Environmental Quality

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

CRC-16-39

November 16, 2016

MEMORANDUM

TO: Coastal Resources Commission
FROM: Tancred Miller
SUBJECT: Fiscal Analysis– 15A NCAC 7H .0308; 7H .1704; 7H .1705
Temporary Erosion Control Structures

The CRC approved several proposed changes to your sandbag rules, and staff has drafted the required fiscal analysis (attached). The Department has approved the fiscal analysis, and it is currently under review at the Office of State Budget and Management (OSBM). OSBM has requested more information be included in the fiscal analysis, and has advised us that getting their approval of the analysis prior to CRC meeting is unlikely.

DCM's analysis found that this rule action will result in a net financial benefit, primarily to private property owners, and would not have a substantial fiscal impact, defined as $500,000 or more in a 12-month period. The majority of OSBM's comments on the draft fiscal analysis relate to factors that are unquantifiable, and most will be addressed in a qualitative manner.

While the size of that benefit may change prior to final OSBM approval, any such changes would still be well below the threshold for being considered substantial.

The commission has the option of approving the fiscal analysis at your next meeting, subject to changes requested by OSBM, which will allow the rules to proceed to public hearing. Alternatively, the commission can hold your approval until OSBM's approval is secured, and take action at your February meeting. At your upcoming meeting, staff will update the commission on the status with OSBM, and will be prepared to discuss these options with you.

Attachment

Fiscal Analysis

Temporary Erosion Control Structures

15A NCAC 07H .0308
15A NCAC 07H .1704
15A NCAC 07H .1705

DRAFT

Prepared by

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November 8, 2016

Summary

Agency	DENR, Division of Coastal Management (DCM) Coastal Resources Commission (CRC)
Title of the Proposed Rule	Specific Use Standards for Ocean Hazard Areas
Citation	15A NCAC 07H .0308 15A NCAC 07H .1704 15A NCAC 07H .1705
Description of the Proposed Rule	7H .0308 contains the CRC's guidelines for the permitting and use of temporary erosion control structures in Ocean Hazard Area of Environmental Concern. 7H .1704 and 7H .1705 rules contain the "General" and "Specific" use standards for emergency work requiring Coastal Area Management Act and/or Dredge and Fill permits to use sandbags for temporary erosion control.
Agency Contact	Tancred Miller Coastal and Ocean Policy Manager Tancred.Miller@ncdenr.gov (252) 808-2808
Authority	G.S. 113-229(cl); G.S. 113A-107; 113A-113; 113A-115; 113A-118; 113A-124
Necessity	The Coastal Resources Commission proposes to amend its administrative rules in order to comply with a recent legislative mandate (S.L. 2015-241) related to the management of temporary erosion control structures (sandbags) along oceanfront and estuarine shorelines. The amendments also include changes requested by local government and agency stakeholders, and recommended by the CRC and the Coastal Resources Advisory Council. The amendments will provide uniformity in administration of the sandbag rules while still serving to protect life and property from the destructive forces indigenous to the Atlantic shoreline.
Impact Summary	State government: Yes Local government: No Substantial impact: No Federal government: No Private citizens: Yes

Introduction and Purpose

The 2015 Appropriations Act (S.L. 2015-241) Section 14.6(p) directed the Coastal Resources Commission (CRC) to amend its rules governing temporary erosion control structures (sandbags), in order to give property owners greater flexibility in their elective use of sandbags for emergency erosion control. The CRC was instructed to adopt temporary rules no later than December 31, 2015, followed by permanent rules in 2016. The time available between the legislative directive and deadline, along with the CRC's meeting schedule and G.S. 150B requirements, prevented the CRC from being able to successfully comply with the legislative deadline for adopting the temporary rules. While the CRC adopted the proposed amendment on February 10, 2016, the Rules Review Commission objected to the rule on February 18, 2016, stating that the CRC lacked statutory authority because the legislative deadline had passed.

The General Assembly indicated their desire to see the amendments adopted by inserting them into House Bill 593 in 2016, although the bill did not become law this year. The CRC, therefore, is again proposing to amend its rules governing sandbags using the four specific changes that were mandated under S.L. 2015-241. In addition to those four statutorily-derived amendments, the CRC is proposing other changes as a result of discussions with local government and agency stakeholders, and with the Coastal Resources Advisory Council. The most significant proposed changes are as follows:

(1) Allow the placement of temporary erosion control structures on a property that is experiencing coastal erosion even if there are no imminently threatened structures on the property if the property is adjacent to a property where temporary erosion control structures have been placed.
(2) Allow the placement of contiguous temporary erosion control structures from one shoreline boundary of a property to the other shoreline boundary, regardless of proximity to an imminently threatened structure.
(3) The termination date of all permits for contiguous temporary erosion control structures on the same property shall be the same and shall be the latest termination date for any of the permits.
(4) The replacement, repair, or modification of damaged temporary erosion control structures that are either legally placed with a current permit or legally placed with an expired permit, but the status of the permit is being litigated by the property owner.
(5) Sandbag structures will be permitted for up to eight years, regardless of location.
(6)

The groups most affected by these changes will be oceanfront property owners within the Ocean Erodible (OEA) and Inlet Hazard Areas (IHA) Areas of Environmental Concern (AECs), including private property owners and governments. The NC Department of Transportation will also be affected.

DCM estimates that there will be **cost savings** to property owners from this action of ranging from $302 - $2,669 per individual, and to NCDOT ranging from $1,211 to $5,878. These cost savings are derived from the delayed costs associated with the removal of sandbags. Additional, unquantified benefits would accrue to property owners in the future who would no longer have had to comply with the existing two- or five-year limit. Given all the unknowns related to future benefits, it would be difficult for DCM to estimate this savings. Other unquantified savings include the value of being able to use sandbags more than once to stabilize an imminently threatened structure (sandbags are the only erosion control structures available to individual property by law). These proposed rule changes are in the public interest, will

reduce cost to coastal land owners and conform to the principles of G.S. 150B-19.1 and Executive Order 70.

DCM anticipates the effective date of these rule amendments to be May 1, 2017.

Description of the Proposed Rules

DCM currently issues permits for temporary erosion control structures under 15A NCAC 7H .0308(a)(2) and 15A NCAC 7H .1700, which are limited to sandbags used to protect imminently threatened structures (buildings, roads and septic systems). Currently, sandbag structures may remain in place for up to two years if protecting a structure that is less than 5,000 square feet or up to five years for larger structures. Sandbag structures may also remain in place for up to five years, regardless of structure size, if the structure is located in a community that is considered to be actively pursuing a beach nourishment project. If a structure is located in an Inlet Hazard Area of Environmental Concern (AEC) and in a community pursuing an inlet relocation project, the sandbags may remain in place for up to eight years. The use of sandbags for temporary erosion control is allowed only once during the life of a structure on the oceanfront, regardless of ownership, but may be used multiple times in Inlet Hazard AECs.

The CRC is proposing the following amendments, based upon a prior legislative mandate, and discussions with stakeholders:

(1) ***Allow the placement of temporary erosion control structures on a property that is experiencing coastal erosion even if there are no imminently threatened structures on the property if the property is adjacent to a property where temporary erosion control structures have been placed.***
Currently, sandbags may only be used to protect roads, right of ways, buildings, and septic systems.

(2) ***Allow the placement of contiguous temporary erosion control structures from one shoreline boundary of a property to the other shoreline boundary, regardless of proximity to an imminently threatened structure.***
Currently, the landward edge of a sandbag structure cannot be located more than 20 feet waterward of the structure or right of way being protected, and may not extend more than 20 feet past the sides of the structure being protected.

(3) ***The termination date of all permits for contiguous temporary erosion control structures on the same property shall be the same and shall be the latest termination date for any of the permits.***
Currently, the termination date for incrementally-expanded sandbag structures is the same, but is the date that the initial sandbag structure was permitted.

(4) ***Allow the replacement, repair, or modification of damaged temporary erosion control structures that are either legally placed with a current permit or legally placed with an expired permit, if the status of the permit is being litigated by the property owner.***
Currently, sandbag structures may not be replaced, repaired, or modified after the permitted time period has expired, without specific authorization from the CRC or a court of law.

(5) ***Increase the allowable time for permitted sandbags to eight years, regardless of location, or the size or type of property being protected.***
Currently, sandbags may be permitted for two, five or eight years, depending on the size and location of the structure being protected.

(6) ***Allow sandbags to remain past their permitted time if they are covered with sand.*** Currently, sandbags can remain past their permitted time only if they are covered with sand and vegetation. The proposed change removes the vegetation requirement.

(7) ***When sandbags are no longer needed, require that only bags exposed above grade be removed.*** Currently, all sandbags that are not covered and vegetated must be removed when they are no longer needed, which could necessitate excavation to remove settled bags. The proposed change allows buried bags to remain, reducing cost and disturbance.

Allowing sandbags on undeveloped lots is a significant change in policy for the CRC, even with the qualifier that they must be adjacent to a property that already has sandbags. This policy has the potential to have a domino effect, whereby many more properties become sandbagged not because of an imminent threat to property, but by virtue of having a neighbor with sandbags.

Allowing sandbag placement across the entire width of a lot will give property owners the ability to connect their sandbag structures, eliminating gaps that can undermine the effectiveness of adjacent sandbag structures.

Normalizing termination dates of properties on the same property to the latest installation date avoids having property owners having some portions of their sandbag structure permits expire before others.

Allowing sandbags to be maintained during litigation ensures that protection continues as designed while property owners are pursuing legal options to maintain their bags beyond the permitted timeframe. DCM does not have any data on the costs that applicants pay for litigation, but assumes that the need for litigation will decrease due to the longer timeframes for keeping sandbags, and the expanded ability to obtain a new permit if their property qualifies by still being imminently threatened or adjacent to a property with sandbags. An anticipated co-benefit a reduced need for enforcement actions by DCM.

The most significant change being proposed by the CRC, that was not included in the legislation, is a change to the permitted time period for sandbag structures. Currently, sandbags may be permitted for two, five or eight years, depending on the size and location of the structure being protected. The proposed amendments standardize the maximum time period that sandbags can be utilized for temporary erosion control to eight years for any size structure, in all locations. The initial eight-year timeframe will apply as well to properties located in communities that are not actively pursuing long-term actions to address beach erosion. This eight-year, across-the-board permit duration is expected to account for the time it takes to complete a beach or inlet project, including project design, permitting, construction, and typical delays.

One of the anticipated effects of this proposed rule change will be consistent application of temporary erosion control measures along all oceanfront and inlet shorelines. Synchronizing the use of temporary erosion control measures with long-term actions to address chronic erosion will prevent property owners from prematurely exposing their structures to hazards associated with the Atlantic shoreline and endangering their structures.

The CRC is also proposing a minor modification to the conditions under which sandbags would need to be removed. Currently, sandbags must be removed when the permit expires, or when they are no longer necessary because the structure they are protecting is no longer imminently threatened due to a beach fill,

inlet relocation or stabilization project; however, removal is not required if the bags are covered with sand and vegetation. Under the proposed amendment, sandbags can remain when they are no longer necessary, provided they are covered with sand; only uncovered sandbags must be removed. This provision will result in cost savings to property owners by allowing them to delay or avoid the cost of removal; these cost savings are estimated in the Benefits section below

COSTS OR NEUTRAL IMPACTS

The CRC offers property owners who wish to do so, the ability to install sandbags for temporary erosion control once their structure becomes imminently threatened, which is defined as the foundation or septic system being located less than 20 feet away from the erosion scarp (steep ridge). In the 20-year period from 1996-2015, DCM permitted 435 sandbag structures, an average of 22 structures per year (rounded up). Excluding 1998, which was a true outlier, DCM issued 354 permits over 19 years, for an average of 19 permits per year. Over the most recent 10-year period from 2006 to 2015, DCM issued 117 permits, an average of 12 per year. The cost to install a sandbag structure is approximately $425 per linear foot. Assuming the typical width of an oceanfront lot to be 50 feet, and with sandbag structures able to span the entire width of the lot, the typical installation cost will be about $21,250. Under normal conditions, sandbag structures are durable and stable enough to easily outlast the eight-year permit duration without deterioration or displacement. Storm events and vandalism can damage or shift sandbags, requiring property owners to spend money on maintenance or repairs, but these events are unpredictable and may not occur at all during the lifespan of a sandbag structure.

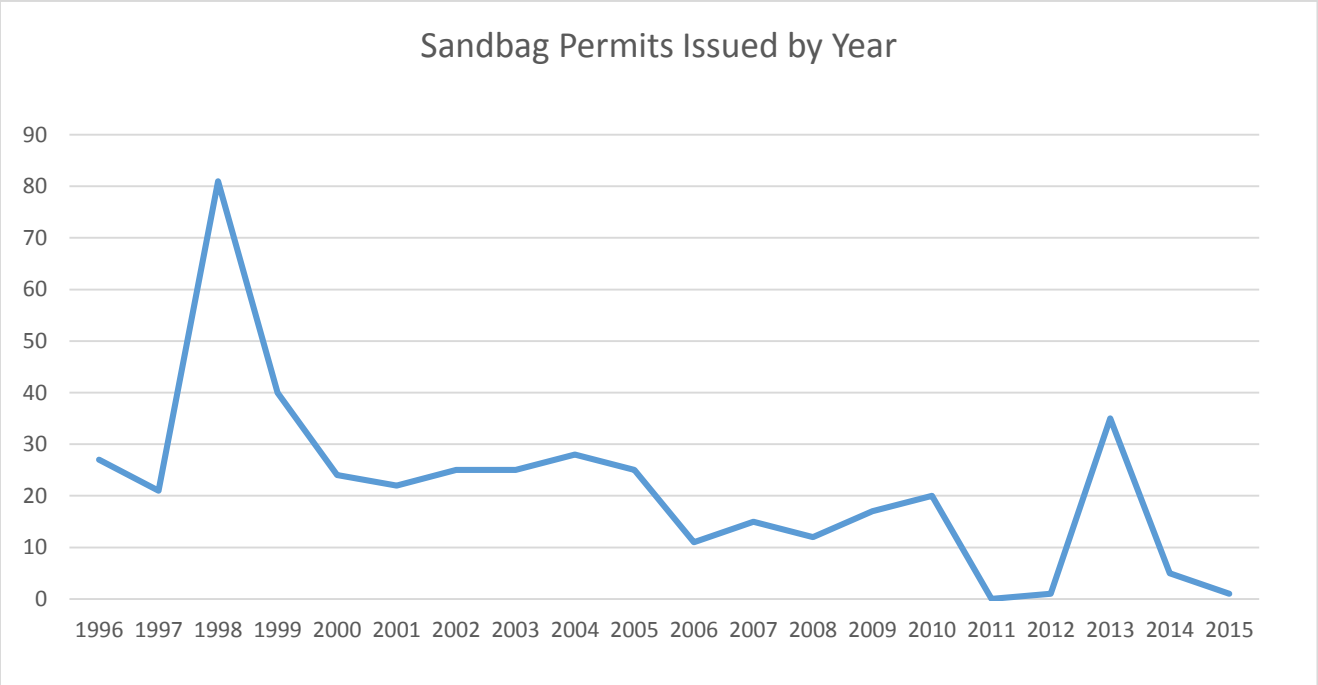
289 of the 435 permitted structures from 1996 to 2015 still remained on the beach in 2015, meaning that 146 sandbag structures had been removed, or an average of 7 sandbag structures removed per year. DCM estimates that the cumulative length of all sandbag structures currently on the beach is approximately six miles. With the extension of permit duration to eight years, the number of sandbag structures removed can be expected to fall initially, but the return to historic levels as the longer-term permits begin to expire, and regular nourishment projects diminish the need for sandbags. It is also possible that removal could trend downward over the longer term if property owners elect to cover their bags with sand instead of removing them. For the purpose of this analysis; however, we will assume that the average number of structures removed over the next 10 years will be the same as the average over the last 10 years; i.e., 7 structures per year. The cost to remove a sandbag structure ranges from $4,000 - $8,000 depending upon whether bags are buried or exposed, the number of bags, the equipment required, and other factors.

With the exception of a couple outlier years that followed unpredictable major storms that affected the state, the trend of new permits for sandbags has been declining. One possible explanation other than the low incidence of major storms in recent years, is that the vast majority of structures that qualify for sandbags, already have them. Since the proposed amendments will make more properties eligible for sandbags, there is a possibility initially of a small increase in the number of permits issued/miles protected; however, any increase will likely be offset by the extended duration that permits are valid (from as few as two years, to as many as eight), and the longer-term trend is therefore not expected to increase. Any increase in the number of permits issued resulting from an increase in the number of eligible properties could also be offset by a decrease in the need for permits resulting from more beach nourishment/ inlet reallocation/stabilization projects being completed, thereby decreasing the possibility of properties to become imminently threatened. For the purpose of this analysis, we will assume that the average for new permits issued over the next 10 years will be the same as the average over the last 10 years; i.e., 12 permits per year. Since sandbags can be used more than once on properties located in

communities that are actively pursuing a beach or inlet project, some of the "new" permit applications could be to allow existing sandbag structures to remain in place for another eight years. The application fee for a sandbag permit $400, Based on the average number of permits issued over the past 10 years, DCM receives $4,800 per year in sandbag permit fees, on average.

DCM has heard claims that the entire value of property behind sandbags would be lost if the bags were removed, but it is not valid to assume that all 289 remaining structures would be destroyed if their sandbag protection were to be removed. While sandbags are effective in mitigating hazards that can cause erosion and destroy structures, there are other factors that that affect a property's ability to withstand coastal hazards (e.g., setbacks, freeboard, topography, shoreline orientation, and the property's proximity to an inlet). In addition, chronic erosion produces different effects than episodic events. Sandbags may perform well against chronic erosion, but may be significantly less effective in storm events. DCM regularly calculates average annual rates of chronic erosion and uses them to determine development setbacks, but storm frequency and intensity, which can have larger impacts than chronic erosion, are impossible to predict.

(http://deq.nc.gov/about/divisions/coastal-management/coastal-management-data/oceanfront-sandbags)



Other potential costs that might result from the proposed changes include the aesthetic impacts of sandbags on the beach, the potential for refracted wave energy to increase erosion on adjacent properties and the public beach, public and emergency access obstructions, and ecological impacts. These types of costs are not readily quantifiable, but are to some degree mitigated by regulatory standards on sandbag color and location, and restricting the use of sandbags until a structure becomes imminently threatened.

NC Department of Transportation

Pursuant to G.S. 150B-21.4, the agency reports that the proposed amendments to 7H.0308(a)(2) and 7H .1700 will not affect environmental permitting for the NC Department of Transportation (NCDOT). The primary change applicable to NCDOT is the longer duration of sandbag permits. NCDOT therefore is not expected to experience any negative fiscal impacts associated with the proposed rule amendments.

Local Government

Local governments do not typically apply for General Permits for sandbag structures; local government sandbag applications are usually at the scale where Major Permits are required. As such, the proposed amendments are not expected to affect local government revenues or expenditures in a significant or measurable way.

Division of Coastal Management

DCM does not anticipate that the proposed action will significantly increase operating cost over what is currently required for permitting, inspecting, and ensuring compliance of sandbag structures. The adoption of a uniform approach to managing sandbags for temporary erosion control will increase the efficiency in which this activity is permitted as permit expiration dates will not be dependent upon the location of the structure other than being present in a community pursuing beach nourishment, inlet relocation or inlet stabilization. Extended time limits on sandbags will provide some relief to DCM staff from the current situation as property owners have increasingly sought variances once sandbag permits expire. Only about one dozen of the existing sandbag structures are located in communities that are not actively pursuing a beach or inlet project, meaning that the vast majority of sandbags are eligible for new permits to allow them to remain in place for an additional eight years. In addition, sandbags will not need to be removed after their permit expires if they are covered with sand. DCM expects this flexibility to increase the compliance rate with the new rules and decrease the enforcement burden on DCM. Property owners may be less likely to contest the removal of sandbags after a beach nourishment, inlet relocation or inlet stabilization project if they know sandbags would once again be permitted should their structure again become imminently threatened.

DCM does not anticipate any change in permitting receipts due to the proposed action. While the proposed amendments would remove the one time per property restriction on the use of sandbags, maintenance cycles associated with large-scale beach nourishment projects would likely prevent the structure from becoming imminently threatened if the beaches are adequately maintained. The issuance of multiple sandbag permits for a property will only come about should a maintenance be delayed or a storm event causes the structure to once again become imminently threatened. Any potential increase in the number of permits issued would likely be offset by a decrease in the number of permits needed due to a beach nourishment project or an inlet relocation/stabilization project. Virtually all of the developed beaches in the state that have erosion problems have either been recently nourished, or have plans to be. The frequency of renourishment varies but is typically tied to need, and can be as frequent as annually or as infrequently as once per decade or more.

BENEFITS

Private Property Owners

New permits upon the effective date of the rule would have an eight-year expiration, a benefit that would be realized through the deferred cost from having to remove sandbags at an earlier date. The costs associated with the removal of sandbags varies from $4,000 - $8,000 depending on the length of the sandbag structure other factors as described previously.

Instead of spending the money to remove sandbags in the current timeframe, property owners would have an additional three to six years of time before incurring this expense. Benefits are calculated as the amount of investment income that a property owner could earn during this period assuming a return ranging between 3% and 7%. Application of 3% and 7% investment rates of return to the $4,000 - $8,000 cost range associated with removal of sandbags is utilized to estimate the net present value (NPV) for delayed sandbag removal. For a 3% investment return, the NPV to a property owner ranges from $302 - $1,034. For a 7% investment return, the NPV to a property owner ranges from $735 - $2,669. Table 1 depicts the investment return afforded by the number of years of additional permit duration.

Table 1. Estimate of Benefits to Property Owners for Delayed Sandbag Removal

Years of investment	Cost to remove bags	Investment income at 3 percent	NPV at 3% return	Investment income at 7 percent	NPV at 7% return
3	$4,000	$371	$302	$900	$735
	$8,000	$742	$606	$1,800	$1,469
6	$4,000	$776	$517	$2,003	$1,335
	$8,000	$1,552	$1,034	$4,006	$2,669

While these properties will benefit from the ability to protect their structures for an increased time period, it is not possible to calculate the number that may become condemned, relocated, damaged/destroyed or otherwise unusable as these factors depend on unknown natural events and owner decisions. It is also not possible to predict whether or not a community will be successful in completing a beach nourishment, inlet relocation or stabilization project as financing of these projects involve the local, state and federal entities outside DCM's control. DCM therefore cannot say with any certainty that the value of these properties will be preserved at some future time even with the extended sandbag permit duration.

NC Department of Transportation

Pursuant to G.S. 150B-21.4, the agency reports that the proposed amendments to 7H.0308(a)(2) and 7H .1705 will not affect environmental permitting for NCDOT. The changes primarily lengthen the duration of sandbag permits for NCDOT projects from five years to eight. NCDOT's sandbag structures are typically bigger than sandbag structures on individual properties, since they are typically used to protect bridges and sections of imminently threatened roadways. Consequently, removal costs for NCDOT's sandbags are higher than for individual property owners. One recent estimate for removing a typical NCDOT sandbag structure was between $16,000 and $32,000. If this range is assumed to be average, the

NPV of NCDOT's additional three years of permit duration ranges between $1,211 and $5,878. Table 2 depicts the investment return afforded by the three years of additional permit duration.

Table 2. Estimate of Benefits to NCDOT for Delayed Sandbag Removal

Years of investment	Cost to remove bags	Investment income at 3 percent	NPV at 3% return	Investment income at 7 percent	NPV at 7% return
3	$16,000	$1,484	$1,211	$3,601	$2,939
	$32,000	$2,967	$2,422	$7,201	$5,878

Division of Coastal Management

If the expected increase in compliance and decrease in enforcement actions prove true, DCM would benefit by the ability to spend less time on sandbag compliance and enforcement, and more time on other agency tasks. Enforcement actions on sandbags do not follow a regular timeline, because permit expiration dates and violations are not uniform. It is not feasible to estimate the total amount of time that DCM staff has spent on sandbag enforcement in recent years, nor to predict how much time might be required in future years. The fiscal benefit of this rule change to DCM cannot be quantified.

COST/BENEFIT SUMMARY

The greatest benefit of the proposed rule changes will be the ability of property owners to maintain sandbags structures for a period of time more closely aligned with the timeframes associated with a community completing a beach nourishment, inlet relocation or inlet stabilization project. In the near term, property owners will realize a benefit associated with the delayed removal of sandbags ranging from $302-$2,669. Additional, unquantified benefits would accrue to property owners in the future who would have had to comply with the existing two- or five-year limit. Given all the unknowns, it is difficult for the Division of Coastal management to estimate this savings.

There will also be a decrease in the enforcement burden on DCM as property owners may be less likely to contest the removal of sandbags after a beach nourishment, inlet relocation or inlet stabilization project if they know sandbags would once again be permitted should their structure again become imminently threatened.

The quantified costs and benefits from these proposed rule changes do not exceed $500,000 annually. Table 3 summarizes the range of estimated costs and benefits of this action. Benefits arise from the ability to keep sandbags in place for an additional three or six years (amendment allows for eight years instead of two or five). Dollar amounts in the table represent the net present value (NPV) of investing the money that would otherwise have been spent on removal at 3% and 7% rates of return. The calculations assume that seven sandbag structures (six private and one NCDOT) will be removed each year, consistent with the historical average.

Table 3. Cost/Benefit Summary

	Benefit (NPV)	Cost	Substantial Impact
Private Citizens	$1,812-16,014	0	No
Local Government	0	0	No
NCDOT	$1,211-5,878	0	No
State Government	0	0	No
Federal Government	0	0	No
TOTAL	**$3,023-21,892**	**0**	**No**

APPENDIX A

(see attached)