

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450

601 WEST ROSEMARY STREET, SUITE 220
CHAPEL HILL, NC 27516-2356

Facsimile 919-929-9421

October 13, 2015

Via U.S. and Electronic Mail

Emily Hughes
Wilmington Regulatory Field Office
U.S. Army Corps of Engineers
69 Darlington Ave.
Wilmington, NC 28403
Emily.b.hughes@usace.army.mil

Re: SAW-2011-01914 Holden Beach East End Shore Protection Project

Dear Ms. Hughes:

Please accept these comments on the Town of Holden Beach's East End Shore Protection Project Draft Environmental Impact Statement ("DEIS"). The Southern Environmental Law Center submits these comments on behalf of the North Carolina Coastal Federation and Audubon North Carolina. As discussed below, the DEIS does not comply with the National Environmental Policy Act ("NEPA"). Moreover, the limited analysis in the DEIS reveals that the only alternative that addresses the Town's long-term erosion issues is Alternative 2: Abandon and Retreat. Not only is Alternative 2 substantially cheaper than any other alternative, it does not have the adverse environmental effects of dredging, beach renourishment, or shoreline hardening. Therefore, none of the alternatives that require a Clean Water Act Section 404 permit can be authorized.

I. The DEIS Analysis Is Inconsistent with Other Terminal Groin Projects.

This is the fourth DEIS the Corps has published analyzing a terminal groin project in North Carolina since 2012. Each uses a different approach to assessing impacts. The Bald Head Island DEIS modeled shoreline change for nine years using primarily the Delft3D model. The Figure Eight Island DEIS modeled shoreline change for five years using the Delft3D model. The Ocean Isle DEIS modeled shoreline change for three years using the Delft3D model. The Figure Eight SEIS modeled shoreline change for five to seven years using the Delft3D model and ten years using the GENESIS model. This DEIS models shoreline change for four years using the CMS model. The Corps has not provided any explanation in these documents regarding why it has been so inconsistent in evaluating substantially similar projects. Failing to explain the different treatment of similar projects is an obstacle to public understanding of the Corps' limited analysis.

Perhaps most troubling regarding this discrepancy is the Corps' apparent deference to third-party consultants regarding the time period to run each model. These consultants are engaged by the project proponents to advocate for the construction of their preferred alternatives. That purpose has been reflected in the approach taken in each EIS. One of the most obvious

ways is in the scope of the analysis provided. As discussed in other comment letters and below, the short time periods evaluated by the models cannot account for the long-term indirect and cumulative effects of the proposed terminal groins.

The Corps still has the opportunity to standardize its analysis of these similar projects for the Figure Eight, Ocean Isle, and Holden Beach EISs. We encourage the Corps to do so.

II. The DEIS Only Evaluates 4 Years of a 30-Year Project.

Many of the DEIS's deficiencies stem from its failure to adequately analyze the proposed alternatives. As stated in the DEIS the purpose of the project is to "provide for the short-term and *long-term* protection of residential structures, Town infrastructure, and recreational assets."¹ Yet the document never attempts to analyze the "long-term" effect of the alternatives, instead limiting its analysis to four years.² As discussed below, this failure results in a variety of NEPA violations.

A. The DEIS fails to appropriately describe baseline data.

The basic purpose of an EIS is to "to help public officials make decisions that are based on understanding of environmental consequences, and that take actions that protect, restore, and enhance the environment." 40 C.F.R. § 1500.1(c). The alternatives analysis comparing environmental effects of projects is the "heart of the environmental impact statement." 40 C.F.R. § 1502.14. The DEIS fails to provide information necessary to inform decisionmakers or the public about the environmental consequences because it fails to adequately describe baseline data.

Here, truncating the analysis at year 4 deprives the public and decisionmakers of any information regarding the baseline data for years 5 through 30 of the 30-year project, making any analysis of long-term effects of the project impossible.

The Fourth Circuit has made clear that "[w]ithout [accurate baseline] data, an agency cannot carefully consider information about significant environment impacts" and therefore the analysis will "result[] in an arbitrary and capricious decision." *N.C. Wildlife Fed'n v. N. C. Dep't of Transp.*, 677 F.3d 596, 603 (4th Cir. 2012) (quoting *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011)). It is fundamental that baseline data for the analysis of environmental impacts be clearly presented. *See Friends of Back Bay v. U.S. Army Corps of Eng's*, 681 F.3d 581, 588 (4th Cir. 2012) ("A material misapprehension of the baseline conditions existing in advance of an agency action can lay the groundwork for an arbitrary and capricious decision."). Without an accurate assessment of baseline conditions, "the [impact statement] process cannot serve its larger informational role, and the public is deprived of [its] opportunity to play a role in the decision-making process." *N.C. Wildlife Fed'n*, 677 F.3d at 603

¹ DEIS at 2-1.

² Additional analysis is provided in Appendix F, but that analysis is not consistent with the DEIS. At times it conflicts with the DEIS analysis. In other instances, Appendix F includes analyses that were not attempted in the DEIS or incorporated into the main document. Appendix F cannot cure deficiencies in the DEIS.

(quoting *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011)).

B. The DEIS fails to evaluate indirect effects of the terminal groin alternatives.

As described in additional detail below, the analysis of indirect effects of the proposed terminal groin is the most essential analysis in the DEIS. Indirect effects are those that “are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8. The entire purpose of the proposed terminal groin is to disrupt natural sand transport mechanisms such that it has the effect of slowing erosion. The adverse indirect effects of the proposed terminal groin—due to the disruption of inlet processes—are the key environmental effects that must be analyzed. It is those inlet processes, specifically the formation and existence of dynamic intertidal shoals and flats, which are critical to the wildlife naturally found in the inlet system. Limiting the analysis of indirect effects to four years, for no apparent reason, fails to adequately assess indirect environmental effects of the proposed terminal groin alternatives.

The Corps cannot ignore those indirect effects by limiting its analysis to four years. As the D.C. Circuit stated in *Scientists’ Institute for Public Information v. Atomic Energy Commission*:

The agency need not foresee the unforeseeable, but by the same token neither can it avoid drafting an impact statement simply because describing the environmental effects of and alternatives to particular agency action involves some degree of forecasting. And one of the functions of a NEPA statement is to indicate the extent to which environmental effects are essentially unknown. It must be remembered that the basic thrust of an agency's responsibilities under NEPA is to predict the environmental effects of proposed action before the action is taken and those effects fully known. Reasonable forecasting and speculation is thus implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as “crystal ball inquiry.” “The statute must be construed in the light of reason if it is not to demand what is, fairly speaking, not meaningfully possible * * *.” But implicit in this rule of reason is the overriding statutory duty of compliance with impact statement procedures to “the fullest extent possible.”

481 F.2d 1079, 1092 (D.C. Cir. 1973); see *Northern Plains Resource Council v. Surface Transportation Board*, 668 F.3d 1067 (9th Cir. 2011); *Potomac Alliance v. U.S. Nuclear Regulatory Commission*, 682 F.2d 1030, 1033-34 (D.C. Cir. 1982). As currently drafted, the DEIS does not satisfy NEPA’s requirement to evaluate the environmental effects of the alternatives considered.

- C. The DEIS fails to provide information necessary for decisionmakers and the public to compare alternatives.

By limiting the analysis to 4 years of a 30-year project, the DEIS fails to provide information to evaluate the full environmental and economic impacts of alternatives across the 30-year period. Evaluating only those four years does not provide the information regarding environmental, economic, or social effects for consideration by the Town, the public, the Corps, or other regulatory and resource agencies. Implicit in the DEIS is the assumption that the Town's preferred alternative would have long-term benefits, but those benefits have not been identified or estimated. As demonstrated in the DEIS, many properties would continue to be adversely affected even with Alternative 6, so the Corps cannot presume that the Town's preferred alternative will be beneficial. Likewise, the Corps cannot assume that the environmental effects of the preferred alternative would be benign. As discussed in more detail below, it is well-established that construction of a terminal groin will result in the degradation of inlet habitats due to the disruption of natural inlet processes. Those effects, which take hold after four years, must be analyzed.

III. The Purpose and Need Must Be Viewed in Proper Context.

As described in the DEIS, the purpose of the project is to "provide for the short-term and long-term protection of residential structures, Town infrastructure, and recreational assets."³ This purpose and need statement must be put in the proper context. The Applicant's preferred alternative, as discussed in more detail below does not provide for even the "short-term" protection of *all* residential structures, town infrastructure, and recreational assets. Under Alternative 6, erosion would still affect 16 properties, including 11 houses. More than \$100,000 in infrastructure would be lost. Further, there is no meaningful distinction between the width of the recreational beach in front of the residential properties under Alternative 6 as compared to any other alternative.⁴ As depicted in Figure 5.28, the MHW line in year four of Alternative 6 would be at the back door of numerous properties, and the recreational use of the beach would be eliminated. The only meaningful "recreational beach" would be in close proximity to the terminal groin—a poor substitute for the recreational beach that currently exists on the natural inlet. As described in more detail below, east of the groin, the wide beach that currently exists can be expected to erode substantially.

It is unclear how the Corps intends to evaluate these various impacts as meeting the Purpose and Need because that analysis is unlawfully omitted from the DEIS (and cannot be done based on four years of modeling). What is clear is that the standard cannot be that only alternatives that protect all residential structures, infrastructure, and recreational beach where they currently exist meet the Purpose and Need. None of the alternatives meet that standard. The Corps must evaluate which alternatives provide for long-term protection of property, infrastructure, and recreational opportunities in a way that accounts for the Town's actual economic costs from lost property and the reality of barrier island geology. With that analysis, Alternative 2 is the only reasonable, practicable alternative.

³ DEIS at 2-1.

⁴ See *id.* at 5-157.

IV. The Proposed Terminal Groin Alternative Would Spend More Than \$2,500,000 in the First Four Years to Protect Less Than \$19,000 of Tax Revenue.

As described in the DEIS, the only alternative that meets the purpose and need is Alternative 2. It provides the only economical means of ensuring long-term protection for houses, infrastructure, and recreational opportunities on Holden Beach. Further, it is the only fiscally responsible alternative provided.

As described in the DEIS, the cost of initial groin construction and beach fill would be approximately \$2,500,000.⁵ Despite that expense, 16 properties would be affected by erosion, including 11 houses, in the first 4 years.⁶ The total assessed value of those properties is \$2,100,000.⁷ Based on current tax rate, the Town receives \$3,150 annually from the 16 affected properties.⁸ Impacts to infrastructure under Alternative 6 would be \$101,572 by year 4.⁹ The remaining dry sand beach would be to the east of remaining houses or existing infrastructure, not directly in front of the remaining properties.¹⁰

The DEIS predicts that Alternative 2, by comparison, would affect 28 properties, including 19 houses.¹¹ The total value of those properties is \$5,180,000.¹² Based on current tax rates, the town receives \$7,700 annually from the 28 affected properties, \$4,620 more than the subset of properties affected by Alternative 6. According to the DEIS, infrastructure impacts under Alternative 2 would be approximately \$617,782.¹³ By relocating houses and removing infrastructure, allowing natural barrier island beach formation to occur, substantial recreational beach could be maintained and protected under Alternative 2.

Assuming for the time being that replacement value is the appropriate measure of infrastructure costs,¹⁴ the four-year cost to the town of Alternatives 6 and 2 is a factor of three things: the initial construction costs, lost tax revenue from affected properties, and infrastructure costs. Those respective costs are summarized in the Table below. Costs for Alternative 2 are also corrected to reflect that most of the properties are affected under both alternatives and some of the infrastructure is affected under both alternatives.

⁵ *Id.* at 5-156.

⁶ *Id.*

⁷ *Id.* at 5-159

⁸ The current tax rate .15 cents/\$100.

⁹ 5-159.

¹⁰ *See* 5-157.

¹¹ 5-64.

¹² 5-67.

¹³ 5-67.

¹⁴ We do not concede that "replacement value" of the infrastructure is the proper measure, given that the Town will not replace roads that would be underwater.

	Alternative 6	Alternative 2	Alternative 2 (corrected)¹⁵
Initial Cost	\$2,500,000	\$0	\$0
Lost Tax Revenue (4- years)	\$12,600	\$30,800	\$18,200
Infrastructure Costs	\$101,572	\$617,782	\$516,210
Total	\$2,614,172	\$648,532	\$534,410

Alternative 2 is, by approximately \$2 million, the cheaper alternative over the four-year span evaluated in the DEIS. The disparity between the alternatives is greater when longer-term analysis is provided. Under Alternative 6, costs are expected to balloon to more than \$36,000,000 over the next 30 years. Even if Alternative 2 resulted in the abandonment or relocation of all oceanfront properties on Ocean Boulevard East that are east of McCray Street, Alternative 2 is the only economically feasible alternative. Such erosion (which is not given), would potentially affect 13 additional oceanfront properties, 8 of which have houses. The total assessed value of those properties is \$4,947,280. The resulting tax revenue paid to Holden Beach for those properties is approximately \$7,421 each year. Even adding that lost tax revenue for year 5 through year 30, the total lost tax revenue to the Town is only \$423,941.¹⁶ In short, the tax revenue lost by Holden Beach if all 41 of the identified properties are lost is approximately 10% of the estimated cost of Alternative 6.¹⁷ The Town will never recoup tax revenues that justify building the groin.

Moreover, even considering the assessed value of the potentially affected properties does not make Alternative 6 practicable. The total assessed value of the 28 properties potentially affected in the first 4 years of Alternative 2 and the additional 13 potentially affected in the next 24 years is \$10,127,280. Holden Beach could buy each of the potentially affected properties three times over and still save more than \$3,000,000 compared to the cost of building and maintaining the terminal groin.

The Engineering Analysis makes clear that the erosion experienced by the few properties potentially protected by Alternative 6 is isolated to a limited segment of Holden Beach. As shown in Figure 1-2 of the Engineering Analysis, the long-term erosion rates of 5 and 7 feet/yr are limited to the East End.¹⁸ West of McCray Street, long-term erosion rates are approximately 3.5 ft/yr and quickly decrease to 2 ft/yr. So there is no indication that higher erosion rates experienced in the East End would spread to other parts of Holden Beach under Alternative 2.

¹⁵ Lost tax revenue from properties affected under both alternatives and infrastructure lost under both alternatives have been subtracted from this column.

¹⁶ This amount is based on the loss of tax revenue from properties identified as affected by Alternative 2 for 30 years (\$231,000) and the loss of revenue from 13 additional potentially affected properties for 26 years (\$192,941).

¹⁷ An even broader analysis cannot make the terminal groin economically rational. Andrew Coburn's 2010 analysis demonstrates that even looking at a broader segment of Holden Beach, the groin would cost far more than the Town revenue it would protect. See Andrew Coburn, Western Carolina University, *A Fiscal Analysis of Shifting Inlets and Terminal Groins in North Carolina* (Attachment 1).

¹⁸ See Appx. F at 1-2; compare Figure 3-1 (denoting East End project).

The DEIS further demonstrates there is no reason to expect widespread extreme erosion in the future based on inlet movement. As conceded in the DEIS, Lockwood Folley Inlet is very stable.¹⁹ It has not moved significantly since 1938.²⁰ Although the orientation of the inlet has changed, aerial photography in Appendix I demonstrates that fluctuations in inlet alignment have not resulted in substantial changes to the island's shoreline. Therefore, removing residential structures and infrastructure built on the most erosive part of the island—allowing natural processes to restore the beach in that area—is the only viable means of providing long-term protection.

V. The DEIS's Modeling Analysis Is Not Clearly Explained.

The modeling analysis included in the DEIS contains several deficiencies. First, it is unclear what shoreline data the model relies on as year 0.²¹ Because the purpose of the DEIS is to evaluate the environmental effect of each alternative on existing environmental conditions, it is critical that the modeling analysis use the most up-to-date information available. The DEIS does not appear to specify the date of shoreline data used in its analysis, undermining the entire analysis.

Moreover, the DEIS does not reconcile its analysis with the analysis presented in Appendix F. The only references to Appendix F in Chapter 5 are with respect to alternatives not carried forward for detailed analysis²² and sand source characteristics.²³ Given that it appears that the DEIS modeling analysis relies to some extent on Appendix F,²⁴ the relation of the analyses in the documents should be more fully explained.

Finally, the model result for Alternative 2, an erosion rate of 20 ft/yr,²⁵ must be explained. Appendix F variously describes the long-term erosion rate as 5-7 ft/yr²⁶ and approximately 10 ft/yr.²⁷ It appears, therefore, that the model significantly overestimates the rate of erosion under Alternative 2.

VI. The DEIS Fails to Adequately Assess Environmental Effects of the Proposed Terminal Groin.

The DEIS is required to evaluate all reasonably foreseeable environmental effects of each alternative. It fails to do so in both its assessment of indirect effects and cumulative effects. For those reasons, the DEIS violates NEPA.

¹⁹ *Id.* at 4-3.

²⁰ *Id.*

²¹ *See id.* at 5-4 (describing modeling).

²² *Id.* at 5-1.

²³ *Id.* at 5-38.

²⁴ *Id.* at 5-125, 5-126, 5-127 (including figures prepared by ATM).

²⁵ *Id.* at 5-10

²⁶ *See* Appx F at 1-2 (showing DCM long-term erosion rates); 4-10, Figure 4-6 (depicting erosion rates less than 7.5 ft/yr).

²⁷ *Id.* at 4-3, Figure 4-1 (showing past erosion west of the groin at approximately 10 ft/yr between 1983 and 2000).

A. The DEIS does not evaluate indirect effects.

Indirect effects are those that “are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8. “[A]n environmental effect is ‘reasonably foreseeable’ if it is ‘sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision.’” *Mid-States Coalition for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (2003). The indirect effects of terminal groins are well documented. The Corps’ Coastal Engineering Manual describes groins as: “...probably the most misused and improperly designed of all coastal structures.”²⁸ It recognizes that “[o]ver the course of some time interval, accretion causes a positive increase in beach width updrift of the groin. Conservation of sand mass therefore produces erosion and a decrease in beach width on the downdrift side of the groin.” A Division of Coastal Management Report that preceded the CRC’s terminal groin study found that, at Oregon Inlet, “[t]he six miles of [Pea Island] shoreline south of the terminal groin fillet that was monitored continues to erode at rates that range from slightly more to slightly less than the pre-terminal groin shoreline erosion rates, in spite of frequent dredging and beach nourishment efforts.”²⁹ With respect to Fort Macon, the report concluded that “[w]ithout constant beach nourishment, the terminal groin would no longer perform as observed historically and, potentially fail altogether.”³⁰

It is well-established that terminal groins destroy inlet habitat that is essential for shorebirds, waterbirds, and other species adapted to those dynamic environments. The N.C. Coastal Resources Commission’s Final Terminal Groin Study recognized that terminal groins modify inlet processes in such a way that they substantially eliminate existing habitat.

As the CRC described in its 2010 Terminal Groin Study, “the barrier islands and associated inlets on which many waterbirds depend are being severely altered by attempts to stabilize beaches and dunes. Habitats associated with inlets are particularly valuable to coastal birds (Harrington 2008) and as such, should be afforded extra protection.”³¹ The CRC has recognized what is well-known, that early successional birds such as terns (*Larida* spp.), black skimmers (*Rhychops niger*), Wilson’s plovers (*Chadrius wilsonia*), piping plovers, and American oystercatchers depend on inlet habitats for survival.³² Piping plovers, in particular, “depend on the natural barrier island and inlet processes that create and maintain broad flats and intertidal areas, overwash zones, and maintain early successional habitat.”³³

One of the primary threats to these species is loss of inlet habitat through shoreline hardening. The Terminal Groin Study found that “[s]tabilization of inlets is considered a serious threat to piping plovers because it can lead to a net loss of suitable habitat.”³⁴ “The construction

²⁸ U.S. Army Corps of Engineers, Coastal Engineering Manual at 3-59 (Aug. 1, 2008).

²⁹ N.C. Division of Coastal Management, North Carolina’s Terminal Groins at Oregon Inlet and Fort Macon: Descriptions and Discussions at 7 (2008) (Attachment 2).

³⁰ *Id.* at 17.

³¹ Terminal Groin Study at III-8.

³² *Id.* at III-9.

³³ *Id.* at III-12.

³⁴ *Id.* at III-13.

of a terminal groin, beach nourishment, and dune construction prevents overwash and contributes to a loss of habitat for breeding and non-breeding waterbirds, including piping plovers.”³⁵

The Recovery Plan for the critically endangered Great Lakes piping plover population states that “[i]nlet dredging and artificial structures, such as breakwalls and groins, can eliminate breeding and wintering areas and alter sedimentation patterns leading to the loss of nearby habitat.”³⁶ The 5-year Status Review for Piping Plover states: “The three recovery plans state that shoreline development throughout the wintering range poses a threat to all populations of piping plovers. The plans further state that beach maintenance and nourishment, inlet dredging, and artificial structures, such as jetties and groins, can eliminate wintering areas and alter sedimentation patterns leading to the loss of nearby habitat.”³⁷ The Status Review concludes: “Habitat loss and degradation on winter and migration grounds from shoreline and inlet stabilization efforts, both within and outside of designated critical habitat, remain a serious threat to all piping plover populations.”³⁸

The piping plover status report discusses the impacts of groins and inlet stabilization on these key elements:

Inlet stabilization with rock jetties and associated channel dredging for navigation alter the dynamics of longshore sediment transport and affect the location and movement rate of barrier islands (Camfield and Holmes 1995), typically causing downdrift erosion. Sediment is then dredged and added back to islands which subsequently widen. Once the island becomes stabilized, vegetation encroaches on the bayside habitat, thereby diminishing and eventually destroying its value to piping plovers. Accelerated erosion may compound future habitat loss, depending on the degree of sea-level rise. Unstabilized inlets naturally migrate, re-forming important habitat components, whereas jetties often trap sand and cause significant erosion of the downdrift shoreline. These combined actions affect the availability of piping plover habitat (Cohen et al. 2008).³⁹

That degradation of habitat has been observed at North Carolina terminal groins. The Terminal Groin Study recognized that “the Pea Island Fillet is rapidly evolving which jeopardizes the overall nesting habitats for many of the species.”⁴⁰ At Fort Macon, the shoreline “does not appear to be suitable for either colonial nesters or shorebirds based on preliminary analysis of historical aerial photographs and available historical shorebird and colonial waterbird data.”⁴¹

³⁵ *Id.* at III-19.

³⁶ U.S. Fish & Wildlife Service, Recovery Plan for the Great Lakes Piping Plover (*Charadrius melodus*) (September 2003) at 23.

³⁷ U.S. Fish & Wildlife Service, Piping Plover (*Charadrius melodus*) 5-Year Status Review: Summary and Evaluation (2009) at 31.

³⁸ *Id.* at 39.

³⁹ *Id.*

⁴⁰ Terminal Groin Study at III-34.

⁴¹ *Id.* at III-58.

Those adverse impacts are heightened in shallow-draft inlets such as Lockwoods Folly. The CRC's study concluded that "[t]he relative impact of these structures on adjacent areas is likely increased when sited next to natural or minimally managed shallow-draft inlets."⁴²

Yet despite these well-established effects of terminal groins, the DEIS adopts the unsupported position that any and all effects of the proposed groin would be revealed by year four of the modeling. That assumption must be supported. It is "reasonably foreseeable" that Alternative 6 will affect inlet processes and impede the development of essential intertidal and shoal habitat beyond year 4 as modeled. The CRC has not only recognized as much, it has stated that those effects are even more likely to occur in this situation. Therefore, it is inescapable that "a person of ordinary prudence" would evaluate the effect of the terminal groin alternatives on inlet habitat well beyond year 4 of the proposed terminal groin.

- B. The DEIS must evaluate cumulative impacts of Alternative 6 combined with proposed terminal groins at Figure Eight Island, Ocean Isle, other inlets in North Carolina, and the in-construction terminal groin at Bald Head Island.

A "[c]umulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. § 1508.7. In the DEIS, the Corps identifies the projects considered in its cumulative impacts analysis.⁴³ Excluded from that list are existing modified inlets described in the Terminal Groin Study, the in-progress terminal groin at Bald Head Island, or the two other terminal groin projects currently under consideration by the Corps. Given the known impacts of terminal groins and the increasing rarity of natural inlets, the Corps must evaluate the hardening of this inlet in the overall context of available inlet habitat. The birds displaced by the construction of the proposed terminal groin cannot go elsewhere, because inlet shorelines along the entire North Carolina coast are increasingly being sandbagged or hardened. The North Carolina General Assembly recently increased the cap for terminal groins in the state, meaning that the Corps is likely to soon have two additional terminal groin proposals before it. The cumulative effect of these projects on inlet-dependent wildlife is significant and must be considered.⁴⁴

The DEIS further errs by concluding that there are no cumulative impacts to the Inlet Complex based on a finding that there are no direct or indirect effects from Alternatives 5 and 6.⁴⁵ That finding is erroneous based on the unlawful analysis of indirect effects of the project.

VII. The DEIS Does Not Provide Information Required to Satisfy the 404(b)(1) Guidelines.

The purpose of the DEIS in this context is to provide information for the Corps to conduct its required analysis under Section 404 of the Clean Water Act. Because of its failure to

⁴² *Id.* VII-5.

⁴³ DEIS at 5-5.

⁴⁴ See Letter from W. Golder, Audubon NC, to M. Sugg, USACE (Sept. 14, 2015) (Attachment 3).

⁴⁵ See DEIS at 5-132-33.

adequately evaluate direct, indirect, and cumulative impacts, this DEIS fails to meet that goal. For the reasons described above, the analysis of environmental impacts based on a terminal-groin-oriented analysis does not provide the objective evaluation necessary to complete that analysis. The DEIS does not “consider[] the alternatives in sufficient detail to respond to the requirements of these Guidelines” discussed below and it is “necessary to supplement these NEPA documents with this additional information.” 40 C.F.R. § 230.10(4).

Under the Clean Water Act, the Corps is only able to permit the least environmentally damaging practicable alternative (“LEDPA”). Practicable means “available and capable of being done after taking into consideration cost, existing technology, and logistics.” 40 C.F.R. § 230.3(q). Although the Corps has not defined practicability in the DEIS—thereby unlawfully denying the opportunity for public comment on that essential element of the analysis—it is apparent that each alternative is practicable.

The alternatives fall into two categories. The first includes the non-structural alternatives, whose environmental impacts – dredging, smothering benthic organisms, altered beach profile, etc. – vary by degree. The second category includes the terminal groin alternatives, whose unique environmental impacts – hardening of the shoreline, loss of overwash areas, etc. – are permanent.

In its application of the 404(b)(1) Guidelines, the Corps must evaluate “the nature and degree of effect that the proposed discharge will have, individually and cumulatively, on the characteristics at the proposed disposal sites.” 40 C.F.R. § 230.11(a). That effect is measured by how the discharges change the “physical, chemical, and biological characteristics of the substrate” and affect “bottom-dwelling organisms at the site by smothering immobile forms or forcing mobile forms to migrate.” 40 C.F.R. § 230.20(b).

The analysis of these factors reveals a clear divide. The non-structural alternatives—with the exception of Alternative 2—will have varying degrees of impact on infaunal communities in both the dredged areas and the nourished areas. Unlike any of the non-structural alternatives, however, the terminal groin alternatives will permanently alter the characteristics of the inlet. The intertidal areas lost in the area that would be impacted by the terminal groin will not redevelop, eliminating the possibility that the benthic organisms buried or displaced could repopulate the area. The groin alternatives will fundamentally change the nature of the eastern end of the island, eliminating overwash areas and permanently altering substrate and eliminating habit for benthic organisms. Alternatives 5 and 6 are the most environmentally damaging alternatives when evaluated under the factors in 40 C.F.R. § 230.20.

The Corps must also evaluate “the nature and degree of effect that the proposed discharge will have individually and cumulatively on water, current patterns, circulation including downstream flows, and normal water fluctuation.” 40 C.F.R. § 230.11(b). These effects are measured by the “adverse changes” that occur in “[l]ocation, structure, and dynamics of aquatic communities; shoreline and substrate erosion and deposition rates; [and] the deposition of suspended particulates.” 40 C.F.R. § 230.23(b).

As with impacts to substrate, Alternative 2 clearly has the least environmental impact on the aquatic communities and deposition of suspended particles. It would not adversely affect aquatic communities and would continue to allow deposition of suspended particles on the overwash areas at the eastern end of the island (as would the other non-structural alternatives). By comparison, the terminal groin alternatives would permanently displace aquatic communities at the eastern end of the island and eliminate overwash, cementing the accompanying adverse environmental impacts.

The Corps' consideration of the fluctuation of normal water level must include consideration of "modifications [that] can alter or destroy communities and populations of aquatic animals and vegetation, . . . modify habitat, reduce food supply, restrict movement of aquatic fauna, destroy spawning areas, and change adjacent, upstream, and downstream areas." 40 C.F.R. § 230.24.

For the reasons described above and the impacts on the benthic communities, Alternative 2 has the least environmental impact. Alternative 2 would have no adverse environmental effect on wet beach habitat, adjacent dry beach habitat, and back beach habitat. Other non-structural alternatives would similarly have temporally limited environmental impacts to these habitats. Alternatives 5 and 6 would have significant, permanent impacts to these areas. These alternatives would eliminate wet beach habitats and the associated benthic organisms, significantly modify dry beach habitats, and result in dense vegetation of what are now sparsely vegetated back beach habitats. They would therefore have the greatest adverse impacts of any of the alternatives.

In addition to the Corps' endangered and threatened species analysis under the ESA, it must also consider listed species under the 404(b)(1) Guidelines. The Corps must compare alternatives based on their potential impact on "nesting areas, protective cover, adequate and reliable food supply and resting areas for migratory species." 40 C.F.R. § 230.30(b)(2).

Alternative 2 and the other non-structural alternatives would maintain habitat for piping plover on Holden Beach and allow habitat for piping plover and other shorebirds and waterbirds in Lockwoods Folly Inlet.

Finally, the Corps must consider "the loss or change of breeding and nesting areas, escape cover, travel corridors, and preferred food sources for resident and transient wildlife species associated with the aquatic system." 40 C.F.R. § 230.32(b).

Construction of Alternative 5 or 6 would eliminate habitat for all shorebirds that rely on relatively unvegetated back beach, wet beach, and intertidal habitats. Therefore, the adverse effects described above for piping plover are likely to be felt by red knots and other shorebirds.

It is clear from the DEIS that under the 404(b)(1) Guidelines, the Corps cannot permit either Alternative 5 or 6. All would have significantly greater environmental impact than Alternative 2. Based on the available information, it appears that Alternative 2 is the LEDPA and is the only alternative that can be permitted by the Corps.

VIII. Conclusion

For the reasons described above, the DEIS does not comply with NEPA. Because the deficiencies are so significant, they cannot be remedied in a final EIS. We request that the Corps issue a revised or supplemental DEIS that addresses the shortcomings of this document, specifically the limited scope of the modeling analysis and resulting failure to adequately assess reasonably foreseeable indirect and cumulative impacts of the proposed project. If the Corps makes a permitting decision based on the information provided in the DEIS, it must deny the requested Clean Water Act Section 404 permit. It is clear that Alternative 2 is not only the least environmentally damaging practicable alternative, it is substantially more economical for the Town of Holden Beach over the short and long term.

Please contact me at (919) 967-1450 or ggisler@selcnc.org if you have any questions regarding these comments.

Sincerely,



Geoffrey R. Gisler
Senior Attorney

GRG/rgd
Enclosures

Cc: Walker Golder (email)
Mike Giles (email)