

Next Steps for National Shoreline Management Study Regarding Distribution of Benefits Study and OMB Comments National Shoreline Management Study

White Paper

At the request of the Office of Management and Budget (OMB), in 2001 the Army Corps of Engineers conducted a study examining how the benefits of shore protection are shared between the beach region and the rest of the nation. The study, titled “The Distribution of Shore Protection Benefits, A Preliminary Examination”, demonstrated a method for allocating the benefits of a shore protection project between the beach area and the rest of the nation.¹

The purpose of this white paper is to examine issues relating to the distribution of shore protection benefits that were addressed in the 2001 Corps study and subsequent concerns expressed and questions raised by the OMB. The issues addressed in the 2001 Corps study are relevant to the National Shoreline Management Study (NSMS) charge of recommending appropriate levels of Federal and non-Federal participation in shore protection. Therefore, this paper will also inform and provide direction to the NSMS, drawing on lessons learned from the outcome of the 2001 Corps study.

Specifically, this paper will identify opportunities for the NSMS to undertake additional studies in order to resolve concerns identified and comment on those areas where additional studies would not warrant the expenditures required. To illuminate the subject topic, the paper will evaluate what has been done to date to identify the beneficiaries of shore protection project benefits and associated regional benefits and make recommendations regarding the appropriateness of proceeding with a detailed study of the distribution of shore protection benefits as part of the ongoing NSMS.

Background and Study Methodology

In order to address some of the informational gaps and methodological inconsistencies in the literature, the 2001 Corps study implemented an analysis of the national and regional economic development benefits of a hypothetical shore protection project under three different scenarios. Each scenario situated the project in a different setting ranging from rural to urban. The demographic and economic attributes of each scenario were based on conditions in actual coastal counties. Additionally, the recreational spending levels and patterns assumed in the analysis also reflected typical beach related activities.

The draft report presented and demonstrated a method of comprehensively evaluating the benefits of beach nourishment projects that could be consistently applied to all shore protection projects on a case-by-case basis. The study methodology addressed the question of how the economic benefits of a beach nourishment project can

¹ The draft report is available online at <http://www.iwr.usace.army.mil/iwr/pdf/shoreprotectbenefdraft.pdf>

be allocated between the county or counties in which the beach is located (i.e. the beach area) and the rest of the nation. The draft report also addressed, on a preliminary and hypothetical basis, the issue of local tax revenues generated by recreation-related activities and whether the local tax revenues collected may be enough to fund the non-Federal cost share for the beach nourishment project.

All benefits claimed for a Federal shore protection project must be national economic development benefits (NED) to be consistent with the requirements of the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies, 1983, (commonly referred to as Principles and Guidelines).² For shore protection projects, NED benefits measure any increase in the net value of the output of beach related services such as hurricane/storm damage reduction or recreation.

In addition to NED benefits, there may also be an increase in the regional benefits that accrue to the state and beach area as a result of project implementation that are very real but are not allowed to be claimed in the evaluation of the justification of a Federal shore protection project. Such regional benefits are of particular interest because if an incremental increase in regional benefits is induced by a Federal shore protection project, the non-Federal sponsors could have a greater capacity to pay a greater share of project cost. This primarily occurs when there are increases in recreation visitation induced by the project. However, for most projects, induced recreation visitation and the associated increases in regional expenditures do not occur.

The 2001 Corps study analyzed both NED benefits and regional benefits of a hypothetical shore protection project. Within the study, benefits were allocated between the beach area and the rest of the nation. Allocations were based on the principal residence of the people who own local property that will have reduced damages as a result of the project and the principal residence of people who use the beach. If these allocations showed that a high percentage of the beneficiaries were from the beach area, this could serve as a basis for further investigating whether the cost sharing for beach projects should be adjusted to shift a greater financial burden to the non-Federal sponsor.

Reaction to Study Findings

In general, shore protection proponents expected that the 2001 Corps study findings would show that the majority of the benefits accrue to the Federal government while many administration officials expected that the findings would show that the majority of benefits accrue to the beach area. Both sides awaited the findings of the report with great anticipation.

While the report made it clear that the results of the allocation of NED benefits for the three hypothetical project scenarios should not be generalized for all projects of that type, and that cost sharing decisions should not be made based on the subjective findings, readers of the report appeared to draw their own conclusions based on their own

² The Principles and Guidelines are available online at: <http://www.iwr.usace.army.mil/iwr/pdf/p&g.pdf>

perspectives. The hypothetical evaluation of one of the beach scenarios that was thought to be typical of the setting in which a great majority of Corps projects are located, resulted in 35 percent of the NED benefits accruing to people within the beach area and 65 percent accruing to people who reside elsewhere. Ironically, these percentages are consistent with the general legal cost sharing requirements for the initial construction of Federal shore protection projects. This created a controversy related to what was the appropriate distribution of benefits as administration officials were looking for a basis to increase non-Federal cost sharing and sponsors were looking to maintain the current level.

Upon completion of the 2001 Corps study, the OMB expressed concern that the preliminary report does not provide an acceptable basis for policy-making, and that further studies are needed. For years OMB has been concerned about the long-term cost implications of the growing numbers of shore protection projects that include continuing construction commitments in the form of periodic nourishment. There was an expectation that by distributing the benefits between the project's regional area and the rest of the nation, this information would provide a rational basis for adjusting the Federal and non-Federal cost sharing for Federal shore protection projects with periodic nourishment. Consistent with the OMB concern that the report does not provide an acceptable basis for policy-making, the report also concluded that a national cost sharing decision should not be made based on the subjective findings and hypothetical situations portrayed in this study and that a more comprehensive study would be required to produce the general results needed for policy-making.

Also, the study included a literature review of environmental effects of shore protection projects, state and local cost sharing participation, tourism data, and Corps district's studies of potential shore protection projects. While this literature search was valuable it became apparent that no research had been done to date on the primary focus of the study, the distribution of benefits that result from a Federal shore protection project. Therefore, the Corps believes the study is a valuable preliminary analysis of the distribution of shore protection benefits. The study added significantly to the limited professional literature on this important subject of how benefits from shore protection projects are distributed even though it was a preliminary evaluation.

Appropriateness of Further Studies to Allocate/Distribute Shore Protection Benefits

A more comprehensive effort to allocate the benefits of shore protection projects could be undertaken with a purpose of producing more general results than provided here. However, it is not likely that the results would provide necessary information to support recommendations to change project cost sharing percentages. While allocating shore protection benefits between the beach area and the rest of the nation provided valuable information, a more important issue may be whether the way in which the benefits accrue can enable the state or local sponsors to support a greater non-Federal cost share.

Data limitations and analysis constraints limited the 2001 Corps study to analyzing the beach area versus the rest of the nation. However, often project cost sharing includes monies from the state as well as the non-Federal sponsor. In those cases, economic benefits of shore protection projects would need to be allocated to the

state, the local beach area, as well as the rest of the nation. In limiting the beach area to the county, the regional economic development benefits could be understated.

An evaluation which adds an additional allocation of economic impacts of shore protection at the state level is more difficult and costly than the simpler, two-region analysis demonstrated in the 2001 Corps study. One difficulty is that data are not usually collected on beach spending beyond the immediate beach area. In addition, most beach impact studies analyze the effects of spending for the recreation trip and leave out other durable goods expenditures related to the beach activities that should be included if allocating to the beach area, the state, and the rest of the nation by using a multiregional input-output model. To further complicate the problem, there are no commercial or public sources for multiregional input-output models. Model construction as well as acquisition of input data would be time consuming and expensive.

Frankly, even if a 3-region input-output model were developed, the distribution of expenditures and regional benefits would not answer the cost sharing question of whether the state and/or beach area could support an increase in the non-Federal cost share. Even an alternative 2-region model of the state and the rest of the nation, while less costly, may not answer the cost sharing question, since it would focus on a much larger area than that immediately impacted by the project. Thus, due to the high research costs and the limited applicability of the results, further input-output analyses are not warranted at this time.

NSMS Additional Study Areas

Ideas raised and lessons learned during the course of the 2001 Corps study suggest several economic and legal questions as well as equity considerations that the NSMS economics workgroup should address before recommending appropriate levels of Federal and non-Federal involvement in shore protection.

Beyond the distribution of benefits

The NSMS should go beyond the intent of the 2001 Corps study. While it was informative to allocate NED benefits from a Federal shore protection project perspective and estimate potential regional benefits, the real issue is the appropriate level of cost sharing for a Federal shore protection project. Collection of site-specific demographic and economic attributes would be valuable information in providing an improved understanding of how these attributes affect the distribution of benefits and whether different levels of cost sharing might be supported.

The NSMS should provide research in additional areas that address the capability of non-Federal sponsors to provide a greater project cost share. The 2001 Corps study for OMB was never intended to answer that complex question. As was done in the 2001 Corps study, future studies should start with the incremental differences between benefits and regional expenditures in the without project condition and benefits and expenditures with the Federal shore protection project. It is necessary and proper to focus on incremental differences because, the value of without project benefits and tourist expenditures are already committed to maintain the existing tourist support infrastructure and other budgetary priorities.

Considering the legal basis for altering existing cost sharing requirements

The value of shore protection projects in reducing storm damages is universally recognized. In addition, flood damage reduction and hurricane storm damage reduction are long established national priorities, by law. Cost sharing requirements are also fixed by law. The economics workgroup should consider whether or not there is a theoretical basis for supporting amendments to the law to increase non-Federal cost sharing.

Assessing the effects of shore protection projects on coastal property values

A fair amount of research has been done regarding the effects on housing values as a result of a Federal shore protection project; however, each study addresses the issue from a different perspective and/or purpose. The extent to which shore protection projects influence coastal property values should be further addressed by the NSMS economic workgroup to determine whether or not there is a direct correlation between damages prevented and increases in property values. Further, to the extent property values increase, the NSMS should address whether property owners should be expected to pay for their damages prevented. If so, would the same policy apply to riverine flood damage reduction projects?

If studies demonstrate that housing values increase in relation to the present worth of future damages prevented, the NSMS should investigate potential opportunities for project sponsors to tap into that value. One logical way would be through increased property value assessments at the existing rate that would result in increased taxes. However, usually increases in property taxes are already earmarked for such things as education. Is it reasonable that the sponsor could claim the increases in taxes solely for paying for the shore protection project? These questions and issues could be further enlightened by additional research or more detailed discussion as part of the NSMS.

Understanding the relationship between government programs and policies affecting shoreline development and the associated magnitude of storm damage reduction benefits

Existing studies suggest that a range of Federal policies and programs affect land use decisions in coastal communities. This means that these same policies and programs affect the value of local storm damage reduction benefits resulting from shoreline protection. The NSMS economics workgroup should further investigate the relationship between government policies and programs that influence land use and development decisions along the shoreline. Questions the NSMS should answer include:

- Are Federal programs such as disaster assistance, the flood insurance program, and the Coastal Barrier Resources Act all programs that work in concert in the management of our coastal resource areas? Are there situations where they are working at cross purposes? For instance, if a hurricane occurs resulting in significant damages, it is likely that any President will declare a national disaster and authorize Federal assistance for recovery costs. Does this create a disincentive for communities to do sound land use planning and flood plain management? The NSMS should consider situations where Federal policies or programs may conflict with each other.

- Do Federal shore protection projects induce development and, therefore, increase the magnitude of storm damages over time? A previous study indicated that Federal shore protection projects have no measurable effect on development. The NSMS should review and discuss this topical area.
- Is the policy of formulating Federal shore protection projects, based solely on hurricane/storm damage reduction benefits with recreation benefits considered as incidental, favoring those areas that have developed in harms way and penalizing those areas with strong land-use development policies?
- Would equal consideration of recreation benefits in the formulation and justification of projects result in a more equitable approach?
- Is the budgetary policy of not supporting shore protection projects that are primarily justified by recreation benefits a sound and equitable policy?

Recommending levels of Federal and non-Federal participation in shore protection projects

It is economically rational for the Federal government to invest in Federal shore protection projects with an approximate 65 percent cost sharing and with estimated benefits that on average are 2.5 times the total project cost. Federal investments in these projects could also avoid paying out much more in Federal recovery costs than the cost of the project over a 50-year period. However, there has been continual resolve by past and present Administrations to reduce Federal shore protection support and funding. Based on the Administrations' position, the NSMS should investigate the environmental, economic, political, budgetary, and other factors important in supporting a recommendation regarding the appropriate levels of Federal and non-Federal participation in shore protection.

Evaluating the ability of non-Federal sponsors to pay for shore protection

There is a presumption that shore protection projects that support recreation can add significantly to the ability of the state and/or the non-Federal sponsor to contribute to the costs of shore protection project construction and future nourishment. For projects that induce increases in recreation visitation that meet an unmet demand for recreation, the presumption is probably true. The same is true to a far lesser extent for the increase in the value of the recreation experience for the existing users as a result of the project.

The largest project induced recreation expenditures occur when a project induces visitation that meets an unmet recreation demand. However, most projects do not induce increased recreation visitation that meets an unmet recreation demand. The reason is that beach visitation is related to many factors in addition to the actual design profile of the shore protection project such as the availability of hotels, motels, eating establishments, parking transportation, roads, distance from major population areas, etc. In addition, most Federal shore protection projects are located in fully developed beach communities. In these situations, the visitation constraints usually result in the beach area simply maintaining the without project level of recreation visitation. Without induced visitation and the associated increased expenditures, it is not appropriate to assume that without project recreation expenditures can be used to support increases in non-Federal cost sharing. These expenditures are already tapped into for support of other beach area infrastructure and local support requirements.

In those cases where a project does induce additional recreation visitation, these funds are more readily available for supporting additional cost sharing. Further research and discussion as part of the NSMS would be instructive. Research should include the percentage of projects that have resulted in increased visitation from unmet recreation demand that was induced by the project, the magnitude of the increase in visitation relative to the total project visitation, the magnitude of regional impacts in terms of increased expenditures and the multiplier effect, the origin of the increased recreation visitors, options for tapping into the increased regional benefits to pay a greater project cost share, and evaluation of various levels of increased cost sharing that could be supported.

Evaluating financing mechanisms

When considering the ability of local and state sponsors to pay for shore protection, the NSMS economics workgroup should also evaluate the effectiveness of the financing mechanisms at their disposal to capture any locally accruing beach nourishment benefits as revenues. Such mechanisms include visitor fees, bed taxes, increased property tax receipts due to housing value increases resulting from project improvements, and other means of raising revenues from the users or property owners.

There is a presumption by some that use of these financing mechanisms will not diminish spending in the beach community and would provide sufficient funds to pay for an increase in the non-Federal share of shore protection projects. The NSMS economics workgroup should address this presumption. This effort would include addressing opportunities for state or local authorities to raise additional monies based on the enhanced value of the beach and beach structures due to the Federal project. Additionally, the workgroup could estimate the increase in payments to the Federal treasury or reduced future Federal expenditures resulting from Federal shore protection projects. Finally, where it can be demonstrated that a Federal project results in increased visitation or an enhanced recreation value to existing visitors, charging users of the beach a fee or a higher fee should be investigated as a means of increasing revenues and potentially paying a greater non-Federal share of the project.

Understanding the without project condition

The President's budget for fiscal year 2005 did not include funding allocations for periodic nourishment of existing shore protection projects. The economic, social, and environmental implications of a change in Administration policy from participating in periodic nourishment as continuing construction to no future Federal participation in periodic nourishment should be evaluated in the NSMS. The NSMS should also evaluate the physical and economic consequences expected with no shore management plan or Federal shore protection projects. In particular, the NSMS should consider whether or not public access and use of our nation's beaches would be limited without Federal shore protection projects.

Also, a Federal project study includes extensive coordination with other agencies, interest groups, and the public. Without extensive planning and coordination associated with Federal projects, project construction might not avoid, minimize, and mitigate environmental and other impacts. The NSMS should look at reasonable alternative

without Federal project scenarios to compare the potential impacts to the current impacts of typical Federal shore protection projects.

Conclusions

In summary, the 2001 Corps report provided a good starting point for understanding what studies have already been performed related to the distribution of shore protection benefits, identifying a methodology for allocating the benefits of shore protection projects between the beach area and the rest of the nation, identifying regional benefits, and addressing studies on the environmental consequences of shore protection projects. While the 2001 Corps study was limited in scope, it added significantly to the limited professional literature on this important subject of how benefits from shore protection projects can be allocated.

Report expectations were far beyond the scope of the study. The methodology for allocating NED benefits in the report was not considered adequate as it only distributed benefits between the beach area and the rest of the nation. It was felt that benefits should also be distributed to the state as the state often also provides shore protection project funding. However, to develop a 3-region multiregional input-output model would be time consuming and expensive. Even if this model were developed, the distribution of expenditures and regional benefits would not answer the fundamental cost sharing question of whether the state and/or beach area could support an increase in the non-Federal cost share. Due to the high research costs and the limited application of the results, further input-output analyses are not recommended at this time.

Consequently, in order for the efforts of the Economics Workgroup to be meaningful to the Administration and Congress in their consideration of possible cost sharing changes, further studies are necessary in a number of areas, as was discussed above. As the Economics Workgroup develops its assumptions, methodology, and scope of work for the NSMS, continued coordination with staffs of other Federal agencies and OMB staff should be ongoing to encourage consensus and assure that their concerns are addressed.