FINAL DETERMINATION OF THE ASSISTANT ADMINISTRATOR FOR EXTERNAL AFFAIRS CONCERNING THE SWEEDENS SWAMP SITE IN ATTLEBORO, MASSACHUSETTS PURSUANT TO SECTION 404(c) OF THE CLEAN WATER ACT

I. INTRODUCTION

Section 404 of the Clean Water Act (33 U.S.C. 1251 et seq.) regulates the discharge of dredged or fill material to waters of the United States. Waters of the United States are defined to the broadest extent possible under the Commerce Clause of the Constitution, and include most wetlands. Such discharges are allowed only to the extent authorized by a section 404 permit and not prohibited or restricted by EPA pursuant to section 404(c). Congress established this regulatory scheme in recognition of scientific evidence which indicates that discharges of dredged and fill material can result in the destruction or degradation of aquatic areas with important public values. Wetlands play an essential role in the hydrologic cycle, purify water by holding nutrients and recycling pollutants, shield upland areas from storm damage, and provide vital food resources and habitat for fish and wildlife.

The 404 permit program recognizes both developmental and environmental values by focusing on protecting the resource (that is, the biological, physical, and chemical integrity of the Nation's waters) rather than on regulating development per se. The public has a legitimate expectation in the reasonable protection of private property rights, including the right to make reasonable, beneficial use of one's property. Citizens also expect, however, that the protection of property rights will be consistent with the need to protect resources that are beneficial to all. This nation would be ill-served by a policy which does not take account of the legitimacy of interests in both environmental protection and economic development. The statutory structure created by Congress in section 404 attempts to accommodate both sets of interests.

The section 404 permit program seeks to minimize adverse effects of discharges of dredged or fill material through application of the section 404(b)(1) Guidelines (regulations developed by the Environmental Protection Agency in conjunction with the Army Corps of Engineers). The Guidelines prohibit discharges which cause "significant degradation" to the aquatic ecosystem or

for which there are practicable, less damaging alternatives, and require adoption of practicable measures to minimize adverse effects of the discharges that are allowed. Although permits are issued by the Army (acting through the Corps of Engineers) or by approved states, the Act also provides EPA an opportunity under section 404(c) to exercise the final judgment on whether a particular discharge will have unacceptable adverse effects on aquatic resources. Before making such a section 404(c) determination, the Administrator must consult with the Chief of Engineers, the landowner, and the applicant in cases where there has been an application for a section 404 permit.

The Administrator has delegated this authority to make a final determination under section 404(c) to the Assistant Administrator for External Affairs, who is EPA's national section 404 program manager.

In this case, Pyramid Companies (Pyramid) has proposed to fill 32 acres of forested wetlands and to alter an additional 13 acres of forested wetlands at a site called Sweedens Swamp in Massachusetts. The purpose of this proposed discharge of dredged and fill material is to construct a shopping mall and appurtenant facilities. Pyramid has also offered to create 36 acres of artificial marsh wetlands to compensate for the loss of Sweedens Swamp, and has offered to post a $1 million performance bond on the man-made wetland's construction.

The Corps of Engineers gave great weight to Pyramid's offer and concluded that the project should be allowed to proceed, notwithstanding questions concerning the availability of upland alternatives. The Corps concluded that Pyramid's proposed wetland creation (or "mitigation") would yield an equivalent or better environmental result than preserving the existing wetland. Because of the site specific and generic implications of wetland creation and its relationship to EPA's and Corps' longstanding policy of avoiding the destruction of existing wetlands when the applicant has other practical alternatives available, EPA initiated this section 404(c) proceeding.

After full consideration of the record in this case and after consultation with the Corps, Pyramid and other interested parties, I have determined that the discharge of dredged and fill material for the purpose of constructing a shopping mall at the Sweedens Swamp site should not be allowed. My findings and reasons for this determination are, in summary form, as follows:

Although mitigation is a valuable and important tool in wetland preservation and enhancement, it is still an uncertain science at best. EPA encourages mitigation efforts when there are no practical alternatives other than filling in a wetland

for a particular project and the project does not cause significant degradation to aquatic resources. EPA is also attempting to improve the science of artificial wetland creation. Nonetheless, the science of wetland creation, particularly for a project of the size and type proposed here, is not sufficiently advanced to land the requisite certainty to a determination that existing benefits can be sacrificed on the promise that a new and different wetland will be "better" or even "equal" in value.

In reaching my decision, I have carefully considered the nature of the wetland at issue here. The comments in the record range from characterizing Sweedens Swamp as a "dump" to calling it a wetland "oasis." The truth is the Swamp is neither dysfunctional and useless, nor is it a pristine wetland of supreme individual value. It is, in the non-perjorative sense, an ordinary swamp. The fact that it is ordinary should not lead us to alter our policy policy of looking first to see whether there are practical alternatives to the destruction of the wetlands. I believe that, because of its confidence in the mitigation proposal, the Corps did not engage in its usual careful consideration of alternatives.

I find that there was a feasible alternative site available to Pyramid to fulfill its project objectives. And it is unacceptable to trade the certain benefits provided by this functioning wetland for the uncertain benefits of a large scale wetland creation. The language, regulations and purpose of section 404 all point to a fundamental principle: The degradation or destruction of special aquatic sites, such as wetlands, should be avoided if there are practical alternatives. This is neither a new nor a startling principle; it reflects a common sense approach to the preservation of a dwindling and important national resource.

What is unusual in this case is the factual setting in which the application of the principle arises. Pyramid now cannot realistically obtain the alternative site that I find was available to it. The site (North Attleborough) is owned by a competitor. Pyramid argues that the present unavailability of the site is dispositive and that it should be allowed to proceed with its project. I do not believe that fact can be given determinative weight.

When Pyramid entered the market area, it decided not to investigate the availability of the North Attleborough site, concluding that the site was not feasible for its project. That may well have been a reasonable business judgment for Pyramid to make. But in relying upon that judgment and in failing to pursue the alternative, Pyramid took the concomitant risk that the marketplace would prove it wrong in its assessment of the feasibility of the site. That is what happened in this case. A competitor, entering the market contemporaneously with Pyramid, has taken the requisite steps to develop a similar project on the North Attleborough site. I cannot ignore that fact, nor can I, consistent with the purposes of section 404, lift from Pyramid

the risk that it assumed in relying upon its business judgment that the North Attleborough site was infeasible. Pyramid's mitigation plan simply does not justify a deviation from the principle that wetlands should not be destroyed if practical alternatives are available.

In reaching my decision, I have also viewed this project in the context of broader regional issues. There has been a significant cumulative loss of wetlands in Massachusetts, and the state has put into effect stringent new limitations on wetlands destruction, effectively prohibiting any fill of more than 5,000 square feet of bordering inland wetlands. While this should not be viewed as a dominant factor -- particularly since Massachusetts, by grandfathering the Pyramid project, has given the project the necessary state permits -- it does reflect a qualitative assessment of the importance of the remaining wetlands in the state, and is a useful guidepost in judging the unacceptability of this fill.

Finally, on a more general note, I believe that both environmental and developmental interests are best served by a section 404 process that works efficiently and predictably. Great improvements in this regard have been made in the permit process. This particular section 404(c) proceeding has attracted a great deal of controversy and attention and has taken time to resolve. I do not view that, however, in any way as a flaw in the process. Pyramid made a novel offer of large scale offsite wetland creation in an effort to secure a permit for a site that it bought with full knowledge of the environmental problems associated with its development. That offer raised admittedly difficult issues where assessments of risks and benefits may legitimately differ. As indicated by the decision here, EPA will tend to be more conservative in its assessment of scientific uncertainties. In leaving the final determination of "unacceptability" to EPA, however, Congress, contemplated that EPA would apply its expertise on issues such as mitigation and would take a conservative approach to our nation's unique aquatic sites. I have carefully weighed all aspects of the proposed permit and considered both its site specific and precedential implications. I am convinced that approval of the project, given the existing uncertainties and alternatives, would have unacceptable adverse environmental consequences.

II. PROJECT DESCRIPTION AND HISTORY

Pyramid proposes to fill 32 acres of wetlands in Sweedens Swamp in Attleboro, Massachusetts to build a regional shopping mall. (See Figures I-II.) If permitted, this would be the largest authorized wetlands fill project in Massachusetts in over five years. Pyramid proposes to mitigate the adverse impacts on water quality and wetlands by excavating thirteen additional acres of wetlands and nine acres of uplands on site to create artificial wetlands. The alteration of the thirteen additional acres of natural wetlands is required to provide onsite capability for the storage and treatment of stormwater runoff from the development. Creation of thirty six additional acres of wetlands offsite would also be attempted.

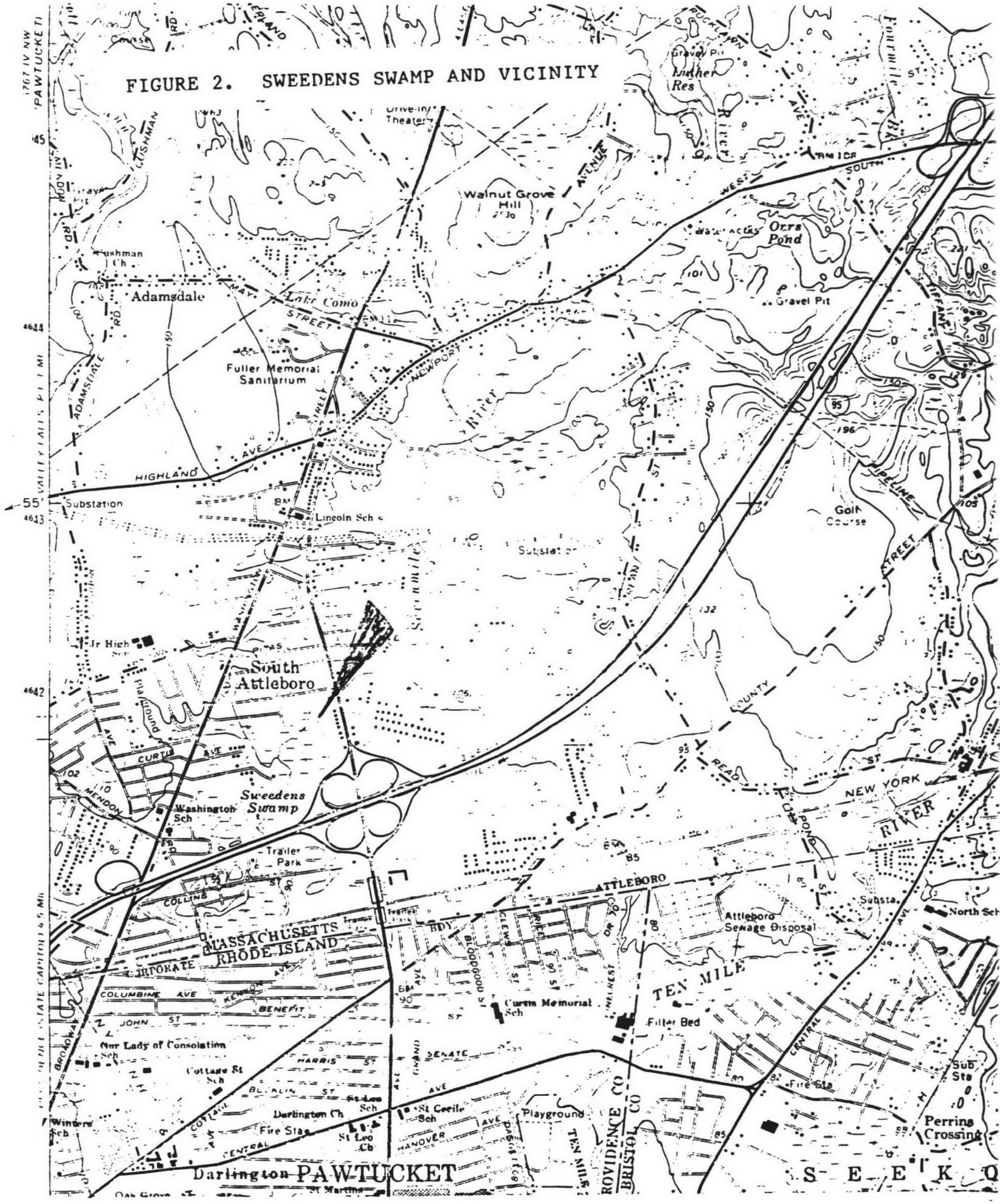
Pyramid first formally presented its proposal, which at the time included only onsite mitigation, to the federal agencies in May of 1984. EPA and the U.S. Fish and Wildfife Service (FWS) expressed concern over the loss of wetlands 1/ and requested that the Corps of Engineers (Corps) exercise its discretion to require an individual permit. The Corps agreed and so notified Pyramid; the permit application was submitted in August of 1984. After participating with Pyramid, the Corps and FWS in an evaluation of the wildlife habitat value of the site, EPA wrote letters to the Corps again expressing concern over the impacts of the proposal, emphasizing the presumption in the section 404(b)(1) Guidelines that practicable alternatives are presumed to exist for non-water dependent activities (such as shopping malls) in special aquatic sites (e.g., wetlands). The Corps hired a consultant to examine the question of practicable alternatives; his January, 1985 report concluded that both Sweedens Swamp and a site in North Attleborough were feasible for development of regional shopping malls. New England Development, a competing developer, proposes to build a shopping mall at the North Attleborough site.

In April of 1985 Pyramid added a proposal for offsite mitigation to the project. The Corp's Division Engineer in May of 1985 prepared a recommendation that the permit be denied, concluding that Sweedens Swamp provides excellent wildlife habitat for species of local importance. Corps Headquarters in Washington, D.C., after reviewing the Division's recommendation, determined that mitigation could make the applicant's proposal the alternative with the least adverse effect on the aquatic environment and directed the Division Engineer to prepare a notice of intent to issue a permit.

1/ EPA's section 404(b)(1) Guidelines, which provide substantive enviornmental criteria used in section 404 permitting decisions, classify wetlands as "special aquatic sites," and characterize their degradation or destruction as "among the most severe environmental impacts covered by these Guidelines."

FIGURE 1. REGIONAL MAP

FIGURE 2. SWEEDENS SWAMP AND VICINITY



The Corps Division prepared a proposed permit, but predicated permit issuance on the expected success of onsite and offsite mitigation and on steps to improve water quality. The proposed permit continued to characterize Sweedens Swamp as an excellent wildlife habitat.

EPA's Regional Administrator (Region I) Michael R. Deland, initiated section 404(c) action on July 23, 1985 by providing to the Corps and the applicant the opportunity for consultation on the discharge. FWS' Regional Director, by letter of July 25, 1985, indicated his support for EPA's action because the project would result in "significant avoidable adverse impacts to wildlife and to the wetland habitat upon which that wildlife depends." The Region entered into discussions with Pyramid and conducted a public hearing at which both supporters and opponents of Pyramid's mall spoke (the majority attending favored the mall). Over 1200 comments were received during the public comment period. After considering this information, and comments received by the Corps on Pyramid's offsite mitigation plan, the Regional Administrator on March 4, 1986 made a recommended determination to prohibit the specification of Sweedens Swamp as a disposal site for fill material.

The Recommended Determination (RD) was received in FPA Headquarters on March 5, 1986, and the administrative record was received on March 14, 1986. Meetings were held by the Assistant Administrator of External Affairs and by staff in EPA Headquarters with representatives of Pyramid on March 21 and 25, 1986, and with Department of Army/Corps of Engineers on March 27 and April 3, 1986. Meetings were also held with environmental and community interest groups on March 21, with representatives of New England Development on March 26, and with State and local representatives on April 4, 1986. In addition, several meetings were held with members of the U.S. Congress during the Headquarters' review of this case. Thousands of letters were received supporting the building of the mall; hundreds were received supporting a prohibition of the discharge.

The Assistant Administrator for External Affairs visited Sweedens Swamp, the North Attleborough Mall site, and the proposed Tiffany Street offsite mitigation area with EPA Region I staff on November 20, 1985.

Appendix A contains a month-by-month chronology of this case.

III. DESCRIPTION OF SITE

The detailed description of the 82-acre site and its present values which appears at Section III of the recommended determination is hereby incorporated by reference. The key points are summarized below.

The 49.5 acres of wetlands on the proposed project site are classified as palustrine forested, hardwood deciduous, seasonally flooded. They are characterized by a forest canopy consisting predominately of red maple trees over shrub and herbaceous layers. There are smaller areas of emergent wetland, shrub swamp, streams, and standing water in part of the wetland, which provide more diversity to the habitat.

The forested wetlands of the site have excellent vertical structure and provide habitat for several migratory bird species and a variety of resident mammals and amphibians. The wetlands also provide valuable summer habitat for many birds from surrounding areas which seek the abundant food sources (fruits and insects) as well as the shade and drinking water found there. Birds observed using the site include mallard and black ducks, the redshouldered hawk and the red-tailed hawk (avian predators that feed on small mammals that inhabit wooded swamps), the swamp sparrow, the Kentucky warbler and the common yellowthroat. A full list of all the species observed using the site is included in the recommended determination.

Extensive adjacent development has made Sweedens Swamp an isolated or "island" wildlife habitat. While this may restrict the number of species using the site, its size is sufficient to maintain a diverse resident wildlife population. Island ecosystems in highly developed areas are important because they provide the last remaining habitat for species that have been extensively disturbed.

The Corps and the FWS characterize the site's wildlife habitat as excellent. FWS designates the site as Resource Category 2, the second highest in its system for classifying habitat. The Massachusetts Division of Fisheries and Wildlife identifies the area as a "high-quality red maple swamp." EPA concurs that Sweedens Swamp provides excellent wildlife habitat.

A number of commenters have characterized Sweedens Swamp as a "dump." Trash and debris are present at the site, primarily along the highly visible perimeter and on the disturbed upland portions of the site. However, only a few scattered piles of debris litter the interior of the wetland; EPA estimates that dumping directly affects less than one tenth of the entire 82-acre site, little of that wetlands. Although unsightly to the casual observer, the refuse has little direct bearing on the wetland values provided by Sweedens Swamp. Parts of Sweedens Swamp have also been subject to other forms of human disturbance, for example, paving and motor

bikes. While this may have some impact on species using the site, the Corps found that "large segments of wetland remain relatively isolated from human impact." EPA agrees that the habitat values have not been significantly altered by this disturbance.

Pyramid and others have described the site as a wetland "in name only" and contended that it "does not function as a true wetland." These assertions are incorrect. Based on the information in the record concerning soil characteristics, vegetation and hydrologic regime, Sweedens Swamp is a typical New England red maple swamp which provides excellent wildlife habitat. EPA does not concur that Sweedens Swamp is a dysfunctional or low quality wetland.

Sweedens Swamp is also an effective area for storing flood water and moderating peak flows. Since the area draining into the wetlands is relatively small, these hydrologic values are important primarily when considered cumulatively. In terms of groundwater, this site acts mainly as a discharge area rather than a recharge area.

Because at least 30% of the total annual flow entering the site has the opportunity to contact vegetation, Sweedens Swamp has the capability to remove waterborne pollutants and to improve water quality.

In summary, Sweedens Swamp provides many wetland values such as wildlife habitat, food chain production, natural flood storage, groundwater discharge, and water quality renovation. While it is neither a unique wetland nor habitat for endangered species, this does not mean that Sweedens Swamp is unworthy of protection under the Clean Water Act. Average healthy functioning wetlands, such as Sweedens Swamp, comprise the bulk of our nation's wetland wildlife habitat.

IV. ADVERSE EFFECTS OF THE PROJECT

Construction of a large shopping center at Sweedens Swamp would drastically change the hydrology, soils, and biology of the area.

The location of the mall building, parking lot, and access roads are shown on Figure III. The western wetland basin would be completely filled. The mall itself would result in the filling of 32 acres of forested wetlands. Thirteen additional acres of forested wetlands would be excavated or otherwise altered to create marsh as part of the proposed onsite (i.e. work adjacent to the mall) mitigation.

The proposed onsite mitigation, if successful, would result in the conversion of 13 acres of forested wetlands and nine acres of uplands to 22 acres of emergent wetlands, shrub swamp and open water. Four acres of the existing forested wetlands would be preserved within the proposed onsite mitigation area. Thus, of the existing 49.5 acres of forested wetlands, only four and a half acres would remain after the construction of the shopping mall as well as the onsite mitigation. (The onsite mitigation was designed, at least in part, to provide necessary restoration of flood storage capacity and to handle new water pollution from the proposed mall.)

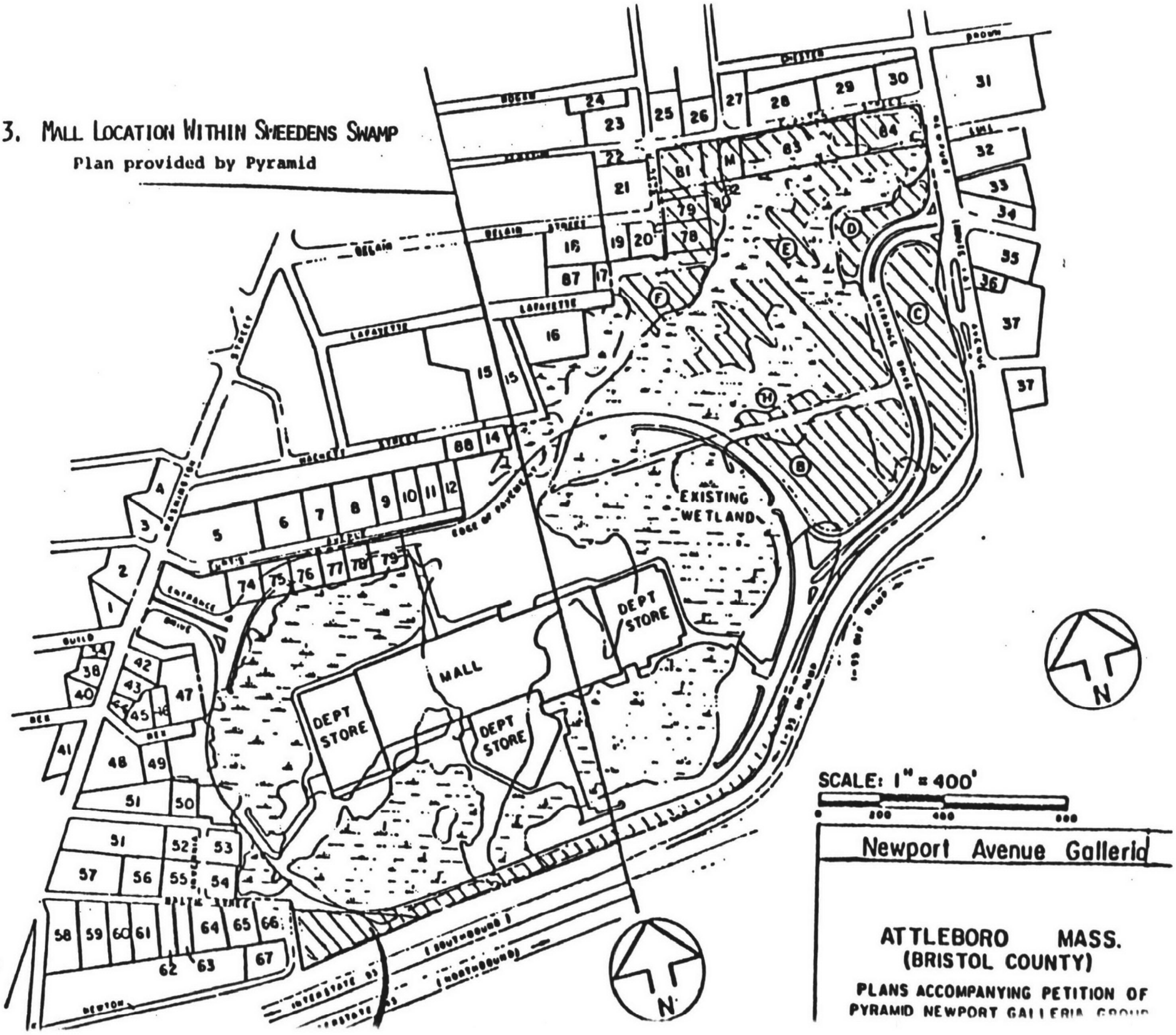
A. Wildlife Effects

As discussed in Section III, Sweedens Swamp provides a large, diverse habitat for a variety of wildlife, particularly species of birds, small mammals, and amphibians, that are typical of New England forested swamps. A substantial part of this habitat would be eliminated or altered. The numerical habitat assessment model (Appendix B) confirms that the proposed project would adversely affect wildlife values, through the loss of both wetland and upland habitat. There would be an outright loss of 45 acres of forested wetland, and a significant loss of the existing value of wildlife habitat as illustrated by the model. The proposed shopping mall would affect wildlife that currently utilizes Sweeden Swamp and would also alter available wildlife habitat.

Construction activities within the proposed mall site would convert 32 acres of forested wetlands to uplands which, for the most part, will be non-vegetated impervious surfaces. The observed mammal species would retreat from construction activities. However, as previously discussed, Sweedens Swamp is an island habitat and is not connected to adjacent habitats. When construction on the mall site begins, mammals will be dispersed into remaining portions of Sweedens Swamp (depending, of course, upon how much of the onsite mitigation is completed before construction) and away from Sweedens Swamp. Since the areas in the vicinity that might provide habitat for mammals displaced from Sweedens Swamp are

FIGURE 3. MALL LOCATION WITHIN SWEEDENS SWAMP

Plan provided by Pyramid



not connected, it may be assumed that some of the mammals displaced from Sweedens Swamp would perish. Construction activities would also displace the bird species observed in Sweedens Swamp.

The displacement would particularly adversely affect nesting species, such as the northern flicker, gray catbird, song sparrow and white-breasted nuthatch, and species which prefer forested wetlands, such as the red-shouldered hawk and the Kentucky warbler. The remainder of the observed bird species are generalists and less specific in their habitat requirement. Therefore, it is assumed that, once displaced, these species will have a better chance of finding replacement habitat.

In addition to affecting wildlife that currently utilizes Sweedens Swamp, the project will also alter available wildlife habitat. From a broad perspective, the loss of forested wetland habitat would be permanent (with or without the proposed mitigation). From the mid-1950's to the mid-1970's the U.S. lost over six million acres of forested wetlands. Many Massachusetts Conservation Commissions, appointed bodies responsible for carrying out Massachusetts' wetlands law at the local level, have expressed grave concern over the potential loss of this amount of wooded swamp, as well as its precedential effect.

Pyramid proposes to attempt to compensate for adverse wildlife impacts at the site by altering existing wetland habitat and by creating wetlands from upland areas. This attempt at compensation involves both "onsite mitigation" (i.e., work adjacent to the mall itself) and "offsite mitigation" (i.e., work at a sand and gravel mining site on Tiffany Street approximately 2 miles from the proposed mall site).

Turning first to onsite mitigation, Pyramid's proposal consists of attempting to create emergent marsh, shrub swamp and open water from existing wooded wetland and upland. Because only four acres of the wetland would be left in its natural state, the initial dredging and filling of the site would destroy nearly all its existing value for wildlife. The onsite mitigation area would also have minimal value immediately after excavation and regrading. If wetland vegetation in the mitigation area were successfully established, wildlife would probably begin to resettle in the area; however, the degree of resettlement may be affected due to greater disturbance from the activity at the mall. The low profile emergent wetlands proposed for this area would not buffer wildlife from disturbance of the highways (much less from the mall itself) as effectively as the existing wooded habitat does. Even if successfully established, the onsite wetlands would be substantially smaller and of a different type than those lost. The vegetation in these wetlands, although potentially producing more pounds per acre per year, would exhibit less spatial heterogeneity, structural diversity, and standing biomass than the existing swamp. Further, these new wetlands would not provide

habitat for the same numbers and types of species displaced or eliminated. The habitat assessment also shows that there would be a substantial drop in both wetland acres (-23) and wildlife habitat values. 2/

In an attempt to offset the net loss of habitat value at Sweedens Swamp, Pyramid proposed additional offsite mitigation. This additional mitigation would occur at a location two miles away where Pyramid would attempt to create 36-acres of emergent wetlands, shrub swamp and open water from an existing 30 acres of upland and 6 acres of open water. The habitat assessment model indicates that, even if 100% successful, the net increase in habitat values at this offsite location would not compensate for those lost at the proposed shopping mall site. Although Pyramid plans to provide a net increase of six acres of wetland under its mitigation proposal, any increase in wetland acreage (or numerical habitat values) will come at the expense of existing wetland and upland areas and their respective numerical habitat values. Pyramid has stated that, unless required by EPA pursuant to its section 404(c) authority, it would not have the offsite mitigation in place and functioning prior to beginning work at Sweedens Swamp.

As previously mentioned, the proposed onsite and offsite wetlands, if successful, would provide habitat for a different species mix than that currently utilizing Sweedens Swamp. These include waterfowl, shorebirds as well as a potentially different species mix of mammals, reptiles and amphibians. However, many of the small mammals and bird species typical of Sweedens Swamp would not usually use the new wetlands. While some species of wildlife might migrate to the created wetlands, their numbers and variety would not be the same as exist at Sweedens Swamp. A recent study 3/ in Massachusetts suggests that breeding bird communities in forested wetlands are significantly related to vegetation structure and hydrology. The study found that, generally, the most structurally diverse and most poorly drained forested wetland sites (such as Sweedens Swamp) have the most abundant and diverse breeding bird populations. In addition, raptors (predatory birds) such as the red-shouldered hawks observed at Sweedens Swamp would be especially affected. Recent research by the USFWS 4/ in

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2/ This net loss is demonstrated numerically in Appendix B. However, as the Appendix explains, the results of the numerical habitat assessment must in any case be viewed with caution because several factors may affect the precision and accuracy of the results.

3/ Swift, B.L., J.S. Larson and R.M. DeGraff. 1984. Relationship of Breeding Bird Density and Diversity to Habitat variables in Forested Wetlands. The Wilson Bulletin, Vol. 96(1): 48-59.

4/ USFWS Research Information Bulletin No. 85-19, November 1985.

Connecticut indicates that these predatory birds are consistently associated with mature, bottomland forests and may be particularly sensitive to land pattern changes in their habitats.

B. Hydrological Effects

Based on the record, the impacts to surface water quality from the proposed project appear to be minimal in comparison to other sources of contamination that already exist in the Ten Mile River watershed, although the amount of pollution from the mall site will increase the overall pollutant load to the watershed. The amount of surface water degradation resulting from mall construction and use will not itself be very significant if effecttive erosion and turbidity control structures are installed during construction and surface water runoff quality is maintained at acceptable levels. In view of the small watershed and associated flows and Pyramid's specific on-site plans, no significant adverse effects on downstream flooding are anticipated as a result of the completed project. It also appears that there would not be adverse impacts from Pyramid's proposed project upon public drinking water supplies, including the Seekonk Water District wells, if effective erosion and turbidity control structures are installed and maintained during construction and surface water runoff quality is maintained at acceptable levels, in accordance with the proposed permit conditions.

Summary

Pyramid's proposal would have an immediate and adverse impact on wildlife habitat. Thirty two acres of wetland with high habitat value would be filled. Moreover, the value of these wetlands to store flood waters, discharge groundwater, and maintain water quality would be lost. In order to provide compensatory flood storage and attempt to replace other wetland values, Pyramid would dredge or fill all but four acres of the remaining forested wetlands and upland. Even assuming full success of the onsite mitigation proposals, there would be a net loss of nearly 24 acres of wetlands and a concomitant decrease in the wildlife value of the site. In an attempt to provide additional compensation, Pyramid proposes to construct 36 acres of artificial wetlands at an offsite location. These wetlands, even if successful, would not serve the same species mix destroyed and therefore would not fully replace the lost habitat values at Sweedens Swamp as calculated by the habitat evaluation method (Appendix B). Thus, the offsite mitigation does not substitute for, but rather seeks to compensate for, the loss of wetlands at Sweedens Swamp.

However, given the circumstances surrounding the Sweedens Swamp site, it does not appear, based upon available information, that the proposed Attleboro Mall project with successful onsite mitigation would materially adversely affect downstream water quality, flooding or drinking water supplies.

In short, the proposed mall project, even with successful onsite mitigation, would have adverse impacts on wildlife values protected by section 404(c) of the Act. In determining whether these adverse impacts are unacceptable, it is relevant to examine next the avoidability of this wetland loss by reviewing whether there are practicable, less environmentally damaging alternatives to the proposed project.

V. ALTERNATIVES TO THE PROPOSED PROJECT

A. Why alternatives are relevant

In determining whether a proposed project would be likely to have an "unacceptable adverse effect" on the aquatic environment, EPA must evaluate both the loss of the resource and the unacceptability of that loss. The section 404(c) regulations state that relevant portions of the section 404(b)(1) Guidelines (40 CFR Part 230) should be considered in judging the unacceptability of a discharge under section 404(c). 5/

Concern has been expressed that EPA is, in considering the issue of practicable alternatives in a section 404(c) action, in effect "second-guessing" the Corps.

EPA's statutory role is not to duplicate the Corps' exercise of its statutory responsibility of issuing or not issuing permits. Rather, EPA's statutory role is to determine whether filling a particular aquatic site would have an "unacceptable" adverse effect on the resources enumerated in section 404(c). As a matter of common sense, as well as regulatory practice, the "acceptability" of an adverse effect may depend on the extent to which that effect is avoidable. The alternatives provisions, as well as other portions of the section 404(b)(1) Guidelines, thus are necessarily relevant to a section 404(c) determination.

Further, the mission of EPA is to protect human health and the environment. In this 404(c) proceeding, the impact of mitigation is a scientific assessment for which EPA has particular expertise. The status and uncertainty of mitigation science must be evaluated in the context of the status and certainty of natural environmental values being lost. Because the science of mitigation is, in EPA's judgment, uncertain and high-risk, the section 404(c) decision must analyze the necessity, or unavoidability, of the natural wetland loss.

5/ Section 231.2(e) defines "unacceptable adverse effect" as:

> impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies (including surface or ground water) or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas. In evaluating the unacceptability of such impacts, consideration should be given to the relevant portions of the section 404(b)(1) guidelines (40 C.F.R. Part 230).

See also preamble to the regulation, 44 Fed. Reg. 58076 (October 9, 1979).

The Guidelines implement the CWA's goal of maintaining and restoring the chemical, physical, and biological integrity of the nation's waters. The Guidelines direct the avoidance of wetland destruction where possible, through the so-called "alternatives test." 6/ When applied to wetlands, the alternatives test sets forth two rebuttable presumptions: 1) that for non-water dependent activities (such as shopping malls) there exist practicable alternatives to the discharge which do not involve wetlands; and 2) that such alternatives have less adverse impact on the aquatic ecosystem.

The rebuttable presumption that other practicable alternatives exist for nonwater dependent projects serves two functions. First and most importantly, it directs development away from sensitive aquatic resources. Second, it reserves such sites for projects which by their nature require access to water. The presumption correctly and logically recognizes that non-water dependent projects can usually be located someplace other than wetlands, whereas the range of options for water-dependent projects is, by definition, usually more limited.

6/ Section 230.10(a) provides, in pertinent part:

1. Except as provided under section 404(b)(2) [pertaining to navigation] 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.

2. An alternative is practicable if it is available and capable of being done, after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded, or managed in order to fulfill the basic purpose of the proposed activity may be considered.

3. Where the activity associated with a discharge which is proposed for a special aquatic site [defined in Subpart E to include wetlands] does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.

In the present case, one of the most contentious points is the issue of practicable, less damaging alternatives. Accordingly, this final decision now discusses whether the loss of Sweedens Swamp is an avoidable loss.

B. Practicable alternatives

To be considered "practicable" an alternative must be both feasible and available. 7/ But, as indicated, the applicant must present sufficient evidence to overcome the presumption that practicable alternatives are available. The record compels the conclusion that Pyramid has not rebutted that presumption.

Feasibility

Under the Guidelines, an alternative must be capable of satisfying the basic, or overall, purpose 8/ of the proposed project (taking into account cost, technology, and logistics). 40 C.F.R. §230.10(a)(2). The applicant's proposal is obviously the starting point for identifying the basic project purpose; the Guidelines' alternatives analysis does not examine alternate uses of the project site in question, but rather alternate sites (or designs) for the basic project purpose. Louisiana Wildlife Federation v. York, 761 F.2d 1044 (5th Cir. 1985).

The Guidelines do not demand an acceptance of literally every aspect of a developer's characterization of his "project purpose." However, in this case, the leading alternative site is capable of serving a strikingly similar project. Pyramid's project is a shopping mall, and the search for alternatives revolves around sites suitable for a shopping mall (or alternative designs at Sweedens Swamp). As discussed below, the marketplace has found that a nearby site is suitable for a virtually identical regional shopping mall: a "quality" fashion-oriented enclosed mall with nearly the same square footage and three anchor department stores, serving the same trade area. There is no convincing basis in the record for finding that such an alternative would not serve the same "basic purpose" as Pyramid's project.

7/ 40 C.F.R §230.3(q) provides: "The term 'practicable' means available and capable being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes."

8/ The preamble and the regulations use the terms "basic project purpose" and "overall project purpose" interchangeably. The preamble clearly supports the position that "basic purpose" refers to the general function of the proposed activity, not its specialized details (45 Fed. Reg. 85339 (December 24, 1980)), and in practice, EPA has consistently so interpreted the terms.

Primary attention has focused on a site known as the North Attleborough site, located immediately south of the interchange of U.S. Route 1 and I-295, approximately three miles north of Sweedens Swamp on Route 1. It is approximately 57 acres in size and is zoned for commercial use. New England Development, Inc. (formerly State Properties of New England) currently controls the site, on which it plans to build a regional shopping mall comparable in size and character to Pyramid's proposed Newport Galleria. In its July, 1984, 404 permit application, Pyramid stated that it had rejected the North Attleborough site on the grounds that it was not feasible to Pyramid's purpose, and thus, Pyramid stated, it was not a practicable alternative for its mall.

As a general matter, an applicant's submission of information clearly within its expertise is normally accepted by the Agency. Where the information seems in conflict with other available information, however, EPA must exercise its independent judgment to determine the matter at issue. Here, the marketplace evidence compels EPA to conclude that the North Attleborough site is feasible, notwithstanding Pyramid's rejection of it. As noted above, New England Development, Inc., an established developer in the region, plans a similar shopping mall at the site. The company has invested over $2 million at the mall site, has successfully pursued the necessary zoning, has done extensive engineering work, had contacted potential tenants, and has completed a State Environmental Impact Report. The willingness of an established developer to invest this time and effort into developing the North Attleborough site is strong evidence that it is a feasible site. 9/ Furthermore, this already convincing market place evidence is also supported by the conclusions of an independent consultant to the Corps of Engineers in January 1985 that the North Attleborough site was a feasible site for a regional shopping mall.

As detailed in the recommended determination, Pyramid has raised numerous specific objections to the North Attleborough site in an effort to justify its own rejection of the North Attleborough site. While I believe the market place evidence is itself sufficient evidence of feasiblity in this case, I nonetheless considered Pyramid's specific comments.

Py amid contends that the North Attleborough site is "too far north" of the primary trade area it had delineated. Even accepting Pyramid's delineation of the primary trade area, I find Pyramid's arguments unconvincing on this point. The site, located near the geographic center of Pyramid's trade area, is only three

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9/ Of course, feasibility does not guarantee success -- whether for an inherently risky shopping center business or for other commercial endeavors.

miles north of Sweedens Swamp, and only six minutes (driving time) further from the densely populated sections of the trade area. It is still within a 15-20 minute drive from the farthest (i.e., southern) fringe of the trade area, and it is a mere two miles west of Interstate 95. The consultant retained by the Corps states in his analysis of feasible sites that the location of the North Attleborough site is "almost ideal" from a market point of view. The marketing analysis conducted for New England Development reaches a similar conclusion. Thus, I find that the record shows that the North Attleborough site is a viable location for a shopping mall of this type, in the same trade area.

Further, Pyramid argues that the North Attleborough site is not visible from I-95 and therefore will be unable to attract sufficient shoppers. First, it should be noted that the North Attleborough site is located at an interstate highway interchange (I-295 and U.S. Route 1). The Corps' consultant's report on feasibility notes that visibility from both I-295 and Route 1 is excellent. The consultant's report also concludes that visibility in general is not an "overly important" consideration.

Pyramid asserts that highway access to the North Attleborough site is poor. However, New England Development's consultant, Realty Development Research, Inc., concludes that the site enjoys good access within the trade area. The Corps consultant also states that the location provides "excellent" road access via I-95, Route 1, Route 1A , and I-295. While the latter roads are currently less well traveled than I-95, he concludes that a mall at the North Attleborough site will create its own traffic by providing its own draw.

Pyramid also states that the site is too small to support a shopping mall. The proposed square footage and "footprint" of each development are roughly equivalent; thus the record provides no evidence that the North Attleborough site is too small.

In some of its later submissions, Pyramid states that one of the main reasons it rejected the North Attleborough site was because of improper zoning (at the time it was evaluating the site). However, in its October 1984 supplement to its 404 permit application, Pyramid states quite clearly that the site was not rejected because of its improper zoning. Pyramid explained that "[m]ost large regional shopping center sites have zoning, infrastructure and environmental constraints at least as severe as those affecting the North Attleborough I site. Had the ... location been acceptable, this site would have warranted our attention as a practicable alternative ...." In fact, the zoning of the site has, through New England Development's efforts, been changed to accommodate a regional shopping mall.

Pyramid also states that past failures at the North Attleborough site demonstrate its infeasibility. However, the same could be said for Sweedens Swamp, scene of at least two prior failures.

Moreover, the record indicates that the market has been improving and is currently strong and that New England Development has not reached any major obstacles to date. Accordingly, I do not find Pyramid's reference to past failures persuasive on this point. 10/ While some retailers apparently have a strong preference for locating at Sweedens Swamp (some planning to locate there have indicated that that is the only site in the market they would accept), the record nonetheless indicates that a North Attleborough mall will still be able to attract tenants, and is indeed competing vigorously for some of the same anchor stores.

Finally, Pyramid and others urge rejection of the North Attleborough site due to various practical problems, including traffic and water quality concerns, the proximity of an elementary school, and public opposition to the project. As previously noted, Pyramid itself recognizes that any large development is likely to pose difficulties that will require time, money, and proper planning to overcome, and the North Attleborough site is no exception. Some specific concerns raised by Pyramid and others are addressed in more detail in Appendix D. Here, I will simply note that many of the difficulties at the North Attleborough site also confronted Pyramid at the Sweedens Swamp site, including water quality, flooding, and traffic concerns, and the proximity of an elementary school. Public support and opposition exist at both sites. There is, in short, no evidence that the North Attleborough site presents unique or insurmountable problems.

Moreover, the fact that other established developers have elected to pursue quality regional malls in the vicinity at sites which do not meet Pyramid's stated criteria strongly suggests that Pyramid's criteria are not dispositive. 11/ In Pyramid's view,

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10/ Pyramid has also cited the failure of anchor stores at the Lincoln Mall on Route 295 as evidence of the unsuitability of such a location. However, the record indicates that the two anchors closed, not because of dissatisfaction with the location but rather because the retail chains of which they were part folded. The Mall quickly replaced the anchors (one replacement was in and operating in 4-5 months), and in fact the Mall is planning to expand to three or four anchors.

11/ New England Development's enterprise has already been described. In addition, another developer, Marathon Group of Companies, Inc., has announced plans to build a comparably scaled quality merchandise regional shopping mall anchored by three department stores in Seekonk, Massachusetts. The Seekonk site is a 79 acre parcel of land located on the southern side of Route 6 in the town on the southern border of the City of Attleboro, and is bordered to the west by East Providence, Rhode Island. The site is within a half mile of Interstate 195, and approximately five miles from I-95 and seven to eight miles from Sweedens Swamp.

FOOTNOTE CONTINUED ON NEXT PAGE

the Sweedens Swamp site is by far the preferred site (with its "excellent" location, access, and visibility), and that may well be the case from strictly an economic perspective. However, whether the North Attleborough site is or is not the best site within the trade area from a specific applicant's business perspective is not the issue. The practicable alternatives test requires only that other sites be feasible, not that they be equal or better. 12/

Availability

The other aspect of practicability is "availability," i.e, whether an alternative which is otherwise suitable for the basic project purpose is "available" for that purpose. The Corps and Pyramid believe that availability should be viewed as "availability to the applicant." I agree that "availability to the applicant" is the correct test to apply to this case. However, I still conclude based on the record that the North Attleborough site must be deemed available to Pyramid.

Pyramid has argued that the North Attleborough site cannot be considered available to it because a competitor controls it and presumably will not sell to Pyramid. I agree that there is no reason to believe that New England Development will sell to Pyramid. 13/ However, I do not agree that the analysis should stop there.

FOOTNOTE 11 CONTINUED FROM PREVIOUS PAGE.

The site is currently an abandoned drive-in theater and vacant land. The Seekonk site is located in the southeast portion of Pyramid's defined trade area, one of the most densely populated sections of that trade area according to Pyramid's 1983 retail market analysis. The Seekonk site would likely serve a market that significantly overlaps, but is not identical to, the market delineated by Pyramid.

12/ Since an applicant presumably usually selects the site which is best from his perspective, alternatives are almost by definition "second best"; to eliminate non-wetland sites on that basis would be inappropriate.

13/ That is not to say that New England Development could not have been talked into relinquishing its interest in the site at an earlier stage. In its October 1984 supplemental application to the Corps, Pyramid asserted (at 21), "[O]ur competitor...has spent little, if any, money on their attempt to develop this site. The current landowner, Allan Riley, is the primary financier of this effort. Mr. Riley is driven by a need and desire to rid himself of a vacant parcel with which he has been burdened for over five years."

The Clean Water Act and the 404(b)(1) Guidelines were intended to avoid unnecessary filling of wetlands and to require a prospective discharger to take a hard look before concluding that upland sites are not available. I do not believe that the Guidelines can, or should, be read as limiting the inquiry on availability solely to the time after an application is filed. It is both fair and consistent with the Guidelines to review the period of availability as including the period when the developer is selecting a site for its project. 14/

There are several reasons for this. First, in a situation where two parties contemporaneously enter the same market area for the same purpose, and one decides to option an upland site (thereby avoiding wetland destruction), while the other selects a wetland, such a "present ownership" test would turn the guidelines on their head and penalize the competitor who heeded the guidelines and pursued the upland site.

Second, the applicant usually must conduct its alternatives analysis before filing its application. A present ownership test would have the perverse effect of holding the applicant harmless

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14/ The issue addressed here relates particularly to circumstances where a developer or developers are entering a market area for the accomplishment of a specific project. I need not, and do not, decide here what the relevant time period would be in other circumstances -- e.g., where an applicant wishes to build on property inherited or acquired long ago.

Pyramid now argues that the language of the guidelines speaks exclusively in the present tense with respect to the availability of alternatives -- e.g., "An alternative is practicable if it is available ..." 40 C.F.R. §230.10(a) (emphasis added). It is clear, Pyramid contends, from the use of the present tense that availability must be determined as of the time of the application.

That reading of the regulatory language is too cramped. The use of the present tense was intended to insure a temporal matching of the requisite alternatives analysis and the availability determination. Indeed, in discussing practicability in its supplemental application to the Corps, Pyramid itself argued that the appropriate time for judging alternatives was when the applicant was reviewing alternatives and deciding on a course action. (Supp. App. at 20.)

The principle I have set forth in this case does not require (or permit) an open-ended historical review of whether an alternative site was ever available during an applicant's corporate or personal existence. Rather I have given the language the common sense reading that the review of alternatives and their availability are necessarily linked in time. This presents no conflict with either the language of the Guidelines or EPA's past practice.

for errors and omissions it made in its analysis. For example, if the applicant mistakenly concludes that a feasible alternative site is not available and that site is subsequently purchased by a competitor, a present ownership test would insulate the applicant from its error.

Finally, Pyramid itself has stated that it "conducted a comprehensive investigation and analysis of the Attleboro primary trade area well before committing any time, money or personnel resources to the development of any specific site." (10/84 Supp., p. 4) (emphasis added). Indeed, Pyramid stated that "at the outset of our trade area investigation, our business judgment was to: (1) find another acceptable site [i.e., a site other than Sweedens Swamp] and (2) to use our influence with major department stores to convince them that the [Sweedens Swamp] site was not the only acceptable location in the area." (Id. at 8). Pyramid's own statements thus show that its search for alternative sites substantially pre-dated its acquisition of Sweedens Swamp. It is certainly fair and reasonable for EPA to review the availability of alternatives in the same time frame that Pyramid reviewed them.

The uncontested fact is that Pyramid never checked the availability of the North Attleborough site during its investigation of the market, notwithstanding its knowledge that Sweedens Swamp suffered from significant environmental constraints. Pyramid rejected the site not because it was unavailable but because Pyramid believed it was not an economically viable site. Pyramid stated that it would have turned down the site for its project even if it were offered "for free." (10/84 Supp., p. 9).

Neither the CWA nor the Guidelines require an applicant to probe the availability of a site that the applicant believes is unsuitable for its project. That is a judgment for the applicant to make. But in making that judgment, the applicant runs the risk that the marketplace will call into question the determination of unsuitability, and the applicant will then be left without proof that the alternative site was also unavailable. That is the case here.

The record indicates that New England Development began acquiring options over property at the North Attleborough site in July, 1983, and completed its acquisitions in February, 1984. Pyramid apparently purchased Sweedens Swamp in December of 1983, but, as indicated above, began its investigation of alternatives "well before" that time. 15/ In an attempt to pin down the timing,

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15/ While Pyramid elsewhere states that it "commenced" its investigation in "approximately" September 1983 preparatory to making an aquisition decision, the record suggests that it would be customary in the industry to follow the market area longer than that before paying $2 million for a site with admittedly severe environmental constraints. Indeed, in October 1984, Pyramid emphasized that it had comprehensively evaluated the area "over one year ago." (10/84 Supp., p.21) (emphasis added).

EPA asked Pyramid for detailed information concerning Pyramid's contacts with realtors, department stores, DeBartolo, and various property owners. Pyramid responded that such information "simply does not exist." (December 17, 1985 letter). It would be, at best, conjecture for me to attempt to recreate what would have happened had Pyramid explored the availability of the North Attleborough site when it first entered the market. 16/ All that the record clearly shows is that Pyramid and New England Development were exploring the same trade area at approximately the same time and that Pyramid decided against the North Attleborough site solely on the basis of unsuitability. On this record, I cannot find that Pyramid has met its burden of showing that the North Attleborough site was unavailable. To make such a finding would be particularly inappropriate in this case since Pyramid bought Sweedens Swamp with full awareness of the environmental concerns posed by destroying the swamp and with a full appreciation of the importance of finding an alternative site.

The special circumstances of this case, argue for an additional, though subsidiary, basis for considering the North Attleborough site as one available to Pyramid. Pyramid chose to be considered as Attleboro Mall, Inc., for the purpose of avoiding the State's new stringent environmental regulation. Logic indicates that Pyramid is likewise bound by alternatives available to Attleboro Mall, Inc., and the record shows the North Attleborough site was available to Attleboro, Mall, Inc., Pyramid's acquired affiliate.

On March 13, 1985 the state Department of Environmental Quality Engineering (DEQE) granted a State permit to Attleboro Mall, Inc., an acquired affiliate of Pyramid, for the filling of Sweedens Swamp. This decision followed a lengthy adjudicatory hearing, in which one of the issues was whether Attleboro Mall, Inc.'s proposed mall could be treated as a continuation and improvement of the earlier mall proposals made by Mugar and DeBartolo, 17/ or whether

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16/ As noted above, Pyramid has said Mr. Riley had been trying to "rid himself" of the parcel for years.

17/ The original notice of intent was filed by the Mugar Group, Inc./Federated Stores Realty, Inc. in March, 1979. The local Corservation Commission's approval of the project was appealed to DEQE. During the appeal process, Mugar conveyed ownership of the Sweedens Swamp site to Attleboro Mall, Inc., then an affiliate of the Edward J. DeBartolo Corporation. In April, 1982 DEQE issued a Superceding Order to Attleboro Mall, Inc., denying the project. Subsequent to the denial, apparently in December 1983, Pyramid obtained control of Attleboro Mall, Inc. and pursued a challenge of the DEQE denial through an adjudicatory hearing.

the revised and now Pyramid-controlled project had to start the state process anew. The DEQE agreed with Pyramid and ruled that a successor in interest could substitute itself for the prior owner and continue in the proceedings without filing a new notice of intent.

Pyramid's claim that it should assume the rights of the original applicant for the state permit meant that Pyramid's proposal was evaluated by the state under regulations that had been in force at the time of the original permit application, rather than under the more stringent regulations which took effect in 1983. The applicability of the old regulations was critical to Pyramid since the new regulations prohibit the filling of more than 5000 square feet of bordering vegetated wetlands. 18/ 310 C.M.R. 10.55. This fact was acknowledged by the State in its final decision.

Since Pyramid acquired the rights of its predecessor, logic would have it be bound by the obligations of its predecessor -- including the obligation to choose an upland alternative. I believe that alternatives available to Attleboro Mall, Inc. while it was under the control of either DeBartolo or Pyramid should be considered. 19/

The North Attleborough site is one such site. It was clearly available for purchase prior to New England Development's acquisition of control over it. In fact, the record indicates that the DeBartolo Corporation expressed an interest in the site to a local realtor who was offering it, and even exchanged some papers, but did not pursue an acquisition. These circumstances reinforce the conclusion that Pyramid has not met its burden of proving that the North Attleborough site was not available to it.

C. Less environmentally damaging alternatives and mitigation

The alternatives requirement also takes in account comparative environmental impacts. The alternatives test provides that "no discharge of dredged or fill material may be permitted if there is a practicable alternative to the discharge which would have less adverse effect on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." 40 CFR §230.10(a) (emphasis added). However, alternatives "which do not involve a discharge into a [wetland]

18/ Pyramid proposes to fill approximately 1,400,000 square feet of bordering vegetated wetlands.

19/ The Newport Galleria Group, another Pyramid affiliate, applied for the federal permit. On February 10, 1985, Attleboro Mall, Inc. conveyed the Sweedens Swamp site to the Newport Galleria Group for $10.00.

are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise." §230.10(a)(3) (emphasis added). 20/

Turning to this case, the record demonstrates beyond doubt that locating a shopping mall at the North Attleborough site would have less adverse impact on the aquatic ecosystem. 21/ For example, the North Attleborough site has less than one acre total wetlands, scattered in small pieces, compared to the 32 acres to be filled at Sweedens Swamp. (Although New England Development plans some retention basins on an adjacent parcel which has some larger wetlands, the basins will not encroach on those wetlands.) Furthermore, construction of a mall there need not have more impacts of concern downstream than at Sweedens Swamp.

Under the Guidelines, the alternatives inquiry does not end here. I must also consider whether there are other significant adverse environmental impacts. As a general matter, both sites will accommodate the same basic project; and there is nothing in the record to suggest that air, noise, trash, etc., impacts of a mall will not be largely comparable at Sweedens Swamp and the North Attleborough alternative site. The regulations contemplate that only unusually significant upland impacts would override wetland impacts. No such significant impacts are present in this case. In fact, the Corps concluded that, mitigation aside, the North Attleborough site "has much less value for wildlife" than does Sweedens Swamp.

I recognize that both the wetland and upland at issue here offer "wildlife" habitat. However, wetlands are scarcer than uplands and historically have been lost at a much higher rate. In

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20/ As noted by both the Corps of Engineers and the recommended determination, a threshold issue is whether offers of mitigation (i.e., compensatory wetland creation) should be considered in comparing the impacts of the project at the proposed site and at alternate sites. General Wall's "Views of the Chief of Engineers" recognized that allowing compensatory mitigation to be factored into the alternatives analysis "is somewhat problematic, because if not implemented carefully, it could serve to weaken or subvert key provisions of the current 404(b)(1) Guidelines" and be counter to the Guidelines' obvious intent (although he concluded that exceptions could be made in "proper cases"). For the reasons discussed below, I conclude that mitigation should not be included in my alternatives analysis in this case. Accordingly, the following environmental analysis of the alternate sites identified above properly focuses on the impacts of the project without the "add-on" mitigation.

21/ In fact, this is so even if one were to consider Pyramid's onsite mitigation offer as part of the project itself.

addition, wetlands serve a variety of ecological functions of which wildlife habitat is only one. For example, these functions include significant water purification functions, flood and storm water storage, groundwater recharge or discharge areas, and food chain production, spawning and rearing sites as well as general habitat. Hence, as a generality, acre per acre, loss of wetlands is considered more significant than development of uplands. Furthermore, in this case, Sweedens Swamp serves as a more effective sheltering urban island habitat. Also, the larger habitat complex, of which the North Attleborough site is part of, unlike Sweedens Swamp, will continue to provide wildlife support functions even if a mall is built.

Finally, I have considered the question of whether Pyramid's proposed offsite creation of a new wetland should be viewed as establishing the Pyramid project as "environmentally preferable" to any other alternative.

This case involves an extensive wetland fill, and an evolving offer to create a large scale wetland complex out of a mostly upland gravel pit. The record raises concerns about the short-term and long-term viability of the mitigation, as well as its enforceability. Under the circumstances, given the large size of the proposed mitigation, the state of the science of artificial wetland creation, the purpose of the alternatives analysis, and the avoidability of the loss of this particular wetland of proven value, I do not believe that the proposed mitigation plan is of such clear environmental benefit that it can justify the unnecessary destruction of an existing wetland.

The offsite mitigation proposed here involves creation of a 36 acre wetland from 30 acres of upland gravel pit and 6 acres of open water at Tiffany Street, over a mile from Sweedens Swamp. The plan calls for the excavation to create weepage faces of groundwater to induce surface water flow, and the mixing of peat with the top foot of substrate to create a "wet mix" to provide conditions to enhance the growth of wetland vegetation (mostly emergent herbaceous vegetation and some shrubs, rather than trees). The onsite mitigation proposal involves the excavation of 9 acres of upland and the conversion of 13 acres of wooded swamp, to create 22 acres of open water habitat and marsh. Pyramid has said it would not challenge EPA if EPA required that the Tiffany Street site be completed prior to construction of the Mall. Pyramid has also stated at various times that it believes that establishment of the Tiffany Street site would take only a few months or 1-3 growing seasons, 22/ although scientific uncertainties associated with such a large man-made wetland, created from predominantly upland, suggest that that is optimistic. The onsite mitigation would necessarily require the concurrent alteration of Sweedens Swamp.

22/ See e.g., affidavit of John A. Bersani, dated August 23, 1985, at paragraph 29.

Without in any way questioning Pyramid's good faith, I nonetheless believe that this proposal presents substantial risks and uncertainties. While considerable work has been done in wetland restoration and enhancement, the science of wetland creation is much less advanced. This is not surprising considering that when wetlands are artifically created, a successful combination of engineering and environmental management techniques is required in order to attempt what it may take natural systems centuries to do.

For example, analysis of the literature indicates that simply creating the requisite "structure" does not guarantee that a wetland ecosystem will function as intended. 23/ Indeed, the preface (at pp. 4, 11) to the Massachusetts wetland regulation premises its blanket prohibition against filling more than 5,000 square feet of bordering vegetated inland wetlands on the fact that "[t]he complex natural functions of these wetlands cannot be replicated, and no amount of engineering will enable such areas to be filled or substantially altered without seriously impairing the statutory interests they serve," particularly water quality and habitat. For these reasons, Pyramid's offer of a 5-year performance bond is of limited utility to ensure success of mitigation.

Moreover, particularly until it is well established, a created wetland is especially vulnerable to a number of forces. These include fluctuations in its energy signature (i.e., fluctuations in hydroperiod, hydrologic energy, and nutrient availability), factors that shape the wetland development process (i.e., temperature, fire frequency, salinity, and herbivores), and colonization by pioneering species, many of which are noxious weeds that are not indigenous species (i.e., purple loose-strife and other "nuisance" plants are prone to invade and dominate disturbed wetland areas). Even if the above vulnerabilities are overcome, it can take seasons until an inland marsh is established, and decades for a shrub or wooded swamp. Consequently, it takes a considerable period of time to be sure that a wetland has become successfully established and even then there is some uncertainty as to how well it will function, both objectively and relative to the wetland it is designed to replace. These uncertainties, and the consequent need for long-term monitoring, increase with the size of the project. 24/

23/ LaRoe, E.T. 1979. The biological basis for estuarine ecoystem mitigation, pp. 90-92. In G.A. Swanson (Technical Coordinator) 1979. The Mitigation Symposium: A National Workshop on Mitigating Losses of Fish and Wildlife Habitats. General Technical Report Station, USDA Forest Service, Fort Collins, Co.; Gonor, J.J. 1979. Id. at 92-93: Race M.S. and Christie, D.R. 1982. Coastal Zone development: Mitigation, Marsh creation and decision-making. Environmental Management 6:317-328.

24/ Wetlands: Their Use and Regulation, Washington, D.C., U.S. Congress, Office of Technology Assessment, OTA-0-206, March 1984.

Pyramid's proposal involves frontiers of science. It appears to be one of the largest wetland creation projects of its type to date. (While larger scale projects have been cited, such as the Ducks Unlimited effort in Canada, they involve essentially wetland enhancement, not creation.) The site presents complicated questions of hydrology. No satisfactory source of peat for the wet mix has even been identified to date. At the Corps' request, Pyramid has submitted extensive historical records on precipitation, groundwater and surface water fluctuations as well as information on the hydrological performance of the wet mix, which the Corps is still evaluating in an effort to address the uncertainties of Pyramid's offsite mitigation's success.

Those uncertainties take on a particular importance in light of the fact that the mitigation is proposed to replace an existing, stable, functioning wetland whose loss is unnecessary. I must consider the role of mitigation in light of the purpose of the alternatives analysis to avoid loss of wetlands where possible. As the preamble to the Guidelines notes, that purpose "was to recognize the special values of wetlands and to avoid their unnecessary destruction, particularly when practical alternatives were available in non-aquatic areas to achieve the basic purposes of the proposal." 45 Fed. Reg. 85339 (December 24, 1980). I cannot find that the policies of the Guidelines, or indeed the Act, would be well served by assuming the risks of Pyramid's proposed wetland creation where there is a feasible, available, upland alternative. The availability of the mitigation option in such a case would undercut the incentive to seriously and carefully examine non-wetland alternatives.

The Corps also expressed concern about the precedential significance of allowing a mitigation proposal to obviate the alternatives test, but believed that the approach it took in this case could be confined to a limited and proper set of circumstances. I am not so confident. This is not a minor project; it is not a scientifically certain project. To accept it under these conditions would, in my view, encourage developers to seek novel mitigation measures, not alternatives, and would undermine the predictability of the permit process. We would find ourselves drawn, as in this case, into assessments of mitigation approaches for which we will be able to make, at best, only qualitative judgments based on uncertain knowledge. As the technology develops, there might well be a case in which even offsite, out of kind wetland creation would be so beneficial and so reliable as to justify an exception. This plainly is not the case here.

Furthermore, Pyramid's proposal, even if successful, would not provide the same kind of habitat as that which would be lost at Sweedens Swamp. Sweedens Swamp is a wooded swamp which provides vertical heterogenity, and heavy cover, and supports a particular mix of bird, mammal, and amphibian species. The Tiffany Street site, if successful, would provide largely marsh and open water, with some shrub swamp, and would be designed to support a somewhat different mix of species. It is also physically separate from Sweedens Swamp, with no ground corridor between the two.

These differences further reinforce my conclusion that it would be inappropriate in this case to let an offer of manmade wetlands override the Guidelines' policy of avoiding losses where practicable. The aquatic ecosystem is one in which each piece plays a role in the whole. Wetlands are not fungible (that is, ecologically interchangeable). Thus, when one creates a mitigation wetland, one is not necessarily restoring what was lost, one is simply attempting to compensate. Even where two wetlands both serve the same generic "wildlife habitat" function, there may still be differences which prevent their being wholly interchangeable. The extent of discrepancy between what one loses and what one creates is not fixed; it obviously increases as one substitutes one kind of wetland (e.g., marsh) for another kind of wetland (e.g. swamp) or for open water; as the distance between the former and new wetlands increases; or as other variables are introduced. In short, even if one assumes created wetlands will be successfully established, there are fundamental questions about what wetland compensation can promise as true replacement. 25/

I do not mean to downplay the value of mitigation in the appropriate context. Where a wetland loss is unavoidable and the discharge does not cause or contribute to "insignificant degradation," EPA encourages consideration of mitigation. Furthermore, manmade wetlands may play a valuable role in waste water management. Indeed, EPA is devoting resources to research in both those areas. However, the case before me does not involve either of those situations.

25/ In a recent study of wetland use and regulation undertaken by the Office of Technology Assessment at the request of Congress, the authors warned of the need for judicious review by federal agencies of wetland construction proposals:

> The ability to construct new wetlands should not be used as sole justification for the unregulated conversion of wetlands to other uses: manmade wetlands do not necessarily provide the same values as natural ones. (emphasis in original)

Office of Technology Assessment report, supra at 117, 130-31

VI. FINAL DETERMINATION

The mission of the Environmental Protection Agency is to protect human health and the environment. In interpreting our administrative responsibilities as mandated by law, regulation and administrative directive, we must conduct our activities with fulfilling that mission constantly in mind.

The Clean Water Act, section 404, directs a special emphasis to our nation's waters, including special aquatic sites such as wetlands. Regulations written pursuant to Section 404(b)(1) incorporate a crucial environmental standard that forbids avoidable destruction of wetlands. The question of avoidability is answered through the practicable alternatives test, more commonly known as the "water dependency" test. The section 404(b)(1) Guidelines direct that when a project which is not water-dependent (for example, a shopping mall, which need not be constructed on or near waters of the United States) is proposed for a permit to fill waters of the United States, there must be a rebuttal of the regulatory presumption that there are no upland alternatives available to meet its objective.

Section 404(c) of the Clean Water Act provides the Environmental Protection Agency the authority and responsibility to review and to condition or prohibit discharges into waters of the United States when certain unacceptable environmental effects would result from the project's construction.

Mindful of the mission of this Agency, the intent of the Clean Water Act, historical loss of approximately half of United States' wetlands, and the continued cumulative national loss of approximately 300,000 wetland acres annually, which affects wildlife, flood protection and water quality, fish, shellfish, and water supply, I began a careful review of the case before me.

Sweedens Swamp is a typical well-established, functioning, red maple swamp which provides excellent wildlife habitat for a variety of birds, mammals, and amphibians, and provides flood storage capacity, groundwater discharge and water purification. Pyramid's proposed shopping mall will result in the destruction of approximately 45 out of 49 acres of this wetland habitat. Thirty two acres would be premanently destroyed, and although Pyramid has offered to recreate other wetlands on the site, doing so would result in the at least temporary destruction of 13 of the remaining 17 acres of wetland habitat. These losses are not necessary in order to have a quality fashion-oriented regional shopping mall. There is at least one practicable alternative site in the same market which was rejected by Pyramid on grounds of infeasibility, not availability to Pyramid, when it was investigating the trade area prior to selecting Sweedens Swamp. In short, filling Sweedens Swamp would result in significant avoidable loss of wildlife habitat.

I must now determine whether this loss is "unacceptable" within the meaning of section 404(c). The context in which the particular loss would occur is important to this inquiry. The filling of Sweedens Swamp would be the largest authorized wetland loss in Massacusetts in at least 5 years. Historically, there has been a significant cumulative loss of wetlands in Massachusetts; upwards of 50% of the wetlands in the State have been lost to date. This loss is of great concern to the State. The Massachusetts wetlands regulations were recently revised to put more stringent limitations on wetlands destruction. Activities causing the loss of more than 5,000 square feet of bordering inland wetlands (the type of Sweedens Swamp) are effectively prohibited under the new regulations. Moreover, the Massachusetts Association of Conservation Commissions and a large number of its members have expressed grave concern over the cumulative impact of similar losses. (Conservation Commissions are appointed bodies responsible for applying Massachusetts' wetland regulations at the local level.) EPA may take cognizance of these facts as reflecting the importance of the remaining wetlands in the State.

Based on the excellent wildlife value of the wetland in question, its size and setting, the avoidability of the loss, and the significance of such areas in Massachusetts, I conclude that filling Sweedens Swamp to build the proposed mall would have unacceptable adverse effects within the meaning of section 404(c).

Pyramid offered to create a 36 acre artifical marsh wetland as compensation for the destruction of the red-maple swamp known as Sweedens Swamp. I do not interpret the Section 404(b)(1) guidelines as allowing mitigation as a remedy for destroying wetlands when a practicable alternative exists. Nor does the state of the science of man-made wetland creations comfortably allow me to recommend at this time that man-made creations of wetlands should obviate the need for an alternatives test, particularly for non-water-dependent projects.

The Environmental Protection Agency has, because of its expertise and responsibility, a strong concern over the scientific uncertainties of artifically-created wetlands, and thus such artifical wetlands' use must be conservatively applied. I am, therefore, anxious that we do not set a precedent across this nation of substituting artificial wetlands for natural, functioning wetlands without consideration of the need for destroying those natural wetlands; we simply do not have the scientific ability to certify what techniques will assure the success of such man-made creations. If we established the precedent to allow these substitutions without regard to need, the Army and EPA would be called upon continuously to judge wetland creations as replacements for natural wetlands -- and the state of the science is such that we cannot make such judgments with acceptable risk to precious and dwindling natural resources.

The Environmental Protection Agency does encourage mitigation efforts for unavoidable losses of wetlands where the project did not cause or contribute to significant degradation of waters of the United States, and supports continued research in wetland creation. However, as I examined Pyramid's mitigation plan, and the conditions which would be needed to ensure that the created wetlands would be successful, I became even more convinced of the risks involved for a project which is not water-dependent, and which would unnecessarily destroy natural wetlands of proven environmental value.

After considering the full record, I determine that the construction of a shopping mall in Sweedens Swamp would cause unacceptable adverse effects on wildlife and wildlife habitat, and under the authority delegated to me by the Administrator of the Environmental Protection Agency, therefore hereby prohibit the use of the site for the proposed fill.

May 13, 1986
Date

Jennifer Joy (Hanson) Wilson