Information Regarding the Review and Processing of Standard Permit Applications for the Construction of On-Line Impoundments

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In the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979), a "pond" (Palustrine) is distinguished from a "lake" (Lacustrine) based upon surface area with a pond being less than 20 acres and a lake being greater than 20 acres in size. For the purposes of this document, the term "impoundment" will be used interchangeably to mean both "pond" and "lake".

Historically throughout all of North Carolina, impoundments have been constructed through various methods and for various purposes. Where topography is present, impoundments are generally constructed by placing an earthen berm or dam across a flowing tributary. In the coastal plain, many impoundments are constructed in wetlands and tributaries by excavating within or constructing large dikes around the area to be impounded. There may be multiple and varied purposes for these impoundments. A majority of smaller impoundments are built for recreational and aesthetic reasons and may also provide supplemental irrigation. Larger impoundments supply drinking water for municipalities, supply water for hydropower facilities, and provide flood control. There has also been a recent trend of proposing to construct activity-specific impoundments like water-skiing lakes and sea-plane landing lakes to provide water-related recreational opportunities to residences of the surrounding development.

In the last three years Wilmington District has received over 20 Standard Permit applications for various types of impoundments. Project purposes include water-skiing area, sea plane base, golf course irrigation impoundments, and recreational/amenity impoundments for residential developments. Proposed stream impacts associated with these applications exceed 53,000 linear feet (10 miles) of stream channel. The average surface area is approximately 11.5 acres and average stream channel impacts are approximately 2,500 linear feet. The Corps anticipates that the number of these types of applications will increase as development increases within North Carolina.

On-line impoundments can have detrimental effects to aquatic resources not only within the footprint of the impoundment but also upstream and downstream of the impoundment. The severity of affects on aquatic resources can vary depending on the size and type impoundment being constructed and the size and type of aquatic resource that is being affected. In general, impoundments can block aquatic species migration routes, contribute to fragmentation of aquatic species habitat, alter natural hydrologic regimes, and alter water temperatures. Cumulatively these effects can cause decreased bio-diversity in both terrestrial and aquatic species, alteration of natural food webs, disruption of riparian plant communities, and overall degradation of water quality (North Carolina Wildlife Resource Commission, Instream Impoundment Guildelines, July 2006).

The purpose of this document is to remind potential applicants of the requirements of the Clean Water Act Section 404(b)(1) Guidelines and to clarify related issues that have been raised in the Wilmington District due to the increased influx of these type of permit requests. The following discussion provides guidance on several key components of these permit requests.

Project Purpose and Water Dependency

Defining the project purpose is critical to the evaluation of any project and in determining its compliance with the Clean Water Act Section 404(b)(1) Guidelines (Guidelines). The basic project purpose is the fundamental or essential purpose of the proposed project and is used to determine whether the applicant's project is considered "water-dependent". Water-dependency for purposes of the Guidelines means that the project requires access, proximity to, or siting within a special aquatic[1] site to fulfill its basic purpose. If a project is not water-dependent, then practicable alternatives that do not involve a discharge into special aquatic sites are presumed to be available.

The basic project purpose is determined by the Corps through information provided by the applicant. In general, the stated purpose for these types of projects should not be to construct an on-line impoundment. The applicant may incorporate multiple use facilities into the proposed project. The Corps has the responsibility to review the project and determine if the facilities are water dependent. In the example of a residential development with a proposed amenity pond; when considering each element independently, the basic purpose of a residential development is to provide housing and the basic purpose of an amenity pond is to provide recreational opportunities. Therefore, the basic project purpose is to provide housing with recreational opportunities. Since neither of these components would be considered water dependent, the basic project purpose is not water-dependent. Figure A provides a brief summary of the process described above and Table 1 provides example purpose statements for projects that propose various types of impoundments.

Alternative Analysis

The basic project purpose may not be defined so narrowly as to unduly restrict the alternatives analysis. For example, a basic project purpose statement explicitly including construction of an on-line impoundment would likely be considered too narrow since it precludes the analysis of alternatives not involving impoundment construction. Once the basic project purpose is determined, an alternatives analysis is conducted based on that purpose. The alternatives analysis must be objective and not used to merely provide a rationalization for the applicant's preferred project.

When reviewing alternatives pursuant to the Guidelines, the Corps need only consider those alternatives that are practicable to the applicant. Practicability is defined as being "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes" (40 CFR230.10(a)(2)). If a project purpose is determined to be

[1] According to Regulation implementing the CWA 404(b)(1) Guidelines, Special Aquatic Sites include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs and riffle and pool complexes.

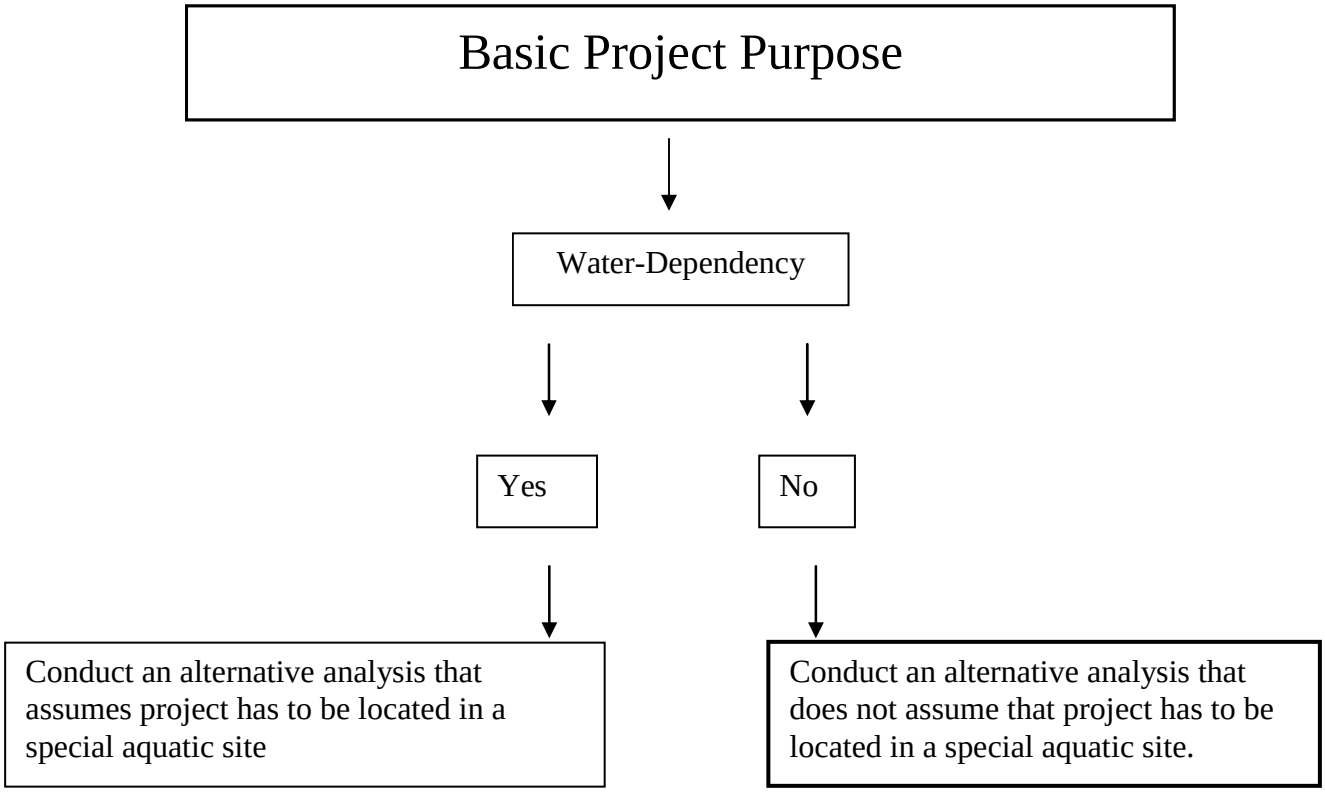
non water-dependent, then it is presumed that there are practicable alternatives that do not involve impacts to special aquatic sites and that these alternatives are less damaging to the aquatic ecosystem. It is the applicant's responsibility to clearly demonstrate that no such alternative exists. In most cases that we have reviewed in the Wilmington District involving the construction of impoundments, the basic project purpose is not water-dependent. For example, the basic purpose for a proposed fire suppression pond in a residential development is to supply water in the event of fire. A discharge of fill material (i.e. placement of a dam structure) in a stream channel is not required to fulfill this project's basic purpose; therefore the applicant must demonstrate why alternatives that do not involve regulated impacts to special aquatic sites (e.g. hydrants or upland impoundments supplied by wells, dry hydrants, etc.) are not practicable.

Project cost is often a key factor in determining the practicability of any alternative. The cost of an alternative and its effect on overall project viability should be viewed from the perspective of the general class of applicant and type of activity. Regulations implementing the 404(b)(1) guidelines discuss assessing alternatives that are reasonable in terms of the overall scope and cost of the proposed project. This discussion as well as Corps and EPA guidance[2] indicates that in making the determination of reasonable/practicable cost, we should focus not on a particular applicant's financial standing, investment or market share but rather the characteristics of the project and whether the projected cost of an alternative is substantially greater than the costs normally associated with the particular type of project. In many instances, applicants have attempted to eliminate alternatives based solely on the reduction of return on a financial investment. While project viability is a consideration, it is the applicant's responsibility to demonstrate why these other alternatives are not viable from a standpoint of cost.

Table 1 provides examples of potential alternatives for consideration based on the project purpose. The examples in this list may not be appropriate in all circumstances and this list is not meant to be all-inclusive. Generally, however, each of these potential alternatives and possibly others should be included in any alternatives analysis submitted. The applicant should clearly explain why the proposed alternative is preferred, and the rationale for eliminating each of the other alternatives. This information should be submitted to the Corps so that we can determine compliance with the Guidelines. The information in Table 1 is not exhaustive, but provides general ideas on the information that we are expecting to receive in an alternatives analysis. For example, if the proposed project is to construct an amenity pond for a residential development, an alternative analysis should be provided that evaluates upland alternatives (on-site and off-site), alternatives for other amenities, and alternatives that would minimize impacts to aquatic resources. If we do not receive an adequate alternatives analysis, we can not determine compliance with the Guidelines.

[2] USACE Regulatory SOP, 1999; EPA Memorandum: Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements, 1993.

Figure A: Path for Determining Scope of Alternative Analysis



Phased Projects

Several applicants have submitted Standard Permit applications proposing to construct on-line amenity ponds for sequential subdivision phases after initial phases have been developed and lots are being sold. In some cases, nationwide permits have been used to construct road crossings, sewer lines, etc. for the initial phases. In these instances the Corps will likely consider the basic purpose for the proposed project to be simply residential development, and will often consider the entire development to be a single and complete project for Clean Water Act review. The applicant must also clearly explain why the proposed amenity is necessary for future but not previous phases.

Compensatory Mitigation

The purpose of compensatory mitigation is to offset impacts to aquatic resources once the applicant has demonstrated adequate avoidance and minimization measures. In general, the type and amount of mitigation required can vary depending on the quality and type of impact that is proposed. The April 2003 Interagency Stream Guidelines developed for use in Wilmington District provides guidance on acceptable ratios depending on the quality of the stream channel being impacted and the type of mitigation being proposed. Regulatory Guidance Letter 02-02 also outlines acceptable mitigation ratios for wetland and stream channel impacts. In some

cases, the Wilmington District has issued permits with less than the recommended mitigation ratios when a majority of the impacts are from flooding of stream channels. The rationale has been that although the aquatic resource has been substantially altered, (changed from a flowing (lentic) aquatic habitat to an open water (lotic) aquatic habitat), that aquatic resource is not lost. In many instances, however, the flooding of a special aquatic site (i.e. riffle-pool complexes) or any aquatic resource can be as detrimental as a fill especially when high value aquatic functions are lost. In these cases, flooding impacts may require compensatory mitigation ratios equivalent to fill impacts. The final decision on adequate mitigation ratios is made by the Corps on a case-by-case basis, subject to the best professional judgment of Regulatory project managers and resource agencies' input after evaluating the quality of the aquatic resource being impacted and the proposed activity.

Applicants often propose preservation of remaining stream channels and wetlands on-site as mitigation for the impacts associated with flooding. The use of preservation is allowed as outlined in the Interagency Stream Guidelines; however, proposed preservation areas should generally be high quality waters with adequate buffers in areas that are in danger of being developed. Preserving areas that are undevelopable due to topography, soils, and/or cost will typically not serve as acceptable compensatory mitigation. Any proposed mitigation plan should adequately offset the proposed impacts to the aquatic resource. Proposing the use of constructed littoral shelves to serve as mitigation for wetland impacts will be evaluated on a case-by-case basis and will consider the quality and function of the wetland being impacted compared to anticipated quality and function of the proposed creation areas. As Wilmington District finalizes interagency stream and wetland functional assessment methodologies, these methodologies should be used to document the type/quality of the aquatic resources that are proposed for impact.

Long Term Monitoring & Maintenance of Impoundments

Due to the secondary and cumulative effects of impoundments, pre-construction and post-construction monitoring may be required in certain cases. Adequate documentation of pre and post water temperatures, dissolved oxygen levels, pH and hydrologic flows may be required for proposed impoundments on stream channels. The pre-construction monitoring will create a baseline for important aquatic variables so that targets can be created to determine if the permitted action is in compliance with conditions of the authorization and meeting state water quality standards. In applicable stream channels, inclusion of a cold water release will be mandatory along with the required maintenance of downstream hydrologic flows.

Recent dam failures on previously permitted impoundments have highlighted the need for evaluating potential impacts to downstream aquatic resources in the event of a dam failure. In some cases, the impoundment may not require a dam safety permit from the N.C. Division of Land Quality. On a case-by-case basis, the Corps may require that the applicant submit information documenting proposed maintenance and contingency plans and may also require emergency action plans in the event of a dam failure. The Corps may also require applicants to provide financial assurances to remediate the potential impact of dam failure. If impacts to downstream waters do occur as the result of a dam failure, the applicant/property owner may be held responsible for remediation of those resources and may be subject to monetary penalties.

Table 1. Key Elements of Standard Permit Requests for On-line Impoundments

Types of Impoundments (Preferred Alternative)	Basic Project Purpose	Potential Alternatives	Water-Dependent?
Amenity Pond For Residential Development	To provide housing and recreational opportunities.	-Evaluating the use of other amenities (fitness centers, playgrounds, common areas, trails, fishing opportunities in on-site streams, stocking existing ponds/streams) -Construction of a Watershed pond* -Construction of an off-line pond -Utilize existing community/local impoundments -Buying property with existing lakes	*No*
Private pond for recreation and fishing	To provide a recreational opportunity for a single-family residence.	-Evaluate other potential fishing opportunities on-site like stocking/using existing streams -Construction of an off-line or Watershed pond	*No*
Irrigation Pond (for fire suppression, commercial nurseries, golf courses, etc.)	To provide water supply for particular activity	-Utilizing wells, dry hydrants, existing water sources (on-site streams/ponds) -Construction of an off-line or Watershed pond	*No*
Geothermal Pond	To provide electricity to single-family residence	-Construction of a closed loop system placed under ground -Construction of a Watershed pond -Construction of an off-line pond -Utilizing existing water sources -Evaluation of other electricity sources	*No*
Recreational uses (eg. water skiing, boating, etc)	To provide water-skiing opportunities	-Utilizing nearby lakes -Buying property with existing lakes	*No*

*A *Watershed Pond* is an impoundment that is constructed in a location that predominately collects surface runoff and is not located on a jurisdictional stream channel.