Legislature, and reported on the Committee's record of monthly meetings[94] and the two major public meetings which it had held. All landowners in the Lake Belt had received notice of those public meetings and approximately 250 had attended each time; the Committee also had hosted a series of stakeholder meetings in1999. AR617. The Plan was adopted in June 2001, Fla. Stat. §373.4149, along with a Lake Belt Mitigation Plan, which imposed a mitigation fee of $.05 per ton of mined rock extracted from the Lake Belt, to be administered by the Florida Department of Revenue, with expenditures to be approved by an interagency committee. Fla. Stat. §373.41492(2). The interagency committee, which did not include any federal representation but did provide for the mining industry to have a non-voting position, met for the first time in November 2000, ultimately expanding its membership to include the leading federal agencies: Corps, EPA and FWS.[95] Although the mitigation fee was to become effective as of October 1, 1999, the statute provided that the fee would be suspended if a "long-term permit for mining" was not issued on or before September 30, 2000.[96] Fla. Stat. §373.41492.[97] The original Lake Belt

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[94]Interestingly, the minutes of the Committee's June and July 2000 meetings contain no mention of the Corps' EIS, despite the nature of the strong objections being raised. The EIS is mentioned briefly at the August 2000 meeting.

[95]ENP recommended that the permits be denied based, *inter alia*, on the fact that there were no federal agencies or any federal oversight planned for the mitigation funds. AR669.

[96]"If a general permit by the US Corps, or an appropriate long-term permit for mining, consistent with the Miami-Dade County Lake Belt Plan, this section, and ss. §373.4149, 373.4415, and 378.4115 is not issued on or before September 30, 2000, the fee imposed by this section is suspended until revived by the Legislature."

[97]This legislation also created a short-lived requirement that all owners of properties in the Lake Belt area submit to the Miami-Dade County recording office an affidavit of disclosure that acknowledged the existence of limestone mining activities

Committee continued to meet, and considered three plan scenarios, based on criteria described in the Committee's 1995 "Initial Objectives and Measures of Success," before selecting a "preferred concept" for the future mining.

The Corps issued a Revised Public Notice on March 1, 2001, which announced that the period of mining had been reduced to ten years with a reduced total mining impact of 3,959.07 acres,[98] and an initial review period after the first three years of mining. The Corps noted that "[a]ctivities would not proceed after the [initial review date] unless the permits were specifically renewed with modifications, if needed." AR737.[99] On October

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involving the use of explosives within close proximity of their property. Copies of that affidavit were to be provided to any party who might later buy, lease, or develop the land, and failure to include the disclosure would provide that party with the right to void the real estate transaction. FAR89. The effect of this affidavit requirement was that private landowners were to be put on notice of the blasting taking place near their property and, presumably, would have little or no recourse about the negative impacts. Apparently acknowledging that the affidavit "went too far," the legislature repealed the affidavit requirement within a few months of its effective date. FAR76.

[98]The EIS specified the area of impact as "15,000+" acres of quarry lakes, which when added to the existing 5,000 acres of lakes, would total ***21,000*** acres of lakes at the end of the project. AR614 at 124 (Programmatic Section 404(b)(1) Evaluation). At another location in the same document, the Corps says that the plan "would result in the mining of approximately 15,800 acres of wetlands over the next 50 years." AR614 at 10 (Executive Summary). The Public Notice that was published with the EIS specifies that it addressed permit renewals and new permits, with a total of 14,300 acres to be mined, added to approximately 5,600 acres of quarry pits existing as of 1998, for a total impact of ***19,900*** acres – a difference of 1,100 acres in impact when compared to the EIS. AR623A. The difference in these figures, considering that they are found in public documents published by the same agency at approximately the same time, is unexplainable, confusing and a constraint on the public's meaningful participation.

[99]The Corps' failure to specify in the Revised Public Notice what criteria would be evaluated at the end of the three years was criticized by ENP and others. AR825. "The results of this review should be coordinated with the resource agencies (not just the permitting agencies)." Id.

10, 2001, EPA requested a strong voice in the three year review, despite the Corps' apparent plan to not issue a public notice regarding the review; EPA also declared that it would not yet remove its objections to the permits. AR870.

The EIS had lacked any detailed study of the endangered wood stork, a protected species which had been observed in the Lake Belt Area, and the FWS had recommended denial of the permits, as explained in its correspondence to the Corps dated April 30, 2001. In an apparent attempt to remedy this omission, a Biological Assessment (BA) was prepared by the mining industry, AR82B, and submitted to the Corps and FWS in May 2001. After reviewing the BA, FWS provided its opinion that the proposed mining would not adversely affect the endangered wood stork. Shortly thereafter, DEP announced its intent to issue a permit to the first of the mining companies, Sunshine Rock.[100]

In December 2001, FWS advised the Corps that it would not seek further review of the proposed permit, despite continuing questions about the adequacy of the mitigation plan. AR947/AR948.[101] On February 7, 2002, EPA announced that it would not pursue a higher level review. AR966. Lacking any further formal objections from its federal partners, the Corps issued the ROD on April 11, 2002, AR1028, with a corresponding press release. The Corps also advised the Miami-Dade County Manager that the County's

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[100]A permit also was issued to White Rock in August 2001 -- both of these companies' mining areas are in the northern part of the Lake Belt, at some distance from the wellheads in the Northwest Wellfield. In late 2001, these two companies, along with Sawgrass Rock, had threatened to break apart from the mining coalition and proceed with mining pursuant to these state-issued permits (and pursuant to their previously existing permits from the Corps), because the issues which were taking so long to negotiate in the Lake Belt plan, e.g., wellfield protections, did not relate to these companies. AR914.

[101]Another copy of this letter is found at AR947.

request for a public hearing was denied. AR1023.

The ROD specifically stated that "[t]he permits authorize a 10-year footprint but the EIS and this memorandum also describe the 50-year effect." AR1028 at 59.[102] The Corps clearly was troubled by the question of water supply.

> The need for additional water from the regional system [for delivery of water to restore the Everglades] is a difficult issue for the Corps acting under Section 404 of the Clean Water Act to address since the Clean Water Act reserves water supply aspects to the States. This issue is certainly recognized by the State and must be incorporated by the State in its water supply planning. Both resolution of this issue and the design of seepage avoidance/compensatory actions is best done in conjunction with CERP components related to seepage, which ... have complete [sic] dates of 2013 and 2014.

AR1028 at 52. The Corps concluded, however, that "there are no practicable nor less damaging alternatives which would satisfy the project's overall purpose [of providing construction-grade limestone from Miami-Dade County]." AR1028 at 59. The ROD estimates that between 4,390 and 7,544 acres of mitigation will be required over the ten year period, depending upon the rates of mining in relation to the rate of acquisition of wetlands to be restored. AR1028 at 69. The completion of the initial review period was to have occurred at the end of the first three years, i.e., by April 11, 2005. Although the Federal Defendants advised the Court that the review probably would be completed by December 31, 2005, there still has been no report. See Plaintiffs' Notice of Corps' Non-Compliance with Proposed Review Schedule, filed February 17, 2006, to which no response was filed.

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[102] It is clear from the permit instruments which were issued after the ROD that mining was approved to occur not just along the already degraded eastern side of the Lake Belt but also in the center of the Northwest Wellfield protection area, and near the ENP. See, e.g., various permit instruments: AR1071 at 28 (Tarmac), AR1090 (Florida Rock), AR1100 (Pan American Construction).

The Court now will address the specific Counts and further analyze the facts relevant thereto, based upon the Court's review of the administrative record.

## III. DID THE CORPS COMPLY WITH NEPA AND THE APA 706(2)? (COUNT V)

Plaintiffs allege that the Corps violated NEPA and section 706(2) of the APA by, *inter alia*, issuing an EIS that did not sufficiently analyze the direct, indirect and cumulative environmental impacts of mining, and did not disclose the existence of less environmentally damaging alternatives. Plaintiffs also claim that the Corps failed to provide a meaningful discussion of the aesthetic and recreational impacts of the proposed project, and didn't disclose critical information, e.g., the existing conditions at the site of each proposed quarry, to the public before the permit decision was made.

### A. NEPA and its implementing regulations

In 1970, NEPA was enacted as "our basic national charter for protection of the environment," 40 C.F.R. 1500.1(a), with a stated purpose of "promot[ing] efforts which will prevent or eliminate damage to the environment." 42 U.S.C. §4321. NEPA contains "action-forcing" provisions to guarantee that federal agencies comply with both the letter and spirit of the statute, 40 C.F.R. 1500.1(a); a primary example of such provisions is the requirement of an EIS. An agency must prepare an EIS for any "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. §4332(2)(C).[103]

[103]An agency does not always have to prepare an EIS, and under certain conditions may elect only to prepare an Environmental Assessment (EA), 33 C.F.R.

It is undisputed that the Corps' act of approving limestone mining by these permits constitutes a major Federal action.

"Challenges brought under [NEPA] are reviewed by the arbitrary and capricious standard, as defined by the APA." Sierra Club v. U.S. Army Corps of Eng'rs, 295 F.3d 1209, 1216 (11th Cir. 2002). The Court, therefore, must determine whether the agency action was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law," 5 U.S.C. §706(2)(A). The Corps' decision should be set aside "only for substantial procedural or substantive reasons as mandated by statute ...." North Buckhead Civic Ass'n v. Skinner, 903 F.2d 1533,1539 (11th Cir. 1990) (agency preparation of EIS was not arbitrary or capricious regarding construction of highway with median for mass transit). Although the Eleventh Circuit has cautioned that this standard is "exceedingly deferential," Fund for Animals, Inc. v. Rice, 85 F.3d 535, 541 (11th Cir. 1996),[104] it

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230.10, 40 C.F.R. 1501.3, 40 C.F.R. 1508.9, which is a concise document explaining the agency's decision whether to prepare an EIS or to announce a "finding of no significant impact," i.e., a FONSI, on the human environment, 33 C.F.R. 230.11, 40 C.F.R. 1508.13. See, e.g., City of Oxford v. F.A.A., 428 F.3d 1346 (11th Cir. 2005) (FONSI supported, agency need not prepare EIS for proposed airport runway extension since it was not "foreseeable" that it would lead to relocation of a nearby highway or construction of a new terminal building); Hill v. Boy, 144 F.3d 1446 (11th Cir. 1998) (FONSI not supported, Corps improperly assumed that petroleum pipeline would be relocated from under a proposed reservoir, remand for consideration in EIS of adverse effects if pipeline not moved).

[104]Not surprisingly, this "exceedingly deferential" standard of review resulted in the Supreme Court's unanimous approval of the agency EIS at issue in each of the companion cases, Robertson v. Methow Valley Citizens Council, 490 U.S. 332 (1989), and Marsh v. Oregon Natural Resources Council, 490 U.S. 360 (1989). In Robertson, the Supreme Court held that an EIS need not contain a "complete" mitigation plan. when NEPA doesn't impose a substantive requirement that mitigation measures actually be taken, and in Marsh they held that supplementation of an EIS was not necessary in light of the inaccuracy of the allegedly new information -- observing, however that supplementation of the EIS clearly would have been required if the

nevertheless is not a meaningless standard. That is, the application of the standard must not be so deferential as to result in this Court serving as a consistent source of approval for agency actions, without regard to the facts presented. Indeed, NEPA is "designed to prevent agencies from acting on incomplete information and to 'ensure[ ] that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast.'" Sierra Club v. U.S. Army Corps of Eng'rs, 295 F.3d 1209, 1214 (11th Cir. 2002), quoting Robertson v. Methow Valley, 490 U.S. 332, 349 (1989). The administrative record here reveals several instances in which the Corps acted on incomplete information, in violation of NEPA, which will be addressed in further detail below.

In preparing an EIS, the Corps is required to follow its own regulations implementing NEPA, 33 C.F.R. 230.1, as well as the regulations promulgated by the Council on Environmental Quality (CEQ)[105] See, e.g., 40 C.F.R. 1501.3, 1501.4, 1508.9, 1508.27.[106] An agency's EIS report must include:

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information presented had been "both new and accurate." Marsh, 490 U.S. 360, 385 (1989).

[105]The Council on Environmental Quality (CEQ) was established by NEPA with the authority to issue regulations interpreting the statute, which it did on November 29, 1978. See 40 C.F.R. 6.101(b), Department of Transp. v. Public Citizen, 541 U.S. 752, 757 (2004). The CEQ regulations are found at 40 C.F.R. Part 1500, and have remained, for the most part, unaltered during the past three decades. The Corps' regulations explicitly incorporate the CEQ regulations. "Whenever the guidance in this regulation (33 C.F.R. 230, [Corps'] Procedures for Implementing NEPA) is unclear or not specific the reader is referred to the CEQ regulations [40 C.F.R. 1500 through 1508, implementing NEPA]." 33 C.F.R. 230.1.

[106]The regulations provide guidance and define critical terms, e.g. "indirect effects," 40 C.F.R. 1508.8, "cumulative impacts," 40 C.F.R. 1508.7, and "mitigation," 40 C.F.R. 1508.20.

(i) environmental impact of the proposed action,[107]

(ii) any adverse environmental effects which cannot be avoided if the proposal is implemented,[108]

(iii) alternatives to the proposed action,[109]

(iv) relationship between short-term uses of environment and maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action if implemented.

42 U.S.C. §4332(2)(c). The NEPA regulations had been interpreted at one time to require analysis of a "worst case scenario," however this proved unproductive as it lead to limitless inquiries into highly speculative harms. Robertson at 354-56. The "worst case" requirement was replaced with a requirement that agencies, when "information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known," must prepare a "summary of existing credible scientific evidence ... and the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community." 40 C.F.R. 1502.22(b); Robertson at 354-355. Impacts are "reasonably foreseeable ... even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not

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[107]40 C.F.R. 1502.1, 1502.14, 1502.16.

[108]40 C.F.R. 1502.16.

[109]40 C.F.R. 1502.14.

based on pure conjecture, and is within the rule of reason." 40 C.F.R. 1502.22(b).

Despite an agency's temptation to include voluminous scientific material, an EIS should be "analytic rather than encyclopedic." 40 C.F.R. 1502.2(a). "[I]t is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork –even excellent paperwork – but to foster excellent action. The NEPA process is intended to help public officials ... take actions that protect, restore, and enhance the environment." 40 C.F.R. 1500.1(c). By overwhelming public officials with mountains of data or reports without concise analytical summaries thereof, an EIS may serve more to frustrate the goals of NEPA rather than to promote them. The EIS need not be "so all-encompassing in scope that the task of preparing it would become either fruitless or well nigh impossible." New York Natural Resources Defense Council, Inc. v. Kleppe, 429 U.S. 1307 (1976) (quoting Natural Resources Defense Council v. Callaway, 524 F.2d 79, 88 (2d Cir. 1975)). The document should be concise and clear. 40 C.F.R. 1502.1.

The Court must "look beyond the scope of the [challenged] decision itself to the relevant factors that the agency considered." Sierra Club at 1216. As has been firmly established, the duty of the judiciary "is to ensure that the agency took a 'hard look' at the environmental consequences of the proposed action." Marsh, 490 U.S. at 374 (1989); City of Oxford v. F.A.A., at 1351; see also, Fund for Animals, Inc. v. Rice, 85 F. 3d 535, 541, 546 (11th Cir. 1996) (Corps not arbitrary or capricious in determination that an EIS was not required for decision to locate landfill in wetlands where no upland site was available); 546, Skinner at 1540.[110] "This duty requires the court to consider not only the final documents

[110]Whether the Court would have reached the same conclusion is irrelevant, "the agency must merely have reached a conclusion that rests on a rational basis." City of

prepared by the agency, but also the entire administrative record." Sierra Club at 1216. Thus, the Court's role here is to examine in detail not only the EIS but also the entire record to determine whether the Corps considered all relevant factors.

> The court will overturn an agency's decision as arbitrary and capricious under 'hard look' review if it suffers from one of the following: (1) the decision does not rely on the factors that Congress intended the agency to consider; (2) the agency failed entirely to consider an important aspect of the problem; (3) the agency offers an explanation which runs counter to the evidence; or (4) the decision is so implausible that it cannot be the result of differing viewpoints or the result of agency expertise.

Id. (citing Motor Vehicle Mfrs. v. State Farm Mutual Auto. Ins. Co., 463 U.S. 29, 43 (1983)). In the event that the court determines that the action is flawed, remand is the appropriate result -- thereby permitting the agency to reconsider its own reasoning and decision. Sierra Club at 1216.

While the Court looks to the entire record to see if the agency took a "hard look," the final determination is made based only upon the NEPA documents themselves, in other words, the Federal Defendants cannot rely on matters in the administrative record to "correct" errors in the EIS, for NEPA requires that the material be included in the EIS, or a supplemental EIS. Sierra v. Marsh, 976 F.2d 763 (1st Cir. 1992) (can verify that EIS is sufficient by reference to record, but cannot rely on record to bolster insufficient analysis in EIS). This is consistent with the statute's mandatory public participation, discussed below, for it would be unreasonable to expect members of the public to search through an entire administrative record in order to find critical environmental information; rather, one must be able to rely on the EIS, or the SEIS, as a comprehensive and accurate guide to the environmental issues presented by the proposed activity. In essence, an EIS has "twin

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Oxford v. F.A.A., 428 F. 3d 1346, 1352 (11th Cir. 2005).

functions" -- preparation of the EIS is designed to require agencies to take a hard look at the consequences of the proposed action, and the distribution of the EIS "provid[es] important information to other groups and individuals." Robertson at 356. An EIS must "detail the environmental and economic effects of proposed federal action 'to enable those who did not have a part in its compilation to understand and consider meaningfully the factors involved,' and to compel the decisionmaker to give serious weight to environmental factors in making discretionary choices." Sierra Club v. Morton, 510 F.2d 813, 819 (5th Cir. 1975)[111] (footnote omitted) (quoting Environmental Defense Fund, Inc. v. Corps of Engineers (Tennessee-Tombigbee Waterway), 492 F.2d 1123, 1136 (5th Cir. 1974). An EIS must, at a minimum, alert the reading public to all known possible environmental consequences. Sierra Club v. Sigler, 659 F.2d 957 (5th Cir. 1983).

Having reviewed the controlling precedent, the Court now turns to the specific facts found in this administrative record and measures each claim against the statute's requirements.

1. Environmental impact of the proposed action

The EIS must account for direct, indirect, and cumulative impacts of the proposed action. 40 C.F.R. 1508.7, 1508.8; City of Oxford v. FAA (11th Cir. 2005); C.A.R.E. Now, Inc. v. F.A.A. (11th Cir. 1988). While direct effects are easy to identify, the consideration of indirect effects requires more careful study of an action and its consequences. The

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[111]In Bonner v. City of Prichard, 661 F.2d 1206 (11th Cir. 1981) (en banc), the Eleventh Circuit adopted as precedent the decisions of the Fifth Circuit rendered prior to October 1, 1981.

CEQ regulations define "indirect effects" as being later in time or farther removed in distance, but still reasonably foreseeable. 40 C.F.R. 1508.8. A cumulative impact is "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency ... or person undertakes such actions." 40 C.F.R. 1508.7. For example, the Eleventh Circuit has determined that the future possible relocation of a nearby road to accommodate new navigational aids after an airport runway has been extended is too speculative to be considered as a cumulative impact of the runway extension project, as is the building of a new passenger terminal. City of Oxford, GA v. F.A.A., 428 F.3d 1346 (11th Cir. 2005).

Impacts may occur in any of a number of areas: ecological, aesthetic, historic[112], cultural, economic, social, or health; previous impacts also must be taken into account, at least to a reasonable extent. The impacts most pertinent to an analysis of the Corps' EIS in this case are those on the municipal water supply (i.e., the Aquifer), the seepage losses to the Park and WCA, the destruction of wood stork habitat, and the increasing urbanization of Miami-Dade County.

a. Aquifer/Wellfield contamination

Miami-Dade County's wellfield protection zones were established in 1985 based upon the generalized survival time of bacteria in soils and groundwater, with appropriate setbacks for mining established to restrict excavations in order to limit the risk of

[112]The Lake Belt wetlands also contained "several historic properties, including potentially significant sites ... exist within the proposed project's area of potential effect." AR880.

contamination at the deeper levels from which the wells draw water. The basis for the protection zones was the nature of the Aquifer and its permeability.

> [Limestone] makes up the Biscayne aquifer, which stores and filters the water supply for Miami-Dade County. Removal of the aquifer material by rock mining leaves the remaining aquifer more vulnerable to contamination from the newly created surface water bodies.... Implicit in the creation of wellfield protection zones is the assumption that the hydrogeologic parameters do not vary in time. However, the very nature of rock mining, removing the geologic material, negates this assumption. There is a concern that existing and future rockmining excavations serve to expand the travel time contours beyond those used to define the existing wellfield protection area.... Unconfined and located at or near the land surface, the Biscayne Aquifer is made up mainly of layers of limestone and sand.... The generally high hydraulic conductivity and the many passages through the solution-riddled limestone offer little resistance to flow. The result is one of the most permeable aquifers in the world, which quickly responds to slight differences in the water table. As a result ... [t]he direction and velocity of groundwater flow is strongly influenced by water levels in adjacent canals and other surface water bodies.

AR1176 ("Description and Analysis of Full-Scale Tracer Trials Conducted at the Northwest Wellfield, Miami-Dade County Florida," DERM Water Supply Section, August 2000).

Not only the extraction of limestone but also the pits/lakes left behind after mining pose threats to the Aquifer. According to a report prepared by DERM (and published after the EIS):

> The presence of lakes in the vicinity of the wellfield increases the risk to the drinking water supply by two routes. The miles of increasing shoreline provide a route for pathogens, as well as other pollutants, to enter the lakes either via stormwater runoff contaminated with pathogens, infected animals accessing the shorelines, or spills of contaminants near shorelines. A more direct route is via waterfowl flying in to use the lakes. Once in the lake, the pathogens/pollutants quickly disperse from the shoreline or middle of the lake. Depending on the specific gravity or other factors, the particular pathogen/pollutant will mix through the vertical extent of the lake and be drawn towards the wellfield. Water transport out of lakes and canals into the surrounding aquifer and towards the wellfield is primarily through the porous sides.... Modern rockmining techniques now can excavate up to 85-ft. depths, well into the various preferential flow zones of the drinking water wells (40-80 ft.). The preferential flow zones are more porous, providing less attenuation, particularly for pathogens of human health concern.

AR1175 at pp. 35-36 ("Northwest Wellfield Watershed Protection Plan," August 16, 2000). The Corps had sufficient information about these risks even before the above-quoted studies. Strong objections to the mining based upon the wellfield contamination issue began arriving, particularly from Miami-Dade County and its agencies, immediately after the Corps announced the preparation of the EIS in 1992. For example, in July 1992, DERM raised concerns about the effect of the Lake Belt Plan on the Northwest Wellfield's classification as a ground water supply source. AR44.[113] DERM commented on the Issue Team's final draft report in May 1997, criticizing its lack of attention to the fact that further mining in the vicinity of the wellfield may itself impact the quality of water, and noting the potentially costly modifications that would be required for the current drinking water treatment process. AR485. In May 1999, DERM reported that it could not support the EIS until water quality and buffer issues were addressed fully, and that it could cost at least $235 million to add more filtration and disinfection to Northwest Wellfield "if groundwater becomes under direct influence of surface water as a result of mining". AR605 at 85.[114]

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[113]In November 1995, Miami-Dade officials highlighted the impact of mining on the quantity and quality of water in the area, and requested that an evaluation of those issues, as well as the related costs, be conducted. AR242.

[114]DERM noted, in July 2000, that the EIS "ignores the potential for microbiological degradation of water quality resulting from warm-blooded animals, such as cattle and mammalian wildlife, which are known carriers of the disease-causing organisms Giardia and Cryptosporidium. Cattle grazing is currently an allowable activity in the vicinity of the wellfield and may continue to exist as rockmining expands. The littoral shelves which are included in the compensatory mitigation proposed in Section 7.1 [of the EIS] will attract mammalian wildlife to the lake edges. Due to the potential presence of these sources of microbiological contamination under the Recommended Plan, evaluation on [sic] of their impacts is warranted..... [The EIS also] minimize[s] surface influence concerns and merely recommend[s] a monitoring program that would allow the impact to occur, instead of working to minimize the impacts." AR655.

The County's water treatment facilities are designed for treating groundwater, and they do so by filtration and disinfection. AR1175. The EIS reported that the excavation of limestone would convert a large portion of the Aquifer to "surface waters," AR614 at 78, and that Miami-Dade County's wellfield protection plan's buffer zone "may be inadequate protection against [potentially deadly] surface water contaminants," AR614 at 69-70. After reviewing the EIS, the County Manager at the time advised the Corps that:

> Quarry lakes have the potential to contain substantially more disease-causing organisms than groundwater.... Mining rock from the Biscayne aquifer in the vicinity of the wellfield decreases the time it takes for a contaminant to travel from the quarry lake to the wells. Rockmining that may be authorized by the proposed Federal action will exacerbate the existing footprint of lakes in the vicinity of the wellfield. Therefore, the proposed Federal action has the potential to increase the risk of water quality contamination at the wellheads and result in the necessity for upgrading the water treatment plants to treat for disease-causing organisms at the cost of approximately $250,000,000.

AR654. Despite this caution, the Corps proceeded with the plan to approve the mining.

A review of the record reveals that the Corps approved mining in close proximity to the Northwest Wellfield (and its multiple wellheads from which drinking water is pumped daily) before the risk of contamination had been studied adequately or sufficient data had been collected and, thus, apparently did not fully consider the impacts (direct, indirect, or cumulative) of the mining activities, in violation of NEPA. According to the EIS, the proposed mining plan "may compromise the existing wellfield protection program." AR614 at 88. The EIS references a wellfield protection subcommittee that "has identified tasks that must be completed" to analyze properly the existing wellfield protections, and notes that if impacts to the wellfield are identified, "activities required to mitigate those impacts

will be identified." AR614 at 88.[115] "At this time, it has not been determined what is needed as a safe buffer to protect the water supply.... [T]his information might not be available until the completion of the Phase II Master Plan in December 2000." AR614 at 70.[116] The only other information provided to the public on this topic before the permits were issued is contained in the Revised Public Notice, which states that additional restrictions had been proposed on mining near the Northwest Wellfield to allow "time for Miami-Dade County to complete a risk analysis and consider modifications" to its wellfield protection ordinance. AR737. The restrictions are not defined, although maps are included for each of the mining companies, purportedly showing the location of mining for the first three years under the proposed permits. Even if the Court were to consider the Revised Public Notice as being a supplemental part of the NEPA document, i.e., the EIS, it still falls short of properly advising the public or public officials of the risks of contamination and what can be done to eliminate those risks, particularly in light of post-EIS reports which specify the risks clearly.

The Corps has a duty, when evaluating "reasonably foreseeable significant adverse effects"[117] such as contamination of a municipal drinking water source, to provide all

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[115]This vague statement does not even commit to requiring mitigation – it simply states that mitigation activities "will be identified."

[116]The ROD does little to remove this uncertainty. "[T]here is a risk of contamination of the public wellfield, but the permit includes provisions to minimize that risk." AR1028 at 80.

[117]The term "significant" as used in NEPA requires "considerations of both context and intensity." 40 C.F.R. 1508.27. An action insignificant in itself may be significant for NEPA purposes if it is "related to other actions [past, present, and reasonably foreseeable future actions] with individually insignificant but cumulatively significant impacts." 40 C.F.R. 1508.27(b)(7). The potential risk to the Aquifer qualifies

information that is "essential to a reasoned choice among alternatives" – or, if such information is unavailable – to summarize "existing credible scientific evidence" and the agency's evaluation thereof. 40 C.F.R. 1502.22. The Corps should have recognized that it lacked essential information and, particularly in light of the anticipated completion of the County's wellfield protection review, should have been more conservative as to this risk.

> The most conservative protection for the wellfield is to eliminate all human activity around the unmined aquifer and lakes near the wellfield, except for the existing wellfield utility maintenance activities. This would entail purchase and transfer of private land into county ownership. This is a costly endeavor [estimates yet to be determined].... The most stringent protection will be applied to the inner lake protection zone. These lakes will be closed to public access and not be biologically enhanced in order to minimize pathogenic risk to surface and groundwater closest to the wellfield.... The proposed outer protection zone encompasses lakes to be used for passive recreation and biological enhancement.... Because past and future rockmining activities have caused this wellfield to be uniquely vulnerable to pathogenic risks, legislative actions should be pursued to ban animal and aquaculture operations, at a minimum, from the Northwest Wellfield's inner lake zone.

AR1175 at 45-53.

The County and its agencies requested a public hearing and recommended denial of the permits, even for the reduced period, since no adequate program had yet been developed to protect the Northwest Wellfield. AR791B. The EPA also requested that special conditions be imposed on the water quality monitoring and that it begin promptly, AR820.[118] The Corps took a positive step toward protecting the Aquifer by rejecting the

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as a "significant" adverse effect.

[118]The Court notes with interest the parties' discussion, in their briefs, regarding a post-permit offer by one of the mining companies, Tarmac America. According to the Industry Defendants, Tarmac has agreed to convey property within the wellfield setback area, i.e., within the 2,500 foot area in which mining and development are prohibited by the County, in exchange for the right to mine other County-owned property on a royalty basis. The anticipated royalties reportedly would generate $70,000,000 (over some

mining industry's attempt to avoid the wellfield restrictions[119] and imposing Special Condition 7 which requires monitoring of water quality and a review at the conclusion of the initial three years. (As noted above, this initial review already has been delayed by almost a year.) These efforts provide little assurance, however, because even if the probability of contamination is low (which it may or may not be), the consequences are great. The concern is not just as to the existing quarry pits, which already have caused groundwater seepage to occur (it is unclear from the EIS whether the Corps took this into account in determining the baseline from which to judge future impacts),[120] but also as to the ongoing mining and future pits. The Corps seems to be tolerant of mining even as it creeps closer to the wellfields/wellheads, unless or until there is a confirmed incidence of contamination. The future pits will be much larger and potentially closer to the wellheads, which "will further compromise the natural filtration processes that currently exist at the Northwest and

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unspecified period of time and acreage) which might facilitate the County's installation of water treatment facilities to prevent or treat any contamination of the drinking water. Industry Defendant's Motion for Summary Judgment, Docket Entry #36, at 17 n12. News of this unconfirmed arrangement played no part in the Corps' decision to issue the permits, nor does it factor into this Court's analysis.

[119]The industry noted in September 2000 that it was "concerned about delays if the County has not acted to amend the Ordinance at the 3 year review and there is some disagreement about whether there is a risk within the Inner Protection Zone. [The permit template] seems to imply the likelihood that compelling data of risk will emerge and places the burden on the miners to rebut such a presumption. In our view, the burden should be on DERM and WASD to come forward with such compelling evidence." AR706.

[120]The Corps' analysis of past impacts was brief. "Past actions within the established geographic boundaries for resource evaluation have resulted in impacts to the environment. It is not possible or necessary to quantify and qualify the conditions of the entire Everglades ecosystem prior to the first impacts of man and identify each subsequent action and its impacts." AR614 at 89.

West wellfields." AR605 at 88.

The Corps ultimately avoided these water supply issues in the EIS (and ROD), claiming to defer to the County what should have been the Corps' responsibility. A senior Corps staff member stated that "I do not think Corps needs to get in a position of deciding how much protection is warranted for the wellfield ...." AR602. As further general evidence of the inadequacy of the Corps' consideration of the wellfield contamination issue, the Court observes that the scientific or technical reports listed in the EIS references that are related to water, e.g., a 1978 study entitled "Investigations of ground-water conditions at borrow pits 7, 9, and 10, Miami-Dade County, Florida," AR614 at 109, are nearly all more than twenty years old or relate to water bodies in other states, e.g., Michigan, Wisconsin. Even a non-scientist recognizes that this poses a problem in the ever-changing world of South Florida's ecosystem.

In conclusion, the Court cannot determine that the Corps' decision relied on the relevant factors. The Corps either should have waited for the County to complete its studies of wellfield protection, or the Corps should have done its own study. Also, the agency's explanation for its failure to impose greater protections, i.e., that it was the County's decision, runs counter to the clear evidence from the scientific reports in this record which expose the risk of contamination, and the Corps' regulatory duties to protect the environment.

b. Seepage losses to the Park and WCA

Another area in which the EIS lacks sufficient detail is in its hydrological analysis. According to the EIS, there is a "very high ground water seepage rate" that is causing

injurious "declining water levels and hydroperiods" in the Everglades Protection Area and the Pennsuco wetlands, AR614 at 24, and seepage rates will increase with an increase in the acreage of mining, particularly if the new quarries are located near the western edge of the Lake Belt. AR614 at 77. In a total of less than two pages of analysis, the EIS concludes that "[a]lthough ... there are potentially significant impacts to large-scale increases in mining, it also seems true that there are readily available strategies to mitigate for these impacts.... It is also clear that time is available to complete a more definitive analysis and prepare the appropriate solutions." AR614 at 77. This apparent reference to the incremental nature of the seepage impacts, i.e., they grow worse as more mining occurs, demonstrates that the cumulative impact of this mining will be significant and will adversely effect the adjacent wetlands (e.g., WCA-3B and the Pennsuco);[121] thus, it was error for the Corps to have paid so little attention to this issue.

As early as March 1997, ENP advised the Corps that rock mining increases the seepage of needed water from the Park since mining increases the aquifer's ability to convey water. AR439. FWS also noted that required restorative flooding levels in the WCAs and ENP will lead to increased water levels along their borders to the east, and that will require that seepage be controlled – a difficult task since mining aggravates the seepage problem. AR464. The National Audubon Society [NAS] already had provided its comments to the Corps regarding seepage issues.

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[121]The ROD does not remedy this deficiency in the EIS. While the permits do "require the Permittee to implement measures to prevent the seepage loss," they also note that "[i]f the impact cannot be avoided, the result would be a reduction in water depths and duration in the adjacent wetlands," AR1028 at 81, apparently anticipating such an occurrence but not imposing or even specifying any prevention measures.

> The 'Lake' Belt is in one of the areas of greatest groundwater transmissivity in the entire Everglades region. Unfortunately there is a belief among some groups that stacking water in a quarry pit actually inhibits seepage. This misconception needs to be rectified. Simply put, water flows through water with less resistance than water flows through rock, even porous rock. NAS EERC [Everglades Ecosystem Restoration Campaign] has a grave concern that quarry pits may actually exacerbate seepage losses from the Everglades. This concern is heightened by the fact that millions of tax dollars are being spent on Everglades restoration, with the goal of improving water timing, delivery, quantity, and quality to the Everglades. Water loss from abandoned quarry pits in the 'Lake' Belt have the potential to negate much of the benefit gained through the expenditure of public dollars in the restoration effort.... Although structural seepage barriers have been proposed as the solution to seepage problems, NAS EERC contends that under many circumstances this may not be the best solution. In addition to the high costs of seepage barrier installation, there is a concern regarding the permanency of the barrier.... removal is for all practical purposes unrealistic.... A structural barrier [also] may actually cause draw down of the aquifer by impeding groundwater flow.

AR340.

Approximately one year before the Corps published the final EIS, the Governor's office urged the Corps to explain the connection between the planned mining in the Lake Belt and the CERP/Restudy project components, as well as "how feasibility and seepage control studies will be used in the decision-making on [Lake Belt] permits .... The future healthy functioning of the Everglades ecological system and the future water supply of Miami-Dade County will be dependent upon the outcome of these issues." AR605 at 73. The EIS was issued, nevertheless, without detailed recommendations for seepage control.

Shortly after the final EIS was released, ENP reported that "[t]here is an increasing trend in the seepage lost ... to the east from WCA-3B .... The increased groundwater flow to the east resulting from the lakes appear to be the primary reason for the declining water levels and hydroperiod in Pensucco [sic] wetlands.... The water delivery to the North West Well Field appears to decrease significantly ... with extensive lakes in the Lake Belt area." AR614 (August 21, 2000).

> EPA has concerns about the impacts of future mining as it relates to seepage losses from Everglades National Park, Water Conservation Area-3B, and the Pennsuco Wetlands. Absent implementation of some significant contravening measures, this groundwater movement to the east will have even larger importance on the area's wetlands.... There remains some significant uncertainties associated with the effectiveness of subsequent assessment/planning measures as well as in ascertaining whether even known losses can be mitigated to acceptable levels.

AR 713, FAR41 (September 20, 2000). "Previous experience attests to the fact future developmental actions will make sustaining desired water quality standards difficult." AR713.[122] The ROD ultimately imposed a Special Condition (Special Condition 3), which imposes on the permittee responsibility for avoidance measures or compensation for effects of changes in groundwater flows, but without specifying what that will require. "The actual plan will be submitted in a future year once, as discussed elsewhere in this memorandum, revised modeling and the design of the CERP are further along." AR1028 at 74. This is far too vague to be in compliance with NEPA, and its open-endedness violates the requirement that permit conditions be "reasonably enforceable" -- found in 33 C.F.R. 325.4(a).

Seepage losses, particularly when they are certain to result from the proposed activity, are within the range of indirect effects required by NEPA to be studied in some detail.[123] To ignore this indirect effect "would be to [allow the Corps] to wear blinders that

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[122]EPA also noted that "any [permit decision] based solely on the [EIS] would be incomplete/premature because resolution of these critical environmental issues [mitigation, land use planning conflicts, wellfield issues, etc.] is deferred until completion of the [Phase II Master Plan]. AR713.

[123]Threats to the habitat of the endangered whooping crane caused by a reduction in water which was caused by a change in the flow of a tributary stream which, in turn, was caused by construction of a dam, were indirect impacts required to be considered under NEPA. Riverside Irr. Dist. v. Andrews, 758 F.2d 508 (10th Cir. 1985) (denial of nationwide CWA permit for construction of dam due to resulting threat

Congress has not chosen to impose." Riverside Irr. Dist. v. Andrews, 758 F.2d 508, 512 (10th Cir. 1985); see also, National Wildlife Federation v. Coleman, 529 F.2d 359, 374 (5th Cir. 1976) (proposed highway construction's indirect impacts included residential and commercial development that would develop around the highway interchanges). Rather than providing an adequate evaluation, backed by "[a]ccurate scientific analysis," 40 C.F.R. 1500.1(b), the Corps postponed examination of the seepage question indefinitely and, essentially, left its NEPA obligation for a future time.[124] Delay of this critical analysis was an unacceptable deviation from the regulatory framework and, as such, requires remand.

c. Wood stork habitat destruction

The EIS announced to the public that the proposed mining plan would have "no effect" on any Federally listed species, AR83, and that the project was fully coordinated with FWS, pursuant to "formal consultation" and was "in full compliance" with the ESA, AR614 at 101. This conclusion was reached without the benefit of either a Biological Assessment or a Biological Opinion, as discussed, *infra*, and misrepresents the nature of the Corps' consultation with FWS at the time. The EIS discusses the wood stork in a total of approximately one-half of a page, AR614 at 49, 83, and fails to report that hundreds of acres of wood stork foraging habitat will be destroyed -- a fact which should have been

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to habitat of endangered whooping crane). These threats to the whooping crane are even more attenuated than the indirect seepage impacts which are certain to occur as mining increases in the Lake Belt.

[124]The point discussed, above, regarding the staleness of the scientific studies relied upon in the EIS also applies to the question of whether groundwater seepage effects were adequately analyzed.

addressed in the NEPA document.[125] The Corps simply determined that there will be no loss of habitat functions since wildlife will be displaced from mined lands to restored lands. AR956. The Court discusses this issue in more detail in the section, below, which evaluates the Corps' compliance with the ESA, but briefly notes here that both NEPA and the ESA require that direct and indirect effects on protected species be considered. Riverside Irr. Dist. v. Andrews, 758 F.2d 508 (10th Cir. 1985) (Corps properly considered indirect effects of permit to construct a dam and reservoir, on whooping crane habitat downstream). The Corps' failure to consider not only the direct effects (e.g., foraging habitat loss), but also the indirect effects (e.g., potential relocation of breeding rookeries, etc.) on the endangered wood stork renders the EIS fatally flawed.[126]

Although prior to publication of the final EIS the Corps had obtained the FWS' concurrence that the proposed mining project was "not likely to adversely effect" any protected species", the FWS announced on April 30, 2001, that it was not able to concur with the Corps' recently announced conclusion[127] (which restated its earlier determination) without receiving supporting information. AR824. FWS observed that no biological evaluation was included in either Public Notice issued by ACOE, nor had the EIS provided a thorough analysis of the potential effects -- including cumulative effects -- on the species.

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[125]It may be that financial restrictions limited the agencies' analysis of impacts on protected species. FWS had stated earlier that it had no funds to conduct wildlife analyses. AR83.

[126]The ROD offers little improvement in this area. "The project is ... expected to result in no change in wildlife utilization compared to before mining, although on a smaller area of land." AR1028 at 79.

[127]On March 1, 2001, the Corps had announced in the Revised Public Notice that the proposed mining was "not likely to adversely effect" any protected species. AR737.

AR824. Thus, FWS identified that NEPA had not been met and this Court agrees. The Corps failed to carry out its NEPA-imposed duty to consider "the environmental impact" of the proposed action, 42 U.S.C. 4332(C)(I), 40 C.F.R. 1502.1, particularly by failing to include accurate scientific analysis regarding an endangered species known to be within the area of the proposed mining. 40 C.F.R. 1500.1(b).

d. Increasing urbanization of Miami-Dade County

Indirect effects may include growth inducing effects, 40 C.F.R. 1508.8, particularly if that growth might not occur without the project's influence. Impacts that "could likely occur at the site or in the vicinity whether or not the permit is issued should not be given much weight." William L. Want, Law of Wetlands Regulation §6:64, at 6-58 (2005). The EIS reports that "continued westward urban expansion of Miami" is a reasonably foreseeable action related to the proposed mining plan, AR614 at 89, and that it will result in "negative impacts," AR614 at 90, but provides no analysis of the specific impacts other than to state that they will be "confined primarily to the immediate area." AR614 at 90. (The EIS also suggests that mined rock from the Lake Belt will have a statewide value.) There is nothing in the EIS that supports a conclusion that westward urban expansion of Miami would occur whether or not the mining continues in the Lake Belt, nor is there anything to show that the adverse effects of the mining-related development will be "confined."[128]

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[128]Plaintiffs claim that the aesthetic value of the Lake Belt was not considered, but it appears that the Corps briefly addressed this point. The Lake Belt has a relatively consistent, i.e. little or no diversity, visual appearance as wet prairie with tree stands of melaleuca. "This perception of minimal diversity results not only from the subtle

A cumulative impacts analysis requires that the present action be considered along with reasonably foreseeable future actions. Clearly the production of limestone-based concrete and cement will lead to greater urbanization anywhere in which the rock is used, and it was error for the EIS to ignore this element. "More strongly related indirect impacts should be given heavy consideration, while more 'attenuated' impacts should be considered, but less heavily." Regulatory Guidance Letter ("RGL") 88-11 (effective August 22, 1988, expired December 31, 1990), *reprinted in* William L. Want, Law of Wetlands Regulation (2005). To the extent that future specific uses of the mined rock in non-contiguous areas, i.e., areas not adjacent to the Lake Belt, are unforeseeable, the Court finds that the Corps properly declined to conduct further study. This conclusion, however, does not relieve the Corps of considering the development, at a minimum, of the Lake Belt area itself which will occur as a direct result of the mining. For example, additional roads and infrastructure to support the mining will be developed, and there will be more truck and rail traffic to process the mined rock.[129]

In a recent decision by another member of this Court, the Corps was ordered to consider the cumulative effects of future planned development even if such development had not yet been specifically proposed. Florida Wildlife Federation v. U. S. Army Corps

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differences in landscape form, color, and texture, but is also a result of the dynamic mode of the average observer (from an automobile). The natural appearing landscape remains dominant. Changes in the landscape are evident, i.e., quarry lakes, but not dominant." AR614 at 67. Obviously, increasing the acreage of mining will cause the quarries to become more dominant and will decrease the natural aesthetic value of the landscape; and this cumulative impact should have been addressed in the EIS.

[129]Moreover, as noted by the FWS, it was inappropriate for the Corps to credit the mining permit applicants with stimulating economic growth but not to charge them with the costs suffered by the environment consequent to such growth. AR712.

of Engineers, 401 F. Supp. 2d 1298, 1326-1328 (S.D. Fla. 2005). While the limestone mining in the present case is not as obvious a catalyst to development as the biotechnology research park at issue in Judge Middlebrooks' case, it is nevertheless this Court's conclusion that the future urbanization of the Lake Belt and at least the surrounding areas to the eastern side of the Lake Belt should have been considered by the Corps as a cumulative effect of the proposed mining plan.[130]

The Court is troubled by the underlying theme of the Corps' ROD which suggests that the permits at issue have been designed to be extended to the full fifty year mining plan. As is evident from the ROD, the Corps has not shelved the larger plan, but rather just delayed its implementation until the first period of mining is complete. Record evidence shows that the purpose of permitting mining in the Lake Belt is to serve a predicted need from Florida's rapidly increasing population growth rate, and there is nothing to suggest that the growth rate will slow significantly. Thus, the Corps' simple dismissal of the negative impacts of development, even as to just the Lake Belt and nearby area, violated NEPA's requirement that all indirect effects be addressed. 40 C.F.R. 1508.8.

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[130]The Corps rejected requests that the EIS be expanded to include the direct, indirect and cumulative effects on other wetlands in Florida as a result of placement of the mining products. "If wetlands are impacted by the placement of fill and subsequent construction, this activity would be addressed by a Section 404 permit that covers that particular activity." AR586. The ROD acknowledges that "[s]econdary effects ... are those resulting from the use of the material mined.... The mined material is processed into cement, crushed rock, and fill products that are used for construction throughout the State. Some of this could be used as fill in wetlands but these uses are regulated individually through 404 permits." AR1028 at 59.

2. Consideration of adverse environmental effects which cannot be avoided if the proposal is implemented (i.e., the mitigation plan)

The Corps' EIS identified various serious impacts, as noted above,[131] and thus the Corps was required, by NEPA, to first attempt to avoid these impacts and then to minimize whatever was unavoidable, and, finally, to mitigate for any unavoidable adverse effect.

> Implicit in NEPA's demand that an agency prepare a detailed statement on 'any adverse environmental effects which cannot be avoided should the proposal be implemented,' is an understanding that the EIS will discuss the extent to which adverse effects can be avoided. More generally, omission of a reasonably complete discussion of possible mitigation measures would undermine the 'action-forcing' function of NEPA.

Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 351-52 (1989).[132] The Corps and EPA have entered into a Memorandum of Agreement ("MOA") on Mitigation,[133] which adopted the sequencing approach that had been used by EPA: generally not considering mitigation as a factor in favor of issuing a permit but rather requiring it after the permit proposal is determined to meet permit criteria independently of mitigation.[134]

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[131]The Corps' identification of the serious impacts was not accompanied by an adequate analysis thereof.

[132]"Although NEPA does not mention mitigation, by administrative practice and regulation mitigation, including conservation-type mitigation, plays an important role in the discharge by federal agencies of their procedural duty under NEPA to prepare an EIS." Thomas J. Schoenbaum and Richard B. Stewart, The Role of Mitigation and Conservation Measures in Achieving Compliance with Environmental Regulatory Statutes: Lessons from Section 316 of the Clean Water Act, 8 NYU Envtl. L. J. 237, 276 (2000).

[133]The Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation was revised, effective date February 7, 1990, *reprinted in* Margaret N. Strand, Wetlands Deskbook (2d ed. 1997).

[134]According to the Mitigation MOA between EPA and the Corps, which coordinates respective duties under §404, a project is to be assessed first without

The CEQ regulations direct that mitigation measures be discussed, 40 C.F.R. 1502.14(f), 1502.16(h), 1505.2(c), 1508.25(b)(3), but a mitigation plan need not be fully developed in the EIS, see Robertson v. Methow Valley, 490 U.S. 332 (1989). It is important, however, that the NEPA document contain all of the relevant information about the impacts of mining as well as the planned mitigation for those impacts. "Nothing should be left to good will among agencies or to personal recollections." FAR97.

Mitigation is compensatory, and has been interpreted to require a replacement of the functional value of the wetlands, that is, there should be no net loss of wetland values. In February 1998, the Corps held a meeting of its branch chiefs to discuss mitigation, and decided that the basic assumption underlying the mitigation evaluation should be to restore the wetlands in context of the entire ecosystem. Neither an "as is today" or "as it should have been, i.e., pine flatwood wetland, pre-impact with invasive species" approach was selected, but rather a more tailored approach toward restoration based upon the specific function being performed by the specific wetland at issue. AR545.[135] The analysis of wetland values in the present case was extensive;[136] however, the results were not applied

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considering proposed mitigation. Margaret N. Strand, Wetlands Deskbook 132-33 (2d ed. 1997).

[135]At the end of this meeting the question was raised by Corps staff as to whether there would be a public notice to announce this "fundamental change in how we do functional assessments on wetlands" as to projects greater than three acres. AR545.

[136]The Corps' mitigation analysis in the EIS benefitted from the work of both the Lake Belt Committee and the Issue Team, as well as an interagency meeting held in August 1996. The Lake Belt Committee's report in 1997 proposed that mining be concentrated toward the east and that the industry fund the acquisition and restoration of lands toward the west, which was accepted and adopted by the Florida Legislature. AR1028 at 35.

in the Corps' decisionmaking process. Many attempts were made to assess the value of the existing wetlands on which the miners wish to mine and construct supporting infrastructure, e.g. roads, work pads, etc. The Court already has addressed the importance of accounting for previous impacts on degraded wetlands, and the Corps' limited evaluation of such impacts here, when determining the adverse effects of a proposed action. The Corps' predictions of future impacts were similarly limited; for example, the Corps noted that the impact on groundwater seepage is "not immediate: it increases as the mining proceeds. The recommended plan is based on 50 years of mining so the total effect will not be seen until then.... The current discussions are to determine the appropriate mitigation measures to be incorporated into the master plan to be reported to the State Legislature by December 31, 2000." AR614 at 99.

"The compensatory mitigation proposed for this project consists of the restoration or enhancement of degraded wetlands within the region and creation of littoral zones adjacent to the quarry lakes." AR614 at 91. The EIS also briefly identifies specific mitigation measures to protect the wellfields, including the construction of a berm around the Lake Belt to prevent direct entry of surface water runoff and the prohibition of any future development of western areas as well as using land use regulations to prevent urban runoff from negatively impacting the Northwest Wellfield, AR614 at 82-83. Very little is discussed regarding the seepage impacts other than to say that water control structures might help, but that they would require more water in the overall system. Nowhere is it discussed that if the Aquifer becomes contaminated, such that its classification changes to groundwater under the influence of surface water, there will be an unpaid bill in the amount of $250,000,000 in order to treat the water.

Some of the strongest criticisms of the EIS were based upon the insufficiency of the mitigation plan.[137] Indeed, the admitted insufficiency of the mitigation[138] was the Corps' impetus for reducing the permit period to ten years.[139] In October 1997, the Department of the Interior delivered comments to the Corps regarding the inadequacy of the mitigation plan.

> The mitigation plan proposed by the Northwest Dade County Freshwater Lake Belt Committee during the Spring, 1997, legislative session of the Florida Legislature accounted for only direct wetland loss and concluded that the amount of mitigation necessary to neutralize rockmining impacts to wetlands was approximately half that required by other development activities. The justification for the reduced mitigation requirement was that the lakes left behind by rockmining were ecologically superior to other types of development and, therefore required less mitigation. We question the scientific basis for this assumption. Deep lakes are not part of the natural landscape of south Florida; they are also biologically unproductive and functionally-impaired. The mitigation ratio proposed, to date, does not and cannot compensate for the biological functions lost when shallow herbaceous marsh is replaced by deep

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[137]The EIS candidly states that the mitigation discussion is incomplete, but that it will be completed "during the permit application review process and finalized as part of the permit decision after this EIS document is finalized." AR614 at 98. "The details of the mitigation will be completed during development of the Phase II Master Plan for the Lakebelt area .... The principal feature of the Recommended Plan is the on going development of a comprehensive hydrologic and wetlands mitigation plan and a funding source to accomplish the plan." AR614 at 10.

[138]As to the 50 year plan, the Pennsuco was inadequate as a source for all mitigation. "The complete restoration ... [of the Pennsuco] would result in an approximate 1,808.41 habitat unit increase in the functions and values of this area." AR614 at 93. "Approximately 23% of the functions and values of the wetlands impacted are mitigated through restoration/enhancement of degraded wetlands within the study area. Additional mitigation sites will need to be identified for the project to achieve complete mitigation." [refers to section 7.0 for detail] AR614 at 93, 103.

[139]In early 1998, a senior Corps staff member noted that the permit duration would be based on how much mitigation was projected to be available from the Pennsuco wetlands area. AR544. After the EIS was issued, and after the permits had been reduced to ten years, a Corps staff member noted that "If we went for a longer footprint/longer permit they wanted us to specifically identify the additional mitigation outside of Pennsuco ...." AR865.

lakes and violates the 'no net wetland loss' directive.

AR512.[140] The Plaintiffs refer to several objections raised as to the mitigation plan in the original fifty-year mining plan, as discussed in the EIS,[141] some of which remain valid even though the duration of mining was reduced to ten years. For example, several months after the Corps announced the reduction in the permit periods, FWS continued to question the adequacy of the proposed mitigation. AR948.[142] The Court will address the Corps' discussion of mitigation in the EIS, with a view toward modifications, if any, that were made in light of the reduction of the permit period to ten years.

a. Mitigation Math

While a certain amount of flexibility in a mitigation plan is necessary and advisable,[143] there must be enough definition to allow for a meaningful review and

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[140]Criticisms of not just the ratio but also the calculation of the fee per ton of rock were received by the Corps, and in February 1998, the Corps staff expressed their own concern as to whether the draft mitigation proposal was based on proper assumptions. The Corps was concerned whether SFWMD's costs/acre would hold over fifty years at an estimated 7.8% annual growth rate, and whether or not other non-Pennsuco mitigation lands will cost $6,142/acre to buy/restore. AR552.

[141]For example, in July 2000, DERM recommended denying the permits because the mitigation described in the EIS was "wholly inadequate." AR65.

[142]EPA also noted a lack, in April 2001, after the announced reduction, of critical information to assess the proposed mitigation plan, and observed that the Lake Belt Committee Phase II plan didn't provide the information as had been anticipated by the Corps and others. AR820.

[143]As previously noted, the Corps' 1983 ROD on mining limestone in the Lake Belt area determined that permits should be reviewed individually, to allow for flexibility to accommodate "the needs of the people, the socioeconomic values and industrial demands, and future technical data which may become available and which would pertain to impacts of the activity to the overall system." AR3.

evaluation of the plan to ensure that it would be successful. An agency must exercise particular care when the mitigation requires restoration of a large number of acres and the location of those restored acres is critical to, e.g., limiting groundwater seepage. While the use of a mitigation fee per ton positively correlates to the amount of impact, it also creates difficulties by shifting the focus to "mine now, mitigate later" since the mining will take place first, followed by payment of the fee, then followed by expenditures for mitigation.

i. The ratio

The Court will only briefly address the question of the adequacy of the Corps' mitigation ratio of 2.5:1, since a complete discussion of Habitat Units, lift, and other aspects of the Corps' mitigation analysis are not necessary here. An interagency meeting was held in 1996 regarding wetland values and the calculation of mitigation, i.e., how many acres of restoration to require for each acre of mining impact. At that meeting the "Corps, DEP, SFWMD and DERM agreed to apply a 2.5:1 ratio within the entire basin for the acquisition, enhancement and perpetual maintenance of the wetlands in the Pennsuco. If the development ratios were applied to the same table, the resulting mitigation ratio would be 4.6:1." Staff concluded that costs per acre for Pennsuco lands were $5,000, so the actual contribution required for each acre mined would be 2.5 times $5,000 = $12,500. FAR131. Corps staff admitted that the 2.5:1 ratio had "a fairly large fudge factor." AR500. At some time in the next year, the Corps conducted a Wetlands Rapid Assessment Procedure (WRAP)[144] for the Pennsuco. The acreage ratios calculated pursuant to the WRAP were

[144]A WRAP assesses six factors in a system to determine its functional wetland value: wildlife utilization, vegetative groundcover, vegetative overstory, upland/wetland

3.65:1 (the Corps' stated preference for individual permits), and the ratio calculated pursuant to a modified version of WRAP known as MWRAP (used for large scale projects such as mitigation banks[145]), was 5.93:1. AR618 at 245. "Based on the WRAP score that was done for the Lakebelt study ..., we would be requesting mitigation at a ratio of about 3.5 to 5.5 to 1. This is a big jump from where we were at before, but we always knew that we were undermitigating." AR532 (November 14, 1997). In discussing other mitigation ratios in a nearby area, i.e., within the East Turnpike Basin, the Corps observed that it had "been progressing in increasing the amount of mitigation required targeting the Pennsuco area. We started at about 0.5:1 and most recently required 1.7:1." AR532. The mitigation ratio was established as 2.5:1.[146] By the time the draft EIS was distributed, the agencies were using a cost estimate to acquire/restore one acre of Pennsuco wetlands as $6,142. AR614 at 98.

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buffers, hydrology, and water quality inputs. Each factor is assigned a score between 0 and 3 based upon standardized criteria, all final scores are added and then divided by the maximum score possible to determine the functioning value for a particular system. FAR94.

[145]Mitigation banks provide replacement functions and values, expressed as credits, for unavoidable adverse impacts. For example, Florida Power and Light is the "owner and operator of the Everglades Mitigation Bank, the largest permitted mitigation bank in the United States. The Everglades Mitigation Bank is located on approximately 13,249 acres of freshwater and estuarine wetlands in Dade County, Florida. " AR605 at 212.

[146]Confusingly, a senior Corps staff member later references a mitigation ratio of 2.78:1 as having been calculated for the EIS, and notes that he had "finally calculated the ratio ... reflecting [certain] assumptions, [e.g., water quality stays constant, sawgrass prairie used as reference for mined lake and littoral assessments]." AR618 at 246-48.

DEP took a strong position with the mining industry that the 2.5:1[147] and $6,142 cost per acre were non-negotiable, which apparently contributed toward the miners' walking out of a meeting with the Corps and others in March 1998.[148] The miners rejected the federal agencies' proposal, which initially included an $.08 per ton fee, even though the "agency folks had worked real hard to come up with a balanced proposal." AR562.[149] In light of the several higher ratios which were developed but ultimately discarded by the Corps, the Court has serious concerns as to whether the final determination of 2.5:1 is adequate to replace the lost value of the wetlands.

ii. The fee

A key component of the mitigation plan is the collection of a mitigation fee, imposed

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[147]Although the EIS specified that "[i]ncreased mitigation will not be required for areas currently permitted when the permits expire," AR614 at 99, the Corps adopted the 2.5:1 ratio to apply to all mining – not just mining under the new permits but also under the extended prior permits, which displeased the mining companies. In early 1999, EPA economists also developed a formula to account for mitigation as to mining that had occurred from October 1, 1998, to September 30, 1999, and any related outstanding mitigation. The formula provided a "kicker" of 2.1% to the mitigation calculations. SAR1336 at 2428, 2426-7 (originally part of AR666). The companies argued that they should be grandfathered in from prior permits, which reportedly generally had required only one acre of restoration for every ten acres of impact. AR956. Just prior to issuing the ROD, the Corps modified its calculations based on the mining companies' objections. AR1009.

[148]This result prompted one Corps staff member to inquire as to whether the Corps could force the Florida Rock takings case along. AR560.

[149]An EPA staff member reported that the miners were upset about the settlement of the takings case and the areas of mitigation to be determined as a result of the Lake Belt process, announcing that they would hire an economist to talk with the EPA economist. AR560. The agencies' plan included a credit to the mining companies of $2,500 per acre of property owned within the Pennsuco; and a total of 3,740 acres to be transferred "up front." AR560.

by the State of Florida on all limestone from the Lake Belt area. The $.05 per ton, which increases each January 1, is based upon an overall mitigation ratio of 2.5 acres of restored wetlands for each one acre mined, assuming that the cost to acquire and restore one acre of Pennsuco wetlands is $6,142. AR614 at 98. The mitigation fee is collected by the State and held in a Mitigation Fund overseen by a multi-agency panel. Fla. Stat. §373.41492(2).[150] The fee is in addition to on-site hydrological mitigation, including the construction of shelves, which first were calculated as surrounding each one mile square lake.[151] The fee per ton established by the state legislature is recognized by the Corps as the administrative mechanism by which the miners are providing compensatory mitigation to satisfy Federal requirements.[152] The use of fees paid, e.g., by a developer, to fund mitigation instead of providing it directly has grown over the past decade.[153] These "in-lieu-fee arrangements" were discussed in the 1995 federal agencies' Guidance issued

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[150]"If a general permit by the US Corps, or an appropriate long-term permit for mining, consistent with the Miami-Dade County Lake Belt Plan, this section, and ss. §373.4149, 373.4415, and 378.4115 is not issued on or before September 30, 2000, the fee imposed by this section is suspended until revived by the Legislature."

[151]The revised mining plan allowed for larger lakes, however, which resulted in less littoral shelves. A senior Corps staff member noted that this issue was addressed by calculating mitigation requirements based upon the percentage of deep mined area. AR616.

[152]"The Corps permit will differ from the State's. They have the fee per ton since the Legislature says so. The Corps permit template recognizes the fee-per-ton as a mechanism but provides criteria that the replacement of functions (based on reports from the interagency committee) balance the actual impacts (based on actual rate of mining) using the WRAP-based methodology (0.18 units in Pennsuco/0.45 units mining)." FAR16.

[153]See Fed. Reg. 66914 (Nov. 7, 2000). William L. Want, Law of Wetlands Regulation §6:43, at 6-40 (2005).

regarding the establishment and use of mitigation banks, and further guidance was provided in 2000 by a multi-agency panel. Such arrangements should be "self-sustaining" and "land acquisition and initial physical and biological improvements should be completed by the first full growing season following payment of the initial funds ...." 65 Fed. Reg. 66913 (November 7, 2000).

The Corps has noted that the fee per ton was based on a 50 year cash flow table estimating 300 acres mined for each of 50 years, and that the "mine-now-mitigate-later" approach was developed to keep the fee at no more than $.05 per ton. AR956. The length of the initial period of proposed mining made economic predictions difficult.

> The agencies [sic] economists feel extremely uncomfortable making economic forecasts over a long period of time (i.e., 50 years). Therefore, they recommend that a 'revisitation' clause be included in the 404 permit so that representative and appropriate values for the economic variables can be determined and utilized. The purpose is to ensure that revenues from the industry match agency costs for the agreed upon mitigation plan. This is especially critical since the mitigation credits for the Pennsuco wetland will not be adequate to offset the total amount of the anticipated wetlands impacts from the proposed mining.

FAR120. FWS noted that "the landscape in South Florida will change drastically as a result of the Everglades Restoration" and that this limited the Corps' ability to prepare a full mitigation plan for the entire fifty years originally envisioned. FAR2. As noted above, the initial assumed value for Pennsuco wetland acquisition and restoration costs was $6,142 per acre. This figure is increased slightly each year, and is based on acquisition costs of $3,071 per acre. See Am. Compl., Attachment 1. According to Plaintiffs, however, Pennsuco land prices were significantly higher than provided for by the permits and the ROD. "[For example,] Parcels in the Pennsuco owned by the Florida Rock mining company were valued at $10,000 per acre as part of an October 2003 'land swap.'"

Further, the Corps' settlement of the Florida Rock takings litigation resulted in compensation of $13,462 per acre. The Corps received comments after the EIS was issued urging the Corps to purchase as much land for mitigation as possible early – before prices increased. AR956.

The costs used to derive the fee included the costs of melaleuca removal. It appears that the costs of removing melaleuca were underestimated in the Corps' adoption of the cost of $6,142 per acre of mitigation, i.e., to acquire and restore an acre of Pennsuco wetlands. "[R]emoval costs are really very low for the amount of work that needs to be done." FAR124. "It is our belief that the proposed costs [at that time already updated to $6,142/acre, see AR126] attributed to management of the Pennsuco are extremely conservative and do not accurately reflect the actual effort necessary to manage Melaleuca successfully." AR547.[154] The Corps has claimed that "[w]ithout the melaleuca removal required by the [Lake Belt] plan, and funded by the mitigation fees these open areas [of wetlands in the Lake Belt] would be overrun by vegetation and unavailable to the storks for

[154]Exotic treatment costs were estimated to be $50 per acre for prescribed burning in the Pennsuco. "Prescribed burning, in conjunction with chemical control, is much more effective than chemical treatment alone. We are proposing that annual burning take place for five years following chemical treatment. Restoration costs are based strictly on exotic control measures – chemical treatment and prescribed burning. Hydrologic restoration has not been considered, although it may be a factor. At this time, there is no way to estimate its need or cost." The annual maintenance costs for the Pennsuco for the first year after the beginning of a melaleuca removal program, ranged from $494/acre (central area of Pennsuco), to $938/acre (northern), to $2270/acre (southern). These figures drop in each of the subsequent four years, and then in the fifth year revert to a lower cost a regular maintenance program (after the melaleuca seed source has been controlled). AR618 at 178. (Attachment to fax from EPA to Corps).

forage." AR 1144 at 15 (Corps' FAQs).[155] In light of the potential underestimating of these expenses, the Court has serious concerns regarding the adequacy of the fee with respect to the costs of acquiring wetlands for restoration.

b. Lakes/Shelves

The EIS discusses mitigation, in part, as replacing lost wetland values by constructing edges, i.e., "littoral shelves," around each of the mining pits.[156] It also had been argued that the lakes themselves were of some ecological value. However, the deep pits and their corresponding shelves, which will be constructed by the mining companies, have been the subject of much criticism.

The Florida Game and Fresh Water Fish Commission reported that fish production is low in the quarry pits. AR299. Natural lakes are absent from southern Florida, and only 3.2% of Florida's natural lakes are greater than 1,000 acres, with few lakes exceeding 30 feet in depth. FAR132.[157] At a meeting in February 1998, an interagency group agreed

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[155]It is unclear why this particular mitigation, i.e., melaleuca removal, could not be accomplished without the mining plan. It is not enough to justify permitting the mining – with its consequent total environmental damage to existing wood stork foraging areas – in order to fund restoration of other areas for wood stork foraging. Although it is not the Court's role to second-guess the Corps' judgment, it certainly appears that a more environmentally correct result might have been obtained by not permitting the mining, and instead funding melaleuca removal on those wetlands already publicly owned.

[156]The shelves have been described variously as safety shelves (presumably because of the danger of the steep drop), artificial marshes/wetlands, and littoral shelves.

[157]This specific document was not located in the AR, although pages from the document appear in Appendix D of the EIS; and the Court presumes that it was available to the Corps. AR614 at 793.

that the functional capacity of a 100 foot wide littoral shelf was .53 on a scale of 0 to 1.0, due to wildlife utilization, ground cover, buffer, hydrology, and water quality functions. FAR124.[158] Clearly, a balanced and healthy agency review would result in a record that included a variety of data, not all of which must support the agency's decision. Indeed, a record that tilted in only one direction would be suspect, nor does all of the data need to support the agency's decision. Environmental Coalition of Broward v. Myers, 831 F.2d 984 (11th Cir. 1987). However, in this case the data is all against any value in the deep pits and limited, if any, value in the shelves, so the Corps' decisions runs counter to the evidence.

The Corps' conclusion that the remnant pits were of any benefit is not supported by the record, nor has it been demonstrated that lakes mitigate for any of the adverse effects discussed above – indeed, they exacerbate the groundwater seepage problem and the Aquifer contamination issue.[159] Similarly, the shelves are of dubitable value; apparently recognizing this, the Corps has postponed enforcing any requirement that the shelves be constructed. In March 1995, the miners requested that mitigation requirements be deferred as to the construction of littoral shelves since it may be inefficient to construct littoral zones if those areas were likely to be mined later. AR219. The ROD provides that

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[158]Although the Court only located this document, summarized notes of a meeting, in the FAR, the content of the document is presumed to have been available to the Corps, who was present at the meeting.

[159]"[C]ontrary to providing comparable water quality enhancement benefits, borrow lakes are much less capable of providing many specific benefits, and in the case of groundwater protection may even act as a conduit for contamination to reach the aquifer." AR117 (Correspondence from EPA to Corps, dated June 15, 1993, regarding project in west Broward County, immediately to the north of Lake Belt area).

"construction of [demonstration 100-foot wide littoral marsh] will commence after the 3-year review," while waiting for data from an existing marsh to determine what benefits these provide. AR1028 at 74. This represents an improper decision by the Corps to postpone the mitigation for the wetlands losses, and the agency's own acknowledgment of the insufficiency of the mitigation plan -- at least to the extent that it depended upon the shelves.

c. Pennsuco

The EIS revealed that there was not enough land in the Pennsuco wetlands for the fifty year mining plan,[160] and that the area may not be the best choice for compensatory mitigation; despite this significant deficiency in its mitigation strategy, the Corps proceeded with the mining plan until it was forced to reduce the period to ten years to satisfy objectors. Although the Corps stated, in February 2002, that there would be enough area in the Pennsuco to accommodate the first ten years of mining, AR990,[161] it appears that it will be insufficient to accommodate the mitigation needs of all of the mining activity allowed in these permits. A senior Corps staff member noted that the permitted acres actually will take sixteen years to mine, and that there will be insufficient acreage available for mitigation in the Pennsuco. AR978.

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[160]"Approximately 23% of the functions and values of the wetlands impacted are mitigated through restoration/enhancement of degraded wetlands within the study area. Additional mitigation sites will need to be identified for the project to achieve complete mitigation." AR614 at 103.

[161]"The Corps has identified willing sellers in 12,000 acres of Pennsuco (more acreage then [sic] required for mitigation for the 10-year period)." FAR2 (Dec. 17, 2001).

The EIS candidly states that the mitigation discussion is incomplete, but that it will be completed "during the permit application review process and finalized as part of the permit decision after this EIS document is finalized." AR614 at 98. In July 2000, the Corps announced that its "current position is that the permits, if issued, will be conditioned for periodic reviews that would stop mining until additional compensatory mitigation sites are identified and added to the permits." AR637. The special conditions, however, do not specify such a result. AR1028 at 75.

As early as 1997, ENP and FWS argued that the Pennsuco might not be the best location for the Lake Belt's planned mitigation since that area may be needed for water storage or for a buffer as part of the Park's restoration. AR512. After the EIS was issued, the FWS noted that the long-term hydrological viability of the Pennsuco was unknown, due to the possible effects of decreases in average annual surface water levels which may result from the mining. AR671.

The record before the Court suggests that the Corps did not comply with NEPA in preparing the EIS, nor in issuing the permits. While the reduction in terms of the permits did retroactively render the EIS discussion of mitigation more adequate, it is nevertheless the case that the Corps should have rigorously evaluated, with public participation, the actual mitigation plan to be adopted with the permits. The location of the additional property to be mitigated, beyond the Pennsuco, is unclear from the EIS, or even the ROD – as it appears that there may be insufficient land in the Pennsuco to accommodate even the 5,409 acres of mining to be conducted as a result of these "ten year" permits (13,522.5 acres would be needed). Having failed to identify, even generally, what other properties would be mitigated, the Corps violated NEPA by failing to provide the public with "sufficient

information to ... generate meaningful comment." 33 C.F.R. 325.3(a).

d. Transfer of property/Conservation easement

Another key aspect of the mitigation plan was that the mining companies were to sell their property within the Pennsuco to a governmental agency at appraised value, in order to protect it from further development.[162] AR614 at 98-99. However, only three of the companies (Florida Rock, Rinker and Tarmac) own any land in the Pennsuco. Shockingly, the planned transfer of the miners' Pennsuco lands to the public is not binding. The EIS states that the sale "will be negotiated with individual companies who agree in principle to sell at appraised value." AR614 at 99.[163] The Corps describes it as a "gentleman's agreement" that miners will sell Pennsuco lands at market value to SFWMD. AR956.

The mitigation plan also envisioned conservation easements briefly in the EIS. AR614 at 99. The record reveals a fair amount of unsuccessful negotiation between the agency and the miners' representatives on these issues, which ultimately resulted in the lack of any binding requirement on the permittees. Thus, although the adoption of the

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[162]Regulatory Guidance Letter ("RGL"), issued by Corps on October 31, 2001: "areas included in a mitigation project should be permanently protected with appropriate real estate instruments." RGL No. 01-1, 4(a)(1) (Oct. 31, 2001), *reprinted in* William L. Want, Law of Wetlands Regulation (2005). This RGL was issued after a report by the National Research Council/National Academy of Sciences issued in June 2001 that criticized agency mitigation plans as being insufficient. William L. Want, Law of Wetlands Regulation §6:43.1, at 6-42 (2005).

[163]The ROD acknowledges that there is "no written commitment" -- apparently because those companies do not yet have a commitment from the Corps that mining will be permitted for the desired fifty years. AR1028 at 70.

statutory fee per ton included an assumption that the conservation easements and agreements to sell would be given by the mining companies, AR701, the Corps' decision on the easements was "[kicked] down the road to the three year review period when we may have a better feel for land-use footprint" AR707, AR759. FWS argued that the Corps should force the mining companies to commit to sell their Pennsuco lands at appraised values, particularly because no lands had been acquired for mitigation in Pennsuco even though $24 million had been collected from October 1, 1999, through December 31, 2000. AR824.

Despite earlier having proclaimed their intention to convey mined property to the public,[164] and their arguments that mining and its leftover lakes would serve the public interest by stopping further westward expansion of urban development, the mining companies slowly moved away from any commitments to convey their property rights. In November 1996, a Corps staff member reported that the miners wanted to keep their development rights in case the Urban Development Boundary for Miami-Dade County shifted to the west to include some of the Lake Belt. AR341. After the EIS was issued, the mining companies negotiated a statement that mined lands were to transfer to public ownership "where appropriate," AR901, and noted that conservation easements were not

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[164]In 1995, a mining representative stated that "[t]he Lake Belt Plan envisions that essentially the entire area will be owned by the public. The mining companies have indicated that they will donate a substantial portion of their land when mining is complete." AR222. Previously, the mining industry had claimed that "the miners in the vicinity of the Northwest Wellfield typically sign a covenant agreeing to no future development around the deep lake - shallow lake area." AR19 at 10-11. As late as September 2000, the miners were taking credit for the "additional consideration from the Coalition such as the agreement to sell its land in the Pennsuco strip at appraised value." AR708.

required by any statute, but that the miners were "doing this voluntarily," and that they were willing to work with the Corps as long as they were fairly compensated. AR909.[165]

> We cannot agree to an open ended conveyance, irrespective of ownership or other legal restrictions and therefore cannot agree to obtain releases or subordination agreements as a condition. In some cases, miners may just be leasing the mineral rights and may never acquire full title to create such an easement nor do we know if an easement would be OK with lenders or others. We also have a problem with extending the easement to upland areas in order to protect the littoral areas from indirect impacts. That would make the easement potentially 'limitless' and be impossible to implement as well as reaching far beyond the Corps CWA jurisdiction.

AR706. The Corps' failure to adopt a sufficiently certain mitigation plan as to transfer of the mined property, particularly since the public was advised that the transfer of mined lands to the public was a component of the mining plan, violates the Corps' duties under NEPA.

In summary, the Corps' permits authorize the mining industry to eliminate thousands of acres of wetlands. While the miners repeatedly describe the area as "degraded" wetlands,[166] it is nevertheless the case that these wetlands, sitting directly above the Biscayne Aquifer, do serve a purpose and that purpose must be mitigated for if the wetlands are going to be destroyed. The Corps' mitigation plan identifies few specifics as to the serious adverse effects identified above, e.g., Aquifer contamination, groundwater seepage, destruction of wood stork habitat, increased urbanization. The major aspect of the mitigation plan is the payment of a fee per ton, and the use of those funds to acquire

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[165]Some members of the mining coalition made it clear that they would not "give up their property rights." AR 708 at 1-2.

[166]The mining industry had argued that no compensatory mitigation should be required since they were minimizing any adverse effects by using only degraded wetlands for mining. AR222. This position clearly was unsupportable.

other wetlands for restoration. There is no discussion of a mitigation plan for treatment of the Aquifer if it becomes contaminated, nor is there a plan for compensating for groundwater seepage impacts. The derivation of the mitigation ratio is confusing, at best, and suggests that even when the Corps does implement a specific mitigation plan that it will be insufficient as to this mining. For all of these reasons, the Court must conclude that the Corps' permitting decision -- particularly the EIS -- does not satisfy NEPA, and the Corps is directed, on remand, to examine the mitigation needs in greater detail.

3. Alternatives to the proposed action

The CEQ regulations describe the analysis of alternatives as "the heart of" the EIS. 40 C.F.R. 1502.14. The result of this analysis should be a set of options which reveal a clear basis for choosing among alternatives. Skinner at 1541. "This discussion-of-alternatives requirement is intended to provide evidence that those charged with making the decision have actually considered other methods of attaining the desired goal, and to permit those removed from the decisionmaking process to evaluate and balance the factors on their own." Sierra Club v. Morton, 510 F. 2d 813, 825 (5th Cir. 1975); Druid Hills Civic Ass'n v. Federal Highway Admin., 772 F.2d 700, 712 (11th Cir. 1985).

"NEPA imposes procedural requirements before decisions are made in order to ensure that those decisions take environmental consequences into account." Wilderness Watch v. Mainella, 375 F.3d 1085, 1096 (11th Cir. 2004) (reversing for NEPA violations in agency decision to allow vehicle use through wilderness areas). The EIS analysis of alternatives must "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons

for their having been eliminated." 40 C.F.R. 1502.14(a). Before determining what alternatives to study, an agency first must clearly define the project's purpose.

a. Defining the purpose

The EIS at issue contains no definitive statement of the project's purpose and only references the creation of the Lake Belt Committee as the "need" for the project. AR614 at 11-12.In the Public Notice issued with the EIS in June 2000 the Corps identifies the proposed work as the: "Placement of fill related to excavation activities for the purpose of limestone quarrying." AR623A. The Corps' responses to critics, attached to the EIS as Appendix H, described the purpose as "to provide a limestone product from the Lakebelt area."[167] AR614 at 909.[168] The Federal Defendants assert that "the purpose of the requested permits was to allow the applicants to exercise their mining rights." Cross-Motion for Summary Judgment, Docket Entry #32, at 33. As NEPA requires public disclosure of critical information, the Court will rely on the more general statement of purpose contained in the more readily accessible Public Notice. This also is consistent with NEPA's requirement that the general goal of the project, rather than the particular applicant's goal, be considered. Van Abbema v. Fornell, 807 F.2d 633 (7th Cir. 1986) (proper to analyze general goal, rather than particular applicant's goal,"only marginally relevant" if at all, that applicant doesn't own an alternative site).

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[167]"A conservation biology alternative [no additional mining, mandated restoration, etc.] will not achieve the landowners' purpose to provide a limestone product from the Lakebelt area." AR614 at 909.

[168]Additional statements of purpose are found in the ROD, see CWA analysis, below.

b. Analysis of "no action" alternative is required

Consideration of the "no action" alternative is mandatory "to facilitate reader comparison of the beneficial and adverse impacts of other alternatives to the applicant doing nothing." 40 C.F.R. 6.203(b)(1), (c), 40 C.F.R. 1502.14(d). This "provides a benchmark, enabling decisionmakers to compare the magnitude of environmental effects of the action alternatives." Forty Most Asked Questions Concerning CEQ's NEPA Regulations, 46 Fed. Reg. 18,026, 18,031 (March 23, 1981).[169]

The "no action" alternative was not rigorously explored and objectively evaluated, as required by 40 C.F.R. 1502.14. Instead, the EIS merely explains why that alternative is not being examined in any detail. AR614 at 71-72. The Corps concluded that if it took "no action" and instead maintained a permit-by-permit review of proposed mining in the area there "would be no development of a comprehensive landuse [sic] master plan" for the Lake Belt area, AR614 at 71. There is no basis for this conclusion, however, since the development of a master plan is not the Corps' responsibility, but rather rests with local, or perhaps state, government. The Federal Defendants admit this in their brief. "The decision to allow mining in the Lakebelt region is a land use decision made by the State of Florida and local governments. It is not the role of the Corps to question that determination, but rather to determine whether public interest in mining as determined by those entities warrants the impact to waters of the United States." Federal Defenants' Cross-Motion for Summary Judgment, at 363.

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[169]Note that the 40 questions document is not owed the substantial deference as would be to agency regs, submitted to notice and comment.

c. Corps' analysis of three alternatives

NEPA requires an analysis of alternatives and the presentation of that analysis in such a manner that a decisionmaker can choose wisely among the options presented to her. The Corps must "[r]igorously explore and objectively evaluate all reasonable alternatives [but then just] briefly discuss [those alternatives eliminated from detailed study]." 40 C.F.R. 1502.14(a). The EIS contains a discussion of only four alternatives:

1) no action (such that the Corps will continue evaluating permits on a case-by-case basis),

2) no action and revocation of existing permits,

3) curtail future mining, and

4) comprehensive mining plan.

The first three of these were "briefly discuss[ed]" and then eliminated. No other alternatives were identified in the EIS, so presumably no others were studied. 40 C.F.R. 1502.14(a). The ROD discusses the same alternatives. AR1028 at 36-40.[170]

i. The "no action" alternative(s)

The Corps concluded that taking "no action" and continuing to review permits on an

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[170]The Industry Defendants rely on the fact that the Issue Team studied twelve alternatives, and the Team's report is included as Appendix F to the EIS; however, NEPA requires that the alternatives analysis be discussed in the EIS. In any event, the claim that the Team studied twelve alternatives is slightly misleading. The Team approached the study of the Lake Belt area by section: north, middle, and south, with no more than five alternatives being studied for any one section. For example, two were studied or the northern section, five for the middle section, and four for the southern. AR614 at 843. Also, the twelve alternatives were only a very preliminary stage – generated as a result of asking members of the Issue Team first to mark on a map their decision as to where mining, water management, and environmental lands should be located, and then to do the same again after a copy of the initial map including everyone's first round of input, was distributed. AR614 at 842.

individual basis would not be wise because of the "strong consensus ... that the current wetland mitigation requirements do not adequately compensate for the resulting wetland impacts." AR614 at 71. This statement defies logic. The continuation of case-by-case review does not imply that wetland mitigation requirements cannot be improved.

The Court also determined that taking no action and revoking the mining permits would cause "economic hardship" on the mining industry "as well as increased cost of construction goods and services to the people of Florida," AR614 at 71, and, as such, was "unreasonably expensive to the applicant" and therefore not practicable.[171] This statement is similarly senseless, and fails to take into account the principle stated within the same paragraph of the EIS, i.e., that "[t]he determination of what constitutes an unreasonable expense should generally consider whether the projected cost is substantially greater than the costs normally associated with the particular type of project or would force an applicant to accept a level of business risk that would be unreasonable." AR614 at 71. There is no support in the record for a determination that "revoking" the current permits (many of which were expiring) and denying any future permits would be "unreasonably expensive to the applicant" -- for the simple fact that there is no evidence at all as to the mining companies' financial situations[172], nor whether, e.g., they own property in other locations that could be

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[171]Citing the Preamble to the 404(b)(1) Guidelines, 45 Fed. Reg. 85336 (1980), *reprinted in* Margaret N. Strand, Wetlands Deskbook (2d ed. 1997), the Corps concluded that because of "the legal issues arising from the revoking of existing permits and the economic hardships imposed on the mining industry this scenario will not be carried forward for further evaluation." AR614 at 71.

[172]The brief report entitled "The Economic Significance of Lake Belt Limestone Mining," included as an Appendix to the EIS, AR614 at 871, is of no assistance. Not only does it focus on external economic factors, e.g., the "earnings of cement manufacture employees" or the "output of cement," rather than actual costs or profits of