

RECOMMENDATION OF THE REGIONAL ADMINISTRATOR

(REGION I) CONCERNING THE SWEEDENS SWAMP SITE IN ATTLEBORO,

MASSACHUSETTS PURSUANT TO SECTION 404(c) OF THE CLEAN WATER ACT

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I. INTRODUCTION

This recommended decision concerns a 50-acre wetland in Attleboro, Massachusetts known locally as Sweedens Swamp, where the Newport Galleria Group, an affiliate of The Pyramid Companies, (Pyramid) proposes to build an enclosed regional shopping mall. Largely a forested wetland adjacent to a headwater tributary of the Seven Mile River, the swamp is located next to Interstate 95, roughly one-quarter mile from the Rhode Island border. In order to **construct** the mall and appurtenant facilities, Pyramid proposes to fill 32 acres of wetland. Pyramid would excavate another 13 acres of existing wetland and 9 acres of upland in an attempt to mitigate the adverse impacts of the mall on flooding, water quality and wildlife. As additional mitigation, Pyramid proposes to excavate and regrade 30 acres of upland and 6 acres of open water several miles from the site in an attempt to create emergent marsh, open water, and shrub wetlands.

Section 404(c) of the Clean Water Act (CWA, 33 U.S.C. §1251 et seq.), authorizes the Administrator of the Environmental Protection Agency (EPA) to prohibit or restrict the use of any defined area as a disposal site, whenever he determines, after notice and opportunity for public hearing, that the discharge of dredged or fill materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. Before making such a determination, the Administrator must consult with the Chief of the Army Corps of Engineers, the property **owner(s)**, and the **applicant(s)** in cases where **there** has been application for a Section 404 permit.

EPA's regulations implementing Section 404(c), 40 C.F.R. Part 231, establish procedures to be followed in exercising the Administrator's authority to prohibit or restrict the use of an area as a disposal site. The three major steps in the process are the Regional Administrator's proposed decision to prohibit or restrict the use of a site; the Regional Administrator's recommendation to the Administrator to prohibit or restrict use of the site; and the Administrator's final decision to affirm, modify, or rescind the regional recommendation. The Administrator has delegated the authority to make a final decision under Section 404(c) to the Assistant Administrator for External Affairs, who is EPA's national Section 404 program manager.

This proposed shopping mall has been controversial and attracted widespread public opposition and support. I have carefully considered the record developed by EPA and the Corps in this case, including the many public comments submitted, information presented at public hearings, voluminous submissions by the proponent, and the comments of other federal and state agencies. As described more fully below, I have determined that the discharge of fill material into Sweedens Swamp as proposed by Pyramid would be likely to have an unacceptable adverse effect upon wildlife habitat. Therefore I recommend that use of the area as a disposal site for the purpose of building a shopping mall be prohibited.

In the following sections, I first discuss the history of Pyramid's proposal and the events leading to EPA's initiation of the section 404(c) process. Next I describe the values of Sweedens Swamp, concluding that the wetland at the site provides excellent wildlife habitat for birds and mammals of local importance, maintains water quality, provides valuable flood storage, and discharges groundwater. Following a description of the wetland values, I explain the basis for my conclusion that construction of a mall at the site would be likely to cause significant adverse impacts to those wetland values, particularly wildlife habitat.

To determine whether the adverse impacts would be unacceptable, I then examine whether the project would comply with EPA's section 404(b)(1) guidelines. I have determined that the project would not comply with the guidelines, since there are less environmentally damaging practicable alternatives to filling Sweedens Swamp, as described in Section V herein. Pyramid's proposed mitigation is not relevant to the conclusion that there are alternatives, for the reasons described in Section VI. In the final section, I explain why the large loss of wetlands and wildlife habitat at Sweedens Swamp that would result from this project, coupled with the projects's violation of the central element of the 404(b)(1) guidelines, supports a finding that the adverse impacts are unacceptable and that the filling of Sweedens Swamp should be prohibited.

Pyramid's proposal presents numerous and complex issues; many are fundamental to the regulatory program under section 404 of the CWA. In reaching my decision, I have been mindful not only of the facts, but also of the precedential nature of this case. I seriously considered whether I should recommend that the project, including mitigation, be allowed to proceed under detailed conditions. I concluded, based on my understanding of the facts in the record, that such an approach would require me to interpret EPA's section 404(b)(1) guidelines in a way which differs markedly from past application of the guidelines by both EPA and the New England Division of the Corps. In contrast, I believe this recommended decision addresses the specific issues posed by this case, is most sound from an overall environmental policy perspective, and best furthers the goals of the Clean Water Act.

FIGURE 1. REGIONAL MAP

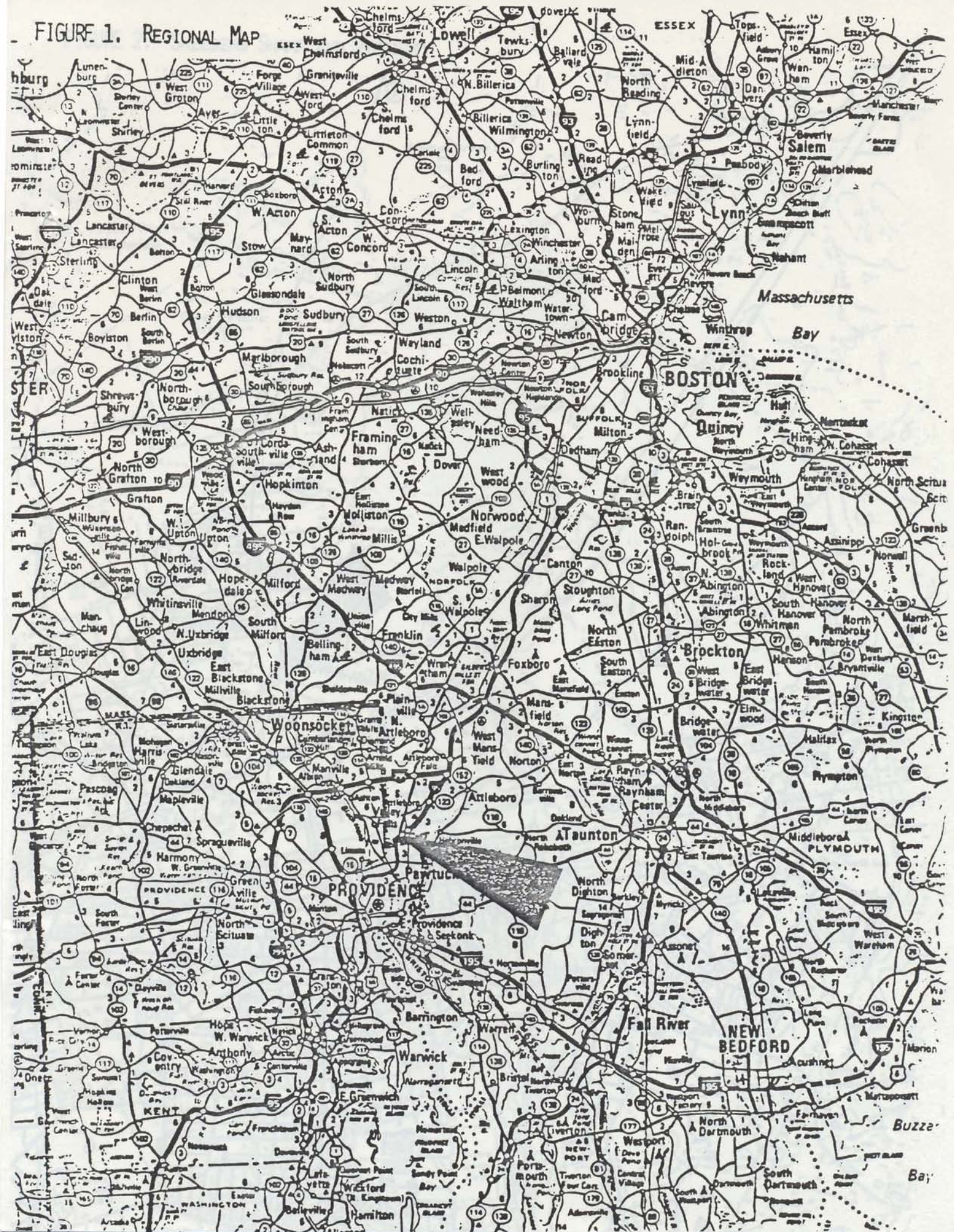


FIGURE 3. MALL LOCATION WITHIN SWEDENS SWAMP
 Plan provided by Pyramid



SCALE: 1" = 400'



Newport Avenue Galleria

ATTLEBORO MASS.
 (BRISTOL COUNTY)

PLANS ACCOMPANYING PETITION OF
 PYRAMID NEWPORT GALLERIA GROUP
 PREPARED BY BSC ENGINEERING/BOSTON
 JULY 1979
 SHEET 2 OF 39

II. BACKGROUND

A. Project Description and History

Pyramid proposes to build an enclosed regional shopping mall on a triangular parcel of property near the intersection of Interstate 95 and Route 1A in Attleboro, Massachusetts. As described in Part III herein, deciduous forested wetland dominates over half of the 82 acre project site. Figures 1 and 2 show the location of the proposed mall.

A two-level structure with approximately 700,000 square feet of floor area, the mall would be "anchored" by three large department stores, and would contain some 150 smaller satellite and specialty outlets. To **construct** the mall (including roads and parking areas) as proposed, Pyramid would place 885,000 cubic yards of fill in 32 acres of wetland. If authorized, this would be the largest wetland fill project in Massachusetts in over five years. In addition to the basic project, Pyramid proposes several additional features to mitigate adverse impacts. A mall "pad" would be constructed beneath the mall building and parking areas. According to the applicant, surface runoff from the mall and parking lots would be collected and passed through sumps and oil and grease traps before flowing through a perforated drainage pipe and into the mall pad and eventually discharged into **onsite** mitigation wetlands. The pad would consist of several feet of **peastone** gravel underlain by a clay barrier or impervious layer and would require excavation of existing soils. Once in place it would sit atop remaining peat soils. Pyramid proposes to mitigate adverse **impacts** by excavating thirteen acres of existing wetland and nine acres of upland **onsite** to create artificial wetlands. Further, pyramid proposes to compensate for wetland impacts at the site by attempting to create 36 acres of artificial wetlands at an **offsite** location roughly two miles away. Figure 3 depicts the proposed development.

Pyramid's proposal is the latest in a series of attempts to develop a shopping mall at the Sweedens Swamp site. **Pyramid's immediate** predecessor, the **DeBartolo** Corporation, was denied a state wetlands permit in 1982. **DeBartolo** requested a state adjudicatory hearing on the denial; before the hearing was held, however, Pyramid assumed control of the project.

EPA first learned of **Pyramid's** proposal to fill wetlands for a shopping mall in May 1984 during a preapplication meeting with the New England Division of the Corps (NE Corps), the U.S. Fish and Wildlife Service (**FWS**), and Pyramid. Pyramid representatives and consultants described the project and distinguished their proposal from previous development plans at the site by emphasizing that they had reduced the amount of wetland fill and added **onsite** mitigation features. Pyramid requested that the project be authorized under a Corps "nationwide **permit**" (a general permit requiring no application or public review) for discharges into headwater areas. While acknowledging Pyramid's improvements to earlier development plans at the site, EPA and FWS stated that the wetland impacts were still substantial and that since the project was not water dependent, practicable alternatives were presumed to exist.

In letters dated June 8, 1984, and July 11, 1984 respectively, EPA and FWS formally asked the NE Corps to exercise discretionary authority to require an individual permit based on, among other things, the loss of wetlands, the need to fully examine alternatives, and the level of public interest in the project. Later in July, the NE Corps notified Pyramid that an individual permit would be required and Pyramid submitted an application. The NE Corps issued a public notice describing the project on August 16, 1984. Neither the permit application nor the public notice included any discussion of **offsite** mitigation.

In August 1984, EPA participated with the NE Corps, FWS, and Pyramid consultants in a site inspection and habitat evaluation of the site. Utilizing the procedure proposed by Pyramid's consultants, (described in Appendix B) numerical values were assigned to the site for quantitative analysis. (The same procedure was later utilized to evaluate the proposed **offsite** mitigation area and an alternate mall site in North Attleborough.)

EPA's preliminary review **comments** to the NE Corps, dated September 19, 1984, indicated a need for further review of project alternatives, water quality impacts, and mitigation plans. This letter stated EPA's view that consideration of mitigation is not appropriate until the alternatives analysis is completed. The FWS also **commented** on September 18, 1984, and concluded that the permit should be denied because the proposal did not comply with the EPA **404(b)(1)** guidelines. I provided the NE Corps with full review comments on October 5, 1984 **and objected** to issuance of the **permit** because the project did not comply with the EPA **404(b)(1)** guidelines since there appeared to be less environmentally damaging practicable alternatives to the project. I noted that Pyramid had incorrectly stated that 30 acres of wetland existed on a nearby alternate mall site in North Attleborough (less than one acre actually exists), and further mischaracterized that site in other respects. I also suggested that other sites in the trade area could serve as practicable mall alternatives. I further recommended that the NE Corps prepare an Environmental Impact Statement (**EIS**) to comply with the National Environmental Policy Act (NEPA) and informed the NE Corps that if it decided to issue the permit over **EPA's** objections, I would consider the case a candidate for action under section **404(c)** of the Act.

EPA, FWS, NE Corps, and Pyramid representatives met on November 30, 1984 to discuss federal agency concerns about alternatives, water quality, mitigation, and NEPA. Pyramid presented for the first time an **offsite** mitigation proposal to convert a gravel pit in North Attleborough (a different area than the alternate mall site discussed above) into an emergent wetland. EPA reiterated its position that mitigation may only be **used to** compensate for unavoidable impacts and that Pyramid had not overcome the presumption that practicable alternatives exist.

Pyramid objected to EPA and FWS recommendations that there be public review and comment on its offsite mitigation proposal and disagreed with our view that the project needs an EIS. The Corps decided not to prepare an EIS or solicit public comment on the offsite mitigation. EPA, FWS, and the NE Corps met again on January 4, 1985 to discuss the status of the project. EPA once more stated its strong belief that the project did not comply with the 404(b)(1) guidelines since it is not water dependent and the presumption of the existence of environmentally preferable practicable alternatives had not been overcome. On January 14, 1985, EPA met with Pyramid to further discuss the issues of practicable alternatives, project purpose definition, and mitigation.

The NE Corps retained a consultant, William Badger, to examine the practicability of a potential alternate mall site in North Attleborough, Massachusetts, at the intersection of I-295 and U.S. Route 1. State Properties of New England, Inc. (now New England Development), proposes to build a mall at that site. Badger's report, released on January 30, 1985, concludes that both Sweedens Swamp and the North Attleborough mall site are feasible for development of regional shopping malls. The report also states that the trade area can only support one such mall. Representatives of EPA, the NE Corps, FWS, the Massachusetts Department of Environmental Quality Engineering ("DEQE"), and State Properties inspected the North Attleborough site in February 1985 and confirmed that less than one acre of this site was wetland. The NE Corps, on February 19, 1985, advised Pyramid that denial of the permit was imminent. On February 26, 1985, EPA wrote the NE Corps outlining three bases for permit denial: 1) existence of at least one practicable alternative; 2) potentially significant impacts to wetlands; and 3) the project may not be in the public interest.

The Massachusetts DEQE in March 1985 issued an Order of Conditions (akin to a state permit), approving Pyramid's project following a highly controversial adjudicatory hearing. The federal agencies were not involved at any stage of the state proceedings. The project was "grandfathered" and approved under the State's older, less restrictive regulations, rather than under the "new" 1983 rules. Under the new regulations, which actually took effect before Pyramid assumed control of the project, the filling of greater than 5,000 square feet cannot be permitted in wetlands such as Sweedens Swamp. Neither the old nor the new state regulations contain requirements comparable to those in the federal regulations concerning project alternatives or impacts to wildlife habitat. Pyramid's offsite mitigation proposal was not part of the project considered by the State. Opponents to the mall subsequently filed suit in state court challenging state approval of the project. That lawsuit is still pending.

In April 1985, Pyramid presented a conceptual plan to the NE Corps, EPA, FWS, and representatives of two environmental groups and the town of North Attleborough to construct an artificial wetland in North Attleborough as offsite mitigation for losses due to the proposed mall. Many questions were raised about the acceptability

of the mitigation site to the town of North Attleborough and about whether the site supplied sufficient water to develop and sustain an artificial (in the sense of being **manmade**) wetland. Pyramid subsequently dropped the site from consideration. In addition, on April 12, 1985, EPA sent to the NE Corps a letter describing the scientific, legal and policy difficulties that arise from accepting mitigation of impacts (in the sense of wetland creation) in place of first avoiding them. EPA again urged permit denial.

On May 2, 1985, the Division Engineer of the NE Corps made a recommended decision to deny **Pyramid's** application for a permit. He found that the permit should be denied for two reasons: first, the proposal did not comply with the **404(b)(1)** guidelines since there was a practicable environmentally preferable site for development of a shopping mall; and second, the proposal was not in the overall public interest. The NE Corps concluded that Sweedens Swamp provides excellent wildlife habitat for species of local importance. The recommended decision, along with the draft statement of findings, environmental assessment, and **404(b)(1)** compliance review were transmitted to Major General Wall, then Director of Civil Works in the Office of the Chief of Engineers in Washington, D.C., in accordance with General Wall's instructions.

In a highly unusual move, on May 31, 1985, General Wall overruled the NE Corps, finding that the project did comply with the **404(b)(1)** guidelines and was not contrary to the public interest. While acknowledging ambiguities in the guidelines, he found that a project involving wetland fill may be approved if sufficient mitigation is offered even though another upland site is available which would satisfy the basic project purpose. Accordingly, he directed the NE Corps to "**reconcile**" its documentation and to prepare a notice of intent to issue a permit. To the best of my knowledge, the Corps Headquarters' position represents the first time that the EPA **404(b)(1)** guidelines have been interpreted and applied in this fashion in New England.

In accordance with General Wall's directive, the NE Corps informed EPA and FWS on June 28, 1985, of its intent to issue a permit for the proposal. The NE Corps' revised findings continue to characterize Sweedens Swamp as an excellent wildlife habitat, but predicate issuance of the permit on the expected success of the **onsite** and **offsite** mitigation even though the location of the **offsite** mitigation had not yet been determined. Although the Corps' proposed permit contains twelve special conditions relating to **offsite** mitigation and water quality, several of which must be satisfied prior to Pyramid's doing any work at Sweedens Swamp, it does not specify the size, location, and type of **offsite** mitigation. The proposed permit is currently conditioned in a manner that would allow Sweedens Swamp to be severely disturbed (earthmoving, clearing of vegetation, etc.) at the same time that Pyramid would attempt to create the offsite wetlands. (Indeed, Pyramid's plan at the time was to use the peat from Sweedens Swamp to create a wetland elsewhere.) The permit does not allow "**vertical** construction" to take place at

Sweedens Swamp until the artificial wetlands are "in place and functioning". These terms have not yet been defined by the Corps.

The NE Corps' notice of intent triggered a 20 working day period for EPA to decide the most appropriate course of action. During this period, EPA met with and exchanged correspondence with Pyramid, State Properties, and other interested parties. EPA reviewed the record developed to date and carefully considered, among other things, whether or not to initiate action under section **404(c)**.

After inspecting the site, I initiated the **404(c)** process on July 23, 1985, by sending a letter to the ME Corps and Pyramid stating that there was reason to believe Pyramid's proposed filling of Sweedens Swamp could result in unacceptable adverse effects on the wetland resources, specifically wildlife. On July 25, 1985, the Regional Director of FWS wrote to the NE Corps stating that he supported **EPA's 404(c)** action and that the **FWS "continues to feel that this non-water dependent project will result in significant avoidable adverse impacts to wildlife and to the wetland habitat upon which that wildlife depends."**

In **response** to a citizen complaint, EPA and the NE Corps inspected the project site on July 30, 1985, and found that Pyramid had conducted work subject to the requirements of the Clean Water Act without having received the required 404 permit. On July 31, 1985, the NE Corps issued a cease and desist order which instructed Pyramid not to perform any additional illegal work within the wetland and commenced an enforcement investigation.

The 15-day consultation period which followed my initiation of the **404(c)** process ended August 8, 1985. The NE Corps did not seek to consult with EPA. Pyramid representatives had several discussions with EPA during that time. Following another review of **Pyramid's** proposal, I was not persuaded that there would be no unacceptable adverse effects from the proposed discharge. Therefore, on August 13, 1985, I signed a proposed determination to prohibit or restrict the specification of Sweedens Swamp for use as a disposal site, in accordance with 40 C.F.R. **§231.3(a)(2)**. Notice of the proposed determination was published in the Federal Register on August 21, 1985 (50 Fed. Reg. **33835**), in the Boston Globe on August 26, 1985, and in the Attleboro Sun Chronicle on September 5, 1985. The notice established a public comment period from August 21, 1985 through October 21, 1985, and scheduled a public hearing for September 26, 1985, in Attleboro, Massachusetts. Because of the complexity of this case, and the number of issues on which I sought comment, I elected to allow the full 60-day comment period.

During the **404(c)** process, Pyramid offered to agree, as a condition of an issued permit, to conduct **offsite** mitigation prior to disturbing Sweedens Swamp. EPA indicated that it would consider this offer, along with any detailed information that might be submitted during the public comment period, in reaching a regional decision whether to withdraw the proposed determination, or to recommend prohibiting or restricting use of the site.

EPA conducted the public hearing at the Attleboro High School. Over 1,000 people attended the almost five hour hearing. EPA heard statements by federal, state and local elected officials and agency representatives, Pyramid, environmental groups, and members of the public. Both supporters and opponents spoke at the hearing although the majority of those in attendance favored the mall. An official transcript is part of the record.

EPA's 60-day public comment period closed on October 21, 1985, by which time the Agency had received over 1200 comments totalling thousands of pages. Many commenters favored the proposed mall primarily because they believed it would increase local shopping opportunities, provide benefits to the local economy and improve the environment. Similar reasons were cited by those who favored a mall at the North Attleborough location. Those who commented in opposition to the Attleboro mall site focused primarily on the loss of wetlands, the non-water dependent nature of the project and the availability of project alternatives. Other commenters expressed concern about water quality impacts, flooding, traffic issues and the need for the project. A number of commenters specifically opposed the North Attleborough mall site because of concerns about potential impacts to drinking water supplies, traffic related problems, and effects on a local elementary school. A few commenters opposed construction of a shopping mall at either location. Appendix D of this document discusses the major issues raised in the comments. During the comment period, Pyramid selected a new location near Tiffany Street in Attleboro for its offsite mitigation proposal and began developing specific plans.

The NE Corps on October 18, 1985, issued a public notice soliciting comment on Pyramid's new proposed **offsite** mitigation plan. A public hearing on this issue was conducted by the NE Corps on November 18, 1985 and public comments were accepted until November 28, 1985. Comments were primarily of a technical nature concerning hydrological or biological aspects of the proposed mitigation. Some speakers stated that a discussion of mitigation during the **404(c)** process was inappropriate.

I originally had intended to make the regional decision to withdraw the proposed determination or forward a recommended determination to EPA Headquarters by October 26, 1985 (thirty days after the public hearing, pursuant to 40 C.F.R. **§231.5(a)**). However, because the Corps sought comments on an issue that was also a subject of EPA's request for comments, I determined that there was good cause to wait to incorporate the comments submitted to the Corps into EPA's **404(c)** record.

The EPA Assistant Administrator for External Affairs, Joy Manson, visited the Sweedens Swamp site with Region I staff on November 20, 1985. In addition to a survey of the proposed mall site, Ms. Manson inspected the proposed Tiffany Street **offsite** mitigation area and the alternate North Attleborough mall site.

The Region has evaluated the entire record in preparation for this decision. The size of the record, the complexity of the issues, and the need to seek additional information to clarify the record have required more time for preparing the recommended decision than originally anticipated. */ In accordance with 40 C.F.R. S231.8, a Federal Register notice is being prepared to inform the public of the time extension adopted by the Region in making the recommendation and the reasons for the delay. **/

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

B. Litigation

On August, 27, 1985, Pyramid filed a complaint against EPA and the Corps in the federal district court for the District of Columbia, seeking to enjoin EPA's **404(c)** process and to compel immediate issuance of the 404 permit by the Corps. (See Newport Galleria v. Deland et al., No. 85-2747 (D.D.C.)). Pyramid alleged that EPA's decision to initiate and continue with the **404(c)** process was illegal because there was no reason to believe that any unacceptable adverse impact could possibly result from Pyramid's proposed project.

On September 25, 1985, the court granted the United States' motion to dismiss Pyramid's action. Judge Green noted that EPA has wide discretion to determine when to begin proceedings under section **404(c)**, since the statute sets no **threshold** requirements for the initiation of such proceedings. The regulations are quite broad on this point, requiring only that there be reason to believe that an unacceptable adverse effect could result.

The court rejected Pyramid's claim that, as a matter of law, EPA could neither find that there were practicable alternatives to the proposed filling of Sweedens Swamp nor find that there could be unacceptable adverse effects. The court stressed that EPA was not bound by the Corps' conclusions during the permit process, and concluded that EPA had "ample reason" to initiate its section

*/ A substantial amount of staff time during this period has also been spent responding to numerous letters and Freedom of Information Act requests submitted by Pyramid to Region I.

**/ Pyramid and the public have already been notified informally of the reasons for the delay and the status of decision-making.

404(c) proceeding. Finally, the court ruled that there was no final, reviewable action that had been taken by EPA. Accordingly, the court dismissed the case for lack of jurisdiction. Pyramid filed a notice of appeal of the district court's decision on October 9, 1985. That appeal is still pending.

Pyramid filed a second lawsuit against EPA on February 20, 1986, in the federal district court for the district of Massachusetts. (See Newport Galleria Group v. Deland, No. 86-0622-Z (D. Mass.)). In that action, Pyramid seeks a declaratory judgment that, because of the delay in issuance of this recommendation, the proposed determination is deemed withdrawn and the Corps permit may be issued. The government has sixty days to respond to Pyramid's complaint.

III. DESCRIPTION OF SITE

A. Ecological Values

The proposed project site is 82 acres, of which 49.5 acres are classified as wetlands. Pyramid proposes to fill or alter 45 of those wetland acres. The FWS's National Wetland Inventory identifies the entire wetland area as palustrine forested, hardwood deciduous; based upon site visits by FWS experts, this wetland can be more specifically classified as seasonally flooded. EPA personnel and others have observed standing water in several areas of the wetland, particularly after moderate to heavy rainfall. The site vegetatibn and habitat types were determined through fieldwork by EPA, FWS, NE Corps and Pyramid's consultants and supplemented by letters received during the public comment period. While none of this work is exhaustive in itself, considerable information about Sweedens Swamp now exists. Tables 1-3 provide **lists** of plant and wildlife species observed or expected to be found at the site. General cover types for the site are as follows:

◦ wooded swamp	47.1 acres
◦ abandoned field/disturbed land	17.2 acres
◦ hardwood forest	12.5 acres
◦ developed land	2.8 acres
◦ open water	1.1 acres
◦ marsh	0.7 acres
◦ shrub swamp	0.6 acres

The 49.5 acres of wetlands are contained within an eastern and a western basin, 35.5 and 14 acres respectively. The smaller western basin, characterized by a forest canopy consisting predominantly of red maple (**Acer rubrum**), contains a well developed shrub layer including European buckthorn (Rhamnus franqula), common elder (**Sambucus canadensis**), winterberry (**Ilex verticillata**), **highbush blueberry** (**Vaccinium corymbosum**), and arrowwood (**Viburnum recogni-**
tum); and a herbaceous layer comprised of marsh fern (Dryopteris thelypteris), sensitive fern (Onoclea sensibilis), cinnamon fern (**Osmunda cinnamomea**), and jewelweed (Impatiens capensis).

TABLE 1

LIST OF IDENTIFIED PLANT SPECIES

Sweedens Swamp
Attleboro, Massachusetts

red maple	<u>Acer rubrum</u> (FAC)
smooth alder	<u>Alnus serrulata</u> (OBL)
Jack-in-the-pulpit	<u>Arisaema atrorubens</u> (FACW)
milkweed	<u>Asclepias</u> sp.
yellow birch	<u>Betula lutea</u> (FAC)
gray birch	<u>Betula populifolia</u> (FAC)
reed bent grass	<u>Calamagrostis canadensis</u> (FACW)
fringe sedge	<u>Carex crinita</u> (OBL)
sedge	<u>C. lupulina</u> (OBL)
sedge	<u>C. lurida</u> (OBL)
sedge	<u>C. folliculata</u> (OBL)
sedge	<u>Carex</u> sp.
sedge	<u>C. vulpinoidea</u> (OBL)
catalpa	<u>Catalpa</u> sp.
wood reed	<u>Cinna arundinacea</u> (FACW)
sweet pepperbush	<u>Clethra alnifolia</u> (FAC)
goldthread	<u>Coptis groenlandica</u> (FACW)
silky dogwood	<u>Cornus amomum</u> (FACW)
red osier	<u>Cornus stolonifera</u> (FACW)
dodder	<u>Cuscuta</u> sp.
umbrella sedge	<u>Cyperus</u> sp. (prob. OBL)
marsh fern	<u>Dryopteris simulata</u>
evergreen wood fern	<u>Dryopteris spinulosa</u> (FAC)
willow herb	<u>Epilobium</u> sp. (probably OBL)
American beech	<u>Fagus grandifolia</u> (FACU)
white ash	<u>Fraxinus americana</u> (FACU)
bedstraw	<u>Galium</u> sp.
manna grass	<u>Glyceria</u> sp. (OBL)
witch hazel	<u>Hamamelis virginiana</u> (FAC)
winterberry	<u>Ilex verticillata</u> (FACW)
jewelweed	<u>Impatiens</u> (probably <u>capensis</u>) (FACW)
sedge	<u>Juncus effusus</u> (FACW)
red cedar	<u>Juniperus virginiana</u> (FACU)
sheep laurel	<u>Kalmia angustifolia</u> (FAC)
duckweed	<u>Lemna</u> sp. and <u>Spirodela polyrhiza</u> (OBL)
yellow wood lily	<u>Lilium canadense</u> (FAC)
spicebush	<u>Lindera benzoin</u> (FACW)
Canada mayflower	<u>Maianthemum canadense</u> (FAC)
watercress	<u>Nasturtium officinale</u> (OBL)
mountain holly	<u>Nemophanthus innconata</u>
black gum	<u>Nyssa sylvatica</u> (FAC)
evening-primrose	<u>Oenothera biennis</u> (FACU)
sensitive fen	<u>Onoclea sensibilis</u> (FACW)
cinnamon fern	<u>Osmunda cinnamomea</u> (FACW)
royal fern	<u>Osmunda regalis</u> (OBL)
panic-grass	<u>Panicum</u> sp.
Virginia creeper	<u>Parthenocissus quinquefolia</u> (FACU)
common reed	<u>Phragmites australis</u> (FACW)
clearweed	<u>Pilea pumila</u> (FACW)

TABLE 1 - (Cont'd)

pitch pine	<u>Pinus rigida</u> (FACW)
white pine	<u>Pinus strobus</u> (FACU)
bluegrass	<u>Poa</u> sp.
smartweed	<u>Polygonum</u> sp.
cottonwood	<u>Populus deltoides</u> (FAC)
quaking aspen	<u>Populus tremuloides</u> (FACU)
big-tooth aspen	<u>Populus grandidentata</u> (FACU)
cinquefoil	<u>Potentilla</u> sp.
black cherry	<u>Prunus serotina</u> (FAC)
white oak	<u>Quercus alba</u> (FACU?)
scrub oak	<u>Quercus ilicifolia</u>
pin oak	<u>Quercus palustris</u> (FACW)
red oak	<u>Quercus rubra</u> (FACU)
black oak	<u>Quercus velutina</u>
European buckthorn	<u>Rhamnus frangula</u>
swamp azalea	<u>Rhododendron viscosum</u> (OBL)
blackberry	<u>Rubus</u> sp.
trailing blackberry	<u>Rubus</u> sp.
poison sumac	<u>Rhus vernix</u> (OBL)
willow	<u>Salix</u> sp.
pussy willow	<u>Salix discolor</u> (FACW)
common elder	<u>Sambucus canadensis</u> (FACW)
sassafras	<u>Sassafras albidum</u> (FACU)
soft-stemmed bulrush	<u>Scirpus validus</u> (OBL)
woolgrass	<u>Scirpus cyperinus</u> (FACW)
common greenbriar	<u>Smilax rotundifolia</u> (FAC)
peat moss	<u>Sphagnum</u> sp. (OBL)
deadly nightshade	<u>Solanum dulcamara</u> (FAC)
goldenrod	<u>Solidago</u> sp.
steeplebush	<u>Spiraea tanentosa</u> (FACW)
skunk cabbage	<u>Symplocarpus foetidus</u> (OBL)
tall meadow rue	<u>Thalictrum polygamum</u> (FACW)
hemlock	<u>Tsuga canadensis</u> (FACU)
broadleaf cattail	<u>Typha latifolia</u> (OBL)
highbush blueberry	<u>Vaccinium corymbosum</u> (FACW)
early low blueberry	<u>Vaccinium vacillans</u>
maple-leaved viburnum	<u>Viburnum acerifolium</u>
wild raisin	<u>Viburnum cassinoides</u>
arrowwood	<u>Viburnum recognitum</u> (FACW)
violet	<u>Viola</u> sp.

¹Terminology from National Wetland Plant Database maintained by the U.S. Fish and Wildlife Service. Obligate (OBL) species occur in wetlands exclusively [99-100%]; Facultative wet (FACW) occur in wetlands frequently (67-99%); Facultative species are present in both wetland and upland habitats [wetland frequency 33-67%]; Facultative upland species occur less frequently in wetlands [1-33%]. If no indication appears it means the plant is either unclassified or is considered an upland species.

OBL = obligate hydrophyte
 FACW = facultative hydrophyte
 FAC = facultative
 FACU = facultative upland

TABLE 2

LIST OF OBSERVED BIRD SPECIES

Sweedens Swamp
Attleboro, Massachusetts

Red winged Blackbird	<u>Agelaius phoeniceus</u>
Mallard (with brood)	<u>Anas platyrhynchos</u>
American Black Duck	<u>Anas rubripes</u>
Ruffed Grouse	<u>Bonasa umbellus</u>
Red-tailed Hawk	<u>Buteo jamaicensis</u>
Northern Flicker (feeding young)	<u>Colaptes auratus</u>
American Crow	<u>Corvus brachyrhynchos</u>
Blue Jay	<u>Cyanocitta cristata</u>
Downy Woodpecker	<u>Dendrocopos pubescens</u>
Hairy Woodpecker	<u>Dendrocopos villosus</u>
Yellow-rumped Warbler	<u>Dendroica coronata</u>
Gray Catbird (feeding young)	<u>Dumetella carolinensis</u>
Rusty Blackbird	<u>Euphagus carolinus</u>
Common Yellowthroat	<u>Geothlypis triches</u>
Dark-eyed Junco	<u>Junco hyemalis</u>
Swamp Sparrow	<u>Melospiza georgiana</u>
Song Sparrow (feeding young)	<u>Melospiza melodia</u>
Northern Mockingbird	<u>Mimus polyglottos</u>
Kentucky Warbler	<u>Opornis formosus</u>
Black-capped Chickadee	<u>Parus atricapillus</u>
Tufted Titmouse	<u>Parus bicolor</u>
Common Grackle	<u>Quiscalus quiscula</u>
Eastern Phoebe	<u>Sayornis phoebe</u>
White-breasted Nuthatch (feeding young)	<u>Sitta carolinensis</u>
American Goldfinches	<u>Spinus tristis</u>
Tree Sparrow	<u>Spizella arborea</u>
Field Sparrow	<u>Spizella pusilla</u>
European Starling	<u>Sturnus vulgaris</u>
American Robin	<u>Turdus migratorius</u>
Eastern Kingbird	<u>Tyrannus tyrannus</u>
Red-eyed Vireo	<u>Vireo olivaceus</u>
Mourning Dove	<u>Zenaidura macroura</u>
White-throated Sparrow	<u>Zonotrichia albicollis</u>

TABLE 3

LIST OF OBSERVED(*) OR EXPECTED MAMMALS, REPTILES AND AMPHIBIANS

Sweedens Swamp
Attleboro, Massachusetts

Shorttail Shrew	<u>Blarina brevicauda</u>
Opossum	<u>Didelphis marsupialis</u>
Woodchuck*	<u>Marmota monax</u>
Striped Skunk*	<u>Mephites mephites</u>
Meadow Vole	<u>Microtus pennsylvanicus</u>
Shorttail Weasel	<u>Mustela erminea</u>
Woodland Jumping Mouse	<u>Napaeozapus insignis</u>
White-footed Mouse*	<u>Peromyscus leucopus</u>
Raccoon	<u>Procyon lotor</u>
Norway Rat	<u>Rattus norvegicus</u>
Eastern Gray Squirrel*	<u>Sciurus carolinensis</u>
Cottontail*	<u>Sylvilagus sp.</u>
Eastern Chipmunk*	<u>Tamias striatus</u>
Eastern Painted Turtle	<u>Chrysemys picta</u>
Wood Turtle	<u>Clemmys insculpta</u>
Eastern Box Turtle*	<u>Terrepena carolina</u>
Eastern Garter Snake	<u>Thamnophis sirtalis sirtalis</u>
Spotted Salamander	<u>Ambystoma maculatum</u>
American Toad	<u>Bufo americanus</u>
Spring Peeper	<u>Hyla crucifer</u>
Green Frog*	<u>Rana clamitans</u>
Northern Leopard Frog	<u>R. pipiens</u>
Wood Frog	<u>R. sylvatica</u>

The forest canopy of the eastern basin again consists predominantly of red maple, but also includes some yellow birch (Betula lutea) and black gum (Nyssa sylvatica); a shrub layer comprised mainly of sweet pepperbush (Clethra alnifolia), spicebush (Lindera benzoin), swamp azalea (Rhododendron viscosum), and poison sumac (Rhus vernix); and a herbaceous layer comprised of sensitive fern, cinnamon fern, royal fern (Osmunda regalis), skunk cabbage (Symplocarpus foetidus), and peat moss (Sphagnum sp.). Within this eastern basin are smaller areas of emergent wetland and shrub swamp vegetated with broadleaf cattail (Typha latifolia), willow herb (Epilobium sp.), mannagrass (Glyceria sp.), soft-stemmed bulrush (Scirpus validus), duckweed (Lemna sp., and Spirodela polyrhiza), and various sedges (Carex sp.). This portion of the wetland exhibits well developed mound and pool microrelief.

Sweedens Swamp provides habitat for several migratory bird species and a variety of resident mammals and amphibians. Many of the bird species depend heavily upon this habitat for nesting and feeding, and some of these species probably breed in Sweedens Swamp. Gray catbird, white-breasted nuthatch, northern flicker, and song sparrow were observed feeding young. A brood of mallards was observed during the summer of 1985. Other birds observed include black duck and red-tailed hawk. In addition, mammals such as the eastern gray squirrel, cottontail rabbit, striped skunk and woodchuck, and amphibians such as the green frog have been observed.

Red maple swamps are typically climax wetland communities that are more mature and stable than earlier successional stages. Vertical stratification of herbaceous, shrub, and tree layers coupled with the well developed soil structure increase the diversity of ecological niches, which are populated by a complex community of producers, consumers and decomposers. In general, red maple swamps support a diverse group of wildlife species. Amphibians and reptiles commonly breeding in these wetlands include green, pickerel, and wood frogs, salamanders, painted turtles, and several snake species. Over 40 bird species breed in Massachusetts red maple swamps.*/ In addition, wetlands such as Sweedens Swamp serve as fall and spring stop-over places for migratory songbirds while other species overwinter in these areas. Avian predators such as red-shouldered hawks and owls nest and hunt the abundant mice, shrews and voles that inhabit wooded swamps. Also, forested wetlands normally have higher biomass and rates of plant productivity than most upland forest types. As such, forested wetlands generally provide better food and cover too. Sweedens Swamp appears to be no exception.

*/ Larson, Joseph S. 1983. A Guide to Important Characteristics and Values of Freshwater Wetlands in the Northeast. university of Massachusetts Water Resources Research Center Publication No. 31.

The forested wetlands on the site have excellent vertical structure with several levels of vegetation including well developed overstory, sapling, shrub and herb layers. As a result of the high structural diversity, dense vegetative growth, and the size of the site, Sweedens Swamp provides excellent habitat for a variety of wildlife species. The types of plant species found at this site, such as alder and winterberry, in combination with their high biomass, result in excellent food sources for wildlife, particularly songbirds and small mammals. The dense vegetative growth also provides good cover for concealment, escape, and nesting.

The juxtaposition of upland and wetland areas on parts of this site helps reduce the travel needed by, and hence the energy expenditures by, various wildlife species to meet life requirements such as nesting, rearing and feeding. Also, Sweedens Swamp provides valuable summer habitat for many birds from surrounding areas which seek the abundant food sources (fruits, insects) as well as the shade and drinking water found there. Certain mammals, reptiles and amphibians find similar refuge during hot weather, while some reptiles and amphibians spend the winter burrowed in soft muds. Further, large forested wetland tracts located in urbanized areas are important resting and feeding areas for many migrating songbirds which nest in northern **New** England or Canadian Provinces.

Overall, the NE Corps and the USFWS characterize the **site's** wildlife habitat as excellent, while the Massachusetts Division of Fisheries and Wildlife stated that the "**area** is a high-quality red maple swamp" and found that:

.....Swedens (sic) Swamp is a 50-acre wetland area composed of a forested swamp mixed with shrubs and herbaceous growth providing wetland habitat for a variety of wildlife including migratory waterfowl and songbirds. It is a classic New England red maple swamp, rich with ferns, mosses, sedges, bulrush, hawks, mammals, amphibians and reptiles. Geologically, a swamp like this takes hundreds of years to develop.

I find based on the record that Sweedens Swamp does provide excellent wildlife habitat.

Extensive adjacent development has given the site an island community effect. The size of the site is certainly sufficient to maintain a diverse resident wildlife population, particularly with the structural heterogeneity of the vegetation. The majority of wetland habitats in the vicinity of Sweedens Swamp are island-like in nature as well. The dynamic processes of population biology force these island-like communities towards an equilibrium by a combination of genetic, behavioral and abiotic factors.*/ Unnatural

*/ Lidicker, W. Z., Jr. 1978. Regulation of Numbers in Small Mammal Populations - Historical Reflections and a Synthesis. Pp. 122-141 in D.P. Snyder, ed., Populations of Small Mammals under **Natural Conditions**. Pymatuning Symposia in Ecology. Vol. 5. Pymatuning Laboratory of Ecology, Univ. of Pittsburgh.

selective forces, such as human induced impacts, disrupt that equilibrium causing emigration. The ability of similar habitat types in the vicinity to accept immigrants through restricted migration corridors is limited if these similar areas are at or near equilibrium already. Increased densities result in greater inter- and intraspecific competition, stress from behavioral interactions, and reduced reproductive success. Mortality of emigrants or emigrant-displaced residents is the probable result.

A community-based evaluation system developed by Pyramid's consultants was used to estimate wildlife habitat value in numerical terms.*/ This method was employed at ~~the~~ Sweedens Swamp site to assess-baseline (existing) conditions. **/ The FWS agreed to participate in these evaluations at the request of the NE Corps and the EPA, but did not endorse the method. The evaluation confirmed that the site is indeed a typical New England red maple swamp. The results indicate that Sweedens Swamp exhibits good foliage height diversity, plant species diversity, and edge -- in short, that Sweedens Swamp is a well developed, stable community. Appendix B provides a complete description of the model, an explanation of the model's strengths and weaknesses, and a presentation of the data acquired.

Several commenters, Pyramid among them, characterize Sweedens Swamp as a "dump" or an area strewn with old tires, refrigerators and debris. Trash and debris have been dumped at the site, primarily along the perimeter and on the disturbed upland portions of the property. Only a few scattered piles of debris litter the interior of the wetland. EPA estimates that dumping directly affects less than 10% of the site, little of which is wetland. Further, the NE Corps found that "[a]lthough the site has been subject to some human disturbance, ... large segments of wetland remain relatively isolated from human impact." I agree that wetland values have not been significantly affected by these disturbances.

*/ The assessment model used in this case attempts to measure wildlife value only and does not purport to evaluate other environmental values. Two other approaches, the Exxon and Adamus models used during the state proceeding, do attempt to measure a wider array of values. Both of these methods placed Sweedens Swamp in the "moderate value" category.

**/ This model also was used at the proposed offsite mitigation area and an alternate mall site to assess baseline conditions, as well as to assess predicted future (after construction) conditions, at all three sites.

Although unsightly and visible to the casual observer, the refuse has little direct bearing on the wetland values provided by Sweedens Swamp. Wildlife are unlikely to avoid the area because they find it aesthetically displeasing. Moreover, most effects of the unauthorized dumping at Sweedens Swamp can be reversed, with the cooperation of the property owner. Pyramid, however, recently denied permission to an environmental group, Citizens for Responsible **Environmental** Management, to clean up the site.

B. Soils and Hydrology

The U.S. Soil Conservation Service classifies the soils which underlie the wetlands at Sweedens Swamp as Medasaprists. This soil type is characterized as having a high capacity for available water and a root zone that is restricted by a seasonal high water table at or near the surface for more than 9 months of the year. This soil type is normally found in the wettest swamps in Massachusetts. Borings indicate that the **site's** wetlands are underlain by fibrous peat varying in thickness up to 40 feet. Stratified drift (sands and gravels) underlie the peat and may reach 30 feet in thickness.

Sweedens Swamp lies at the confluence of several small drainage systems that flow through the site prior to entering a 48-inch culvert under **Newport** Avenue. This water travels through a short channel before entering the Seven Mile River, a tributary of the Ten Mile River. The Ten Mile River eventually empties into Narragansett Bay. The total watershed area draining into Sweedens Swamp is approximately 622 acres.

The large size, steep sides, and restricted outlet of the Sweedens Swamp wetland basin make it an effective flood storage area. Pyramid has stated in its 404 permit application that "the site is presently capable of reducing downgradient peak **stormflows**", and that "[a]s a result, the site reduces downstream flood hazards and storm damage potential." Pyramid further characterizes the existing wetlands as "serving as a valuable storage area for storm and flood water", in its supplement to the permit application. In its final decision on this project, the Massachusetts Department of Environmental Quality Engineering stated that "the area serves a crucial flood water storage function and helps to control peak flows by releasing stormwater over time." Further, in an evaluation of an earlier mall proposal at this site, BSC **Engineering***/ stated in 1979 that:

*/ Currently one of the environmental consultants to Pyramid for this project.

This swamp contains the single largest flood storage area in the sub-watershed [of the Seven Mile River] and may equal the combination of all of the other storage capacity (sic) of the 600 plus acres. The existing swamp functions hydrologically to attenuate peak discharges from the watershed, buffer flood flows in the Seven Mile River and conversely to release stored water and groundwater to maintain dry weather flows.

I agree with these analyses and conclude that in its present state, Sweedens Swamp stores flood waters and modulates peak and base flows. In addition, I conclude that this flood storage function will increase in importance as development continues in the watershed and downstream of Sweedens Swamp.

Wetlands can alter the fate of pollutants by chemically or biologically removing contaminants from water. The ability of a wetland to remove these contaminants is a function of several variables including hydrology, vegetative type, soils and pollutant loading. For a wetland to function in this pollutant attenuation capacity, the water which carries the contaminants must come into contact with the wetland vegetation and soils. Water can come into contact with vegetation and soils when streams overtop their banks and flood adjacent wetlands. Contact also can occur when water flows over the wetland surface or through the wetland soils as a result of runoff from adjacent areas or precipitation. (Pyramid's consultants refer to these latter two routes as "diffuse flow.") The removal of contaminants can occur by any of the following mechanisms: 1) contaminants simply may settle out as velocities decrease when water enters a vegetated wetland; 2) contaminants may settle out and be adsorbed to soil particles or plant roots; and 3) contaminants may be absorbed by plants.

Pyramid has stated that of the total annual flow entering the site, approximately 73% flows through Sweedens Swamp in discrete stream channels while 27% passes through the site as "diffuse" flow (principally flow over the wetland surface). Pyramid further states that the amount of water which overtops the stream banks (overbank flooding) and floods the wetlands represents about 3-4% of the total watershed runoff entering the site.* / When combined with the 27% which flows across the site as diffuse flow, then at least 30% of the total annual flow entering the site has the opportunity to contact the site wetlands. Indeed, observations during different times of the year indicate that substantial flooding of the forested wetlands occurs. On April 8, 1984, FWS personnel observed that

* / These figures were developed from a hydrological analysis of the existing stream channel for a 1 inch (rainfall) storm event.

"surface water [was] present over much of the wetland but in areas around [the] stream the surface water had drained off." On November 20, 1985 and January 28, 1986, EPA personnel observed surface water over several parts of the wetlands and found evidence of stream flooding indicated by fresh debris lines in the vegetation surrounding the stream channel. The debris lines were approximately 6-9 inches above the surface of the water in the stream. In testimony submitted during the adjudicatory hearing at the state level, Garrett **Hollands**, of IEP, Inc. (a consulting firm), stated that on June 12, 1984, he observed flooding on approximately 40.6 acres of the wetlands at the site. He further observed that the western basin (approximately 14 acres) was flooded to a depth, in some places, of one to two feet. In addition, Mr. Hollands estimated that of the 35.5 acres of wetlands in the eastern basin, approximately 27.7 acres were flooded. Mr. Hollands concluded that these wetlands were inundated from "**overbank** flooding plus **inflowing** runoff from point and nonpoint source discharges."

In evaluating Sweedens Swamp's ability to remove pollutants from waters passing through the site, I have accepted Pyramid's estimates on **overbank** flooding as the minimum amount which occurs. However, this phenomenon is difficult to measure with complete accuracy. Low spots in the stream bank away from the measured cross-sections used in the model to calculate **overbank** flooding could allow flooding to occur which would not show up in model calculations. In any event, the record indicates that at least 30% of the watershed's runoff has the opportunity to contact the wetland system in a manner which would permit the wetlands to remove contaminants. I have no reason to believe that the degree of interaction between the water, soils and vegetation in Sweedens Swamp is lower than what typically occurs in similar forested headwater wetlands in New England. Therefore, I find that Sweedens Swamp has the capability to attenuate waterborne pollutants and to improve water quality. */

Sweedens Swamp is part of the Ten Mile River drainage basin and acts mainly as a groundwater discharge area rather than as a recharge area. Recharge may only occur during short periods during dry summer months. Although the unconsolidated aquifer underlying the site and nearby area has not been developed as a drinking water supply, a U.S. Geological Survey hydrologic atlas indicates

*/ During the State proceeding, Pyramid submitted data which show that existing water quality was good and did not change significantly between entry and exit from the site. This information indicates that there are not significant sources of pollution in the watershed; it does not have a bearing on the capability of the wetland to improve water quality.

that this aquifer has the potential to be a major source of groundwater. It appears, however, that under current Massachusetts regulations, the presence of a major highway interchange and residential and commercial development surrounding this site likely precludes use of the aquifer for a municipal drinking water supply.

C. Summary

Pyramid has on occasion described the site as a wetland "in name only" or claimed that Sweedens Swamp is a wetland only because red maples grow there. For instance during the litigation, Pyramid stated that the "site is a highly inefficient and degraded wetland" and that the "'swamp' does not function biologically as a true wetland but is merely classified as such due to the presence of red maple trees." These assertions are incorrect. The presence of red maple -- a facultative species which tolerates a wide range of moisture regimes -- actually has little to do with the determination of the area as a wetland. Based on information in the record concerning soil characteristics at the site, the majority of the plant **species** present and the hydrologic regime of the site, I believe that Sweedens Swamp is a functional wetland.

Further, I find that Sweedens Swamp provides to varying degrees most wetland values such as natural flood storage, groundwater discharge, natural filtration and pollution control, and habitat for a variety of amphibians, reptiles, birds and mammals. Both the Massachusetts Division of Fisheries and **Wildlife** and the U.S. Fish and Wildlife Service state that the site is valuable, with the latter designating it as Resource Category 2, the second highest category in its policy for classifying habitat. I agree with these assessments. The record shows that Sweedens Swamp is a typical New England red maple swamp which provides excellent habitat. It is not a dysfunctional or low value wetland, as Pyramid claims.

IV. ADVERSE EFFECTS OF THE PROPOSED PROJECT

Construction of a large shopping mall at Sweedens Swamp would drastically change the hydrology, soils, and biology of the area. For purposes of deciding whether the impacts of this project are avoidable, they should be evaluated without consideration of the various onsite and offsite mitigation measures proposed by Pyramid. As discussed more fully in Sections V and VI, only by assessing the direct impacts of the project without mitigation can alternatives to the project be equitably compared and an accurate determination made whether there are less environmentally damaging alternatives to the proposed activity. Mitigation is appropriate to consider only if the impacts from the project are unavoidable.

A. Wildlife Impacts

The general impact of the project on wildlife habitat can be evaluated by comparing the baseline (existing) condition of the project site with the projected condition after the mall is built. Project impacts can most readily be seen by looking at the gains and losses of cover type acreage, projected changes in habitat values, and the expected effects on wildlife use. The proposed project without mitigation would involve filling 32 acres of wetland out of a total of 49 acres of wetland. Currently, less than three acres (4%) of the site are developed; after construction, 49 acres (60%) would be developed. Much of the existing vegetative community of Sweedens Swamp would be destroyed by the project. As discussed in Section III, Sweedens Swamp provides a large, diverse habitat for a variety of wildlife, particularly birds, small mammals, and amphibians, species typical of New England forested swamps. Very few, if any, of these species would survive in the area during construction of the project. Some individuals might remain in the wetlands which would not be filled for the mall, but this area would be poorly buffered from the disturbance of construction activities and even so, could only support a small percentage of the affected wildlife.

In all likelihood, slow moving species would perish under the fill or during the clearing and excavation of the swamp. More mobile species would attempt to migrate and relocate in nearby habitats. However, if these nearby habitats already are at or near carrying capacity (equilibrium), relocation would result in death of the refugee animals or death of the animals in nearby areas displaced by animals from Sweedens Swamp. The numerical habitat assessment model (Appendix B) confirms that the proposed project would adversely affect wildlife values since both wetland and upland habitat would be destroyed to build the mall. There would be an outright loss of 32 acres of wetland, and a significant loss of the existing value of wildlife habitat as illustrated by the model.

Before Interstate 95 bisected it, Sweedens Swamp was a larger wetland area. Now it is located in an area of Attleboro which is subject to increasing development pressure. Surrounded by highways and cleared land, Sweedens Swamp provides an oasis of valuable wildlife habitat. The current proposal (without mitigation) would further reduce the remaining wetland to one third its present acreage and increase substantially the level of human disturbance of that remaining portion. While the cumulative effect of development on Sweedens Swamp is clear, it is more difficult to predict the broader regional consequences of this project. In any event, 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 6 million acres of forested wetlands. While specific figures are not available, it is reasonable to assume that this type of habitat declined in acreage in New England as well. The filling of nearly two-thirds of Sweedens Swamp, the largest permitted wetland loss in Massachusetts in at least five years, would represent a significant loss of valuable wetlands, at least on a regional scale.

Even if Pyramid's proposed mitigation were considered, the project would still result in a net loss of wildlife habitat. As explained in Section VI, Pyramid proposes to attempt to compensate for the adverse 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 location several miles from the mall).

Pyramid's proposed onsite mitigation consists of attempting to create 22 acres of emergent marsh and shrub swamp from 13 acres of existing wooded wetland and 9 acres of existing upland. Thus, 50 acres of the site would be occupied by the mall and attendant facilities; open water and eventually, vegetated wetlands would comprise about 26 acres. Because only four acres of the 82-acre parcel 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 developed area would have virtually no wildlife value. The onsite mitigation area would 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, this resettlement would be slow due to greater disturbance from the activity at the mall. Even under the most optimistic projections, the site would recover no more than half its current value for wildlife. The low profile emergent wetlands proposed for this area would not buffer wildlife from disturbance of the highways (much less the mall itself) as effectively as the existing wooded habitat does. Even if successfully established, the onsite wetlands would be substan-

tially smaller and of a different type than those lost. The vegetation in these wetlands, although potentially of higher annual productivity, would exhibit less spacial 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 (-24) and habitat values.*/ Habitat losses would result from the destruction of both wetland and upland cover types.

In an attempt to offset the net loss of habitat at Sweedens Swamp, Pyramid proposed additional mitigation. This additional mitigation would occur at an offsite location two miles away (see Section VI) where Pyramid would attempt to create a 36-acre wetland out of an existing 30 acres of upland and 6 acres of open water. Even if 100% successful (which is another issue altogether), the projected net increase in habitat value at this offsite location would not fully compensate for the net loss of habitat value at the mall site. Therefore, even if both the onsite and offsite mitigation were completely successful, the project as a whole (mall construction and mitigation) would result in an overall loss in wildlife habitat values. 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.

If successful, the artificially created wetlands, both onsite and offsite, would attract wildlife species different than those currently using or inhabiting Sweedens Swamp. Many of the small mammals and bird species typical of Sweedens Swamp probably would not 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. Because the size of the wetlands onsite would be reduced substantially and the level of human disturbance increased, small mammals would be less likely to return. Also, this smaller wetland area would result in a greater adverse effect on certain bird species which require large, well-developed, and relatively isolated habitats (i.e., forest interior species). A recent study**/ in Massachusetts suggests that breeding bird communities in forested wetlands are significantly related to vegetation structure and hydrology. The study found

*/ 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.

**/ 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.

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** such as the red-tailed and red-shouldered hawks observed at Sweedens Swamp, would be especially impacted at both sites. Recent research by the **USFWS*** in 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 Impacts

In its present state, Sweedens Swamp stores flood waters and modulates peak and base flows. Construction of the mall and parking areas, absent compensatory flood storage (as Pyramid proposes for mitigation), would exacerbate flooding **onsite** and downstream.

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 be very significant in itself, as long as effective erosion control structures are installed and surface water runoff quality is maintained at acceptable levels.

There is little information describing **the** quality of parking lot runoff and its impact on surface water resources. According to the EPA Nationwide Urban Runoff Program (NURP) report, the effects of urban runoff on receiving water quality are highly site-specific. The impacts depend upon the urban runoff quantity and quality, the chemical and physical characteristics of the receiving water body, the concentration of specific pollutants reaching the receiving water body, and the pollutant concentrations that reach a water supply. The NURP report found that there are a variety of heavy metal and organic contaminants which commonly occur in urban runoff. Without detailed site-specific testing, **it is difficult to determine** which of those contaminants would be found in the proposed mall's parking lot runoff or what their concentrations would be. However, the contaminants most likely to be found in parking lot runoff include lead, zinc, copper, chromium, arsenic, oils and greases, and salts. In the absence of any treatment, runoff from the mall project would likely contribute these pollutants to adjacent waters.

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

As a part of its attempt to offset adverse impacts to Sweedens Swamp, Pyramid has proposed several features in the **onsite** mitigation plan. Pyramid proposes to build a "mall **pad**" to address reductions in **baseflow** that would result **from** the development of the site. The pad is also supposed to reduce peak flows from storm events and contribute to the prevention of pollution. Other **onsite** features, according to Pyramid's consultants, would improve water quality renovation. For example, Pyramid claims that conversion of existing wooded swamp to open water, deep marsh and shallow marsh areas would triple contact of watershed runoff with the wetland. To accomplish this, Pyramid proposes the construction of several "wetland cells", which also would function as stormwater detention basins. Runoff from various parts of the site would discharge into created shallow marshes and ultimately into a deep marsh and open water area before leaving the site.

Pyramid's consultants have stated that 100% of the runoff from the watershed will be able to interact with the created wetlands, which will provide water quality renovation. Pyramid implies that replacement of the current wooded swamp with a shallow marsh will provide **more** efficient water quality renovation. I am not certain that the created wetlands will function exactly as described by Pyramid.*/ Unless carefully controlled, 40% of the runoff entering the **site may** interact with only several hundred feet of shallow marsh.**/ Further, while it may be true that contact of runoff with **the** wetland will increase, this does not necessarily mean that water quality will improve. Polluted runoff from the mall and its parking areas will increase the pollutant loading to the remaining areas of Sweedens Swamp. Even if greater pollutant contact with the wetland occurs, this **will** merely result in concentrating contaminants generated by the mall in a smaller volume of the wetland vegetation and soil. (**Some** of these pollutants may be regulated by an NPDES permit, issued under Section 402 of the Clean Water Act, for the discharge of stormwater runoff into the wetlands.)

As discussed in Section **III**, Sweedens Swamp overlies an aquifer which has water supply potential. However, it appears that the existence of a major highway interchange (Route 95) and residential and commercial development near this aquifer likely precludes its use for a municipal drinking water supply. It is not probable that the

*/ For example, according to the elevations on the applicant's plans, it appears that there will be little opportunity for the runoff entering the northwestern corner of the site to interact with shallow marsh areas; instead it would more likely flow through the wooded swamp and deep marsh before leaving the site.

**/ Runoff from the 40% of the watershed drainage area that enters the northeast corner of the site would theoretically be dispersed through a shallow marsh via spreader berms and ultimately into a deep marsh. It is uncertain how effectively this will work and whether the runoff will merely take the shortest route off the site as it does under existing conditions.

Massachusetts DEQE would grant a permit for development of a municipal water supply at Sweedens Swamp because a suitable buffer zone needed for protection may not be available, and because the site is near potential contamination sources.

Sweedens Swamp drains into a small unnamed stream that eventually joins the Seven Mile River which flows into the Ten Mile River. The swamp is approximately five river miles upstream of Central Pond, which most likely provides recharge to the adjacent Seekonk, Massachusetts Water District well field. There currently are three production wells and a proposed well adjacent to Central Pond. The existing wells have the potential yield of more than three million gallons per day (mgd). The Seekonk Water District currently is pumping between 2.5-3.0 mgd from these wells, representing approximately 90% of the total volume used by the town.

According to the Rhode Island Department of Health, the Ten Mile River is not being used as a source of water supply by Rhode Island communities. The Ten Mile River previously was used as a source of drinking water by the town of East Providence approximately fifteen years ago. Since then, however, East Providence has been purchasing drinking water from the city of Providence which is supplied by the Scituate Reservoir. As stated previously, the amount of contamination from the mall site will increase the overall contaminant load to the watershed. However, the water quality impacts from the proposed project appear to be minimal in comparison to other sources of contamination that already exist in the Ten Mile watershed. Therefore, I find that there would not be adverse impacts from Pyramid's proposed project upon public drinking water supplies, including the Seekonk Water District wells, as long as effective erosion control structures were installed and maintained during construction and surface water runoff quality were maintained at acceptable levels.

Summary

Pyramid's proposal would have an immediate and severe impact on wildlife habitat because 32 acres of wetland 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 much of the remaining wetlands (4 acres would remain undisturbed) 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 build 36 acres of artificial wetlands at an offsite location. These wetlands, even if successful, would not be of the same type as those destroyed and would not fully replace the lost habitat values at Sweedens Swamp. I cannot tell whether the newly created

wetlands **onsite** would function much more "efficiently" than the existing swamp, as Pyramid asserts. In any case, the mall will generate waterborne pollutants which may partially or totally **offset** any gains in wetland "efficiency". I do not believe, based on current information, that the mall proposal would adversely affect drinking water supplies.

As described above, the proposed mall project would have adverse impacts on wildlife habitat, one of the wetland values protected by section **404(c)** of the Act. In determining whether or not these adverse impacts are unacceptable, I next examine whether or not there are practicable, less environmentally damaging alternatives to the proposed project.

V. ALTERNATIVES TO THE PROPOSED PROJECT

A. General Considerations

In determining whether a proposed project would be likely to have an "unacceptable adverse effect" on the aquatic environment, I must evaluate both the significance of the loss of the resource value and the unacceptability of that loss.—/ The preamble to the **404(c)** regulations states that the section **404(b)(1)** guidelines provide the substantive criteria by which the acceptability of a discharge is to be judged under section **404(c)**. 44 Fed. Reg. 58076 (October 9, 1979). The preamble explains that:

one of the basic functions of **404(c)** is to police the application of the section **404(b)(1)** guidelines. Therefore, those portions of the guidelines relating to alternative sites may be considered in evaluating the unacceptability of the environmental impact. For example, the Administrator may take into account the fact that the alternative sites or methods are or are not available, so that the loss of resources is avoidable or unavoidable. Of course, even when there is no alternative available, and "vetoing" the site means stopping a project entirely, the loss of the **404(c)** resources may still be so great as to be "unacceptable."

Id. at 58078.

As discussed above, Pyramid's proposal to fill Sweedens Swamp would be likely to cause a significant loss of wildlife habitat at the disposal site. In order to determine whether that loss is unacceptable, I have evaluated the project in light of the section **404(b)(1)** guidelines, which are regulations published at 40 C.F.R. Part 230.

Section 230.10 sets forth the specific requirements which discharge proposals must meet in order to be permitted. The section implements the **CWA's** goal of maintaining and restoring the integrity of the nation's waters by establishing strong protection against discharges into special aquatic sites, which include wetlands. This section includes what is often referred to as the "water dependency" or "alternatives" test, and has been described as the "cornerstone" or "linchpin" of the section 404 regulatory program. Briefly, **§230.10(a)** sets forth two rebuttable presumptions: that, for non-water dependent

*/ 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).

activities (such as shopping malls) involving discharges into special aquatic sites, there exist practicable alternatives to the discharge; and that such alternatives would have less adverse impact on the aquatic ecosystem.^{*/}

One of the central issues, therefore, identified in my proposed determination is whether there exist one or more practicable, less environmentally damaging alternatives to Pyramid's proposal to fill Sweedens Swamp.^{**/} In analyzing this issue, I am mindful that EPA regulations place the burden of proof on the permit applicant. Specifically, it is not EPA's burden to prove that there is a practicable, less environmentally damaging alternative to filling Sweedens Swamp; rather, Pyramid must prove that no such alternative exists. In Sections V.B. and V.C., I explain the basis for my conclusion that Pyramid has failed to overcome the two presumptions contained in the alternatives test.

^{*/} 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 practical 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.

^{**/} Pyramid argues that EPA is bound by the findings of the Corps of Engineers concerning the project's compliance with the 404(b)(1) guidelines. The D.C. district court has rejected that contention. See Newport Galleria Group v. Deland, et al., No. 85-2747 (D.D.C.).

B. 'Practicable Alternatives

To be considered **practicable**, an alternative to a **proposed discharge** must be both feasible and available. **Again**, it is **Pyramid's** burden to prove that an alternative is not feasible or available. In the following sections, I discuss these two elements of practicability and Pyramid's failure to overcome the presumption that there are practicable alternatives.

1. Feasibility

First, an alternative must be capable of satisfying the basic, or overall, purpose of the proposed project (taking into account cost, technology, and logistics); **i.e.**, it must be feasible. 40 C.F.R. **§230.10(a)(2)**. The preamble and the regulations use the terms "basic project purpose" and "overall project purpose" interchangeably, but do not specifically define them. The preamble clearly supports the position that "**basic purpose**" refers to the generic function of the proposed activity. For example, as described in the preamble, the basic purpose of a restaurant is to feed people. 45 Fed. Reg. 85339 (December 24, 1980). In practice, EPA has consistently interpreted the **term** to describe the broad function of the activity being proposed.

A contrary construction of the **term**, to mean the specific details of an applicant's preferred plan, would seriously undermine **the alternatives test**, since an applicant for a 404 **permit** could almost always structure its proposal so that the chosen wetland site would be the only location that could satisfy the project purpose. **For** example, the basic purpose of a residential development of one kind or another is to provide housing, notwithstanding a **developer's** preference for housing of a particular type (**e.g.**, condominiums), a certain configuration, having a special view, or located near specific roads. If such prescriptive requirements were included in the basic purpose, then an applicant could easily manipulate project features to prevent fair evaluation of other alternatives.*L

The presumption that other practicable alternatives exist for **non-water dependent projects** serves two functions. Most importantly, it directs development away from sensitive aquatic resources. Second, it preserves such sites for projects which truly 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 usually more limited. Too narrow a reading of basic purpose substantially weakens the guidelines' ability to preserve waters for water dependent purposes and to prevent avoidable losses altogether.

*/ Similarly, permit applicants might add amenities (e.g., a waterfront view) to make access to water seemingly essential and thus directly subvert the water dependency test. This approach has been rejected by the government and the courts in the past. See, e.g., Shoreline Associates v. Harsh, 555 F. Supp. 169 (D. Md. 1983), aff'd, 725 F.2d 677 (4th Cir. 1984).

The case at hand presents a striking example of the drawbacks of construing "basic project purpose" too narrowly. Pyramid has submitted detailed technical information in support of its choice of Sweedens Swamp. Many of Pyramid's site selection criteria are quite narrow (e.g., the mall must be located on I-95; the site must accommodate single-level parking). The regulatory agencies, lacking the industry expertise, would be at a great disadvantage in determining whether the presumption has been overcome, if the evaluation were required to be conducted entirely on the **applicant's terms**. In this case, the agencies were able to evaluate **Pyramid's** submissions in light of differing conclusions reached by another well-established developer, at least with respect to one alternative site. This coincidence is unlikely to be repeated often in the future.

An interpretation of the guidelines to refer to an applicant's detailed project proposal would act as incentive for the applicant to define a project to fit a preferred site, rather than to seek the best upland site. Only if "basic project purpose" is read broadly can the alternatives test be the workable protection against widespread filling of wetlands that it was intended to be. Here, the basic project purpose of the proposed activity is to provide retail shopping. It is not necessary to determine how broadly "retail shopping" should be construed, however, because in this case feasible alternatives exist for a more specific project purpose, i.e., a shopping mall, offering "quality" merchandise, capable of serving a regional market.*

2. Availability

According to 40 C.F.R. §230.10(a), in order to be practicable, an alternative must be "available" as well as feasible. To overcome the presumption, Pyramid bears the burden of proving that alternatives are not available. A question has arisen concerning the meaning of availability in the context of the alternatives analysis: whether an alternative need only be available to someone for fulfilling the basic project purpose, or whether it further must be available to the applicant. ~~Under either interpretation, as the~~ later discussion of actual alternatives indicates, I believe Pyramid has failed to overcome the presumption that there are available alternatives.

*/ In identifying a specific project purpose here, I am viewing the project activity generically, rather than referring to Pyramid's actual proposal. As discussed in the following section, an alternative capable of satisfying the basic project purpose need not be available to the applicant.

The regulation does not define "available". The interpretation followed by EPA and the NE Corps in the past is that an alternative need not be available to the applicant.*/ I believe that **considerations** of the overall integrity of the 404 program and the goals of the CWA strongly favor continuing to interpret the guidelines to mean that an alternative is "available" if it could satisfy the basic project purpose.

The regulation states that "[i]f 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 project purpose of the proposed activity may be considered." 40 C.F.R. **§230.10(a)(2)**. Pyramid argues that this language clearly means that the applicant must reasonably be able to obtain, utilize, expand, or manage such other area. In making its argument, Pyramid assumes the very meaning which is in question. The language does not say explicitly that the applicant must be able to obtain, utilize, expand, or manage the alternative area. Instead, the regulation emphasizes the capability of a site (even if **owned** by another) to fulfill in some fashion the basic project purpose.

Pyramid attempts to find support for its position in the **preamble** to the regulations. While the preamble does contain some language consistent with Pyramid's reading, it also contains language to the contrary; on balance, the preamble is inconclusive. Since neither the regulation nor the preamble clearly states whether "availability"^m is to be viewed from the perspective of the project or the **applicant,**/** EPA should resolve the ambiguity in favor of past practice **and the** basic purpose of section 404 of the Act, which is to conserve wetlands (and other waters of the U.S.).

***/** See, for example, the February 19, 1985 telephone memorandum of the NE Corps discussing the imminent denial of Pyramid's permit: "We are interpreting regulations the way we always have, **i.e.**, practicable alternatives are those available for the purpose of the activity."

****/** Nor are the two cases on which Pyramid relies to support its interpretation of "availability"^w persuasive. Neither case holds what Pyramid argues it holds and both are distinguishable factually. Both cases involved judicial reviews of final permit decisions under the deferential "arbitrary and capricious" standard of review, and neither specifically limited the range of reasonable interpretations of the guidelines.

Strong policy considerations favor interpreting the guidelines to mean that the availability and feasibility of alternatives are to be viewed from the perspective of the basic project purpose rather than strictly from the applicant's perspective. This interpretation best serves the **guidelines'** goal of avoiding the unnecessary destruction of wetlands. It ensures that the filling of wetlands will not be authorized as long as the public need (**i.e.**, the basic project purpose) can be served at an environmentally preferable site.*/

To accept **Pyramid's** interpretation, limiting the consideration of alternatives to only those available to the applicant, would unreasonably skew the analysis in favor of filling wetlands. It would mean, for example, that an alternative which is entirely capable of accomplishing the project purpose and avoiding the wetland loss would be eliminated from consideration if the applicant cannot obtain it, thus defeating the central purpose of the section 404 program.

The scope of alternatives under the guidelines is directly analogous to the scope of alternatives under the National Environmental Policy Act (NEPA). (See the preamble to the proposal for the revised guidelines, 44 Fed Reg. 54224, September 18, 1979). Indeed, NEPA requires that federal regulations and policies be interpreted and administered in accordance with NEPA policies. 42 U.S.C. **§4332(1)**. NEPA clearly mandates consideration of alternatives beyond the control of the project proponent. Cf. NRDC v. Morton, 458 **F.2d** 827 (**D.C.Cir.** 1972). The Council on **Environmental Quality** (CEQ) directly addressed the scope of alternatives issue when asked if an EIS prepared in conjunction with an application for a permit or other federal approval must address alternatives outside the capability of the applicant. CEQ replied by affirming that NEPA requires the consideration of all alternatives which are reasonable, "whether or not the proponent or applicant likes or is itself capable of carrying out a particular alternative." (40 Most Asked Questions on NEPA Regulations; 46 Fed. Reg. 18026, 18027 (**1981**)). It would be anomalous indeed if an EIS (and EPA requested that the

*/ Pyramid mistakenly argues that construing availability to apply only to the basic project purpose resurrects the so-called "necessary test" which was deleted from proposed section **230.10(e)** (the forerunner of the final water dependency test in section **230.10(a)(3)**). That test would have required, in cases where there were no alternatives, that a permit be denied if the permitting agency concluded that there was no public need for the proposed project. Interpreting availability to apply only to the basic project purpose does not require an evaluation of whether the public needs the project. Rather, it assumes, as I have here, that the need exists, and asks only whether the need can be satisfied at a location other than a wetland.

Corps prepare one in this case) found that there were feasible alternatives to a wetland fill project only to have those same alternatives discarded at the 404 permit stage because they were "unavailable" from the applicant's narrow perspective.

Requiring alternatives to be available to the permit applicant in effect shifts the burden to the regulatory agencies to prove that alternatives which otherwise may be practicable are available to the applicant. In evaluating an applicant's attempts to rebut the presumption, EPA would be forced to ascertain what the applicant was or was not able to do, whether certain real estate was or was not on the market, what does or does not constitute a reasonable business risk for that applicant, and so forth, based on information solely within the knowledge and control of the applicant. Moreover, if an applicant chooses not to provide sufficient information, it may be nearly impossible to unravel the tangle of real estate and financial transactions that may have a bearing on the issue.

In this case, for example, the record contains conflicting information concerning whether and when the North Attleborough site (see discussion below) was available to Pyramid. In order to reconcile these inconsistencies, EPA sent a letter to Pyramid on November 18, 1985 requesting specific information concerning Pyramid's "entry" to the market, how it conducted its evaluations, what was available and when, etc. Pyramid refused to respond to EPA's specific questions, and instead referred EPA to Pyramid's earlier submissions. In addition to conflicting statements concerning the North Attleborough site, Pyramid provided virtually no information about the availability of other sites. As this case demonstrates, the presumption becomes unworkable as a practical matter if availability is evaluated only from the applicant's perspective. The water dependency test, in turn, is rendered meaningless.

Admittedly, it will not always be easy for the regulatory agencies to determine the availability of alternatives to satisfy the basic project purpose. This approach nevertheless poses far fewer problems than the approach advocated by Pyramid. There are ways of evaluating availability for the basic project purpose that do not depend entirely on what the applicant is willing to disclose. Public comments on a permit application can provide useful information. The agency can hire a consultant to do a market analysis or market survey, as the NE Corps did in this case. For many projects, an EIS will be the vehicle for gathering substantial information on alternatives available to satisfy the basic project purpose. From this information, the agencies can evaluate whether an applicant has rebutted the presumption.*/ The usefulness of an

*/ For example, The NE Corps prepared an EIS in connection with a 404 permit application for the North Haven Mall. Extensive information was developed on alternatives -- far more extensive than exists in this case. (That permit was ultimately denied, since the project was found not to be in the public interest.)

EIS is substantially diminished if alternatives disclosed in the EIS cannot be considered in the 404 permit proceeding because they are not available to the applicant.

The interpretation of the alternatives test to apply to the project rather than to the applicant need not work an undue hardship on applicants. Where upland alternatives exist which could satisfy the project purpose, it is appropriate for the presumption to stand firm in forcing the upland alternatives to be chosen (provided they are less environmentally damaging). While this may result in a particular applicant's inability to pursue its particular project, the overall purpose of the Act is furthered.*/ Particularly where (as here) a wetland has been purchased well after the effective date of the guidelines, the denial of a permit in such circumstances is justifiable. The developer takes the risk that a permit to fill may be denied, since there is no right to fill wetlands.**/

For the reasons stated above, I believe that the 404(b)(1) guidelines require that an applicant, in order to rebut the alternatives presumption, must demonstrate that there are no alternatives available to satisfy the basic project purpose, without regard to whether alternatives are available to that applicant. In this case, there clearly are alternatives available to satisfy the basic project purpose, as described below. In addition, also as discussed below, even if alternatives were required to be available to the applicant, I believe that Pyramid has failed to rebut the presumption that such alternatives existed at the time Pyramid was in a position to obtain other sites.

3. Practicable Alternatives to Filling Sweedens Swamp

In evaluating whether Pyramid has overcome the presumption that there are practicable (*i.e.*, feasible and available) alternatives to the discharge, attention has focused primarily on a site located approximately three miles north in North Attleborough, Massachusetts,

*/ Where wetlands are less expensive to purchase than uplands, Pyramid's interpretation could result in encouraging more marginal companies to attempt to develop wetland areas. Permits would be more likely to be granted, since such companies would be less able to compete in the market for upland sites and could, therefore, demonstrate that there were no practicable alternatives open to them. Clearly, this is not desirable. In addition, Pyramid's interpretation penalizes the developer who avoids wetlands in favor of an upland site, only to discover that a competitor's permit for the filling of a wetland site is granted because the upland site is already "taken."

**/ Certainly Pyramid can claim no hardship in this case. When Pyramid acquired control over Sweedens Swamp, the State had already denied a state permit to fill the wetlands. Pyramid was fully cognizant of the risks associated with an attempt to develop this site.

because more information exists about this site than other sites. However, my proposed determination did not limit the inquiry to the North Attleborough site, and the record contains information on other sites as well. Based on the record, I find that Sweedens Swamp is not the only site available which can satisfy the basic project purpose of retail shopping, as well as the more specific project purpose of a regional shopping mall offering quality merchandise. The following is a discussion of some of these **alternatives**.

a. North Attleborough Site

The North Attleborough site is 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 offering 625,000 square feet of leasable area and anchored by three "quality" department stores.*

Pyramid included an evaluation of the North Attleborough site in its July, 1984 404 permit application. Pyramid had rejected the site, concluding that it was not a practicable alternative to building its mall at Sweedens Swamp.**/ Several commenters to the NE Corps, including EPA, expressed **the** belief that the North Attleborough site should be considered a practicable alternative due to

*/ I find no basis to conclude, as Pyramid asserts, that New England Development is merely trying to leverage Pyramid into a joint partnership at the Sweedens Swamp site by pretending to be interested in building at the North Attleborough site. New England Development has acquired control over the site, obtained a zoning change, applied for a variety of permits, and completed a lengthy environmental impact report. Nothing in the record indicates that all of this activity is a charade. Moreover, New England Development appears to have a **well-established** presence in New England.

/ **Pyramid's description of the site was not very accurate. For example, Pyramid stated that there were 30 acres of vegetated wetlands present, according to various maps and **confirmed** by Pyramid's "**independent** investigation." In fact, according to investigations by EPA, FWS, and NE Corps experts, less than one acre of wetlands exists at the site. In addition, Pyramid stated that installation of a sewer system to service the site (coupled with the need to purchase adjacent property) would be prohibitively expensive. Actually, a sewer system had already been installed by the property owner. Finally, Pyramid stated that two-thirds of the site was zoned residential, whereas only 37% of the site was so zoned.

its size, the small amount of wetlands present, and its location within the trade area to be served by Pyramid's project. Since that time the record has been supplemented with additional, and conflicting, information.

Feasibility of the North Attleborough Alternative

As a general matter, an applicant's submission of information clearly within its expertise is normally accepted by the Agency. Where the information seems questionable, illogical, or in conflict with other available information, however, EPA must exercise its independent judgment to determine whether the presumption has been clearly rebutted. The preponderance of evidence in the administrative record in this case shows that the North Attleborough site can satisfy the basic project purpose of providing retail shopping. The site is large, it is properly zoned with the necessary infrastructure, and it is located within a defined trade area. In addition, as discussed below, the site also satisfies a more specific purpose of a regional shopping mall offering "quality" or "fashion-oriented" merchandise. New England Development has provided information confirming that the North Attleborough site is viable to support a regional mall. The NE Corps' independent consultant, William Badger, reached the same conclusion in his January 1985 analysis,*/ as did the NE Corps in its May 1985 "risk analysis" of this alternative site.

Pyramid has presented various technical criteria which it asserts must be satisfied in order for a site to be capable of supporting a regional, fashion-oriented shopping mall. In Pyramid's view, only the Sweedens Swamp site can meet these criteria. While disagreeing that the alternatives test requires Pyramid's criteria to be met, I conclude that the North Attleborough site satisfies most of those criteria and, more importantly, can support a viable shopping mall.

Pyramid states that the site is too small to support a shopping mall. Pyramid proposes to build a two-level structure providing approximately 700,000 square feet of leasable floor area (and associated roads and parking) on about 49 acres at the Sweedens

*/ Pyramid has questioned Mr. Badger's independence, arguing that his conclusions should be rejected because of a letter he subsequently wrote to the Region supporting the initiation of the 404(c) process. I find there is no reason to believe that Mr. Badger did not conduct an objective analysis or that his conclusions were improperly influenced. Indeed Pyramid's consultant, HSG/Gould Associates, stated, "It appears that Mr. Badger conducted a very even-handed analysis.. . ." I assume that Mr. Badger's support for EPA's 404(c) action flowed from his conclusion that the North Attleborough site was practicable, not vice versa. His letter to EPA was written approximately 7 months after he completed his analysis for the Corps.

Swamp site. New England Development proposes to build a two-level structure providing 625,000 square feet of leasable floor area (and associated roads and parking) on approximately 44 acres at the **Nort.** Attleborough site. The proposed square footage and size of the "**footprint**" of each development are roughly equivalent; thus it cannot be said that the North Attleborough site is too small. Even if they were not so close in size, I believe that the North Attleborough site is large enough to support a regional mall. I base this conclusion on the Badger report and on information submitted during the comment period concerning the viability of sites supporting shopping malls with higher density configurations (described further, below).

Pyramid also rejected the North Attleborough site because it 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 as well. The **site**, located near the geographic center of Pyramid's trade area, is ~~only three miles north of Sweedens~~ Swamp. According to Pyramid's own consultant, **HSG/Gould Associates**, the site is 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. Mr. Badger states in his analysis for the Corps 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.

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 on an interstate highway (**I-295**). The Badger report notes that visibility from **I-295** and U.S. Route 1 is excellent. Badger also concludes that visibility in general is not an "overly important" consideration. "**Access**, closeness to market, and potential to create a point of destination for buyers is more important." Both Pyramid and New England Development have identified a strong "**need**" within the area for department-store type merchandise. It is therefore reasonable to conclude that the market can support a mall which serves destination shoppers and ~~does not rely on attracting errant highway travelers~~ bound for other activities in other locations. Interested shoppers could presumably locate the mall even if it were not visible from any highway.

Pyramid asserts that highway access to the North Attleborough site is poor. Badger, by contrast, 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, Badger concludes that a mall at the North Attleborough site will create its own traffic by providing its own draw. New England

Development's consultant, Realty Development Research, Inc., similarly concludes that the site enjoys good access within the trade area.

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.. .. The zoning of the site has, through New England Development's efforts, been changed to accommodate a regional shopping mall.

In support of its claims that the location of the North Attleborough site is unacceptable, Pyramid asserts that no department stores are willing to locate there, as evidenced by a history of past development failures. Pyramid also stated that before acquiring Sweedens Swamp it tried to persuade department stores to locate at another site in the area.*/ The Badger report, as well as New England Development's **feasibility** analysis, convince me that with the current market strength, past development failures are not conclusive. Since, as both developers insist, a strong market "need" for this type of shopping mall exists, if the Sweedens Swamp site were not available for development because of **environmental considerations**, it is difficult to believe that department stores would not locate at the North Attleborough site. The letters from department stores which were submitted by both Pyramid and New England Development are inconclusive, suggesting that the stores are waiting to see which site will materialize first. Moreover, there may well be other "**quality**" department stores interested in locating at either site.

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. Any large development is likely to pose difficulties that will require time, money, and proper planning to

*/ EPA requested Pyramid, in the November 18, 1985 information request, to document its claims that it tried to persuade department stores to locate at a site other than Sweedens Swamp. Pyramid refused to respond to this request for information, referring EPA to items it had already submitted. The record does not contain support for Pyramid's assertion.

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. Pyramid was not daunted by these difficulties at the Sweedens Swamp site, and it is hard to understand why these problems loom so large for Pyramid when it evaluates the North Attleborough site. While issues have been raised in the public comments on the draft environmental impact report for the North Attleborough mall project, at this juncture it appears that these problems are solvable and will be addressed in the course of the final environmental impact review by the State.

As the discussion above demonstrates, the record supports the conclusion that the North Attleborough site is feasible for the basic project purpose of retail shopping, and for a more specific purpose of a regional shopping mall offering quality merchandise. Whether the North Attleborough site is the best site within the trade area is not the issue. In Pyramid's view, the Sweedens Swamp site is by far the preferred site (with its "excellent" location, access, and visibility). The alternatives test, however, requires only that other sites be feasible, not that they be equally desirable. Based on the record I find that Pyramid has not met its burden to show that Sweedens Swamp is the only feasible alternative.

Availability of the North Attleborough Alternative

The North Attleborough site is certainly available to satisfy the basic project purpose. Another mall developer has acquired control over numerous parcels of property and plans to develop the site for retail shopping similar in type and size as that proposed for Sweedens Swamp. The site has been available for this purpose since well before the NE Corps' permit decision. Moreover, even if alternatives were evaluated from the **applicant's** point of view, I find two separate bases for concluding that Pyramid has not overcome the presumption of available alternatives.*/

First, Pyramid has made conflicting statements concerning the availability of the North Attleborough site at the time it was making its decision to locate a mall in the area. In its permit application and supplement and in subsequent meetings with the NE Corps and EPA, Pyramid stated only that it had rejected the site

*/ If alternatives are evaluated from the perspective of the applicant, another question arises: When must the alternative be available? It is difficult to **fashion a** hard and fast rule which would best serve the guidelines' goal of preserving wetlands. Indeed, Pyramid has, over time, argued different positions on this issue. Under the circumstances of this case, I believe it is reasonable to evaluate availability at the time Pyramid was in a position to obtain other sites.

for feasibility reasons, not because it had been unavailable. In July and August, 1985, Pyramid partner John Bersani confirmed that the North Attleborough site was available to Pyramid, and that Pyramid had rejected the site due to its location. See The Boston Globe, July 29, 1985, p.16; The Boston Herald, August 26, 1985, p.26. That statement was later contradicted in an affidavit filed by Mr. Bersani in the litigation described in Section II above. In his affidavit, filed September 16, 1985, Mr. Bersani stated that Pyramid had not begun to investigate and analyze the trade area until "approximately September 1983" and that therefore the site had been unavailable.

The record indicates that New England Development began acquiring control over property at the North Attleborough site in July, 1983, and completed its acquisitions in February, 1984. The record is not clear when Pyramid began its investigations of the area and made its various business decisions culminating in its acquiring control over Sweedens Swamp in late 1983 or early 1984. It does appear from statements made by Pyramid's predecessor, the **DeBartolo Corporation**, and by New England Development, that it is standard practice **for** the retail development industry to stay abreast of activities and market trends in areas of interest, well in advance of making site acquisitions. In its November 18, 1985 letter to Pyramid, EPA attempted to gain a better understanding of when Pyramid "entered the market" by asking detailed questions concerning Pyramid's contacts with realtors, department stores, **DeBartolo**, and various property owners. Pyramid initially refused to answer these specific questions. When requested by EPA to reconsider its refusal, Pyramid responded on **December** 17, 1985 that, with respect to the existence of further or more detailed information about the project and alternate sites, "...there is no further or more detailed information. It simply does not exist." In determining whether Pyramid has rebutted the presumption, I must evaluate the credibility of the information that has been submitted. Pyramid has in the past made inaccurate statements about the character of the North Attleborough site (see page 34, supra), and conflicting statements about its availability. Pyramid further has refused to provide information so that I could reach an independent judgment of when it entered the market. In weighing all of the information, I conclude that Pyramid has not overcome the presumption that the North Attleborough site was available to Pyramid.

A second basis for concluding that Pyramid has not overcome the presumption is that under the particular facts in this case, Pyramid ought to be bound by the alternatives that were available to its affiliate, Attleboro Mall, Inc.

On March 13, 1985, the state Department of Environmental Quality Engineering (**DEQE**) granted a state permit (a Superceding Order of Conditions) to Attleboro Mall, Inc., an 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.** must file a new notice of intent with the local

Conservation Commission because it was not the original applicant and because the plans submitted with the original notice of intent had been revised by Pyramid.* / Pyramid argued that its new proposal to build a shopping mall **should** be treated **as** a continuation and improvement of the earlier mall proposals made by **Mugar** and **DeBartolo.**** / 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. Undoubtedly, the state permit would not have been granted under the new regulations, since they prohibit the filling of more than 5000 square feet of bordering vegetated wetlands.*** / 310 C.M.R. 10.55. This fact was acknowledged by the State in its final decision.

Now that it has secured the state permit (without which it would not be entitled to a federal permit, **see** 33 C.F.R. **§320.4(j)**) by standing in the shoes of its predecessor, Pyramid wishes to step out of those shoes and be treated as an entirely new entity for

* / The original notice of intent was filed by the **Mugar** Group, **Inc./Federated** Stores Realty, Inc. in March, 1979. The local Conservation 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, Pyramid obtained control of Attleboro Mall, Inc. and pursued a challenge of the DEQE denial through an adjudicatory hearing.

** / In contrast, when **DeBartolo** controlled Attleboro Mall, **Inc.**, the corporation argued that its project was a new proposal and that the State should allow it to seek a new permit from the local Conservation Commission rather than holding a hearing tied to the denial of **Mugar's** application. Once Pyramid acquired control of Attleboro Mall, Inc., the corporation changed its position and argued that it should succeed to the rights of the original applicant, and that it wished to pursue its **appeal** based on a new proposal but without starting over at the local level.

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

purposes of the alternatives analysis under federal regulations.**/ Since Pyramid acquired the rights of its predecessor, it ought also to be bound by the obligations of its predecessor - including the obligation to choose an upland alternative. Under the particular circumstances in this case, I believe that alternatives available to Attleboro Mall, Inc. while it was under the control of both DeBartolo and Pyramid should be considered.

During the period that Attleboro Mall, Inc. has been in existence and has been actively engaged in plans to build a shopping mall at Sweedens Swamp, the North Attleborough site was available for purchase prior to New England **Development's** acquisition of control over the site. The record indicates that the DeBartolo Corporation expressed an interest in the site to a local realtor who was offering it, but did not pursue an acquisition. Under these circumstances, I cannot conclude that Pyramid has met its burden of proving that the North Attleborough site was not available to Attleboro Mall, Inc.

iii. Summary

In conclusion, I believe, based on the record, that Pyramid has failed to overcome the presumption that the North Attleborough site is a practicable alternative to filling Sweedens Swamp. The site is available to serve the basic project purpose of retail shopping, as well as a more narrowly defined purpose of a regional, quality shopping mall. Even if the site needed to be available to Pyramid, I conclude that Pyramid has not clearly demonstrated that the site was unavailable to it or its immediate predecessor in interest.

b. Other Alternatives

Comments in response to my proposed determination suggested that the North Attleborough site is not the only alternative to the discharge to Sweedens Swamp. Other sites discussed in Pyramid's permit application and supplement to its application were suggested for further evaluation. In addition, a site in Seekonk, Massachusetts, has recently come to our attention as the proposed location for another regional, fashion oriented shopping mall. Some of these alternatives are discussed below.

Washington Plaza Site

One of the alternatives evaluated and rejected by Pyramid was the expansion of an existing facility at the Washington Plaza site, located at the junction of Route 1 and Highland Avenue in Attleboro, near the intersection of Routes 1 and 1A. The site, which is over 27 acres in size, currently contains a strip shopping center. It is zoned "planned highway business", and is located in the midst of an urbanized area. The Plaza is only 1.25 miles south of Sweedens Swamp and the interchange of **Newport** Avenue (Route 1A) and 1-95.

/ 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 in exchange for \$10.00.

Adjacent to this parcel, on the west, is a large tract (approximately 20-40 acres) of wooded land, primarily a mixed Quercus alba/Pinus strobus (white oak/white pine) forest on apparently well-drained soils. This tract appears to provide the potential for expanding the Washington Plaza site, although it is currently zoned "single family residential."

Pyramid stated in its application that this site is impracticable because it suffers from the same deficiencies of another site it evaluated (Tri-Boro Plaza). Summarizing those deficiencies at the Tri-Boro Plaza site, Pyramid asserted that the cost of demolition of the existing structures, site expansion, and highway improvements would be prohibitive. Pyramid also stated that the department stores were unlikely to locate there because of the poor location.

In EPA's November 18, 1985, information request to Pyramid, we sought additional information on which Pyramid based its conclusions, including the estimated costs of building demolition, highway expansion, and traffic improvements; and a description of the efforts made to ascertain the availability of surrounding property. The inquiry concerning costs is particularly important in light of Pyramid's willingness to spend millions of dollars to create an artificial wetland in order to obtain a permit to fill Sweedens Swamp. Pyramid refused to supply any of this information. EPA in a December 6, 1985 letter requested Pyramid to reconsider its refusal to answer EPA's questions. In his December 17, 1985 response, John Bersani stated that "there is no further or more detailed information. It simply does not exist."

As with the North Attleborough site, I remain unconvinced that the location of the Washington Plaza site renders it infeasible, since it is scarcely more than one mile from Sweedens Swamp and is located near an interchange with I-95. With respect to the other alleged deficiencies of the site, Pyramid has asserted conclusions but submitted no detailed information. Because Pyramid has not substantiated its claims that development of this site would be prohibitively expensive, I cannot conclude that Pyramid has met its burden on this issue. Finally, Pyramid provided no information on the availability of this site and therefore has not overcome the presumption that the site is available.

Seekonk Site

The Seekonk site is a 79 acre parcel of land located on the southern side of Route 6 in Seekonk, Massachusetts. Seekonk is the town on the southern border 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. The site is currently an abandoned drive-in theater and vacant land.

In September, 1985, a Rhode Island developer, Marathon Group of Companies, Inc., announced plans to build at the site a quality

merchandise regional shopping mall anchored by three department stores. Marathon currently plans to build a two-story structure with 540,000 square feet of floor space (including separate cinema, commercial building, and restaurant structures) covering 35-40 acres of the site. An existing Ann & Hope department store adjacent to the site would be included in the complex for a total of nearly 800,000 square feet of retail space.

Because **Marathon's** project is at a much earlier stage of development, the record does not contain as much information as exists on the Attleboro and North Attleborough mall proposals. What is available, however, indicates that the site is capable of satisfying the basic project purpose of retail shopping, as well as the more narrowly described purpose of a regional, quality shopping mall. The site is large, it is properly zoned, and a developer with other malls in the northeast has concluded that its location is satisfactory to support a regional shopping mall.

Some potential problems with the site do exist. In particular, traffic improvements and increased fire and police protection may be needed, and potential difficulties posed by the proximity to the Runnins River flood plain must be addressed. (Similar problems were overcome by Pyramid at the Attleboro site). Despite these potential problems, the Seekonk Planning Board approved Marathon's proposal with a unanimous vote on January 14, 1986.

The Seekonk site is located in the southeast portion of Pyramid's defined trade area; in fact, it is in one of the most densely populated sections of the trade area according to **Pyramid's** 1983 retail market analysis. Pyramid states that the Sweedens Swamp site is the "best" site within the trade area. Again, even if that is correct, the alternatives test does not require that an alternative be the "best", only that it be feasible.

The Seekonk site would likely serve a market that overlaps, but is not identical to the market delineated by Pyramid. Nevertheless, I believe it can fairly be considered an alternative under the guidelines. The geographic scope of the alternatives inquiry need not be confined solely to Pyramid's defined trade area. It is reasonable to include in the analysis a site within the same general vicinity drawing on overlapping, although not identical, population areas.

The Seekonk site is available now to carry out the basic project purpose. Whether the site was ever available to Pyramid is unclear. It appears that this property in Seekonk has been available for development and shopping mall construction for most of the period from 1974 to the present. The property owner has stated that the drive-in portion of the site was under lease since 1979, with the most recent lease being from September, 1983 - September, 1984. At the same time, however, it appears that the property was available for sale or lease. According to Armand **Ricci**, a real estate broker active in the area, he approached the property owner on June 18, 1984, on behalf of a client who wanted to develop the

site. While the property was available, mutually agreeable terms were not reached and nothing came of the project. Marathon representatives also have stated that they believed the site had been available to developers since the 1970's. Marathon began negotiations with the property owner in early 1985 and completed the purchase of options in late spring, 1985.

Pyramid did not address either the feasibility or the availability of the Seekonk site. Whether this site was one which **Pyramid** evaluated during its initial screening is unknown, since Pyramid refused to answer **EPA's** November 18, 1985 request for additional information (which included a request for the names and locations of all sites evaluated, and all realtors contacted).

In summary, the record supports a finding that the Seekonk site is a practicable alternative to the filling of Sweedens Swamp, since it is available to satisfy the basic project purpose of providing retail shopping, and the more specific purpose of a regional, fashion-oriented shopping mall. Pyramid has not clearly demonstrated that the site is not practicable.

Additional Sites

Pyramid states in its application for a 404 permit that it identified and evaluated "**numerous**" potential sites in the primary trade area. Following initial screening, four undeveloped sites (including Sweedens Swamp) were identified as worthy of additional investigation. These sites, along with Tri-Boro Plaza, Washington Plaza, and Central Business Districts, **are** the alternatives discussed in the application.

The Environmental Defense Fund has submitted **information** describing successful multi-story malls with multi-level parking in Massachusetts as well as other parts of the country. Because of their design, such developments require less land than two-story malls with single level parking. Pyramid does not appear to have considered locating its mall on a smaller parcel of land using a higher density design. Pyramid refused to respond to **EPA's** November 18, 1985 request for information concerning the location and size of each potential site it investigated, and the criteria used to conduct initial screening and evaluation of potential sites (such as minimum acceptable site size). Thus, there may be parcels available within or near the trade area which are of sufficient size to satisfy the basic project purpose of retail shopping, or even the purpose of a regional shopping mall. It is not EPA's obligation to determine the existence of those other sites; rather, it is **Pyramid's** burden to show that there are no other sites.

4. Conclusion

I believe based on the record that Pyramid has not met its burden of clearly demonstrating that there are no practicable alternatives to the proposed filling of Sweedens Swamp. The North Attleborough site seems clearly to be a practicable alternative. In addition,

the mall proposal for the Seekonk site seriously undermines Pyramid's claim that Sweedens Swamp is the only location within the trade area where a mall could be built. The absence of specific information supporting Pyramid's rejection of the Washington Plaza site is not sufficient to overcome the burden with respect to that site, where the site otherwise appears to be a possible candidate for the location of a shopping mall, given its location within the trade area and its potential for expansion. Even without expansion, that site, as well as others in the area, may be able to support a shopping mall using a higher density configuration than that advocated by Pyramid.

Pyramid seems to have approached the alternatives analysis in a way that would guarantee that it would find Sweedens Swamp to be the only feasible alternative. Some of the information about other possible alternatives has been inaccurate (e.g., the North Attleborough site) or incomplete (e.g., the Washington Plaza site). When requested to provide additional information, Pyramid first refused and then stated that no additional information exists about the project or about alternatives. It seems remarkable that Pyramid has no further information in response to the very specific questions EPA asked about alternatives (such as the location and size of each potential site investigated by Pyramid, the criteria used to conduct the initial screening of those sites, etc.). If this statement is true, then I certainly question the extent and depth of Pyramid's alternatives investigation.

The nature of **Pyramid's** submissions, coupled with the fact that two other developers are planning malls similar in type and size to Pyramid's proposal within the same trade area, make it impossible for me to conclude that Pyramid has clearly demonstrated that no practicable alternatives to the filling of Sweedens Swamp exist.

C. Less Environmentally Damaging Alternatives

Under the guidelines, "no discharge of dredged or fill material may be permitted if there is a practicable alternative to the discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." 40 C.F.R. §230.10(a). Practicable alternatives "which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise." 40 C.F.R. §230.10(a)(3). Thus in evaluating practicable alternatives to the filling of Sweedens Swamp, I must determine whether Pyramid has met its burden of proving that the alternatives have a greater adverse impact to the aquatic ecosystem. I also must consider whether such alternatives have other significant adverse environmental consequences.

The Corps based its decision to issue a permit to Pyramid on a novel and, I believe, incorrect interpretation of the requirement that a permit be denied if there is a less environmentally damaging alternative to the proposed discharge. In considering the **alterna-**

tives requirement of 40 C.F.R. §230.10(a) from the public interest (as opposed to the **applicant's**) perspective, General Wall (then Director of Civil Works at Corps Headquarters) acknowledged that the Sweedens Swamp site would require the filling of many more acres of wetlands than the North Attleborough site and that without **mitigation** the filling of Sweedens Swamp would clearly have greater adverse impacts on the aquatic ecosystem. With mitigation, however, General Wall concluded that there would be a net benefit to the aquatic environment.

The General reasoned that, "**if** mitigation measures can fully compensate for all adverse impacts of a proposed discharge on the aquatic environment, then the adverse effects of the proposed discharge is zero. Since no alternative could have less adverse environmental effect than zero, 100% mitigation would allow the satisfaction of that **404(b)(1)** guidelines requirement even if a practicable upland alternative site might be available." In support of this interpretation, he cited a passage in the preamble to the guidelines which states that, "where there is no significant or easily identifiable difference in impact, the alternative need not be considered to have 'less adverse' impact." 45 Fed. Reg. 85339. General Wall concluded that "**in** a proper case, mitigation measures can be said to reduce adverse impacts of a proposed activity to the point where there is no '**easily** identifiable difference in impact' between the proposed activity (including mitigation) versus the alternatives to that **activity**." Thus, the Corps allowed mitigation to be used to rebut the presumption that there are less damaging practicable alternatives and determined that **Pyramid's** proposed discharge, when coupled with its mitigation **proposal**, complied with **40 C.F.R. §230.10*/**.

The interpretation of the "less adverse impact" portion of the guidelines articulated by the Corps in this case is a marked departure from the normal application of the alternatives test.**/ The proper interpretation of the guidelines--and the **relationship** between mitigation and alternatives--is a central issue in this case. I believe that the guidelines authorize mitigation to compensate for unavoidable losses; mitigation cannot be used to justify avoidable losses. My reasons for this position are explained more fully in Section VI. In determining whether Pyramid has overcome the presumption that alternatives would have a less adverse effect

***/** By taking this approach, General Wall avoided addressing directly the issue of whether alternatives need to be available to the applicant or only for the project purpose. Regardless of the answer to that question, the Corps decided that with enough mitigation, a proposed discharge can rebut the presumption.

****/** The approach also is at variance with the **Corps'** historical interpretation of the guidelines. The New England Division's proposed decision, for instance, found that the project did not comply with the guidelines because there was a practicable alternative that would have less adverse impact to the aquatic ecosystem.

on the aquatic environment, I have declined to follow General Wall's approach. Instead, I have evaluated alternatives to the discharge without considering the mitigation component of Pyramid's proposal.

1. North Attleborough Site

As demonstrated earlier, the North Attleborough site is a practicable alternative to the filling of Sweedens Swamp. I further conclude based on the record that constructing a shopping mall at the North Attleborough location would have a less adverse impact on the aquatic environment than at the Sweedens Swamp site.

a. Site Description

The majority of the site consists of upland shrub habitat, old field, and developed lands (dilapidated commercial structures and parking areas). Approximately 40% of the site has been stripped of its topsoil. The site is on a hillside which slopes west and east. Prior excavation and removal of vegetation has left a poorly graded area of very small depressions and swales. Approximate acreages for the various vegetative covertypes on the site are: upland shrub (25.5 acres), upland forest (12 acres), developed areas (10.4 acres), disturbed field (3.0 acres), abandoned field (5.4 acres) and isolated wetlands (0.8 acres). The largest individual wetland is .26 acres. The National Wetland Inventory (NWI) Map which encompasses this area does not designate any wetlands at the site. Field verification by NWI personnel in September 1984 revealed several small wetland areas well below the resolution capabilities of the NWI mapping effort.

These small wetland areas contain a variety of plant species, including rushes (Juncus effusus and J. tenuis), beak rush (Rhynchospora capitellata), loosestrife (Lysimachia terrestris), goldenrod (Solidago sp.), meadow sweet (Spiraea latifolia) and cattail (Typha latifolia). Adjacent upland areas contain plant species such as bayberry (Myrica pennsylvanica), rose (Rosa multiiflora), meadow sweet, gray birch (Betula populifolia), quaking aspen (Populus tremuloides) and various grasses. Isolated wetlands have no apparent drainage outlets, with the exception of the 0.15 acre area which has a small drainage outlet in its northeast corner.

A drainage ditch bisects the site, draining towards the southwest. Steep sided and 5-6 feet wide at the bottom, the ditch has some areas of wetland vegetation. There is no "low-flow" channel within the ditch. Plant species present include red maple, (Acer rubrum), silky dogwood (Cornus amomum), steeplebush (Spiraea tomentosa), meadow sweet, green ash (Fraxinus pennsylvanica), and sedge (Carex lupallina).

About 1/4 acre of wetland exists near Rte. 1 adjacent to the drainage ditch where it swings north. The wetland is characterized by reed grass (Phragmites australis), silky dogwood and cattail. Upland immediately adjacent to the wetland is characterized by reed grass and sweet fern (Comptonia peregrina). Mounds of old excavated material are scattered through the wetland. In 1984 the North Attleborough Conservation commission issued a **Determination** of Non-Applicability regarding the jurisdiction of the state Wetlands Protection Act. This finding will be verified during the state environmental impact review process. Site wetlands are isolated wetlands and would normally qualify for a Corps of Engineers nationwide permit. However, since the Commonwealth of Massachusetts has denied water quality certification for this nationwide permit, an individual permit will be processed by the Corps.

The mixture of grassy and shrubby upland habitats that dominate the site are attractive to such nesting birds as gray catbird, cedar waxwing, blue-winged warbler, indigo bunting, American goldfinch, field sparrow and song sparrow; rodents such as meadow voles; and reptiles such as garter snakes and common toads. It would not be used by many migrating and wintering birds. A group called the Concerned Citizens of North Attleborough reported that they have observed woodcock, quail, hawks, raccoon, fox and deer on or near the site.

The site is located within the watershed of the Seven Mile River, a major tributary to the Ten Mile River. Drainage from the site passes beneath U.S. Route 1 via culverts at two locations. It then flows into a channel which meanders through an area of wetlands and eventually into the Seven Mile River. Below the discharge from the site the Seven Mile River flows south into Luther Reservoir, a water supply reservoir serving the City of Attleboro.

The Seven Mile River watershed currently accounts for 60 to 75% of the total Attleboro drinking water supply. The Seven Mile River watershed upstream of Luther Reservoir is over 4,000 acres, of which the project site is some 57 acres. The Attleboro Water Department utilizes a groundwater withdrawal system (wells) which receives recharge from a number of surface water storage reservoirs along the Seven Mile River.

b. Aquatic Impacts

Less than 1 acre of wetland would be filled at the North Attleborough site, compared with 32 acres at Sweedens Swamp. Moreover, the wet areas on the North Attleborough site are scattered, the largest totalling .26 acre. These wetlands provide minimal flood storage and water quality renovation because most of them are isolated from the surface water system. These wetlands also provide much less value to wildlife than those at Sweedens Swamp because of their small size.

A mall at the North Attleborough location would generate pollutants similar in quantity and type to Pyramid's proposal although the impact to the aquatic ecosystem would not be as immediate because

the mall would not be sited within an existing wetland complex as Pyramid's mall would be. The North Attleborough site has more potential to impact drinking water resources because it lies within the watershed of **Attleboro's** water supply. However, the risk from these potential impacts is within the level normally considered acceptable by EPA provided proper protective measures are taken. EPA has outlined a number of such measures in comments to the State on the draft environmental impact report for the project. In addition, the Massachusetts DEQE rejected the city of **Attleboro's** request to acquire the North Attleborough site by eminent domain, finding that the action was not warranted in order to protect the water supply.

Therefore, I find that Pyramid has not clearly demonstrated that the filling of Sweedens Swamp would have a less adverse impact on the aquatic environment than the development of the North Attleborough site. My conclusion agrees with that of the Corps which found that, in the absence of mitigation, this alternative to filling Sweedens Swamp would have less adverse impact to the aquatic ecosystem. One further inquiry must be made -- whether the North Attleborough alternative poses other significant adverse environmental consequences which outweigh the adverse aquatic impacts at Sweedens Swamp.

c. Other Impacts

Section 230.10(a) does not define the term "other significant adverse environmental consequences." The preamble explains that this provision "**gives** the permitting authority an opportunity to take into account evidence of damage to other ecosystems in deciding whether there is a 'better' alternative." 45 Fed. Reg. 85340. Against the backdrop of the overall policy that the filling of wetlands is considered among the most severe environmental impacts covered by the guidelines, this provision offers a safeguard that, in those unusual cases where even more severe environmental consequences would result if an otherwise practicable alternative is chosen, a permit for the wetland filling need not be denied. An example might be where an upland alternative involved impacts to an endangered species or affected an area of outstanding scenic or recreational value.

At the North Attleborough site, the major non-aquatic environmental impact that would result is the destruction of upland wildlife habitat. Approximately 34 acres of wildlife habitat would be lost at the North Attleborough site due to the mall itself (another 10 acres are already developed). Pyramid's mall would destroy about 46 acres of habitat (wetland and upland **combined**)(**another** 3 acres are already developed). While the mall at Sweedens Swamp would be constructed on both wetland and upland habitat, the losses at North Attleborough would be primarily of upland shrub habitat. The predominant upland shrub cover type at the North Attleborough site is indicative of past disturbance of the area. The NE Corps in its permit decision noted that "about 25 acres of this site was mined for gravel, and has been left in a highly disturbed state.

The rest of the site consists largely of upland forest and some old field habitat (20-25 acres total). This site provides open space and similar opportunities for passive recreation, but has much less value for wildlife and other wetland values."

Wildlife habitat values associated with the North Attleborough site were also estimated using the same procedure discussed in Appendix B. The evaluation team consisted of representatives of the Corps, FWS, and EPA. EPA had sought to have **Pyramid's** consultants participate in the evaluation since they had been involved with the assessments at the Sweedens Swamp site and Tiffany Street mitigation area. New England Development, however, denied **EPA's** request to grant site access to Pyramid's consultants. Fifty-seven acres were included in the wildlife evaluation. Seven cover types ranging from 0.8 acres to 26 acres were identified and measured. The results are presented in Appendix B. Wetlands, however, accounted for only a very small fraction of the total score. If the mall is built according to current plans, there would be a loss of wildlife value **from** the clearing and development of 34 acres of the parcel. Wetland values would increase slightly if the stormwater management features are considered in the analysis.

Although the existing habitat assessment data do not allow precise calculation of numerical losses at either site **from** just construction of a mall itself,*/ the losses at North Attleborough arise from destruction of **upland** habitat whereas the losses at Sweedens Swamp stem mainly from destruction of the wetland areas. The regulations clearly envision protection of wetland areas over upland areas except in an unusual circumstance. The initial impact to wildlife from construction at the sites (including mitigation) is clearly greater at Sweedens Swamp because roughly 72 acres of the site would be either dredged or filled compared to about 40 acres at the North Attleborough site. Moreover, in the absence of a shopping mall at either location, it is reasonable to assume that the North Attleborough site would be developed whereas Sweedens Swamp would remain in its natural state. Current Massachusetts and federal environmental regulations prohibit or discourage any major development of the wetlands at the Sweedens Swamp site.**/ Although regulatory requirements exist for the North **Attleborough** site as well, (**e.g.**, zoning requirements, building permits, etc.), they appear to permit development of the area.

*/ Of course, if mitigation is introduced into the equation we presumably would have to **look** at the various possibilities that exist at each site. New England Development, for example, controls substantial acreage near the mall site upon which it could possibly effect habitat "improvements" if it so chose.

**/ Current Massachusetts regulations prohibit the filling of greater than 5,000 square feet of bordering vegetated wetlands.

After careful consideration of the information in the record, I find that the development of the North Attleborough site would not result in environmental impacts significant enough to outweigh the impacts of filling Sweedens Swamp. Development of the North Attleborough site clearly involves less impact to the aquatic ecosystem. Moreover, the total impacts to wildlife habitat at the Sweedens Swamp site would be greater because more acreage would be permanently developed. Again, I reach this conclusion based on my understanding of the guidelines, which is that alternatives to a **proposed** discharge must be considered in the absence of any mitigation proposed by the applicant. **Mitigation** is appropriate for consideration only if the loss of wetlands is unavoidable (**i.e.**, there are no alternatives to the filling).

2. Seekonk Site

As discussed in Section V.B.3., building a regional mall on the Seekonk site appears to be another practicable alternative to filling Sweedens Swamp. Further, the adverse impacts to the aquatic environment would be much less than at Sweedens Swamp, and there would be no other significant adverse environmental consequences; therefore this site is a less environmentally damaging alternative to filling Sweedens Swamp.

The Seekonk site was recently mapped by USFWS using aerial photography. This initial study indicates that of the 79 acre site, roughly 22 acres are wetland and 57 acres are upland. This corresponds with the information provided by **Marathon** in its State Environmental Notification **Form** filed January 21, 1986. Most of the wetlands are on the floodplain of the Runnins River, which borders the area to the southwest. Additionally, isolated palustrine emergent marsh and scrub-shrub wetlands, and open water exist on the site. The majority of uplands present are paved, as much of the area is the site of the Seekonk Twin Drive-In, currently abandoned but previously operated by the Milford Drive-In, Inc.

Due to the extensive size of the Seekonk site, and the large amount of upland present, a regional shopping mall could be constructed without filling any wetlands. Pollutants in the stormwater runoff from the mall are likely to be similar in kind and amount to the other mall proposals. Current plans are to construct a tertiary treatment system before discharging sanitary wastewater to the **Runnins** River. Thus, it does not appear that there would be significant effects on the surface water **from** the proposal. Overall, it appears that aquatic impacts from placing a mall at the Seekonk site would be substantially less than the aquatic impacts **from** filling Sweedens **Swamp**.

Based on the information currently available, potential impacts to upland habitat do not appear to be significant either. Much of the project site is already developed. The upland habitat which remains is substantially less valuable than the habitat at Sweedens Swamp, due to its small size, past disturbance, the lack of structural diversity and the absence of any noise or visual buffer from Route 6.

3. Washington Plaza Site

This site consists of approximately 27 acres, much of which is already developed. There is an additional 20 - 40 acres of undeveloped land to the west consisting of early successional upland woods. There appear to be no wetlands or watercourses on the site, so expansion of the site to build a regional mall would not entail any adverse impacts to the aquatic environment. While the record does not contain complete information for this site, there is nothing to suggest that development of a mall would cause any other significant adverse environmental impacts. This site therefore also appears to be a less environmentally damaging alternative to filling Sweedens Swamp.

D. Conclusion

In determining whether the adverse effects of **Pyramid's** proposed discharge are unacceptable, I must determine whether the discharge would comply with the **404(b)(1)** guidelines. I have reached a conclusion different from the Corps, in part because I have declined to follow the Corps' departure from the 'normal interpretation of the alternatives test.

Pyramid had the burden of overcoming the **presumption** that there are less environmentally damaging, practicable alternatives to the proposed discharge. Based on the record I find that Pyramid **has** not met its burden. Therefore, I conclude that the wetland loss at Sweedens Swamp is avoidable, and that the **proposed** discharge would not comply with the guidelines.

VI. MITIGATION

Even though, as previously explained, there are practicable alternatives, Pyramid nevertheless argues that it should be allowed to fill Sweedens Swamp in exchange for a package of mitigation measures which it claims would more than offset the adverse impacts of its proposal. While I view the answer to the alternatives question to be dispositive, a detailed examination of the mitigation issue will be undertaken to lay it to rest as well.

Mitigation may mean a broad array of actions, but in the context of this decision, it refers to attempting to compensate for wetland losses by creating or enhancing other wetlands.*/ Until recently, there has been little debate about the proper **role** of mitigation in the 404 program: mitigation applies to unavoidable environmental impacts. While there has been considerable discussion about the technical questions wetland creation poses, there has been wide agreement that **mitigation** cannot substitute for the alternatives analysis required by the **404(b)(1)** guidelines. The Clean Water Act and the guidelines direct us to protect natural wetlands by avoiding impacts where possible. Sound scientific, legal and policy reasons support continuing this approach to wetlands protection.

As described more fully below, Pyramid proposes various actions to attempt to mitigate the adverse environmental impacts of building a mall on Sweedens Swamp. Throughout the 404 permit process, EPA maintained that the project did not comply with the Section **404(b)(1)** guidelines because the project purpose could be satisfied without filling wetlands. As discussed in Section V, alternatives exist to **Pyramid's** proposal which eliminate or greatly reduce the filling of wetlands. To the extent that wetland impacts are avoidable it is unnecessary to grapple with the difficult question of whether the proposed mitigation would succeed in creating functional wetlands, let alone whether the uses and values provided by the artificial wetlands would be equivalent to those provided by the natural ones lost to the project.

The New England Division of the Corps, after much deliberation, reaffirmed this view in the context of **Pyramid's** 404 permit application. As early as February 1985, the NE Corps informed Pyramid that a permit for its proposal would be denied because there were less environmentally damaging, practicable alternatives available to satisfy the project purpose.

*/ I use the term "mitigation" instead of the term "**compensation**" in order to be consistent with our previous correspondence on this case. The most widely used definition of mitigation is that put forth by **CEQ** (40 C.F.R. §1508.20(a)-(e)). The CEQ definition includes avoidance of impacts as well as habitat compensation.

In May, 1985 the New England Corps Division Engineer succinctly stated his recommendation^{*/} to his Headquarters office:

I recommend that the permit be denied. I believe that the project does not comply with the 404(b)(1) guidelines because there is a practicable alternative to the proposed discharge that has less adverse impact to the aquatic ecosystem. Further the alternative to the entire proposal (on and offsite) has less adverse impact because it does not depend on the success of creating wetlands.

Major General Wall, then Deputy Director for Civil Works, disagreed, reasoning that if an applicant promises full compensation so that there would be no net loss of wetlands, there could be no "less environmentally damaging alternative" within the meaning of the 404(b)(1) guidelines. Under this approach an applicant could overcome the regulatory presumption that less damaging alternatives exist merely by agreeing to compensate for the amount of wetlands destroyed by a non-water dependent project. In contrast to the NE Corps position, this represents a novel interpretation of the guidelines and a departure from the way the alternatives analysis has been handled by EPA and the Corps in the past. In essence it removes any distinction between water-dependent and nonwater-dependent projects, thereby nullifying the presumption against siting nonwater-dependent projects in wetlands. It also supplants the presumption against filling wetlands (and that alternatives exist) with an assumption that wetland creation projects will work as advertised to fully compensate for adverse impacts. One consequence of this new approach is that it effectively shifts the burden of proof from the applicant -- who formerly had to demonstrate that alternatives did not exist -- to EPA and the Corps, who would have to prove that a mitigation plan could not work. As a practical matter, it is impossible to predict whether a particular mitigation plan will or will not work exactly as proposed. Moreover, there are currently no standards in place to judge whether the values created by artificial or enhanced wetlands equal those sacrificed to nonwater-dependent projects.

I disagree with General Wall's interpretation of the 404(b)(1) guidelines. In my view it contravenes the language and intent of the regulations and the Clean Water Act itself; it is scientifically unfounded; and it is unsound environmental policy. It poses environmental problems not faced under our current interpretation of the guidelines while reducing benefits enjoyed under the usual approach. Moreover, I question whether policy changes which affect the basic structure of the regulatory program should be made on an ad hoc basis. The following analysis treats each of these issues in turn.

^{*/} In New England, the past decisions whether or not to issue a 404 permit rested with the Division Engineer. In this case, the New England Division Engineer was directed to submit his decision to the Corps Headquarters office in Washington, D.C., for review before final action could be taken.

A. Scientific Issues

To permit mitigation of avoidable impacts by the creation of artificial wetlands is not a scientifically valid approach because it exchanges a proven form of resource protection for an experimental one.*/ Avoidance of impacts through selection of an environmentally preferable alternate site provides 100% effective wetlands protection; mitigation, even if well designed, cannot provide this level of certainty. The record shows that the practice of mitigating unavoidable impacts through wetland expansion or creation is increasing in New England and throughout the country, but the science involved remains unproven. Examples where mitigation has apparently succeeded or failed can be found, although it is difficult to compare one case to another. In an effort to better understand the effectiveness of wetland creation projects in New England, EPA recently contracted with **Metcalf** and Eddy, Inc. to evaluate the results of mitigation in five cases, each a condition of an issued **\$404** permit in New England. Their report found that mitigation was ineffective in two cases and marginally successful in two other instances (the mitigation has not yet been done for the fifth case). The record shows that results of wetland creation in New England appear to be, at best, mixed.

Pyramid has supplied a number of examples of wetland creation to lend support to its position that wetlands can and have been successfully created. A number of the examples cited show that certain wetland types have been successfully created although none of them involves the replication of all of the functions of a Sweedens Swamp. Other examples cited are in fact not wetland "creation" at all but alterations of existing wetlands, such as the Great Meadows National Wildlife Refuge, the Harland Street marsh in Milton, Massachusetts and many Ducks Unlimited projects in Canada. For example, closer examination of the facts behind the Harland Street marsh reveals that it was a wetland prior to, not as a result of, an SCS flood control project. Moreover, the abstract of one case in New York cited by Pyramid indicates there was a 75% failure rate for plant species introduced into artificial wetlands.**/

Whether or not **Pyramid's** proposal (discussed below) would encounter the same difficulties as past unsuccessful projects, or would experience its own difficulties, cannot be known at this time. Indeed that is a major reason why the less speculative alternatives analysis is a preferable means, from a policy standpoint, of approaching proposals to fill wetlands. The point is that wetland

*/ Remarkably, at the time the Corps Headquarters decided Pyramid's mitigation proposal was "100% effective", Pyramid had not even selected its final site, much less developed a specific plan.

**/ Emerson, Fredrick. 1961. Experimental Establishment of Food and Cover Plants in Marshes Created for Wildlife in New York State. New York Fish and Game Journal 8:2, p. 130-144.

creation projects are rarely as simple and routine as Pyramid's consultants imply; many uncontrolled variables may influence ultimate success or failure. Salt marshes and freshwater emergent marshes appear to be the systems that are most frequently and easily established. Most often, however, past mitigation projects in New England have involved conversion of one wetland type to another or expansion of an existing wetland. Few are major de novo wetland creation projects and none as large as what Pyramid proposes.

Even where wetlands have been successfully created, relatively little work has been done to assess the long-term fate of these artificial systems. The record shows that some wetland creation projects have not proved as successful as had been hoped. Margaret Race of Stanford University, for instance, evaluated wetland mitigation projects in the San Francisco Bay area and concluded that, "Many of the projects never reached the level of success purported and others have been plagued by serious problems.. **[B]ecause** the technology is still largely experimental, there is no guarantee that man-made wetlands will persist as permanent substitutes for sacrificed natural habitats. **"*/**

Other studies in California reached similar conclusions. Gregory Baker**/ in an analysis of the role of mitigation in the 404 program **found that,** "In practice, wetland mitigation has not lived up to expectations" and that "this study **refute[s]** the common notion that almost any project can be made acceptable by simply offsetting the adverse impacts with a wetland mitigation project." Baker also reached conclusions about the proper relationship between mitigation and the analysis of project alternatives:

Public and private interests are likely to continue to place strong development pressures on wetland resources. Since wetland systems can be expeditiously eliminated but cannot be recreated overnight, preservation should be preferable to exchanging existing wetlands for new ones. In spite of this, mitigation is often used as a means of justifying a project rather than as a means for offsetting truly unavoidable impacts. Since wetland recreation projects do not consistently meet expectations, dredge and fill activities should be evaluated at face value, unprejudiced by proposals to compensate for losses.

***/** Race, Margaret S. 1985. Critique of Present Wetlands Mitigation Policies in the United States Based on Analysis of Past Restoration Projects in San Francisco Bay. Environmental Management **9:1**, pp. 71-82.

****/** Baker, Gregory F. 1984. An Analysis of Wetland Losses and Compensation under the Clean Water Act Section 404 Program: Managing Natural Resources through Mitigation. Master of Science Thesis, University of San Francisco.

The results of these and other studies do not mean that some kinds of wetlands cannot be created, but they do illustrate the uncertainty surrounding the short and long term viability of wetland creation, and perhaps more importantly the difficulty of determining the value to the public of artificial vs. natural wetlands. We cannot be positive how long it takes to establish artificial wetlands, much less how to judge a level of success sufficient to justify destruction of natural wetlands. Daniel Willard of Indiana University* reporting on wetland mitigation work in Chicago, cautions that—".our lack of knowledge of wetland ecosystems dynamics limits our confidence about the exact future distribution of these [created] habitats on the site.. ■■ Biological systems do not behave like engineered systems (happily). Therefore, the outcome will surely vary from prediction."

Shisler and Charette**/ at Rutgers compared artificially created wetlands to natural systems to determine whether the manmade areas actually compensated for lost values. "Our results", they wrote, "indicate that the overall answer to the question 'Are artificial marshes equivalent to natural marshes?' is NO. Many characteristics of the artificial marshes were lower than the natural marshes. In view of the concept of mitigation, artificial marshes are not equivalent to natural marshes and therefore are not a biological[sic] equivalent replacement of a natural marsh."

Particularly troubling to me is that General Wall's approach not only allows mitigation to justify avoidable habitat losses, but would permit the artificial wetlands to be of a different type. Management of wetland types for a single purpose (e.g., duck hunting, sewage treatment) or to restore degraded systems may be appropriate in limited cases where that is the express purpose of the project. But using such techniques to justify the destruction of natural wetlands is an entirely different matter. Permitting out-of-kind habitat replacement as a general practice has little scientific support since it merely reflects the decision-maker's bias for one kind of habitat over another.

The entire concept of trading artificial for existing wetlands rests on several challengeable assumptions (e.g., that a manmade wetland functions as well as a natural one; or that we know which wetland types, and which wetland values, are most "important"). Even where successful, mitigation projects usually replace selected wetland attributes (typically flood storage or wildlife habitat), not the full spectrum of values most wetlands provide. In addition, the creation of artificial wetlands can exact other environmental costs. Obviously, new habitat cannot be created from nothing;

*/ Willard, Daniel E. 1985. Progress Report on Restoration and Development of Wetlands on Two South Chicago Properties (Paper presented at May 1985 meeting of Society of State Wetland Program Managers, Portland, Maine).

**/ Shisler, Joseph, K. and David J. Charette. Artificial vs. Natural Tidal Salt Marshes: Are Artificial Marshes Equivalent for Mitigation? The Coastal Society, Proceeding, 9th Annual Conference. (in press)

existing areas with existing values must be modified in the hope of improving selected environmental values. The consequence of creating an artificial wetland will often be the loss of upland habitat, as well as the loss of the existing wetland.

I am also concerned that we not rely too heavily on quantitative assessment methodologies in addressing these questions. Although useful tools for general comparisons, they do not often measure site-specific environmental values. That Sweedens Swamp scores 332 habitat units (see Appendix B) sounds more precise than it really is. It is reasonable to use assessment methodologies--the best tools currently available--in developing mitigation plans for unavoidable wetland losses; it is much more questionable to allow wetland destruction that could otherwise be avoided based on such numerical approximations. Some of the inherent limitations of the model used in this case are discussed in Appendix B. In addition, Willard notes the tautological nature of using assessment methodologies to predict habitat improvements from mitigation projects. "To some extent the predictions of future [habitat] units depend on a logically circular process. We assume that existing physical characteristics of the sites cause existing habitat to develop. Then we assume that by creating similar physical characteristics we get habitat of similar values. Finally, we design the [mitigation] site to include only physical characteristics which give us high habitat values. Therefore, our design always predicts an improvement in habitat." These models, then, can usually be employed to show a theoretical gain in values and, in the context of General Wall's interpretation of the guidelines, automatically defeat the alternatives test.

Based on my review of the record, I conclude that wetland creation projects do not always replace the specific environmental values lost when other wetlands are filled. I also find that while some wetland creation projects have worked as expected, others have not. Little evidence exists to show whether or not successfully created wetlands persist for as long as, or provide the full spectrum of values attributable to, natural wetlands. I believe wetland creation has progressed to a point where it should play an important but limited role in the 404 program: compensation for unavoidable impacts. To permit compensation of an avoidable environmental injury, however, is a mistake in my view for it presupposes too much understanding of the natural wetlands we destroy and too much confidence in our ability to recreate them.

B. Legal and Policy Issues

A fundamental precept of the 404 program, and the Clean Water Act itself, is that the discharge of pollutants (including dredged and fill material) into the nation's waters is to be avoided whenever possible and ultimately eliminated entirely. The section 404(b)(1) guidelines implement this basic policy quite logically, by presuming that alternatives to the filling of wetlands are available for non-water dependent projects and by allowing permits to be issued only if there is no less environmentally damaging practicable

alternative (40 C.F.R. 5230.10). The Corps, on the other hand, wishes to issue a permit for Pyramid's project, based on a finding that the adverse environmental impacts associated with the proposed discharge, when considered along with proposed "mitigation," are equivalent to, or less than, the adverse impacts that would result from the development of *any* alternate sites. I believe that such an approach would violate the legal requirements of the guidelines.

The language of Section 230.10 is clear and its intent unmistakable. No discharge shall be permitted "if there is a practicable alternative to the discharge which would have less adverse impact on the aquatic ecosystem..." (emphasis added). This cannot fairly be read to mean that a discharge (especially one associated with a non-water dependent activity), for which there is a demonstrated practicable alternative location could nevertheless be permitted because it would be accompanied by a mitigation plan promising the creation of more wetlands than those destroyed. The obvious point of this provision is to discourage discharges, not to encourage them by allowing natural wetlands to be traded off for artificial ones. Even the best conceivable mitigation plan cannot transform an unnecessary discharge into a necessary one.*

The preamble to the guidelines reinforces this message. For instance, with respect to non-water dependent activities, the preamble notes that it "is reasonable to assume there will generally be a practicable site available upland or in a less vulnerable part of the aquatic ecosystem." Later, and more forcefully, the preamble states "...the guidelines always prohibit discharges where there is a practicable less damaging alternative..". Thus, if destruction of an area of waters of the United States may reasonably be avoided, it should be avoided." The guidelines themselves begin by stating their purpose, consistent with the purpose of the Clean Water Act, to restore and maintain the chemical, physical and biological integrity of waters of the United States through the control of discharges of dredged or fill material. "From a national perspective, the degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by these guidelines. The guiding principle should be that degradation or destruction of special sites may represent an irreversible loss of valuable aquatic resources." That is the case here. Valuable wildlife habitat would be lost forever with the filling of Sweedens Swamp.

*/ The New England Corps Division Engineer held the same view. In the Statement of Findings which accompanied his recommended decision, he concluded that the 404 guidelines simply mean "if you don't need to fill a wetland, don't" and that "the applicant's attempt to create new and different wetland types as mitigation does not change the reality that an existing, viable wetland will be destroyed."

The 404 guidelines therefore envision an effective, simple and certain method of protecting wetlands: Avoid **impacts** to the extent possible through selection of the least environmentally damaging, practicable alternative, and then mitigate any remaining unavoidable impacts. The New England **Division** of the Corps and Region I EPA have enjoyed much success with this approach. Recent examples include two other shopping mall projects proposed in Westerly, Rhode Island and Framingham, Massachusetts. In both cases, the developers initially proposed to fill wetlands and attempt to mitigate the impact by creating man-made wetlands. As a result of our requiring the traditional alternatives analysis, both projects were redesigned during the 404 permit process to eliminate or substantially reduce the amount of wetland loss. There are many other examples in New England where the "avoid first, mitigate later" interpretation of the guidelines has preserved wetlands. Undoubtedly, in many of these cases, permit applicants would have opted to create artificial wetlands in lieu of relocating or re-designing their projects, if they had had that choice.*

General **Wall's** approach, by contrast, allows projects to proceed on the **promise** of full mitigation regardless of whether or not alternatives exist which would result in less wetland filling. This approach so severely skews the alternatives analysis that it completely undercuts the water dependency test. On paper, mitigation could reduce the impacts of virtually any wetland fill project to "zero". With enough theoretical mitigation, any project will appear to be environmentally preferable to upland alternatives. This interpretation amounts to a virtually automatic finding that there are no less environmentally **damaging alternatives**; therefore alternatives could be completely ignored.**

To the extent that alternatives are evaluated, General Wall's approach is still flawed because it tries to **compare** apples to oranges, **i.e.**, a wetland fill project plus mitigation (such as the creation of artificial wetlands) against an upland alternative without mitigation.

*/ Another possibility is that applicants whose permits have been denied in the past would request reconsideration in light of the option to preempt the **alternatives** requirements with mitigation.

/ General Wall recognized these **difficulties by admitting that his new interpretation of the guidelines is somewhat problematic because "...it could serve to **weaken** or subvert key provisions of the current **404(b)(1)** guidelines." Moreover, he recognized that, "EPA did not write the **404(b)(1)** guidelines to facilitate granting of 404 permits which allow the destruction of special aquatic sites, even if the applicant is willing to offer compensatory **mitigation** by offering to dedicate existing wetlands to the public." Nevertheless, the Corps proceeded to reinterpret the guidelines so that applicants have a choice of either avoiding wetland losses or compensating for their loss by creating artificial wetlands.

Upland alternatives generally do not need mitigating features, because they do not (for the most part) involve the filling of wetlands. If enough mitigation is included in the comparison, a wetland fill project will easily appear to be environmentally preferable to an upland alternative. Such comparisons will drive development projects into, rather than away from, wetlands -- a result which turns the water dependency test upside down. This would also embroil EPA in the highly subjective and potentially fruitless exercise of judging whether artificial wetlands are "better" than natural ones -- a role that does not appear to be what Congress had in mind for EPA under its 404(c) authority. Therefore, the only approach which preserves the intent of the guidelines is to compare the impacts of a proposed discharge without **mitigation** to the impacts that would occur at an alternate site. -*/

As we have seen above, the Corps' approach poses scientific concerns and is not contemplated by the Act or the regulations. Beyond these problems, it creates practical difficulties. Establishing a standard where mitigation of impacts can be substituted for avoidance transforms a straightforward review procedure into a complex and confusing analysis of uncertain result, thereby frustrating the express goals of the regulatory reform effort. It is unclear whether applicants would continue to search for the least damaging alternative or concentrate instead on developing artificial wetland proposals. We have no criteria by which to compare the theoretical benefits of **mitigation** against selection of an alternative which would involve less direct wetland impacts. We also have no standards for the whole cornucopia of issues that would arise, e.g., when, if ever, out-of-kind habitat replacement would be allowed; the proper ratio of replacement; how "**success**" would be determined; etc.

If, as Pyramid contends, the success of mitigation depends on an applicant's willingness to provide the necessary money and expertise, then the agencies would be forced to delve into the financial capability and technical competence of the applicants and their consultants before making permit decisions. In the future, it may be difficult to deny a permit where mitigation is offered even if we have serious doubts about its effectiveness. To deny one permit because of such doubts when (at least **superficially**) similar proposals have already been allowed may create a perception of arbitrary and capricious action. Moreover, instead of resolving environmental problems during the review stage, the agencies would have to monitor the created wetland through time to

* / There is no logical reason to distinguish between **onsite** and **offsite** mitigation proposals in relation to the alternatives analysis. Although they **are** often different types of mitigation their basic purpose -- to lessen or compensate for environmental damage -- is the same.

ensure that it was working and that the permanent impacts (which could have been avoided) were still being "mitigated".*/

It is doubtful the agencies would have the resources to monitor these "mitigation" sites properly if **permits** authorizing them were issued on a regular basis. Assuming that proper monitoring would occur, it is not clear how we could enforce long **term** compliance, since 404 permits usually expire after five years. More importantly, once the existing wetland has been filled, there may be no adequate remedy if the artificial wetlands fail.

Because of these difficulties I continue to believe that a proper application of the **404(b)(1)** guidelines requires that mitigation apply only to unavoidable impacts. This means that the alternatives analysis should be completed as a first step before proceeding to mitigation. Of course, where the applicants are confident that their projects will meet the alternatives requirements of the guidelines, there is nothing to prevent them **from** working on mitigation proposals during the permit review process.

Region I fully supports the development of mitigation proposals to compensate for truly unavoidable impacts. In the case at hand, had Pyramid successfully demonstrated that there were no practicable, less environmentally damaging alternatives, it would be appropriate to consider mitigation. Of course, the uncertainties and difficulties associated with wetland creation proposals do not disappear merely because the impacts are unavoidable. However, the acceptability of these inherent risks does change. **While** the prospects for success or failure of the mitigation would not change, the mitigation might be worth attempting since it may lessen or compensate for adverse impacts which cannot be otherwise avoided.**/ .

*/ The **Metcalf & Eddy** report confirms that a number of **unanticipated** difficulties can arise in these wetland creation projects, requiring a great deal of vigilance on the part of the regulatory agencies to identify and rectify problems. For example, in one case, lack of ownership of the proposed mitigation parcel delayed construction of the artificial wetland for at least a year after the existing wetland had been filled. In another instance, fill for the project was placed before the mitigation was complete, contrary to the Corps agreement with the applicant.

/ This does not necessarily mean that every mitigation plan will be acceptable even if the impacts are unavoidable. We may still object to a project if the mitigation proposal appears unlikely to succeed, is not enforceable or is scientifically questionable (e.g.**, simply converts one productive habitat into **another**).

C. Pyramid's Proposed Mitigation

Pyramid proposes both **onsite** and offsite mitigation measures in an attempt to compensate for the loss of wetlands at Sweedens Swamp. The **onsite** mitigation would involve the creation of 9 acres of wetlands from existing upland, and the conversion of 13 acres of wooded swamp to other wetland types. A gravel pit south of Tiffany Street in Attleboro is the proposed **offsite** mitigation area where Pyramid would attempt to create 36 acres of artificial wetlands from 30 acres of upland habitat and 6 acres of open water. If successful, the artificial wetlands would in both cases be primarily emergent marsh with lesser amounts of open water and shrub swamp.

The **onsite** mitigation proposal was part of the initial 404 application and an instrumental feature in Pyramid's success in securing state approval. Pyramid asserts that the refurbished **onsite** wetlands will function better than the existing swamp to renovate water quality and provide wildlife habitat. These wetlands in conjunction with the mall "pad" would provide stormwater detention and modulate downstream flow.

Subsequent to its original proposal, Pyramid proposed offsite **mitigation** after it became apparent that the **onsite** measures would not fully replace lost wetland values at Sweedens Swamp. After an earlier proposal was abandoned, Pyramid eventually settled on its current proposal at Tiffany Street, a 70 acre tract of land roughly two miles from the mall site. The existing habitat at this site consists of abandoned field (29 acres), open water (6 acres), and some small pockets of hardwood forest (1 acre). To create 36 acres of wetland, Pyramid proposes to remove 348,000 cubic yards of sand and gravel from the site and blast 55,000 yards of bedrock. Depth of bedrock removal varies from 1 to 12 feet. Roughly 30,000 cubic yards of peat would be trucked onto the site.* / After re-grading the site and preparing the organic material, emergent and shrub wetland vegetation would be planted on the site.

The same habitat evaluation procedure used at Sweedens Swamp (see Appendix B) ** / was employed to estimate baseline and future values

* / EPA had requested Pyramid to identify its source of peat, but Pyramid refused to do so. This was cause for concern since we do not know whether there would be adverse impacts associated with obtaining peat for this mitigation project. The Region has recently learned from correspondence between Pyramid and the NE Corps that Pyramid is considering an area in North Attleborough known as Whiting Pond as the primary source of peat. According to the DEQE, Whiting Pond lies in the historic channel of the Ten Mile River and has received high levels of various heavy metals including copper and nickel from upstream plating operations. If present in the peat, the effect of these pollutants upon pyramid's wetland creation plan would have to be evaluated.

** / Appendix B also discusses some of the limitations of this procedure.

at the **offsite** mitigation area. If fully successful, the mitigation would increase the measured value of the site by a modest amount. Even under this optimistic projection, however, the net gain in habitat units at the mitigation site would be less than the net loss of habitat units at the mall site. Pyramid contends that much of the proposed mitigation area should be assigned a baseline value of zero because the site would be developed in the future anyway.*/ The Corps has not to date agreed to this idea.

During the **404(c)** process, Pyramid revised its mitigation proposal further, by offering to conduct the **offsite** mitigation prior to excavating or placing any fill in Sweedens Swamp.**/ Pyramid's earlier proposal had required use of the **substrate** from Sweedens Swamp for construction of the new wetland.***/ Pyramid stated that it would "**walk away from the mall project**" **should** the mitigation not succeed but has not definitively indicated how long it would be willing to wait before determining the success of the **offsite** mitigation. Pyramid also proposed that the success or failure of the mitigation be judged by a "**blue ribbon panel**" selected by EPA and Pyramid and chaired by an **environmental** celebrity.

I gave serious consideration to this offer. "**Up front**" mitigation has certain advantages, since it reduces the short-term uncertainties and risks associated with wetland creation. Moreover, it would provide an opportunity to test the success or failure of a large mitigation project and thus be of some educational value. I am nevertheless compelled to reject Pyramid's proposal for the strong legal and policy reasons discussed above. To barter away an existing wetland for a created one of uncertain success and duration when there are practicable alternatives is an environmental brinkmanship simply not **allowed** under the existing regulations. Moreover, although the short term risks are reduced under the "**up-front**" approach, no one can knowledgeably predict the status of the mitigation area five, ten, or twenty years from now, long after the

*/ Presumably, this reasoning would dictate that the habitat value of the upland portions of the alternate North Attleborough mall site be considered zero as well, particularly since the North Attleborough site is more certain to be developed.

/ In a February 14, 1986 letter to the NE Corps, Pyramid stated that if Region I refuses the offer and continues with the **404(c) proceeding, Pyramid expects "**to operate under the conditions required by General Wall's decision** (which clearly does not require such a drastic construction delay) as such conditions may be supplemented by EPA at any future time during the pending **404(c)** proceedings."

***/ Indeed at one point Pyramid's consultants indicated that the mitigation was infeasible without the soil from Sweedens Swamp.

permit has issued and the mall is built. Over the long term, the chance for unusual stress -- a prolonged drought for instance -- increases markedly. The **manmade** wetland may not withstand such events as well as Sweedens Swamp, which has a track record of several centuries. In considering Pyramid's offer, I felt it important to be mindful of the far reaching implications for the overall 404 program associated with a decision on this specific proposal. For the legal, policy, and practical reasons discussed above, I still do not believe that issuance of a permit conditioned upon the creation of **offsite** wetlands is a proper application of the guidelines when a practicable alternative to the proposed discharge exists.

Furthermore, I remain troubled by the fact that the artificial wetlands, even if fully successful, would not be of the same type as those that would be destroyed. No doubt **Pyramid** proposes to replace a wooded swamp with an emergent marsh in part because of the difficulty of attempting to create an artificial wooded wetland. Certainly marshes provide some benefits that wooded swamps do not and vice versa. The mere fact that emergent marsh systems are less common in the northeast^{*/} does not seem sufficient justification to me for allowing **mitigation** when wetlands need not be destroyed in the first place. Nothing in the Clean Water Act or 404 guidelines suggests that EPA should pursue a "**museum approach**" to wetland protection, preserving only rare wetland types. The FWS classifies Sweedens Swamp as Resource Category 2 under its mitigation policy. This means that if the loss of habitat at Sweedens Swamp were unavoidable (which it is **not**), FWS would seek in-kind compensation from the applicant.

In addition, any gains **Pyramid's** mitigation plan would provide (e.g., if successful, there would be an increase in wetland acreage), result from the conversion of existing upland and wetland habitat types. These habitats have wildlife value in their present state which would be lost in the wetland creation attempt. At best, there would be an increase in generalized wetland habitat values; the total (wetland and upland combined) effect on wildlife would remain negative. While I do not find fault with **Pyramid's** mitigation plan on account of this, for such "hidden costs" are typical of most attempts to compensate for adverse impacts, it again underscores the prudence of accepting compensation for unavoidable impacts only.

General Wall's interpretation of the guidelines concluded that mitigation was appropriate in "a proper case". I agree. The "proper case^A, however, is when the impacts are unavoidable. To the extent that this subject requires further debate, it should be done publicly where all points of view can be accommodated. There

^{*/} In its Statement of Findings the Corps relies on a "1982 National Wetland Inventory Reportⁿ to document the relative scarcity of emergent marshes in the northeast. EPA has been unable to locate any such report.

are too many implications to decide the issue in the narrow context of this case. Where nothing in the current 404 guidelines allows such an approach,*/ and given the fundamental nature of the questions at hand and—the widespread interest in these issues, any change should be carefully considered. I disagree with those who commented that I have attempted to set new policy in this case. On the contrary, I have applied the guidelines in traditional fashion, as the NE Corps was prepared to do in its proposed decision. This approach was reiterated recently in EPA's national draft mitigation policy.**/ While I accept that Pyramid's proposal to create wetlands is serious, I do not believe the overall project **complies** with the **404(b)(1)** guidelines.

*/ The 404 guidelines do recognize wetland creation and habitat restoration as techniques to compensate for adverse impacts (see especially Subpart H). These actions, however, pertain to the requirement of § 230.10(d) to take appropriate and practicable steps to minimize impacts of discharges. This is one of the "**Restrictions** on discharge" found in Subpart B; compliance with this provision does not relieve the applicant of satisfying the other requirements of § 230.10 including, among other things, demonstrating that no less environmentally damaging, practicable alternative exists.

**/ Office of Federal Activities draft document dated November 25, 1985.

VII. RECOMMENDATION

In the preceding sections, I explain the basis for my conclusion that Pyramid's proposal to fill 32 acres of forested wetland in order to build a shopping mall would violate the section 404(b)(1) guidelines. Sweedens Swamp is a typical forested wetland which provides excellent wildlife habitat for birds and small mammals, maintains water quality, provides valuable flood storage, and discharges groundwater. Construction of a shopping mall at Sweedens Swamp would be likely to have significant adverse impacts on the wetland values, particularly on wildlife habitat at the site. The project is non-water dependent, for which practicable, less environmentally damaging alternatives exist. Further, mitigation (i.e., wetland creation) cannot bring this project into compliance with the guidelines, because mitigation is proper for consideration only if the adverse impacts are unavoidable.

Under section 404(c), I must now consider whether these avoidable adverse impacts are unacceptable. Nothing in the 404(c) regulations, 40 C.F.R. Part 231, appears to compel an automatic finding of unacceptability when there is noncompliance with the guidelines. On the other hand, quite clearly one of the roles of section 404(c) is to "police" the guidelines, and EPA has broad discretion to construe the meaning of "unacceptable" impacts. To my knowledge, EPA has never confronted the question whether a project which would violate the guidelines could nevertheless be authorized under section 404(c) based on a finding that the impacts would not be unacceptable. I believe that in this particular case the large loss of wetlands and wildlife habitat at Sweedens Swamp that would result from this project, coupled with the project's violation of the central element of the 404(b)(1) guidelines, supports a finding that the impacts are unacceptable. I therefore recommend that the filling of Sweedens Swamp for the purpose of building a retail shopping facility be prohibited.

Before reaching this conclusion, I carefully considered the possibility of finding that, notwithstanding the project's noncompliance with the guidelines, Pyramid's mitigation proposal would render the impacts to Sweedens Swamp acceptable. Such a finding would support a restriction of the filling of Sweedens Swamp, placing detailed conditions on Pyramid's overall plan to ensure that the mitigation is accomplished to EPA's satisfaction before Sweedens Swamp is destroyed.

Development of conditions for a restriction would take considerable time and technical expertise, and would require resolution of numerous issues. Perhaps the most important of these are the criteria to determine "success" and the length of time that would need to elapse before we could confidently evaluate whether the artificial wetland was successful. It would also be necessary to decide how much mitigation is enough, given that both wetland

and upland habitat will be lost and that the impacts are avoidable in the first place. We would need to determine whether additional mitigation should be built in as a "buffer" against the loss of wildlife habitat while the new wetlands are under construction and in the early phase of development. Further, we would have to consider whether in-kind replacement should be required; and if out-of-kind replacement is accepted, whether additional mitigation is needed. Conditions to ensure long-term success would be required, relating to ownership, monitoring, and management of the site as well as contingency plans for any necessary remedial actions. Finally, the enforceability of the conditions would need to be carefully evaluated: if the artificial wetland is only marginally successful, or successful in some respects but not others, there will be considerable pressure on the Agency to allow the mall project to proceed regardless of the final outcome for the values section 404 seeks to protect.

I believe that the restriction approach presents numerous complications in addition to the difficulty of writing the conditions of a restriction, and should not be pursued in this case. I am most troubled by the implications of authorizing under section 404(c) of the Act a project which should have been denied under section 404(b). It is illogical to grant with one hand what the other hand would prohibit. To do so would change the 404(c) process from being an enforcer and protector of the guidelines, to being a forum for obtaining what amounts to a variance or special permit. There are no standards to guide me in deciding whether, when, and how the 404(c) process can be used to this end. Conceivably, a situation may arise where the degree of noncompliance with the guidelines is trivial, the impacts by any measure are acceptable, and there are no far-reaching implications for the section 404 program. This case, however, is not such a situation.

I am also concerned about how the regulated community might interpret EPA's authorization of a project that does not comply with the guidelines. Approval of this project on the basis of mitigation will almost certainly be perceived as sanctioning a new interpretation of the guidelines, no matter what safeguards we attempt to take. The result could be a dramatic increase in the number of projects that substitute mitigation for avoidance.

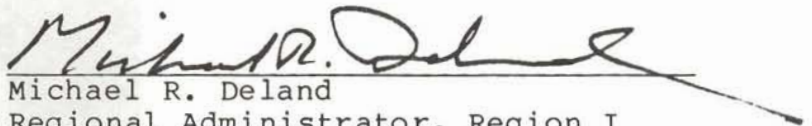
Finally, I doubt that Pyramid's proposal is worth the environmental risks that would accompany approval of a project which violates the guidelines. As described in Section VI, Pyramid's plan to create wetlands to compensate for the destruction of existing wetlands requires the Agency to make numerous assumptions and

leaps of faith, including assumptions that all variables can be controlled; that the wetlands even when functioning will provide the values claimed; that shortterm success ensures long-term success; that we know enough about relative habitat values to be able to trade one for another and call it an environmental gain; and so forth. Such assumptions ought not to be made, and the risks of failure should not be taken, when the impacts are avoidable in the first place.

I believe that the avoidance principle of the guidelines should strongly influence the determination of acceptability or unacceptability in particular cases. Here, the wetland is valuable, the loss is avoidable, and the project purpose can be accomplished without violating the guidelines. On these facts I can only conclude that the adverse effects are unacceptable and must accordingly be prohibited.

Dated:

March 4, 1986


Michael R. Deland
Regional Administrator, Region I

APPENDIX A

CHRONOLOGY OF ATTLEBORO MALL CASE

- 1982 - Proposal by the DeBartolo Corporation to construct shopping mall on Sweedens Swamp site (S. Attleboro) denied necessary state wetland permit.
- 1983 - State Properties rejects offer to buy Sweedens Swamp site and acquires option on North Attleboro (upland) mall site.
 - Pyramid Company elects to pursue Sweedens Swamp as future mall site.
- May 1984 - EPA attends an interagency pre-application conference to discuss proposed Pyramid project.
- June 1984 - EPA requests Corps to exercise discretionary authority and require an individual permit.
- July 1984 - Pyramid applies for Section 404 permit.
- August 1984 - Corps exercises discretionary authority and issues a public notice describing project.
- September 1984 - Corps holds public hearing on project. FWS submits comments objecting to issuance of the permit.
 - EPA provides preliminary review comments to the Corps.
- October 1984 - EPA provides full review comments to Corps focusing upon environmental impacts, alternatives, and mitigation and indicates that project is a candidate for a 404(c) action.
 - Region I Regional Administrator, Michael Deland briefed about project.
 - EPA first asked by mall opponents to exercise 404(c) authority.
- November 1984 - EPA, FWS, Corps, and Pyramid meet to discuss Federal agency concerns. Pyramid first proposes concept of off-site mitigation to offset habitat losses.
- December 1984 - EPA writes Corps requesting additional background information contained in Corps' files.

- January 1985
- EPA, FWS, and Corps meet to discuss status of project and to allow the environmental agencies an opportunity to restate their concerns.
 - A consultant retained by the New England Division of the Corps reviews marketing data of Pyramid and State Properties and concludes that while the market area will not support two malls, either site is feasible for development.
 - Region I meets with Pyramid representatives to discuss alternatives and mitigation.
 - FWS reiterates that Sweedens Swamp is valuable wildlife habitat.
- February 1985
- EPA writes Corps urging that permit be denied based on noncompliance with 404(b)(1) Guidelines; EPA also questions whether project could pass Corps public interest review.
 - Corps informally notifies Pyramid of imminent permit denial.
 - Pyramid submits rebuttal to Corps consultant's report about alternative mall site.
- March 1985
- Massachusetts issues state wetland permit after much controversy.
 - Interest of outside groups increases markedly.
- April 1985
- EPA sends letter to Corps detailing scientific, legal, and policy difficulties of accepting mitigation in place of proper alternatives analysis.
- May 1985
- New England Division of the Corps drafts a recommendation that permit be denied and forwards documentation to Office of the Chief of Engineers.
 - OCE reviews Division Engineer's draft recommendation for denial and directs that the permit be issued.
- June 1985
- New England Division of the Corps issues a notice of intent to issue the permit.
 - Region I participates in several meetings with the Corps and/or Pyramid to discuss case.
 - Issue arises in Senate oversight hearings on 404 program.

- June 1985 (Cont.) - Regional Administrator meets with the Massachusetts Association of Conservation Commissions, Inc. and representatives of the Coalition to Save Sweedens Swamp, at their request.
- July 1985 - Region I again meets with Pyramid representatives to discuss case.
- Regional Administrator meets with State Properties to discuss case at company's request.
- Region I initiates 404(c) action.
- Major articles and editorials in local newspapers/television coverage.
- Pyramid begins work at the site illegally; Corps issues cease and desist order.
- August 1985 - Region I publishes Federal Register notice of Proposed Determination (50 FR 33835, August 21, 1985) soliciting comments on the Region's 404(c) action and announcing a public hearing.
- Pyramid sues to terminate EPA's proceeding.
- September 1985 - Region I conducts a public hearing on September 26 to solicit comments on its 404(c) action. The public hearing comment period closed on October 21; over 1200 comments were received.
- Court dismisses Pyramid's lawsuit.
- October 1985 - Pyramid submits a mitigation plan to the Corps; Corps schedules a public hearing for November 18 to solicit comments on Pyramid's mitigation plan.
- Pyramid files notice of appeal of order dismissing lawsuit.
- November 1985 - Assistant Administrator for External Affairs, Joy Manson, visits Sweedens Swamp site.
- Corps conducts public hearing on Pyramid's proposed offsite mitigation plan.

- December 1985 - Pyramid organizes letter writing campaign to the President.
 - Region I begins preparing Recommended Decision to be forwarded to Headquarters.
- February 1986 - Pyramid files a second lawsuit against EPA, charging that the regional recommendation has been delayed improperly and seeking a declaratory judgment that the proposed determination is deemed withdrawn.
- March 1986 - Region I recommends that the Final 404(c) Determination prohibit filling of Sweedens Swamp.

APPENDIX B

Habitat Evaluation

1. Description of Model

A community based evaluation system developed by Pyramid's consultants was used to estimate habitat value in numerical terms. The model attempts to quantify wildlife values by using seven structural and botanical indices;*/ it does not attempt to measure other environmental or social values. Wildlife values, presented as "habitat units" (HU), are derived through straightforward calculations. Each of the seven criteria is weighted so that the sum of all weights equals one. An evaluation team in the field divides the study area into relatively homogenous cover types and assigns each cover type a score between 0 and 10 for each of the seven criteria. The products of these scores and the pre-assigned weights are added to give a "sum of weighted scores" for each cover type (10 being the highest possible score). These sums are multiplied by the acreage of each cover type to produce the number of habitat units. Finally, the number of habitat units for each cover type may be added to give a total for the entire site.

Hence, the highest theoretical score for each cover type is $10 \times$ the affected acreage. A site of 50 acres, for example, could not score higher than 500 HU. Of course, no actual cover type could reach this theoretical limit because it is not possible to maximize all the model's variables at once. A vigorous salt marsh might score 9 or 10 for "productivity" but would have low foliage height diversity. Likewise very few wetlands would approach the theoretical minimum of zero. The vast majority of vegetated wetlands (assume a 50 acre standard) would fall between 150-350 HU. Therefore general application of the model should result in a strongly normal distribution of scores with a low standard deviation.

2. Results

The model was employed at the Sweedens Swamp site and later at the proposed offsite mitigation area and an alternate mall site in North Attleborough. The model was used to assess baseline (existing) and predict future (after construction) conditions at these three sites. The data for these three sites are found at the end of this appendix.

*/ These are: 1) foliage height diversity; 2) "edge"; 3) moisture regime; 4) productivity; 5) plant species diversity; 6) proportion of community in food production; and 7) winter food availability.

During a one day site visit in August 1984, the applicant's consultants and federal agency representatives ("Assessment Team") evaluated Sweedens Swamp using the model.

TABLE B-1

Sweedens Swamp: Baseline Condition

◦ Wooded Swamp	47.1 acres	221 HU
◦ Shrub Swamp	0.6 acres	3 HU
◦ Marsh	0.7 acres	5 HU
◦ Open Water	1.1 acres	2 HU
◦ Upland Hardwood Forest	12.5 acres	48 HU
◦ Abandoned Field/Disturbed	17.2 acres	53 HU
◦ Developed	<u>2.8 acres</u>	<u>0 HU</u>
Site Total:	82.0 acres	332 units

Based on the discussion above, the mathematical maximum score at Sweedens Swamp site is 800 HU. The "realistic" range of scores, however, is 240-560; to score lower or higher than this range would indicate respectively either a degraded or extraordinarily valuable wetland. The actual score, 332 HU, falls well within the range we would expect for a normal functioning wetland. Looking at the 50 acres of wetland cover types alone, the score is 231 HU. This value is also well within the expected range (150-350).

The model was also used by Pyramid's consultants to predict the value of the project site if the onsite mitigation were fully successful. [As discussed below, the value of the model for this sort of speculation is limited.] Table B-2 compares the pre- and post-project condition of Sweedens Swamp assuming fully successful mitigation.

TABLE B-2

Sweedens Swamp: Baseline and Proposed Conditions

	<u>Total Acres</u>	<u>Wetland Acres</u>	<u>Total Habitat Units</u>	<u>Wetland Habitat Units</u>
Baseline Condition	82	50	332	231
Project and Onsite Mitigation	82	26	170	150
Net Change	0	-24	-162	-81

The existing data are not adequate to predict precisely the loss of habitat units from construction of the mall without onsite mitigation. Undoubtedly, however, that loss would be substantially greater than the 162 HU shown in Table B-2. If onsite mitigation is included, the most favorable analysis projects a loss of 24 acres of wetland habitat and about 25 acres of upland habitat. Total HU would permanently decrease by half and wetland HU by over one-third. The model results support the conclusion that Sweedens Swamp does provide values for wildlife and that these values would be adversely affected by the project.

In October 1985 the assessment team reassembled and used the model to estimate the baseline value of the Tiffany Street offsite mitigation area.

TABLE B-3

Tiffany Street Site: Baseline Condition

° Abandoned Field (south)	5 acres	26 HU
° Abandoned Field (north)	24 acres	114 HU
° Open Water	6 acres	11 HU
° Aspen Stand	1 acre	4 HU
Site Total:	36 acres	155 HU

Pyramid's proposed mitigation plan, if successful, would convert this primarily upland area to an emergent wetland and open water habitat. The predicted maximum value of the created wetlands is 219 HU. Assuming the mitigation is completely successful, the mitigation work would therefore increase the value of the site by 65 HU. If applied against the predicted long term losses at Sweedens Swamp, the net gain at Tiffany Street does not fully compensate for the total loss of wildlife value (-162 HU) or the loss of wetland values alone (-81 HU). This again assumes fully developed and successful mitigation both on- and offsite. Because Pyramid would attempt to create 30 acres of wetland from upland at Tiffany Street and 9 acres of wetland from upland at Sweedens Swamp, there would be a net increase in the absolute number of wetland acres (and habitat units) if the mitigation were successful. The entire project would result in a net increase of 6 wetland acres and a decrease of 54 upland acres. Correspondingly, the entire project would result in a net increase of 128 wetland habitat units and a decrease of 226 upland habitat units. While Pyramid has pointed to the net increase of 128 wetland HU, it has ignored the net decrease of 226 upland HU. In addition, Pyramid based its projections for offsite mitigation on the expectation that onsite mitigation would be 100% successful. Given the speculative nature of that estimate, the losses may be greater.

In November 1985 the federal agency representatives visited an alternate mall site in North Attleborough where New England Development proposes to construct the Emerald Square Mall. In order to have the complete assessment team present EPA sought to have Pyramid's consultants participate in this evaluation. New England Development, however, denied Pyramid's consultants access to the site. The evaluation results are summarized below:

TABLE B-3

North Attleborough Mall Site: Baseline Condition

◦ Upland Shrub	26 acres	148 HU
◦ Upland Forest	12 acres	56 HU
◦ Developed	10 acres	0 HU
◦ Mixed Forest	4 acres	16 HU
◦ Disturbed Field	3 acres	7 HU
◦ Abandoned Field	1 acre	6 HU
◦ Wetlands	1 acre	4 HU
Total:	57 acres	237 HU

All but 1 acre of the site is upland. Similarly the measured habitat value arises almost entirely from upland (233 HU) as compared to wetland habitat (4 HU). The projected value of the site after development is 49 HU, a total net loss of 190 HU. This net loss is slightly higher than the total projected net losses at Sweedens Swamp with onsite mitigation (162 HU). An equal comparison without mitigation would show that the overall impact to wildlife is numerically similar at both sites although probably higher at Sweedens Swamp. In terms of wetland values, the impacts would be much greater at the Sweedens Swamp site.

3. Model Limitations

The results of the model tend to confirm the views of the participating federal agencies with respect to the wildlife values of the three sites evaluated. Nevertheless, these numerical results must be viewed with caution and not accorded too much weight because the model (as does any model) has biases and limitations.

This assessment method was originally developed by Normandeau Associates to evaluate peat bogs in Maine.*/ While it can reasonably be used to evaluate other wetland systems, it is less certain how well it can be applied to upland habitats (e.g., Tiffany Street and North Attleborough). The FWS has expressed reservations about use of the model. Although they agreed to participate in the three site evaluations at the request of the NE Corps and EPA, they did not endorse the method. FWS believes the model is untested and its uses and limitations are unknown. No data exist to identify what species, cover types or communities the model discriminates for or against. Since the model relies on subjective value judgments, the results may not be replicable.

EPA agrees that the model is untested and unpublished and may have inherent biases of one kind or another. It is also subjective since values are arrived at by the consensus judgment of the evaluation team. As with most habitat evaluation systems, this model is more useful for comparing similar habitat types than it is for comparing one habitat type to another. Hence, the emergent wetland at Sweedens Swamp can be directly compared to the emergent wetlands at the North Attleborough site more accurately than, say, a shrub swamp can be evaluated against an upland forest. Nevertheless, EPA believes the method was applied as objectively as possible by the evaluation team and the results render in numerical terms the judgments of the participating biologists about the existing habitat value. Values predicted for the created wetlands reflect the paper value of the mitigation schemes. These values do not represent a judgment by EPA or FWS that the mitigation would develop as depicted on the plans.

Several other assumptions should be borne in mind when interpreting the results of the habitat evaluations. First, since the model is not annualized it does not account for the initial low quality of the mitigation areas but instead assumes values typical of a fully developed wetland system. Even if fully successful - and as discussed in Section VI, wetland mitigation has not always worked well - the artificial wetlands would require from several years (for the marsh) to perhaps a decade (for the shrub swamp) to reach maximum sustainable value. In addition, the future scenarios for each of the evaluated sites varies. Sweedens Swamp, if not developed by Pyramid, would likely maintain its current environmental values although some development of the upland might occur. The Tiffany Street site is currently abandoned. It is possible that parts of the site could be developed or mined for sand and gravel further in the future. The North Attleborough mall site will almost certainly be developed. New England Development has stated that it would develop the parcel for other purposes if a mall could not be built on the site. Even if not developed, normal successional changes would decrease annual productivity and edge and reduce the numerical score of the North Attleborough site. An

*/ Dennis Magee, personal communication.

annualized model would account for how these reasonably foreseeable changes (or lack of changes) in land use affect predicted habitat values.

Second, at least for the onsite mitigation at Sweedens Swamp, the model assumes that each cover type is of equal value to wildlife both before and after construction. For example, the forested wetlands at Sweedens Swamp scored a numerical value of 4.7 (out of a possible 10) per acre. Yet the four acres of wooded swamp that would remain after construction also were given a value of 4.7 though they will be far less buffered from human disturbance.

Finally, despite attempts to be objective, the model may have been unevenly applied. The three sites were evaluated in three different months of the year and Sweedens Swamp was assessed over a year before the other two sites. The team composition changed for each evaluation. The FWS representative, for example, at Sweedens Swamp was representing the Corps at the second two sites for which the original Corps representative was not present (this resulted from changes in employment). As noted above, Pyramid was not able to participate in the evaluation of the Tiffany Street site. What affect, if any, these factors had on the subjective judgments of the team is unclear.

WILDLIFE EVALUATION FOR PROPOSED NEWPORT GALLERIA

at Sweedens Swamp

CRITERIA	Wooded Swamp	Shrub Swamp	Marsh	Open Water	Hard-wood Forest	Abandoned Field Disturbed	Developed	Total
[Score: 0-10] Foliage Height Diversity x.25	6	5	4	0	4	2	0	
Edge x.20	6	4	8	6	7	4	0	
Moisture Regime x.16	3	6	6	3	1	1	0	
Productivity x.16	3	6	10	2	2	4	0	
Proportion Production Food x.09	4	6	8	1	5	4	0	
Diversity x.09	6	5	5	1	3	5	0	
Winter Food x.05	2	4	8	1	4	4	0	
Sum of Weighted Scores	4.7	5.2	6.7	2.2	3.8	3.1	0	
Existing Acreage	47.1	0.6	0.7	1.1	12.5	17.2	2.8	82.0
Existing Wild- life Value	221	3	5	2	48	53	0	332
Proposed Acreage	4.0	8.3	12.5	1.9	0.0	6.4	48.9	82.0
Proposed Wild- life Value	19	43	84	4	0.0	20	0.0	170

TOTAL NET CHANGE: -162

Wildlife Evaluation for Tiffany Street Mitigation Areas

COVER TYPE	Abandoned Field Disturbed (South)	Open Water	Abandoned Field Disturbed (North)	Aspen Stand	Created Marsh	Created Shrub Swamp	Created Open Water
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CRITERIA

[Score: 0-10]

Foliage Height Diversity (x.25)

5	0	5	4	6	4	6	0
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Edge (x.20)

5	3	4	6	8	8	6	6
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Moisture Regime (x.16)

3	4	3	2	7	5	4	4
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Productivity (x.16)

5	2	5	6	8	7	4	4
---	---	---	---	---	---	---	---

Proportion Food Production (x.09)

5	2	5	6	8	5	4	4
---	---	---	---	---	---	---	---

Diversity (x.09)

7	1	7	4	5	6	4	4
---	---	---	---	---	---	---	---

Winter Food (x.05)

5	1	5	6	8	4	3	3
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Sum of Weighted Scores

4.9	1.9	4.7	5.2	6.6	6.2	3.4	TOTALS -
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Existing Acreage

5.4	5.6	24.3	0.75	0	0	0	36
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Existing Wildlife Value

26	11	114	4	0	0	0	155
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Proposed Acreage

0	0	0	0	27	4	5	36
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Proposed Value

0	0	0	0	178	25	17	220
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Net Change: +65

[OPP-30003/8D FRL 2973-3]

Intent To Cancel Registration of Certain Pesticide Products Containing Sodium Fluoroacetate ("1080"); Availability of Position Document 4

Correction

In FR Doc. 85-18136 beginning on page 31012 in the issue of Wednesday, July 31, 1985, make the following corrections:

1. On page 31013, in the first column, in the sixth line, "40935" should read "50935".

2. On page 31017, in the second column, in paragraph 2, in the last line, "statement" should read "statements".

BILLING CODE 1505-01-01

[FRL-2885-5]

Proposed Determination To Prohibit or Restrict the Specification of an Area for Use as a Disposal Site; Notice of Public Hearing

AGENCY: Environmental Protection Agency.

ACTION: Notice.

SUMMARY: Section 404(c) of the Clean Water Act authorizes the Environmental Protection Agency (EPA) to prohibit or restrict the discharge of dredged or fill material at defined sites in the waters of the United States (including wetlands) if it determines, after notice and opportunity for hearing, that use of the site for disposal would have an unacceptable adverse impact on various resources, including wildlife. EPA's Regional Administrator, Region I, has concluded that he has reason to believe that a proposal by The Pyramid Companies ("Pyramid") to fill portions of Sweedens Swamp in Attleboro, Massachusetts, for the purpose of building a shopping mall, may have unacceptable adverse impacts on wildlife and possibly other resources. Accordingly, EPA is announcing the Regional Administrator's proposed determination to prohibit or restrict the filling of Sweedens Swamp and is seeking public comment on his proposal.

Purpose of Public Notice

EPA would like to obtain comments on this proposed determination to prohibit or restrict the disposal of dredged or fill material into Sweedens Swamp, and on whether or not the impacts of such disposal would represent an unacceptable adverse effect as described in section 404(c) of the Clean Water Act.

DATES: All comments should be submitted by 60 days from publication

of this notice to the person listed under **ADDRESSES**. A public hearing will be held on September 26, 1985, from 7:00 to 11:00 p.m.

Public Hearing

A public hearing will be conducted on September 26, 1985, from 7:00 to 11:00 p.m., in the Attleboro High School Auditorium, located on Rathbun Willard Drive, in Attleboro, Massachusetts.

Written comments may be submitted prior to the hearing. Both written and oral comments may be presented during the hearing. The hearing record will remain open for the submittal of written comments until the close of the sixtieth day after publication of this notice, or possibly a later date announced at the hearing.

The Regional Administrator's designee will be the Presiding Officer at the hearing. Any person may appear at the hearing and present oral or written statements, and may be represented by counsel or other authorized representative. The Presiding Officer will establish reasonable limits on the nature and length of the oral presentations. No cross examination of any hearing participant will be permitted, although the Presiding Officer may make appropriate inquiries of any such participant.

ADDRESSES: Comments should be sent to Linda M. Connolly, U.S. Environmental Protection Agency, WOB-2103, J.F.K. Federal Building, Boston, MA 02203. Copies of comments submitted to EPA may be reviewed at the same address. EPA regulations provide that a reasonable charge may be made for copying.

The public hearing will be held in the Attleboro High School Auditorium, located on Rathbun Willard Drive, in Attleboro, Massachusetts.

FOR FURTHER INFORMATION CONTACT: Douglas Thompson, U.S. EPA, Region I, J.F. Kennedy Federal Building, Boston MA 02203; (617) 223-5800.

SUPPLEMENTAL INFORMATION:

I. Description of the Section 404(c) Process

The Clean Water Act, 33 USC 1251 *et seq.*, prohibits the discharge of pollutants, including dredged and fill material, into the waters of the United States (including wetlands) except in compliance with, among other things, section 404. Section 404 authorizes the Secretary of the Army, acting through the Chief of Engineers, to authorize the discharge of dredged or fill material at specified sites, through the application of environmental guidelines developed by EPA in conjunction with the

Secretary¹ or where warranted by the economics of anchorage and navigation, except as provided in section 404(c). Section 404(c) authorizes the Administrator of EPA, after notice and opportunity for hearing, to prohibit or restrict the use of a defined site for disposal of dredged or fill material, where he determines that such use would have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife or recreational areas.

Regulations published at 40 CFR Part 231 establish the procedures to be followed by EPA in exercising its section 404(c) authority. Whenever the Regional Administrator has reason to believe that use of a site may have an unacceptable adverse effect on the pertinent resources, he may begin the process by notifying the Corps of Engineers and the applicant, if any, that he intends to issue a proposed determination under section 404(c). Unless the applicant or the Corps persuades the Regional Administrator that there will not be unacceptable adverse impacts or identifies corrective measures satisfactory to the Regional Administrator within 15 days, he then publishes a notice in the Federal Register of his proposed determination soliciting public comment and offering an opportunity for a public hearing. Today's notice represents this step in the process.

Following the public hearing and the close of the comment period, the Regional Administrator decides whether to withdraw his proposed determination or prepare a recommended determination. If he prepares a recommended determination, he then forwards it and the complete administrative record compiled in the Region to the Assistant Administrator for External Affairs at EPA's headquarters for a final decision affirming, modifying, or rescinding the recommended determination. The Corps of Engineers and the applicant are provided with another opportunity for consultation before this final decision is made.

II. Description of the Site

The 80 acre project site involved in this action includes a 50 acre wetland, known as Sweedens Swamp, located near the intersection of Routes 85 and 1A in Attleboro, Massachusetts. Largely a red maple wetland adjacent to a

¹ The pertinent regulations are set forth at 40 CFR Part 230 and are often referred to as the section 404(b)(1) guidelines.

headwater tributary of the Seven Mile River in southeastern Massachusetts, Sweedens Swamp is located roughly one-quarter mile from the Rhode Island border. The predominant habitat type is deciduous forested wetland (45 acres) although pockets of emergent and shrub wetlands exist on-site. Several shallow streams wind through the wetland and there is some seasonal ponding of water on the southern portion of the wetland. Upland habitat types include oak dominated forest and disturbed field. Human disturbance is evidenced by sporadic dumping of refuse and debris, primarily at the wetland's perimeter, and by the existence of several foot trails (with occasional use by dirtbikes) through the site.

Wetlands, to varying degrees, have hydrologic, biological, and social values. Sweedens Swamp provides flood storage but its role in this regard may be limited since it is located high in a small watershed (625 acres). The wetland also may function to improve or maintain water quality in the Seven Mile River by the adsorption and uptake of contaminants. Pyramid states that most of the water entering the site does not contact the vegetation and that the wetland therefore functions "inefficiently" for water quality renovation. It is not clear, however, whether Sweedens Swamp is less functional for water quality renovation than other wooded swamps in New England. Sweedens Swamp, which overlies a large regional aquifer, functions primarily as a groundwater discharge (rather than recharge) area.

EPA, the U.S. Fish and Wildlife Service, and the New England Division of the Army Corps of Engineers have concluded that the site provides excellent habitat for small mammals, songbirds, reptiles, and amphibians. This view is based on the diversity, density, and structural heterogeneity of the vegetation in the swamp. Waterfowl, including black ducks and mallards, are known to utilize the site; red shouldered hawks, a predatory bird species, have been observed in the wetland. In addition to these wildlife values, the wetland may have social value as open space and provide some opportunities for passive recreation (such as bird watching).

The proposed shopping mall would alter all but 4 acres of the site. Pyramid proposes to place 885,000 cubic yards in 32 acres of the wetland to construct the buildings, parking areas, and roads associated with the development. The company also proposes to excavate 9.0 acres of upland to create wetland onsite and alter 13.3 acres of the existing

swamp in an attempt to increase its value for fisheries, wildlife, and water quality maintenance. In addition, Pyramid proposes to mitigate the impacts by attempting to build another wetland, consisting of marsh, open water, and shrub swamp at an off-site location.

III. Proceedings to Date

In 1982, the DeBartolo Corporation, Pyramid's predecessor, failed in its attempt to obtain a state permit to fill the wetlands for the purpose of building a shopping mall. Pyramid, however, in March 1985 received a permit from the State for its proposed development. The issuance of the state permit is currently being challenged in Massachusetts Superior Court.

Pyramid applied for a section 404 permit from the Corps of Engineers in July 1984. In October 1984, February 1985, and April 1985, EPA objected to issuance of the permit on various grounds. In particular, EPA expressed concern that this non-water dependent project did not comply with the section 404(b)(1) guidelines because there were other practicable, less environmentally damaging alternatives available to accomplish the basic project purpose. Attention has primarily focused on an alternate site in North Attleboro which contains few wetlands and which the Corps and EPA believe is a feasible location to develop a shopping mall. The U.S. Fish and Wildlife Service also objected to permit issuance for the same reasons.

New England Division of the Corps of Engineers initially agreed that the permit should be denied, but was instructed by the then Deputy Director of Civil Works, General Wall, to forward its files and recommended decision to him for review. In May 1985, General Wall concluded that the project did comply with the section 404 (b)(1) guidelines because there was no practicable, less environmentally damaging alternative. His conclusion was based on a finding that (1) the North Attleboro site is not available to Pyramid because it is now controlled by another developer and that from Pyramid's point of view the site would not fulfill the purposes of its proposed project; and (2) from the public interest perspective, Pyramid's proposed mitigation (i.e., on-site and off-site wetland enhancement and creation) would reduce the adverse impacts of the discharge to a point where no other site could offer a less environmentally damaging practicable alternative. In his view, such mitigation can be used to satisfy the guidelines even when there may be a practicable upland site available. General Wall therefore

directed the Division to revise its decision documents and issue the permit with appropriate conditions. Accordingly, on June 28, 1985, the Division sent EPA its Notice of Intent to Issue the permit.

On July 23, 1985, the Regional Administrator of EPA notified the Division and Pyramid of his intention to issue a proposed determination to prohibit or restrict the use of Sweedens Swamp as a disposal site, based on the belief that the proposed project may have unacceptable adverse effects—specifically, the avoidable loss of wildlife habitat. A 15 day consultation period ended on August 8, 1985. Following another review of Pyramid's proposal, the Regional Administrator was not persuaded that there would be no unacceptable adverse effects from the proposed discharge.

IV. Basis for Proposed Determination

A. Section 404(c) Criteria

As mentioned above, the Act requires that exercise of final section 404(c) authority be based on a determination of "unacceptable adverse effect" on municipal water supplies, shellfish beds, fisheries, wildlife, or recreational areas. The regulations define this term at 40 CFR 231.2(e) 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 CFR Part 230).

The preamble explains that since one of the basic functions of section 404(c) is to police the application of the section 404(b)(1) guidelines, those portions of the guidelines relating to alternative sites may be considered in evaluating the unacceptability of environmental impacts. 44 F.R. 58078 (Oct. 9, 1979). Thus, it is appropriate under section 404(c) to take into account whether the loss of the resource is avoidable.

B. Impacts of Filling Sweedens Swamp

Construction of the shopping mall would result in the initial, direct loss of 32 acres of wetland habitat. If the on-site wetland creation plan were successful, there would be a net loss of 23 acres of wetland at the site. Approximately 9 acres of upland would be converted to wetland: The remaining 20 acres of upland habitat would be replaced by the mall. This proposal, if permitted, would be the largest single loss of wetland authorized in

Massachusetts in the past five years, and one of the largest fill projects in New England during the last few years.

The hydrologic regime of the site would be altered by the project. On one hand, the remaining wetlands would, according to the developer, function better to maintain water quality. Since the fill, however, would be a source of various contaminants to surface waters it is unclear what the net effect upon water quality would be. Flood storage capacity would be reduced by the project but the developer intends to provide adequate compensatory storage.

Adverse impacts to wildlife will result from the reduction of wetland acreage. The native vegetation and the less mobile animal species will perish under the fill. Other species (e.g., birds) may escape from the site and attempt to relocate to other nearby habitats; relocation may not be successful, however, for highly territorial species or if the adjacent areas are already at carrying capacity.

If the on-site and off-site created and enhanced wetlands function as described by Pyramid, they would provide wildlife habitat. The replacement wetlands, however, would not be of the same type as these destroyed and would be utilized by different wildlife species. The developer has stated that the replacement wetlands, although different from Sweedens Swamp, represent less common habitat types and should be more attractive to waterfowl. Neither the on-site nor off-site replacement wetlands would be immediately available for wildlife use and the extent of utilization would depend upon the ultimate success of the wetland creation effort.

Construction of the shopping mall and the replacement wetlands will involve considerable dredging, filling and earthmoving which will result in a temporary increase in sedimentation and turbidity or surface water in the vicinity.

C. Avoidability of the Impacts on Sweedens Swamp

As mentioned above, whether an impact is avoidable can affect its acceptability under section 404(c). This is consistent with 40 CFR 230.10(a) of the guidelines, which requires that (except for the navigation override), "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." The

preamble to the guidelines explains that the particular alternatives approach adopted by EPA reflects the view that the waters of the United States "from a priceless mosaic. Thus, if destruction of an area of waters of the United States may reasonably be avoided, it should be avoided." 45 F.R. 85340 (Dec. 24, 1980).² To reinforce this point, the guidelines establish a rebuttable presumption that practicable, environmentally preferable alternatives exist for "non-water dependent activities," such as shopping centers, proposed to take place in "special aquatic sites," such as wetlands. 40 CFR 230.10(a)(3).

Pyramid states that the alternative sites identified during the permit process are not "practicable" sites for shopping centers, citing factors such as access from major highways, visibility, size, lack of parking, distance from its preferred market area, and other matters. However, this contention has been disputed. A consultant hired by the Corps concluded that at least one other site three miles away in North Attleboro (at the intersection of Routes 1 and I-295) was also suitable for a shopping mall of the general type proposed by Pyramid. Moreover, another shopping center developer has concluded that the North Attleboro site is suitable and is in the process of obtaining the necessary permits to build. It also appears that this site was available to Pyramid at the time it made its site selection. This site is an upland one (less than an acre of wetlands), the use of which would apparently have significantly less impact on the environment than the use of Sweedens Swamp, although some similar questions have been raised about both sites (e.g., questions about impacts to water supplies).

Therefore, based on the present record, it does not appear to EPA Region I that Pyramid has clearly demonstrated that there is no practicable, environmentally preferable site for a shopping center. We are particularly interested in comments and information from the public on all aspects of this issue.

D. Off-Site Mitigation

As described above, Pyramid has proposed to create a new wetland at another location in order to compensate for values which would be lost at Sweedens Swamp. While the off-site mitigation was not part of its original

permit application, Pyramid now suggests that this proposal means that there could be no alternative site which is "environmentally preferable."

The specific location and details of the to-be-created wetland have not yet been determined. The current leading candidate is an abandoned gravel pit located near Tiffany Street in Attleboro, near the Ten Mile River. However, questions remain about its availability, its suitability for creation of a self-sustaining, functioning wetland, and the extent to which it could replicate the values to be lost at Sweedens Swamp. In addition, the art of creating wetlands is not yet fully understood, especially in fresh water environments and particularly on the scale involved here. EPA is interested in any comments and information on wetlands creation in general; on the substitution of one kind of wetland for another; and on what would be required to establish a suitable wetland at the Tiffany Street site, the likelihood of its long-term success, and the performance measures necessary to determine long-term success, including the length of time it would take to be confident of such success.

EPA has traditionally not considered wetlands creation to be an appropriate factor to consider in weighing the environmental comparability of two practicable project sites under § 230.10(a) of the Guidelines. In other words EPA normally does not evaluate or accept mitigation (in the sense of wetland creation or enhancement) plans until after the alternatives test is satisfied. Therefore, even if the factual problems with the mitigation proposal described above are resolved, there still remain the questions (1) whether the proposed mitigation plan can be found to satisfy the practicable alternatives test in § 230.10(a); and (2) if the mitigation proposal does not strictly satisfy the guidelines, is that noncompliance sufficient to render the adverse impacts at Sweedens Swamp unacceptable within the meaning of section 404(c).

IV. Solicitation of Comments

EPA solicits comments on all issues raised by its proposed determination in this case, including, in particular, whether there is a practicable alternative to locating a shopping center in Sweedens Swamp, the relative environmental impacts (to wildlife, water supply and/or recreation) at the various potential sites, the proposal for off-site mitigation, and the acceptability or unacceptability of the impacts likely to occur if Sweedens Swamp is filled as proposed. Comments should be sent by

² The preamble goes on to note that where a category of discharges is so minimal in impact that it has been placed under a general permit, a case-by-case analysis of alternatives is not necessary. The current proposal was removed from coverage from the general permit at 33 CFR 330.54(a)(26) because its impacts were not minimal.

60 days from the date of publication of this Federal Register notice to the person listed above under ADDRESSES and may also be provided at the public hearing announced above.

All comments received, as well as the hearing record will be fully considered by the Regional Administrator in making his decision to prepare a recommended determination to prohibit or restrict filling Sweedens Swamp or to withdraw today's proposed determination.

Dated: August 13, 1985.

Michael R. Deland,

Regional Administrator.

[FR Doc. 85-19934 Filed 8-20-85; 8:45 am]

BILLING CODE 6660-60-M

[FRL-2885-2]

Science Advisory Board,
Subcommittee on Dioxins; Open
Meeting—September 4-6, 1985

Under Pub. L. 92-463, notice is hereby given that a meeting of the Science Advisory Board's Dioxins Subcommittee will meet September 4-6, 1985, at the main auditorium of the Environmental Protection Agency's Environmental Monitoring Systems Laboratory, 944 East Harmon Avenue, Las Vegas, Nevada. The meeting will begin at 8:00 a.m. on September 4 and adjourn at approximately 4:00 p.m. on September 6.

The purpose of the meeting is to provide the Subcommittee with the opportunity to review the quality, relevance and direction of the Agency's dioxins' research program. The program has four major research components including (1) engineering, (2) monitoring, (3) environmental effects, and (4) health effects and assessment. The program is discussed in a document prepared by EPA's Office of Research and Development entitled: Status of Dioxin Research in the U.S. Environmental Protection Agency. Individual copies of the document may be obtained by writing or calling Dr. Rizwanul Haque, Office of Environmental Processes and Effects Research, Office of Research and Development (RD-682), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460 (202) 382-5967.

The meeting is open to the public. Any member of the public wishing to attend, obtain information, or submit written comments to the Subcommittee should notify Dr. Terry F. Yosie, Director, Science Advisory Board at (202) 382-4126 or Ms. Patti Howard, Staff Secretary (A-101F), 401 M Street SW., Washington, D.C. 20460 or call (202) 382-2552 by close of business August 29, 1985.

Dated: August 15, 1985.

Terry F. Yosie,

Director, Science Advisory Board.

[FR Doc. 85-19929 Filed 8-20-85; 8:45 am]

BILLING CODE 6660-60-M

[OPP-30253; FRL-2883-3]

Idacon, Inc.; Application To Register a
Pesticide Product

AGENCY: Environmental Protection
Agency (EPA).

ACTION: Notice.

SUMMARY: This notice announces receipt of an application to register a pesticide product containing an active ingredient not included in any previously registered product pursuant to the provision of section 3(c)(4) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended.

DATE: Comment by September 20, 1985.

ADDRESS: By mail submit comments identified by the document control number [OPP-30253] and the file number (10413-RU) to:

Information Services Section (TS-757C),
Program Management and Support
Division, Attn: Product Manager (PM)
16, Office of Pesticide Programs,
Environmental Protection Agency, 401
M St., SW., Washington, D.C. 20460.
In person, bring comments to: Rm. 236,
CM # 2, Attn: PM 16, Registration
Division (TS-767C), Environmental
Protection Agency, 1921 Jefferson
Davis Highway, Arlington, VA.

Information submitted in any comment concerning this notice may be claimed confidential by marking any part or all of that information as "Confidential Business Information" (CBI). Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR Part 2. A copy of the comment that does not contain CBI must be submitted for inclusion in the public record. Information not marked confidential may be disclosed publicly by EPA without prior notice to the submitter. All written comments will be available for public inspection in Rm. 236 at the address given above, from 8 a.m. to 4 p.m., Monday through Friday, except legal holidays.

FOR FURTHER INFORMATION CONTACT:
William Miller, PM 16, (703-557-2600).

SUPPLEMENTARY INFORMATION: Idacon, Inc., 10611 Harwin Drive, Suite 400, Houston, TX 77036, has submitted an application to EPA to register the woodpecker repellent, ST-138(R), EPA File Symbol 10413-RU, containing the active ingredient 3,3,5-trimethyl-2-

cyclohexene-1-one at 50 percent. The application proposes that the product be classified for general use in wood treatment facilities, utility poles, and crossarms. Notice of receipt of this application does not imply a decision by the Agency on the application.

Notice of approval or denial of an application to register a pesticide product will be announced in the Federal Register. The procedure for requesting data will be given in the Federal Register if an application is approved.

Comments received within the specified time period will be considered before a final decision is made; comments received after the time specified will be considered only to the extent possible without delaying processing of the application.

Written comments filed pursuant to this notice, will be available in the Program Management and Support Division (PMSD) office at the address provided from 8 a.m. to 4 p.m., Monday through Friday, except legal holidays. It is suggested that persons interested in reviewing the application file, telephone the PMSD office (703-557-3262), to ensure that the file is available on the date of intended visit.

Authority: 7 U.S.C. 136.

Dated: August 7, 1985.

Douglas D. Camp,

Office of Pesticide Programs.

[FR Doc. 85-19714 Filed 8-20-85; 8:45 am]

BILLING CODE 6660-60-M

[OPP-50640; PM-FRL 2885-8]

Issuance of Experimental Use Permits

AGENCY: Environmental Protection
Agency (EPA).

ACTION: Notice.

SUMMARY: EPA has granted experimental use permits to the following applicants. These permits are in accordance with, and subject to, the provisions of 40 CFR Part 172, which defines EPA procedures with respect to the use of pesticides for experimental purposes.

FOR FURTHER INFORMATION CONTACT:
By mail, the product manager cited in each experimental use permit at the address below: Registration Division (TS-767C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460.

In person or by telephone: Contact the product manager at the following address at the office location or telephone number cited in each

APPENDIX D

RESPONSE TO COMMENTS

Region One opened a 60-day public comment period on August 21, 1985 which extended until October 21, 1985. On September 26, 1985 EPA conducted a public hearing in Attleboro, Massachusetts. I solicited public comments in my proposed determination published in the Federal Register on August 21, 1985. A copy of the complete proposed determination is included as Appendix C. Briefly, the proposed determination sought public comment on a number of issues including information pertaining to the biological and hydrological values provided by Sweedens Swamp; whether or not the adverse impacts from the mall could be avoided; information about wetland creation attempts in general and in particular comments on the advisability of substituting one type of habitat for another; and specific comments about Pyramid's proposed mitigation plans.

The degree of public response to EPA's proposed determination has been impressive. During the 60-day comment period* we received over 1200 comments totalling thousands of pages. An estimated 1000 persons attended the public hearing which lasted nearly five hours. Views range from strong support for the mall to strong opposition to the proposal. Many comments were general and did not address the issues raised in the proposed determination; others were specific and provided detailed information in response to EPA's request. Many comments--both in support and opposition to the mall--were thoughtful and demonstrated serious consideration of the issues at hand. All comments have been read and evaluated by Region One in reaching this recommended determination. EPA appreciates the time and effort spent by all those who commented to us about this case.

The very large number of comments makes it impossible to address each one individually. We have instead chosen here to respond to the major issues raised by the public during the 404(c) process. This is a reasonable approach for several reasons. First, although the number of commenters is high, similar issues were raised repeatedly and can be best treated generically. Second, we believe that many comments, particularly those on environmental issues, have been addressed in the body of this recommendation. Finally, several issues were raised which are either beyond the authority or expertise of EPA or not pertinent to the decision.

The organization of this part basically follows that of the recommended decision. That is, we first address issues pertaining to Pyramid's proposal and the 404(c) process and then proceed, sequentially, to comments about the environmental value of the site, environmental impacts, alternatives and mitigation.

*/Many comments have been received both before and after the formal comment period. These have been made part of the record for this project.

A. General Comments on the Project and 404(c) Process

Comment: The proposed mall would be good for the local economy and tax base, provide jobs, and stop the flow of consumer dollars into Rhode Island.

Response: EPA accepts that the proposed mall would provide economic benefits to Attleboro although we have not attempted to validate Pyramid's specific projections in these areas. However, since practicable alternatives must satisfy the basic purpose of the project, these other alternatives would provide substantially similar benefits. For example, the developer of the proposed mall at the North Attleborough site predicts a similar range of economic benefits from its project. That the benefits may not occur in exactly the same community is not pertinent to EPA's decision under the national 404 program.

Comment: There is no need for a shopping mall at all, either at the Sweedens Swamp site or at any location in the region.

Response: EPA has accepted the conclusions of Pyramid and others that a market demand exists in the trade area for the type of retail shopping the mall would provide. Whether or not the expected viability of a shopping mall equates with a "public need" for such a facility is a question beyond EPA's authority to address. Our evaluation is confined to an analysis of the environmental impact of the proposed project and an evaluation of alternatives which may be practicable and involve less environmental impact.

Comment: EPA's 404(c) action is inappropriate since Pyramid underwent extensive environmental review at the state, local and federal level and has received the approval of every other agency charged with evaluating the project. EPA should not preempt local decisions.

Response: Local views and decisions are an important consideration to EPA. Nevertheless, the 404 program is a national program, with national standards (the 404 guidelines) aimed at protecting wetlands and other sensitive waters of the United States. EPA clearly has the authority under 404(c) to restrict or prohibit a proposed discharge even if it has been approved by other agencies. In this particular case, the state law does not have jurisdiction over project alternatives and wildlife impacts, EPA's two key concerns in this case. Despite this fact, the State proceeding was extremely controversial since the project would not be permitted under current state regulations. The NE Corps recommended denial of the 404 permit; it notified EPA of its intent to issue the permit only after receiving directions to that effect from the Corps Headquarters office. This reversal was based on a new interpretation of EPA's 404(b)(1) guidelines. The FWS also has consistently opposed issuance of a permit for this project. Pyramid's proposal involves significant adverse environmental impacts making action under 404(c) appropriate.

Comment: EPA should veto the project under 404(c) because it is not water dependent, alternatives exist, or the impacts of the fill are significant.

Response: Region I is recommending a "veto" for the reasons summarized in Section VII of this document.

Comment: The Region I EPA office is setting new policy in this matter.

Response: As described in the text of this Recommendation, the 404 review has required that several important legal and policy questions be addressed. Nevertheless, this decision generally follows existing policy and does not urge the adoption of new policies.

Comment: EPA should extend or reopen the public comment period to give interested parties more time to comment, particularly on Pyramid's mitigation plan which was not available until late in the 404(c) process.

Response: EPA provided an initial 60-day comment period. With regard to Pyramid's mitigation plan, the NE Corps provided a period for public comment (and held a hearing) on the mitigation plan from October 18, 1985 to November 28, 1985. EPA has incorporated into its record all comments submitted to the NE Corps concerning Pyramid's project.

B. Comments Concerning the Environmental Value of Sweedens Swamp

Comment: Sweedens Swamp has been degraded by uncontrolled dumping of trash and debris, is basically a dump, and poses various safety hazards.

Response: As described in Section III, the dumping has occurred primarily around the perimeter of the wetland with only scattered evidence of disturbance in the interior of the wetland. The dumping may have reduced the aesthetic value of the site but has had little effect on other environmental values. To the extent that there are adverse effects or safety problems from the dumping, they can be largely reversed by removal and proper disposal of the material. Such removal is the responsibility of the property owner. In fact, to the extent that the dumping has been illegal under Section 301(a) of the Act, EPA may consider whether enforcement action to clean up the wetlands portion of the site is appropriate.

Comment: Sweedens Swamp is a dysfunctional or inefficient wetland because the water that travels through the site does not interact with the native wetland vegetation.

Response: Sweedens Swamp is not "dysfunctional". There is nothing in the record to support a conclusion other than that Sweedens Swamp is a typical headwater forested wetland. As described in Section III, Sweedens Swamp stores flood water and does allow for interaction of the water, soils and vegetation for a significant percentage of water entering the site. Whatever the source of water, Sweedens Swamp is wet enough to support a diverse and productive community of wetland plant species.

Comment: Sweedens Swamp is not valuable wildlife habitat, but instead is home to only rats and mosquitoes.

Response: Section III lists the plants, birds and animals that have either been observed at Sweedens Swamp or are likely to frequent the area. Insects, of which there would be many, are not listed.

Comment: Sweedens Swamp is very valuable wildlife habitat for waterfowl, mink, beaver, and otter.

Response: The wetland at one time may have supported mink, beaver, and otter but there is no evidence that any of these species now uses the site. Waterfowl do utilize Sweedens Swamp and have been observed on site on several occasions. It is not prime waterfowl habitat because the ratio of open water to vegetation is not optimal.

Comment: Sweedens Swamp is vital to maintaining the purity of surface and ground waters and drinking water supplies because the peat soils filter the water.

Response: Sweedens Swamp may act to improve water quality or protect existing water quality. As discussed in Section III, EPA does not believe that the wetland is critical for drinking water concerns. The swamp acts more to discharge (rather than recharge) groundwater except possibly during the dry summer months. In other words, the water does not, as several commenters suggested, "seep down through the peat," although there would be some vertical movement through the substrata at certain times. The swamp in its existing state does contribute to maintenance of surface water quality.

Comment: Sweedens Swamp is an important flood storage area.

Response: EPA agrees that the wetland has value for flood storage. This has also been acknowledged by Pyramid and its consultants.

Comment: The value of Sweedens Swamp was greatly reduced when Interstate 95 was constructed. (Several commenters asked why EPA did not object to the roadway when it was proposed).

Response: Undoubtedly, I-95 had a severe impact on Sweedens Swamp. The road was constructed, however, before passage of the National Environmental Policy Act which would have required preparation of an EIS, and before passage of Section 404 of the Clean Water Act. If I-95 were proposed today, EPA would object to construction of the road through the middle of the wetland.

C. Comments Concerning the Environmental Impact of the Project

Comment: Pyramid would improve the area by cleaning it up and by creating new and better wetlands near the mall.

Response: Section IV describes the impacts to wildlife, flood storage, and water quality that would result from the mall. These impacts would be, in EPA's opinion, adverse, particularly with respect to wildlife habitat. We agree that if Pyramid cleaned up the site there would be an aesthetic improvement. However, with the heavy human use associated with a shopping mall, it would be difficult to prevent future dumping of trash and debris.

Comment: The new onsite wetlands would function better as wildlife habitat and to maintain water quality.

Response: If the created wetlands can be successfully established, they would not provide the same type of habitat as that which would be destroyed. Therefore, some species would benefit from the change while other species would suffer. The total amount of available habitat would decrease by 49 acres, however, so the net impact upon wildlife would be negative. The impact to water quality is less certain. Pyramid's proposed mitigation plan would in theory increase the contact of the artificial wetlands with mall runoff to enhance the opportunity for water quality renovation. At the same time, the mall will generate and discharge more pollutants into Sweedens Swamp than which currently enter the site.

Comment: The proposed mall will adversely affect drinking water supplies.

Response: As described in Section IV, EPA does not anticipate significant adverse impacts to drinking water.

Comment: The mall will cause flooding near the site and downstream.

Response: Sweedens Swamp does serve as a flood retention area and the mall will decrease the available storage capacity of the site. Under the state permit requirements, however, Pyramid would provide full compensation for lost flood storage. Therefore, EPA does not expect significant flooding problems as a consequence of constructing the mall.

Comment: The project will degrade both surface and groundwater.

Response: Short-term degradation of surface water would occur during construction of the mall although it could be minimized by use of erosion control measures. The long term impact of the project on water quality is unclear although it would be negative in the aquatic ecosystems near the mall (See Section IV). Groundwater quality should not be significantly affected by the project.

D. Comments Concerning Alternatives to the Project

Comment: A shopping mall can be constructed anywhere and there are many other sites in the area where Pyramid could build a mall.

Response: EPA does not agree that a shopping mall can be built "anywhere". However, EPA does agree that retail shopping facilities, including a regional mall, could be constructed at other sites in the area. (See Section V).

Comment: The North Attleborough alternative site is not a "practicable alternative" because it is not owned nor available for purchase by Pyramid.

Response: To be practicable an alternative must be available to satisfy the basic project purpose, not necessarily available to a specific permit applicant (See Section V). In addition, the record indicates that the North Attleborough site may have been available to Pyramid at an earlier date.

Comment: The North Attleborough site is not practicable because of a number of economic and logistical factors including its location with respect to the trade area and the major highways. The site has a limited amount of developable land and problems with access.

Response: As discussed in Section V, the North Attleborough site can satisfy the basic project purpose of providing retail shopping, and also is viable for a regional shopping mall. Typical of any major development site, the North Attleborough location poses certain difficulties. However, Pyramid has not demonstrated that these obstacles to development could not be overcome, and the record indicates that these problems can likely be solved.

Comment: The proposed North Attleborough Mall will cause significant traffic related problems immediately adjacent to the mall and on the connecting roadways.

Purpose: The Massachusetts Department of Public Works has jurisdiction over these issues. In their comments to the Executive Office of Environmental Affairs, during the state EIR process, DPW had several technical comments and recommendations but concluded that the project was a feasible one. The final EIR is expected to analyze these issues more fully as well.

Comment: The North Attleborough site is not less environmentally damaging than the Sweedens Swamp site because of impacts to wetlands, wildlife, water supply, and groundwater.

Response: Section V discusses the environmental characteristics of the North Attleborough site. The proposed mall development at this site would adversely affect wildlife because approximately 34 acres of habitat, primarily upland shrub and forest, would be developed. Less than one acre of wetlands, most of them isolated, would be filled. The impacts to both wetlands and wildlife are less from building a mall (without considering possible mitigative actions at either site) at the North Attleborough site than at the Sweedens Swamp site.

The North Attleborough site lies within the watershed of a principal drinking water supply for Attleboro, although the project site is small relative to the total watershed area. Provided that a variety of temporary and permanent measures to manage stormwater are implemented, EPA believes that the risk of potential impacts to the water supply is within the level normally considered acceptable.

The site is underlain primarily by glacial till, which generally has low permeability. While no site specific base-flow calculations have been made, base flow contributions from a site composed mainly of till will be insignificant in comparison to base flow from other areas in the watershed where sand and gravel deposits exist.

Comment: Development of the North Attleborough site would have an unacceptable impact to the local elementary school on Allen Avenue and the nearby residential neighborhoods.

Response: These issues are not directly pertinent to EPA's decision under Section 404(c) of the Clean Water Act. While they are issues of considerable local importance and concern, they are of the type normally addressed during the local planning and zoning approval process. EPA lacks the authority or expertise to intervene for non-environmental reasons in the decision of the town of North Attleborough to allow development of a mall at this site. We do note that the developer of the site, New England Development, Inc., has proposed numerous measures intended to minimize impacts to the school.

Comment: A shopping mall could be constructed on the upland portions of Pyramid's project site.

Response: Since only about 32 acres of upland exist at the site and it is not all one contiguous parcel, it apparently would be difficult to construct a shopping mall without filling wetlands. EPA has not evaluated this option in detail because of the existence of other upland parcels that are available to satisfy the basic project purpose.

Comment: Constructing several smaller shopping areas around the region is a viable alternative to Pyramid's current proposal.

Response: Given the existence of sites in the area which are capable of supporting a regional mall, EPA did not need to reach the question whether scattered smaller shopping facilities around the region would satisfy the basic project purpose.

E. Comments Relating to Pyramid's Mitigation Proposal

Comment: Mitigation cannot be substituted for the alternatives requirements of the 404(b)(1) guidelines.

Response: EPA agrees, for the reasons set forth in Section VI.

Comment: Pyramid's mitigation proposal would improve the environment because it would create high quality wetlands of more value to wildlife.

Response: Even if fully successful, Pyramid's mitigation plan would result in a net loss of overall wildlife value (See Section VI and Appendix B). Any gain in wetland acreage and wildlife value would be at the expense of existing upland and wetland habitat.

Comment: Creation of artificial wetlands is an established science and artificial wetlands can be built with certainty. Therefore, Pyramid's offer to create artificial wetlands is "risk-free".

Response: The record shows that certain types of wetlands have been successfully managed or created. Other attempts to create wetlands, however, have failed or not been as successful as anticipated. Moreover, there are no well established criteria by which to judge whether or not artificial wetlands are "successful". (See Section VI.).

Comment: The proposed artificial wetlands would not be of the same type as those Pyramid would destroy and the proposal is unacceptable for that reason.

Response: EPA is concerned that out-of-kind wetland replacement is being proposed here, although EPA does accept out-of-kind replacement in some instances (e.g., when the adverse impacts are unavoidable and in-kind replacement is either not feasible or desirable). More importantly, however, in this instance EPA believes that the adverse impacts are avoidable, making consideration of mitigation inappropriate altogether.

Comment: Substituting the artificial emergent and shrub wetlands for the wooded wetlands at Sweedens Swamp is environmentally sound because forested wetlands are common while emergent ones are not.

Response: EPA is aware that forested wetlands are a more common type in New England but we do not agree that this provides sufficient justification for trading off these wetlands for artificial ones when the impacts could be avoided altogether. The relative scarcity of a wetland type may be a factor in deciding what type of wetland to attempt to create when the impacts are unavoidable.