The Federal Wetland Permitting Program: Avoidance and Minimization Requirements

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I. Introduction

The Clean Water Act (CWA) prohibits the discharge of any dredged or fill material in "waters of the United States,"[1] including wetlands, without a permit. Wetlands are regulated under CWA § 404 which is administered by the U.S. Army Corps of Engineers (the Corps) with oversight by the U.S. Environmental Protection Agency (EPA).[2] The basic premise of the § 404 permitting program is that no discharge shall be permitted if (1) a practicable alternative exists that is less damaging to the aquatic environment, or (2) the discharge would cause the nation's waters to be significantly degraded. In order for a project to be permitted, it must be demonstrated that, to the extent practicable: steps have been taken to avoid impacts to wetlands and other aquatic resources, potential impacts have been minimized, and compensation will be provided for any remaining unavoidable impacts. This process is commonly referred to as the mitigation sequencing requirement of the Clean Water Act § 404 regulatory program.

Significant attention has been paid over the past 20 years to improving the third step in the process—compensatory mitigation—to ensure that the compensation being provided is ecologically effective, self-sustaining, protected in perpetuity, has "assurances of long- term sustainability and stewardship,"[3] and ultimately meets the program's goal of no net loss (discussed further below). This report focuses on the first two steps in the sequencing process which, to date, have received far less attention: avoidance and minimization.

While the sequencing requirement in the § 404 program comes from EPA's permitting regulations, the Corps also has regulations that control this permitting process and the process has been the subject of administrative and legal decisions and policy changes. The current state of avoidance and minimization requirements is a result of all of these authorities. Before describing the substantive requirements of avoidance and minimization policy, this paper will describe the setting for the requirements, which includes the regulatory context and the permitting procedures.

Agency Roles and Responsibilities

Congress created the § 404 program in 1972 with authority divided between the Corps and EPA.

1. Corps Roles and Responsibilities

The Corps plays the lead role in the § 404 program through its authority to require and issue permits for the discharge of dredged or fill material in "waters of the United States." In addition to administering the program on a day-to-day basis, the Corps also conducts or verifies jurisdictional determinations and shares enforcement responsibilities with EPA.[4]

2. EPA Roles and Responsibilities

EPA is responsible for developing and interpreting the substantive environmental criteria used by the Corps to evaluate permit applications—the § 404(b)(1) Guidelines[5] (Guidelines)—and maintains a review and comment role in the issuance of § 404 permits. EPA is also responsible for determining the geographic scope of jurisdiction and the applicability of exemptions, approving and overseeing state and tribal assumption of the permitting program, and shares enforcement responsibilities with the Corps.[6] Finally, EPA has two additional powers that have, over the years, helped to shape avoidance and minimization policy: § 404(c) veto authority and § 404(q) elevation authority.[7]

3. EPA's Elevation and Veto Authorities

Section 404(c) of the Clean Water Act gives EPA the authority to prohibit, deny, or restrict the use of any defined area as a disposal site for dredged or fill material if the discharge will have unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas.[8] Under § 404(c), EPA may "veto" the Corps' permit decisions. EPA has exercised its veto power very rarely, reporting that it has completed only 11 veto actions out of an estimated 1,640,000 permit applications received between October 1979, when the § 404(c) regulations went into effect, and December 2005.[9] EPA can exercise its § 404(c) authority over specific sites without a related § 404 permitting action, but the agency has not "pre-designated" any § 404(c) sites since the program's inception.[10]

Section 404(q) of the Act established a requirement that the Secretary of the Army enter into an agreement with EPA and other appropriate federal agencies to ensure that delays in the issuance of permits under § 404 are minimized to the maximum extent practicable.[11] Under these agreements, EPA, the U.S. Fish and Wildlife Service (FWS), and the National Oceanic and Atmospheric Administration (NOAA) may request "elevation" of specific permit decisions or policy concerns for higher-level review within the Department of the Army.[12] EPA reports that it has requested elevation of review on 20 permit cases out of an estimated 1,580,000 applications received between 1982 and December 2005.[13] In the same time period, eight permit cases were elevated to EPA Headquarters by EPA regional offices, but these cases were resolved before a final elevation request was transmitted.[14] Between 1992, when the current § 404(q) Memorandum of Agreement (MOA) between EPA and the Department of the Army was signed, and 2006, EPA made ten requests for elevation. Of these 10 requests, 4 were denied, 3 were accepted, 2 were withdrawn (EPA withdrew elevation on one and the applicant withdrew the permit on the other). In one of these cases, EPA's elevation request was denied, but FWS's elevation request based on similar concerns was ultimately accepted.[15]

CWA § 404 Permitting Process

The Corps has the authority to issue both individual and general permits. General permits authorize certain activities that the Corps determines are similar in nature and will "cause only minimal adverse environmental effects both individually and cumulatively."[16] General permits are meant to expedite the permitting process by allowing certain activities to be evaluated categorically, rather than on a case-by-case basis. The general permit procedure allows the Corps to apply the § 404(b)(1) Guidelines to an entire class of activities on a national, regional, or statewide basis.[17] The vast majority of the Corps' permitting actions involve general permits. For example, in Fiscal Year 2003, the Corps made approximately 85,000 permit decisions. Of these, nearly 79,000—over 91 percent of the permit decisions in that year—involved general permits.[18]

Proposed activities that are not covered under a general permit must be evaluated under the individual permit review process.[19] The Corps relies on three sets of regulations to make its individual permit decisions. These include: 1) the Corps regulations guiding permit processing procedures, issued in 1986;[20] 2) the Corps "public interest review" policy, first issued in 1968 as part of the general policies for evaluating permit procedures;[21] and; 3) the § 404(b)(1) Guidelines, issued by EPA in 1980.[22]

1. Corps Procedures for Processing Individual Permits

The Corps' individual permits process begins with the submission of an application. Applicants are encouraged, however, to consult with the Corps (and other resource agencies) prior to submitting an application in order to identify avoidance and minimization opportunities before the official permit evaluation process starts. As a result, before submitting a full, formal permit application, applicants for larger projects often request a pre-application meeting with the Corps.[23] Between the time a permittee has a pre-application meeting with the regulatory agencies and when a full application is submitted, permittees may significantly alter their proposed activities based on the agencies' feedback.[24] These revisions may include efforts to avoid or minimize impacts, even before the formal sequencing steps, discussed further below, are applied.[25]

Clean Water Act § 404(b)(1) Guidelines

The Federal Water Pollution Control Amendments of 1972 (the Clean Water Act) authorized the U.S. Army Corps of Engineers to issue permits for the discharge of dredged or fill material into waters of the United States, including wetlands.[a] Section 404 (b)(1) of the Act directed the U.S. Environmental Protection Agency to develop substantive criteria to be used when evaluating discharges under § 404.[b]

Interim Guidelines were issued by the U.S. Environmental Protection Agency in 1975, and the current Guidelines were finalized in 1980. In the intervening years, EPA and the Corps have issued a variety of guidance on how to carry out the Guidelines.

a. 33 U.S.C. § 1344; CWA § 404.

b. 33 U.S.C. § 1344 (b)(1); CWA § 404 (b)(1).

Once the Corps receives a complete application, it is posted in post offices or other appropriate public places and distributed to all interested parties who requested copies of public notices and to other parties listed in the regulations.[26] This begins the public interest review phase—generally a 15-30 day period—during which the Corps solicits feedback from the public on how the proposed project will impact the public interest.[27] Section 404 also requires the Corps to consult with its sister natural resource agencies, including EPA, FWS, and NMFS.[28]

2. EPA's Guidelines for Permit Applications

On December 24, 1980, EPA issued the § 404(b)(1) Guidelines, the regulations that established the environmental criteria by which the Corps evaluates dredge and fill permit applications.[29] Central to the Guidelines is the fundamental requirement for an alternatives analysis. "…[N]o discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the environment, so long as the alternative does not have other significant adverse environmental consequences."[30] "[T]he application is required in every case (irrespective of whether the discharge site is a special aquatic site or whether the activity associated with the discharge is water dependent) to evaluate opportunities for the use of non-aquatic areas and other aquatic sites that would result in less adverse impact on the aquatic ecosystem."[31] Thus, applicants must demonstrate that for any discharge or fill activity there is no practicable alternative site for the proposed activity that will have less adverse environmental impacts.

For special aquatic sites such as wetlands, however, the Guidelines propose a more difficult test for avoidance with two presumptions. For proposed discharges to special aquatic sites there is a presumption that an alternative site that is not a special aquatic site exists and a presumption that such a site will result in less adverse environmental impacts on the aquatic ecosystem.[32]

These rebuttable presumptions clarify how to determine if discharges proposed for special aquatic sites meet the requirement that the practicable alternatives have less significant adverse impact on the environment and do not have other significant environmental impacts. If the applicant can rebut either of these presumptions, the project has been shown not to have a practicable alternative that is less environmentally damaging, and thus is no longer subject to denial for that reason. The Guidelines also require that "appropriate and practicable steps" are taken to minimize potential adverse impacts to the aquatic ecosystem before a discharge can be permitted.[33] The Guidelines further describe habitat "development and restoration" as an appropriate method for compensating for permitted impacts that destroy habitat.[34]

3. Corps Public Interest Review for Permit Applications

In addition to satisfying the § 404(b)(1) Guidelines, the Corps bases its permitting decision on a public interest review that balances foreseeable benefits and detriments.[35] Under this review, the Corps' public interest review provision states, "a permit will be granted unless the district engineer determines that it would be contrary to the public interest."[36] The evaluation of every application must include a consideration of "[t]he relative extent of the public and private need for the proposed [project]."[37] The Corps determines how much weight to give each factor by its relevance to the specific proposal.[38]

4. Relationship Between the Two Sets of Permit Regulations

The Corps' public interest review and EPA's § 404(b)(1) Guidelines have a complex relationship. Furthermore, the agencies have differed on how to apply the EPA's environmental standards. After the Guidelines were finalized in 1980, the Corps often treated them as a lesser weighted component of the public interest determination, while the EPA maintained they were for the threshold determination.[39]

In October 1984, the Corps agreed to abide by EPA's § 404(b)(1) Guidelines, pursuant to a settlement agreement in *National Wildlife Federation v. Marsh.*[40] The Corps amended its regulations to include the statement that a permit would be denied if it "would not comply with the Environmental Protection Agency's 404(b)(1) guidelines."[41] In 1989, the Corps issued two decisions—in the *Plantation Landing* guidance and the *Hartz Mountain* elevation findings—reasserting that the § 404(b)(1) Guidelines are binding on the Corps and emphasizing the importance of the alterna-

tives test.[42] This point was clarified and reestablished in the 1990 Mitigation MOA between the Corps and EPA.[43] In 1992, EPA and the Corps issued another MOA clarifying their roles, including the procedures for requesting elevation of permit decisions.[44] As the areas of agreement shifted over the years, EPA relied upon the threat of its veto and elevation powers to press for more rigorous application of the Guidelines.

Notes

1. 33 U.S.C. § 1311; CWA § 301. Waters of the United States means "(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (2) All interstate waters including interstate wetlands; (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce; (4) All impoundments of waters otherwise defined as waters of the United States under the definition; (5) Tributaries of waters identified in paragraphs (a) (1) through (4) of this section; (6) The territorial seas; (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section. (8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States." 33 C.F.R. § 328.3.

2. 33 U.S.C. § 1344; CWA § 404.

3. National Research Council, *Compensating for Wetland Losses Under the Clean Water Act*, National Academy of Sciences, at 9 (2001).

4. 33 C.F.R. § 325.9.

5. 40 C.F.R. § 230 et. seq.

6. 33 U.S.C. § 1344; CWA § 404.

7. 33 U.S.C. §§ 1344 (c), 1344(q); CWA §§ 404(c), (q).

8. 33 U.S.C. § 1344(c); CWA § 404(c); U.S. Environmental Protection Agency, *Clean Water Act 404(c) "Veto Authority,"* at http://www.epa.gov/owow/wetlands/pdf/404c.pdf (last visited Apr. 16, 2007).

9. *Id.*

10. *Id*.

11. 33 U.S.C. § 1344(q); CWA § 404(q); Environmental Protection Agency, *Clean Water Act 404(q) Dispute Resolution Process*, *at* http://www.epa.gov/owow/wetlands/pdf/404q.pdf (last visited Apr. 16, 2007).

12. 33 U.S.C. 1344(q); CWA § 404(q); Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency Concerning Section 404(q) of the Clean Water Act (Aug. 11, 1992).

13. Dispute Resolution Process, *supra* note 11.

14. *Id.*

15. U.S. Environmental Protection Agency. "404(q) Permit Cases Elevated to EPA HQ – August 2006."

16. 33 U.S.C. § 1344 (e)(1); CWA § 404(e)(1).

17. *Id*.

18. U.S. Army Corps of Engineers Regulatory Program, *All Permit Decisions FY 2003*, available at http://www.usace.army.mil/cw/cecwo/reg/2003webcharts.pdf (last visited May 15, 2007).

19. 33 U.S.C. § 1344; CWA § 404.

20. 33 C.F.R. § 325.

21. *Id*. § 320.4(a).

22. 40 C.F.R. § 230 et. seq.

23. 33 C.F.R. § 325.1(b).

24. *Id*.

25. Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines, § III.A (Feb. 6, 1990).

26. 33 U.S.C § 1344(o); CWA § 404(o); 33 C.F.R. § 325.3.

27. 33 C.F.R. § 325.2.

28. 33 U.S.C §§ 1344, (c), 1344(m), 1344(q); CWA §§ 404(c), 404(m), 404(q).

29. 40 C.F.R. § 230 et. seq.

30. 40 C.F.R. § 230.10(a).

31. RGL 93-02, Memorandum to the Field: Guidance on Flexibility of the 404(b)(1) Guidelines and Mitigation Banking (Aug. 23, 1993 - Dec. 31, 1998, Department of the Army and Environmental Protection Agency).

32. 40 C.F.R. § 230.10(a)(3).

33. *Id.* § 230.10(d).

34. *Id.* § 230.75(d).

35. Department of the Army, *Army Corps of Engineers Standard Operating Procedures for the Regulatory Program*, 13 (Oct. 15, 1999).

36. 33 C.F.R. § 320.4(a)(1).

37. *Id.*

38. Department of the Army, *SOP, supra* note 35.

39. Government Accounting Office, RCED-88-110, *Wetlands: Corps of Engineers Administration of Section 404 Permit Program*, 26 (July, 1988).

40. 721 F.2d 767, 782 (11th Cir. 1983).

41. 33 C.F.R. § 320.4(a)(1).

42. Plantation Landing Guidance, Brigadier General Patrick J. Kelly, Director of Civil Works, Department of the Army (Apr. 21, 1989); Hartz Mountain HQUSACE Findings (July 25, 1989).

43. 1990 Mitigation MOA, *supra* note 25.

44. 1992 §404(q) MOA, *supra* note 12.

II. Sequencing

Federal standards on mitigation were first described in the NEPA regulations issued by the Council on Environmental Quality in 1978. The CEQ defined mitigation as avoiding, minimizing, rectifying, reducing or eliminating, and compensating for impacts.[1] Avoidance and minimization were further described as "[a]voiding the impact altogether by not taking a certain action or parts of an action…"[2] and "[m]inimizing impacts by limiting the degree or magnitude of the action and its implementation."[3] The CEQ presented compensation as a separate, independent procedural element.[4] The Clean Water Act and EPA's Guidelines make mitigation a requirement of the § 404 program, through the standards set at 40 CFR §§ 230.10(a)-(d).[5]

The four standards are: (a) the prohibition against discharging dredged or fill material without a permit, if there is a practicable alternative; (b) the prohibition against discharging dredged or fill material if it will violate state water quality standards, toxic effluent standards, or jeopardize a species listed under the Endangered Species Act; (c) the antidegradation rule; and (d) the requirement to minimize impacts.

These standards were clarified in the 1990 Mitigation MOA that articulates EPA and the Corps' mitigation procedures.[6] The MOA establishes the process by which the Corps seeks to meet the § 404 program's guiding goals: 1) the 1972 Clean Water Act's purpose, "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters,"[7] "including wetlands";[8] and, 2) the national goal, established by President Bush in 1989, of achieving a "no overall net loss" of wetland acres and functions.[9] The 1990 MOA was developed by EPA and the Corps to elaborate on the mitigation sequence of the alternatives analysis and the rebuttable presumptions from the Guidelines.

The Mitigation MOA defines mitigation as a three-part sequence: avoidance, minimization, and compensation:[10]

> The Corps…first makes a determination that potential impacts have been avoided to the maximum extent practicable; remaining unavoidable impacts will then be mitigated to the extent appropriate and practicable by requiring steps to minimize impacts and, finally, compensate for aquatic resource values.[11]

The sequencing provisions are further described in the Mitigation MOA as follows:

1. Avoidance: The avoidance provisions are satisfied through the alternatives test spelled out in the § 404(b)(1) Guidelines (specifically, 40 C.F.R. § 230.10(a)(1)(i)). By approving permits only for the "least environmentally damaging alternatives," the Corps seeks to avoid impacts.
2. Minimization: The minimization provisions are satisfied through the minimization procedures described in the § 404(b)(1) Guidelines (specifically 40 C.F.R. § 230.10(d)). Subpart H of the Guidelines further provides a broad array of possible methods for minimizing the impacts of a proposed activity.
3. Compensation: All remaining unavoidable adverse impacts must be addressed through "[a]ppropriate and practicable compensatory mitigation." Compensation activities are specified in Subpart H of the Guidelines (specifically, 40 § C.F.R. 230.75).[12]

There are two overarching themes that affect how this sequencing analysis is conducted. One is that although the burden of proof for satisfying these steps rests with the permit applicant,[13] the Corps must rely upon its own analysis in making a finding of compliance or noncompliance with the Guidelines.[14] Where the applicant provides information that is insufficient to determine compliance, the Guidelines require that the Corps deny the permit.[15] This issue has arisen in several policy elevations relating to who has the responsibility of determining the project purpose, described below. The second overarching theme is that in evaluating projects, the stringency of the review may be modified based on the "significance and complexity of the discharge activity."[16] The Corps issued guidance in 1993 providing districts with additional information on how to determine the appropriate level of analysis for evaluating compliance with the alternatives analysis.[17]

A. Avoidance: The Alternatives Analysis

Avoidance is the first step in the sequencing process by which the Corps determines whether or not the proposed project is the least environmentally damaging practicable alternative (LEDPA).[18] The LEDPA is identified by an evaluation of the direct, secondary, and cumulative impacts on the aquatic ecosystem[19] and "other ecosystems"[20] of each alternative under consideration.

The Guidelines state:

> …no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem so long as the alternative does not have other significant adverse environmental consequences.[21]

The universality of the requirement to evaluate opportunities for use of non-aquatic areas and other aquatic sites that would result in less adverse impact on the aquatic ecosystem was reiterated in a EPA and Army guidance memo in 1993.[22]

The regulations further establish two analytical presumptions that increase the burden on an applicant for a non-water dependent activity to demonstrate that no practicable alternative exists.[23]

The first presumption is that if the basic purpose of a project is not water dependent, "practicable alternatives that do not involve special aquatic sites are presumed to be available."[24] The second presumption is, "where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem."[25] The two presumptions hold unless the applicant proves otherwise.[26] The standards for overcoming these presumptions and the other components of the alternatives analysis have been clarified by numerous administrative and legal decisions.

1. Project Purpose

The first step in completing an alternatives analysis is defining the project purpose. Defining project purpose is critical, as it has a profound effect on the set of alternatives to the permit applicant's proposed site which must be considered. Certain aspects of this determination have been controversial, including who is ultimately responsible for making the required findings, whether there are two severable components to project purpose, and how the water dependency test relates to project purpose. These perspectives are described below.

Several administrative decisions in the early 1990s established that the project purpose must be defined broadly enough that more than only the proposed project will meet it. [27] The EPA requested elevation of the *Plantation Landing* application in 1989 in part due to concern about project purpose.[28] In this case, the Department of the Army affirmed that the Corps must conduct an independent analysis of project purpose to ensure that the purpose is not defined too narrowly.[29] This was similarly affirmed in the *North Fork of the Hughes River*, *Petro Star*, and *Old Cutler Bay Associates* elevations.[30] Nonetheless, the Corps must take the applicant's purpose into account when conducting the alternatives analysis.[31]

a. Burden of Proof

Although the Clean Water Act does not specify who has the responsibility to meet the requirements of the Guidelines, over 20 years of agency policy-making and judicial decisions have clarified that the responsibility lies with the Corps. The permit applicant must demonstrate compliance with the Guidelines[32] in order to obtain the permit, though the Corps may supplement the analysis with its own information. The Guidance states that ultimately the Corps must make an independent finding that the proposed activity complies with the applicable standards and may deny a permit if the information supplied by the applicant is insufficient.[33]

In a 1988 report on the § 404 program, the Government Accounting Office explained the concern that the Corps Districts were simply accepting project purposes asserted by applicants without making the required independent finding.[34] In an effort to establish clarity, EPA requested elevation of several applications, calling the problem of the Corps' failure to independently verify the information and analysis presented by § 404 permit applicants one of national concern. "We are concerned by matters of interpretation of the Guidelines… and the potential for site specific and cumulative envi-

ronmental impacts as well as impacts on the integrity of the Section 404 program," EPA stated in the *Old Cutler Bay* elevation request.[35] This concern was similarly expressed in the *North Fork of the Hughes River* elevation request.[36] The EPA asserted that by relying on the applicant's alternatives analysis, the Corps had unnecessarily limited the scope of practicable alternatives that could meet the project purpose.[37]

Through acceptance of EPA elevation requests and resulting guidance, the Department of the Army has affirmed the requirement that the districts make independent verifications of the findings.[38] This position was further affirmed by a federal appellate court in 2002 in *Utahns for a Better Environment v. USDOT*.[39]The decision established that the applicant bears the burden of proving that there is no practicable alternative but the Corps must independently verify the finding.[40] The demonstration must "provide detailed, clear and convincing information *proving* impracticability."[41] Further, both the applicant and the Corps "are obligated to determine the feasibility of the least environmentally damaging alternatives that serve the basic project purpose. If such an alternative exists… then the CWA compels that the alternative be considered and selected unless proven impracticable."[42]

b. Basic Versus Overall Project Purpose

The Corps separates the Guidelines' concept of project purpose into two analytical elements, distinguishing between the "basic purpose" (a regulatory term from EPA's § 404 Guidelines) of the project and the "overall purpose" (a guidance term from HQUSACE's guidance resulting from the Twisted Oaks Venture and Old Cutler Bay Elevation Requests) of the project.[43] The Corps Standard Operating Procedures state that the overall project purpose is more specific to the applicant's project than the basic purpose.[44] EPA's final interpretation of the Guidelines' use of the terms "basic purpose" and "overall project purposes" came in 1990 in the veto of the *Two Forks* application.[45] EPA clarified that these terms were intended to be used interchangeably. This analytical distinction is entangled with the determination of water dependency, as described below.

c. Water Dependency

Once the project purpose is established, the next step is to determine whether the project is water dependent—whether it "requires access or proximity to or siting within [a wetland] to fulfill its basic purpose."[46] This distinction is crucial because of the presumption in the Guidelines that non-water-dependent projects have "practicable alternatives that do not involve [wetlands]."[47] If a project is not water dependent, then a practicable alternative must be chosen. In 1986, EPA vetoed the application to build the *Attleboro Mall* in Sweedens Swamp because the project was not water dependent and there was a practicable alternative to the proposed site.[48] This view was affirmed through litigation.[49]

The Corps' subsequent interpretation of this rule has resulted in confusion. In the late 1980s, the Corps asserted that if a project has two components, one of which is water dependent, then the overall project purpose is water dependent.[50] The 1989 *Plantation Landing* decision highlighted this issue. In this case, one concern was that the District had found the project to be water dependent because one element was water-related, though the overall purpose of the project was not.[51] The Army accepted EPA's assertion that the basic purpose of each component of a project must be considered in terms of its actual, non-water-dependent function, and the project components cannot be made water dependent simply by planning them to be adjacent to another component that *is* water dependent.[52] That same year, the EPA requested elevation of the *Hartz Mountain* application for similar reasons. The Department of the Army confirmed that the water- dependence analysis must be conducted for the individual components of the project, one component does not confer water dependence on the whole project, and non-water- dependent projects may not be permitted.[53]

The *Old Cutler Bay Associates* elevation request in June of 1990 was also based on a concern that the project was not in fact water dependent, though the Corps was processing the application.[54] EPA was concerned that the applicant had failed to rebut the presumption that there was a less damaging alternative for the non-water-dependent golf course.[55] The Army accepted the request and directed the District to apply the policy of

Plantation Landing and *Hartz Mountain,* requiring the Corps to conduct an independent determination of project purpose, water dependence, and finding of whether the presumption that there is an alternative had been rebutted.[56]

The issue of project purpose and water dependency was revisited in 1991 by the Department of the Army in the *Twisted Oak Joint Venture* elevation, initially requested by the EPA and subsequently requested by the FWS.[57] Although the Army affirmed the District's determination that one element of the project was water dependent, and agreed generally with the project purpose as the District defined it, the Army also found that an alternatives analysis was necessary.[58] Overruling the District, the Army found that one water-dependent element did not make the whole project water dependent.[59] Thus, the applicant did not overcome the regulatory presumption that alternatives are available for non-water-dependent projects.

As discussed earlier, the Corps must assume that non-water-dependent projects have practicable alternatives. Court decisions, elevation proceedings, and veto decisions in the late 1980s and early 1990s have established that if the Corps does not find that the permit applicant has shown that there is no practicable non-wetland site that fits the overall or basic project purpose, the permit must be denied.[60] In order to conduct a thorough alternatives analysis, the Corps therefore must correctly analyze the project purpose and its water dependency.

2. Practicability

Once the Corps determines whether there are non-water-dependent alternatives, the agency makes a finding of whether there is a less environmentally damaging project alternative[61] to the applicant's proposed site that is practicable.[62] This is where the second analytical presumption comes into play: "where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem."[63]

All practicable alternatives must be considered.[64] An alternative is considered to be practicable if it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes."[65] Because the definition of practicability contains the overall project purpose, the analysis of project purpose is bound to the practicability determination.

As described above, practicable alternatives are presumed to exist.[66] From the late 1980s into the 1990s, EPA requested elevation of several permit decisions based on its finding that the Corps had failed to consider practicable alternatives.[67] The existence of these practicable alternatives, EPA argued, provided the Corps with sufficient cause to reject the permit applications. In the *Petro Star* elevation request, EPA was concerned that a practicable alternative had been neglected.[68] The Army affirmed that the Corps was required to consider all practicable alternatives and not limit its analysis based on the applicant's assertion that the proposed project was more attractive.[69]

In some cases, the Army has disagreed with EPA about the availability and practicability of alternatives, and has issued permits despite EPA's requests for elevation. In the *Churchill Downs* case, it took a second request by another agency, the FWS, before the Army accepted the elevation.[70] The Army's ultimate acceptance of the FWS's elevation request reestablished that alternatives must be rigorously analyzed and that the presence of a practicable alternative results in the rejection of the permit application.[71] In the *Sears Island* case, the Army concluded that the alternative proposed by the EPA was not in fact practicable, and denied its elevation request.[72]

a. Availability

The first element in the definition of practicability is the concept of availability—an alternative is practicable if it is available and capable of being done.[73] Availability was clarified in the late 1980s in one of the rare applications that EPA vetoed.[74] In the *Attleboro Mall* case, discussed above, the applicant claimed that the alternative property was no longer available because it had been subsequently purchased.[75] The Army rejected EPA's "market entry theory:" that availability is to be judged at the time when the developer is selecting the property on which to site the proposed activity, rather than at a later stage in the development process.[76] The Army sided with the permit applicant, arguing that the "sold" site was not practicable because it was no longer available at the time the per-

mit application was filed. EPA disagreed asserting that availability decisions under the Guidelines are made at the time the permit applicant selects the project site. Since that now sold site was available at when the applicant was choosing the site and would have had less impact on the aquatic environment, the proposed site at Sweeden's Swamp was not the LEDPA and the permit had to be denied. After subsequent appeals, EPA's market entry theory was ultimately affirmed by the Second Circuit Court of Appeals.[77] In other words, an alternative is considered practicable if it was available at the time when the applicant was considering project locations, even if the alternative later becomes unavailable. The *Attleboro Mall* case established that the existence of available alternatives must be considered from the perspective of meeting the basic project purpose, not the perspective of the applicant, or of profitability.[78]

The Guidelines themselves establish that to be available, alternative sites need not be under the ownership of the applicant. The sites must merely be *reasonably* available for purchase, use, or management.[79] The 1992 *Churchill Downs* elevation proceeding established that the need for rezoning does not make an alternative impracticable.[80] In this case, EPA requested elevation because there were practicable alternatives that had not been considered. The applicant argued that in light of funds already committed to the project and because the alternative would require rezoning, it was not available. After the FWS echoed EPA's concerns, the Department of the Army directed the Corps to reevaluate the application in light of the potential for rezoning.[81] In the *Tennessee DOT* elevation, the agencies also agreed that the applicant's previous expenditures—in this case the amount of money the applicant spent on a project before a § 404 permit was issued—may not be a factor in determining the practicability of an alternative.[82] The Department of the Army directed the Corps not to limit its consideration of practicable alternatives in light of the resources the DOT had committed in preparing the project proposal, because DOT should have consulted with the Corps earlier in the process.[83]

b. Feasibility

Another key phrase in the definition of practicability ("available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes"[84]) is "capable of being done," which the EPA refers to as "feasibility." Federal policy has established that an applicant's unwillingness—or in some cases inability—to pursue an alternative does not render it infeasible. The Guidelines require the evaluation of feasibility "in light of overall project purposes."[85] Alternatives that do not satisfy the project purpose are not feasible. As in the analysis of availability, in the analysis of feasibility, issues of costs, existing technologies, and logistics must be considered.

c. Cost

The cost aspect of the practicability finding has been established as a legitimate but difficult consideration that generally requires a case-by-case evaluation. The preamble to the Guidelines state, "The mere fact that an alternative may cost more does not necessarily mean it is not practicable."[86] The preamble further states, "Our intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project. The term economic [for which the term "cost" was substituted in the final rule] might be construed to include consideration of the applicant's financial standing, or investment, or market share, a cumbersome inquiry which is not necessarily material to the objectives of the Guidelines."[87] The distinction between cost and economics and how discretion is to be applied concerning costs is further described in a joint Regulatory Guidance Letter issued by EPA and the Department of the Army.[88] The determination of what constitutes an unreasonable expense should generally consider whether the projected cost is substantially greater that the costs normally associated with the particular type of project, not the financial circumstances of the applicant.[89]

Debates over the issue of cost often revolve around specific issues of capital costs, operating costs, and funds committed to the project before the permit was issued. As described above, applicants may not limit the scope of the alternatives analysis by spending money on their proposed site and then asserting that alternatives are not feasible. Increases in costs do not necessarily render an alternative infeasible. An alternative that increases costs so as to preclude construction of a project (*e.g.*, would render the project uneconomical) would not normally be feasible.

d. Existing Technology

The Guidelines elaborate on the technology requirement in the definition of practicability.[90] The policy states that discharge technology should be adapted to the needs of each site, and the applicant should consider:

- Using appropriate equipment or machinery, including protective devices, and the use of such equipment or machinery in activities related to the discharge of dredged or fill material;
- Employing appropriate maintenance and operation on equipment or machinery, including adequate training, staffing, and working procedures;
- Using machinery and techniques that are especially designed to reduce damage to wetlands. This may include machines equipped with devices that scatter rather than mound excavated materials, machines with specially designed wheels or tracks, and the use of mats under heavy machines to reduce wetland surface compaction and -rutting;
- Designing access roads and channel spanning structures using culverts, open channels, and diversions that will pass both low and high water flows, accommodate fluctuating water levels, and maintain circulation and faunal movement;
- Employing appropriate machinery and methods of transport of the material for discharge.[91]

e. Logistics

The final factor element that must be considered in determining practicable alternatives is logistics.[92] Logistics include considerations such as geography of the site, the proximity of the location of the fill material to the proposed site, or other issues related to the specifics of the proposed location. This factor in the practicability determination for the alternatives analysis has not been controversial and thus has not been elaborated in any regulatory guidance or other publications.

3. Making the LEDPA Determination

Once the practicable alternatives are identified, based on the factors and standards described above, the Corps may only issue a permit for the proposed activity if it is the alternative that which would cause the least damage to the aquatic environment—the LEDPA.[93]

There are occasions, however, when the Corps may find that the LEDPA will still cause too much harm to special aquatic resources to be allowed.[94] The 1990 Mitigation MOA states: "It is important to recognize that there are circumstances where the impacts of the project are so significant that even if alternatives are not available, the discharge may not be permitted regardless of the compensatory mitigation proposed."[95] In other words, the Corps may deny a permit if it finds that the proposed project is the least damaging alternative but that the damage would still be too significant, even after all practicable avoidance and minimization.

Finally, the availability of compensation opportunities may *not* be taken into account during the alternatives analysis and identification of the LEDPA. Guidance issued in 1990 states that "[c]ompensatory mitigation may not be used as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 230.10(a)."[96] Guidance issued by the Corps in 1993 further reinforced this position: "It is not appropriate to consider compensatory mitigation in determining whether a proposed discharge will cause only minor impacts for purposes of the alternatives analysis required by Section 230.10(a)."[97]

The Alternatives Test

- When the Corps receives an application for a project that will impact a wetland it must determine if there are alternatives that are less environmentally damaging to the aquatic environment and other ecosystems.
- The Corps presumes that there are non-wetland alternative sites on which to locate non-water-dependent projects.
- The Corps presumes that alternatives that do not impact wetlands are less damaging to the aquatic ecosystem and are environmentally preferable.
  - Are the alternatives practicable?
    - Are the alternatives reasonable in terms of overall scope, cost, existing technology, and logistics?
    - Do the alternatives allow the project to meet the applicant's basic purpose?
- In order to grant the permit, the Corps must make a finding that the proposed project is the Least Environmentally Damaging Practicable Alternative (LEDPA).

b. Minimization

After applying the avoidance requirement outlined in the § 404(b)(1) Guidelines, the agencies must minimize impacts to aquatic resources.

…no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem.[98]

As a part of the permitting requirements, some minimization efforts can play a role in finding the LEDPA. On the other hand, it is also clear that minimization-type activities can also be used to reduce remaining significant impacts. In this way, minimization has a dual identity, existing pre- and post-LEDPA. For example, some minimization measures such as utilizing alternative project designs and construction methods can be used to attain compliance with Section 230.10(a)-(c).

Subpart H of the Guidelines lists examples of how unavoidable impacts may be minimized.[99] Actions to minimize the impacts of discharges include: changing the location of the discharge, changing the material to be discharged, controlling the material after discharge, changing the method of dispersion, changing the technology used, changing the affects on plants, animals, and human uses.[100]

The actions described in Subpart H largely relate to § 404 permits for the narrow purpose of the disposal of dredge spoil in the context of the dredging of harbors and river channels. In the intervening years since the law was written, the § 404(b)(1) Guidelines have been used to prescribe mitigation for a wider variety of wetland fill projects than the agencies had originally anticipated. As such, the program would benefit greatly from additional guidance on how to evaluate minimization procedures for activities more commonly encountered, such as wetland and stream fill projects.

Notes

1. 40 C.F.R. § 1508.20.

2. *Id.* § 1508.19(a).

3. *Id.* § 1508.19(b).

4. *Id.* § 1508.18(e).

5. 33 U.S.C. § 1344; CWA § 404; 40 C.F.R. § 230.

6. Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (Feb. 6, 1990).

7. 33 U.S.C. § 1251(a); CWA § 101(a).

8. 1990 Mitigation MOA, *supra* note 6.

9. The national goal of achieving no net loss of wetland acres and functions was first articulated by the National Wetlands Policy Forum, a group of governors, business, environmental groups, state officials and federal agencies, convened by the Conservation Foundation at the request of the EPA in 1987. Thomas H. Kean, Carroll Campbell, Booth Gardner, and William K. Reilly, *Protecting America's wetlands: an action agenda, Final Report of the National Wetlands Policy Forum* (The Conservation Foundation 1988). The report recommended that "the nation establish a national wetlands protection policy to achieve no overall net loss of the nation's remaining wetlands base, as defined by acreage and function, and to restore and create wetlands, where feasible, to increase the quality and quantity of the nation's wetlands resource base." *Id.* President George H.W. Bush echoed the recommendation with a campaign commitment in 1988. U.S. Environmental Protection Agency, *Oral History Interview: William K. Reilly* (Sept., 1995) *available at* www.epa.gov/history/publications/reilly/08.htm. On June 8, 1989, President H.W. Bush officially articulated no net loss as a national policy goal in a speech to Ducks Unlimited. The American Presidency Project, *George Bush: Address to Ducks Unlimited, available at* www.presidency.ucsb.edu/ws/index.php?pid=17125. In 1990, joint guidance issued by the Corps and EPA stated the national goal of achieving "no overall net loss of values and functions." 1990 Mitigation MOA, *supra* note 8 at § IIB. The Guidance acknowledges the difficulty inherent in measuring and therefore replacing functions and values and states that "a minimum of 1 to 1 acreage replacement may be used as a reasonable surrogate for no net loss of functions and values." *Id.* at § IIIB. The no net loss goal is, therefore, often referred to in terms of acres and functions, rather than values and functions, despite the fact that existing federal guidance encourages reliance on functional assessment methods in determining impacts and required mitigation for aquatic resources. *See* Jon A. Kusler, Association of State Wetlands Managers, *Common Questions: Definitions of the Terms Wetland Function and Value*, *at* http://www.aswm.org/propub/16_functions_6_26_06.pdf (last visited May 14, 2007).

10. 1990 Mitigation MOA, *supra* note 6 at § II.A.

11. *Id*. § II.C.

12. *Id.* § II.C. 3.

13. Guidelines for Specification of Disposal Sites for Dredged or Fill Material, 45 Fed. Reg. 85336, 85339 (Dec. 24, 1980) ("Consistent with the burden of proof under these Guidelines, where an applicant proposes to discharge in a special aquatic site it is his responsibility to persuade the permitting authority that both of these presumptions have clearly been rebutted in order to pass the alternatives portion of these Guidelines."); RGL 93-02,

Memorandum to the Field: Guidance on Flexibility of the 404(b)(1) Guidelines and Mitigation Banking (Aug. 23, 1993 – Dec. 31, 1998, Department of the Army and Environmental Protection Agency).

14. 40 C.F.R. § 230.12(a)(3)(iv); RGL 93-02, Guidance on Flexibility, *supra* note 13 at 4.

15. 40 C.F.R. § 230.12(a)(3)(iv).

16. 40 C.F.R. § 230.6(b).

17. RGL 93-02, Guidance on Flexibility, *supra* note 13.

18. Certain minimization measures such as utilizing alternative project designs and construction methods can also be used to help identify the LEDPA.

19. 40 C.F.R. § 230.10(a).

20. Fed. Reg., *supra,* note 13 at 85339.

21. 40 C.F.R. § 230.10(a).

22. Guidance on Flexibility, *supra* note 13.

23. Plantation Landing Guidance, U.S. Army Corps Brigadier General Patrick Kelly (April 21, 1989).

24. 40 C.F.R. § 230.10(a)(3).

25. *Id*.

26. RGL 93-02, Guidance on Flexibility, *supra* note 13; 40 C.F.R § 230.10(a)(3).

27. North Fork of Hughes River Army Response, Acting Assistant Secretary of the Army John Zirschky, (Dec. 22, 1994); Old Cutler Bay Associates Elevation Request, EPA Assistant Administrator LaJuana Wilcher, (June 4, 1990).

28. Old Cutler Bay Elevation Request, *supra* note 27.

29. Old Cutler Bay Associates Guidance, Director of Civil Works Major General Patrick Kelly (September 13, 1990).

30. North Fork of Hughes River Army Response, *supra* note 27; Petro Star/Port Valdez Elevation, Acting Assistant Secretary of the Army Edward Dickey (July 14, 1993); Petro Star/Port Valdez Guidance, Director of Civil Works Major General Stanley Genega (Sept. 28, 1993); Old Cutler Bay Associates Guidance, *supra* note 29.

31. *Louisiana Wildlife Federation v. York,* 761 F.2d 1044 (5th Cir. 1985).

32. RGL 93-02, Guidance on Flexibility, *supra* note 13 at (b)(4).

33. 40 C.F.R. § 230.12(a)(3)(iv); RGL 93-02, Guidance on Flexibility, *supra* note 13 at 4.

34. Government Accounting Office, RCED-88-10, *Wetlands: Corps of Engineers Administration of Section 404 Permit Program,* 26 (July, 1988).

35. Old Cutler Bay Elevation Request, *supra* note 27.

36. North Fork of Hughes River Elevation Request, U.S. Environmental Protection Agency Assistant Administrator Robert Perciasepe (November 22, 1994).

37. *Id*.

38. North Fork of Hughes River Army Response, *supra* note 25; Petro Star/Port Valdez Guidance, *supra* note 28; Petro Star/Port Valdez Elevation, *supra* note 28; Old Cutler Bay Associates Guidance, *supra* note 27; Hartz Mountain HQUSACE Findings (July 25, 1989).

39. *Utahns for a Better Environment v. USDOT*, 305 F.3d 1152 (10th Cir. 2002).

40. *Id*.

41. *Id.* at 1186.

42. *Id*.

43. Department of the Army, *Army Corps of Engineers Standard Operating Procedures for the Regulatory Program,* 13 (Oct. 15, 1999). S*ee* 33 U.S.C. § 1344(q); CWA § 404(q); Old Cutler Bay Associates Guidance, *supra* note 29.

44. *Id.* at 7.

45. Two Forks Final Determination, (Nov. 23, 1990).

46. 40 C.F.R. § 230.10(a)(3).

47. *Id*.

48. Final Determination of the Assistant Administrator for External Affairs Concerning the Sweedens Swamp Site, 51 Fed. Reg. p. 22977 (June 24, 1986).

49. *Bersani v. USEPA*, 674 F. Supp 405 (N.D.N.Y. 1987); *Bersani v. Robichaud*, 850 F.2d 36, 44 (2d. Cir. 1988), *cert. denied*, 489 U.S. 1089 (1989), (affirmed EPA's reliance on the Section 404(b)(1) Guidelines to arrive at the veto decision, supporting the agency's assertion that a determination that the losses were avoidable under the Guidelines necessarily gives EPA the authority to veto a decision under Section 404(c)).

50. Corps SOP *supra* note 43 at 6.

51. Plantation Landing Elevation Request, EPA Acting Assistant Administrator Rebecca Hanmer (Jan. 13, 1989).

52. Plantation Landing Guidance, *supra* note 23.

53. Hartz Mountain HQUSACE Findings, *supra* note 38.

54. Old Cutler Bay Associates Elevation Request, *supra* note 27.

55. *Id*.

56. Old Cutler Bay Associates Guidance, *supra* note 29.

57. Twisted Oaks Joint Venture Elevation, Director of Civil Works Patrick J. Kelly (Mar. 15, 1991).

58. *Id*.

59. *Id*.

60. 40 C.F.R. § 230.10 (a)(2); Attleboro Mall Final Determination, Department of the Army Assistant Administrator for External Affairs Jennifer Joy Wilson, (May 13, 1986); *Bersani v. Robichaud*, *850 F.2d 36, supra* note 49 at 44; Two Forks Final Determination, *supra* note 45.

61. RGL 93-02, Guidance on Flexibility, *supra* note 13.

62. 40 C.F.R. § 230.10(a).

63. *Id*. § 230.10(a)(3).

64. *Id.* § 230.10(a).

65. *Id.* § 230.10(a)(2).

66. *Id*. § 230.10(a)(3); *see* Tennessee DOT Guidance, Director of Civil Works Major General Arthur Williams (July 16, 1992).

67. Hartz Mountain Elevation Request, EPA Acting Administrator for Water Rebecca Hanmer (Apr. 25, 1989), Sears Island Elevation Request, EPA Acting Assistant Administrator for Water Rebecca Hanmer (Apr. 8, 1988).

68. Petro Star/Port Valdez Elevation, *supra* note 30.

69. Petro Star/Port Valdez Guidance, *supra* note 30.

70. Churchill Downs Army Response to U.S. FWS, Acting Assistant Secretary of the Army Edward Dickey (Apr. 14, 1993).

71. *Id*.

72. Sears Island Army Response, Assistant Secretary of the Army Robert Page (Apr. 27, 1988).

73. 40 C.F.R. § 230.10(a)(2).

74. *Bersani v. USEPA*, 674 F. Supp 405, *supra* note 49 (The court affirmed EPA's reliance on the Section 404(b)(1) Guidelines to arrive at the veto decision, supporting the agency's assertion that a determination that the losses were avoidable under the Guidelines necessarily gives EPA the authority to veto a decision under Section 404(c)); Final Determination Concerning the Sweedens Swamp Site, *supra* note 48.

75. Attleboro Mall Final Determination, *supra* note 60.

76. *Bersani v. USEPA*, 674 F. Supp 405, *supra* note 49; Final Determination Concerning the Sweedens Swamp, *supra* note 48.

77. *Bersani v. EPA,* 850 F.2d 36, *supra* note 49.

78. *Bersani v. EPA,* 850 F.2d 36, *supra* note 49; *Bersani v. USEPA*, 674 F. Supp 405, *supra* note 46; Final Determination Concerning the Sweedens Swamp Site, *supra* note 48.

79. 40 C.F.R. § 230.10(a)(2).

80. Churchill Downs Elevation Request, Acting Assistant Secretary for Fish and Wildlife Joseph E. Doddridge (Mar. 15, 1993).

81. Churchill Downs Response to the FWS, *supra* note 70.

82. Tennessee DOT Army Response, Assistant Secretary of the Army Nancy P. Dorn (Dec. 19, 1991); *see also* Churchill Downs Response, *supra* note 70.

83. Tennessee DOT Army Response, *supra* note 82.

84. 40 C.F.R § 230.10(a)(2).

85. *Id.*

86. Fed. Reg. 85339, *supra* note 13 at Preamble.

87. *Id.*

88. RGL 93-02 Guidance on Flexibility, *supra* note 13.

89. RGL 93-02 Guidance on Flexibility, *supra* note 13 at 3(b).

90. 40 C.F.R. § 320.74.

91. *Id.*

92. *Id*. § 230.10(a)(2).

93. RGL 93-02 Guidance on Flexibility, *supra* note 13 at 3(a)(iii – v); Bersani, *supra* note 49.

94. 40 C.F.R. §§ 230.10(c), 230.12(a)(ii).

95. 1990 Mitigation MOA, *supra* note 6 at footnote 6.

96. *Id.* at II. C. 2.

97. RGL 93-02 Guidance on Flexibility, *supra* note 13 at 3.

98. 40 C.F.R. § 230.10(d).

99. *Id*. § 230.70-77.

100. *Id*.

III. Comprehensive Planning Process

Comprehensive planning efforts can be effective mechanisms to achieve aquatic resource mitigation on a programmatic basis. As noted in the 1990 MOA between the Department of the Army and the EPA:

> "This [mitigation] sequence is considered satisfied where the proposed mitigation is in accordance with specific provisions of a Corps and EPA approved comprehensive plan that ensures compliance with the compensation requirements of the Section 404(b)(1) Guidelines (examples of such comprehensive plans may include Special Area Management Plans, Advanced Identification areas (Section 230.80) and State Coastal Zone Management Plans)."[1]

Thus, the MOA allows that with appropriate compensatory mitigation, "comprehensive plans" such as Advanced Identification of Disposal Areas (ADIDs), Coastal Zone Management Plans, and special area management plans (SAMPs) may obviate the requirement for sequencing, provided that they are approved by the Corps and EPA.[2] While the opportunity to forgo sequencing may appeal to developers, and may make sense ecologically where the plan is truly "comprehensive," this raises the stakes over the consideration and adoption of SAMPs and similar plans.[3]

1. Advanced Identification of Disposal Areas

Advance identification of disposal areas is a planning process used to identify wetlands and other waters that are generally suitable or unsuitable for the discharge of dredged and fill material. The ADID process was established by the § 404(b)(1) Guidelines.[4] The process may be initiated by EPA, another regulatory authority, or at the request of another party, in consultation with the state.[5]

The ADID process involves collecting information on the values and functions of wetlands in a specific, predefined area. EPA conducts the process in consultation with States or Tribes. Although an ADID study generally classifies wetland areas as suitable or unsuitable for the discharge of dredged or fill material, the classification does not constitute either a permit approval or denial. ADIDs may, however, be used as a guide by community planners, landowners, and project proponents in planning future activities. They may also provide possible permittees with a preliminary indication of the factors likely to be considered during review of future § 404 permit applications.

Because the ADID process brings to light the specific functions and values of an area's aquatic resources, it may yield valuable information to permittees and regulatory agencies that can be put to use in the sequencing steps. The ADID process is intended to add predictability to wetlands permitting as well as to better account for the impacts of losses from multiple projects within a geographic area.

In the early to mid-1990s, ADIDs were a popular means for gathering information on the location and functions of areas in specific geographic regions. In February 1993, 38 ADID projects had been completed and 33 were ongoing. The projects ranged in size from less than 100 acres to more than 4,000 square miles and were located across the country.[6]

ADID projects have often been initiated by local entities to facilitate planning efforts. One of the best known examples of ADID and its ability to build local support for wetland protection is the plan that emerged from a process in West Eugene, Oregon. In West Eugene, local entities embarked on an ADID process, which led to the adoption of a § 404 general permit. The ADID was subsequently incorporated into the City of Eugene's general comprehensive plan, and as a result, has had a significant effect on local land-use planning.

Because of their resource-intensive nature, however, few ADIDs have been initiated since the mid-1990s.

2. State Coastal Zone Management Plans

The development of SAMPs under the Coastal Zone Management Act (CZMA)[7] is another means of identifying areas as suitable or unsuitable for issuance of a discharge permit before a permit application is filed. The CZMA, enacted in 1972 to protect the United State's coastal zone, gives coastal states authority to develop programs regarding activities in the coastal zone. It requires federal actions, including the issuance of permits under § 404 of the Clean Water Act, to be consistent with the states' programs. Applicants for federal permits to conduct development activities in the coastal zone must furnish a certification that the proposed development activity is consis-

tent with that state's coastal zone management program.[8] The program is administered through the Office of Coastal Resource Management in the National Oceanic and Atmospheric Administration's National Ocean Service.

Under the CZMA, the "coastal zone" is defined as the "coastal waters and the adjacent shorelands," including wetlands areas.[9] This zone extends seaward to the outer limit of the United States territorial sea and inland from the shorelines "only to the extent necessary to control shorelands, the uses of which have a direct and significant impact on the coastal waters."[10]

In 1980, the CZMA was amended to provide an express procedure for developing special area management plans. A SAMP is:

> A comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas with the coastal zone.[11]

The purpose of a SAMP is to protect the coastal environment while still allowing for economic uses.[12] To date, a number of SAMPs have been developed in coastal states with the involvement of federal, state, and local governments and the public. Unlike ADIDs or other nonbinding reconnaissance efforts, SAMPs have formal legal status and can serve as the basis for state coastal wetland permit decisions. Since they are part of a state's coastal zone management program, SAMPs also provide states with a mechanism for reviewing the issuance of § 404 permits through the consistency review process under § 307 of the CZMA.[13]

The Corps has been involved with SAMPs through its participation in the CZMA planning process. In addition, the Corps also has adopted the SAMP procedure for areas which extend beyond the coastal zones.[14] The Corps applies four criteria before participating in a SAMP. First, the area in question must be environmentally sensitive and under strong development pressure. Second, the public must be involved in the process. Third, a sponsoring local agency must participate to ensure that local concerns are addressed. Fourth, all parties must agree to an end result which includes definitive regulatory guidance documents.

Generally, SAMPs cover relatively small geographic areas, and often are developed in conjunction with an ADID or a Section 404 general permit. EPA and the Corps have agreed, in Section IIC of their MOA, that sequencing does not apply to wetland development activities where an EPA and Corps approved SAMP fully considers and plans for wetland conservation. The SAMP is regarded as a functional equivalent or substitute for sequencing.[15]

Notes

1. Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (Feb. 6, 1990).

2. Environmental Law Institute, *Wetland Mitigation Banking*, 129, (Environmental Law Institute, 1993).

3. *Id*.

4. 40 C.F.R. § 230.80.

5. *Id.* § 230.80(a).

6. U.S. EPA, Wetlands, "Advanced Identification (ADIDs)," at http://www.epa.gov/owow/wetlands/facts/fact28.html (last visited September 25, 2007).

7. 16 U.S.C. §§ 1451-1464.

8. *Id*.

9. *Id.* § 1453(1).

10. *Id.*

11. *Id.* § 1453(17).

12. *Id.*

13. Environmental Law Institute, *supra*, note 2.

14. RGL 86-10, Special Area Management Plans (Oct. 2, 1986 – Dec. 31, 1998, Department of the Army and Environmental Protection Agency).

15. 1990 Mitigation MOA, *supra* note 1.

IV. Summary of Federal Avoidance and Minimization Policy

Three aspects of the avoidance and minimization provisions have been particularly controversial: (1) the requirement to reject a permit if there is a less-damaging practicable alterative; (2) the requirement that the purpose of the project be appropriately defined to allow for an appropriate analysis; and (3) the responsibility of the Corps to ensure that these analyses are done thoroughly and in good faith.

Federal regulations, guidance, and administrative and judicial precedent all combine to establish the current state of federal policy on avoidance and minimization procedures under § 404. The Department of the Army, EPA, and the courts have consistently interpreted the regulations to require the use of sequencing in determining mitigation for dredge and fill permit applications that may impact wetlands and other aquatic resources. Adherence to the Guidelines requires that: (1) the project purpose be defined by the basic function of the proposal; (2) alternative sites be analyzed; (3) the presence of a less environmentally damaging practicable alternative results in the denial of the permit; (4) impacts from the least damaging practicable alternative must be minimized; and (5) the Corps is required to ensure the analysis is conducted thoroughly.

V. U.S. Army Corps of Engineers District Avoidance, Minimization, and Alternatives Analysis Guidance

The U.S. Army Corps of Engineers' 38 district offices play the lead role in issuing permits for the discharge of dredged or fill material into waters of the U.S. under § 404 of the Clean Water Act. The Corps Districts are responsible for ensuring that proposed projects represent the least environmentally damaging practicable alternative. Although federal law, regulations, and guidance—detailed in previous sections of this report—provide the Districts with direction on how to ensure that avoidance and minimization requirements are met, nearly all of the Districts provide additional resources, guidelines, and information online to help permit applicants understand and comply with the § 404(b)(1) Guidelines and the sequencing provisions of the 1990 Mitigation MOA.[1] District public information materials are summarized in Appendix A. The avoidance and minimization guidance the Districts provide to the public can be divided into three categories: general resources related to the permitting process, avoidance and minimization guidance within general mitigation guidelines, and resources specifically addressing alternatives analysis and mitigation sequencing.

A. Permitting Process Information

Applicants can use many different tools to learn about the permitting process and avoidance and minimization requirements. One source of information is Corps Districts websites, where many post information including permitting overviews, checklists, answers to frequently asked questions, or other online resources to help prospective applicants understand the permitting process. In these documents, 17 Districts provide some statement or explanation of the need to assess project alternatives during the permit review process.[2] Eleven of these seventeen Districts include standard language stating that "where unresolved conflicts of resource use exist, the practicability of using reasonable alternative locations and methods to accomplish project purposes" is one of the factors that will be assessed during the permit application review.[3] The remaining six Districts express the same concept in their own words.[4] Going beyond vague descriptions of the alternatives analysis and the avoidance and minimization requirements, six Districts require permit applicants to provide specific information about their alternatives analysis through prompts in their permit applications, or by requiring applicants to submit supplemental application materials or fill out application checklists. The District instructions for inclusion of information related to avoidance and minimization during the permit application process are detailed in Appendix B.[5]

The Norfolk District is unique in providing a fact sheet about General Permits that states which agency (state or federal) will review avoidance, minimization, and compensatory mitigation for each category of General Permit. The fact sheet does not provide any additional information about the criteria used in this review.

B. Avoidance & Minimization in General Mitigation Guidance

Twenty-four Districts provide information about alternatives analysis and/or avoidance and minimization in general mitigation guidelines, guidance, or standard operating procedures. Of these 24 Districts, 11 state that the permit applicant has the responsibility for conducting the alternatives analysis or for describing avoidance and minimization measures.[6] These Districts generally direct prospective permittees to describe their alternatives analysis and/or their avoidance and minimization efforts in their permit application or in their preliminary mitigation plan. The discussion of mitigation sequencing in these Districts' guidelines varies from just a few lines[7] to a lengthy discussion of the § 404(b)(1) guidelines and their implications.[8] For example, joint guidance issued by the San Francisco and Sacramento Districts merely states, "After the applicant has demonstrated maximum avoidance and minimization of project impacts to waters of the U.S., Corps Districts will likely require compensatory mitigation for the remaining unavoidable impacts."[9] At the other end of the spectrum, the Los Angeles District's final mitigation guidelines and monitoring requirements contain several lengthy references to alternatives analysis, avoidance and minimization. Specifically, the policy sections of the document's introduction contain relatively detailed explanations of § 404(b)(1) requirements:

Corps District Avoidance and Minimization Resources

Districts	Avoid & min info	Avoid & min in permit process info	Require specific alternatives submission	Avoid & min in mitigation info	Detailed avoid & min info
Alaska	✓	✓	—	—	—
Albuquerque	✓	✓	✓	✓	✓
Baltimore	✓	—	—	✓	✓
Buffalo	✓	✓	—	—	—
Charleston	✓	—	—	✓	—
Chicago	✓	✓	✓	—	—
Detroit	✓	—	—	✓	—
Fort Worth	✓	—	—	✓	—
Galveston	✓	—	—	—	—
Honolulu	✓	✓	—	✓	—
Huntington	✓	—	—	—	✓
Jacksonville	✓	✓	—	—	—
Kansas City	✓	✓	—	—	—
Little Rock	✓	—	—	✓	—
Los Angeles	✓	—	—	✓	—
Louisville	✓	✓	—	—	—
Memphis	✓	—	—	✓	—
Mobile	✓	—	—	✓	—
Nashville	✓	—	—	✓	—
New England	✓	—	—	✓	—
New Orleans	✓	✓	✓	✓	—
New York	✓	—	✓	—	—
Norfolk	✓	—	✓	—	✓
Omaha	✓	—	—	✓	—
Philadelphia	✓	—	—	✓	—
Pittsburgh	—	—	—	—	—
Portland	✓	—	—	✓	—
Rock Island	✓	—	—	✓	—
Sacramento	✓	✓	—	✓	✓
San Francisco	✓	—	—	✓	✓
Savannah	✓	—	—	✓	—
Seattle	✓	✓	—	—	✓
St. Louis	✓	✓	—	✓	—
St. Paul	✓	✓	✓	—	—
Tulsa	✓	✓	—	✓	✓
Vicksburg	✓	✓	—	✓	—
Walla Walla	✓	✓	—	✓	—
Wilmington	✓	✓	—	—	—

MITIGATION POLICY

The Corps and the EPA formulated policy and procedures to be used in determining the mitigation necessary to demonstrate compliance with the Clean Water Act Section 404(b)(1) Guidelines (40 CFR 230) (the Section 404(b)(1) Guidelines). This information is set forth in the "Memorandum of Agreement (MOA) Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines," dated February 7, 1990 (the Mitigation MOA).

The Section 404(b)(1) Guidelines limit the issuance of a permit to the activity or project design representing the least environmentally damaging practicable alternative (LEDPA) that is not contrary to the public interest. More specifically, the Section 404(b)(1) Guidelines state that no discharge of dredged or fill material shall be permitted if there is a practicable alternative available to the proposed discharge that would have less adverse impact on the aquatic ecosystem, if the alternative does not have other significant adverse environmental consequences. Practicability is defined in terms of cost, logistics, and existing technology in light of the overall project purpose. The burden to demonstrate compliance with the Section 404(b)(1) Guidelines rests with the permit applicant. For non-water dependent discharges into special aquatic sites, there is a presumption that less environmentally damaging practicable alternatives are available. If the applicant has complied with the Guidelines by first evaluating alternatives that would avoid impacts, and then taken appropriate and practicable steps to minimize adverse impacts to the maximum extent practicable, then compensatory mitigation is required for the unavoidable impacts.

Even in cases where a Corps-notifying General Permit (Nationwide Permit or Regional General Permit pursuant to 33 CFR 330) applies, the applicant will have to demonstrate avoidance and minimization of aquatic resource impacts. Granted, the demonstration required is typically less rigorous than for a Standard Permit. Nevertheless, if an applicant is required to notify the Corps regarding authorization under an existing General Permit, it is likely that the Corps Los Angeles District's verification letter/notice to proceed will require compensatory mitigation. Clearly, the sequence of avoidance, minimization, and compensatory mitigation specified by the Section 404(b)(1) Guidelines and the Mitigation MOA is fundamental to the administration of the Corps' regulatory program.

CORPS POLICY

As stated in the Mitigation MOA, the goal of the Clean Water Act and the Section 404(b)(1) Guidelines is to maintain and to restore the physical, chemical, and biological integrity of the Nation's waters. The Corps strives to avoid or minimize adverse impacts to waters of the U.S., and to achieve a goal of no net loss of wetland functions and values.[10]

The Los Angeles District also makes special mention of alternatives analysis and avoidance in its discussion of projects occurring around lakes, ponds and vernal pools:

> Because wetlands are common along lakes and ponds, many proposed impacts to lake/pond habitat will be evaluated under the Corps' Standard Permit procedures, which will involve an analysis of alternatives pursuant to the 404(b)(1) Guidelines. In those cases where wetland habitat would be impacted by a non-water dependent activity (e.g., housing), the applicant is required to rebut the presumption that there is a less damaging, practicable alternative that does not impact wetlands or other special aquatic sites.[11]
>
> Proposed impacts to natural, seasonal ponds and lakes within the Los Angeles District is discouraged because there are so few remaining. As an example, within Orange County, there may be only three natural lakes remaining within the entire county. Preservation of these few remaining systems is a priority of the District, and proposed impacts to them would likely require Standard Permit review. The requirements to rebut the presumption that there is a less damaging practicable alternative will likely be more

stringent in the case of proposed impacts to natural ponds and lakes.[12]

The Los Angeles District of the Corps has proposed a regional condition that would require an applicant to obtain a Standard Permit for any impact to a jurisdictional vernal pool. Because jurisdictional vernal pools are considered wetlands, the Standard Permit requirement would require an applicant proposing an activity that is not water-dependent (e.g., housing) to rebut the presumption that a less environmentally damaging, practicable alternative is available to the proposed project. The increased sensitivity of vernal pools will make this requirement more difficult to satisfy in the near future. As a result, the Los Angeles District of the Corps is stressing total avoidance in order to protect the remaining jurisdictional vernal pools.[13]

Fourteen Districts do not provide information about avoidance and minimization or alternatives analysis in mitigation guidelines or checklists online. Two of these Districts have mitigation guidelines and/or checklists that do not mention alternatives analysis or avoidance and minimization available on their web sites.[14] The other 12 Districts do not have mitigation guidelines or similar documents available on their web sites at all, in any form.[15]

Three Districts discuss avoidance and minimization requirements in their guidelines for mitigation banking, either to establish that permit applicants must demonstrate compliance with the mitigation sequencing process before using a mitigation bank[16] or as part of a larger discussion of mitigation policy.[17] Similarly, the New Orleans District provides a brief description of mitigation sequencing and the § 404(b)(1) guidelines on its compensatory mitigation web page and the Fort Worth District describes the mitigation sequence from the 1990 Mitigation MOA on its mitigation web page.

C. Information Specific to Alternatives Analysis or Mitigation Sequencing

Eight Districts provide specific information or guidance related to alternatives analysis or avoidance and minimization. The Baltimore and Sacramento Districts each offer flowcharts of the permitting process that help permit applicants understand how alternatives analysis and avoidance and minimization fit into the overall permitting process.[18] Going into greater detail, the San Francisco District is the only District that has a web page dedicated to explaining mitigation sequencing in more depth.[19] In addition, the Tulsa District includes a lengthy description of mitigation sequencing on its general mitigation web page.[20] Each of these web pages is based on the § 404(b)(1) Guidelines, with the San Francisco page quoting relevant sections of the guidelines and the Tulsa page referencing the guidelines more generally. The Tulsa page also gives some examples of avoidance and minimization:

Avoidance Mitigation

Avoidance mitigation best occurs in the planning and design stages of a project by configuring the site layout to avoid impacting an aquatic area or areas or by not implementing certain parts of an action. Project proponents should configure the proposed development or facility around natural flood plains and aquatic resources by incorporating open space, green space, natural areas, and buffers into the site plan. For linear projects such as utility lines and transportation facilities, alternative alignments should be vigorously investigated to eliminate wetland and other aquatic resource impacts.

The Section 404(b)(1) Guidelines are the substantive criteria used in evaluating proposed construction requiring a Clean Water Act Section 404 permit. These Guidelines support the selection of the least environmentally damaging practicable alternative in all cases. Where an action is proposed in a Special Aquatic Site (wetland, stream riffle and pool complex, mudflat, vegetated shallows, coral reefs, and sanctuaries and refuges) the Guidelines establish a rebuttable presumption that alternatives to construction in Special Aquatic Sites are less damaging to the aquatic environment and are environmentally preferable. In addition, where the proposed action is non-water dependent, practicable alternatives that do not involve Special Aquatic Sites are presumed to be available unless demonstrated otherwise. A non-water dependent activity does not require access or proximity to, or positioning within an aquatic area to fulfill its basic purpose (e.g. a

marina is water dependent; a restaurant is non-water dependent).

Minimization Mitigation

Minimization mitigation should occur during the planning and design stages as well as during construction or implementation stages of a project. Project proponents should consider ways in which minimization of aquatic resource impacts could occur through limiting the degree or magnitude of the action and its implementation, and by effectively rectifying temporary impacts by repairing, rehabilitating, or restoring the affected environment to pre-construction or pre- disturbance conditions. Minimization of impacts could also occur through the designing or programming of operation or maintenance activities to eliminate or reduce impacts over the life of the project or operation. For linear projects such as utility lines and transportation facilities, alternative alignments should be vigorously investigated to reduce the number and length of wetland, stream, and river crossings, with particular sensitivity to multiple crossings of the same stream or wetland. Proper consideration of avoidance and minimization should result in the selection of the least environmentally damaging practicable alternative as required by the Section 404(b)(1) Guidelines. [21]

Two Districts, Albuquerque and Seattle, have published stand-alone documents that describe in detail how applicants should undertake alternatives analysis and the specific factors that must be provided to the Corps. The Albuquerque District's standards for submittal of a § 404(b)(1) alternatives analysis specify five general categories of information that must be considered: project purpose and need, project alternatives, practicability of alternatives, environmental impact of alternatives, and mitigation required for remaining adverse impacts. More specifically, the District directs that assessment of project alternatives should consider those with "smaller and larger areal coverage," those "sited in different locations," and those that "would have alternative phase-in times for different features of a project." Practicability is assessed based on costs, existing technology, and logistics, "in light of overall purpose." Assessment criteria are not specified for the other three categories of information.[22]

The Seattle District's Alternative Analysis Guidance contains similar provisions to the Albuquerque District's guidance. The Seattle District emphasizes the need to clearly identify the project's purpose in order to be able to evaluate potential alternatives. Alternatives "should include both offsite and onsite alternatives which are available and capable of meeting the project purpose." Offsite alternatives must be evaluated in light of the geographic scope of the project's market analysis. To obtain permit approval, the Seattle District recommends that both onsite and offsite alternatives be assessed based on cost, logistics, existing technology, and impacts, in order to demonstrate that the preferred alternative is the least environmentally damaging practicable alternative.[23]

Two Districts have created more unique resources related to alternatives analysis. The Huntington District provides slides from a PowerPoint presentation about alternatives analysis.[24] The presentation appears to be intended to help the regulated community understand the requirements of the § 404(b)(1) Guidelines and to provide detailed instructions on how to comply with the guidelines. The presentation lists a wide range of factors that must be considered during the alternative analysis. First, permittees are directed to include detailed factual determinations regarding the aquatic system that the proposed project would impact.[25] Project proponents must then clearly define the project's purposes (basic purpose and overall purpose),[26] and consider a range of alternatives at a level of detail "commensurate with the level of impacts associated with the proposal."[27] The alternatives should include those with different aerial and surface area coverages and those in different locations. Each alternative should also "indicate how impacts to aquatic resources have been avoided or minimized to the maximum extent practicable."[28] The practicability of alternatives is assessed with regard to technical and logistical factors (i.e. access, transportation needs, utilities and infrastructure constraints, topography, and available construction techniques), and considers the level of impact both to the aquatic ecosystem and to the overall environment.[29] The final assessment should also include a rationale for why the proposal is the least environmentally damaging alternative and a

consideration of the effects of the project not being undertaken (a no action alternative).

The Norfolk District has developed a set of spreadsheets that guide permit applicants through a detailed economic analysis of project alternatives. The spreadsheets are designed to facilitate the careful consideration of cost, logistics, and existing technology for possible project alternatives on "those occasions when [the Norfolk District regulatory staff] believe there are practicable alternatives to avoid and minimize impacts to waters and wetlands and an applicant voices concern over the effects of those changes on the economic viability of their project."[30] The District reports that these spreadsheets are used only on a case-by-case basis.[31]

It is important to note that in all of these documents, the Corps Districts are providing additional explanations and information about requirements under existing national-level regulations and guidance, rather than providing new regulations. Much of the information provided by the Corps Districts uses consistent, standard language to describe permittees' obligations under the federal § 404(b)(1) Guidelines and the 1990 Mitigation MOA, and only a few Districts have gone beyond these policies to offer additional information that is specific to the District. For example, the Los Angeles District uses standard language to describe the existing Corps policies, but also informs permit applicants that the District takes a special interest in preserving rare aquatic resources, such as vernal pools and seasonal lakes or ponds. As a result, the Los Angeles District makes clear to prospective permittees that application of the alternatives analysis is more stringent for proposed activities that would impact these resources.

D. Potential Model Documents

In the context of assessing how the Corps Districts describe their approach to alternatives analysis and mitigation sequencing, the most useful documents are the guidance documents prepared by the Albuquerque, Huntington, and Seattle Districts to help applicants complete their alternatives analysis, and the instructions for permittees provided by the Albuquerque, Chicago, New Orleans, New York, Norfolk, and St. Paul Districts that direct permit applicants to describe their alternatives analysis and how impacts have been avoided and minimized. These nine documents provide the most thorough explanation of the types of information that the Corps Districts are using to assess projects under the § 404(b)(1) Guidelines, and would be a logical starting point for any effort to standardize the methods used by various Districts to comply with the § 404(b)(1) Guidelines. In addition, the spreadsheets created by the Norfolk District could provide a useful starting point for standardizing the determination of practicability based on an economic analysis of project costs, logistics, and feasibility using existing technology.

Notes

1. Only one district, Pittsburgh, does not appear to provide any information online about alternatives analysis or mitigation sequencing.

2. The 17 districts that describe or reference alternatives analysis or avoidance and minimization include: Alaska, Albuquerque, Buffalo, Chicago, Honolulu, Jacksonville, Kansas City, Louisville, New Orleans, Sacramento, Seattle, St. Louis, St. Paul, Tulsa, Vicksburg, Walla Walla, and Wilmington.

3. The 11 districts that use standard language to describe the alternatives analysis requirement include: Alaska, Albuquerque, Honolulu, Jacksonville, Kansas City, Louisville, New Orleans, Sacramento, Seattle, St. Louis, and Vicksburg; *see, e.g.* the Alaska District.

4. The six districts that describe alternatives analysis or avoidance and minimization requirements in their own terms include: Buffalo, Chicago, St. Paul, Tulsa, Walla Walla, and Wilmington.

5. The six districts that require specific alternatives analysis information in the permit application forms or supplemental materials include: Albuquerque, Chicago, New Orleans, New York, Norfolk, and St. Paul.

6. Albuquerque, Baltimore, Fort Worth, Los Angeles, Memphis, Portland, Sacramento, San Francisco, Savannah, St. Louis, and Walla Walla.

7. *See,* e.g., San Francisco and Sacramento Districts.

8. *See,* e.g., the Los Angeles District.

9. Sacramento and San Francisco Districts, U.S. Army Corps of Engineers. "Mitigation and Monitoring Proposal Guidelines." December 30, 2004. http://www.spk.usace.army.mil//organizations/cespk- co/regulatory/pdf/Mitigation_Monitoring_Guidelines.pdf, § Overview.

10. Los Angeles District, U.S. Army Corps of Engineers. "Final Mitigation Guidelines and Monitoring Requirements." April 29, 2004. http://www.spl.usace.army.mil/regulatory/mmg_2004.pdf, §§ I.B, C.

11. *Id.* at Appendix A, § A.2.

12. *Id.*

13. *Id.* at Appendix A, § A.3.

14. Norfolk and Wilmington Districts.

15. Districts that do not provide mitigation guidelines or similar documents on their web sites include: Alaska, Buffalo, Chicago, Galveston, Huntington, Jacksonville, Kansas City, Louisville, New York, Pittsburgh, Seattle, and St. Paul.

16. Galveston and Savannah Districts.

17. Portland District.

18. Interagency Mitigation Task Force. "Maryland Compensatory Mitigation Guidelines." August 1994. http://www.nab.usace.army.mil/Regulatory/Mitigation/MDCompensatoryMitigationGuidance.pdf, Ch.1, § 3; Ch. 2, § 3; *and* Sacramento District, U.S. Army Corps of Engineers. "Permit Review Process." http://www.spk.usace.army.mil//organizations/cespk-co/regulatory/pdf/Permit_Review_Process.pdf.

19. http://www.spn.usace.army.mil/regulatory/amc.htm.

20. http://www.swt.usace.army.mil/permits/Mitigation.cfm.

21. http://www.swt.usace.army.mil/permits/Mitigation.cfm.

22. Albuquerque District, U.S. Army Corps of Engineers. "Expedited Standard Individual Permit Processing Pilot Program." http://www.spa.usace.army.mil/reg/Special%20Public%20Notice/XIP.doc, Attachment 1: Standards for Submittal of a Section 404(b)(1) Alternatives Analysis.

23. Seattle District, U.S. Army Corps of Engineers. "Alternative Analysis Guidance." October 23, 2003. http://www.nws.usace.army.mil/publicmenu/DOCUMENTS/REG/AltGuidance.pdf.

24. Hatten, Mike. Huntington District, U.S. Army Corps of Engineers. "Section 404 of the Clean Water Act Alternative Analysis." http://www.lrh.usace.army.mil/_kd/go.cfm?destination=ShowItem&Item_ID=9855.

25. *Id.* slide 14.

26. *Id.* slides 17-19.

27. *Id.* slide 20.

28. *Id.*

29. *Id.* slide 21.

30. Norfolk District, U.S. Army Corps of Engineers. "Public Notice: Financial Analysis." June 21, 2006. This public notice and the associated spreadsheets are no longer available online but are on file with the authors.

31. Steve Martin, Norfolk District U.S. Army Corps of Engineers. Personal Communication. 15 February 2007.

VI. Conclusion

Avoidance and minimization are critical requirements of the CWA § 404 permitting process. The application of the underlying presumptions and standards results in permitting decisions that support national wetland protection goals.

Appendix A
Corps Districts' Online Public Information

Summary of documents available online from each Corps District that are related to alternatives analysis and/or mitigation sequencing

Alaska

In the Alaska District's Regulatory Program Overview,[1] the District describes the pre- application consultation as, in part, a forum to discuss "the viability of some of the more obvious alternatives available to accomplish the project purpose, [and] to discuss measures for reducing the impacts of the project…." The web page also states that "the practicability of using reasonable alternative locations and methods to accomplish project purposes" is one of the general criteria used in evaluating projects.

Albuquerque

The Albuquerque District provides an application information brochure includes standard language about using the pre-application consultation to discuss alternatives and about using the practicability of alternatives as a general evaluation criteria, according to the § 404(b)(1) Guidelines.[2] The District's permit application checklist includes the following items related to alternatives analysis:

- Alternatives Analysis for the proposed project design and location
  - Describe and discuss other alternatives considered that would avoid and minimize impacts, and satisfy the project purpose and need.
  - Discuss why those alternatives were rejected.
  - Discuss why the chosen plan is the least damaging alternative to the environment.[3]

According to the Albuquerque District's website, the District tested an expedited, standard individual permitting process from September 30, 2005 to September 30, 2006. The guidance for submitting permit applications under the expedited process includes an attachment with a detailed description of the components that should be present in the applicant's alternatives analysis.[4] The guidance includes detailed explanations of the need for an alternatives analysis, the types of alternatives that must be considered, and the factors that are considered in assessing practicability of the alternatives. This is one of the most detailed descriptions of alternatives analysis that has been prepared by a district.

The Albuquerque District's Mitigation and Monitoring Guidelines also discuss alternatives analysis, avoidance and minimization. The guidelines state:

> The Section 404(b)(1) Guidelines limit the issuance of a permit to the least environmentally damaging, practicable alternative that is not contrary to the public interest. In other words, no discharge of fill material will be permitted if there is a practicable alternative that would have less adverse impact on the aquatic ecosystem, if the alternative does not have other significant adverse environmental consequences, and is practicable in light of cost, logistics, and existing technology. For individual permit applications, the applicant should include an alternatives analysis with the permit application that clearly documents compliance with the Guidelines, i.e., first evaluating alternatives that avoid impacts; then taking appropriate and practicable steps to minimize adverse impacts to the maximum extent practicable; and, finally, proposing compensatory mitigation for unavoidable impacts.[5]

In addition, avoidance and minimization are mentioned throughout the guidelines, especially in the preamble and purpose sections that give background information about the 404 permitting program and Corps policy.[6]

Baltimore

The Baltimore District's Final Mitigation and Monitoring Guidelines from November 2004 are primarily directed at compensatory mitigation, but include a few references to avoidance and minimization. In explaining the purpose of the guidelines, the District states "[i]t is important to note that the first element of mitigation is avoidance and minimization of impacts, and all mitigation proposals are evaluated on a case-by-case basis during review of permit applications in accordance with all relevant laws, regulations, and guidance."[7] Later, in its discussion of preliminary mitigation plans, the District states that "[a] preliminary mitigation plan should generally include a discussion of how on-site impacts to aquatic resources were avoided and minimized and how the proposed compensatory mitigation will appropriately compensate for the remaining unavoidable impacts."[8]

The District's website also has Maryland Compensatory Mitigation Guidance from 1994. This guidance is principally directed at compensatory mitigation, but it does include a flowchart of the mitigation process that lists avoidance and minimization as steps in considering both project site location alternatives and project design alternatives.[9]

Buffalo

The Buffalo District has an online brochure titled "Understanding the U.S. Army Corps of Engineers Regulatory Program." The brochure states that to expedite the permit process, the applicant may request a pre-application meeting with a Corps project manager who "will listen to your ideas and discuss alternatives which may be incorporated into your permit application."[10] The brochure also discusses the idea of an alternatives analysis saying:

> An alternative analysis involves considering other practicable ways to do the project which will reduce environmental impacts. Examples of alternatives may include using a different location, different alignment of structures, and/or the use of different construction techniques. Under the USEPA 404(b)(1) Guidelines (40 CFR 230), the water dependent nature of the proposed project is an important factor. If the proposed project is not a marina or another type of project which needs to be located in the waterway or wetland to fulfill its primary purpose, alternatives are presumed to exist. For example, parking lots, houses and shopping centers do not need to be located in waters or wetlands to fulfill their primary purpose. Therefore, if you are proposing a new project, you need to consider the water-dependent nature of the proposal.[11]

Charleston

The Charleston District has published Standard Operating Procedures for Compensatory Mitigation, which state that:

> Types of mitigation other than compensation (e.g., avoidance, minimization, reduction) are not addressed by this SOP. This SOP does not obviate or modify any requirements given in the 404(b)(1) Guidelines or other applicable documents regarding avoidance, sequencing, minimization, etc. Such requirements shall be evaluated during consideration of permit applications.[12]

Chicago

The Chicago District has an online Regulatory Program Overview that outlines the permitting and mitigation processes. The District writes that:

> The pre-application process is designed to provide the applicant with the Chicago District's assessment of potential alternatives available to accomplish the project purpose, to discuss measures for reducing the adverse impacts of the project, and to advise him of the factors the Corps must consider in its decision making process.[13]

The overview goes on to say that:

> In order to receive a permit from the Corps to discharge dredged or fill material into wetlands, applicants must demonstrate that they have avoided wetlands to the extent practicable, and have minimized the adverse effects of the project to the extent practicable. These conditions, known as the Section 404(b)(1) Guidelines, are central to the Corps decision making process. Compensation is generally required for most impacts which are not avoided or minimized.[14]

Finally, in describing compensatory mitigation, the District states that:

> Wetland mitigation is only considered as an option after the Corps has determined that the applicant has avoided impacts to jurisdictional areas to the extent practicable, and has minimized unavoidable impacts to such areas. [15]

The District also has a permit application checklist that provides a description of what applicants should include in their alternatives analysis:

Alternatives analysis

Avoidance and minimization of impacts must be accomplished before considering compensatory mitigation for wetlands or other waters of the United States.

- **Individual permit authorizations under Section 404 of the Clean Water Act require evaluation of an alternatives analysis.** See page 3 for other application requirements for individual permit processing.
- This material is not required for the issuance of a Public Notice but is required to fully assess the project for compliance under the Section 404(b)(1) Guidelines (40 CFR Part 230). It would be advantageous to submit this information with the permit application to facilitate accurate description of your project in the public notice.
- Provide selection criteria used in determining the feasibility of the chosen project site.
- Provide a list of alternatives rejected and reasons including application of criteria to the proposed site.
- Provide sufficient information (i.e. location map, site descriptions) for comparison of selected site with other apparent alternative sites.
- Statement of reason that impact has been minimized to the smallest impact possible, and other designs considered.
- Statement of why avoidance is not possible.
- Alternative analyses are not required for projects that meet the RPP or existing nationwide permit conditions with minimal adverse environmental impacts.[16]

Detroit

In November 2006, the Detroit District released Mitigation Guidelines and Requirements. Although these guidelines focus on compensatory mitigation, the introduction mentions that they are intended "for permit applicants and others in meeting the requirements of Section 404(b)(1) Guidelines of the Clean Water Act. Compensatory mitigation is required to offset impacts that cannot be avoided and minimized to the extent practicable."[17]

Fort Worth

The Forth Worth District describes the mitigation sequence, including avoidance and minimization, at the beginning of its web page on mitigation. This page includes the definitions of avoidance and minimization from the 1990 Mitigation MOA between EPA and the Corps.[18]

The District also includes these definitions from the 1990 Mitigation MOA in the Introduction to its Draft Mitigation Guidelines.[19] The guidelines go on to specify that permit applications should include, as part of the baseline information about the proposed project:

> a complete description of the measures the applicant proposes to avoid and minimize the adverse impact of the project on the aquatic environment, both on-site and off-site. Include a discussion of the measures proposed to avoid adverse impacts of the preferred alternative on the aquatic environment.[20]

Galveston

The Galveston District has a web page containing Draft Mitigation Guidelines and Procedures for the Development and Use of Mitigation Banks. This page mentions that

> The MBRT continues to maintain its policy that an applicant will only be: allowed to use a mitigation bank after the mitigation sequencing process has been followed. In other words, an applicant must first demonstrate that impacts to wetlands and other aquatic resources have been avoided and minimized to the maximum extent practicable.[21]

Honolulu

On its regulatory web page, the Honolulu District describes the pre-application process in the same terms as the Alaska District, writing that the process:

> is designed to provide the applicant with an assessment of the viability of some of the more obvious alternatives available to accomplish the project purpose, to discuss measures for reducing the impacts of the project, and to inform him of the factors the Corps must consider in its decision making process.[22]

The District also specifies that one of the general criteria used in the public interest review process is "[w]here unresolved conflicts of resource use exist, the practicability of using reasonable alternative locations and methods to accomplish project purposes…."[23]

In its description of mitigation on its regulatory program homepage, the Honolulu District references the 1990 Mitigation MOA, writing:

> The Mitigation MOA states that compensatory mitigation may not be used as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 230.10(a).
>
> The following sequence is used in evaluating proposed projects:
>
> - determination that potential impacts have been avoided to the maximum extent practicable;
> - remaining unavoidable impacts will then be mitigated
> - to the extent appropriate and practicable by requiring steps to minimize
> - impacts and, finally, compensate for aquatic resource values.
> - Section 230.10(d) of the Guidelines states that appropriate and practicable steps to minimize the adverse impacts will be required through project modifications and permit conditions.
>
> Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been required.[24]

The Honolulu District also briefly discusses avoidance and minimization in its Compensatory Mitigation and Monitoring Guidelines. The Guidelines state that:

> The National Environmental Policy Act (40 CFR 1502-1508) requires the consideration of mitigation for adverse environmental impacts, and requires that permit decisions reflect all practicable means to avoid and minimize environmental harm from a Federal action, to include monitoring for compliance and subsequent enforcement for non-compliance with any mitigation requirement. Mitigation includes avoiding impacts to a resource, minimizing the impacts, and compensating for "unavoidable" impacts. The mitigation sequence of avoidance, minimization, and compensation forms the basis for permit application evaluation by the Corps, and should be considered by the regulated public in project planning and development. Permit applicants will develop their project plans following a process of identifying resources and taking actions, including considering practicable project alternatives, to avoid and minimize project impacts *before* considering compensatory mitigation. Compensatory mitigation cannot be used to satisfy, or otherwise pre-empt, the requirements for avoidance and minimization.[25]

Huntington

The Huntington District's regulatory page includes a link to a 34-slide PowerPoint presentation about alternatives analysis.[26] The PowerPoint presentation appears to be intended to help the regulated community understand the alternatives analysis process. The slideshow explains the requirements under the various subparts of the § 404(b)(1) Guidelines and emphasizes that it is the applicant's responsibility to provide the Corps with sufficient analysis of project alternatives to allow the Corps to determine whether the project may be permitted under the §404(b)(1) Guidelines. The end of the slideshow also discusses compensatory mitigation, including under this heading the entire mitigation sequence of avoidance, minimization and compensation. Overall, this slideshow is an explanation of the general, headquarters-level guidance regarding alternatives analysis and mitigation sequencing and does not seem to represent separate district-level guidance. It is, however, a useful explanation of the alternatives analysis process and the factors considered therein.

Jacksonville

The Jacksonville District's website on permitting includes standard Corps language regarding permit evaluation factors that include "where unresolved conflicts of resource use exist, the practicability of using reasonable alternative locations and methods to accomplish project purposes shall be considered."[27]

Kansas City

The Kansas City District has a web page of information for permit applicants. In the section on evaluation factors, the District states that one of the general factors that will be considered is "the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed activity."[28] In the same section, the District notes that:

> If your project involves the discharge of dredged or fill material, it will be necessary for the Corps to evaluate your proposed activity under the Section 404(b)(1) guidelines prepared by the Environmental Protection Agency. The guidelines restrict discharges into aquatic areas where less environmentally damaging, practicable alternatives exist.[29]

Little Rock

The Little Rock District does not have specific policies on its website related to avoidance and minimization or alternatives analysis. Mitigation sequencing is, however, mentioned in the District's Compensatory Mitigation Standard Operating Procedure (SOP). The introduction to the SOP states that:

> This guidance is intended to fully support the national policy for "no overall net loss" of wetlands and other waters of the United States, consistent with the Section 404 (b)(1) Guidelines. The Section 404 (b) (1) Guidelines require compensatory mitigation to offset aquatic resource losses after all appropriate and practicable steps have been taken to first avoid and then minimize aquatic resource impacts.[30]

Los Angeles

In April 2004, the Los Angeles District issued a public notice detailing its final mitigation guidelines and monitoring requirements. These guidelines contain several references to alternatives analysis, avoidance and minimization. Specifically, the policy sections of the document's introduction contain relatively detailed explanations of § 404(b)(1) requirements:

> **B. MITIGATION POLICY**
>
> The Corps and the EPA formulated policy and procedures to be used in determining the mitigation necessary to demonstrate compliance with the Clean Water Act Section 404(b)(1) Guidelines (40 CFR 230) (the Section 404(b)(1) Guidelines). This information is set forth in the "Memorandum of Agreement (MOA) Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines," dated February 7, 1990 (the Mitigation MOA).
>
> The Section 404(b)(1) Guidelines limit the issuance of a permit to the activity or project design representing the least environmentally damaging practicable alternative (LEDPA) that is not contrary to the public interest. More specifically, the Section 404(b)(1) Guidelines state that no discharge of dredged or fill material shall be permitted if there is a practicable alternative available to the proposed discharge that would have less adverse impact on the aquatic ecosystem, if the alternative does not have other significant adverse environmental consequences. Practicability is defined in terms of cost, logistics, and existing technology in light of the overall project purpose. The burden to demonstrate compliance with the Section 404(b)(1) Guidelines rests with the permit applicant. For non-water dependent discharges into special aquatic sites, there is a presumption that less environmentally damaging practicable alternatives are available. If the applicant has complied with the Guidelines by first evaluating alternatives that would avoid impacts, and then taken appropriate and practicable steps to minimize adverse impacts to the maximum extent practicable, then compensatory mitigation is required for the unavoidable impacts.

> Even in cases where a Corps-notifying General Permit (Nationwide Permit or Regional General Permit pursuant to 33 CFR 330) applies, the applicant will have to demonstrate avoidance and minimization of aquatic resource impacts. Granted, the demonstration required is typically less rigorous than for a Standard Permit. Nevertheless, if an applicant is required to notify the Corps regarding authorization under an existing General Permit, it is likely that the Corps Los Angeles District's verification letter/notice to proceed will require compensatory mitigation. Clearly, the sequence of avoidance, minimization, and compensatory mitigation specified by the Section 404(b)(1) Guidelines and the Mitigation MOA is fundamental to the administration of the Corps' regulatory program.

C. CORPS POLICY

> As stated in the Mitigation MOA, the goal of the Clean Water Act and the Section 404(b)(1) Guidelines is to maintain and to restore the physical, chemical, and biological integrity of the Nation's waters. The Corps strives to avoid or minimize adverse impacts to waters of the U.S., and to achieve a goal of no net loss of wetland functions and values. To achieve these goals, compensatory mitigation is generally required at a minimum 1:1 replacement ratio.[31]

The Los Angeles District also makes special mention of alternatives analysis and avoidance in its discussion of projects occurring around lakes, ponds and vernal pools:

> Because wetlands are common along lakes and ponds, many proposed impacts to lake/pond habitat will be evaluated under the Corps' Standard Permit procedures, which will involve an analysis of alternatives pursuant to the 404(b)(1) Guidelines. In those cases where wetland habitat would be impacted by a non-water dependent activity (e.g., housing), the applicant is required to rebut the presumption that there is a less damaging, practicable alternative that does not impact wetlands or other special aquatic sites.[32]
>
> Proposed impacts to natural, seasonal ponds and lakes within the Los Angeles District is discouraged because there are so few remaining. As an example, within Orange County, there may be only three natural lakes remaining within the entire county. Preservation of these few remaining systems is a priority of the District, and proposed impacts to them would likely require Standard Permit review. The requirements to rebut the presumption that there is a less damaging practicable alternative will likely be more stringent in the case of proposed impacts to natural ponds and lakes.[33]
>
> The Los Angeles District of the Corps has proposed a regional condition that would require an applicant to obtain a Standard Permit for any impact to a jurisdictional vernal pool. Because jurisdictional vernal pools are considered wetlands, the Standard Permit requirement would require an applicant proposing an activity that is not water-dependent (e.g., housing) to rebut the presumption that a less environmentally damaging, practicable alternative is available to the proposed project. The increased sensitivity of vernal pools will make this requirement more difficult to satisfy in the near future. As a result, the Los Angeles District of the Corps is stressing total avoidance in order to protect the remaining jurisdictional vernal pools.[34]

Louisville

The Louisville District has a PDF document of information for permit applicants that includes brief references to alternatives analysis and mitigation sequencing. The document explains that a pre-application consultation "may involve discussion of alternatives."[35] It also provides the standard Corps language regarding permit evaluation factors, noting that one of the general criteria for permit evaluation is "the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed activity"[36] and describing the requirement to evaluate projects under the § 404(b)(1) Guidelines:

> If your project involves the discharge of dredged or fill material, it will be necessary for the Corps to evaluate your proposed activity under the Section 404(b)(1) guidelines_prepared by the Environmental Protection Agency. The guidelines restrict discharges into aquatic areas where less environmentally damaging, practicable alternatives exist.[37]

Memphis

The Memphis District has released mitigation guidelines that include a mitigation checklist. The checklist states that mitigation plans should include a "[d]escription of avoidance and minimization of impacts."[38] The special public notice accompanying the District mitigation guidelines also includes the following description of § 404(b)(1) requirements:

> The Corps and the EPA formulated policy and procedures to be used in determining the mitigation necessary to demonstrate compliance with the Clean Water Act Section 404(b)(I) Guidelines (40 CFR 230) (the Section 404(b)(1) Guidelines).This information is set forth in the "Memorandum of Agreement (MOA) Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines," dated February 7, 1990 (the Mitigation MOA). The Section 404(b)(1) Guidelines limit the issuance of a permit to the activity or project design representing the least environmentally damaging practicable alternative (LEDPA) that is not contrary to the public interest. More specifically, the Section 404(b)(1) Guidelines state that no discharge of dredged or fill material shall be permitted if there is a practicable alternative available to the proposed discharge that would have less adverse impact on the aquatic ecosystem, if the alternative does not have other significant adverse environmental consequences. Practicability is defined in terms of cost, logistics, and existing technology in light of the overall project purpose. The burden to demonstrate compliance with the Section 404(b)(1) Guidelines rests with the permit applicant. For non-water dependent discharges into special aquatic sites, there is a presumption that less environmentally damaging practicable alternatives are available. If the applicant has complied with the Guidelines by first evaluating alternatives that would avoid impacts, and then taken appropriate and practicable steps to minimize adverse impacts to the maximum extent practicable, then compensatory mitigation is required for the unavoidable impacts. Even in cases where a Corps-notifying General Permit (Nationwide Permit or Regional General Permit pursuant to 33 CFR 330) applies; the applicant will have to demonstrate avoidance and minimization of aquatic resource impacts. Granted, the demonstration required is typically less rigorous than for a Standard Permit. Nevertheless, if an applicant is required to notify the Corps regarding authorization under an existing General Permit, it is likely that the Corps verification letter/notice to proceed will require compensatory mitigation. Clearly, the sequence of avoidance, minimization, and compensatory mitigation specified by the Section 404(b)(1) Guidelines and the Mitigation MOA is fundamental to the administration of the Corps' regulatory program.[39]

Mobile

The Mobile District has released a mitigation checklist in accordance with Corps HQ policy inspired by the Mitigation Action Plan. The checklist and associated guidance do not include any requirements for information about avoidance and minimization.[40] The only mention of sequencing is in the supplementary guidance which states that "[c]ompensatory mitigation is required to offset impacts that cannot be avoided and minimized to the extent practicable."[41] This is not actually an accurate statement of Corps and EPA policy. According to the 404(b)(1) guidelines and the 1990 Mitigation MOA, the District should say that compensation is required to offset unavoidable impacts after those impacts have been avoided and minimized to the maximum extent practicable.

Nashville

The Nashville District has released compensatory mitigation guidelines that reference avoidance and minimization requirements. Specifically, the guidelines state that:

> Before compensatory mitigation is considered, appropriate and practicable measures to avoid and minimize those adverse impacts to the aquatic ecosystem that are not necessary or cannot reasonably be avoided must be taken.
>
> Once avoidance and minimization have been considered, applicants must implement appropriate

and practicable measures to compensate for adverse project impacts to the aquatic ecosystem.

While this sequential process (avoid, minimize, compensate) is normally applied only during the individual permit process, most nationwide and regional general permits require that discharges of dredged or fill material into waters of the US be avoided and minimized to the maximum extent practicable, unless the District Engineer approves a compensatory mitigation plan that is more beneficial to the environment than minimization or avoidance measures that could be undertaken at the project site. [42]

New England

The New England District has published a mitigation plan checklist and mitigation plan checklist guidance, neither of which directly address avoidance and minimization.[43] The guidance does reference avoidance and minimization in excluding those forms of mitigation from the definition used throughout the guidance: "While mitigation includes sequencing from avoidance to minimization to, finally, compensation, it is frequently used instead of "compensation," including in this document."[44] In addition, in reference to compensatory mitigation through preservation, the guidance states that:

> "[w]etlands within subdivisions, golf courses, etc. should generally be protected along with appropriate buffers. This is part of the avoidance and minimization steps of mitigation. … Preservation should be part of every mitigation package as preservation of a creation, restoration, or enhancement area, and buffer; the remaining unimpacted wetlands on-site as part of avoidance and minimization; as a stand-alone form of mitigation; or as any combination of these.[45]

New Orleans

The New Orleans District's permitting overview includes standard Corps language regarding evaluation factors (see Kansas City District summary for language).[46] The District's regulatory program overview page includes standard language about using the pre-application meeting to assess "the viability of some of the more obvious alternatives available to accomplish the project purpose, [and] to discuss measures for reducing the impacts of the project…"[47] It also repeats the standard language about alternatives being one of the general evaluation criteria for permits.[48]

The District's Joint Permit Application for projects in the Louisiana Coastal Zone requires applicants to describe:

a. What alternative locations, methods and access routes were considered to avoid impact to wetlands and/or waterbottoms?
b. What efforts were made to minimize impact to wetlands and/or waterbottoms?49

The District's standard permit application for projects outside the Louisiana Coastal Zone does not include any language related to mitigation sequencing or alternatives analysis.[50]

The District's webpage on compensatory mitigation includes an explanation of mitigation sequencing:

> …special conditions may be added to permits in order to satisfy public interest concerns and/or legal requirements, such as compliance with the Clean Water Act 404(b)(1) Guidelines. If a proposed permit action would result in impacts to wetlands, these special conditions often include provisions requiring the permittee to compensate for the expected impact. This compensation is commonly referred to as compensatory mitigation. It may also be referred to simply as mitigation, although strictly speaking, it is only one of three forms of mitigation. The first two forms, avoidance and minimization are typically addressed through alternative siting and/or modifications to the project design. For most standard permits (i.e., those that require issuance of a public notice), and in particular those subject to regulation under the Clean Water Act, avoidance and

> minimization of impacts to aquatic resources, including wetlands, must be addressed prior to considering compensatory mitigation. Compensatory mitigation, therefore, is only utilized to offset impacts which are otherwise unavoidable. The process of incorporating all appropriate and practicable measures to avoid, minimize and, finally, compensate for impacts to aquatic resources caused by permit actions is referred to as sequencing.[51]

The compensatory mitigation page also quotes the sentence from 1990 Mitigation MOA establishing a policy of striving to avoid adverse impacts and offset unavoidable impacts to aquatic resources.[52]

The New Orleans District has published Mitigation Guidelines, of which avoidance and minimization is the first step: "Impacts to aquatic resources shall be avoided and/ or minimized to the maximum extent practicable."[53] The District has also published Compensatory Mitigation Standard Operating Procedures, which reference avoidance and minimization and the definition of mitigation from the 1990 Mitigation MOA to establish that the SOP deals only with compensatory mitigation.[54] The SOP also references mitigation sequencing in its discussion of when applicants should develop and formalize a compensatory mitigation plan for their proposed project.[55]

New York

The New York District directs permit applicants to include an environmental questionnaire with their permit application. The questionnaire includes a prompt requiring applicants to discuss their alternatives analysis:

> Provide a thorough discussion of alternatives to your proposal. This discussion should include, but not necessarily be limited to, the "no action" alternative and alternative(s) resulting in less disturbance to waters of the United States. For filling projects in waters of the United States, including wetlands, your alternatives discussion should demonstrate that there are no practicable alternatives to your proposed filling and that your project meets with current mitigation policy (i.e. avoidance, minimization and compensation).[56]

Norfolk

The Norfolk District has a General Permit Summary Sheet that summarizes the process for general permit applications. The summary sheet notes whether the Virginia DEQ or the Corps will conduct avoidance, minimization and mitigation reviews for each category of General Permit.[57] The District's annotated Mitigation Recommendations are focused on compensatory mitigation and do not mention avoidance, minimization, alternatives analysis, or the § 404(b)(1) Guidelines.[58] Likewise, the District's mitigation checklist calls for "Site selection considerations" but does not mention avoidance, minimization, alternatives analysis or the § 404(b)(1) Guidelines.[59]

The District's joint permit application for tidal waters and/or wetlands includes a prompt for permit applicants to describe avoidance and minimization measures:

> 10. Describe the measures that will be taken to avoid and minimize impacts, to the maximum extent practicable, to wetlands, surface waters, submerged lands, and buffer areas associated with any disturbance (clearing, grading, excavating) during and after project construction. Please be advised that unavoidable losses of tidal wetlands and/or aquatic resources may require compensatory mitigation.[60]

Similarly, the District's full-length joint permit application directs permit applicants to:

- Include a description of alternatives considered to avoid or minimize impacts to surface waters, including wetlands, to the maximum extent possible. Include factors such as, but not limited to, alternative construction technologies, alternative project layout and design, alternative locations, local land use regulations, and existing infrastructure
- For utility crossings, include both alternative routes and alternative construction methodologies considered (p. 8)[61]

In June 2006, the Norfolk District issued a public notice regarding two spreadsheets that the District developed to help assess the economics of project alternatives. In the public notice, the District wrote,

"Our intent is to request this information only on those occasions when we believe there are practicable alternatives to avoid and minimize impacts to waters and wetlands and an applicant voices concern over the effects of those changes on the economic viability of their project."[62] Although these documents are not available online, as of February 2007, regulatory staff at the District indicated that the spreadsheets are used on a case-by-case basis as needed.[63]

Omaha

The Omaha District released "Guidance for Compensatory Mitigation and Mitigation Banking in the Omaha District" in August 2005. The Guidance is directed almost exclusively at compensatory mitigation, and mentions avoidance and minimization only briefly: "Compensatory mitigation will be considered after all appropriate and practicable avoidance and minimization has been achieved."[64] The Guidance also asserts that the District's guidance is intended to clarify policies under existing guidance including the 1990 Mitigation MOA and the § 404(b)(1) Guidelines.[65]

Philadelphia

The Philadelphia District released draft compensatory mitigation guidelines in December 2003. The draft guidelines are directed primarily at compensatory mitigation, and mention avoidance and minimization only briefly: "The policies and guidance that have been developed and implemented in the Corps' Regulatory program have emphasized that compensation for aquatic resources should only be considered after the applicant has adequately addressed the issues of avoidance and minimization."[66] In the Public Notice that accompanied the draft guidelines, the District also stated:

> It should be noted that these compensatory mitigation guidelines are being developed as a technical guide, and are not intended to modify or alter the Corps' responsibilities to comply with the Section 404(b)(1) Guidelines, the Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning Mitigation, and Regulatory Guidance Letter 02-2.[67]

Pittsburgh

The Pittsburgh District does not appear to have any documents online that relate to alternatives analysis or mitigation sequencing.[68]

Portland

The Portland District has two guidance documents that discuss avoidance and minimization. The District's Wetland Mitigation Banking Guidebook for Oregon includes the following passages:

> The Section 404(b)(1) guidelines, developed by the U.S. Environmental Protection Agency (USEPA), are the substantive criteria that the Corps uses to evaluate the effects of proposed discharges. The guidelines require that practicable alternatives to the proposed action be considered before a Corps permit is issued. The guidelines also require that if there is no practicable alternative available, the permit applicant will minimize any potential harm to the aquatic ecosystem. The Corps evaluates permit applications to ensure that impacts are avoided where practicable through the evaluation of alternative sites so that impacts are minimized, and that unavoidable impacts are mitigated through appropriate and practicable compensation, called compensatory wetland mitigation.
>
> Mitigation policy was further clarified in a MOA between the Corps and the USEPA in 1990. The sequencing requirement articulated in the MOA provides that permit applicants must demonstrate that they have made every reasonable effort to avoid and minimize wetland losses through careful location and design before compensatory mitigation techniques such as wetland restoration, creation or enhancement can even be considered.[69]
>
> The processing and evaluation of permit applications by DSL follows a process similar to the Corps process and applies standards for evaluation similar to those of the Corps, including the requirements for an alternatives analysis, minimization of impacts, and compensation for unavoidable impacts.[70]

Oregon and the Federal Government define mitigation as the reduction of adverse effects of a proposed project by considering, in the following order:

a. Avoiding the impact altogether by not taking a certain action or parts of an action.

b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

c. Rectifying the impact by repairing, rehabilitating or restoring the affected environment.

d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action by monitoring and taking appropriate corrective measures.

e. Compensating for the impact by replacing or providing comparable substitute wetland or water resources.[71]

Mitigation means sequentially avoiding impacts, minimizing impacts, and compensating for remaining unavoidable impacts.[72]

The District's Mitigation Guidelines and Monitoring Requirements include the following language that is identical to the language in guidance from the Los Angeles District:

B. MITIGATION POLICY

The Corps and the EPA formulated policy and procedures to be used in determining the mitigation necessary to demonstrate compliance with the Clean Water Act Section 404(b)(1) Guidelines (40 CFR 230) (the Section 404(b)(1) Guidelines). This information is set forth in the "Memorandum of Agreement (MOA) Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines," dated February 7, 1990 (the Mitigation MOA).

The Section 404(b)(1) Guidelines limit the issuance of a permit to the activity or project design representing the least environmentally damaging practicable alternative (LEDPA) that is not contrary to the public interest. More specifically, the Section 404(b)(1) Guidelines state that no discharge of dredged or fill material shall be permitted if there is a practicable alternative available to the proposed discharge with less adverse impact on the aquatic ecosystem, if the alternative does not have other significant adverse environmental consequences. Practicability is defined in terms of cost, logistics, and existing technology in light of the overall project purpose. The burden to demonstrate compliance with the Section 404(b)(1) Guidelines rests with the permit applicant. For non-water dependent discharges into special aquatic sites, there is a presumption that less environmentally damaging practicable alternatives are available. If the applicant has complied with the Guidelines by first evaluating alternatives that would avoid impacts, and then taken appropriate and practicable steps to minimize adverse impacts to the maximum extent practicable, then compensatory mitigation is required for the unavoidable impacts.

Even in cases where a Corps-notifying General Permit (Nationwide Permit or Regional General Permit pursuant to 33 CFR 330) applies, the applicant will have to demonstrate avoidance and minimization of aquatic resource impacts. Granted, the demonstration required is typically less rigorous than for a Standard Permit. Nevertheless, if an applicant is required to notify the Corps regarding authorization under an existing General Permit, it is likely the Corps's verification letter/notice to proceed will require compensatory mitigation. Clearly, the sequence of avoidance, minimization, and compensatory mitigation specified by the Section 404(b)(1) Guidelines and the Mitigation MOA is fundamental to the administration of the Corps' regulatory program.

C. CORPS POLICY

As stated in the Mitigation MOA, the goal of the Clean Water Act and the Section 404(b)(1) Guidelines is to maintain and to restore the physical, chemical, and biological integrity of the Nation's waters. The Corps strives to avoid or minimize adverse impacts to waters of the U.S., and to achieve a goal of no net loss of wetland functions and values.[73]

In addition, the Portland District guidelines also include the following additional passages:

> For Standard Permit applications, the applicant can submit a conceptual mitigation plan along with the formal application materials. This plan should focus on discussing the mitigation concept(s); not providing a fully developed mitigation and monitoring plan with implementation, maintenance, and monitoring protocols. It should include a summary of how on-site impacts would be avoided and minimized, and why the applicant believes the remaining, proposed impacts would be adequately compensated.[74]
>
> After the applicant has demonstrated maximum practicable avoidance and minimization of project impacts to waters of the U.S., the Corps will determine whether compensatory mitigation for the unavoidable impacts is required.[75]
>
> Assessment results can provide a basis for modifying pre-construction plans to avoid and/or minimize impacts to these resources.[76]
>
> Applicants should carefully consider expanding efforts to avoid and minimize on-site impacts and to attempt to submit plans for self-sustaining compensatory mitigation sites along natural water features, such as stream channels.[77]
>
> Preservation is essentially avoidance, which is required under the Mitigation MOA and the Section 404(b)(l) Guidelines.[78]
>
> *Monitor the construction activities to ensure habitat outside of the planned compensatory mitigation site is not impacted*. The use of heavy equipment may be needed to construct the site, and care must be taken to ensure equipment operators do not stray outside of the project boundaries. Brief the operators of heavy equipment on the location of sensitive habitat areas and the importance of avoidance.[79]

Rock Island

The Rock Island District has published Mitigation and Monitoring Guidelines that explicitly "are intended to summarize major points regarding the compensatory mitigation that may be required in a Department of the Army (DA) permit after all practicable steps have been taken to avoid and minimize impacts to aquatic sites."[80] The District's website does not have any guidance that deals specifically with avoidance and minimization.

Sacramento

The Sacramento District has a Permitting Overview web page that includes the standard Corps language stating that one of the general evaluation criteria for permits is "the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed activity."[81] The District has also posted a graphical permitting process flow chart that illustrates the steps in a permit review including avoidance, minimization and alternatives analysis using the § 404(b)(1) Guidelines.[82]

In December 2004, the San Francisco and Sacramento Districts released joint Mitigation and Monitoring Proposal Guidelines. These guidelines are primarily designed to address compensatory mitigation practices, but the document does reference avoidance and minimization in relation to compensatory mitigation: "After the applicant has demonstrated maximum avoidance and minimization of project impacts to waters of the U.S., Corps Districts will likely require compensatory mitigation for the remaining unavoidable impacts."[83] The guidelines also state that as part of mitigation planning, the project site impact assessment "can provide a basis for modifying pre-construction plans to avoid and/or minimize impacts to these resources."[84] Finally, the Districts' guidelines state that compensatory mitigation implementation plans should "[d]escribe any measures used to avoid sensitive areas outside of the grading plan."[85]

San Francisco

The San Francisco District is the only district that has a web page specifically to explain mitigation sequencing. The definitions and explanations on this webpage are either quoted from or paraphrased from national guidance, it does not represent unique district- level guidance.[86]

In December 2004, the San Francisco and Sacramento Districts released joint Mitigation and Monitoring Proposal Guidelines. These guidelines are primarily designed to address compensatory mitigation practices, but the document does reference avoidance and minimization in relation to compensatory mitigation: "After the applicant has demonstrated maximum avoidance and minimization of project impacts to waters of the U.S., Corps Districts will likely require compensatory mitigation for the remaining unavoidable impacts."[87] (p. 1 Overview) The guidelines also state that as part of mitigation planning, the project site impact assessment "can provide a basis for modifying pre-construction plans to avoid and/or minimize impacts to these resources."[88] Finally, the Districts' guidelines state that compensatory mitigation implementation plans should "[d]escribe any measures used to avoid sensitive areas outside of the grading plan."[89]

Savannah

The Savannah District released Standard Operating Procedures for compensatory mitigation in March 2004. The SOP stipulates that "[t]ypes of mitigation other than compensation (e.g., avoidance, minimization, reduction) are not addressed by this SOP."[90] However, the SOP also explicitly states that "[t]his SOP does not obviate or modify any requirements given in the 404(b)(1) Guidelines or other applicable documents regarding avoidance, sequencing, minimization, etc. Such requirements shall be evaluated during consideration of permit applications."[91] Finally, in the section on mitigation plan drawings, the SOP states, "All aquatic areas within the project boundaries (avoided, impacted, or mitigated) must be shown."[92]

The Savannah District has also released a working draft of guidelines on the establishment, operation, and use of mitigation banks. Again, these draft guidelines do not directly concern avoidance and minimization, but they do state that:

> …prior to use of credits from a commercial mitigation bank, it is the permit applicant's responsibility to demonstrate that the proposed discharge would comply with the mitigation sequencing requirements of the Section 404(b)(1) Guidelines of the CWA, as follows:
>
> A. Avoid wetland, stream and open water impacts through practicable upland alternatives;
> B. Minimize wetland, stream and open water impacts using all reasonable actions; and
> C. Mitigate for unavoidable direct and indirect wetland, stream and open water impacts that result in a loss of aquatic function(s).[93]

The banking guidelines also include definitions of compensatory mitigation and mitigation that refer to avoidance and minimization:

> Compensatory mitigation: For purposes of Section 10/404, the restoration, enhancement, or in exceptional circumstances, preservation or creation of wetlands, streams, and/or aquatic resources expressly for the purpose of compensating for adverse impacts that remain after all appropriate and practicable avoidance and minimization have been achieved.
>
> Mitigation: The three step process outlined in the 404(b)(1) Guidelines: first, avoid adverse impacts associated with a proposed project through selection of less damaging practicable on-site or off-site alternatives; then minimize the impact of the selected alternative to the extent appropriate and practicable; and finally, compensate for remaining unavoidable impacts to the extent appropriate and practicable.[94]

Seattle

The Seattle District released guidance in October 2003 on alternatives analysis. The District guidance emphasizes that it is the permit applicant's responsibility to prepare the alternatives analysis, and provides a detailed explanation of the factors that must be included in this analysis and how the Corps weighs these factors. The District guidance does not change or add to the national-level § 404(b)(1) Guidelines, but it does provide a detailed and user-friendly explanation of the factors that permit applicants must address in

the alternatives analysis process. This is by far the most thorough district-level guidance related to alternatives analysis, avoidance, and minimization.[95]

The Seattle District has a web page titled "Helpful Hints for the Permit Process" that includes the suggestion:

> Minimize the impact on the aquatic environment. Document your efforts in the process. For example, do you really need to develop 5 acres of wetlands? Instead, is it feasible to develop 1 to 2 acres of wetlands and 3 to 4 acres of uplands? Do you have to develop wetlands, would your project succeed if you developed 5 acres of uplands? Does your boat ramp have to be 50 feet wide? Can you use other materials besides pouring concrete onto the beach (possibly destroying fish habitat)? We will ask these types of questions in order to determine if the proposed project has the least possible impact on the aquatic environment.[96]

The District also has a webpage listing the standard set of evaluation factors for permits, including standard Corps language regarding alternatives (see e.g. Kansas City District).[97]

St. Louis

The St. Louis District released its most recent Mitigation and Monitoring Guidelines in June 2004. The guidelines are primarily directed at compensatory mitigation, however, they do include a description of mitigation sequencing:

> When reviewing a proposed project for DA authorization the Corps of Engineers applies a sequential three-step evaluation of the need for mitigation in order to maximize protection of the aquatic resource. The sequence is as follows:
>
> **Avoidance:** The Corps requires the applicant to employ all practicable measures in order to avoid adverse impacts to the aquatic ecosystem that are not absolutely necessary.
>
> **Minimization:** The Corps requires the applicant to employ all practicable measures in order to minimize adverse impacts to the aquatic ecosystem that cannot be reasonably avoided.
>
> **Compensation:** Implement appropriate and practicable measures to compensate for all adverse impacts to the aquatic ecosystem that cannot be avoided or minimized. This is commonly referred to as compensatory mitigation.[98]

In addition, the District's guidelines stipulate that compensatory mitigation plans must include "[a] complete description of the alternatives investigated and the efforts made to avoid and to minimize adverse impacts of the project on the aquatic ecosystem."[99]

The District also has a website with information for permit applicants that includes the standard Corps language regarding the use of the pre-application consultation for identifying project alternatives. The website also explains that the practicability of project alternatives is one of the general evaluation factors used in assessing permits in accordance with the 404(b)(1) guidelines (see e.g. Kansas City District, Seattle District, etc.).[100]

St. Paul

The St. Paul District has a Frequently Asked Questions webpage that mentions alternatives analysis, avoidance, and minimization in several places:

> The general rule is that for an activity to receive a 404 permit it must comply with the EPA's Section 404(b)(1) guidelines. In general, the guidelines require that the activity be the least environmentally damaging alternative that is feasible, and that adverse impacts are avoided, then minimized, and then compensated for (such as creating or restoring wetlands to replace those that would be filled). Activities also must not be contrary to the public interest, as determined by the Corps….
>
> Select a project site or design that can support the project purpose without the need to alter wetland or water areas. If that is not practical, then you should enhance your chances of receiving a favorable interagency review and a permit by designing the project so that water and wetland impacts are avoided, minimized, and then compensated for, in that order and to the maximum extent practical. Completely avoiding water and wetland areas will eliminate the need for a 404 permit. Minimizing

wetland impacts will reduce the amount of wetlands that may need to be created or restored in order to satisfy compensatory mitigation requirements of state or Corps' permits.[101]

The general joint permit application (Corps and Minnesota Department of Natural Resources) for Minnesota directs applicants to include a section on project alternatives:

> **PROJECT ALTERNATIVES:** What alternatives to this proposed project have you considered that would avoid or minimize impacts to wetlands or waters? List at least **TWO** additional alternatives to your project in Section 5 that avoid wetlands (one of which may be "no build" or "do nothing"), and explain why you chose to pursue the option described in this application over these alternatives. Attach *PROJECT ALTERNATIVES* sheet if needed.[102]

The joint permit application for Public Transportation and Linear Utility Projects in Minnesota directs applicants to include:

> **SEQUENCING CONSIDERATIONS:** What alternatives to this proposed project have you considered that could have avoided or minimized impacts to wetlands or water? **For new construction only - list at least two alternatives** (one of which may be "no build" or "do nothing"), and explain why you chose to pursue the option described in this application over these alternatives. (If space below is not adequate, attach separate sheet labeled *SEQUENCING CONSIDERATIONS.)*[103]

The District's joint permit application for Wisconsin also requires alternatives analysis. The permit application includes a two page questionnaire of information related to alternatives analysis, which includes the following requirements:

I. Background/Description of Project
   A. Describe the purpose and need for the project.
   B. Is your project an expansion of existing work or is it new construction? Explain.
   C. When did you start to develop a plan for your project?
   D. Explain why the project must be located in or adjacent to wetlands.

II. Alternatives (your analysis should address the following questions).
   A. How could you redesign or reduce your project to avoid the wetland, and still meet your basic project purpose?
   B. Other sites
      1. What geographical area(s) was searched for alternative sites?
      2. Were other sites considered?
      3. Have you sold any lands in recent years that are located within the vicinity of the project? If so, why were they unsuitable for the project?
   C. For each of the alternatives you identified, explain why you eliminated the alternative from consideration (include cost comparisons, logistical, technological, and any other reasons).
   D. What are the consequences of not building the project? (include social and economic consequences):

   If you have chosen an alternative that would result in wetland impacts:
   E. Summarize why your alternative was selected.
   F. Explain what you plan to do to minimize adverse effects on the wetlands during your project (e.g. erosion control, best management practices, setbacks, etc.).[104]

Tulsa

The Tulsa District has a mitigation web page that includes a relatively detailed explanation of mitigation sequencing, avoidance, and minimization. The webpage includes the definition of mitigation from the NEPA regulations (40 CFR 1508.20) and describes avoidance and minimization with reference to the § 404(b)(1) Guidelines.[105] This is one of the more detailed explanations of avoidance and minimization on any of the Corps District websites, though like other districts the Tulsa District is not creating new guidance but rather explaining the existing national-level guidance.

The Tulsa District's web page on the Individual Permit Review Process also mentions alternatives analysis,

avoidance, and minimization briefly in a paragraph about alternatives and impact mitigation:

> The Individual Permit review process will sometimes reveal an alternative project design that creates less impact to the aquatic environment. This determination may require a change to the projects design, scope, or construction method. However, if the original request is determined to be the least environmentally damaging practicable alternative, any impacts to the aquatic environment, which cannot be avoided or minimized, will require compensatory mitigation.[106]

The District's aquatic resource mitigation and monitoring guidelines from October 2004 also discuss alternatives analysis, avoidance, and minimization briefly. The introduction states that:

> Mitigation of project impacts to aquatic resources requires the development and consideration of project alternatives. These alternatives must employ three mitigation steps that are to be considered in a sequential manner. First, project impacts must be *avoided* to the extent practicable. Second, unavoidable impacts should be *minimized*. Third, remaining unavoidable impacts should be mitigated through *compensatory actions*. This mitigation policy is more explicitly described in the Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines.[107]

The guidelines also repeat the definition of mitigation from the NEPA regulations (40 CFR 1508.20) and state that "[w]here avoidance and minimization of project impacts have been maximized to the extent practicable and unavoidable impacts remain, project proponents should consider compensatory actions to counter the aquatic ecosystem losses of the proposed project."[108]

Vicksburg

The Vicksburg District provides a document on Detailed Application Information for permit applicants. This document defines mitigation to include avoidance and minimization and contains the standard Corps language regarding assessment of practicable alternatives under the § 404(b)(1) Guidelines as one of the general criteria for permit evaluations.[109] The document also contains a section on mitigation requirements that states:

> The first step in the process is to determine if the wetlands can be avoided. The second step is to minimize adverse impacts to those wetland areas that cannot be avoided. If the Corps determines that the proposed site is the only available practicable alternative, then any remaining adverse impacts to the wetland functions and values must be mitigated to the extent appropriate and practicable in terms of cost, existing technology and logistics in light of the overall project purposes.[110]

In August 2004, the District also released a Compensatory Mitigation Standard Operating Procedure. This SOP is intended to address compensatory mitigation, not avoidance and minimization, but does reference avoidance and minimization stating:

> This guidance is intended to fully support the national policy for "no overall net loss" of wetlands and other waters of the United States, consistent with the Section 404(b)(1) Guidelines. The Section 404(b)(1) guidelines require compensatory mitigation to offset aquatic resource losses after all appropriate and practicable steps have been taken to first avoid and then minimize aquatic resource impacts.[111] (§ I)

Walla Walla

The Walla Walla District has created a pamphlet containing permitting information, which includes a section on permit evaluation factors. This pamphlet does not use the standard Corps language regarding alternatives, stating instead:

> If an activity is proposed in valuable wetlands, the Corps will evaluate it to determine whether it is a necessary alteration. The unnecessary alteration or destruction of these wetlands will be considered

> contrary to the public interest and must be avoided. In determining whether the alteration is necessary, the Corps will primarily consider whether the proposed activity is dependent on the wetland resource and whether alternatives are practical.[112]

In December 2003, the District issued Proposed Mitigation and Monitoring Guidelines. In the public notice accompanying the proposed guidelines the District stated that "[a]pplicants who apply for a permit to fill wetlands or waterways are required to avoid and minimize impacts as much as possible."[113] The Proposed Mitigation and Monitoring Guidelines include a lengthy description of the § 404(b)(1) Guidelines and their requirements in the Corps Policy section:

> The 404(b)(1) Guidelines allow permit issuance for only the least environmentally damaging practicable alternative in light of the overall project purposes. The 404(b)(1) Guidelines state that no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem so long as the alternative does not have other significant adverse environmental consequences. An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics. The burden to demonstrate compliance with the 404(b)(1) Guidelines rests with the permit applicant. For non-water dependent discharges into special aquatic sites (e.g. wetlands), there is a presumption that less environmentally damaging practicable alternatives exist. If the applicant has complied with the 404(b)(1) Guidelines through first evaluating alternatives to avoid impacts, and then taken appropriate and practicable steps to minimize adverse impacts to the maximum extent practicable, then reasonable and practicable compensatory mitigation is required for the unavoidable impacts that remain.
>
> The goal of the Clean Water Act and the 404(b)(1) Guidelines is to maintain, restore, and enhance the physical, chemical, and biological integrity of the Nation's waters. The Corps strives to avoid adverse impacts to waters of the United States, and to achieve a goal of no net loss of wetland functions.[114]

The guidelines also specify that compensatory mitigation plans should "describe how the project has been modified to minimize and avoid impacts to the aquatic environment."[115]

Wilmington

The Wilmington District has a website dedicated to mitigation, but it includes relatively little about avoidance and minimization.[116] On the Permitting and Compensatory Mitigation page, the District cites the Corps' regulations and includes avoidance and minimization in its description of the role of mitigation in the permitting process: "Mitigation is considered throughout the permit application review process and includes avoiding, minimizing, rectifying, reducing, or compensating for resource losses [33 CFR 320.4(r)(2)]."[117] The District briefly discusses avoidance and minimization on its Frequently Asked Questions page, in response to a question of how much wetland or stream area can be impacted, writing:

> The best practice is to avoid all impacts to streams and wetlands. When this is unavoidable, contact your Corps office to determine how to minimize the area impacted and whether a permit is needed. Stringent limits are placed on activities that may cause anything other than minimal impacts to the waterbody or aquatic environment. There are additional prohibitions and limitations on special aquatic resources. The national policy regarding wetlands is to prevent any further net loss. To meet this goal, if your activity is permitted, you may be required to compensate for the loss through mitigation as a condition for proceeding with the planned activity.[118]

The District also mentions avoidance and minimization on its page of mitigation-related definitions. The District defines avoidance as "[n]ot discharging into the waters of the United States or discharging into an alternative aquatic site with potentially less damaging consequences." Avoidance and minimization are also mentioned in the definitions of 'mitigation' and 'compensatory mitigation.'[119] The Wilmington District's Wetland Compensatory Mitigation Checklist does not mention avoidance and minimization, and includes no requirement to describe avoidance and minimization efforts in the mitigation plan proposal.[120]

Notes

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Appendix B
Corps Districts' Instructions for Specific Avoidance and Minimization Submissions

DISTRICT	ALTERNATIVES ANALYSIS/AVOIDANCE AND MINIMIZATION IN THE PERMITTING PROCESS
Albuquerque	*District's permit application checklist includes:* • Alternatives Analysis for the proposed project design and location – Describe and discuss other alternatives considered that would avoid and minimize impacts, and satisfy the project purpose and need. – Discuss why those alternatives were rejected. – Discuss why the chosen plan is the least damaging alternative to the environment.[1]
Chicago	*District's permit application checklist includes:* Alternatives analysis Avoidance and minimization of impacts must be accomplished before considering compensatory mitigation for wetlands or other waters of the United States. • Individual permit authorizations under Section 404 of the Clean Water Act require evaluation of an alternatives analysis. See page 3 for other application requirements for individual permit processing. • This material is not required for the issuance of a Public Notice but is required to fully assess the project for compliance under the Section 404(b)(1) Guidelines (40 CFR Part 230). It would be advantageous to submit this information with the permit application to facilitate accurate description of your project in the public notice. • Provide selection criteria used in determining the feasibility of the chosen project site. • Provide a list of alternatives rejected and reasons including application of criteria to the proposed site. • Provide sufficient information (i.e. location map, site descriptions) for comparison of selected site with other apparent alternative sites. • Statement of reason that impact has been minimized to the smallest impact possible, and other designs considered. • Statement of why avoidance is not possible. • Alternatives analyses are not required for projects that meet the RPP or existing nationwide permit conditions with minimal adverse environmental impacts.[2]
New Orleans	*The District's Joint Permit Application for projects in the Louisiana Coastal Zone requires applicants to describe:* a. What alternative locations, methods and access routes were considered to avoid impact to wetlands and/or waterbottoms? b. What efforts were made to minimize impact to wetlands and/or waterbottoms?[3]
New York	*District directs permit applicants to provide with their permit application responses to an environmental questionnaire that includes:* Provide a thorough discussion of alternatives to your proposal. This discussion should include, but not necessarily be limited to, the "no action" alternative and alternative(s) resulting in less disturbance to waters of the United States. For filling projects in waters of the United States, including wetlands, your alternatives discussion should demonstrate that there are no practicable alternatives to your proposed filling and that your project meets with current mitigation policy (i.e. avoidance, minimization and compensation).[4]

DISTRICT	ALTERNATIVES ANALYSIS/AVOIDANCE AND MINIMIZATION IN THE PERMITTING PROCESS
Norfolk	*The District's joint permit application for tidal waters and/or wetlands includes a prompt for permit applicants to describe avoidance and minimization measures:* 10. Describe the measures that will be taken to avoid and minimize impacts, to the maximum extent practicable, to wetlands, surface waters, submerged lands, and buffer areas associated with any disturbance (clearing, grading, excavating) during and after project construction. **Please be advised that unavoidable losses of tidal wetlands and/or aquatic resources may require compensatory mitigation.**[5] *The District's full-length joint permit application directs permit applicants to:* • Include a description of alternatives considered to avoid or minimize impacts to surface waters, including wetlands, to the maximum extent possible. Include factors such as, but not limited to, alternative construction technologies, alternative project layout and design, alternative locations, local land use regulations, and existing infrastructure • For utility crossings, include both alternative routes and alternative construction methodologies considered (p. 8)[6]
St. Paul	*The general joint permit application (Corps and Minnesota Department of Natural Resources) for Minnesota directs applicants to include a section on project alternatives:* **PROJECT ALTERNATIVES:** What alternatives to this proposed project have you considered that would avoid or minimize impacts to wetlands or waters? List at least **TWO** additional alternatives to your project in Section 5 that avoid wetlands (one of which may be "no build" or "do nothing"), and explain why you chose to pursue the option described in this application over these alternatives. Attach *PROJECT ALTERNATIVES* sheet if needed.[7] *The joint permit application for Public Transportation and Linear Utility Projects in Minnesota directs applicants to include:* **SEQUENCING CONSIDERATIONS:** What alternatives to this proposed project have you considered that could have avoided or minimized impacts to wetlands or water? For new construction only - list at least two alternatives (one of which may be "no build" or "do nothing"), and explain why you chose to pursue the option described in this application over these alternatives. (If space below is not adequate, attach separate sheet labeled *SEQUENCING CONSIDERATIONS.)*[8] *The District's joint permit application for Wisconsin also requires alternatives analysis. The permit application includes a two page questionnaire of information related to alternatives analysis, which includes the following questions:* I. Background/Description of Project A. Describe the purpose and need for the project. B. Is your project an expansion of existing work or is it new construction? Explain. C. When did you start to develop a plan for your project? D. Explain why the project must be located in or adjacent to wetlands. II. Alternatives (your analysis should address the following questions). A. How could you redesign or reduce your project to avoid the wetland, and still meet your basic project purpose? B. Other sites 1. What geographical area(s) was searched for alternative sites? 2. Were other sites considered?

DISTRICT	ALTERNATIVES ANALYSIS/AVOIDANCE AND MINIMIZATION IN THE PERMITTING PROCESS
St. Paul, cont.	3. Have you sold any lands in recent years that are located within the vicinity of the project? If so, why were they unsuitable for the project? C. For each of the alternatives you identified, explain why you eliminated the alternative from consideration (include cost comparisons, logistical, technological, and any other reasons). D. What are the consequences of not building the project? (include social and economic consequences): If you have chosen an alternative that would result in wetland impacts: E. Summarize why your alternative was selected. F. Explain what you plan to do to minimize adverse effects on the wetlands during your project (e.g. erosion control, best management practices, setbacks, etc.).[9]

Notes

1. Albuquerque District Regulatory Branch, U.S. Army Corps of Engineers. "Checklist of Information Required for Complete Application." http://www.spa.usace.army.mil/reg/application%20process/applcklst.pdf, p. 3.

2.Chicago District, U.S. Army Corps of Engineers. "Application Checklist." September 2005. http://www.lrc.usace.army.mil/co-r/checklis.htm.

3. New Orleans District, U.S. Army Corps of Engineers and Louisiana Department of Natural Resources Coastal Management Division. "Joint Permit Application for Work Within the Louisiana Coastal Zone." May 21, 2004. http://www.mvn.usace.army.mil/ops/regulatory/CMD-JPA.pdf, p. 6.

4. New York District, U.S. Army Corps of Engineers. "Environmental Questionnaire." http://www.nan.usace.army.mil/business/buslinks/regulat/formdocs/new-201r.pdf, p. 2.

5. Norfolk District, U.S. Army Corps of Engineers, Virginia Department of Environmental Quality and Virginia Marine Resources Commission. "Joint Permit Application for Projects Involving Tidal Waters and/or Tidal Wetlands in Virginia." http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/webTidewaterJPA2004.pdf, Part 1.10.

6. Norfolk District, U.S. Army Corps of Engineers, Virginia Department of Environmental Quality and Virginia Marine Resources Commission. "Joint Permit Application." http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/webJPA2004.pdf, § 3.

7. St. Paul District, U.S. Army Corps of Engineers. "Minnesota Local/State/Federal Application Forms for Water/Wetland Projects." October 29, 2004. http://www.bwsr.state.mn.us/wetlands/wcamanual/form03_B.pdf, § I.6.

8. St. Paul District, U.S. Army Corps of Engineers. "Minnesota Local/State/Federal Application Forms for Water/Wetland Projects: Public Transportation and Linear Utility Projects." September 1, 2004. http://www.bwsr.state.mn.us/wetlands/wcamanual/form03_C.pdf, § I.8.

9. State of Wisconsin Department of Natural Resources. "Application for Wetland Water Quality Certification." January 2002. http://www.dnr.state.wi.us/org/water/fhp/waterway/permits/pack20a.pdf, pp. 3-4.

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