

614 F.Supp. 1475

23 ERC 1033

(Cite as: 614 F.Supp. 1475)

SIERRA CLUB, Hudson River Fishermen's Association, NYC Clean Air Campaign, Inc., the Hudson River Sloop Clearwater Inc., the City Club of New York, Business For Mass Transit, Committee For Better Transit, Inc., West 12th Street Block Association, Friends of The Earth, Otis Burger, Mary Rowe, and Howard Singer, Plaintiffs,

v.

UNITED STATES ARMY CORPS OF ENGINEERS, John Marsh, as Secretary of the Army of the United States, E.R. Heiberg, III, as Chief of Engineers, Fletcher H. Griffis, as New York District Engineer, United States Department of Transportation, Elizabeth Dole, as Secretary of Transportation of the United States, Federal Highway Administration, Raymond A. Barnhart, as Federal Highway Administrator, United States Environmental Protection Agency, Lee Thomas, as Administrator of the Environmental Protection Agency, Christopher J. Daggett, as Administrator, Region II of the Environmental Protection Agency, James L. Larocca, as Commissioner of the New York State Department of Transportation, Defendants.

No. 81 Civ. 3000.

United States District Court,
S.D. New York.
Aug. 7, 1985.

In actions opposing construction of interstate highway and urban renewal project bordering river, the United States District Court for the Southern District of New York, 536 F.Supp. 1225 and 541 F.Supp. 1367, upheld in part challenged proposed landfill, and defendant federal and state agencies appealed and one plaintiff cross-appealed. The Court of Appeals, 701 F.2d 1011 affirmed in part, reversed in part and vacated in part. Corps of Engineers and Federal Highway Administration reconsidered matter and again decided to grant landfill permit. New York State Department of Transportation moved to have injunction vacated, and plaintiffs opposed motion.

Motion to vacate injunction denied; permanent injunction entered.

***1477** Mitchell S. Bernard, New York City (Jean McCarroll, Butzel & Kass, New York City, on brief), for plaintiffs Sierra Club, et al.

Rudolph W. Giuliani, U.S. Atty., S.D. of N.Y., New York City (Howard Wilson, Marc H. Rosenbaum, Randy M. Mastro, Asst. U.S. Attys., New York City, on brief), for defendants U.S. Army Corps of Engineers and Federal Highway Administration.

Paul J. Curran, New York City (Bruce Margolius, Lauri A. Novick, Kimberly A. McFadden, Kaye, Scholer, Fierman, Hays & Handler, New York City, on brief), for defendant New York State Dept. of Transp.

OPINION

GRIESA, District Judge.

On March 31, 1982 and June 30, 1982 the court handed down opinions ruling that certain authorizations, which had previously been granted by the U.S. Army Corps of Engineers and the Federal Highway Administration for the Westway project in New York City, should be vacated. The Corps had granted to the State of New York a permit for landfill in the Hudson River, and the FHWA had approved the grant of 90% federal funding to the State for the project. The matters were remanded to the federal agencies for reconsideration pursuant to judgments dated April 14, 1982 and July 23, 1982.

The judgments enjoined the construction of Westway, and federal funding for that construction, until and unless the agencies had remedied certain legal deficiencies in their proceedings regarding Westway.

The opinions are Action For Rational Transit v. West Side Highway Project, 536 F.Supp. 1225 (S.D.N.Y.1982), and Sierra Club v. U.S. Army Corps of Engineers, 541 F.Supp. 1367 (S.D.N.Y.1982). The court of appeals affirmed the basic district court rulings, although it reversed on some points, mainly relating to procedural provisions of the judgments. Sierra Club v. U.S. Army Corps of Engineers, 701 F.2d 1011 (2d Cir.1983).

The 1982 Judgments

The April 14, 1982 judgment vacated the Corps of Engineers landfill permit for Westway. The judgment directed that, in the event that New York State reapplied for a landfill permit, the Corps would undertake further proceedings in accordance with the National Environmental Policy Act, 42 U.S.C. §§ 4321 et seq. ("NEPA"), and § 404 of the Federal Water Pollution Control Act, 33 U.S.C. § 1344 ("Clean Water Act"), and the regulations thereunder, to prepare and issue the necessary supplemental environmental impact statement ("SEIS") and consider whether a landfill permit should be issued.

Paragraphs II.2.A and B directed that, as part of the remand proceedings, the Corps should prepare an adequate SEIS, dealing with the impact of Westway on the Hudson River fishery resources, including striped bass, and also dealing with current information on such non-fishery subjects as current cost estimates, current plans for the use of the landfill area, new information regarding alternatives, and any new information regarding the relation of Westway to the development of the West Side. Subparagraphs C and D directed that, in connection with the fishery issue, the Corps should independently evaluate all existing data, and after consultation with the federal agencies having to do with fishery and environmental matters--the National Marine Fisheries Service ("NMFS"), the Fish and Wildlife Service ("FWS") and the Environmental Protection Agency ("EPA"), the Corps should arrange for any additional studies necessary to evaluate the importance of the proposed Westway area of the Hudson River to the fisheries. Subparagraph F of the April 14, 1982 judgment directed: F. During the course of its consideration of a landfill/dredging permit application ***1478** for Westway, the Corps of Engineers shall keep records of all activities, deliberations, and communications (including communications with the FHWA and any other federal official or agency) which occur in relation to such permit application.

The July 23, 1982 judgment related to the FHWA. It vacated all actions taken by the FHWA in approving the design and location of Westway and federal funding for that project. The judgment prohibited the FHWA from granting any such approvals for Westway until a proper SEIS had been issued, and reconsideration had been given, in accordance with the applicable statutes and regulations, to the question of whether design and location and federal funding approvals should be granted for Westway.

Paragraph II.4 of this judgment directed:

During the course of all proceedings had pursuant to this order, the FHWA, the New York State DOT, all administrative units of each, and all consultants and contractors employed by each, shall keep records of all activities, deliberations, and communications which occur in connection with the matters referred to in the Judgment of April 14, 1982 and the present Judgment. This is not intended to include law firms or the Department of Justice. It is understood that all parties subject to this provision reserve the right to claim all applicable privileges in respect to possible disclosure of the records maintained.

Due to the evidence of serious misconduct committed by the federal agencies and the New York State Department of Transportation ("DOT") during the proceedings leading up to the original grant of the landfill permit by the Corps and the original approvals of the FHWA, the court was of the view that a special master was required to exercise certain limited surveillance during the remand proceedings. The July 23, 1982 judgment appointed a special master and outlined his duties.

Current Proceedings

The Corps of Engineers and the FHWA have reconsidered the Westway matter. On January 24, 1985 the Corps decided again to grant the landfill permit for Westway. On February 25, 1985 this permit was issued. On March 18, 1985 the FHWA decided again to approve federal funding for Westway.

The New York State DOT has moved to have the injunctions vacated on the ground that the agencies had now fully complied with the law and that valid federal authorizations for Westway are in effect. Plaintiffs opposed this motion, contending that the procedures of the federal agencies on remand had been legally deficient and that the purported authorizations were invalid. Plaintiffs have filed a supplemental complaint containing the allegations of wrongdoing. Defendants have denied the essential claims.

An extensive trial has been necessary to resolve these issues, lasting from May 20 to July 12, 1985. There have been 30 trial days.

Summary of Findings and Rulings

[1] 1. Prior to the preparation of the supplemental EIS, the FHWA and the Corps of Engineers agreed that the primary purpose of the Westway project was to satisfy transportation needs, although it was recognized that other benefits would accrue from the new land provided by the landfill, including residential and commercial development and also parkland. It was important to the FHWA to define the primary purpose of Westway in terms of transportation needs, because that agency's authority to provide federal funding was essentially limited to highway projects. In the SEIS, issued on November 27, 1984, and signed by both the FHWA and the Corps of Engineers, it was stated that Westway's primary purpose is to replace the now demolished West Side Highway, although there was again a discussion of attendant development benefits. The cost of Westway was estimated to be approximately ***1479** \$2 billion, 90% of which would be federally funded.

In the decision of the District Engineer granting the landfill permit, issued January 24, 1985, it was stated:

Though FHWA has supported Westway over the years as a highway endeavor, in order to satisfy all of the goals desired of such a plan, it is better termed a "redevelopment" project.

The District Engineer testified in court that Westway is not needed as a transportation project; landfill is not needed for transportation purposes. As far as transportation needs are concerned, other possible highway designs would be practicable alternatives to Westway and would satisfy transportation requirements. The District Engineer testified that the existing West Street/12th Avenue, now that the West Side Highway has been demolished, provides adequate transportation. Arterial highway designs for improvement of West Street/12th Avenue at a cost of \$50 million (the estimate for a design called the "Modified Arterial") would meet transportation needs. The FHWA presented no evidence to contradict these assertions. The State of New York has conceded in its Post Trial Memorandum that "Westway is not necessary to provide transportation along the lower West Side."

The District Engineer, in his decision granting the landfill permit, stated that the non-Westway highway alternatives would not have any significant adverse environmental consequences of any kind. He specifically found that the current operation of West Street/12th Avenue, since the demolition of the West Side Highway, has not produced any significant adverse effects on air quality.

By his own admission, if the District Engineer had characterized Westway as a highway project, he could not have granted the landfill permit. However, the District Engineer's decision denominated Westway as a redevelopment project. On this basis he found great benefits and no practicable alternatives, and decided that the landfill permit should be granted.

The analysis of the District Engineer, as presented in his decision and in his court testimony, was far different from what had been presented in the SEIS. Under the statute (NEPA), the SEIS was required to publicly disclose the nature and purpose of the project and the kinds of alternatives that exist in light of the project's nature and purpose. The SEIS characterized the project as primarily related to transportation needs. The alternatives discussed were other highway designs with discussion of attendant benefits. The SEIS did not apprise the public of the positions now taken by the District Engineer in his decision and court testimony. These are fundamental differences, not trivial ones.

The SEIS should have, but did not, state that Westway is not needed for transportation purposes; that transportation needs can be satisfied by the existing roadway improved at a cost of \$50 million; that the reason for the Westway landfill project, estimated to cost \$2 billion, is redevelopment.

What is stated here is not the view of some opponent of Westway. It is that of the District Engineer.

Not only should this characterization of the project have been disclosed to the public in the SEIS, but the discussion of alternatives to Westway was required to be stated in terms of redevelopment. The choice among alternatives was basically the choice between real estate and park development through the Westway landfill project, recognizing that Westway is not needed for transportation purposes, and other types and degrees of development without Westway. An analysis of this kind would inevitably have included a thorough discussion of potential private development, undoubtedly on a lesser scale than Westway, but at a lesser cost both in money and in effects on the environment, and without the expenditure of public funds. This analysis would have focused on the real issue the decision makers had to deal with.

The SEIS in the present case largely avoided this issue and was thus materially deficient. The requirements of NEPA and

*1480 the 1982 judgments of this court have not been complied with.

2. With regard to the fishery question, the Corps of Engineers made findings in the Draft Supplemental Environmental Impact Statement ("DSEIS"), dated May 14, 1984, which would have required the denial of the landfill permit. The Corps found that the landfill would have a significant adverse impact on the aquatic environment--specifically on the striped bass fishery. An adverse impact of this kind mandates denial of a landfill permit under the regulations issued pursuant to the Clean Water Act.

[2] Six months later, in the Final SEIS ("FSEIS"), issued on November 27, 1984, the Corps reversed itself and purported to find that the fishery impact would be minor and inconsequential, a conclusion which permitted the granting of the permit. In an attempt to avoid fully explaining this reversal, the Corps has taken the position that there was no change in its basic conclusion as to impact and that the finding of minor impact was intended all along. The court finds this position incredible. There was unquestionably a fundamental change from the DSEIS to the FSEIS. No reasoned basis for the change has been shown. The court finds the conclusion of the FSEIS as to minor or inconsequential impact to be arbitrary, and a violation of NEPA and the 1982 judgments.

There are certain additional reasons why the FSEIS, and the process leading up to it, failed to comply with the law and the 1982 judgments.

In its fishery analysis the Corps relied in large part on a theory said to have originated with one William Dovel--i.e., that the striped bass do not use Westway and the other interpier basins for overwintering, but simply as transient shelters in migrations in and out of the river. Dovel testified in support of this theory and stated that he had indeed proposed it to the Corps. However, the evidence shows that, prior to the time of the FSEIS, Dovel had drafted a written report which substantially contradicted the essential points of the theory, or indicated that they were not supported by existing data. The extent to which the Corps was apprised of the substance of the report is unclear. However, the Corps knew of the report, but did not request or obtain it.

There is no valid explanation for the failure of the Corps to obtain the Dovel report. Another noteworthy feature of this matter is that the trial testimony of Dovel (the consultant relied on most heavily by the Corps), in trying to explain the discrepancies between the FSEIS and his report, was wholly irresponsible.

Early in the remand the District Engineer had decided on a two-winter 17 month study of striped bass abundance in the Westway area and in the Hudson estuary. This decision was overruled by the Chief of Engineers and the Assistant Secretary of the Army, and only a 4 month study was allowed. The curtailed study did not provide data which supported the theory and analysis adopted by the Corps.

The court finds that the Corps's analysis of fish movement, and of the degree of utility of Westway to the fishery, is unsupported by the existing data.

The Corps failed to consult adequately with the federal fishery agencies and the relevant state agency, and failed to give full consideration to their views. Such consultation and consideration are required by law.

[3] 3. Since the decision of the Corps to grant the landfill permit was based on an inadequate FSEIS, it was arbitrary, and in violation of NEPA, the Clean Water Act and the 1982 judgments.

Since the FHWA decision to grant federal funding was based on the inadequate FSEIS, it is in violation of NEPA and the 1982 judgments.

4. The State's motion to vacate the 1982 injunctions is denied. A permanent injunction will be entered prohibiting (1) the grant of a landfill permit for Westway by the Corps of Engineers, (2) federal funding for Westway by the FHWA, and (3) the construction of Westway by the State.*1481

Record Keeping

In connection with the remand, it was the desire of the district court that all reasonable steps be taken to ensure the integrity of the process, so that the actions taken by the Corps and the FHWA would be final, and that further litigation would be unnecessary or minimal. Two of the means towards this end

were the appointment of the special master and the requirement of the keeping of full records. The federal agencies appealed these rulings. The court of appeals reversed the appointment of the special master but affirmed the record keeping requirement.

The 1982 judgments, requiring the keeping of "records of all activities, deliberations, and communications" which occurred in connection with the remand, were perfectly plain. They applied both within the agencies and to transactions with persons outside the agencies. The judgments required the recording of what occurred, not merely some notation about date, persons, etc. omitting all reference to the substance of what transpired.

The federal defendants moved in the district court to have the record keeping requirement eliminated from the judgments, and later this phase of the judgments was appealed. During these proceedings no question was raised about the scope and meaning of the directions. The issue was the legal power of the district court to impose such a requirement. In an opinion dated August 5, 1982, in which the district court denied a motion to remove the record keeping requirement, the court explained the necessity of the keeping of "full and accurate records during the further proceedings." The federal defendants indicated their understanding of the extent of the record keeping requirement in their brief to the court of appeals dated August 20, 1982, in which they stated (p. 43):

In a complex project of the magnitude of Westway, the requirement that agency personnel must record every contact or conversation, no matter how passing or inconsequential, is burdensome in the extreme.

Of course, as it has turned out, the problems regarding record keeping have related to matters that are in no sense "passing or inconsequential."

Colonel Fletcher H. Griffis, who assumed primary responsibility for the Westway matter as District Engineer for the Corps in the spring of 1983, gave a written direction to his staff, dated April 18, 1983. It quoted the court's order regarding record keeping and then stated:

Under this order, all Corps personnel have a continuing obligation to maintain records of communications relative to the Westway permit processing. This obligation should be deemed to apply to contacts of any and all manner, with persons inside or outside the Corps. In order to insure compliance, it is recommended that at the end of each day, personnel review their Westway involvement as it relates to this record keeping requirement

and assure themselves that the records required by the Court have been or are then made. Failure to comply with the court's record keeping order may subject the individual to severe penalties. A copy of any records made with respect to Westway must be sent to Dr. Suszkowski who is responsible for maintaining the central file for this action.

Thus, Griffis directed that records be maintained as to "contacts of any and all manner, with persons inside or outside the Corps."

The record keeping requirements, which were the subject of extensive debate in the district court and the court of appeals, and which were carefully considered by both courts, have been violated to a gross extent by the Corps of Engineers. As to the FHWA, the issues at the trial regarding this agency were somewhat limited, and there was very little inquiry about its record keeping. However, it must be said that certain events of importance in the FHWA were not recorded in accordance with the court's directions. With regard to the State of New York, no evidence has been presented at the trial as to any failure ***1482** to comply with the record keeping requirement.

To return to the question of the Corps, the seriousness of the Corps's violation of the court order can hardly be exaggerated. Since the trial which has been held was not a contempt proceeding, but a trial on the merits of plaintiffs' claims under NEPA and the Clean Water Act, there has not been an exhaustive inquiry into the details of the Corps's failure to keep records. Indeed some records of some meetings and activities were kept by the Corps at certain periods of time. However, a substantial number of important meetings, discussions and activities were not recorded, or were noted by brief entry as to date, persons involved and perhaps the subject matter, without any record of the substance of what occurred. There were lengthy episodes in the deliberations within the Corps, involving questions of basic importance, where there was no record whatever of what occurred.

Serious questions about the character of the deliberations within the Corps arose during the trial. The answers to these questions related very largely to what occurred in discussions and meetings, and what calculations and analyses were made by various people. Over and over the court was told that the required records of discussions and meetings were not kept. In many instances witnesses testified to calculations and analyses of data, which were not reduced to writing as required. In some

cases the evidence showed that notes of meetings, and notes and work papers relating to calculations and analyses, were made but destroyed.

The very problem, which the district court and the court of appeals sought to forestall in their 1982 and 1983 opinions, was brought to pass by the misconduct of the Corps. The development of the evidence has depended upon memories which are often said to have failed, and the questions of credibility have been compounded by this problem. There has been confusion from conflicting versions of events. The trial has been greatly lengthened and the issues have been clouded.

Witnesses from the Corps, including Griffis, have sought to explain the record keeping problem by various means. Griffis testified that for "internal meetings" he required merely a note of the date, the persons present and the topics discussed, but not the substance of what occurred. Full records were made only of meetings with persons outside the Corps. The trouble with this testimony is that it contradicts his own directive of April 18, 1983. Moreover, there were numerous meetings, both inside the Corps and with persons outside, about which there was no record made at all.

Framework For Remand

In connection with the remand, the 1982 judgments directed that the agencies should deal not only with the fishery issue, but with non-fishery subjects where the circumstances differed from what they were at the time of the prior agency actions. The court of appeals modified the district court's ruling on the non-fishery subjects, holding that an order directing reconsideration of these specific subjects was unwarranted. However, the court of appeals ruled that the district court was empowered to order the agencies to determine whether non-fisheries subjects should be reconsidered. 701 F.2d at 1034- 37. This issue was resolved by the fact that on July 18, 1983 the Government stipulated that it would reconsider, and treat in the supplemental EIS, all of the non-fishery subjects specified in the district court judgments.

In connection with the supplemental EIS, the Corps and the FHWA acted as joint lead agencies. See 701 F.2d at 1041-42. In preparing the supplemental EIS, the Corps drafted the fishery material and the FHWA drafted the material on the non-fishery subjects.

Clean Water Act and Certain Regulations

It is appropriate at this point to set forth certain relevant provisions of the Clean Water Act and pertinent regulations, since *1483 they bear in important ways on the matters described in the statement of facts.

Section 404(a) of the Clean Water Act, 33 U.S.C. § 1344(a), provides that the Secretary of the Army, acting through the Chief of Engineers, may issue permits for the discharge of dredged or fill material into the navigable waters and specified disposal sites. Section 404(c), 33 U.S.C. § 1344(c), provides in substance that the Administrator of the EPA may veto a proposed landfill under certain circumstances. Section 404(b), 33 U.S.C. § 1344(b), provides:

(b) Subject to subsection (c) of this section, each such disposal site shall be specified for each such permit by the Secretary (1) through the application of guidelines developed by the Administrator, in conjunction with the Secretary, ...

Pursuant to § 404(b), the EPA has issued guidelines in conjunction with the Secretary of the Army, which are contained in 40 C.F.R. Part 230. These are known as the "404(b) Guidelines." They were revised in 1980.

Section 230.1 of the Guidelines defines their policy and purpose, and provides:

(a) The purpose of these Guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material.

(b) Congress has expressed a number of policies in the Clean Water Act. These Guidelines are intended to be consistent with and to implement those policies.

(c) Fundamental to these Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.

Under subsection (c), in order to obtain a landfill permit, an applicant must demonstrate that the landfill "will not have an unacceptable adverse impact" in ways stated in the subsection and further defined in other parts of the Guidelines.

In this connection, § 230.10(c) provides in pertinent part:

(c) ... no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States.... Under these Guidelines, effects contributing to significant degradation considered individually or collectively, include:

* * *

(3) Significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat....

Under this subsection no landfill will be permitted which will "cause or contribute to significant degradation" of the waters of this country. The subsection goes on to provide that "effects contributing" to such significant degradation include "significantly adverse effects" of the discharge of pollutants, and that such effects include loss of fish habitat. It is conceded by all parties in the present case that "pollutants," as referred to in this provision, include the kind of materials which would be used in the Westway landfill. See 40 C.F.R. 230.3(o).

Section 230.10(a) of the Guidelines provides in pertinent part:

(a) ... no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic eco-system, so long as the alternative does not have other significant adverse environmental consequences.

* * *

(2) An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. ***1484** In its consideration under the Clean Water Act, the Corps was first required to determine whether the landfill would be prohibited under the 404(b) Guidelines issued by the EPA. Then the Corps would determine whether the landfill would be in the public interest. The Corps has its own regulations relating to its public interest review. These are contained in 33 C.F.R. Part 320. Section 320.4(a) provides in pertinent part:

(a) Public interest review. (1) The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity and its intended use on the public interest. Evaluation of the prob-

able impact which the proposed activity may have on the public interest requires a careful weighing of all those factors which become relevant in each particular case. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments.

* * *

(2) The following general criteria will be considered in the evaluation of every application:

(i) The relative extent of the public and private need for the proposed structure or work:

(ii) Where there are unresolved conflicts as to resource use, the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work; ...

Another regulation of the Corps requires consultation by the Corps with certain other agencies in connection with land-fill permit applications. 33 C.F.R. § 320.4(c) provides:

(c) Fish and wildlife. In accordance with the Fish and Wildlife Coordination Act ... district engineers will consult with the Regional Director, U.S. Fish and Wildlife Service, the Regional Director, National Marine Fisheries Service, and the head of the agency responsible for fish and wildlife for the state in which work is to be performed, with a view to the conservation of wildlife resources by prevention of their direct and indirect loss and damage due to the activity proposed in a permit application.

Following the quoted language there is another sentence, which prior to October 4, 1984 read:

They will give great weight to these views on fish and wildlife considerations in evaluating the application.

As of October 4, 1984 this sentence was amended to read:

The Army will give full consideration to the views of those agencies on fish and wildlife considerations in deciding on the issuance, denial, or conditioning of individual or general permits.

Comments on the amendment indicate that no substantive change was intended. 49 Fed.Reg. 39478 (Oct. 5, 1984).

In connection with the requirements of NEPA and the necessary discussion of adverse environmental impacts in an EIS, the following regulation is of particular relevance to the present case. 40 C.F.R. § 1502.22(b).

(b) If (1) the information relevant to adverse impacts is essential to a reasoned choice among alternatives and is not known and the overall costs of obtaining it are exorbitant or (2) the information relevant to adverse impacts is important to the decision and the means to obtain it are not known (e.g., the means for obtaining it are beyond the state of the art) the agency shall weigh the need for the action against the risk and severity of possible adverse impacts were the action to proceed in the face of uncertainty. If the agency proceeds, it shall include a worst case analysis and an indication of the probability or improbability of its occurrence.

Facts The Fishery Study

One of the first matters which faced the Corps of Engineers during the remand was the question of whether additional fishery studies should be carried out. The April 1982 judgment required that the Corps independently ***1485** evaluate all existing data, and after consultation with FWS, NMFS and EPA, undertake any additional fishery studies which the Corps concluded were necessary.

Certain concepts in connection with the fishery issue need to be set forth at this point. As the earlier court opinions describe in detail, the fishery issue involved with the proposed Westway project relates to juvenile striped bass, specifically to those in the first year of life called young-of-the-year (YOY) and those in the second year of life called yearlings (YR). The importance of the striped bass fishery, and the role of the Hudson River estuary as a spawning ground and as a habitat for juvenile striped bass, are well recognized and are described to some extent in the earlier court opinions.

The basic question before the Corps on the remand was to assess the importance of the proposed Westway landfill area to the striped bass fishery, and the impact on that fishery which would result from the loss of this area. It was recognized throughout the remand proceedings that these questions broke down into two basic issues. The first issue required a quantitative estimate of the proportion of the juvenile striped bass using the Westway area in relation to the number of these fish which were using the estuary as a whole and certain waters just outside the mouth of the estuary. This kind of quantitative estimate has been referred to as an estimate of "relative abundance."

It was recognized that an estimate of relative abundance would not necessarily provide the answer to what impact Westway would have on the striped bass. The fish mortality occurring as a result of the loss of Westway might be less, or it might be greater, than the proportion of the fish using Westway at a particular time. Various factors might affect how a particular level of fish mortality would be translated into impacts on the Hudson River striped bass stock and the Atlantic coast stock. Thus there was a second basic issue, which was closely related to relative abundance but still a separate question--i.e., what ultimate impact would the loss of the Westway area have on the striped bass fishery?

There was a consensus among the experts who were involved on the remand that, with an appropriate degree of sampling effort in the estuary, a reasonable relative abundance estimate could be arrived at. However, it was generally recognized that any quantitative estimate of fish mortality and of the ultimate impact on the fishery was beyond the state of the art. Thus, the latter issue would need to be resolved by what were called "qualitative" judgments, based upon assessments of the nature of the fish, their needs, their movements, and their use of the various habitats.

The evidence in the trial of this action dealt mainly with the period beginning with Colonel Griffis's assumption of responsibility for Westway at the Corps of Engineers in March 1983. However, it is necessary to note certain events that occurred prior to the time Griffis took over.

In the initial stage of the remand process, the District Engineer was Colonel Walter Smith. His office retained Malcolm Pirnie, Inc. to analyze the existing fishery data and to develop a recommendation on the question of whether additional fishery studies would be needed, and if so what kind. Malcolm Pirnie rendered a lengthy report in August 1982. This report concluded that the available data were insufficient to provide a firm quantitative estimate of the proportion of juvenile striped bass in the Hudson River estuary which were using the proposed Westway landfill area. The report recommended two types of studies--first, a fish sampling program to develop the quantitative estimate; and second, a habitat survey to assess the quality of the Westway area in comparison with other relevant areas. The report recommended that the first study should be for a minimum of three years and the second study for a minimum of one year.

Subsequent to this report there were meetings involving the Corps, Malcolm Pirnie, NMFS, FWS and EPA. The participants in these meetings generally agreed *1486 that further studies were required, but that a two-winter study might be adequate.

Malcolm Pirnie called a workshop of experts in October 1982 to further consider the matter. The fields of expertise represented were striped bass ecology, sampling design, statistics and hydroacoustics. The participants included a number of persons who would play further roles in the Westway matter: Leonard Houston, project biologist for the Westway proceeding in the District Engineer's office; John Reed of Malcolm Pirnie; Dr. Tibor Polgar of Martin Marietta Corp; Dr. Douglas Heimbuch and Dr. Joseph Mihursky of the Chesapeake Biological Laboratory, University of Maryland; Dr. Ian Fletcher and Dr. Richard Thorne of the University of Washington; Dr. James McLaren, an independent consultant; and William Dovel, of Mote Marine Laboratory, Sarasota, Florida.

Immediately following this workshop, the participants, or at least some of them, met with representatives of FWS, NMFS, EPA, the New York State Department of Environmental Conservation, and the New Jersey Department of Environmental Protection.

The result of these meetings was a recommendation to the Corps that there should be a 17 month, two-winter study to assess the relative abundance of overwintering juvenile striped bass in the proposed Westway area. The study would commence in December 1982 and conclude in April 1984. There was apparently no dissent by the participants as to the need for at least a two-winter study to assess relative abundance. The only apparent debate was whether this study should be longer and whether the qualitative habitat study, originally recommended by Malcolm Pirnie, should be included. The workshop experts and the agencies did not reach a consensus in favor of the habitat survey.

Throughout the time that the matter of additional studies was being considered, the applicant for the landfill permit, New York Department of Transportation, made known its objections to any substantial program of this kind. Following the October workshop the DOT strongly objected to the proposed two-winter study. On December 1, 1982 Colonel Smith decided that the Corps would not perform further studies.

On February 1, 1983 plaintiffs filed a contempt motion, alleging misconduct by the Corps and New York State DOT. In March 1983, in the course of preparing for the hearing on the contempt motion, the Department of Justice learned that Colonel Smith had been discussing possible future employment with DOT's prime engineering contractor, Parsons, Brinckeroff & Quade. The Justice Department promptly advised the court of this situation, and further advised that Colonel Smith was being removed from the Westway matter. Colonel Griffis, who was scheduled to become District Engineer in May 1983, would immediately assume responsibility for Westway. The decision of Colonel Smith against further fishery studies was vacated. Colonel Griffis was to consider anew the relevant questions, including the issue about further fishery studies.

Griffis convened a workshop of experts in July 1983. The main purpose again was to consider whether further fishery studies should be carried out. The workshop was attended by 39 persons. There were representatives from the Corps, including Griffis and Houston, and from FWS, NMFS, EPA, the New York Department of Environmental Conservation, and the New Jersey Department of Environmental Protection. Of the independent experts attending the 1982 workshop Drs. Polgar, Heimbuch, Fletcher, Mihursky and Messrs. Reed and Dovel attended the one in July 1983. Certain additional scientists attended. The majority of the participants favored the 17 month two-winter study proposal of the 1982 workshop. There was also some substantial backing for a qualitative survey of the various habitats.

Griffis decided that the Corps should carry out the 17 month two-winter study to commence in December 1983. He also approved the habitat survey. Griffis appointed a Technical Steering Panel to work out the details of the fishery study and the method of analysis of the data. The panel *1487 consisted of Leonard Houston of the Corps, and five experts outside the Corps, John Reed, Joseph Mihursky, Tibor Polgar, Douglas Heimbuch and James McLaren. All of these persons had attended both the 1982 and 1983 workshops, except for Dr. McLaren, who only attended the one in 1982.

On September 13, 1983 Griffis wrote Governor Cuomo of New York that he had decided that "at least two winters of additional studies" were necessary. The letter stated:

I believe that only through the conduct of additional studies will we be able to quantify the relative importance of the Westway interpier area as a fisheries habitat. The study results

will increase our confidence in determining the ultimate survivability of the Hudson River striped bass population in relationship to displacement of fish caused by the proposed Westway fill.

On September 23, 1983 Governor Cuomo wrote Secretary of the Army, John O. Marsh, Jr., objecting to the District Engineer's decision about additional studies, and requesting that the entire Westway landfill permit matter, including the question about fishery studies, be taken away from the District Engineer and decided by the Secretary. This initiated proceedings in Washington, which lasted through the fall of 1983. In connection with these proceedings, Assistant Secretary of the Army for Civil Works, William R. Gianelli, was in charge. The Chief of Army Engineers, Lieutenant General J.K. Bratton, was also involved.

On October 4, 1983 Griffis met with Assistant Secretary Gianelli, General Bratton and others. His view at that time was that he needed to do two years of study to prepare an adequate EIS, but that he was prepared to cut the study off earlier if developments during the study process warranted. Griffis stated at the meeting that he did not have enough data to prepare an EIS on Westway without the further study.

Subsequent to the October 4 meeting, Bratton appointed a Task Force to consider the matter of the additional fishery studies. The Task Force did not include any of the experts who had expressed themselves in favor of the two-winter study. Griffis appeared before the Task Force on October 31, 1983, and again explained the reasons for the two-winter study. He explained, among other things, that various attempts had been made to do a "worst case" relative abundance estimate for the juvenile striped bass in the Westway area. Griffis advised the Task Force that these attempts had produced figures ranging from 1% to 50%, and that none of these estimates was usable. Griffis also discussed the habitat studies, which had been proposed by the experts.

In a meeting with Bratton on December 6, 1983 Griffis stated that the existing data and the relative abundance estimates provided thus far would not support either a denial or an approval of the permit--they simply would not support a decision.

On December 6, 1983 the Task Force submitted its report to Bratton. The report did not make a definite recommendation, but

presented three alternative courses of action--(1) to conduct the studies decided upon by Griffis; (2) to conduct no further studies; and (3) to conduct studies, but either more or less than those proposed by Griffis. All three conclusions were supported with equal eloquence, asserting various opposite propositions. The body of the report (prior to the alternatives) was extremely cautious and most statements of interest were loaded with qualifications. However, a few points are worth noting. The report did recognize that an assessment of relative abundance for striped bass in the Westway area would be essential for determining the impact of Westway, and that the studies proposed by Griffis would yield the most statistically reliable results on this question. This would eliminate the need for relying upon "numbers which do not have any statistical confidence value associated with them." However, the report stressed the cost of the studies, estimating the direct cost to be \$9 million. In addition the report accepted the argument of the State that there would ***1488** be large costs incurred in delaying the benefits of Westway. A figure of \$60 million was placed on this alleged cost. The total costs of the Griffis studies were thus said to be \$69 million. The report noted the wide range of estimates of relative abundance produced from existing data, but suggested that this range could be greatly reduced if Griffis would only accept the State's figure about depth distribution.

On December 15, 1983 Bratton addressed a memorandum to Gianelli, expressing the view that existing data were sufficient for a supplemental EIS; that any problems about the wide range of relative abundance estimates based on such data could probably be largely resolved by simple adjustments, such as the one about depth distribution; that the overall costs of the two-winter studies proposed by Griffis were exorbitant. Bratton recommended, however, that Griffis be permitted to conduct the relative abundance studies through the rest of the 1983-84 winter, since the cost in time and money would not be great. The habitat studies were totally rejected by Bratton.

Gianelli immediately accepted Bratton's recommendations in a memorandum dated December 15, 1983.

Plaintiffs in this action object to the December 15 decision, and their contentions will be dealt with later in this opinion. However, a few points should be noted at this juncture. The idea that a supplemental EIS could be prepared from existing data, or that the problems with the range of existing estimates could be solved by some simple adjustments--all this was totally

disproved by subsequent events. Moreover it should be recalled that the judgment remanding the matter to the Corps, and directing it to perform any further fishery studies that were necessary, was entered in April 1982. If the original 1982 workshop proposal for a 17 month two-winter study had been promptly implemented, this study would have started in December 1982 and would have been completed in April 1984. As it turned out, no fishery studies were commenced until January 1984, 20 months following the April 1982 judgment. The study permitted by the Bratton-Gianelli decision concluded in April 1984, the exact time when the original proposed 17 month study would have ended. Of course, because of the delays and the failure to utilize the remand period there was only a 4 month instead of a 17 month study.

As previously described, Griffis had appointed a Technical Steering Panel after he decided in September 1983 on the two-winter relative abundance study and the habitat study. Following the December 15, 1983 decision, three members of the Technical Steering Panel resigned--Dr. Heimbuch, Dr. Polgar and Dr. McLaren. They voiced strong objections to the decision to reduce the length and scope of the fishery studies. Indeed, at the trial Griffis testified that he himself believed that he was being ordered to prepare a supplemental EIS without the studies which he deemed were the minimum necessary for this purpose.

Griffis went ahead with the reduced study. It should be noted that, as to the three resigning panel members, they were involved with the subsequent activities of the Corps to varying degrees as employees of subcontractors of the Corps in connection with the reduced study that was undertaken.

The 1984 Corps Study

To carry out the study, the Corps contracted with New Jersey Marine Sciences Consortium for the field work, and with Malcolm Pirnie for technical analysis of the field results. Both of these firms had various subcontractors. Malcolm Pirnie brought in Martin Marietta to take charge of the statistical analysis. Dr. Heimbuch and Dr. Polgar were with that firm. Malcolm Pirnie also arranged to obtain the technical advice of Dr. McLaren and Dr. Mihursky through their firms. William Dovel was employed directly by Malcolm Pirnie during this time to monitor the field work.

After a few days of preliminary work, the sampling commenced on January 2, 1984 and continued until April 30, 1984. ***1489** The Corps and its consultants had decided upon an area for study which included the portions of the Hudson River estuary and certain adjacent waters where they believed that meaningful quantities of juvenile striped bass might be located. The northern boundary of the study was Peekskill. The study included all of the Hudson River running south from Peekskill to the mouth of the River at the southern tip of Manhattan Island. The study area also included Upper New York Bay, running from the Battery to the Verrazano Bridge; Arthur Kill; Newark Bay; Jamaica Bay; the East River; and the portion of western Long Island Sound running from the northern end of the East River to approximately the Throgs Neck Bridge.

The total study range was divided into 11 areas. The Peekskill-Haverstraw area ran from Peekskill to Ossining, including Haverstraw Bay and Croton Bay. Proceeding south was the Tappan Zee running from Ossining to Dobbs Ferry. Farther south was the Yonkers area, running from Dobbs Ferry to the George Washington Bridge. Next was area called Metro North, running from the George Washington Bridge to 34th Street. An area called Metro South ran from 34th Street to the end of Manhattan Island. Metro South included the proposed Westway landfill site. The areas beyond the mouth of the Hudson were Upper New York Harbor, Arthur Kill, Newark Bay, Jamaica Bay, East River and western Long Island Sound.

These areas were generally divided into two or three zones--the total number of zones being 25. The logic behind the division into zones was the differentiation between the deep waters (mainly the Hudson River channel) and shallow areas closer to the shore. Among the shallow areas, a distinction was drawn between those in the metropolitan area involving piers and those in areas such as Haverstraw Bay which do not involve piers. The former were called "interpier zones" and the latter were called "shallow zones."

The Metro South area contained three zones--Metro South Westway Interpier (MSWW), Metro South Interpier (MSI), and Metro South Deep (MSD). MSWW ran from the north end of Battery Park City to 34th Street. MSI was the interpier area on the other side of the Hudson River in New Jersey. MSD was the channel.

The Metro North area is mostly channel. This channel was called Metro North Deep (MND). However, there is a rather small

interpier zone on the New York side running from about 42nd Street to a point north of 57th Street, called Metro North Interpier NY (MNINY). On the New Jersey side there is a relatively small interpier area starting opposite about 57th Street and running north to a point opposite about 85th Street. This was called Metro North Interpier NJ (MNINJ). The Metro North area includes a small amount of non-interpier shallows, which are mainly on the New Jersey side just south of the George Washington Bridge (Metro North Shallow MNS).

Aside from the interpier zones in the Hudson River, there were other interpier zones in the study area located in the Upper Harbor and in the East River. In the areas with no interpier zones, there were usually natural shallows without piers. Thus the Tappan Zee area was divided into Tappan Zee Shallow (TZS) and Tappan Zee Deep (TZD).

The plan of the study was to have 10-day sampling periods running consecutively through the entire study. Each zone would be sampled three times or more during each sampling period. The dates of the periods were as follows:

Period	Dates
-----	-----
1	January 2-11
2	January 12-21
3	January 22-31
4	February 1-10
5	February 11-20
6	February 21-March 1
7	March 2-11
8	March 12-21
9	March 22-31
10	April 1-10
11	April 11-20
12	April 21-30

The results for Period 1 were considered unreliable for statistical purposes, so that the statistical analysis was based on Periods 2-12. During the first seven periods, ***1490** the catches in Arthur Kill, Jamaica Bay and Long Island Sound were so small that sampling was thereafter discontinued. Sampling in other stations was increased.

The FHWA--Corps Agreement About Project Definition

In connection with the FHWA side of the activities, in late 1983 or early 1984 the FHWA submitted to the Corps a draft of the non-fishery section of the supplemental EIS. The Corps sent the FHWA written comments on the draft on February 7, 1984. Among the comments was the following:

Are the primary purposes of the project "transportation and revitalization" in the eyes of FHWA. If so, this raises concern about consideration of alternatives. For instance, only highway alternatives are discussed, not revitalization plans for the westside waterfront.

This comment related to earlier discussions between the Corps and the FHWA in December 1982 and January 1983 on the question of the definition of the project and the consideration of alternatives in light of the requirements of the 404(b) Guidelines.

A meeting between the Corps and the FHWA was held on February 22, 1984. According to an FHWA memorandum, it was agreed at the meeting that the "primary purpose of the project is to satisfy transportation needs," but that other "related goals such as the achievement of desirable physical and economic use of the West Side waterfront corridor will be discussed [in the supplemental EIS] in terms of benefits to the area as appropriate to the various alternatives."

The FHWA memorandum of the February 22 meeting is brief and only contains a few points summarizing the conclusions reached during a meeting lasting a full day. There is no record of the substance of the discussion leading up to the agreement that the primary purpose of the project was transportation. This point is of considerable interest since, in the decision of the Corps a year later granting the landfill permit, the Corps stated that Westway was better termed a "redevelopment" project than a "highway endeavor." The memorandum states that redevelopment "benefits" would be discussed in connection with the "various alternatives," but does not indicate any resolution of the problem raised by the Corps that the alternatives discussed in the FHWA draft were only highway alternatives.

The DSEIS

To return to the matter of the fishery study, the sampling was to be completed on April 30, 1984. Griffis convened a workshop on April 16-18, attended by Griffis and Houston from the

Corps, and certain of the experts who had been at previous workshops and were working on the study--Heimbuch, Mihursky, McLaren, Reed and Dovel. By the time of the workshop the data from Periods 1- 10 were available. Some statistical estimates of relative abundance were attempted on the basis of the existing data. Various problems were recognized, particularly the wide variation in the sampling results, which produced standard errors which were deemed unacceptable. It was agreed that further work would be done on the method of statistical analysis. Also, the data from Periods 11 and 12 were still to come. The final results of the statistical analysis were given to the Corps in July 1984. A written report embodying these results was completed in August 1984.

In the meantime the Corps and the FHWA issued a draft supplemental EIS ("DEIS"). Under the NEPA regulations, the agencies were required to prepare such a draft, which would be made public and be subjected to comments. Thereafter, the agencies would issue a final supplemental EIS ("FSEIS").

The DSEIS on Westway is dated May 14, 1984. It appeared in two volumes. Volume I covered the non-fishery subjects, such as the description of the project, estimated costs and alternatives. Certain of these matters will be discussed later in this opinion. Volume II covered the fishery issues. The first volume was drafted by the FHWA and the second by the Corps, ***1491** although both agencies signed the document as a whole.

The DSEIS treatment of fishery issues must be described at considerable length. The references are to Volume II.

The DSEIS stated that, because of the lack of precise answers on many questions, the method to be used in determining the impact of Westway would be largely a worst case analysis (pp. 1-3). On the question of the proportion of the juvenile striped bass using the Westway area, the DSEIS stated that the data existing prior to the 1984 Corps study did not furnish a basis for making such an estimate (pp. 12-14).

The DSEIS described the results of the statistical analysis of the 1984 Corps study data. The computer model estimates were described, together with certain problems with these estimates, including large standard errors for some sampling periods. As a check on the computer estimates, the DSEIS noted that the Westway area makes up one-third of the interpier basins in Metro South (comprising the Westway basins and those opposite on the

New Jersey side) and one-fifth of the interpier basins in Metro South and Metro North (this total area comprising the Westway basins and the piers to the north of Westway on the New York side, and all of the piers facing them on the New Jersey side). The model estimates "point towards the 33% level as an appropriate measure" of the use of Westway by the fish. In the alternative an adjusted model estimate "suggests the 20% level would be an appropriate measure of the Westway usage" (p. 22).

The DSEIS adopted a range of 20-33% for the relative abundance estimate of juvenile striped bass in the Westway area. The 33% was considered to be the worst case projection of the greatest (though least likely) portion of fish affected by the project. The 20% was said to be the more probable projection (pp. 23-24).

The DSEIS stated that the Westway interpier zone is not unique, since the sampling showed that juvenile bass use the Westway area along with the other interpier zones in the lower river, and comparable quantities of bass were found in all these zones (p. 22). However, the Westway area appears to play "an important role for the fishery" (p. 23). Although the area is not a unique habitat, it represents a "substantial portion of a consistent and, on occasion, heavily used habitat" (p. 23).

As to the manner in which the juvenile striped bass use these lower river interpier zones (including Westway), the DSEIS relied on a hypothesis developed by William Dovel (p. 24). According to this theory, the interpier zones are not an overwintering area in the sense that the fish remain through the winter. Instead, the juvenile bass move down from the nursery grounds and use the interpier zones during the course of migration through and out of the river, and migration back into the river heading north. There are two "peaks" in the usage of the pier zones (p. 24; Figure 3.1-7), the first being in December-January, and the second being in March-April. The DSEIS description of the migratory hypothesis in relation to the peaks is somewhat complex (p. 25), but the first peak is said to relate largely to the movement out of the river and the second to the movement back up river (p. 25). The fish move south in winter because of colder temperatures in the nursery areas, and return to these areas with the warm temperatures in the spring. Another aspect of the theory stated in the DSEIS was that the young striped bass move out of the river temporarily during the winter for purposes of acclimatization to the conditions in the ocean which they will encounter as adults (pp. 24, 31). The extent of

this movement out of the river is greater for the YR, being older, than for the YOY (p. 24).

As to the utility of the interpier basins, the DSEIS had a number of comments. It said that

... the interpier basins offer a convenient shelter from the upstream flood tide. (p. 25)

Since the YOY are "small and more susceptible to environmental stress," their "periods of rest in the low-energy environments" would be greater (p. 25). *1492 The use of the "metropolitan area around the river mouth" was explained at some length as follows:

This area represents a rather distinct break between two different environments: river versus open estuary. The yearlings use it as a jumping-off point for what is essentially their initial extensive venture outside the river, while the YOY use it as a refuge, from which they make their first tentative movements outside the system that spawned and nursed them during their first critical year.... The YR use the area as a transit point, while to the YOY it represents a more basic, though brief, part of a cyclic migration to and from the nursery grounds upriver; a shelter from which they undertake their first exposure to a more marine environment. Regardless of the role played in the species overall adaptive strategy, the piers serve both year classes as a point of respite from the energy demands of the faster current in the channel. As such they would tend to increase overall survival of these fish. (p. 28)

The DSEIS went on to emphasize the fishes' "need to conserve energy," stating that the metropolitan area provides a "refuge" for this purpose (p. 28).

The DSEIS contrasted the interpier basins with the shallows farther up the river, and then stated:

Though the shallows exhibit reduced current, they probably do not possess the overall protection afforded by the sheltered interpier basins. Given a continual exposure to currents throughout its early movement, these fish might then linger in the pier areas for a short time, conserving (and probably gathering) energy for their initial movements outside the riverine environment. As such, loss of that habitat might have a greater consequence to the overall survival of an individual fish than the shallows. Impact enough individuals and the stock itself is adversely impacted. (p. 30)

As to the specific utility of the Westway area, it was concluded:

Based on the above considerations, the Westway portion of the area assumes a reasonable perspective as a part of a larger, low-energy winter habitat within an even greater winter distributional area. Its continual utilization over 3 years of varying environmental conditions and year class sizes indicates it is an important part of a highly utilized and potentially vital winter refuge. (p. 30; see also p. 31)

Finally, the DSEIS stated that, if Dovel's theory is correct, then the "whole area near the river mouth serves as a staging area" for juvenile bass in making movements out of the river system (p. 30).

The DSEIS analyzed in some detail the question of what habitats could be considered equivalent to Westway. This discussion repeated the concept that "a sheltered environment is important" (p. 30). However, the loss of Westway should not be "any more significant than a similar sized equivalent habitat within the metropolitan region" (p. 30). The DSEIS concluded that the pier complexes in Metro South across the river in New Jersey were equivalent. Westway would make up about 35% of this total equivalent habitat. The DSEIS went on to say that the pier complexes of Metro North offer a "similar sheltering role to the more downstream piers," although not providing the combination of shelter and proximity to the river mouth offered by the Metro South region. Westway comprises 20% of the "extended interpier habitat" consisting of the Metro South and Metro North piers (p. 30).

The DSEIS described the utility of the Westway area in the following terms:

Westway comprises, at most, one-third of the Metro South interpier area dominated by pier and basin complexes, and more probably one-fifth of the prime winter habitat. Essentially no natural shoreline remains outside the channel to serve as a shelter except the piers. The loss of an area as large as the Westway site would present a substantial problem to the downstream migrants, especially during a large year class when the area appears to be inundated by larger groups of fish. Finding sufficient shelter for fish after ***1493** removing such a large part of that shelter would be a formidable task. The dynamic nature of the area's use implies fish could move freely, but the greater movement could require more exposure to the current, lowering the energy reserve of the fish and decreasing his survival potential. Habitat still exists along the opposite shore, but whether it could accommodate all the fish entering and returning to the area is unknown. (pp. 31-32)

The DSEIS went on to discuss the impact upon striped bass which would result from the removal of the Westway area habitat. Three "scenarios" were considered. The first assumed that the Westway area's proportion of the juvenile striped bass was one-third. It was stated that, on this assumption, there would be a ... very significant adverse impact to the fishery. Such a loss would have severe repercussions to the stock of striped bass and most likely result in a major decline in stock size, through not its total demise. (p. 32)

However, this level of impact was considered very improbable.

The second scenario dealt with a "more likely" 20% proportion of usage. The removal of a ... maximum 20% habitat ... would still project potential long-term repercussions to the stock but of a substantially reduced order of magnitude. A stock decline would likely be measurable and permanent, but result in less damage to the overall productivity of the population. (p. 32)

The second scenario was thought more likely to occur in large year classes. It should be noted that the YOY at the time of the Corps study were the 1983 year class--a very large one (p. 32).

The third scenario related to the 20% level during more average years. The impact of the removal of Westway in this situation would be "minor" in the long term, although more noticeable in the short term (p. 32).

The DSEIS stated that the second scenario "is considered more appropriate for assessing Westway's impacts," since striped bass populations may be sustained over time by the large year classes (pp. 32-33). This led to the following conclusion about the impact of removing the Westway area:

It would thus be imprudent to consider any such habitat loss as projected by the Westway landfill to be either minimal, insignificant, or sustainable at current population levels. Some measurable long-term reduction in the overall stock along with a reduced recovery rate would be a reasonable expectation, but a worst-case assumption of loss of the resource would be improbable. (p. 33)

The latter reference to the worst case relates to the 33% assumption.

The above analysis was said to be based on the impact of "Westway alone." The DSEIS went on to discuss impacts of Westway in conjunction with other habitat alterations ("cumulative impacts"), and then to present the final conclusion as to overall impacts. The discussion of cumulative impacts summarized briefly the impact of Westway alone.

On its own the Westway landfill will impact the striped bass population enough to very likely cause a measurable degradation in future stocks. (p. 37)

The DSEIS then states that the reason a still greater impact was not considered likely was the presence of "other sheltered refuges" in this reach of the river. The amount of fish displaced by Westway that can utilize these other areas "cannot be determined with any degree of confidence" (p. 37). However, the existence of other habitats provides room for displaced fish to make "alternate choices."

The impact to the species is lessened and, though still measurable, reduced in its severity and its threat to the survival or well being of the stock. (p. 37)

The cumulative impacts were analyzed in two stages: (1) with past and ongoing alterations of habitat; and (2) with possible future alterations. In connection with (1), the DSEIS listed the landfill for Battery Park City, which had already occurred, and ***1494** a program for the removal of pilings in New Jersey, which was ongoing. The DSEIS stressed the cumulative impact Westway would have in conjunction with Battery Park City.

The Battery Park landfill is of special concern here since its habitat loss effectively removed any respite displaced fish might have found before leaving the river for the stressful and unfamiliar marine-like environment of Upper New York Bay or Long Island Sound. Fish reaching Westway would now move along the face of the fill, with greater exposure to currents and tide, all the way down to the Battery. Little opportunity would be afforded them anywhere along the east shore for a haven to reduce and perhaps replenish energy consumed during the downstream movement. These fish could expire during this prolonged exposure, arrive in the open-water bay with energy reserves below survival needs, or effectively be caught within the tidal cycle to the point of never reaching their goal and thus not undergoing initial adaptations to the environment they will be exposed to daily as an adult. To what degree such events will occur cannot be predicted now. A worst-case analysis would conclude many, if not all such displaced fish would be affected. The more likely scenario would find some portion of these fish capable of

utilizing remaining habitat, in proportion to the size of the year class. (pp. 37-38)

The cumulative impacts of Westway in conjunction with the past and ongoing projects referred to "could serve to expand the overall quantitative impact," and the cumulative effect would "more closely resemble or even exceed Westway's proportionate loss of overall pier habitat (20%)."

Such a level of impact could possibly affect the quality of the stock as well as its productivity by sufficiently cutting into its reserve, and making it more susceptible to future natural or man-made events. (p. 38)

The DSEIS then noted the "myriad of development projects being considered," and stated that ... the potential of the overall impact to equal or exceed the actual proportional habitat loss (20% plus the development portion) is increased, making it more probable to impact on the quality of the Hudson River stock, and perhaps its long-term survivability as well.... In this respect, Westway is not bearing the burden of past and future impacts, but responding to system-wide impacts as an integrated part of a large ecosystem, as all such components must. (p. 38)

As to measures to mitigate the adverse effects of Westway, the DSEIS concluded that they were too uncertain to be relied on (p. 42).

The DSEIS then stated its overall conclusions. The worst case impact, based on the assumption of Westway's share of the juvenile striped bass population as being one-third or 33%, was reiterated. Such a loss would be very difficult to absorb into the overall population, and most of the displaced fish would be assumed to perish, resulting in a significant longterm degradation of the stock. (p. 43)

It was again stated that such an impact is considered unlikely, and that the more probable impact should be based on the one-fifth or 20% figure.

What is more likely to result will be a quantitative reduction in stock size that may last through succeeding generations, ultimately reducing the overall stock size, but not subjecting it to potentially threatening repercussions. (p. 43)

The other past and ongoing habitat alterations would "tend to amplify" these impacts and to "increase the quantitative magnitude of fish lost as a result of the landfill." It would re-

sult in a "greater overall effect on the stock, probably reflected in a more permanent long-term reduction in the Hudson productivity." Further proposed developments, if they occurred, would make the problem worse.

The final overall conclusion of the DSEIS as to the impact of Westway was:

The project site represents a significant portion of that habitat, [the lower ***1495** river interper basins] and its loss would be a significant adverse impact to the Hudson River stock of this species. Though such an impact would not be a critical blow to the species, it is likely to cause some long-term repercussions that could result in depressed population levels in the foreseeable future. (pp. 42-43)

One feature of the presentation of impacts in the DSEIS, as shown by the excerpts, was the breakdown into an unlikely worst case, based on the 33% estimate of Westway use, and the most probable worst case, based on the 20% estimate. The ultimate assessment of impacts was based mainly upon the most probable worst case.

The findings of the Corps in the DSEIS, if they had stood, would have required denial of the landfill permit for Westway. The 404(b) Guidelines require denial of a landfill permit where the landfill "will cause or contribute to significant degradation of the waters of the United States." 40 C.F.R. § 230.10(c). Such "degradation of the waters" includes "significantly adverse effects" of the landfill on the fishery. 40 C.F.R. § 230.10(c)(3). The DSEIS found that the loss of the Westway area would have a "significant adverse impact to the Hudson River Stock" of striped bass, admittedly an important fishery resource. The DSEIS found that "on its own," even without considering the cumulative impacts, the Westway landfill would very likely cause a "measurable degradation in future stocks." The DSEIS went on to show that the cumulative impacts would intensify the problems of Westway considered alone. There is simply no doubt about the fact that the findings of the DSEIS, if they had remained unchanged, would have mandated denial of the landfill permit. No party contends otherwise. Griffis expressly admitted this in his testimony.

Griffis issued a press release which summarized some of the points made by the DSEIS. The press release stated that the Corps fishery study showed ...that the portion of the Hudson River below the George Washington Bridge to the Battery on both

sides of the navigation channel is extremely important to the life cycle of the striped bass.

The press release also stated:

The area to be filled for Westway is an important habitat area used by juvenile striped bass during the winter months.

* * *

Construction of Westway will result in the elimination of part of that important habitat area. It may have important long-term repercussions on this fishery resource.

New York State is currently working on ways to possibly mitigate long-term impacts on the resource. A proven mitigation plan could help to reduce the risks of serious impacts.

This press release indicates that Griffis understood the DSEIS to project risks of "serious impacts" resulting from the Westway landfill. Moreover, the possible solution was indicated to be in the direction of mitigation.

The EPA, the agency which drafted the 404(b) Guidelines in conjunction with the Department of the Army, expressed its view as to the effect of the findings in the DSEIS. In the comment letter dated July 16, 1984, the Regional Administrator of the EPA stated that the conclusions in the DSEIS indicate that the Westway project "would cause significant degradation of waters of the United States," and that therefore the project would not be in compliance with the 404(b) Guidelines. The letter recommended that the landfill permit be denied. In a letter to David Rockefeller, a proponent of Westway, dated July 31, 1984, William D. Ruckelshaus, Administrator of the EPA, stated that the finding in the DSEIS of a "significant adverse impact" meant that the EPA had no choice but to object to the landfill permit. The letter further stated:

The pertinent EPA regulations, set out at 40 CFR 230.10(c), forbid any permit that would result in "significant degradation" of waters of the United States. The regulations specify, as primary factors in determining "significant degradation", "significantly adverse impacts" *1496 on fish, fish habitat, and ecosystem productivity.

It should be emphasized that the DSEIS, although its title includes the word "Draft," is not an informal, intra-office draft. It is a public document representing the findings and conclusions of the Corps as of the date of issuance. It was the basis for public comments. It could, of course, be revised in

the process leading to the final EIS--the FSEIS. However, it is clear that changes or revisions were required to be made as part of a reasoned process.

The FSEIS

Six months after the DSEIS, in late November 1984, the FSEIS was issued. The conclusions in the FSEIS were virtually the opposite of those in the DSEIS. The impacts of the Westway landfill on the striped bass fishery were said to be "minor" (pp. 51, 65), "inconsequential" (pp. 47, 48), "difficult to notice" or "difficult to discern" (pp. 51, 52, 65), "too small to noticeably affect commercial/recreational fishing" (p. 48), "insufficient to significantly impact" (p. 65), and "not a critical (or even minor) threat" to the well being of the striped bass stock (p. 66).

One would expect that this drastic change of position by the Corps as to the fishery impacts of Westway would be accompanied by a clear-cut and thorough explanation. Indeed, one would expect such an explanation to be contained in the FSEIS itself. In addition, it would be natural that a change of this magnitude would be accompanied by thorough discussions among the persons at the Corps responsible for the work. Leonard Houston was the person at the Corps who drafted both the DSEIS and FSEIS. Grifis, as the District Engineer, was responsible for the documents and signed them. Dennis Suszkowski, the district's chief regulatory officer and the drafter of the District Engineer's permit decision, was the third person in the office who worked on the two documents. The reversal of position of the Corps could hardly have occurred without discussions among these persons. Such discussions were required to be recorded. In addition, it would be normal to assume that there would be work papers or notes showing the revised analysis.

There are no such records of discussions or deliberations, and no such work papers or notes.

As to the basis for the changes from the draft to the final EIS, it would seem that they could only occur as a result of some noteworthy new developments. Were the relative abundance estimates substantially reduced? Was the migratory theory of fish movement replaced? Was some major flaw in the reasoning of the DSEIS discerned and corrected?

The answer to these questions is--No. Regarding the relative abundance estimate, the final Martin Marietta report (delivered orally in July and in writing in August) produced an estimate of 44%--substantially greater than the maximum figure of 33% used in the DSEIS. For reasons stated in the FSEIS, the Corps treated the 44% figure as unwarranted, and adopted a range of 26%-33% as being reasonable to show usage of the Westway area by juvenile striped bass. However, this range was clearly not lower than the 20%-33% range used in the DSEIS. As to the theory of fish movement, the FSEIS used the migratory hypothesis that was presented in the DSEIS. There is no evidence that any major flaw in the reasoning or analysis of the DSEIS was detected, and corrected in the FSEIS.

Certain of the differences between the DSEIS and the FSEIS need to be set forth in detail.

The conclusion reached in the DSEIS about "significant adverse impact" was based on a step-by-step analysis. The basic thesis (well summarized in Griffis's press release) was that the interpier zones in the lower river are an extremely important--"potentially vital"--winter habitat for juvenile striped bass (DSEIS p. 30), and that the removal of "such a large" and "important" portion of this habitat would create "substantial" and "formidable" problems for the fish (DSEIS pp. 30-31), and thus result in a significant adverse impact. ***1497**

In the FSEIS the elements of the above thesis were either removed or largely neutralized. This occurred despite the fact that, as the evidence shows, the interpier zones in the lower river were, at the time of the FSEIS, and still are, at least "potentially vital," and the Westway area's proportion of those zones (20% or 33% depending on the method of measurement) is still just as large as it was at the time of the DSEIS. On the first point, Houston testified at considerable length about the role of the interpier zones. Houston attempted a number of times in his testimony to support the FSEIS conclusion of minor impacts by saying that the interpier zones in the lower river offer nothing more than other low current areas anywhere in the estuary. When questioned more specifically, and with a map, Houston admitted that during the migration of the fish, low current refuges are essential at each stage; that the interpier zones in the lower river are essential to the fish at that stage; and without them, the loss of migrating fish would be very great.

Nevertheless, the passage in the DSEIS (p. 30) about Westway constituting ... an important part of a highly utilized and potentially vital winter refuge ... does not appear in the FSEIS. The passage in the DSEIS about "the loss of an area as large as Westway" presenting a "substantial problem" and a "formidable task" to the downstream migrants (p. 31) does not appear in the FSEIS.

With regard to the use of alternative habitat on the other side of the river, the DSEIS stated

Habitat still exists along the opposite shore, but whether it could accommodate all the fish entering and returning to the area is unknown. (p. 32)

The DSEIS then discussed the three "scenarios"--(1) unlikely worst case based on the 33% estimate; (2) more probable worst case based on the 20% estimate of usage for large year classes; (3) the same as (2) except for more average year classes. As already described, the DSEIS chose (2) for assessment of impacts because the striped bass populations may be sustained over time by the large year classes. As to the ability of fish displaced by Westway to be accommodated on the opposite shore, the DSEIS analyzed the question in connection with the three "scenarios." The DSEIS stated that, assuming the 33% estimate, there is serious doubt that the displaced fish could be sustained elsewhere (p. 32). As to the 20% estimated usage for a large year class, there would be a "somewhat greater ability of displaced fish to find suitable places to shelter," but there would still be an impact that is not "minimal, insignificant, or sustainable at current population levels" (pp. 32-33). As to the 20% estimated usage for an average year class, there would be "an even greater survival rate for displaced fish since alternate shelters would be more available" (p. 32). But this hypothesis was not chosen for estimating impacts.

The foregoing analysis in the DSEIS was substantially altered in the FSEIS. The FSEIS adopted the view that space is not likely to be a "limiting factor" in how many fish can use an area, since (according to the hypothesis of the FSEIS) the fish remain in any given area briefly (probably for a mere tidal cycle) and feed only "incidentally," so that there would be no problem of food shortage caused by increased numbers of fish in an area. Thus even for a large year class there should be little problem for fish displaced by Westway in finding alternate habitat (pp. 49-50).

Thus the problem described in the DSEIS about the loss of so "large" a portion of the lower river interpier habitat was resolved basically by saying that the reduction of habitat makes little difference because the amount of space does not limit the quantity of the fish that can be accommodated. Thus the DSEIS and the FSEIS took opposite positions on this important point.

There was no attempt in the FSEIS to separately analyze the ability to find alternate habitat for the different relative abundance estimates, as there had been in the DSEIS. The ability of fish displaced by Westway to find and use alternate habitat ***1498** was treated in optimistic terms in the FSEIS whether the assumption was the 26% or the 33%.

The FSEIS retained to some degree the theory of the importance of the Westway area and the other interpier zones. The FSEIS stated that the pier areas, while not a permanent residence, "still have importance in helping conserve energy" during migrations (p. 40). The FSEIS further stated:

Because the juveniles do not appear to overwinter in the [Westway] project area for the entire season does not decrease the importance of its potential role in the fishery If the fish are moving downriver in response to temperature declines they would occupy the most preferable habitat available. Upriver this would be the shallows and in the lower river the piers, which essentially replace the shallows in the more developed parts of the harbor. (pp. 44-45)

An odd circumstance arose at the trial when Griffis testified that the first sentence ("does not decrease the importance") was incorrect. He testified that the word "decrease" was a typographical error and that it should be "eliminate." When asked how this typographical error came to his attention, he said that the Government attorney pointed it out. Houston also testified that the word "decrease" was erroneously used, and that a different meaning was intended giving a lesser importance to the Westway area.

This testimony is of no weight. There is no evidence that the word "eliminate" was given to a stenographer who then erroneously typed "decrease."

The DSEIS, as part of its description of the migratory theory, had stated that the interpier zones served as a "staging area" for the fish prior to the departure from the river into

the bays and perhaps beyond (pp. 30-31). The DSEIS also stated that the bass used the areas beyond the mouth of the river for purposes of "acclimatization" to the oceanic conditions they would encounter as adults (pp. 24, 31). However, the FSEIS, although it relied strongly on the Dovel migratory theory and discussed it at some length, stated that the "staging area" concept had been modified.

After reviewing the comments to the DSEIS on this topic, reexamining correlations with other data, and discussing the concept with Dovel, this initial theory has been modified. The theory of juvenile migration is still believed to be the best supported ... and the most appropriate for consideration in a worst-case analysis. The reasons behind this movement pattern are no longer considered identifiable from existing data, nor is such identification necessary at the level of detail (regarding specifics and timing) attempted in the DSEIS. The system itself is far too large, with too much "noise", in the data to explain all possible nuances and seemingly conflicting data. (p. 43)

Thus the modification of the staging area concept meant that the detailed reasons for the migratory movement and the "nuances" of the movement could not be arrived at, nor were they considered to be essential for the analysis.

There was testimony at the trial (which will be discussed hereafter) to the effect that the modification of the staging area concept constituted an explanation for some of the changes between the DSEIS and the FSEIS. At this point, it should simply be noted that the FSEIS does not offer the modification of the staging area concept as an explanation of any further changes whatever.

As to the conclusions of the FSEIS, a few passages should be set out. The finding of "significant adverse impact" in the DSEIS was replaced with entirely different findings. The most probable worst case impact in the FSEIS was based on the 26% relative abundance estimate, and it was concluded:

At this level WW is being utilized on a par with most surrounding areas, and its loss should be absorbed by those habitats remaining. However, as this does represent a sizeable number of fish, it would be reasonable, and appropriate in a worst-case analysis, to project a conservative survival, and conclude that a sufficient ***1499** loss could be suffered to permanently impair the stock's productivity and produce a minor but perceptible decline in its future levels. The resulting loss could be

significant in that it may produce a persistent reduction in stock size, yet minor in that the magnitude of the loss would be diluted through subsequent age groups. This would result in little overall effect on the viability of the stock (portion of breeding adults lost should be far less than the YOY loss). It may also be difficult to distinguish this loss within the normal yearly population variations. (pp. 50-51)

It should be noted that there is no evidence as to what was meant by "conservative survival." In the FSEIS even the impact at the unlikely worst case level (33%) was not thought to be significant.

Since the fraction of fish impacted is greater than at the 26% level ... and the mortality may be greater, the loss should be proportionally larger. This larger loss would more likely be noticed at the spawning level, and may thus result in a larger drop in stocks, which could be noticeable even within normal yearly fluctuations, and overall yearclass sizes, at least to those familiar with or dependent on the fishery. Such a decline is more likely to persist over time, regardless of yearclass size. Though a larger decline than at the 26% use level, this impact is still not likely to significantly affect the overall stock, except in leaving them more vulnerable to future perturbations. (p. 51)

The FSEIS presented the following short summaries:

Most likely impacts are restricted to one quarter of any yearclass with perceptible but permanent reduction in stocks that is likely to be too small to noticeably affect commercial/recreational fishing.

Less likely but possible impact to as many as one third of any yearclass with larger (though still probably inconsequential) stock declines that could be discernible by commercial and recreational interests and lead to some economic impact on both (mostly the former). (p. 48)

In discussing the cumulative impacts, the introductory description of the impact of Westway on its own was changed from "measurable degradation" in the DSEIS (p. 37) to "perceptible decline" in the FSEIS (p. 59). The conclusions about cumulative impacts were different in the FSEIS from those in the DSEIS. The risk that the cumulative effect of Westway and other habitat changes would "equal or exceed" the proportionate loss of habitat (DSEIS p. 38) is presented in the FSEIS as being the risk that the impact would "begin to approach" the proportionate loss

of habitat (p. 60). The reference in the DSEIS to a problem as to "productivity" was eliminated from the FSEIS.

The overall conclusions of the FSEIS, after considering cumulative impacts, were that the impacts of Westway would be "minor," with regard to the 26% level, and even "minor" as to the 33% level. A final summary was that the impact at either level would not involve a "critical (or even minor) threat" to the Hudson River stock or the fishery (pp. 65-66).

As described earlier, no explanation for the sharp reversal in conclusions from the DSEIS to the FSEIS was presented in the FSEIS itself, in any notes or work papers, or in any records of the discussions which surely must have taken place regarding a matter of this importance. The importance lies, of course, in the fact that the Corps proceeded from the DSEIS, which would have required denial of the landfill permit, to the FSEIS, which permitted the granting of the permit.

It is now necessary to confront the basic position of the Corps on these problems--a position which is altogether bizarre. In the closest thing to a contemporaneous document--an internal memorandum dated January 22, 1985-- Houston, the draftsman of both the DSEIS and the FSEIS, stated that "there has been no change in the conclusion of project impacts" from the DSEIS to the FSEIS. This memorandum was dealing with certain comments received by the Corps concerning the FSEIS, *1500 which raised questions about the changes which the commentators perceived.

The statement in the January 22, 1985 memorandum about "no change in the conclusion of project impacts" was adopted as the litigation position of the Corps in this action. The three witnesses from the Corps--Griffis, Houston and Suszkowski--have denied that there was any change in the basic conclusions regarding impacts from the DSEIS to the FSEIS. They have elaborated on this to say that there was no change in the "most probable" worst case impact. As the quotations from the DSEIS indicate, the most probable worst case assessment in the DSEIS was based on the 20% relative abundance estimate, as distinguished from the "unlikely" 33%. In the FSEIS, the most probable worst case was said to be at the 26% level, as distinguished from 33% (unlikely) and 44% (unwarranted). The essential impact assessment in each document was for the most probable worst case. The numerical basis for the impact analysis increased from the DSEIS to the FSEIS, while the evaluation changed from "significant adverse impact" to "minor" and "inconsequential." Nevertheless,

the witnesses testified that these conclusions of the DSEIS and the FSEIS were the same.

Moreover, Griffis and Houston testified that the wording of the FSEIS about minor and inconsequential impacts was merely a clarification of what was intended in the DSEIS. Houston testified that when he used the word "significant" in the DSEIS, he meant something that was measurable although minor. He went so far as to testify that when the DSEIS said that the habitat loss as a result of Westway should not be considered as "minimal, insignificant, or sustainable at current population levels," (p. 33), he meant to say that such loss was "minor or small" (Tr. 4713).

In an effort to support the testimony of Houston, the Government brought out that the minutes of the April 1984 workshop, held a month before the issuance of the DSEIS, referred to a discussion of a "significant habitat" as being one whose loss would cause a "measurable impact ... i.e., a 5% population decline after project implementation." Houston had attended this workshop. He testified that in using the word "significant" in the DSEIS, he used it in the sense of something measurable as used in the workshop discussion. The Government did not ask Houston about the further reference in the workshop minutes to an "important habitat." On cross-examination, Houston explained that the discussion at the workshop was to the effect that "significant" was something more than "important." It was something important that could be measured. It might be more or less than the 5% referred to. Houston testified that in using the phrase "significant adverse impact" in the DSEIS, he meant something that could be measured or quantified--and more than important (Tr. 3939).

The view that there was indeed a sharp difference between the conclusions in the DSEIS and those in the FSEIS is reinforced by the evidence about the EPA's view of the matter. After receiving the FSEIS, Christopher Daggett, the Regional Administrator of the EPA, drafted a comment letter strongly criticizing the FSEIS and recommending denial of the landfill permit. A principal point of the letter was that the conclusion as to impact had been changed from "significant" in the DSEIS to "minor" in the FSEIS, without any explanation for the change. This letter met with opposition in the EPA Administrator's office in Washington. A staff member in that office wrote a memorandum to the Acting Administrator stating:

It doesn't appear that Daggett has gotten the message; nothing will kill this project faster than this letter.

There was further debate about the letter within the agency. Concern was expressed that a weakened letter "could look bad (like Gorsuch era)," referring to a recent administrator who had resigned. The letter which finally emerged was drafted in Washington, and recommended that the landfill permit be denied, but the grounds for this recommendation were greatly modified from those in the draft submitted by Daggett. The criticism in the Daggett draft about the change from the DSEIS to ***1501** the FSEIS was omitted from the final EPA letter. There is no suggestion that this resulted from any faulty interpretation of the documents by Daggett. The matter was simply removed because it might help to "kill this project."

The contention of the Corps that there was no change in conclusions from the DSEIS to the FSEIS (or no change in conclusions as to the most probable worst case) is sheer fiction. The same is true of the contention that the DSEIS was intended to indicate a minor or small impact. The changes in the conclusions between the two documents were so stark, so fundamental, and so plainly stated that it is utterly impossible to accept the position of the Corps in this regard or to credit the testimony of the Corps witnesses on this point. This finding is supported by the evidence about the events occurring between the DSEIS and the FSEIS.

Events Between DSEIS and FSEIS

The development of the evidence about this course of events was difficult and prolonged because of the failure of the Corps to keep records of most of the relevant activities. The problem was compounded by the fact that certain working drafts of the FSEIS, which should have been produced by the federal defendants well in advance of the trial as part of the discovery, were not produced until late in the trial.

The three witnesses from the Corps--Griffis, Houston and Suszkowski--were called during the initial stage of the trial. All three were questioned about a variety of subjects, including the events that occurred between the DSEIS and the FSEIS. The total time of their testimony in this initial stage was eleven days. The following are certain matters they testified about.

A public hearing was held following the DSEIS, at which numerous persons appeared arguing for and against Westway. In ad-

dition, a large number of written comments were received by the Corps and the FHWA. Of particular relevance for present purposes are the comments of the federal resource agencies and the New York Department of Environmental Conservation. These comments were sent to the Corps in mid-July. FWS, NMFS and EPA each made a variety of points, but they concurred in certain basic positions. They agreed with the overall conclusions in the DSEIS that the loss of the Westway area would have a significant adverse impact on fishery resources. Moreover, the three agencies took the view that the DSEIS underestimated the impact in various ways. The agencies were critical of the fact that the DSEIS rejected the idea that the juvenile striped bass were overwintering in the interpier zones, and that the Corps had accepted instead the Dovel hypothesis that the bass were using the pier basins for brief periods in the course of migrating out of the river and back into the river. The agencies believed that the latter view downgraded the importance of the Westway area habitat. The agencies complained of a lack of data for the full two winters, and commented in particular on the lack of data for December. Previous studies indicated the possibility of very high usage of the Westway area in December. The agencies recommended that the landfill permit be denied.

The New York Department of Environmental Conservation complained about the curtailed study, the reliance on the Dovel migratory hypothesis, and the failure to develop data about the usage of the relevant areas in the late fall and early winter.

As already described, in late July 1984 the Corps received a report on the final statistical analysis of Martin Marietta regarding the 1984 fishery study. A written report was rendered in August. Dr. Heimbuch, who was in charge of the work at Martin Marietta, believed that the results produced by the statistical model had been greatly improved over what they were at the time of the DSEIS. Certain percentages had been arrived at with reasonable standard errors. He recommended to the Corps that the best indicators of relative abundance for Westway were 44% for YOY and 29% for YR. Since the situation of the YOY was deemed more critical, the focus in the evidence has been upon the 44% ***1502** figure. This percentage was the median derived from the computer model for Period 11 (April 11-20). The standard error was 9%. The 95% confidence interval ran from 26%-62%, this being two standard errors on either side of the median.

At some point Houston commenced work on the FSEIS. Suszkowski commenced work on the decision to be rendered by Griffis, the District Engineer.

Suszkowski gave Griffis a portion of a draft decision on August 21. It was Suszkowski's recommendation that the landfill permit be denied, and his draft reflected that recommendation. The draft discussed the purposes of the Westway project and the question of alternatives. Suszkowski relied upon the February 1984 agreement between the Corps and the FHWA to define the primary purpose of the project as being the satisfaction of transportation needs. In this light the Suszkowski draft found that there would be practicable alternatives. Transportation needs could be satisfied by the construction of a modest highway that would not involve landfill. Although the draft did not contain detailed material on the fishery issue, it obviously assumed, in line with the DSEIS, that the findings of the Corps were adverse to the landfill permit. The draft stated that Westway "represents a potentially significant impact to the striped bass population of the Hudson." A satisfactory alternative highway could be achieved without this "adverse impact on the aquatic ecosystem."

Some time thereafter, Griffis directed Suszkowski to draft a decision granting the landfill permit. There is testimony to the effect that Suszkowski worked for a time simultaneously with drafts which would grant and deny the permit. However, the drafts themselves, except for the one of August 21, no longer exist, and the testimony about precisely what instructions Griffis gave, and when, is vague. The required records are lacking.

Houston started work on the FSEIS in late summer 1984. As already described, the position of the Corps witnesses was that the basic conclusions about fishery impact remained unchanged from the DSEIS to the FSEIS, and all that occurred in respect to the conclusions was essentially a clarification of wording. In this regard, Houston testified that at some point he was questioned by Suszkowski in the presence of Griffis as to what he had meant in the DSEIS by the phrase "significant adverse impact." According to the testimony, Suszkowski asked Houston whether he meant to use this term in the sense of the 404(b) Guidelines. Houston told Suszkowski he did not so intend, and only meant to say that the impact would be measurable, and further intended to say that the degree of impact was minor. Houston's testimony was that, on the basis of this kind of discus-

sion with Suszkowski, he drafted the conclusions in the FSEIS to make clear his original meaning.

At the initial phase of the trial Griffis was asked in general whether there was any change in the fishery analysis between the DSEIS and the FSEIS. His answer was that Houston and Dovel were "becoming more comfortable with the migratory theory," and Houston was telling him that the "impact was somewhat less" for the catastrophic worst case, although not for the most probable worst case. Because the migratory theory was "becoming more firmly entrenched" in Houston's mind, the Corps officials "felt that Westway ... had a lesser importance ... to some degree" (Tr. 865-69).

Houston, in his testimony at the beginning of the trial, was asked whether he discussed with Griffis any change in fishery analysis between the DSEIS and the FSEIS. Houston answered that there were a "few discussions." Griffis read a few working drafts of the FSEIS and noticed "a little bit of a change" as to how the fish used the area and what would happen to the portion of the fish impacted by the Westway landfill. According to this testimony, Houston told Griffis that there was a "refinement of our idea of how the fish used the area" and this affected the consideration of impact as to the higher percentage figures of Westway use, but not for the most probable worst case (Tr. 991-93). ***1503** There is no record of any of these discussions.

Needless to say, the testimony just described, about becoming "more comfortable" with the migratory theory, and "a refinement of our idea" about fish usage, did not explain the major changes from the DSEIS to the FSEIS.

The court asked the attorneys to provide a detailed analysis of the differences between the DSEIS and the FSEIS, and evidence explaining these differences. In response to this, the parties filed certain memoranda, and the Government recalled Houston to the stand.

Shortly before this, on the 24th day of trial, the Government announced that on the previous night it had turned over to plaintiffs two drafts of the DSEIS and five drafts of the FSEIS. Plaintiffs had requested such documents prior to trial. At that time, plaintiffs had been given two partial drafts of the DSEIS, but had not been furnished with any of the drafts which were now presented to them. The Government explained that Suszkowski had found two of the drafts of the FSEIS in his home after he had

testified. According to the statement of the Government, the other five newly produced drafts had been in the United States Attorney's office all along, but had simply not been produced.

The belated production of these drafts compounded the difficulties created by the general dereliction of the Corps with regard to its record keeping. The drafts could have been used in the questioning of Griffis, Houston and Suszkowski early in the trial, and would have been of considerable importance in view of the dearth of other records. As it turned out, Houston was scheduled to be recalled by the Government and could be questioned about the drafts. However, in view of the length of the trial, it was not practical to recall Griffis and Suszkowski.

On the 25th day of trial, the Government recalled Houston to explain the DSEIS/FSEIS changes which had not been explained before. Houston testified that each change on which he was questioned resulted from the rejection of the "staging area" concept found in the DSEIS. According to the staging area concept, the juvenile striped bass would spend time in the lower river inter-pier zones prior to leaving the river--to feed and otherwise gather energy and to become accustomed to new conditions of temperature and salinity. Houston testified that by the time of the FSEIS he was no longer utilizing the staging area concept, and considered the interpier area as merely one of the several transient low-current shelters used by the fish during their migrations in the Hudson River. He had decided that there was no essential difference between the environment in the lower river and the harbor beyond, and thus no need for the fish to linger in the lower river.

As already described, the staging area concept was referred to in the DSEIS, and the FSEIS stated that this concept had been modified to the extent that the precise reasons for the basic migratory movement, and the nuances of this movement, would not be postulated. In the FSEIS the modification of the staging area concept was not stated to be a reason for the various other changes which occurred between the DSEIS and the FSEIS. Moreover, no notes or work papers exist showing that the rejection of the staging area concept was the basis for such changes.

Nevertheless, Houston testified that the rejection of the staging area idea caused him to drop the portion of the DSEIS stating that the proposed landfill area was an important part of a highly utilized and potentially vital winter refuge; and the part which stated that the loss of an area as large as Westway

would impose a "substantial problem" and a "formidable task" on the migrating fish.

Whereas the DSEIS stated that the ability of habitat on the opposite shore to accommodate the displaced fish was unknown, the FSEIS substantially discounted this problem. The change was attributed by Houston wholly to the abandonment of the staging area idea. The DSEIS had stated that, on the assumption of 33% the loss of the Westway area would have a ***1504** "very significant impact to the fishery"--"severe repercussions to the stock of striped bass," most likely resulting in a "major decline in stock size." The FSEIS changed the impact at this level to "probably inconsequential." Again, this was ascribed by Houston to the dropping of the staging area idea.

Houston continued to deny that there was any change between the DSEIS and the FSEIS as to the impacts for the most probable worst case. But, even here the staging area matter played a salutary role. Under the Corps's own argument, there was at least somewhat of a problem as to how there could be the same level of impact for the most probable worst case when the percentage of fish affected had increased from 20% to 26%. Houston explained that the rejection of the staging area idea offset the increased percentage.

Houston testified in general that any differences in analysis between the DSEIS and the FSEIS regarding how the fish use the relevant area were accounted for by the staging area matter.

The appearance of this panacea late in the trial did not have a ring of credibility. Moreover, the cross-examination of Houston brought to light further difficulties.

On Houston's direct, the Government had not asked him about the five drafts of the FSEIS, although they had been produced shortly before his resumed testimony. These drafts were taken up on cross-examination.

There was an undated draft and a draft of September 25, 1984. It was agreed that these were the first two drafts of the FSEIS and appeared in that order. They were written by Houston. These drafts were very substantially rewritten from what was presented in the DSEIS. Obviously, much of the revision was in response to the comments which had been received following the DSEIS.

It should be noted that none of the early drafts of the FSEIS is a seamless garment. Not every section hangs together in complete consistency. One reason for this, as Houston explained, is that certain passages were worked on intensively in connection with a particular draft, but corresponding revisions in other sections might not be made. Thus, a reader must use caution in characterizing the drafts and in describing how they compare with each other. However, the court has reviewed these drafts in their entirety, and certain features, which are important to the present case, should be noted.

The important thing for present purposes is what occurred with regard to the staging area concept. As just described, Houston contended in his direct examination that it was the rejection of this concept which justified the view taken in the FSEIS as to the diminished importance of Westway, and the low level of impacts presented in the FSEIS.

Houston admitted in his cross-examination that the rejection of the staging area concept had occurred prior to the time of the drafts of the FSEIS. One would expect therefore, that these drafts would reflect the reduced importance for Westway and the low level of impacts. However, the picture is different.

Houston admitted in his testimony that the description in the two drafts of the FSEIS as to the importance of Westway and the level of impacts is at the same level as in the DSEIS, and indeed presents a somewhat more serious picture. The court's examination of the documents indicates that, in crucial respects, their description is substantially more serious than in the DSEIS. A few items will illustrate.

Both drafts referred to the fact that Westway is the "primary eastshore pier complex," and the last before the river mouth and upper harbor, thus aiding in the survival of the fish (Undated p. 71; September 25 p. 78). As to the lower river pier basins as a whole, these drafts stated that, whether the piers are the goal of the migration or another point along the route makes no difference; they still are heavily used as a sheltering area.

Presumably in response to certain of the comments, particularly those of the federal and state resource agencies, the drafts distinguished two times of peak usage--December *1505 and April. The drafts noted that there is no statistical estimate for December from the Corps study, since this study started its

sampling in January. However, the drafts assumed that the usage of the Westway area in December is at least as great as it is in April. The drafts analyzed the December situation as involving downriver migration at a time of great stress. The movements in April were at times of less stress with less need for sheltered areas. The evidence in this case about the use of the interpier basins has generally dealt with the downward migration during severe winter conditions. It has been the unspoken assumption that this is the phase of the juvenile bass movement of the greatest importance for considering the use of Westway and the impact of its loss. This also appears to be the assumption in the DSEIS and the FSEIS.

However, the matter was set forth with great clarity and explicitness in the first two drafts of the FSEIS. The undated draft stated that the December peak would appear to be the one of greater importance to the juvenile bass.

The loss of the Westway habitat now would represent reduction of shelter they are being driven to, as opposed to shelter they are being attracted out of by the warming spring waters. The value of the habitat is thus greatest in the winter, and its loss would be of a larger impact at that time. (pp. 79, 80)

The September 25 draft referred to the Westway area as a "major shelter," the loss of which could be of "substantially greater impact" to the overall survival of the fish in December than in the spring (p. 88). Both drafts characterized the loss of the Westway area as being "the loss of a sizeable sheltering area (that essentially removes any quiet backwater on the east bank for the last 4 miles of shoreline)" (Undated p. 80; September 25 p. 89). Both drafts projected that there would be dire impacts to the striped bass fishery from the loss of Westway to the December migration (Undated pp. 80-81; September 25 pp. 89-90).

It is of interest that the undated draft considered a range of relative abundance estimates which were precisely that of the DSEIS--20% to 33%. The September 25 draft considered the revised range ultimately used in the FSEIS-- 26% to 33%. In the overall conclusions, considering the whole range of relevant factors including both the April and December migrations, both drafts stated that the impacts would be adverse with respect to any of the percentages. The undated draft stated that, under the 33% assumption, the commercial fishery would likely be severely impacted and even lost, and result in "further curtailment" of

recreational bass fishing. Under the 20% assumption, the commercial fishery could still be reduced, although there would be little likely impact on the recreational fishery. However, at either percentage, the bass "would suffer population declines," which would be "significant and permanent." Such declines would be quite evident at the 33% level, but not as noticeable at the 20% level; except for large year classes. However, since large year classes "may be the sustaining influences on a population," this must be "considered a long-term impact." Although the 20% level is considered the more probable, the 33% level is judged "possible (as opposed to unlikely) and must warrant serious consideration as an ultimate level of risk" (pp. 84-85). The summary in the September 25 draft contained essentially the same conclusions about impacts, although the 26% figure was substituted for the 20% (pp. 94-95). In both these drafts there were later summaries of the conclusions which were worded somewhat differently. Houston testified that no difference of substance was intended.

We return to the question of whether the rejection of the staging area concept was in fact responsible for shaping the conclusions presented by the Corps in the FSEIS. What has been said about the first two drafts of the FSEIS shows that the rejection of the staging area theory had no importance whatever in Houston's basic determination as to the importance of the Westway area and the impact of its loss. The staging area concept was gone by the time of these drafts, and yet the degree of ***1506** importance and impact increased, or at the very least remained the same as was stated in the DSEIS. Houston was asked to explain this. His answer was that, while he had rejected the staging area idea, he nevertheless had retained some idea of "special use" or "extra value" for Westway, and this was responsible for the presentation in the first two drafts of the FSEIS. He could not define this special use or extra value. It was something less than the staging area theory but more than what was in his mind at the time of the FSEIS.

Several things must be said. In his resumed direct testimony explaining the changes from the DSEIS to the FSEIS as being related to the staging area concept, Houston never mentioned some intermediate "special use" or "extra value" theory. He never disclosed in this direct testimony that, after he had rejected the staging area idea, he had written two successive analyses in which he had escalated the importance of Westway and the impact of its loss. These various explanations of Houston are entitled to no weight.

A further issue arises because of what occurred after the September 25 draft. The next draft of the FSEIS appeared on October 19. There were subsequent drafts of October 22, October 25 and November 16. The latter was the final draft before the FSEIS, which was issued on November 27.

The salient fact is that the trend of the analysis, as displayed in the first two drafts of the FSEIS, was sharply altered beginning with the October 19 draft. It was this alteration which led to the portrayal in the FSEIS of a reduced importance of the Westway area and reduced impact of the Westway landfill. Houston has admitted that, beginning with the October 19 draft and progressing through the subsequent drafts, there were changes in many details and a "softening" of the descriptions (Tr. 4644-45, 4649, 4695-96).

In the October 19 draft the description of the December migration and its special importance in assessing impacts was almost completely removed, and by the October 22 draft it was eliminated. The description of the Westway area as a "major shelter," and the characterization of the loss of the Westway area as being the loss of the only "quiet backwater on the east bank for the last 4 miles of shoreline" were eliminated from the drafts beginning October 19.

The description of impacts, starting with the October 19 draft, was continually revised in the direction of the small, minor and inconsequential impacts portrayed in the FSEIS. Some of the formulations in the FSEIS appeared in virtually their final form in the October 19 draft. Others were subject to some degree of further revision. One passage in the October 19 draft used the phrase "significant adverse effect," but went on to define this as involving declines in the stock which would be "perceptible but perhaps difficult to quantify" at the one-quarter level, but "more noticeable" at the one-third level. In the October 22 draft this language was changed to "significant impact," which was said to be "relatively inconsequential" to the overall well-being of the stock, and not a "critical (or even minor threat)" to the commercial and recreational fishery (p. 42). In the November 16 draft the phrase "significant impact" was changed to "probable impact" (p. 46), and this was the language used in the FSEIS. The obvious purpose of these changes was to do away with the language which would cause a problem under the 404(b) Guidelines.

Another change for a similar purpose was to alter the phrase "measurable degradation" in the October 19 draft (p. 103) to the term "at least perceptible decline" in the October 22 draft (p. 53). The latter language appeared in the FSEIS.

As already described, the experts dealing with the statistical model recommended 44% as the best estimate of usage of Westway by YOY, which were considered to be the more critical class of fish. The Corps did not accept the 44%, but adopted 26%-33% as the reasonable range. However, in the October 19, October 22 and October 25 drafts, there was a description of drastic impact at the 44% level, one *1507 deemed unlikely, but presented as the "worst impact projected for the WW fill" (October 19 p. 89). In these same drafts there was a discussion of the 62% figure--the upper end of the model range. This was said not to deserve serious consideration even as a worst case.

In the November 16 draft and the FSEIS, the above discussion of the 62% figure was omitted. The 44% was shifted into the slot formerly occupied by the 62%. The 44% was now said to be so improbable as to require no consideration as a worst case (November 16 p. 50; FSEIS p. 51).

Other revisions occurred beginning with the October 19 draft, all of which had the effect of downgrading the importance of the Westway area and the impact of its loss. Almost without exception, there is no legitimate explanation for these changes in terms of correcting factual errors or improving inadequate scientific analysis.

Houston has testified that each draft was circulated to Griffis, Suszkowski and others, and that after each draft there was a meeting. There are no records whatever showing discussions of these various drafts. There are no records of discussions, and no notes or work papers, showing the background for the changes or the reason for the changes which occurred beginning with the October 19 draft and continued thereafter, culminating with the FSEIS. There is no explanation in any part of the evidence at this trial as to a reasoned basis for such changes.

The above findings bear upon the question of whether the actions of the Corps were arbitrary. Plaintiffs will prevail in this action if they show such arbitrariness. They need not prove corruption or improper influence. However, they do make a claim of improper influence. They point out that there was a meeting on September 21 between the Corps and the State (fully recorded)

to discuss the State's mitigation proposal. At this time Griffis stated that the analysis of the Corps regarding the fishery issue was essentially finished. After this meeting, Griffis made a diary entry to the effect that mitigation did not appear to have much value. It should be noted that Griffis did keep a log, although it is apparent that numerous relevant events were not noted in the log, and when the events were recorded, the notations contained few if any points of substance.

On September 24 Griffis noted in his log that he was preparing for an October 1 briefing for the new Chief of Engineers, General Heiberg. The diary noted that Westway would be an issue Heiberg would become involved in. The briefing occurred on October 1. On October 4 Griffis took a river trip with Acting Assistant Secretary of the Army Dawson and two generals from the Corps.

Plaintiffs argue that an inference can be drawn that Griffis was subjected to improper influence at this time, as the explanation for what occurred between the drafts of September 25 and October 19.

The court declines to make such a finding. Griffis's log entries, while they do not contain the substance of the relevant discussions, state that no mention of the merits of Westway was made in the meeting with General Heiberg and no mention at all of Westway was made on the river trip. No witness was ever questioned about these occasions. There is no direct evidence, and there is insufficient circumstantial evidence, to justify a finding of improper influence.

On the other hand, the evidence does not affirmatively show a bona fide explanation of events. We are left with the fact of serious and unexplained anomalies in the Corps proceeding.

In this regard, an argument of the Government in a post-trial reply brief must be dealt with. The Government points to a few log entries of the Corps employees during this period as offering evidence of the kind of reasoned record which is required. Unfortunately, this evidence raises more questions than it solves. As to the log entries, there was an employee named Janice Rollwagon, who was apparently directed to make a record of meetings she attended. The trouble is that she either did not attend all of the meetings, or failed to make notes of some of the ones she was *1508 present at. In any event, in the first part of October, there were discussions involving Griffis, Hous-

ton, Suszkowski and the Corps attorneys. Houston described to Suszkowski and the attorneys what he was planning to present at that time in his description of impacts. His discussion dealt with three possible percentages of use of Westway--26%, 44% and 62%. He refused to quantify in any way the proportion of fish that would be lost, simply saying that it was likely to be "some." Suszkowski and the lawyers objected to this and urged Houston to quantify the loss in some way. The matter was brought before Griffis, who stated that Houston and one of the lawyers should review the matter, and the lawyer should make the decision. There is no record of the conference between Houston and the lawyer, if it occurred, and no record of the decision that was taken on this point.

In his testimony at the trial, Houston gave no indication of the problem raised by Suszkowski and the lawyer. He stated that his colleagues were satisfied with his assurance that the impact would be so small--would be no real problem--nowhere near the level where it was important to define an exact quantity (Tr. 1356, 1364). It is important to note that both Houston and Suszkowski were asked at the trial whether the Corps arrived at any standard or definition in any terms at all as to what "significant adverse impact" meant. Both witnesses stated that this was not done (Tr. 1355, 1364-65, 1927).

There are log entries by Rollwagon regarding meetings on October 11 and 12. Griffis stated at one point that his scenario for the worst case was that even a perceptible decline in the fish stock was unlikely, and most probably there would be no impact from Westway because the fish would go elsewhere. Later, according to the log entry, Griffis and Houston agreed to report a perceptible decline of the stock, which would not be measurable in view of the varying sizes of the year classes. According to this record, Houston stated that the impact on striped bass would be significant but there would be no significant degradation of water quality.

These fragmentary records do nothing to resolve the real problems in the case. There is no explanation as to why Griffis would sign the DSEIS, projecting a significant adverse impact, and then a few months later state that his preferred "scenario" was no impact. There is no mention whatever in these log entries of why the analysis switched directions during this time from what it was in the September 25 draft. There is no mention whatever in the logs of the particular drafts despite testimony that there were meetings after each draft. Although it is said that

Griffis and Houston agreed on some presentation of low level impact, this offers no explanation as to the reason why they arrived at this, after they had subscribed to a completely different position earlier in the process.

As described earlier, the discussion of October 2 related to percentages of 26%, 44% and 62%. This is shown by a chart of that date. The 33% figure is not referred to in this chart. There is no explanation as to why this occurred, or as to why the 44% was later eliminated from consideration in the worst case analysis, and the 33% used as the upper figure for such analysis.

The Dovel Testimony

As described earlier, in both the DSEIS and the FSEIS the Corps rejected the idea that juvenile bass were overwintering in Westway and the other lower river interpier zones. The Corps accepted a theory said to have been proposed by William Dovel--i.e., that the juvenile bass use the interpier zones only briefly in the course of migrations out of and back into the river.

In their comments to the Corps regarding the DSEIS, the federal resource agencies and the New York DEC all complained that the overwintering theory should not be rejected for purposes of the impact analysis, and that the Dovel migratory theory was merely an untested and unproved hypothesis. Witnesses from these agencies testified at the trial to the same affect.

The Government then called Dovel as a witness. The importance of Dovel to the Government's case was substantial indeed. ***1509** In its opening statement the Government stated that Dovel was the person who most completely articulated the theory that the Corps ultimately accepted. During colloquy at the time of Dovel's testimony, the Government emphasized the large measure of reliance which the Corps had placed upon Dovel. Both Griffis and Houston affirmed this in their testimony. Moreover, of all the outside experts who worked with the Corps and whose views the Corps sought, Dovel was the only one who supported the Corps's analysis of impact.

A main purpose of Dovel's direct testimony for the Government was to rebut the criticism that his migratory theory was merely an untested hypothesis. Dovel stated that, although his theory may have been a hypothesis as of the time of the DSEIS,

by the time of the FSEIS he had reviewed all available data intensively and arrived at firm conclusions, which he set forth in a written report. The first handwritten draft of this report was finished by the end of October. He kept Houston fully apprised of all of his ideas, and he displayed to him the draft report when it was completed. He did not give the report to Houston, nor did Houston ask for it.

On the first day of Dovel's testimony, the Government produced a document dated April 18, 1985. Dovel testified that this contained the substance of the handwritten draft he had displayed to Houston the previous October, although there had been a delay until April in having it typed. The Government offered the document into evidence, stating that it reflected Dovel's "final conclusions" on the subjects relating to Westway; that it was the definitive work by the person the Corps relied on. It was said to be the "wisdom on this subject" from this expert.

There was extensive cross-examination about the document, which will be described shortly. The problems arising from this cross-examination were so serious that the court suggested that the Government and the witness attempt to obtain the handwritten draft, which the witness stated was still in existence.

On the fourth day of Dovel's testimony a prior document was produced. It consisted of a marked-up typewritten version. The production of this prior document caused Dovel to change his testimony about the chronology. He now said that he produced the handwritten draft in October, from which a typed draft was produced in December. This was marked up in early 1985, and the mark-up was typed into the document of April 18, 1985. Houston knew about the December typed draft before the decision of the Corps in January 1985. Houston did not ask for a copy of either.

On the fifth day of Dovel's testimony the Government produced the December typed draft.

On cross-examination it was brought out that in early September Dovel went to Laurance Rockefeller's office to speak to a Mr. Lamb. Dovel requested funding for the preparation of a report on striped bass. Dovel said that it could be most beneficial for Westway and that "Westway could use it." Lamb promptly agreed to provide funding. Later, Lamb wrote to Griffis urging him to grant the landfill permit for Westway, and recommending serious consideration of Dovel's view about the low level of fishery impact which would result from Westway.

The further cross-examination dealt mainly with the contents of the three drafts of the Dovel report which had been gradually produced by the Government as described.

It quickly became apparent that these documents presented the most glaring contradictions to all that the Government had been claiming as to Dovel. Far from presenting firm conclusions about the theory of fish movement and usage of Westway adopted in the FSEIS, the Dovel documents were flatly contrary on a number of points, and on still other points indicated that they were the most tentative hypotheses, on which further data were required.

It will be remembered that a fundamental part of the reasoning of the Corps in both the DSEIS and the FSEIS was that the juvenile bass were not overwintering *1510 in Westway and the other interpier zones, but were passing through briefly on their migratory path. The rejection of overwintering was so positive in the Corps's analysis that it was not even considered for worst-case purposes.

Dovel's December draft (which had been handwritten in October) asserted that the Westway area is "an area currently used as overwintering habitat" for juvenile striped bass. This document contained a 4 1/2 page section entitled "Overwintering Habitats." Among other things, it stated that the interpier basins in the lower Hudson "serve as man-made wintering habitats," and that they "currently make a substantial contribution to the total overwintering habitat available." The document went on to state that, in the event a portion of such habitats would be lost, "the vitality of future populations of bass ... is a question that probably cannot be determined from available data." To say the least, these statements do not support the idea of the FSEIS that overwintering of bass in Westway and the interpier zones can be conclusively dismissed.

When confronted with these and other similar items in his drafts, Dovel responded in a fashion which must be remarkable in the annals of courtroom testimony. He stated that he does not agree with these statements, and did not agree with them when he wrote them in October and when they were put in typed form in December. As of October he had formed the very opposite "conclusion"-- i.e., that the bass were definitely not overwintering in the lower river pier basins, although he did not put it in the document.

In preparing the April 1985 draft, Dovel changed the flat statement about Westway being an overwintering habitat to say that it was "considered" to be such a habitat. The other language in the December draft described above was eliminated. However, the December draft contained additional language about overwintering which was carried over to the April 1985 draft, and which was no less contradictory of the position of the Corps in rejecting overwintering and accepting the migratory theory. The December and April documents stated that the pier basins may be "uniquely beneficial to overwintering bass," and that the lower Hudson river basins "may represent optimal overwintering sites."

Dovel again gave his surprising response that he does not agree with these statements now and did not agree with them when they were written in October, at which time he had reached the opposite conclusion from what he wrote. The October date was, of course, important because it was then that Dovel had supposedly reached his "conclusions" that formed part of the basis for the FSEIS.

One feature of the migratory theory was that there could be little or no impact from the loss of the Westway area because there was no dependence of the fish on this area. The April 1985 Dovel document stated that the degree of dependence would relate to the length of the occurrence of fish in a habitat. The document stated that the length of occurrence of the fish in the lower Hudson habitats could only be determined through mark and recapture studies, a technique which had not been adequately employed there. Dovel testified that this remark did not apply to Westway or the other lower Hudson river habitats. Of course, contrary to his testimony, the only possible meaning of the statements relates to Westway and the lower Hudson river habitats.

In the December draft it was stated that it is impossible to determine the direction of bass movements from available data. Dovel testified that this was not true when he wrote it, and that indeed by that time he had determined from the available data precisely what the document stated could not be determined. In the December draft it was stated that definitive conclusions about the movements of young striped bass in the New York City area may be difficult if not impossible to develop. Dovel testified that he meant this for "subtle" movements, indi-

cating that the statement had no relation to the migratory theory he had proposed in regard to the Westway problem.

***1511** At times Dovel specifically admitted that items in the documents, if believed, would give a different view of the impact of Westway than what he and the Corps had postulated. However, Dovel repeatedly gave his astonishing answers to the effect that he disagreed with the offending passages, or they did not apply to Westway, and that he had reached contrary conclusions in October, notwithstanding the fact that he wrote something quite the opposite. He testified that all of his conclusions regarding matters that affected Westway were reached in October, although not stated in his drafts. Some of his "general scientific" conclusions, not directly related to Westway, were reached in early 1985. However, even these he did not put down in the draft which appeared thereafter in April.

As to any items in the documents which were favorable to the Dovel migratory theory, they were uniformly stated as tentative hypotheses. Dovel's repeated testimony was that they were really conclusions, and that he would revise the language in the final form of the report.

Dovel's testimony is a collection of assertions so irresponsible that it is shocking that the Government ever tendered him as a witness. Moreover, it is difficult to countenance a decision as important as the Westway landfill permit application resting to any substantial degree on his views.

As to Houston's knowledge of the contents of the Dovel report, Dovel testified that he made sure that Houston understood the substance of the entire manuscript which was displayed to Houston in October 1984. Houston testified that he had a conversation with Dovel in which Dovel showed Houston a manuscript of a report. They discussed it, and Houston may have glanced at a page or two. Houston testified that Dovel's discussion indicated that he was modifying his migratory theory extensively; Dovel was now suggesting that substantial numbers of the juvenile bass were overwintering in the river, but this was going on "upriver somewhere, I think Yonkers" (Tr. 4066). Houston referred to this as the "upriver overwintering" theory. It was similar to a theory which had been proposed by the State and rejected by the Corps. According to Houston's testimony, he at first suggested to Griffis that the Corps obtain Dovel's report before issuing the FSEIS. However, Houston told Griffis that the report would not make any difference to the Corps's conclusions, and Griffis

decided that he did not want to wait for the report, which might take months. It is difficult to understand the latter testimony, since the evidence shows that the report was already in existence.

In any event the report did not contain any coherent statement of the upriver overwintering theory (Tr. 3582), but did contain strong statements about overwintering in the lower river pier basins.

Houston did not obtain a copy of the Dovel report. There is no excuse for this. He had requested a written report of Dovel's tentative findings at the time of the DSEIS, and Dovel had provided this. It was far more important to obtain Dovel's final report, but this was not done. The FSEIS falsifies the situation by stating that the Corps had obtained a memorandum of Dovel's initial ideas in May, and a "final form" in July. In fact the same document was presented in May and then in July, and it was the memorandum of the initial ideas. No final report from Dovel was obtained from Dovel in July or at any time.

Court Finding Regarding Migratory Theory

The court finds that the Corps's analysis, which entirely rejected the overwintering concept and based its conclusions on the Dovel migratory theory, was arbitrary and without reasonable basis. In addition to the Dovel situation, the following circumstances should be pointed out.

The migratory theory assumed that the fish, instead of remaining in the lower river, moved through this area and into the Upper Harbor and beyond. However, the data from the Corps study did not show any substantial numbers of fish in the locations where they had supposedly gone. Houston himself admitted that the fish were postulated to have moved to locations *1512 which were sampled with negative results, or which were not even sampled. The FSEIS notes the problem, and admits the inadequacy of the sampling (pp. 43-44).

One of the purposes which had been proposed for the two-winter study was to allow a sufficient period of time to test hypotheses developed in the early part of the study which appeared worth exploring, and to permit an adjustment in the scope of the study to allow such exploration. The two-winter study was vetoed, and it was said at the time that any inadequacies in the data would be treated in a strictly worst-case fashion. This was

not done. Instead, a hypothesis was suggested to the Corps which went beyond what was proven by the shortened study. Instead of either rejecting it or extending the study to prove it, the Corps accepted it without proof. This was not a worst-case analysis. The result was an arbitrary rejection of overwintering and acceptance of the migratory theory. This means that the analysis in the FSEIS, and also that in the DSEIS, cannot be accepted. Thus, the conclusions of the Corps regarding impacts were improperly understated throughout the entire process.

The Resource Agencies

The Corps was legally required to consult with FWS, NMFS and New York DEC. The views of these agencies were expressed in written comments after the DSEIS. The agencies criticized the DSEIS, which had found a significant adverse impact, as not being negative enough. For one thing, the agencies believed that the Corps should not have rejected the possibility of overwintering, and should not have based its findings on the Dovel migratory theory.

A critical juncture occurred in the deliberations of the Corps in the fall of 1984 when it switched from a finding of significant adverse impact to a finding of minor or inconsequential impact. In addition, whatever the state of the relationship was between the Corps and Dovel, the Corps must have had at least some realization that his theory was questionable. If there ever was a time when the consultation required by law should have occurred this was it. But the Corps went through with its work on the FSEIS without calling on the agencies.

Frank DeLuise of FWS and Michael Ludwig of NMFS testified at the trial. Both criticized the lack of a two-winter study. Ludwig was of the opinion that Westway is a critical habitat and DeLuise basically concurred. They viewed the Corps's conclusions regarding minor impact as without basis in existing scientific data and unsupportable.

There is no question about the honesty of these witnesses and the high degree of expertise they possess. Their knowledge of the relevant subject-matter is indeed profound. This is in sharp contrast to the situation regarding Dovel, with whom the Corps was in frequent consultation and on whom the Corps relied. The FWS and NMFS experts were the kind whose advice would have greatly benefited the Corps, and indeed the Corps was legally obligated to seek it.

The State argues that these persons and their agencies were merely partisan opponents of Westway. The problem with that contention is, simply, that their track-record in the Westway matter is one of being right. In the proceedings leading to the first round of litigation their judgment was uniformly sound. The Corps was not required to accept the views of these agencies as binding, but serious consideration was warranted.

Events From FSEIS to Decisions

Following the FSEIS, comments were submitted to the Corps by FWS, NMFS and EPA, again recommending denial of the landfill permit. Polgar and Heimbuch of Martin Marietta wrote a joint letter objecting to the findings of the FSEIS. Mihursky spoke to Houston and objected to the finding of small impact. Dovel wrote a letter endorsing the Corps conclusions.

On January 24, 1985 Griffis issued his decision that the landfill permit should be granted. For purposes of this case two phases of the decision are relevant--that dealing with fisheries impact, and the portions ***1513** dealing with the definition of the project and alternatives. The latter subjects will be dealt with in the next section of this opinion. As to the fisheries impact, it is sufficient to say that the decision was based on the findings in the FSEIS. The Corps issued the landfill permit on February 25, 1985.

The FHWA handed down its decision on March 18, 1985. On the fishery question the FHWA relied on the FSEIS and the Corps decision.

Purpose of Project and Alternatives

Early in the remand period, the chief regulatory officer in the District Engineer's office, Suszkowski, discussed in his own office and with the FHWA the fact that the 404(b) Guidelines, revised in 1980, changed the considerations for review in connection with the new landfill application from what they were in the prior proceedings. For one thing, the Corps would be required to deny a landfill permit if there were practicable alternatives having a less adverse environmental impact. Previously the question of alternatives was merely a factor to be considered. The definition of alternatives, which would need to be presented in the SEIS, was being left to the FHWA, and Suszkowski was concerned about the adequacy of its work on the sub-

ject in light of the issues which the Corps would need to decide.

As described earlier, the FHWA sent the Corps a draft of its portion of the SEIS in late 1983 or early 1984. The Corps wrote the FHWA on February 7, 1984 questioning whether the primary purpose of the project included revitalization as well as transportation, and expressing concern that the draft SEIS described only highway alternatives.

At a meeting held on February 22, 1984 it was agreed between the Corps and the FHWA that the "primary purpose of the project is to satisfy transportation needs," but that the SEIS would also discuss the other related goals involving redevelopment of the West Side waterfront corridor.

The drafting of the portion of the SEIS dealing with the definition of the project and alternatives was carried out solely by the FHWA. There is no evidence that the Corps took any substantial part in this.

The FSEIS described the proposed federally-funded action as the construction of an interstate system highway to replace the demolished West Side Highway (p. I-1). The FSEIS described the "basic transportation purpose of the project," and spoke of the redevelopment aspect as "benefits associated with the project." Westway was said to "respond to transportation needs and provide other needed benefits." The FSEIS stated:

At the heart of these needs was the replacement of the West Side Highway.... (p. II-1)

It stated that "Westway's primary purpose" is to replace the West Side Highway (p. II-3).

The FSEIS went on to describe in detail the associated benefits. There would be about 93 acres of parkland and about 100 acres of land for residential and commercial development. The residential phase would involve 7100 units.

The estimated cost of Westway was stated to be \$2.047 billion. It was estimated that about 10% of this would be recouped by disposing of the developable land (p. VI-1).

The FSEIS stated that the process by which "final land use decisions are reached and a development plan adopted will be completed in the future." No action has been taken to decide

whether the new land would be sold or leased, whether there would be public or private development, and if private how many developers there would be and how they would be selected (p. V-13).

As to alternatives, five highway designs other than Westway were presented. None of the five would involve any appreciable landfill in the Hudson River. In each case the highway design and transportation aspects were described. The presentation as to each alternative consisted of a map showing the possible highway, physical description, costs of constructing the highway, assessment of the merits and demerits *1514 from a transportation point of view, and a description of its impacts in regard to air quality, noise, water quality, construction and social consequences. As to development, what was said in each case was basically that it would provide little or none of the development benefits of Westway, since no appreciable amount of new land was being created by any of the alternative highway designs.

One of the alternatives described was the "Interim Roadway," which is the existing West Street/12th Avenue, now that the West Side Highway has been demolished. Possible improvements were estimated at \$46.2 million. Another alternative is the "Modified Arterial," which would involve the improvement of the existing roadway to provide arterial six-lane service at an estimated cost of \$52.9 million. The Interim Roadway and the Modified Arterial would be non-interstate roads. Other alternative designs were more elaborate involving estimated costs up to the \$1.5 billion for the so-called "Inboard Alternative."

With regard to the latter alternative it was stated that from a standpoint of traffic service, it would be as effective as Westway. As to the Modified Arterial, it was stated that this road would provide service comparable to a major urban arterial. As to the Modified Arterial there was no explicit statement that, from a transportation standpoint, it was a practicable alternative to Westway.

In the decision of the District Engineer granting the landfill permit, issued January 24, 1985, it was stated:

Though FHWA has supported Westway over the years as a highway endeavor, in order to satisfy all of the goals desired of such a plan, it is better termed a "redevelopment" project.

Griffis testified in court that Westway is not needed as a transportation project; and that there is no need for landfill as far as transportation is concerned. For transportation purposes, other possible highway designs would be practicable alternatives to Westway and would satisfy transportation needs. An interstate link is not needed. Griffis testified that the existing West Street/12th Avenue, now that the West Side Highway has been demolished, has improved greatly in its handling of traffic and provides adequate transportation. This is even before the improvements suggested in the FSEIS costing \$46.2 million. The District Engineer's decision of January 24, 1985 speaks of both the Interim Roadway and the Modified Arterial, indicating that both are practicable alternatives to Westway for transportation purposes. As stated, the estimated cost of the Modified Arterial is \$52.9 million.

The FHWA presented no evidence to contradict these assertions. The State of New York has conceded in its Post Trial Memorandum that "Westway is not necessary to provide transportation along the lower West Side."

Griffis, in his decision granting the landfill permit, stated that the non-Westway highway alternatives would not have any significant adverse environmental consequences of any kind. He specifically found that the current operation of West Street/12th Avenue, since the demolition of the West Side Highway, has not produced any significant adverse effects on air quality.

By his own admission, if Griffis had characterized Westway as a highway project, he could not have granted the landfill permit. The existence of practicable highway alternatives would have prevented the permit under the 404(b) Guidelines. 40 C.F.R. 230.10(a). However, the District Engineer's decision denominated Westway as a redevelopment project. On this basis he found great benefits and no practicable alternatives, and decided that the landfill permit should be granted.

The analysis of the District Engineer, as presented in his decision and in his court testimony, was far different from what had been presented in the FSEIS.

The FSEIS should have, but did not, state that Westway is not needed for transportation purposes; that transportation needs can be satisfied by the existing roadway improved at a cost of \$50 million; that the reason for the Westway landfill project, *1515 estimated to cost \$2 billion, is redevelopment.

There was nothing approaching a fair statement in the FSEIS as to these points, or any of them. To be sure, there was a statement, by no means emphasized, that the \$1.5 billion Inboard Alternative would be the equivalent of Westway as to transportation. But there was nothing in the FSEIS about the far more important point that a \$50 million improvement to the existing road would be a practicable alternative for transportation purposes. As to the lack of need for Westway or landfill for transportation purposes, Volume III of the FSEIS, dealing with comments to the DSEIS, referred to an objection which had been received to the effect that the replacement of the West Side Highway does not require the Westway landfill project. The response avoided answering this (p. II-10).

If it had been fairly disclosed that the primary purpose of Westway was redevelopment, as found by the District Engineer in his decision, this would have led to discussion of alternatives appropriate to the redevelopment purpose. See 40 C.F.R. 230.10(a)(2).

The choice among alternatives was basically the choice between real estate and park development through the Westway landfill project, recognizing that Westway is not needed for transportation purposes, and other types and degrees of development without Westway. An analysis of this kind would inevitably have included a thorough discussion of potential private development, undoubtedly on a lesser scale than Westway, but at a lesser cost both in money and in effects on the environment, and without the expenditure of public funds. However, in the FSEIS there was no discussion of alternative redevelopment possibilities except in a very minimal way in connection with the description of highway designs. There was no discussion focused on alternatives to Westway, treating the project as a development project. Among other things, there was little or no recognition of the possible alternative approaches to waterfront development without landfill, of the kind which have occurred and are proposed elsewhere in New York and in other cities.

Thus the FSEIS simply failed to present the real issue that required decision, in terms of the actual nature of the project and the alternatives.

It can be said that the decision of the District Engineer went some distance in disclosing the true nature of the issue involved here. His court testimony further elucidated it. But

the time for disclosure under NEPA is not the point of decision or later court testimony.

The FHWA could not approve funding unless Westway is defined as a highway project. The FHWA cannot fund a development project, according to the FHWA's own testimony, which is obviously correct. The Corps of Engineers could not approve the landfill permit if it were called a highway project, because of the availability of practicable highway alternatives. The Corps could approve the permit only if Westway is defined as a development project. The FSEIS defined the project one way to suit the needs of the FHWA, and the Corps decision defined the project another way in granting the landfill permit. This was not fair dealing with the public or compliance with the public disclosure law (NEPA).

Conclusions of Law

The rules of law applicable to the present case are well defined. There is no dispute among the parties about the essential points. Much of the pertinent law is set forth in the court of appeals opinion in the present case. *Sierra Club v. U.S. Army Corps of Engineers*, 701 F.2d 1011 (2d Cir.1983). The scope of the district court's permissible review is narrow. *Id.* at 1029. The court does not sit as a super-agency and is not empowered to resolve de novo conflicting scientific options or to overrule the agency because it disagrees with its views. *Id.* at 1029; *County of Suffolk v. Secretary of Interior*, 562 F.2d 1368, 1383 (2d Cir.1977).

[4] As to an environmental impact statement, the court's task is to determine whether the agency has prepared the EIS in objective good faith and whether the ***1516** stated conclusions have a substantial basis in fact. *Sierra Club* at 1030; *County of Suffolk* at 1383.

[5] Regarding a decision of the Corps under the Clean Water Act, the court should uphold the agency decision unless it is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law. *Sierra Club* at 1032. Again, the court is not empowered to overrule an agency decision simply because it disagrees with it.

One of the requirements with regard to agency procedures is the creation of a reasoned record for decision. *Id.* at 1040.

This is of particular relevance in the present case where the prior judgments directed the keeping of full records.

[6] When an agency decision is based upon conclusions in an EIS which are not arrived at in good faith or in a rational and reasoned manner, that decision is necessarily arbitrary. *Id.* at 1033.

[7] As a general rule, the review of an agency decision is based on the administrative record. However, the court is empowered to go outside the record where it is incomplete and where substantial questions arise which cannot be resolved by the administrative record. *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 420, 91 S.Ct. 814, 825, 28 L.Ed.2d 136 (1971); *Environmental Defense Fund v. Costle*, 657 F.2d 275 (D.C.Cir.1981).

[8] Defendants contend that plaintiffs are barred from raising the claim regarding alternatives because it was litigated in the first stage of the proceeding and the doctrines of *res judicata* and law of the case apply. The court disagrees. The Government stipulated that all the non-fisheries topics listed in the April 1982 judgments would be treated in the SEIS and appropriately reconsidered in the agency decisions.

The circumstances of the agency consideration on remand were far different than they had been in the prior proceedings. Then no fishery impact had been found, so that the consideration of alternatives occurred in that context. The regulation itself was different in the prior proceeding. The old 40 C.F.R. § 230.5(a) simply required that alternatives be considered. The new 40 C.F.R. § 230.10(a) mandates denial of a landfill permit if practicable alternatives exist, presenting less adverse impact.

Under the stipulation of the Government and under the obvious requirements of law, the agencies were required to make their decisions anew on certain critical questions. Clearly they were required to state in the new EIS the essential considerations, in light of current conditions. As to the definition of the project and the nature of the alternatives, the agencies did not rely on incorporation by reference of material in the old EIS of January 1977. They purported to cover these matters in the new EIS. They did so for the purpose of presenting information in the course of the current review. There is no merit to the argument that incomplete and misleading statements on these

subjects in the new EIS are beyond the court's power in the present litigation.

One final point of law needs to be dealt with--the question of remedy. Ordinarily deficiencies in agency action would lead to a remand. However, there has been one remand already in the Westway matter. It is the court's conclusion that two failures to justify the Westway landfill and federal funding for Westway under the applicable legal standards should bring the matter to an end. There is simply no legitimate purpose to be served by further proceedings. See Office of Communication of the United Church of Christ v. F.C.C., 425 F.2d 543, 550 (D.C.Cir.1969).

Under the applicable rules of law and in light of the detailed findings previously set forth, the court concludes as follows:

1. The FSEIS in respect to fisheries violated NEPA and the 1982 judgments.

2. The FSEIS in respect to the definition of the project and the statement of alternatives violated NEPA and the 1982 judgments. ***1517**

3. The decision of the Corps to grant the landfill permit was arbitrary and violated NEPA, the Clean Water Act and the 1982 judgments.

4. The FHWA decision to grant federal funding violated NEPA and the 1982 judgments.

5. The State's motion to vacate the 1982 injunctions is denied. A permanent injunction will be entered prohibiting (1) the grant of a landfill permit for Westway by the Corps of Engineers, (2) federal funding for Westway by the FHWA, and (3) the construction of Westway by the State of New York.

Settle judgment.

END OF DOCUMENT