no						
LRD	LRL	FRM	10/27/2020	Louisville Metropolitan Flood Protection System Reconstruction, Jefferson and Bullitt Counties, KY	yes	no	no	no	no						
SPD	SPL	ENR	11/13/2020	Malibu Creek Ecosystem Restoration, Los Angeles and Ventura Counties, CA	no	no	no	no	no						
NWD	NWK	ENR	11/18/2020	Grand River Basin Ecosystem Restoration, Iowa and Missouri	no	no	no	no	no						

SAD	SAJ	FRM	11/18/2020	Rio Grande de Manati Flood Risk Management, Ciales, Puerto Rico	yes	no	no	no	no						
NAD	NAN	ENR	11/19/2020	Hudson River Habitat Restoration, NY	no	no	no	no	no						
NAD	NAE	CSRM	1/19/2021	Fairfield and New Haven Counties, CT	yes	no	no	no	no						
POD	POA	NAV	3/12/2021	Elim Subsistence Harbor, AK	yes	no	no	yes	no						
SPD	SPL	ENR	4/22/2021	Prado Basin Ecosystem Restoration, San Bernardino, Riverside and Orange Counties, California	no	no	no	no	no						
SPD	SPK	FRM	6/21/2021	Lower Cache Creek, Yolo County, Woodland and Vicinity, California	yes	no	no	no	no						
NWD	NWP	FRM	8/20/2021	Portland Metro Levee System, Portland, Oregon	yes	no	no	no	no						
SAD	SAJ	CSRM	9/16/2021	San Juan Metropolitan Area, Puerto Rico, Coastal Storm Risk Management - 2021	yes	no	no	no	no						
SWD	SWG	CSRM/ENR	9/16/2021	Coastal Texas Protection and Restoration	yes	no	no	no	no						
SAD	SAJ	CSRM	9/24/2021	Florida Keys, Monroe County, Florida Coastal Storm Risk Management	yes	no	no	no	no	yes	yes	yes	yes	no	
SAD	SAM	CSRM	10/7/2021	Okaloosa County, Florida, Coastal Storm Risk Management	yes	no	no	no	no						
SAD	SAM	FRM	10/7/2021	Selma, Alabama, Flood Risk Management and Bank Stabilization	yes	no	no	no	no						
SPD	SPL	NAV	10/14/2021	Port of Long Beach Deep Draft Navigation, Los Angeles County, California	yes	no	yes	no	no						
SAD	SAC	CSRM	10/26/2021	Folly Beach, South Carolina Coastal Storm Risk Management	yes	no	no	no	no						
SAD	SAJ	CSRM	10/29/2021	Pinellas County, Florida, Treasure Island and Long Key Segments, Coastal Storm Risk Management	yes	no	no	no	no						
SAD	SAM	FRM	10/29/2021	Valley Creek Flood Risk Management, Bessemer and Birmingham, AL	yes	no	no	no	no						
NWD	NWO	FRM	1/24/2022	Papillion Creek and Tributaries Lakes, Nebraska	yes	no	no	no	no						
MVD	MVN	CSRM	1/28/2022	Upper Barataria Basin, Louisiana, Hurricane and Storm Damage Risk	yes	no	no	no	no						
SAD	SAS	NAV	3/11/2022	Brunswick Harbor Modifications, Glynn, County, Georgia	yes	no	no	no	no						
SAD	SAJ	CSRM	5/24/2022	Rio Guanajibo Flood Risk Management, Mayaguez, Hormigueros, and San German, Puerto Rico	yes	no	no	no	no						
LRD	LRL	FRM/ECO	5/24/2022	Three Forks of Beargrass Creek Ecosystem Restoration, Louisville, Kentucky	no	no	no	no	no	no	yes	yes	yes	no	yes
NWD	NWS	NAV	5/26/2022	Tacoma Harbor Navigation Improvement Project, Washington	yes	no	no	no	no	yes	yes	yes	yes	no	unclear
SPD	SPL	NAV	5/31/2022	Port of Long Beach, California - Supplemental	yes	no	yes	no	no	yes	yes	yes	yes	no	unclear
NAD	NAN	NAV	6/3/2022	New York – New Jersey Harbor Deepening Channel Improvements	yes	no	no	no	no	yes	yes	yes	yes	yes	yes
SAD	SAC	CSRM	6/10/2022	Charleston Peninsula, South Carolina, Coastal Storm Risk Management	yes	no	no	no	no	yes	yes	yes	yes	no	yes
MVD	MVN	CSRM	6/23/2022	South Central Coast, Louisiana Hurricane and Storm Damage Risk Reduction	yes	no	no	no	no	yes	yes	yes	yes	no	no
SAD	SAJ	CSRM	9/26/2022	Miami-Dade County, Florida, Main Segment, Coastal Storm Risk Management	yes	no	no	no	no	yes	yes	yes	yes	no	no
SWD	SWG	NAV	6/2/2023	Gulf Intracoastal Waterway, Coastal Resilience Study, Brazoria and Matagorda Counties, Texas	yes	no	yes	no	no	yes	yes	yes	yes	no	yes
NAD	NAB	NAV	6/22/2023	Baltimore Harbor Anchorages & Channels Modification of Seagirt Loop Channel	yes	no	no	no	no	yes	yes	yes	yes	no	no
NAD	NAE	CSRM	9/28/2023	Rhode Island Coastline, Rhode Island, Coastal Storm Risk Management	yes	yes	yes	yes	no	yes	yes	yes	yes	no	no

Appendix 5: Recent Studies with Approved Exceptions or With Plans Other Than the NED Plan

Name	Report Date	Authority	Comp Benefits	LPP	ASA(CW) Exemption	Notes	Web Link - Chief's Report
Tulsa West Tulsa Levees, OK	4/23/2020	WIIN Act of 2016, and Bi-Partisan Budget Act of 2018	No	No	Yes	ASA(CW) approved an exception to the requirement for USACE to recommend the NED plan - allowed to recommend a plan based on overriding life-safety risks and contribution to the Other Social Effects Account. The NED plan would have been the without project alternative (No Federal Action).	https://planning.erdc.dren.mil/toolbox/library/ChiefReports/TulsaWestTulsa-2020.pdf
Houston Ship Channel Expansion Channel Improvement Project, Harris, Chambers & Galveston Counties, TX	4/23/2020	Section 216 of Flood Control Act of 1970	No	Yes	Yes	ASA(CW) approved selection of a Locally Preferred Plan. The LPP has a higher cost than the NED Plan. Note that the sponsor pays 100% of the incremental cost above the NED Plan.	https://planning.erdc.dren.mil/toolbox/library/ChiefReports/HoustonShipChannel-2020.pdf
Port of Nome Modifications, Nome, AK	5/29/2020	Section 2006 WRDA 2007; Section 1202(c)(3) WRDA 2016	Yes	No	No	NED evaluated but not identified; arctic security and native benefits used to select a plan	https://planning.erdc.dren.mil/toolbox/library/ChiefReports/PortofNome_2020.pdf
Westminster, East Garden Grove Flood Risk Management Study	7/9/2020	Bi-Partisan Budget Act of 2018	No	Yes	Yes	ASA(CW) approved selection of a Locally Preferred Plan. The LPP has a higher cost than the NED Plan. Note that the sponsor pays 100% of the incremental cost above the NED Plan.	https://planning.erdc.dren.mil/toolbox/library/ChiefReports/WestminsterChiefsReportSigned_2020.pdf
Fire Island to Montauk Point Reformulation, NY	7/9/2020	Disaster Relief Appropriations Act of 2013 (P.L. 113-2)	No	No	Yes	ASA(CW) approved NED Plan deviations	https://planning.erdc.dren.mil/toolbox/library/ChiefReports/FireIslandtoMontaukPoint_2020.pdf
St. George Harbor Improvement, St. George, Alaska	8/13/2020	Section 2006 WRDA 2007	Yes	No	No	NED evaluated but not identified; additional mooring days used to select a plan; OSE evaluated but term not mentioned in Chief's Report	https://planning.erdc.dren.mil/toolbox/library/ChiefReports/StGeorgeHarborImprovement_2020.pdf

Elim Subsistence Harbor, AK	3/12/2021	Section 2006 WRDA 2007	Yes	No	No	NED evaluated but not identified; additional mooring days used to select a plan; OSE evaluated but term not mentioned in Chief's Report	https://planning.erdc.dren.mil/toolbox/library/ChiefReports/Elim_March2021.pdf
Florida Keys, Monroe County, Florida Coastal Storm Risk Management	9/24/2021	Public Law 84-71, dated June 15, 1955, and Bi-Partisan Budget Act of 2018	No	No	Yes	ASA(CW) granted a policy exemption to allow separable element for road protection for critical evacuation. The plan was slightly more expensive than the NED Plan (about +$20k).	https://planning.erdc.dren.mil/toolbox/library/ChiefReports/FloridayKeys_Sept2021.pdf
Selma, AL	10/7/2021	WRDA 2018 Section 1203 and Bi-Partisan Budget Act of 2018	Yes	No	Yes	ASA(CW) granted an exemption to the requirement that USACE recommend the National Economic Development plan. A least-cost approach was used for formulating, evaluating, and determining the recommended plan. Other Social Effects was the basis for the exemption and recommendation. The Least cost plan was less expensive than the cost to relocate historic structures.	https://planning.erdc.dren.mil/toolbox/library/ChiefReports/SelmaAlabamaFRM_2021.pdf
Gulf Intracoastal Waterway, Coastal Resilience Study, Brazoria and Matagorda Counties, Texas	6/2/2023	Section 1201 of WRDA 2016	No	No	Yes	ASA(CW) approved an exception for NED Plan plus Resilience features. Recommended a "Resilience Plan"	https://planning.erdc.dren.mil/toolbox/library/ChiefReports/GIWW%20CRS_2June2023.pdf
Rhode Island Coastline, Rhode Island, Coastal Storm Risk Management	9/28/2023	Senate Public Works Committee resolution dated September 12, 1969, Senate Committee on Environment and Public Works resolution dated August 2, 1995,	Yes	No	Yes	ASA(CW) approved an exception for NED Plan to include resilience features	https://planning.erdc.dren.mil/toolbox/library/ChiefReports/GIWW%20CRS_2June2023.pdf

		and by Public Law (PL) 84-71.					

Appendix 6: Summary of Benefits and Costs of the Proposal

This table presents a section-by-section listing of the proposed rule. A qualitative assessment of each section resulted in determinations of whether costs are direct or indirect and whether benefits are direct or indirect. The analysis is supported by descriptions in sections IV-VI in the regulatory impact analysis. As a whole, implementation of the ASP by the Corps would result in overall maximization of public benefits across economic, environmental, and social considerations.

Section	Section Name	Direct Benefits	Direct Costs	Indirect Costs	Indirect Benefits
Section 234.1	General	n/a	n/a	n/a	n/a
Section 234.2	Definitions	n/a	n/a	n/a	n/a
Section 234.3	Exceptions	n/a	n/a	n/a	n/a
Section 234.4	Objectives and applicability	Yes - transparency	Yes - consistency	No - voluntary	Yes – public benefits
Section 234.5	Level of analysis	No – similar to P&G	No - similar to P&G	No - similar to P&G	No - similar to P&G
Section 234.6	The Planning Process	Yes - transparency	Yes - collaboration	Yes – watershed scale	Yes - resilience
Section 234.7	Evaluation framework	Yes - comprehensive	Yes – ecosystem services	Yes – learning	Yes - documentation
Section 234.8	Final array of alternatives	Yes - similar to comp benefits array	Yes – broader array	Yes – local plan	Yes – indigenous knowledge
Section 234.9	Evaluate effects of alternatives	Yes – total benefits	Yes – more plans	Yes – new methods	Yes – clear display
Section 234.10	Compare alternatives	No – similar to P&G	No – similar to P&G	No – similar to P&G	No – similar to P&G
Section 234.11	Select the recommended plan	Yes – public benefits	Yes - comprehensive	Yes – public benefits	Yes - comprehensive

Appendix 7: Summary of Main Provisions and Impacts

This table lists the provisions of the proposed rule and the impact of each section of the ASP in terms of water resources planning procedures and expected results.

Section Number	Section Name	Description of the Provision in the Proposed ASP Rule	Impacts of Proposal
Section 234.1	General	States the purpose of ASP regulations.	Establishes the authority for the Corps to utilize ASP to investigate water resources problems and to make recommendations for project solutions.
Section 234.2	Definitions	Defines planning and other related terminology.	Provides common definitions supporting provisions of the ASP and for terminology used in the evaluation of water resources problems.
Section 234.3	Exceptions	Allows for policy exceptions and sets the approval authority at the Assistant Secretary of the Army for Civil Works.	Allows flexibility in recommending plans to authorize federal investments.
Section 234.4	Objectives and applicability	Establishes a common framework to analyze a range of water resources projects, programs, activities, and related actions involving potential Federal investments.	Outlines the application of the PR&G to Corps water resources missions and highlights water project planning objectives, exclusions, and introduces the concept of public benefits.
Section 234.5	Level of analysis	Defines the level of analysis consistent with investment monetary thresholds established in the PR&G.	Creates three levels of potential analysis commensurate with investment cost thresholds.
Section 234.6	The Planning Process	Details the planning procedures to be used by the Corps to implement the PR&G in the investigation of water resources development projects.	Serves as a complete introductory overview of the processes to be used by the Corps and partners in planning evaluations.

Section Number	Section Name	Description of the Provision in the Proposed ASP Rule	Impacts of Proposal
Section 234.7	Evaluation framework	Highlights planning concepts and considerations essentially to fully evaluating problems and recommending water resources solutions.	Reinforces fundamental planning concepts and the evolution of modern approaches to water resources problems including risk and resilience. Introduces new concepts such as ecosystem services for use in Corps studies and confirms commitments to honoring Tribal Treaty Rights and state water law.
Section 234.8	Final array of alternatives	Describes the types of alternatives to be included in a final array of plans to solve a water resources problem.	Identifies the specific alternatives to include: : no action, a non-structural alternative, a nature-based solution alternative, an environmentally preferred alternative, an alternative that maximizes net public benefits, and an alternative preferred by local interests.
Section 234.9	Evaluate effects of alternatives	Establishes three categories to account for the effects of alternatives and their contributions to the Federal Objective.	Outlines the comparison of impacts at national and regional scales relative to a baseline. Requires display of benefits and costs in economic, environmental, and social categories and provides for equal consideration across categories.
Section 234.10	Compare alternatives	Requires identification of the alternative that reasonably maximizes public benefits. Establishes tradeoff analysis and robust engagement as foundational elements supporting comparisons.	Adds specific requirements for the display of information supporting the comparison of plans against a no action scenario and to other plans along with the objectives addressed, risks and uncertainty and additional trade-offs evaluated.
Section 234.11	Select the recommended plan	Enables decision-makers to assess tradeoffs and to consider the extent of both monetized and non-monetized effects. Outlines the information to be provided in support of decisions and recommendations for water resource project investments.	Calls for the transparent display and documentation of the basis for decision making including the criteria and considerations used. Identifies the requirement to describe how alternatives maximize public benefits and requires providing a benefit to cost analysis. Allows for exceptions to be approved.

Appendix 8: Case Study – Comparison of Two Civil Works Planning Frameworks – Barrow, Alaska Coastal Erosion Study

Purpose

This case study uses a completed Director's Report to compare key aspects of civil works planning under two different frameworks. The feasibility study work supporting the Director's Report was performed using the 1983 P&G. That effort is compared to the 2015 PR&G framework. This comparison is useful in evaluating how the proposed Corps Agency Specific Procedures might produce civil works project results. The project highlighted is instructive because it involves complex factors such as climate change, resilience, Tribal interests, environmental justice, sensitive ecological resources, non-monetary benefits, and cultural resources. It is expected that future Corps water resources studies will involve many of these complex aspects as well. This case study provides a cursory review of the findings in which methods of evaluation germane to both approaches are present.

Background

The Energy and Water Development and Related Agencies Appropriations Act of 2010 authorized the study of erosion in Alaska's coastal communities.[11] The Assistant Secretary of the Army for Civil Works provided implementation guidance for the Barrow (Utqiaġvik), Alaska study in June 2010.[12] The North Slope Borough was the non-federal sponsor with the Corps' Alaska District. Barrow experiences frequent and severe coastal storms, resulting in flooding and coastal erosion that threatens public health and safety, the economy of the community, over $1 billion in critical infrastructure, access to subsistence areas, and cultural and historic resources.

The partners investigated Coastal Storm Risk Management plans to address coastal processes and related issues along 5 miles of Arctic Ocean coastline. This study authority allows the Corps to recommend projects to Congress without the requirement for that recommendation to be primarily justified based on NED benefits. However, the study did evaluate NED benefits to show that this alternate decision-making framework was necessary. Therefore, this study contains both an NED analysis common to those studies conducted under P&G and a more holistic, comprehensive benefits approach that is estimated to be more similar to what can be expected from studies conducted under PR&G. In 2019, the Director of Civil Works signed a report recommending a plan to address storm damages in Barrow.[13]

Comparison

The October 2019 feasibility report and environmental assessment presents the study from initial problem identification through the planning process and concludes with a

[11] Note: the authorization history is complex. The authority has been repealed and replaced by Water Resources Development Act of 2022 Sec. 8315. For this case study the authority summary is simplified. The details are not presented. The statutes, implementation guidance, and the feasibility report are good resources for the details.
[12] See planning.erdc.dren.mil/toolbox/library/WRDA/wrda07sec5031.pdf.
[13] See https://planning.erdc.dren.mil/toolbox/library/DirectorReport/Barrow-11Dec2019.pdf.

recommended plan.[14] A report prepared under the proposed Agency Specific Procedures would include the same information documenting the planning process. However, it would also include certain revised and/or new requirements to meet the standards in the proposed procedures.

P&G Analysis: The Barrow study first analyzed all four accounts as previously discussed, focusing on NED-based net annual benefits (annual benefits minus annual costs). This analysis was based on foregone damages to structures and infrastructure located along the Arctic Coast at Utqiaġvik. The result of this analysis showed that an alternative that protected two of the six reaches of the study area generated the highest level of net annual NED benefits, with average annual NED benefits of $587,000, benefit to cost ratio of 1.21, and project first costs of approximately $70 million. Under normal P&G analysis, this would have been the recommended plan. This plan would have protected a portion of the community's utilidor, a portion of the community's residences, some public facilities, some historically and culturally significant sites, the community's freshwater source, two dams, and some burial sites.

PR&G Analysis: Given the unique structure of the authority used to conduct the Barrow study, an alternate means of justification was developed and is likely to be comparable to what could be expected under the PR&G. The analysis used Community Resilience Units (CRUs) to evaluate and compare various alternatives against one another. An alternative that protected all six reaches of the study area was recommended. This plan exhibited average annual net NED benefits of -$5,900,000, a benefit-cost ratio of 0.58 (50-year period of analysis, 2.875%), and project first costs of approximately $330 million. The recommended plan protects the following community assets over and above the NED plan including, but not limited to: a village site eligible for listing in the National Register of Historic Places, the Utqiaġvik airport (which provides the only transportation option since Utqiaġvik is not on the road system), multiple residential structures, the full length of the community's utilidor, the community's main arterial road, the community's only gas station, multiple cultural and historic sites, the community's landfill, the only Tribal college in the State of Alaska, the community's barge access point, the community's subsistence vessel launch site, a radar site, and the National Arctic Research Laboratory site.

The first table below highlights key common elements between the two planning frameworks and the new components found in the proposed Agency Specific Procedures. A comparison of results is used to illustrate the differences that would result using the Agency Specific Procedures. The second table uses information from the completed Barrow feasibility report to illustrate how the application of the proposed Agency Specific Procedures would be documented.

[14] See https://www.poa.usace.army.mil/Portals/34/docs/civilworks/publicreview/Barrow/BarrowAlaskaCoastFinalFeasibilityReportsigned.pdf?ver=2020-02-14-191257-430.

Appendix 8 - Table 1: Comparison of Frameworks Across Various Planning Procedures and Topics			
Planning Procedure or Topic	**Framework**		**Comparison of Result(s)**
	1983 Principles and Guidelines and ER 1105-2-100 (Planning Guidance Notebook)	**2015 Principles, Requirements and Guidelines and Proposed Agency Specific Procedures**	
Public involvement	Disseminate information about proposed activities, understand the public's desires, needs and concerns, provide for consultation with the public before decisions are reached, and consider the public's views.	Higher emphasis on broad early engagement. Meaningful public engagement would continue throughout a study with input used directly in formulating & evaluating potential plans, assessing impacts & benefits, & considering other public inputs related to the problem & plans.	Higher cost. Increased engagement will require additional time and efforts.
Interagency collaboration	Work jointly with other agencies or entities throughout the planning process. Collaboration is distinguished from coordination through the active involvement of the parties in conducting studies.	The ASP have similar emphasis on coordination. Although not mentioned in the ASP, the WRRDA 2014 Section 1005 provision would apply as well.	Lower cost. Early coordination will lead to better collaboration and less time in disputes.
SMART Planning milestones & limits	While not part of the P&G these are significant in managing studies.	No change to these under the ASP.	Same results expected.
Final Array of alternatives	Describe the plans that qualified for the final comparison, including the NED, NER or Combined Plan, and any Locally Preferred Plan. Discuss the rationale for eliminating alternative plans.	Six alternatives are to be included in a final array: no action, a non-structural alternative, a nature-based solution alternative, an environmentally preferred alternative, an alternative that maximizes net public benefits, and an alternative preferred by local interests. Some of these may be the same plan.	Broader array of plans and clearer display of costs, benefits, and risks.
National Economic Development	Unless ASA(CW) grants an exception - "For all project purposes except ecosystem restoration, the alternative plan that reasonably maximizes net economic benefits consistent with protecting the Nation's environment, the NED plan, shall be selected."	"Rather than primarily focusing on national economic values in the alternatives analysis, the proposed ASPs require all three categories to be considered fully and equally." Consideration of benefits includes environmental, social, and economic benefit categories across both a national and regional analysis, with equal consideration given to all.	NED will not be defined and used in the new framework. However the same economic analyses will be performed. Any ecosystem services that fall within the analytical boundaries of NED will be included here, and monetized, quantified, or described, in that order, as feasible.
Regional Economic Development	This account registers changes in the distribution of regional economic activity resulting from each alternative.		
Environmental Quality	The Environmental Quality account displays non-monetary effects on significant natural and cultural resources.		

Appendix 8 - Table 1 – Comparison of Frameworks (cont.)

Other Social Effects	This account registers plan effects from perspectives that are relevant to the planning process but are not reflected in the other three accounts.		The relation of these effects to human outcomes are not explicitly assessed, rather they reflect changes in the environment such as changes in habitats, species populations or ecosystem functions. Non-NED impacts may be considered through distributional analysis when benefits to specific groups can reasonably be identified and such analysis would significantly contribute to the decision-making process. Under the PR&G, results would characterize any changes in ecosystem services that are not captured within the boundaries of the NED analysis. This may include changes in provisioning, regulating or cultural ecosystem services, depending on the case. results will be monetized, quantified, or described, in that order, as feasible.
Plan comparison	Compare plans against each other (including no action). Emphasis on outputs & effects that will have the most influence in the decision-making process.	Compare plans to each other (including no action). Compare the ability of plans to respond to changing conditions like climate change. Identify the plan(s) that reasonably maximizes net public benefits. Elicit public preferences from about the plans, their component elements, and effects.	Same result expected but with added benefit of further collaborative input.
Recommended Plan	The criteria for selecting the recommended plan differ, depending on the type of plan and whether project outputs are NED, NER, or a combination of both.	The draft ASP expand the ability of decision-makers to recommend plans providing a wider range of features and public benefits.	Under both frameworks, feasibility studies and other similar work results in a Chief's Report or a Director's Report.

Appendix 8 - Table 2: Examples from Barrow, Alaska Feasibility Report

Planning Topic	Highlighted Details	Result
Public Involvement	Planning team made over 20 Trips to project site: –1 Charrette–NFS and stakeholders –9 Public Comment meetings –2 MOA meetings –4 Site visits (VT & one post-storm to see erosion) –6 meeting with NFS Source: https://planning.erdc.dren.mil/toolbox/webinars/19Sep5-BarrowACE.pdf	The District met with NMFS and USFWS. Both agencies informed the USACE that they would not prepare a Coordination Act Report. The Alaska SHPO was notified of the Recommended Plan and concurred with USACE's finding of adverse effect. The Advisory Council on Historic Preservation was notified of the finding and invited to participate in MOA development, but they declined. The MOA was developed in consultation with interested parties and identified mitigation to resolve the adverse effect.
Array of Alternatives	The team collaborated in identifying 19 structural and nonstructural measures during the charette. These were screened and later combined into an initial array of 12 alternatives (including no action). After further analysis a final array of 9 plans was set. https://www.poa.usace.army.mil/Portals/34/docs/civilworks/publicreview/Barrow/BarrowAlaskaCoastFinalFeasibilityReportsigned.pdf?ver=2020-02-14-191257-430	This aspect of the study could be different under the Agency Specific Procedures. The process would be similar, but the results would produce more plans to meet the requirements. Alternatives using nature-based solutions and a full non-structural plan would be required. However, the unique setting of the study area is a factor and even under the Agency Specific Procedures a similar array of plans would likely result.
Evaluation and Comparison	Traditional cost benefit economic analysis was conducted. Plan comparison identified deficiencies of some plans. Additional analysis helped further discern between plans using Community Resilience Units and Cost Effective / Incremental Cost Analysis.	Three plans had positive benefit to cost ratios but were lacking in some aspects of the four evaluation criteria. Some plans failed to fully meet objectives and allowed damages and other consequences to occur in the study area. (See Section 6.4 in the Feasibility Report)
Recommended Plan	An NED plan was identified. However, it would leave areas of the community vulnerable to erosion and flooding impacts. A plan reducing impacts to the entire five-mile study area was recommended. Selection of the plan was based upon engineering performance, community resilience and completeness.	"Each alternative, other than the Recommended Plan, would leave sections of the coast exposed to storm surges and flooding." https://www.poa.usace.army.mil/Portals/34/docs/civilworks/publicreview/Barrow/AppendixBEnvironmentalAssessment.pdf?ver=2020-02-14-185635-320)
Transparent Display of Details	Sponsor hired a contractor (Regional Native Corporation) to develop a presentation, strategically set up meetings, and help message and present the study in terms the community would appreciate. This was important for a very remote area located above the arctic circle and with a population of less than 5,000 residents.	–362 public comments received –Positive feedback and community buy-in –5 letters of support Source: https://planning.erdc.dren.mil/toolbox/webinars/19Sep5-BarrowACE.pdf
Vertical Coordination	Aligned the vertical team on the study scope and requirements: –Leveraged Risk-Informed Decision Making to reduce schedule and create support for planning approaches –3 Site visits with HQ, RIT, and USACE Commanders Source: https://planning.erdc.dren.mil/toolbox/webinars/19Sep5-BarrowACE.pdf	Revised a 30-month schedule and $3 million budget to a re-scoped 24-month schedule. The ability to tailor a study to address risks and provide information to interested partners and area residents is fundamental to the Agency Specific Procedures.

Conclusion

The selection of the NED plan would have left significant parts of the community unprotected. In short, the NED Plan was not considered an adequate plan for the community as a whole, given site-specific considerations. The shift from P&G to PR&G carries with it some inherent decision risk as consideration of factors not strictly tied to dollar amounts are given equal footing. However, in the Barrow study, the Corps has a baseline from which to continue development of metrics that holistically capture benefits generated by Corps projects. The Barrow study has provided an initial framework from which the Corps can work to increase fidelity in analysis and certainty in decision making using the guiding principles in the PR&G. The Corps anticipates this will allow for recommendations to Congress that will greatly increase the resilience of the nation's communities, ports, and ecosystems commensurate with administration budgetary priorities.

Although differences exist between the two frameworks, much of the planning process and evaluations remain the same. In particular the technical analysis of engineering, economic, environmental, social, real estate, and other considerations are identical or fundamentally very similar between the two frameworks. Differences emerge in the intensity of collaboration, the display of information, and the evaluation of risks. From a hypothetical perspective the cost to perform the study under the 1983 P&G compared to the proposed ASP would be similar although certain elements would be expected to cost more. In terms of the plan recommended there likely would be no difference between the two frameworks for this particular project.

Maps and Photo

Figure 1. North Slope Borough, Project Vicinity Map. (Appendix I)

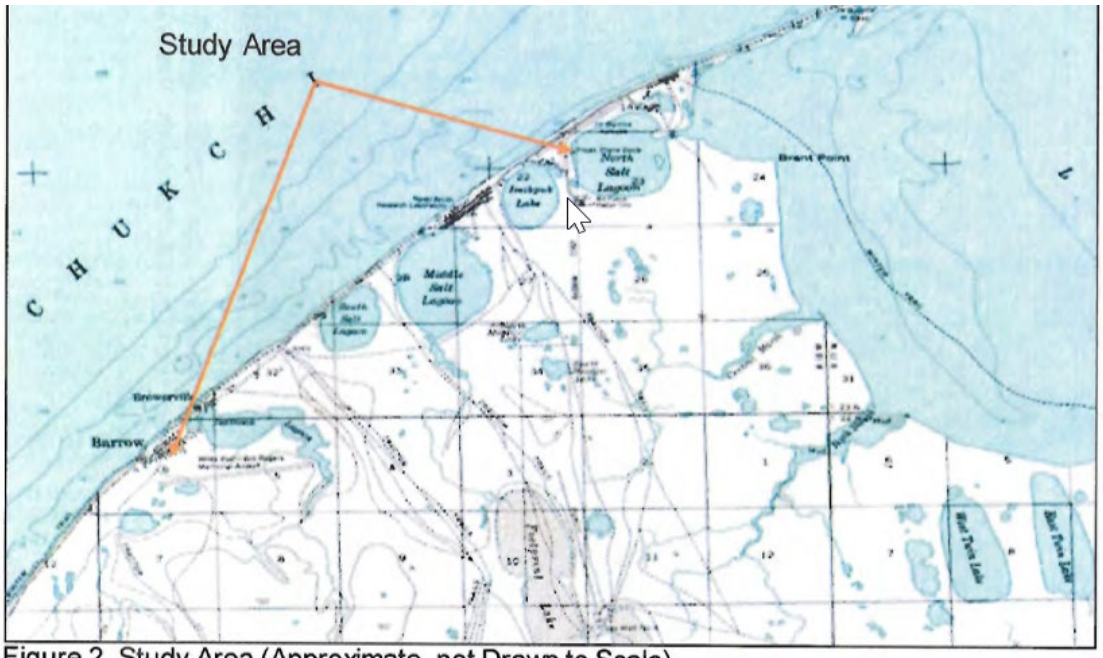


Figure 2. Study Area (Approximate, not Drawn to Scale).

Photo: Public beach access at natural break in coastline between reaches 1 and 2.

Appendix 9: Case Study – Coastal Texas Plan – Comparing the Two Planning Frameworks Applied in a Large Coastal Storm Risk Management Study

Purpose

This appendix presents an example of how the proposed rule might impact the civil works planning process and the decision making that leads to water resource project investment recommendations. The intent is to provide a comparison of the planning work performed for large coastal projects under the 1983 Principles and Guidelines and the 2015 Principles, Requirements and Guidelines. The focus is on National Economic Development analysis, a plan recommendation driver under the P&G, compared to the equal consideration of economic, social, and environmental analysis under the PR&G.

Background

Congress has directed the Corps to study coastal storm risk management projects in numerous locations. Recent study examples include high risk coastal settings with major urban population centers along the Atlantic and Gulf coasts. Although not a new mission, the large impacts of the landfalls of multiple extreme coastal storms over the last two decades has demonstrated the high risks these American communities face. Substantial risks to life and property are being exacerbated by increasing coastal populations and exposure to climate factors such as sea level rise and rapid storm intensification fueled by high ocean temperatures. The heightened risks of economic damages and the prevention of the loss of life can be addressed but not completely eliminated under the Corps coastal storm risk management mission. The Coastal Texas Protection and Restoration Plan offers insight into projects of this nature, and it is used in this case study to hypothetically highlight differences between the two planning frameworks.

Comparison

The Coastal Texas study offers examples of evaluation considerations similar to the display of total benefits called for in the Agency Specific Procedures. To show what the planning process and a recommendation may look like under the PR&G we highlight the study's final array of alternative plans, the evaluation of the four P&G accounts, and the identification of a recommended plan. Appendix 5 - Table 1 provides a snapshot of these key components in the Civil Works planning process. Highlights of planning activities are described under the two frameworks - the 1983 P&G as implemented under ER 1105-2-100 and the 2015 PR&G to be implemented using the Agency Specific Procedures.

Conclusion

The comparisons support a conclusion that the new Agency Specific Procedures can be successfully applied using analyses similar to those that Corps teams perform today. The underlying planning methods and techniques will remain, but the scope of analysis will likely shift and support the identification of broader more comprehensive plans. While not detailed in this example, similar comparisons and results could be expected in an inland Flood Risk Management investigation or in a navigation project investigation.

Appendix 9 - Table 1 – Comparison of Frameworks and Potential Outcome

Planning Topic	Principles and Guidelines	Principles, Requirements and Guidelines	Potential Result Under Agency Specific Procedures
Final Array of Alternative Plans	**Requirement:** Describe plans that qualify for final comparison. Include No Action, NED Plan and any Locally Preferred Plan. **Example:** The Coastal Texas study presented three alternatives in the final array (the No Action Plan, the Coastal Barrier Plan, and the Bay Rim Plan). Both action plans were comprehensive.	**Requirement:** The Final array includes six alternatives: no action, a non-structural alternative, a nature-based solution alternative, an environmentally preferred alternative, an alternative that maximizes net public benefits, and an alternative preferred by local interests. Some of these may be the same plan.	Under the PR&G more plans may have been included independently (for example a nonstructural plan). Due to the comprehensive nature of the two action alternatives it is likely that some of the six required alternatives under the PR&G may have been covered in one of those plans.
National Economic Development	**Requirement:** "For all project purposes except ecosystem restoration, the alternative plan that reasonably maximizes net economic benefits consistent with protecting the Nation's environment, the NED plan, shall be selected." **Example:** "…the Alternative A CSRM measure for Galveston Bay and the South Padre Island beach nourishment measure were identified as the NED plan"	**Requirement:** "Rather than primarily focusing on national economic values in the alternatives analysis, the proposed ASPs require all three categories to be considered fully and equally." Consideration of benefits includes environmental, social, and economic benefit categories across both a national and regional analysis, with equal consideration given to each category and each scale.	The same economic analyses will be performed under the PR&G, but a NED Plan will not be defined. The PR&G employ an ecosystem services framework to evaluate provisioning, regulating, and cultural services. Teams would use the provisioning category of ecosystem services approach to capture and display monetized costs and benefits. The Coastal Texas report would contain the same evaluation information but would not identify an NED Plan.

Planning Topic	Principles and Guidelines	Principles, Requirements and Guidelines	Potential Result Under Agency Specific Procedures
Regional Economic Development	**Requirement:** This account registers changes in the distribution of regional economic activity resulting from each alternative. **Example:** "The region's economic anchors of the petrochemical, fishing, and shipping industries remain firmly tied to their proximity to the Gulf and its oilfields; however, without flood risk management alternatives, the stability of employment, business, and industrial activity associated with these economic drivers could be adversely affected over periods of time."	**Requirement:** Regional analysis of economic benefit categories are measured and given equal consideration with other benefits such as environmental and social categories.	Monetized economic benefits would be evaluated and described on a regional scale. The evaluation would be conducted using the same techniques and the results would be expected to be the same under both frameworks. Regional Economic Development represents a measure of substitutions and transfers within a region due to the implementation of a project. Regional economic development is considered a net zero gain to the nation as a whole. Distributional analysis may allow for the consideration of these impacts to specific groups in the study area for justification by increasing employment and income. In the consideration of these impacts, care must be taken not double count. Under the PR&G the results would be displayed in the provisioning category of the ecosystem services approach.
Environmental Quality	**Requirement:** The Environmental Quality account displays non-monetary effects on significant natural and cultural resources. **Example:** "the Recommended Plan is the lowest cost comprehensive ER [ecosystem restoration] plan with the measures directly benefitting nationally significant resources…beyond the ER features, the natural & nature-based features included in the West Galveston & Bolivar Peninsula beach & dune CSRM features will also have significant benefits on critical national resources"	**Requirement:** Analysis of environmental quality is performed and given equal consideration to other categories such as social effects and economic benefits.	The report may have contained more information about public willingness to support ecosystem processes. However, the extensive public involvement work is documented in the report and may have been sufficient to meet the PR&G requirement of equal consideration.

Planning Topic	Principles and Guidelines	Principles, Requirements and Guidelines	Potential Result Under Agency Specific Procedures
Other Social Effects	**Requirement:** This account registers plan effects from perspectives that are relevant to the planning process but are not reflected in the other three accounts. **Example:** "features were assembled as a comprehensive plan to achieve resiliency for communities and were formulated to be adaptive over time to maintain risk reduction in the face of coastal geomorphology and relative sea level changes. Resilience is captured as the system's ability to prepare, withstand, recover, and adapt from coastal storm risk." and "The Recommended Plan would ensure that the economy and the region's critical infrastructure would continue to operate after a storm and that the stress and hardship associated with hurricane storm surge would be lessened."	**Requirement:** Analysis of social effects is performed and given equal consideration to other categories such as environmental quality and economic benefits.	The report may have contained more information displaying the impacts and benefits for vulnerable or disadvantaged communities.
Recommended Plan	**Requirement:** The criteria for selecting the plan differ depending on the type of plan and whether project outputs are NED, NER, or a combination of both. **Example:** The Coastal Texas plan is a combined NED and NER Plan.	**Requirement:** The draft ASP expand the ability of decision-makers to recommend plans providing a wider range of features and public benefits.	Under both frameworks studies result in a Chief's Report. The same result would have been expected for the Coastal Texas study under the PR&G.

Appendix 10: Case Study – Navigation – Port of Nome, Alaska

Introduction

In an attempt to show the difference in approaches between the framework contained within the Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G) and the Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies (PR&G), the following sections will document how the change in approaches affected decision making at the Port of Nome, Alaska (Nome).

Background

The Alaska Deep Draft Arctic Port Study began in 2008 under authority granted by Section 204 of the Flood Control Act of 1948, which gives the Secretary the authority to investigate navigation improvements throughout the State of Alaska. The goal of this effort was to find a suitable site for a deep draft port in the Arctic. The closest deep draft port in the region was at Unalaska (Dutch Harbor), over 1,000 miles south of the strategic chokepoint of the Bering Strait. The study analyzed over a dozen potential sites before settling on Nome, Alaska as the preferred site. From there, traditional planning principles were followed to find a solution that maximized net annual National Economic Development (NED) benefits consistent with the P&G.

P&G Analysis and Outcome

After significant outreach and public engagement, a recommended plan at Nome was identified. The project was sized to accommodate a range of vessels, from traditional commercial interests (freight movement and oil and gas exploration vessels) to scientific and government vessels. The recommended plan would have dredged the existing basin to -28 feet mean lower low water (MLLW) and added one 450-foot long dock. A range of growth scenarios were analyzed, based primarily on the Arctic oil and gas industry, which at the time had a great deal of interest from industry, who at the time was engaged in intensive exploration in the Arctic Ocean. The recommended plan had a project first cost of $207 million (2014 price levels), net annual NED benefits of $2.3 million, and a benefit-to-cost ratio of 1.26. This would have been the recommended plan. However, prior to the finalizing the report, there was a significant shift in Arctic oil and gas exploration, significantly impacting the benefits, and the study was eventually terminated, leading to the eventual Port of Nome Modification Study discussed below.

PR&G Analysis and Outcome

Section 1105 of WRDA 2016 amended the Remote and Subsistence Harbors authority to consider broader benefits to the region served by a project. Additional language in Section 1202(c)(3) of WRDA 2016 provided for the analysis of national security benefits provided by such a project. With this, the Port of Nome Modification Study commenced. The study utilized Community Viability Units and National Security Units to measure the benefits provided by the various alternatives to Nome and to surrounding communities and to national security. Using the metrics of Community Viability Units and National Security Units to analyze various alternatives, the recommended plan included dredging the existing outer basin to -28 feet MLLW, a new Deep Water Basin with an extension to the existing causeway extending to a depth of -40 feet MLLW, and the addition of multiple docking facilities. The recommended plan provided 950 Community Viability Units and 1,000 National Security Units. It had a project first cost of $631 million, net annual NED benefits of -$23 million, and a benefit to cost ratio of 0.1.

Appendix 11: Case Study – Flood Risk Management and Ecosystem Restoration – DeSoto County, MS

Purpose

A study in the south-central U.S. is underway to address flood risks. Aspects of the study area, such as urbanization, altered hydrology, and environmental justice considerations, are common in much of the Corps' flood risk management mission. The study is presented here to show the potential to apply the proposed Agency Specific Procedures to similar situations. This case study focuses on different mission areas and a different region of the country than the three previous examples. Those presented large and small coastal projects and a navigation project. This summary highlights planning missions and factors not covered in the other case studies.

Background

Many large cities in the south have grown rapidly and expanded into surrounding less populated areas. In some cases this development has outpaced water infrastructure and created structure flooding problems that did not previously exist. The removal of forest cover and degradation of waterways further impacts flood risks. These problems present opportunities to consider combined approaches to address flood risks and to restore degraded habitats.

Due to altered hydrology, floods impact and isolate vulnerable communities, damage public infrastructure, and threaten life safety in the study area. The aquatic ecosystem is impacted due to development, channel alterations, channel bed degradation and loss of bottomland hardwood forest. These environmental conditions are also factors in flooding conditions. The objectives of the study are to reduce flood risk to commercial and residential property and to critical infrastructure; reduce or arrest the uncontrolled down-cutting of stream channel beds; replace and improve in-stream habitat; and reforest stream corridors to restore riparian forest habitat structure and function.

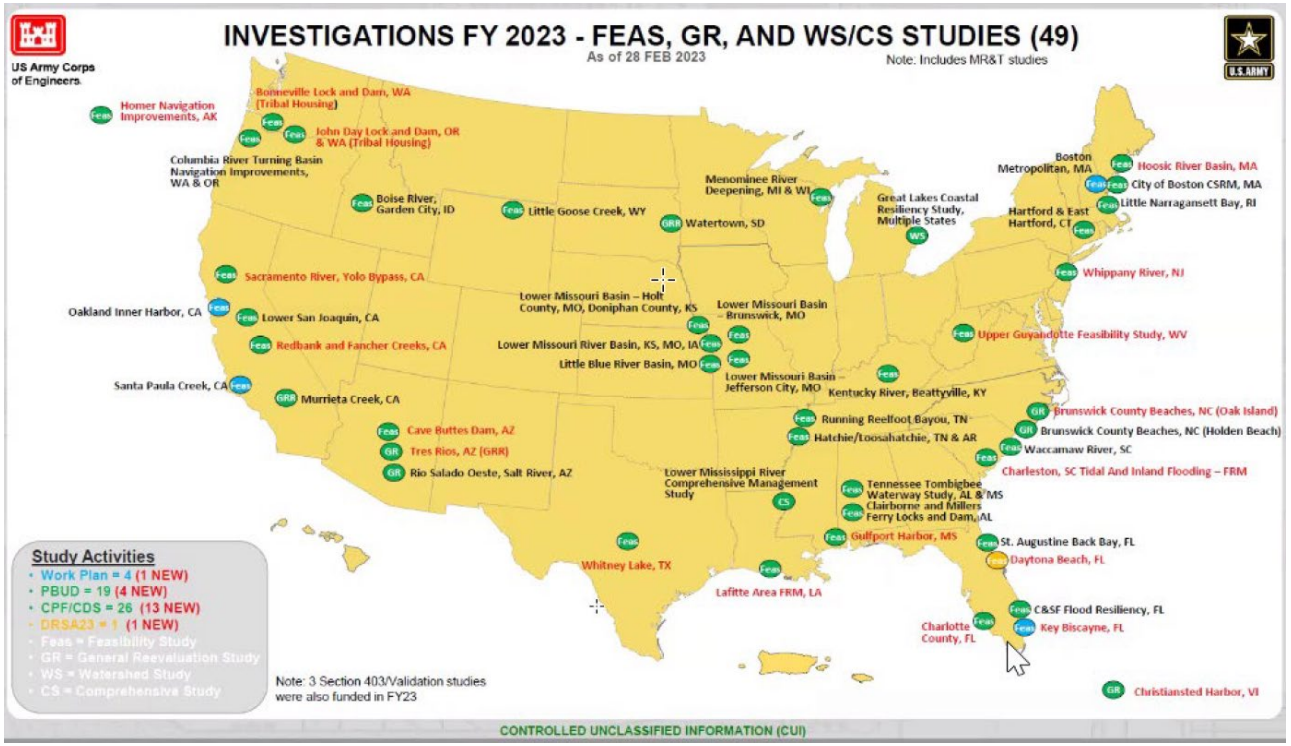
Planning Considerations

The team evaluated a set of alternatives similar to those that are proposed to be required in the Agency Specific Procedures for this type of study. Those include no action, non-structural plans, a nature-based plan, and plans with local preferences. More importantly the risk to environmental justice communities is serving as a driving formulation consideration and an opportunity to address inequities in a vulnerable segment of the study area. The team recognized that certain structural plans could exacerbate flooding in environmental justice communities. These options were not acceptable, and the team collaborated locally to identify alternatives to address the vulnerabilities, avoid induced impacts, reduce life safety risks, and enhance surrounding ecosystem conditions. The plan is not without risk and the team has clearly displayed what areas will continue to face flooding risks.

Conclusion

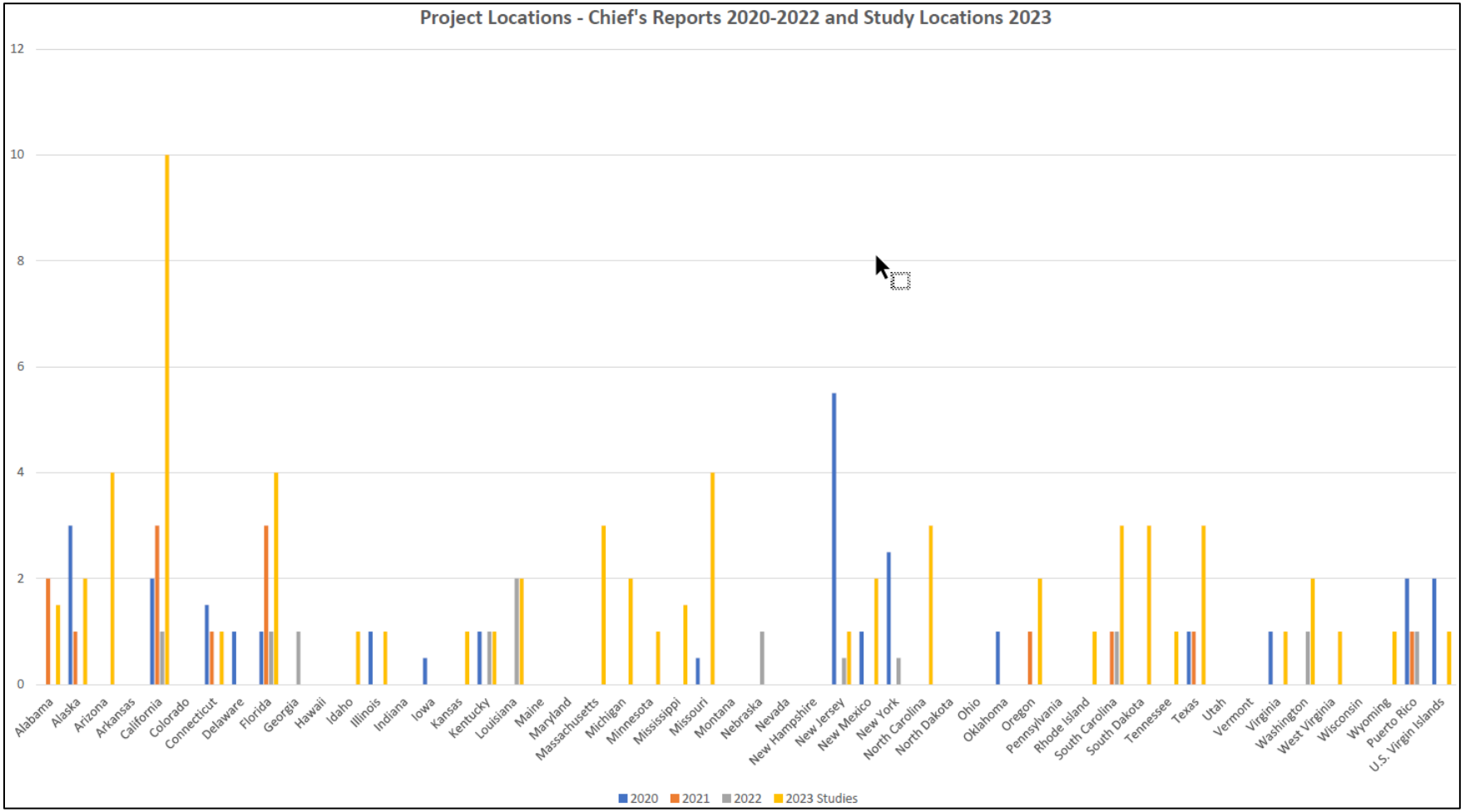
The analysis successfully connected ecosystem restoration measures to prevent further hydrologic degradation in the area. In course these ecosystem actions are expected to contribute to lessening flood risks. In conjunction with structural and nonstructural flood risk management features it is expected that the community will become more resilient to flooding. Evaluations of this nature would be commonplace under the Agency Specific Procedures. This type of project represents the kind of investment recommendation that would be expected under the procedures because of the consideration of total public benefits and placing environmental and social benefit considerations on an equal footing with economic benefits.

Appendix 12: Geographic Distribution of Corps Project Studies – 2023 Investigations Work Plan



Legend: Terms Used on the Map

CDS	Congressionally Directed Spending (Senate)
CPF	Community Project Funding (House)
CS	Comprehensive Study
DRSA	Disaster Recovery Supplemental Act
Feas	Feasibility
FY	Fiscal Year
GR	General Reevaluation
MR&T	Mississippi River & Tributaries
PBUD	President's Budget
WS/CS	Watershed Study


Project Locations - Chief's Reports 2020-2022 and Study Locations 2023
12
10
8
6
4
2
0
Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming
Puerto Rico
U.S. Virgin Islands
2020
2021
2022
2023 Studies