



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

MAY 26 1994

Honorable John H. Zirschky  
Acting Assistant Secretary (Civil Works)  
Department of the Army  
Washington, DC 20310-0130

OFFICE OF  
WATER

Dear Dr. Zirschky:

In accordance with the provisions of the 1992 Memorandum of Agreement (MOA) between the U.S. Environmental Protection Agency (EPA) and the Department of the Army, under Section 404(q) of the Clean Water Act, I am requesting your review of a permit decision by the U.S. Army Corps of Engineers, Alaska District (District). The District has decided to issue a Section 404 permit (No. 4-930661, Klatt Bog 22) to Mr. Mike Cusack for the construction of a residential subdivision in Anchorage, Alaska (see Figure 1). EPA Region X received the draft Department of the Army Permit and the draft Permit Evaluation and Decision Document on April 22, 1994. The proposed permit would authorize the excavation and backfill of 15 acres of waters of the United States for the construction of a residential subdivision causing direct, secondary, and cumulative adverse impacts to palustrine wetlands. After a thorough review of available information, EPA has determined that the case warrants elevation in accordance with the criteria in Part IV of the MOA.

Aquatic Resources of National Importance

The proposed discharge of fill material into wetlands associated with the development of the proposed residential subdivision would result in substantial and unacceptable adverse effects to Klatt Bog, an aquatic resource of national importance. During the past 25 years, extensive areas of Klatt Bog wetlands have been destroyed by commercial, residential, industrial, and infrastructure development. A patterned peat bog complex, Klatt Bog historically encompassed over 1,500 acres, including more than 200 acres of patterned ground<sup>1</sup>. The patterned ground area is surrounded by forest, woodland and scrub vegetative communities. The vegetation that dominates the project sites' bog community consists of black spruce, sweet gale, labrador tea, dwarf birch, and cinquefoil with a groundcover of sphagnum moss (Table 1). Today, approximately 1,000 acres of the original Bog remain, scattered into 32 separate parcels (see Figure 2). The largest contiguous parcel is the 400 acre Bog core which includes most of the Bog's remaining patterned ground.

---

<sup>1</sup> Patterned ground, also known as string bog or strangmoor, is a feature that sometimes occurs in large peatlands. It is characterized as an area having a concave cross-section that functions as a broad shallow drainage channel marked by wet hollows interspersed with narrow bog ridges oriented perpendicular to water flow (Hogan and Tande, 1983).

Figure 1

# Vicinity Map

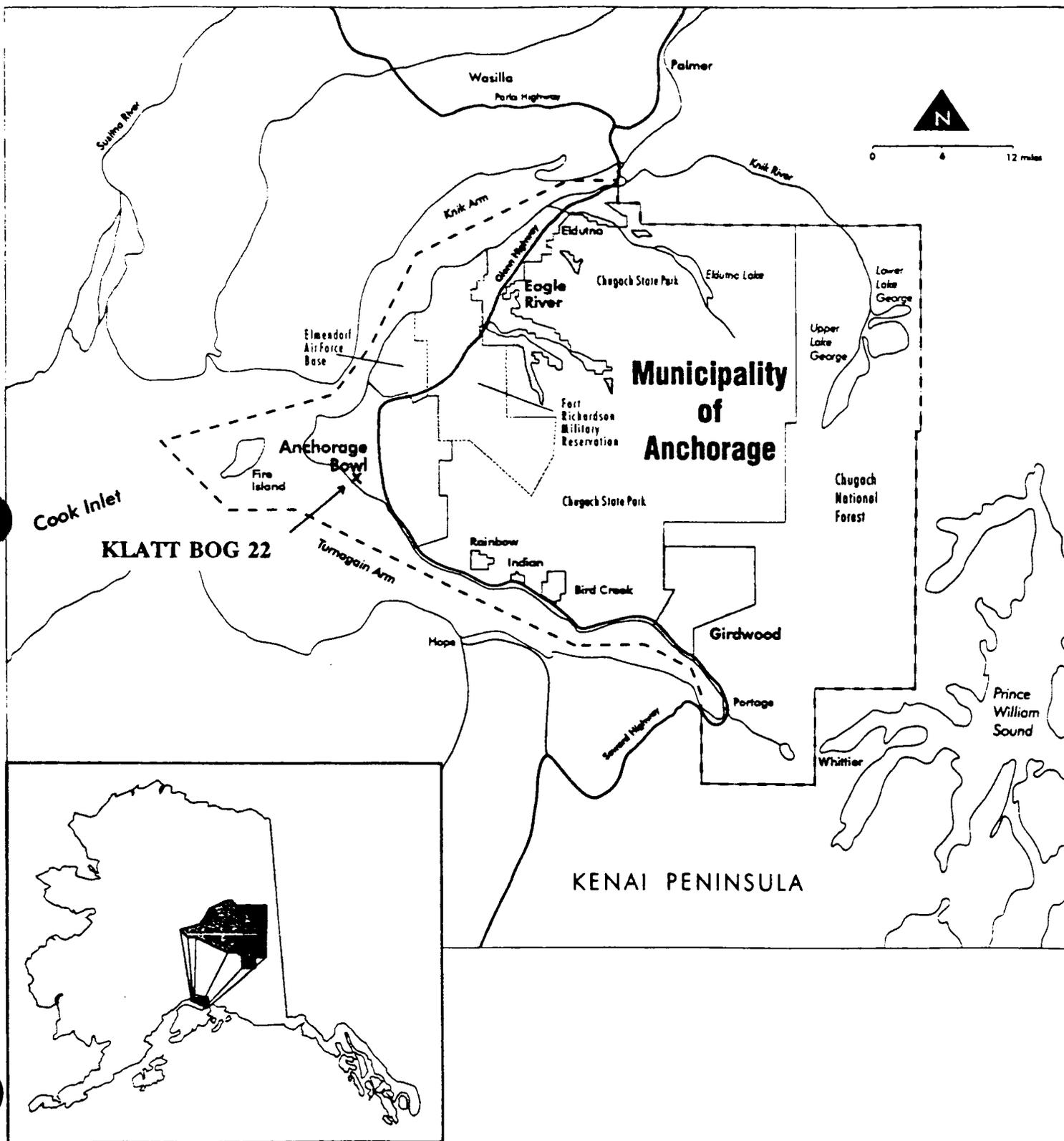


Table 1: Plant species found at Klatt Bog, Anchorage, Alaska.

TREES

Paper Birch	<i>Betula papyrifera</i>
Black Spruce	<i>Picea mariana</i>

SHRUBS

Thin-leaf Alder	<i>Alnus tenuifolia</i>
Bog Rosemary	<i>Andromeda polifolia</i>
Tundra Dwarf Birch	<i>Betula glandulosa</i>
Swamp Birch	<i>Betula nana</i>
Paper Birch	<i>Betula papyrifera</i>
Leatherleaf	<i>Chamaedaphne calyculata</i>
Black Crowberry	<i>Empetrum nigrum</i>
Narrow-leaf Labrador Tea	<i>Ledum decumbens</i>
Greenland Labrador Tea	<i>Ledum groenlandicum</i>
Sweetgale	<i>Myrica gale</i>
Black Spruce	<i>Picea mariana</i>
Shrubby Cinquefoil	<i>Potentilla fruticosa</i>
Prickly Rose	<i>Rosa acicularis</i>
Small Cranberry	<i>Vaccinium oxycoccus</i>
Bog Blueberry	<i>Vaccinium uliginosum</i>
Mountain Cranberry	<i>Vaccinium vitis-idaea</i>

FORBS

Rough Bentgrass	<i>Agrostis scabra</i>
* Rush Aster	<i>Aster junciformis</i>
Bluejoint Reedgrass	<i>Calamagrostis canadensis</i>
Water Sedge	<i>Carex aquatilis</i>
Wooly-fruit Sedge	<i>Carex lasioscarpa</i>
Mud Sedge	<i>Carex limosa</i>
Livid Sedge	<i>Carex livida</i>
* sedge	<i>Carex oederi</i>
* Coastal Stellate Sedge	<i>Carex phyllomanica</i>
* Loose-flowered Sedge	<i>Carex rariflora</i>
Canada Bunchberry	<i>Cornus canadensis</i>
* English Sundew	<i>Drosera anglica</i>
Field Horsetail	<i>Equisetum arvense</i>
Water Horsetail	<i>Equisetum fluviatile</i>
Alpine Cottongrass	<i>Eriophorum alpinum</i>
* Green-keel Cottongrass	<i>Eriophorum viridi-carinatum</i>
Beach-head Iris	<i>Iris setosa</i>
Moor Rush	<i>Juncus stygius</i>
Buckbean	<i>Menyanthes trifoliata</i>
Cloudberry	<i>Rubus chamaemorus</i>
* Menzies' Burnet	<i>Sanguisorba menziesii</i>
Tufted Bulrush	<i>Scirpus caespitosus</i>
* Small Burreed	<i>Sparganium minimum</i>
Sticky False Asphodel	<i>Tofieldia glutinosa</i>
European Starflower	<i>Trientalis europaea</i>
Seaside Arrowgrass	<i>Triglochin maritimum</i>

BRYOPHYTES

Feathermoss  
Fen moss  
Lichens  
Sphagnum moss

\* Plants listed in 1994 AWMP as either significant to the Municipality of Anchorage or of high public interest (AWMP, 1994 Draft)

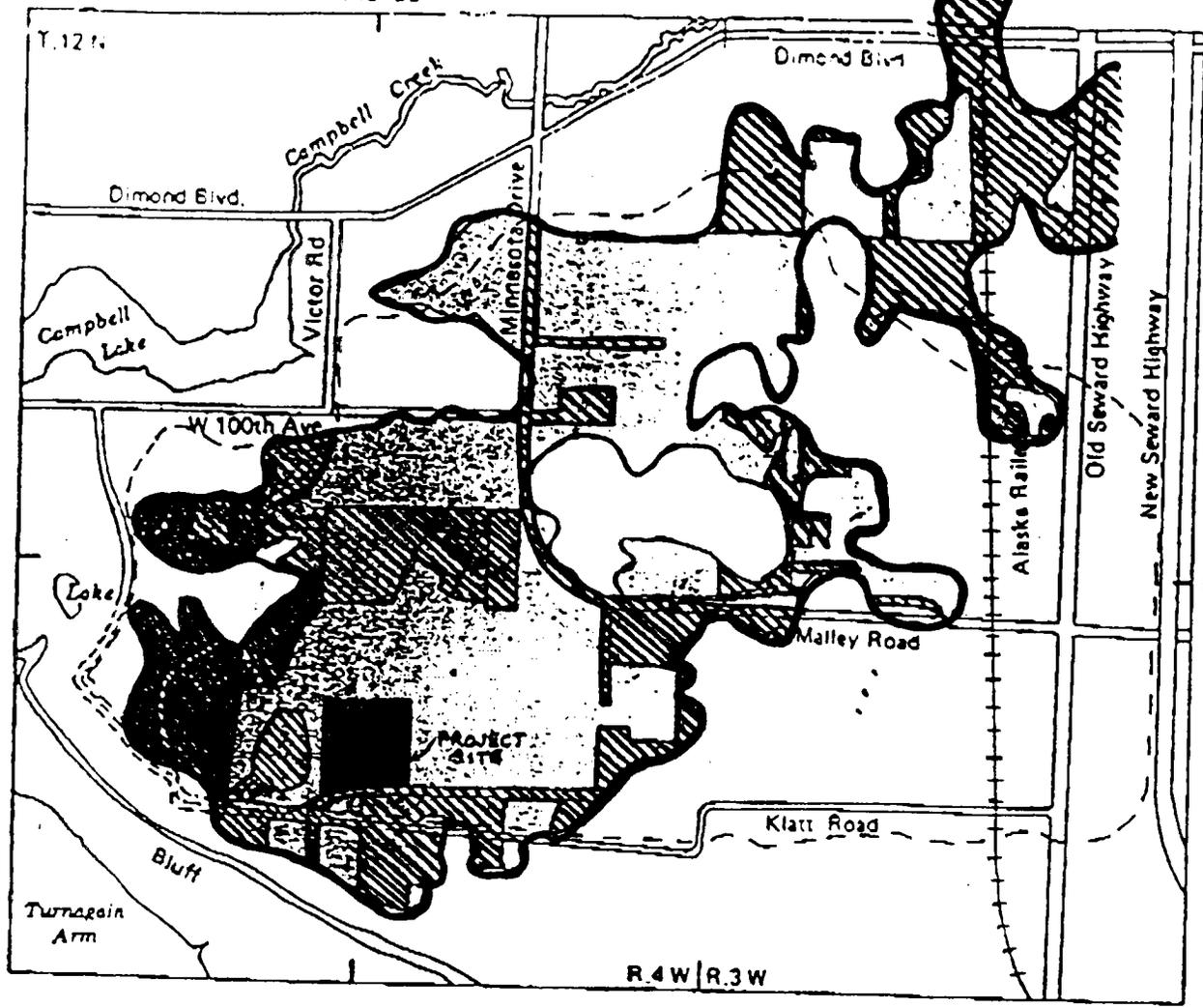


Figure 2. Development within Klatt Bog.

-  Klatt Bog
-  Developed Areas

EPA concurs with the District's statement (Notice of Intent - April 22, 1994) that the remaining core of Klatt Bog "provides valuable habitat for a variety of species and that this unique area is worthy of a high degree of protection from degradation." Klatt Bog is the largest of only three major patterned ground bogs which remain in Anchorage<sup>2</sup>. It ranks within the top 15 percent of the most valuable wetlands assessed in the 1994 Draft Anchorage Wetlands Management Plan (AWMP)<sup>3,4</sup>. Various analyses of the functions and values of Anchorage wetlands (Fugro Northwest, Inc., 1980a; U.S. Fish and Wildlife Service, 1983; AWMP, 1994 Draft) have found the Municipality's patterned ground bogs to be among the area's highest value wetlands, having high biological values for protected species or habitats, and as unique ecosystems. The U.S. Fish and Wildlife Service (FWS) (Hogan and Tande, 1983) and the Municipality (Municipality, 1985) consider Klatt Bog's patterned ground area to be critical waterbird habitat. According to FWS, patterned ground bogs, including Klatt Bog, had the greatest bird species richness (particularly during the breeding season) among all wetlands studied in the Anchorage Bowl. Furthermore, waterfowl were more abundant and diverse on patterned ground bogs than on any other type of wetland surveyed within the Anchorage Bowl. Finally, of the assessed habitat values and the relative level of species use, the Bog core, which includes the proposed project site, had the highest value of any of the remaining portions of the Bog (AWMP, 1994 Draft).

As shown in Table 2, Klatt Bog provides nesting, feeding, rearing, and staging habitat for 53 species of migratory, and five species of resident, birds (Hogan and Tande, 1983; Berg, 1988). Many of these species migrate from as far away as South America and at least 15 bird species breed in Klatt Bog. Seven of the wetland dependent bird species are experiencing a decline in their local populations (FWS, 1993a) and the Municipality considers nine bird species to be locally significant (AWMP, 1994 Draft). The reason for this locally significant designation is that these species are rare, limited, or unique in the upper Cook Inlet region; have limited suitable habitat; are extremely

---

<sup>2</sup> Connor's Bog and Turnagain Bog are the other two major patterned ground bogs in Anchorage.

<sup>3</sup> In 1991, the Municipality of Anchorage (Municipality), in conjunction with Federal and State resource agencies (including the Corps and EPA), devised the Anchorage Wetlands Assessment Methodology to assess and compare the wetlands within the Municipality. Of the 179 sites assessed within the Anchorage Bowl (approximately 100 square miles), the remaining core of Klatt Bog, which includes the proposed project site, had the 22nd highest overall score. This area's assessed habitat value and relative level of species use both ranked in the top 10% of the Anchorage sites.

<sup>4</sup> On April 20, 1982, the Anchorage Assembly adopted the AWMP as part of the Anchorage Coastal Zone Management Plan and the Anchorage Comprehensive Plan. The AWMP was prepared by the Municipality and identifies those wetlands that provide important ecological and hydrological functions. These areas are referred as "conservation" or "preservation" wetlands. The AWMP also identifies "developable" wetlands having lesser ecological and hydrologic functions. At present, the AWMP is undergoing revisions (1994 Draft AWMP). The 1982 AWMP designated Klatt Bog, depending on specific location, as either "conservation" or "developable" wetlands. The proposed development site is within an area designated as "conservation"



Table 2 (continued): Bird species observed in 1982 and 1988 at Klatt Bog, Anchorage, Alaska (Hogan and Tande, 1983; Berg, 1988).

		SPRING MIGRATION		BREEDING		FALL MIGRATION		ALL SURVEYS	
		1982	1988	1982	1988	1982	1988	1982	1988
<b>PASSERINES</b>									
hairy woodpecker									
northern flicker	1	No	No	No	Yes	No	No	No	Yes
olive-sided flycatcher	1,2	No	No	Yes	No	Yes	No	Yes	No
alder flycatcher	1,2	No	No	No	Yes	Yes	No	Yes	Yes
Say's phoebe	1	No	No	Yes	No	No	No	Yes	No
tree swallow	1	Yes	No	Yes	Yes	No	No	Yes	Yes
violet-green swallow	1	No	No	No	Yes	No	No	No	Yes
bank swallow	1,2	No	No	No	Yes	No	No	No	Yes
cliff swallow	1,2	No	No	No	No	No	Yes	No	Yes
black-billed magpie		No	No	No	No	Yes	No	Yes	No
northwestern crow		No	No	Yes	Yes	No	Yes	Yes	Yes
common raven		No	No	No	No	No	No	No	Yes
black-capped chickadee		No	No	No	Yes	No	No	No	Yes
ruby-crowned kinglet	1	No	Yes	No	Yes	No	No	No	Yes
Swainson's thrush	1,2	No	No	No	Yes	No	No	No	Yes
hermit thrush	1	No	No	No	Yes	No	No	No	Yes
American robin	1,3	No	Yes	Yes	Yes	No	Yes	No	Yes
water pipit	1	No	No	No	No	Yes	No	No	Yes
Bohemian waxwing	1	No	No	Yes	No	No	No	No	Yes
orange-crowned warbler	1	No	No	No	Yes	No	No	No	Yes
yellow-rumped warbler	1	No	No	Yes	Yes	No	No	Yes	Yes
Wilson's warbler	1	No	No	No	Yes	No	No	No	No
American tree sparrow	1,6	No	No	Yes	No	No	Yes	Yes	Yes
Savannah sparrow	1,3	No	No	Yes	Yes	No	No	Yes	Yes
song sparrow	1,6	No	No	Yes	Yes	No	Yes	No	Yes
Lincoln's sparrow	1	No	No	No	Yes	No	No	No	Yes
golden-crowned sparrow	1	No	No	Yes	Yes	Yes	Yes	Yes	Yes
white-crowned sparrow	1,3	No	No	Yes	Yes	Yes	Yes	Yes	Yes
dark-eyed junco	1	No	No	Yes	Yes	No	Yes	Yes	Yes
rusty blackbird	1,3	No	No	Yes	Yes	No	No	Yes	Yes
white-winged crossbill	1	No	No	No	Yes	No	No	No	Yes
pine siskin	1	No	No	Yes	No	No	No	Yes	No
common redpoll	1	No	Yes	No	Yes	Yes	Yes	Yes	Yes

1. Migratory bird species.
2. Birds that migrate as far away as South America.
3. Bird species documented to breed in Klatt Bog (Hogan and Tande, 1983)
4. Wetland dependant bird species.
5. Wetland dependant bird species in decline in Anchorage (FWS, 1993a).
6. Bird species designated to be locally significant by the Municipality of Anchorage (AWMP, 1994 Draft).

sensitive to disturbance; and/or are experiencing local or regional populations declines. Three bird species designated as locally significant were observed at Klatt Bog in the 1982 bird survey, but not in the 1988 survey. Klatt Bog also provides habitat for moose, red fox, snowshoe hare, and other small mammals (Resource Analysts, 1988; District Draft Decision Document, 1994). Klatt Bog also serves as an important stormwater storage area, and it conveys stormwater runoff from developed areas to the east (AWMP, 1994 Draft). In a hydrologic study (Fugro Northwest, Inc., 1980b), peat material in Klatt Bog was found to have a flood storage capacity of three million gallons of water per acre. In addition, this study concluded that the most important hydrologic function of the Bog was stormwater storage and the capacity for flood hazard reduction.

Between 1950 and 1990, approximately 11,000 acres or 64% of freshwater wetlands in the Anchorage Bowl were destroyed<sup>5</sup> (FWS, 1993a). As a result, Klatt Bog is one of the few relatively large contiguous tracts of wetland wildlife habitat remaining in Anchorage (FWS, 1993b). In recognition of its importance as wildlife habitat, concerted efforts to preserve the ecological values of the Bog began with its designation as a Preservation Environment in the 1979 Anchorage Coastal Management Plan<sup>6</sup>.

In 1982, the Municipality adopted the Anchorage Wetlands Management Plan (AWMP, 1982). The plan designated the southwest half of the Bog, in which the proposed project site is located, as a "conservation" wetland. The goal for "conservation" wetlands is management "in such a way as to conserve their natural functions and values to the maximum extent practicable while permitting uses to occur on wetland fringes and less critical wetland areas." The AWMP also noted that the natural character of "conservation" wetlands should be maintained as much as possible.

### Substantial and Unacceptable Adverse Impacts

#### Direct Impacts

The proposed project would directly destroy 15 acres of Klatt Bog's remaining core wetlands by excavation of peat material and backfilling with gravel for home and road construction. The proposed project would eliminate wetlands which provide

---

<sup>5</sup> FWS determined the changes in the acreage of different aquatic ecosystems within the Anchorage Bowl between 1950 and 1990. In addition to freshwater wetlands the study also examined lacustrine, riverine, and palustrine open water systems as well as estuarine wetlands. In 1950, there were approximately 17,000 acres of freshwater wetlands in the Anchorage Bowl. In 1990, approximately 6,000 acres or 36% remained.

<sup>6</sup> As defined in the 1979 Anchorage Coastal Management Plan, Preservation Environment is a designation for lands and waters imperative for the survival and propagation of varied wildlife and fisheries resources. They include breeding and rearing areas, overwintering areas, and historic migration routes. Birds of particular concern include eagles and other rare birds of prey, waterbirds, and upland birds.

nesting, rearing, and cover habitat for a variety of waterbirds. These functions arise not only from the project site's proximity to the Bog's patterned ground, but also from the presence of additional ponded areas within the project site itself. Many of the waterbirds which utilize the project site are already experiencing population declines related to habitat loss. The project would also cause a loss of important nesting and hunting habitat for raptors, whose populations are declining not only locally, but throughout their range. Habitat for their primary food sources, (i.e., small mammals and passerine birds), would also be lost as a direct result of the proposed project. The incremental loss of passerine habitat is also of importance because of the regional rarity of two of Klatt Bog's passerine species (song sparrow and American tree sparrow). The project would also result in the direct loss of habitat for such mammals as moose, red fox, and snowshoe hare.

To compensate for the direct loss of wetlands and open water areas (previously unidentified) mitigation in the form of two one-half acre open water ponds would be created. EPA is concerned that this mitigation would not replace lost functions and values because the mitigation would replace 15 acres of wetland complex [i.e., forested, scrub-shrub, emergent, open water] with one acre of open water ponds. EPA recognizes that the proposed location for the mitigation ponds (nearby the Bog's main ditches) requires an impermeable liner to prevent outflow of water from these ponds. However, the location of the ponds near the main ditches and the placement of proposed liners would also prevent groundwater inflow as a source of hydrology. Therefore, the ponds would be completely dependent on precipitation and surface runoff as the sole source of hydrology. EPA is concerned that in years of low precipitation, these ponds would most likely be dry. Should the mitigation ponds retain water, they would still be subjected to disturbance from the subdivision that would render the sites as undesirable wildlife habitat for sensitive species. Overall, EPA believes that the proposed mitigation would result in a net loss of wetland functions and values.

### Secondary Impacts

The proposed project would eliminate nearly all of the scrub-shrub/forested buffer that currently lies between the critical waterbird habitat in the northern portion of the applicant's property and the road and subdivision to the south. Many of the Bog's important bird species are extremely sensitive to human disturbance (e.g. northern harrier, short-eared owl, sandhill crane, solitary sandpiper, Hudsonian godwit, short-billed dowitcher, red-necked phalarope), (AWMP, 1994 Draft). The proximity of the development to the critical habitat area would cause disturbance impacts to important waterbirds. Land conversion adjacent to wetlands has been documented to significantly reduce wetland functions for migratory waterfowl, despite the fact that wetlands remain (Washington Department of Wildlife, 1992). Disturbance has been documented to negatively affect such activities as nesting (Flemming et al., 1988), brood rearing (Yalden and Yalden, 1989; Fernandez, 1993), resting (Burger, 1981; Pfister et al., 1992) and feeding (Owens, 1977; Burger, 1981; Burger and Gochfeld, 1993).

The District acknowledges that the addition of 88 housing units with associated disturbances from human activity and pets would result in secondary impacts to wildlife. Disturbance impacts related to land conversion and increased human and pet presence in the Bog is likely to reduce waterbird use of the critical habitat area, particularly by the more sensitive species. Many of these birds are ground nesting, which make them extremely vulnerable to disturbances by human activity and pets. The fact that many of the sensitive species are already experiencing population declines underscores the importance of protecting their existing habitat. In an attempt to reduce or eliminate the disturbance (e.g., human/pet access) to wildlife by the presence of the development, a berm and eight foot fence have been proposed on three sides of the subdivision. EPA believes that the berm and fence would be only minimally effective in reducing access, and therefore addressing disturbance, to adjacent wetlands, and in any case, the addition of 88 homes in the core of the Bog would increase the incidence of human and pet disturbance.

### Cumulative Impacts

Anchorage has lost almost two-thirds of its freshwater wetlands over the last 40 years and Klatt Bog has been severely affected in the last 25 years. Urban development has directly eliminated approximately one-third of the Bog's acreage, and historic draining has threatened an even greater area. These impacts have occurred not only on the Bog's fringes, but also in its critical patterned ground area. According to a consultant's report (Resource Analysts, 1988), cumulative impacts from infrastructure and development have altered the Bog's fringes and hydrologic regime resulting in a drying trend. Important to the hydrologic regime of Klatt Bog is input of surface water from the surrounding watershed. The applicant has proposed a perimeter dike around three sides of the subdivision. Although this dike may prevent some dewatering of the Bog by impeding subsurface and surface flow from the remaining Bog into the subdivision, it would also impede the existing natural drainage in those areas of the proposed subdivision that currently flow into the Bog's core. By diverting this drainage away from the Bog, the project would further decrease the amount of water into the Bog and exacerbate the drying trend.

Hogan and Tande (1983) observed 38 bird species during their field surveys of Klatt Bog (34 species observed during breeding season). In a 1988 follow-up study of Klatt Bog (Berg, 1988), 45 species were documented (41 species observed during the breeding season). Although species richness appears stable, FWS noted a difference in the composition of those species. Specifically, there was an increase in the number of passerines in the 1988 survey (see Table 3). FWS indicated that the reduction in waterbird observations and increase in passerines appeared to be the result of less standing water (preferred by waterbirds) and an increase in woody plant species (preferred passerine habitat) (FWS, 1993b). FWS notes that Anchorage area populations of seven wetland dependent birds known to use the Bog, are already declining due to habitat loss and degradation. Four of these species as well as three

**Table 3: Changes in bird species observed between 1982 and 1988 in Klatt Bog, AK.**

	ALL SURVEYS	
	1982	1988
<b>WATERFOWL</b>		
American wigeon	Yes	No
northern shoveler	No	Yes
<b>RAPTORS</b>		
bald eagle	Yes	No
short-eared owl	Yes	No
<b>WADING BIRDS/SHORE BIRDS</b>		
whimbrel	Yes	No
Hudsonian godwit	Yes	No
pectoral sandpiper	Yes	No
red-necked phalarope	Yes	No
semipalmated plover	No	Yes
spotted sandpiper	No	Yes
solitary sandpiper	No	Yes
<b>GULLS</b>		
glaucous-winged gull	No	Yes
<b>PASSERINES</b>		
Bohemian waxwing	Yes	No
northwestern crow	Yes	No
American tree sparrow	Yes	No
northern flicker	Yes	No
Say's phoebe	Yes	No
pine siskin	Yes	No
orange-crowned warbler	No	Yes
bank swallow	No	Yes
black-capped chickadee	No	Yes
Swainson's thrush	No	Yes
hairy woodpecker	No	Yes
Lincoln's sparrow	No	Yes
black-billed magpie	No	Yes
golden-crowned sparrow	No	Yes
cliff swallow	No	Yes
ruby-crowned kinglet	No	Yes
water pipit	No	Yes
Wilson's warbler	No	Yes
violet-green swallow	No	Yes
hermit thrush	No	Yes
white-winged crossbill	No	Yes

others are designated locally significant due to population declines, habitat loss and sensitivity to disturbance (AWMP, 1994 Draft). Based on FWS bird surveys conducted in 1982 and 1988, three locally significant species, including two waterbird species, were observed in the 1982 surveys but not in the 1988 survey. These surveys suggest that the cumulative loss of wetland habitat, increased human disturbance, and hydrologic impacts associated with continuing development encroaching on the Bog, have caused important changes in bird use, particularly waterbird use, in Klatt Bog and that the proposed project may further contribute to this trend.

### Analysis of Practicable Alternatives

Section 230.10(a) of the Section 404(b)(1) Guidelines (Guidelines) requires that no permit shall be issued if there is a practicable alternative to the proposed discharge that would have less adverse impact to the aquatic environment. In addition, in circumstances where the proposed discharge does not require siting in, or access to wetlands to fulfill the basic project purpose<sup>7</sup> (i.e., is not water dependent), the Guidelines presume that practicable, less damaging alternatives are available unless clearly demonstrated otherwise.

#### A. Project Purpose

A critical first step in the analysis of practicable alternatives is identification of basic project purpose. Basic project purpose clarifies the fundamental objective of the proposed discharge and is important in establishing the scope of potential alternatives that may be available to satisfy these objectives. The basic project purpose can neither be identified so broadly as to make the analysis of alternatives inappropriately and unmanageably expansive, nor so narrow as to unjustifiably constrain the consideration of alternatives that would otherwise be available.

The District's Decision Document provides conflicting characterizations of the project purpose in this case. On page one of the Decision Document, the District states that "the purpose of the excavation and fill is to provide a suitable foundation for the construction of a residential subdivision for area residents." The District's Decision Document later characterizes the overall project purpose as "to derive reasonable profit from the development of a single family cluster subdivision." The District has significantly narrowed the project purpose from "residential subdivision" to "reasonably profitable single family subdivision", that in turn constrains the scope of potentially practicable alternatives available to satisfy the project purpose. The District's justification for the identified project purpose is scant and appears to defer almost

---

<sup>7</sup> For example, residential housing has generally been considered by EPA and the Corps to be a non-water dependent activity.

exclusively to the objectives identified by the applicant without an independent evaluation by the District regarding consistency of the applicant's characterized purpose with requirements in the Guidelines and the Corps own policies<sup>8</sup>.

I would emphasize that EPA supports cost and profitability considerations in evaluating the practicability of potential alternatives. The Preamble to the Guidelines explicitly recognizes that only those alternatives that are "reasonable in terms of the overall scope/cost of the proposed project" should be considered. The Guidelines further recognize that if a proposed alternative "is unreasonably expensive to the applicant, the alternative is not practicable." While a determination by the District that a particular alternative is too costly, or would preclude the return of a reasonable profit, is fully consistent with the practicability analysis established in the Guidelines, such a conclusion involves an independent evaluation by the District of information provided by the applicant and other relevant considerations. As General Kelly has written in guidance<sup>9</sup> to the Corps on this issue, "(w)hile the Corps should consider the views of the applicant regarding the project's purpose and the existence (or lack of) practicable alternatives, the Corps must determine and evaluate these matters itself, with no control or direction from the applicant, and without undue deference to the applicant's wishes."

#### B. Scope of Review of Practicable Alternatives

EPA is concerned that, in reliance on an inappropriately narrow project purpose, the District has unjustifiably constrained the scope of potential practicable alternatives being considered in this case. The District appears to have developed criteria based on information provided by the applicant with little or no independent analysis of the validity of the data, which favors the selection of the applicant's proposal and restricts or even excludes consideration of alternative sites that may otherwise be considered practicable. While we agree that such factors as cost and profitability are relevant considerations in determining practicability, the District reaches conclusions based on these factors with little documentation or analysis to support them. We are particularly concerned that applying the District's approach in evaluating potential alternatives as they did in this case to future cases would, as a general matter, lead almost inevitably to the selection of alternatives that involve the loss or degradation of wetlands.

---

<sup>8</sup> HQUSACE Findings/Guidance: Plantation Landing (April 21, 1989); Hartz Mountain (July 26, 1989); and, Old Cutler Bay (September 13, 1990).

<sup>9</sup> Corps guidance regarding permit elevation, Plantation Landing Resort, Inc. from Brigadier General Patrick J. Kelly, Director of Civil Works to Commander at U.S. Army Engineer District, New Orleans dated April 21, 1989.

### Cost/Profitability

The District, in what appears to be exclusive reliance on conclusions reached by the applicant, determined that "parcel cost" of potential alternative sites in excess of \$0.30 per square foot render the alternative too costly because "cost in excess of this figure would not allow the applicant to fulfill his over all project purpose to derive reasonable profit..."<sup>10</sup> The District provides no clarification regarding what is determined to be "reasonable profit." The District considered fifteen alternatives and rejected seven because each exceeded the \$0.30 per square foot threshold and would therefore not be considered practicable. Because nearly half the alternatives considered by the District were not determined to be practicable based on cost, it is critical to the analysis to clearly establish the basis for the \$0.30 per square foot cost threshold.

### Existing Infrastructure

The District also relied upon the applicant's conclusion that a particular alternative was not practicable if the site did not have an existing access or was not "nearby" utilities. As discussed above, fifteen alternative locations were considered by the District and seven were rejected on the basis of cost/profitability. Of the remaining seven, all were rejected, at least in part, based on "poor" access and no utilities. The District neither characterized access/utilities limitations nor addresses opportunities to provide access/utilities to the alternative sites rejected on this basis. Installation of roads and utilities is a legitimate cost consideration that is frequently associated with residential construction and may, in certain circumstances, be prohibitively expensive. However, we see no basis in the District's analysis to establish lack of this infrastructure as a standard for automatic rejection of a site as not practicable. The District's record for this case indicates that the project site itself currently lacks utilities. In addition, several potential sites that were eliminated are, in fact, located adjacent to, or in the vicinity of, existing roads and subdivision. Justification for determining that a particular site is not practicable because lack of existing infrastructure would seem particularly relevant in those parcels available at less than the \$0.30 per square foot threshold established by the applicant.

### Marketability

In their review of potential alternatives, the final criterion considered by the District was marketability. The District recognizes that the applicant's evaluation of marketability was based on "market research to demonstrate whether or not single family cluster houses in the price range \$135,000 to \$165,000 would be readily purchased" and consideration of the "length of time it would take before all the parcels were sold and developed." There is no additional clarification of the marketability considerations that

---

<sup>10</sup> The applicant concluded that a cost in excess of \$0.42 per square foot would not allow the applicant to "break even."

contribute to elimination of seven of the fifteen alternatives being considered by the District.

We are concerned that the marketability criterion applied in the District's analysis and used importantly as the basis for eliminating alternatives appears to defer exclusively to the applicant's conclusions and without any evaluation of its economic underpinning. In addition, although higher density residential projects (i.e., townhouses, apartments) were considered by the applicant for the proposed site, these alternatives were rejected for reasons such as zoning restrictions or cost of development. EPA is concerned that these type developments or lower density developments may, in fact, be practicable alternatives at other sites in Anchorage. As noted by the District, it may be practicable to obtain a zoning variance to build higher density housing. The Southport subdivision consisting of a broad range of housing currently being developed nearby the proposed site appears to illustrate the marketability of other forms of residential development in Anchorage.

In summary, EPA found little basis in the District's Decision Document to support the conclusion that the proposed Klatt Bog 22 project represents the least damaging practicable alternative. This concern is magnified by the fact that the District's analysis appears to be inconsistent with Corps national policies clarified as a result of previous elevations. EPA understands that avoidance of wetland impacts in Alaska can be difficult and certain flexibility is appropriate in conducting the evaluation of potential alternatives. Notwithstanding this flexibility and the relative difficulty of avoiding wetland impacts in Alaska, the District has not satisfied the fundamental requirements of Section 230.10(a) of the Guidelines and has not demonstrated that the loss of these fifteen acres, an aquatic resource of national importance, is in fact unavoidable.

### Conclusion

For the reasons elaborated above, we are concerned that the discharges that would be authorized under the proposed permit to construct a residential housing development in Anchorage, Alaska have not been demonstrated to comply with the requirements of the Section 404(b)(1) Guidelines. The record clearly indicates that impacts associated with the discharge of fill material would result in substantial and unacceptable adverse impacts to wetlands in Klatt Bog, an aquatic resource of national importance. To underscore the importance of Klatt Bog, various planning and conservation efforts are in place which emphasize the values and the need to protect this area. The record also indicates that the District has inappropriately accepted a narrow project purpose and has unjustifiably constrained the scope of potential practicable alternatives. In addition, The District appears to have developed criteria based on

project purpose and practicability considerations which inappropriately restrict or eliminate consideration of alternative sites. Finally, in light of the valuable and unique resources at risk, the record does not support the District's conclusion that the project represents the least damaging practicable alternative to fulfill the project purpose. Therefore, EPA requests that these issues be further reviewed by the District based on guidance developed by Corps Headquarters.

I hope that you will carefully review the record associated with the proposed permit decision, and look forward to your response to our concerns. If my staff can provide assistance during your evaluation of this request, please direct questions to Mr. Gregory E. Peck, of the Wetlands Division, at (202) 260-8794.

Sincerely,

A handwritten signature in cursive script that reads "Bob Perciasepe".

Robert Perciasepe  
Assistant Administrator

## REFERENCES CITED

AWMP, 1982. Anchorage Wetlands Management Plan. Department of Community Planning and Development, Municipality of Anchorage.

AWMP, 1994 Draft. Anchorage Wetlands Management Plan Revision: Concept Approved Draft. Department of Community Planning and Development, Municipality of Anchorage. 143 pp.

Berg, C, 1988. Bird use of Anchorage wetlands, 1988. U.S. Fish and Wildlife Service, Anchorage Field Office, Alaska. unpublished report. 80 pp.

Burger, J., 1981. The effect of human activity on birds at a coastal bay. *Biol. Conserv.* 21:231-241.

Burger, J. and M. Gochfeld, 1993. Human activity influence and diurnal and nocturnal foraging of sanderlings. *Condor* 93:259-265.

Fernandez, C., 1993. Human disturbance affects parental care of marsh harriers and nutritional status of nestlings. *J. Wildl. Manage.* 57(3):602-608.

Flemming, S. P., R. D. Chiasson, P. C. Smith, P. J. Austin-Smith, and R. P. Bancroft, 1988. Piping plover status in Nova Scotia related to its reproductive and behavioral responses to human disturbance. *J. Field Ornith.* 59(4):321-330.

Fugro Northwest, Inc., 1980a. Anchorage Wetlands Study: Resource Analysis. (draft) 51 pp.

Fugro Northwest, Inc., 1980b. Municipality of Anchorage: Wetlands Hydrologic Study. (preliminary) 36 pp.

FWS, 1993. Anchorage wetlands trend study (1950 to 1990). U.S. Fish and Wildlife Service, Anchorage Field Office, Alaska. 59 pp.

FWS, 1993. Letter dated November 8, 1993 from Ann G. Rappoport, Field Supervisor (FWS) to Colonel John W. Pierce, District Engineer, (Alaska District Corps of Engineers).

Hogan, M. H. and G. F. and Tande, 1983. Anchorage wetlands study: special report on Connors Bog and Klatt Bog. U.S. Fish and Wildlife Service, Special Studies, Anchorage, Alaska. 91 pp.

Municipality of Anchorage, 1985. Letter dated October 28, 1985 from Bill Luria, Director of Community Planning to Robert Oja, Chief Regulatory Branch, (Alaska District Corps of Engineers).

Owens, N. W., 1977. Responses of wintering brent geese to human disturbance. *J. Wildfowl* 28:5-14.

Pfister, C., B. S. Harrington, and M. Lavine, 1992. The impacts of human disturbance on shorebirds at a migration staging area. *J. Biol. Conserv.* 60:115-126.

Resource Analysts, 1988. Potential wetland mitigation sites within the Municipality of Anchorage. 143 pp.

Washington Department of Wildlife, 1992. Buffer needs of wetland wildlife. Habitat Management Division (WDOW).



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY  
CIVIL WORKS  
108 ARMY PENTAGON  
WASHINGTON DC 20310-0108



REPLY TO  
ATTENTION OF

27 JUN 1994

Honorable Robert Perciasepe  
Assistant Administrator for Water  
Environmental Protection Agency  
Washington, D. C. 20460

Dear Mr. Perciasepe:

This is in response to your letter of May 26, 1994, in which you requested our review of issues related to a Department of the Army permit being considered by the Army Corps of Engineers Alaska District. The permit would allow Mr. Mike Cusack to construct a residential development within 15 acres of wetlands associated with Klatt Bog in Anchorage, Alaska. The project would result in the excavation of 105,000 cubic yards of wetland substrate and the backfilling with approximately 119,500 cubic yards of fill material.

Your request for elevation was made pursuant to Part IV of the 1992 Section 404(q) Memorandum of Agreement (MOA) between the Department of the Army and the Environmental Protection Agency (EPA). EPA's concerns were primarily associated with the direct and secondary impacts to the Klatt Bog wetland system and the alternatives analysis conducted by the district. Part IV of the MOA establishes procedures for elevation of specific permit cases. To satisfy the explicit requirements for elevation, the permit case must pass two tests: 1) the proposed project must involve an aquatic resource of national importance (ARNI); and 2) the project must result in substantial and unacceptable impacts to the ARNI.

We have carefully reviewed the concerns raised in your letter, the Alaska District's decision documents and draft permit. Mr. Michael Davis, Assistant for Regulatory Affairs, also met personally with Corps field staff. EPA staff declined an invitation to this meeting. Based on our evaluation, we believe that portions of Klatt Bog do qualify as an ARNI. Specifically, we believe that the patterned ground or "core" of Klatt Bog qualifies as an ARNI. We do not believe, however, that the actual project development site involves an ARNI. We do agree that the proposed project could potentially impact the ARNI portion of Klatt Bog through hydrologic

Encl

alterations that may contribute to further drying of an already impacted wetland system. The potential for such hydrological alterations and subsequent effects on the ARNI portion of the bog must be evaluated fully and will be discussed below.

We agree with some of the EPA's concerns regarding the district's alternative analysis. Specifically, based solely on the discussion in the decision document, the district's analysis does not appear to have demonstrated that the applicant's proposal is the least environmentally damaging practicable alternative. We will direct the district to clarify its decision document in this area by explaining more fully how the analysis was conducted. Further, we will instruct the district to ensure that undue deference was not given to the applicant's preferred alternative. I will note that after coordination with the Alaska District, we gained a better understanding of the district's consideration of alternatives. However, the full extent of their evaluation and analysis of alternatives was not documented and must be clarified.

With respect to the potential for substantial adverse impacts to the ARNI portions of the bog, we generally agree with the district that the proposed project should not further degrade the bog. It is predicted that the project may actually improve wetland conditions in the bog. The district's decision includes the preservation of approximately 18 acres of the patterned ground area, excavation of two open water ponds (one acre total) within the patterned ground area for habitat enhancement, preservation of a 250-300 foot black spruce buffer between the residential area and patterned ground area, and construction of a berm and fence to restrict human and domestic animal access to the preservation area. The construction of the berm will also have other potential hydrologic benefits by redirecting the subsurface flow towards the "core" area. Several drainage ditches and other factors have contributed to a drying effect to Klatt Bog. Although where the berm will be constructed is a relatively limited area, this action, in conjunction with other restorative measures, included in this proposed permit and others, may contribute to the restoration of the bog's hydrology. The restoration of Klatt Bog's hydrology, along with the preservation of the patterned ground area may

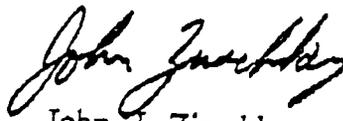
result in a reversal of the trend towards a dryer plant community and associated wildlife species populations. This reversal should result in habitat which would more closely reflect natural wetland functions, including waterbird habitat.

Notwithstanding the above, we believe that because of the importance of the "core" portion of the bog, additional precautions should be taken to assure that the district's assumptions on indirect impacts are correct. In this regard, we will instruct the district to either: 1) develop, in coordination with EPA, a monitoring and contingency plan that addresses potential hydrologic impacts in the bog if the Klatt Bog site remains the least damaging practicable alternative (this plan will be incorporated by reference into the permit as a special condition); or 2) require the applicant, in coordination with the district and EPA, to conduct a more detailed evaluation of the effectiveness of the berm design in preventing negative impacts to the "core" area hydrology.

In light of the findings summarized above, and in accordance with the MOA, we will provide the Corps with case-specific guidance regarding documentation of the alternatives analysis and development of a monitoring and contingency plan special condition, or in the alternative, a more detailed evaluation of the potential hydrologic impacts. The district will complete these requirements prior to making a final permit decision.

Although in this particular case we disagree with EPA on a few issues, we share fully your desire to protect the Nation's aquatic resources and the public interest. The efforts of you and your staff in raising this case to our attention are appreciated. Should you have any questions or comments concerning our decision in this case, do not hesitate to contact me or Mr. Davis at (703) 695-1376.

Sincerely,



John H. Zirschky  
Acting Assistant Secretary of the Army  
(Civil Works)



DEPARTMENT OF THE ARMY

U.S. Army Corps of Engineers  
WASHINGTON, D.C. 20314-1000

REPLY TO  
ATTENTION OF:

CECW-OR

6 SEP 1994

MEMORANDUM THRU COMMANDER, NORTH PACIFIC DIVISION

FOR COMMANDER, ALASKA DISTRICT

SUBJECT: Request for Section 404(q) Elevation, Klatt Bog 22

1. On 27 June 1994, the Acting Assistant Secretary of the Army (Civil Works) (AASA(CW)) responded to a request by the Environmental Protection Agency (EPA) for higher level review of a permit proposed by the U.S. Army Corps of Engineers Alaska District. The project proposed by Mr. Mike Cusack, Jr., involves the construction of a residential development in a portion of Klatt Bog, Anchorage, Alaska.

2. The request from EPA was made pursuant to Part IV of the 1992 Section 404(q) Memorandum of Agreement between the Department of the Army and EPA. The main issues EPA presented for consideration were based on their conclusion that substantial and unacceptable adverse impacts to an aquatic resource of national importance would occur. More specifically, the primary issues raised are summarized as follows:

a. The Klatt Bog is an aquatic resource of national importance.

b. Issuance of the Klatt Bog 22 permit will cause substantial and unacceptable adverse impacts to Klatt Bog from 15 acres of scrub-shrub/forested wetland and secondary and cumulative impacts to critical habitat which is located on the property as well as the remainder of Klatt Bog.

c. It has not been clearly demonstrated that the proposed project is the least environmentally damaging practicable alternative which meets the project purpose.

3. The AASA(CW) letter did not concur with the EPA position that the portion of Klatt Bog which will be directly impacted is an aquatic resource of national importance. However, the AASA(CW) did express concern that the potential for hydrological alterations and subsequent effects on the portion of the bog which is considered an aquatic resource of national importance be evaluated fully. In addition, the AASA(CW) notes that CENPA's alternatives analysis is not fully discussed in the decision document and must be clarified.

CECW-OR

SUBJECT: Request for Section 404(q) Elevation, Klatt Bog 22

4. Prior to reaching a final decision, CENPA must:

a. Clarify the alternatives analysis. The decision document requires clarification with respect to discussing how the alternatives analysis was conducted and the basis for the decision by the District. The discussion should demonstrate consistency with the guidance concerning alternatives analysis which is provided in the Section 404(q) Elevations for Hartz Mountain and Old Cutler Bay. The discussion should also address how the analysis relates to the guidance provided in Regulatory Guidance Letter 93-2, Memorandum to the Field, subject: Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements. This Regulatory Guidance Letter provides guidance on the flexibility, afforded by the Guidelines, which is based on the relative severity of the environmental impact of proposed discharges. The scope of analysis (i.e., level of scrutiny) of alternatives should be commensurate with the severity of the environmental impacts on aquatic resources and the scope/cost of the project. The first step in the analysis, then, would be to define the impact on aquatic resources of the proposed project and relate it to the project's scope and cost. Once this is established, alternatives should be assessed by first looking at the environmental impacts of the alternatives when compared to the environmental impacts of the proposed project. If an alternative is found to have no identifiable or discernible difference in impact on the environment, including impacts to the non-aquatic environment, the alternative can be dropped from the analysis as not being less environmentally damaging. Any alternative which is demonstrated to be less environmentally damaging must then be more rigorously evaluated for practicability. The criteria used to determine practicability must be clearly defined and consistently applied to all alternatives which were not dropped during the initial screening.

The discussion of the alternatives analysis, which is included in the decision document, is to include a description of the process or methodology as well as definitions of the criteria used in the analysis. As indicated in the guidance provided for Hartz Mountain, the District should determine the minimum feasible size, circumstances, etc., which characterize a viable project. As with any Section 404 permit decision, alternatives must be practicable to the applicant. However, in weighing and balancing the criteria, care must be taken to ensure that an individual criterion, or combination of criteria, does not result in undue deference to the applicant's wishes. The discussion must clearly demonstrate that all criteria, including consideration of the

CECW-OR

SUBJECT: Request for Section 404(q) Elevation, Klatt Bog 22

environmental impacts, have been consistently applied to the full array of final alternatives, including the applicant's preferred alternative. A matrix is a helpful tool in demonstrating that this has been accomplished.

b. Ensure against further degradation of Klatt Bog. The District should ensure that the proposed water control berm is effective in ensuring that the proposed project will not further degrade the bog with respect to the groundwater hydrology. One method of accomplishing this would be to add a special condition for a monitoring and contingency plan. Alternatively, the applicant may elect to conduct a more detailed evaluation of the effectiveness of the berm design (e.g., conduct geomorphic testing to the extent that the ability to effectively isolate the development from the bog is clearly demonstrated). Details of the alternative selected are to be developed in coordination with EPA.

5. If you have any questions or comments, please call Ms. Cheryl Smith at (202) 272-0817.

Encl

  
STANLEY G. GENECA  
Major General, USA  
Director of Civil Works



DEPARTMENT OF THE ARMY

U.S. Army Corps of Engineers  
WASHINGTON, D.C. 20314-1000

28 SEP 1994

REPLY TO  
ATTENTION OF:

CECW-OR

MEMORANDUM THRU COMMANDER, NORTH PACIFIC DIVISION

FOR COMMANDER, ALASKA DISTRICT

Subject: Request for Section 404(q) Elevation, Klatt Bog 22

1. This is in further regard to subject memorandum concerning the documentation of the U.S. Army Corps of Engineers Alaska District's decision on the Klatt Bog permit. Upon further review, we identified that additional clarity was needed in the description of the documentation of the District's alternative analysis. The following information should be added to the end of paragraph 4 of subject memorandum:

a. alternatives that the District determined to be not less environmentally damaging should be clearly identified and excluded from further analysis. The decision document should state why such alternatives are not less environmentally damaging.

b. criteria used by the District to evaluate the practicability of alternatives (e.g., why cost in excess of \$0.30 per square foot is not practicable).

c. for parcels which satisfy the cost threshold, document the determination of why a particular alternative is not practicable because of the lack of existing infrastructure. Further, infrastructure limitations should be explained in more detail as they applied to all alternatives (e.g., lack of utilities was apparently used to eliminate particular alternatives when the preferred site apparently lacked some of the same infrastructure).

d. document the District's reevaluation of the applicant's marketability study regarding why the scope of practicable alternatives is limited to single family housing in Anchorage, Alaska costing between \$135,000 and \$165,000.

2. Should you have any questions regarding this further clarification of our guidance please contact Ms. Cheryl Smith at (202) 272-1780.

STANLEY G. GENEGA  
Major General, USA  
Director of Civil Works