



PLANNING BULLETIN

**US Army Corps
of Engineers®**

No. PB 2019-03

Issuing Office: CECW-P

Issued: 13 December 2018

Subject: Further Clarification of Existing Policy for USACE Participation in Nonstructural Flood Risk Management and Coastal Storm Risk Management Measures

Applicability: Guidance

1. References:

- a. ER 1105-2-100, Planning Guidance Notebook (2000).
- b. ER 1105-2-101, Risk Analysis for Flood Damage Reduction Studies (2017).
- c. ER 1165-2-26, Implementation of Executive Order 11988 on Flood Plain Management (1984).
- d. ER 1110-2-8162, Incorporating Sea Level Change in Civil Works Programs (2013).
- e. Engineering and Construction Bulletin 2018-14 Guidance for Incorporating Climate Change Impacts to Inland Hydrology in Civil Works Studies, Designs, and Programs (2018).
- f. Implementation Guidance for Section 219 of the Water Resources Development Act of 1999, Nonstructural Flood Control Projects.
- g. Planning Bulletin 2016-01, Subject: Clarification of Existing Policy for USACE Participation in Nonstructural Flood Risk Management and Coastal Storm Damage Reduction Measures.

2. Reference 1.g. is still in effect. This bulletin further clarifies policy with respect to evaluation of nonstructural measures.
3. Formulation and evaluation. Existing policy established in reference 1.a. requires that USACE analyses formulate, evaluate, and present a plan that reasonably maximizes net National Economic Development (NED) benefits. Prior interpretation of this requirement with respect to nonstructural measures and plans was to formulate and evaluate plans at the individual structure level. There are numerous problems with that approach, which include but are not limited to: fidelity of depth damage function, uncertainty with individual structure data, overall risk management, and other social effects. For these and other reasons, the policy going forward is that 'reasonably maximizing' does not require individual structure benefit-cost analysis.
 - a. All future nonstructural analyses will formulate and then evaluate measures and plans using a logical aggregation method. Examples include, but are not limited to: grouping by structures' main floor elevation; census block or tract boundaries; neighborhoods or communities sharing common infrastructure; neighborhoods or communities sharing common floodplains; and structures within other geophysical boundaries or sharing other flood characteristics. Project delivery teams shall describe the logic and methodology for such aggregation in the decision document and supporting appendices.

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- b. The federal objective to reasonably maximize net NED benefits is not the only planning objective. Project delivery teams should consider the P&G accounts, life safety, residual risk, and study-specific planning objectives when formulating, evaluating, and selecting nonstructural measures. These considerations are a fundamental component of all flood and coastal storm risk management studies. Nonstructural measures may produce benefits and costs captured in the Environmental Quality (EQ), Regional Economic Development (RED), and Other Social Effects (OSE) accounts, and trade-offs between the accounts provide valuable decision information to USACE, project partners, and stakeholders.
4. Participation rate. Reference 1.g. acknowledges the requirement for a complete plan includes retaining the use of eminent domain, if necessary, for acquisition, relocation, and permanent evacuation of the floodplain. However, all other nonstructural measures cannot be mandatory. Thus, for all nonstructural measures but acquisition, relocation, and evacuation, participation is voluntary. Participation rate uncertainty brings in to question plan selection and the point at which benefits may no longer exceed costs for a potential project. A standard or minimum participation rate does not exist, as the characteristics of a community influence its potential participation rate in a USACE nonstructural plan. Project delivery teams shall consider participation rates that are appropriate for a community, and utilize sensitivity analyses of different participation rates to clearly communicate to decision makers the inherent uncertainty of benefits exceeding costs and plan selection. Project delivery teams shall describe the assumptions and methodologies used to determine participation rates in the decision document and supporting appendices.
5. Interest During Construction. Reference 1.a. identifies Interest During Construction (IDC) as a requirement when calculating economic costs. Part of the consideration in calculating IDC is the duration of construction. The duration of construction is the length of time funds are committed to an individual structure. This concept is straight forward when looking at a levee, for example. The time from start (no levee) to finish (finished feature) is identified and IDC calculated accordingly. The timing for nonstructural project implementation is less defined. For example, 100 structures may be elevated over the course of a year, but the time to implement a nonstructural measure at a single structure is only 3 months. Thus, the IDC should only be calculated for 3 months. Therefore, when calculating IDC for nonstructural measures or plans, the length of time will be based on construction duration for a specific measure and/or structure, and not the overall duration of construction for the entire project.
6. Supplemental guides that outline example methodologies, best practices, and lessons learned will be disseminated in the future. These guides will provide project delivery teams with a basis for successful consideration of nonstructural measures.
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