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THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

NOV 1 3 2000

The Honorable Elaine Kaplan
Special Counsel
U.S. Office of Special Counsel
1730 M. Street, N.W., Suite 300
Washington, D.C. 20036-4505

Re: OSC File No. DI-00-0792

Dear Ms. Kaplan:

In accordance with 5 U.S.C. § 1213, I directed the Department of the Army to conduct an investigation of the information you transmitted on February 24, 2000, under the above-referenced file, alleging that U.S. Army Corps of Engineers (USACE) officials manipulated studies related to the Upper Mississippi River and Illinois Waterway navigation systems. The investigation substantiated four allegations and found eight others to be unsubstantiated. Specifically, it found that three individuals, MG Russell L. Fuhrman, Deputy Chief of Engineers and Deputy Commanding General, USACE; MG Phillip R. Anderson, Commanding General, Mississippi Valley Division, USACE; and Colonel James V. Mudd, Commander, Rock Island District, Mississippi Valley Division, USACE, improperly took or directed actions which they knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established by law and regulation. It also found that MG Phillip R. Anderson improperly gave the barge industry preferential treatment when he allowed it to become an active participant in the economic analysis connected with the feasibility study. A copy of the executive summary and the report of investigation upon which it is based are forwarded herewith.

The report of investigation contains information which may be considered as a basis for adverse actions against individuals. It should be distributed only to those whose duties and official responsibilities require access to it in order to protect the privacy of those individuals and witnesses who requested confidentiality.

The executive summary and this letter set forth the findings of the investigation and the information required under 5 U.S.C. § 1213 (d). The executive summary:

a. Summarizes the information with respect to which the investigation was initiated in the Background section at paragraphs 6-9;

b. Describes the conduct of the investigation in the Background section at paragraph 10;

c. Summarizes the evidence obtained from the investigation in the synopses of substantiated and unsubstantiated allegations at pages 10-13; and

d. Lists substantiated and unsubstantiated allegations at pages 10-13.

With respect to actions that DoD plans as a result of the investigation, the following information is provided:

a. The report of investigation and executive summary will be forwarded to the Secretary of the Army for consideration of any necessary changes in Army rules, regulations or practices concerning the USACE's conduct of its studies. The Department of the Army point of contact for this action is the Assistant Secretary of the Army (Civil Works).

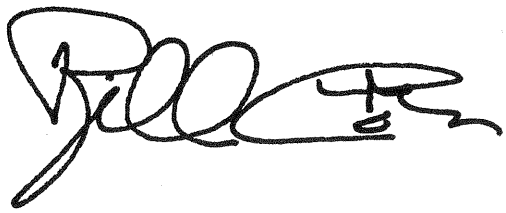
b. Any rights, benefits or privileges lost by Dr. Donald C. Sweeny, the complainant in this case, (or by any other Army employee), as a result of adverse employment actions subsequently determined to have been taken in retaliation for his or her disclosure of information under 5 U.S.C. § 1213(a), shall be fully restored.

c. The report and executive summary shall be forwarded to the Army for appropriate action with respect to the three military officers as to whom allegations were substantiated.

d. The investigation revealed no evidence of a criminal violation.

This letter and attachment are submitted in satisfaction of my responsibilities, under 5 U.S.C. § 1213(e)(1), as agency head.

Sincerely,



Attachments

DEPARTMENT OF THE ARMY
OFFICE OF THE INSPECTOR GENERAL
1700 ARMY PENTAGON
WASHINGTON DC 20310-1700

U.S. ARMY INSPECTOR GENERAL AGENCY
REPORT OF INVESTIGATION
(Case 00-019)

EXECUTIVE SUMMARY

OVERVIEW:

1. This is a report of investigation concerning a feasibility study currently being conducted by the U.S. Army Corps of Engineers (USACE). The purpose of the feasibility study was to address the most efficient means of relieving congestion on the Upper Mississippi River (UMR) and the Illinois Waterway (IWW). In the absence of exceptions granted at the Army Secretariat level, the study was required to be conducted using the processes and standards of the Economic and Environmental Principles for Water and Related Land Resources Implementation Studies and the Economic and Environmental Guidelines for Water and Related Land Resources Implementation Studies. A Corps employee alleged that Corps officials manipulated the study to show that large-scale construction was the most efficient means to relieve the congestion.

2. The investigation revealed the feasibility study has not yet produced a draft report. For a large portion of the past few years, the Corps has been mired in confusion generated by the magnitude of the study, new corporate visions, and a new computer model. The evidence also indicated that the economic analysis prepared for the draft report was manipulated. The District Engineer (DE) directed a specific value for a key parameter when he knew it was mathematically flawed, not empirically based, and contrary to the recommendations of Corps economists. Evidence also revealed that the former Director for Civil Works (DCW) and the Mississippi Valley Division (MVD) Commander created a climate that led to the manipulation of the benefits-cost analysis.

BACKGROUND:

1. The Corps of Engineers conducted planning studies for inland navigation under guidelines established by the Water Resources Council and the Corps' internal regulations. These studies provided the basis for decisions by Congress and the Administration concerning proposed inland navigational improvements. Planning studies were divided into two phases: reconnaissance and feasibility. The reconnaissance phase was a preliminary analysis of potential solutions to navigation

problems. If the reconnaissance phase showed that further study was warranted, the study proceeded to the feasibility phase.

2. The Corps' process for conducting feasibility studies flowed through several staffing levels. A DE was responsible for preparation of a draft report. After a Division Headquarters Review, the draft was forwarded to the USACE Headquarters for another review. USACE Headquarters then would send the final draft to the Assistant Secretary of the Army for Civil Works and Environment. Upon approval by the Assistant Secretary, the report would be forwarded to Congress.

3. The Water Resources Council guidelines and the Corps internal regulations provided a specific framework for conducting inland navigation studies. They provided methods for calculating the benefits and costs of alternative solutions. They required development of a baseline forecast of the most likely condition expected to exist in the future in the absence of any project. The alternative projects were measured against the baseline. The plan with the greatest net national economic development benefits (NED) was identified as the NED plan. The Assistant Secretary must select the NED plan as the recommended plan unless there are overriding reasons for another recommendation.

4. The UMR-IWW System Navigation Study began as two separate reconnaissance studies that were conducted between 1989 and 1992. In 1993 the studies were combined into a single feasibility study with a projected completion date of December 1999.

5. The feasibility study was conducted by a multi-disciplinary team composed of Corps planners, project managers, and engineering, economic, and environmental experts with participation of interested parties referred to as "stakeholders." The stakeholders included the barge industry, farmers (particularly corn growers), environmentalists, local government officials, and representatives from the five states bordering the UMR-IWW. The study process encouraged open sharing of information and dialogue between the Corps and stakeholders.

6. In February 2000, Dr. Donald Sweeney, General Schedule (GS)-13, economist, Saint Louis District, MVD, USACE, filed a disclosure with the Office of Special Counsel (OSC) alleging senior Corps officials manipulated the study to produce results favoring immediate large-scale construction. He charged that Corps officials altered four key analytic parameters and that Corps leadership either explicitly or tacitly endorsed the alterations. OSC sent a request for an investigation pursuant to Section

1213 of Title 5, United States Code (USC), to the Secretary of Defense, who forwarded the request to the Secretary of the Army. The Secretary of the Army directed The Inspector General, Army, to investigate the allegations. The National Academy of Sciences was asked to evaluate the analytic accuracy of the UMR-IWW study.

7. The four analytic parameters involved were industry self-help (ISH), construction contingency costs, rehabilitation cost avoidance, and demand for waterborne transportation. Changes to each of these parameters occurred after preliminary modeling results in February 1998 showed only small-scale measures were needed on the UMR-IWW. Small-scale measures were waterway improvements that did not involve major construction or large expenditures. In June 1999, when the four parameters were changed, the economic modeling results showed that large-scale construction was needed in at least five lock locations.

a. ISH was the process of barge industry tugboats assisting each other in lock passage. It was a voluntary practice that occurred only when lock passage exceeded reasonable wait times. ISH occurred because the existing locks on the UMR were 600-foot locks, while the tows on the Mississippi River had grown to 1200-foot lengths. In the February 1998 preliminary modeling results, ISH was estimated at a 50 percent level for the future, a figure not supported by industry or the Corps' lockmasters. ISH was restricted to 5 percent in the analysis sometime between August 1998 and January 1999. ISH appeared to have been eliminated from consideration because of safety concerns, intense industry opposition (in view of the voluntary nature of the practice), and the availability of safer, more effective, small-scale alternatives. The potential environmental damage of unconstrained self-help also provided a basis for the 5 percent limitation.

[Investigating Officer (IO) note: ISH was used in two contexts in the navigation study. In a generic sense, it referred to towboat operators assisting each other with passage through locks. In a specific sense, it referred to a small-scale construction alternative in the early stages of the study. The preliminary modeling results involved ISH as a small-scale construction alternative. The 5 percent restriction concerned ISH in the generic sense.]

b. Construction contingency costs represented the costs associated with unforeseen expenses once construction was begun. Those costs were initially estimated at 35 percent because the Corps planned to employ innovative construction techniques. The estimate was reduced to 25 percent in May 1999 because the new construction techniques had been in use for several years and could be more accurately

estimated. It was not uncommon for a completed feasibility study to have a contingency cost estimate of 20 percent.

c. Rehabilitation cost savings was the savings generated from not having to do lock rehabilitation because the locks were either replaced or extended with new construction. No rehabilitation cost savings were included in the initial engineering estimates. However, in June 1999 they were included in the analysis, resulting in greater benefits being accrued from lock extensions.

d. The demand for waterborne transportation (expressed as the "N-value" in the study) was the most critical parameter in the benefits-cost analysis.

(1) It was developed from the basic economic principle of supply and demand. It was represented in the economic model as the tonnage of commodities expected to be shipped on the river under a variety of conditions. The demand variable approximated the lost shipping when lock delays were increased or alternative grain uses like ethanol were available to farmers.

(2) The major commodity shipped on the UMR-IWW was grain. Grain was determined to be more elastic than other commodities. The concept of grain elasticity, the willingness of shippers or farmers to use alternative transportation or alternative grain uses when water transportation costs increased, was new in Corps analytic efforts. Previous navigation studies employed an inelastic demand for all commodities. This meant that theoretically a shipper would ship via the river regardless of price.

(3) The challenge was defining how elastic grain was for the five states affected by the study. The economic analysis could define the value of grain elasticity through data collection and/or analytic techniques. Data collection was a major deficiency throughout the study. It resulted in demand elasticity development along mathematical and theoretical lines. There was a great deal of uncertainty about how the economic model should best represent demand elasticity for grain.

8. The UMR-IWW study was a complex, management intensive effort involving the potential for more than $1 billion in capital improvements. As of January 2000, the study had cost $57 million and involved two Corps divisions and seven districts over a 7-year period. The study was the largest and most complex undertaking of its kind by the Corps. In addition to its magnitude and complexity, the study was affected by other factors. Several Corps officials noted an institutional preference for construction solutions. The "Grow the Corps" program placed pressure on Corps leaders and

managers to justify projects. Treating the barge industry as a customer created a conflict with the Corps' role as an honest broker in the study. It also led to granting the barge industry preferential treatment in terms of exclusive access and involvement in development of the economic analysis.

9. At the time of this investigation, a DE's report had not been produced. This investigation focused on the actions of the Corps leadership involving the analysis conducted in preparation for the DE's report.

10. The Office of the Army Inspector General (DAIG) conducted the investigation with a team of four investigators assisted by an attorney and a cost analyst. The team began its investigation on March 22, 2000, and completed the ROI on August 14, 2000, after which a legal review was conducted. The team prepared an investigation plan built around the disclosure allegations, standards applicable to feasibility studies, and the officers and employees involved in the study from the USACE Headquarters, the MVD Headquarters, and the Rock Island and the Saint Louis Districts. Witness interviews and electronic mail (e-mail) correspondence were the primary sources of evidence. Investigators interviewed 38 witnesses including the Chief of Engineers, the Deputy Chief of Engineers, the DCW, the MVD Commander, and the Rock Island DE. Investigators also reviewed the e-mail files of each senior leader and many other Corps participants in the study. The investigation focused on the actions of senior Corps officials and measured them against the standards established for feasibility studies as cited in the standards section beginning on page 7 of this document. Because of the nature of the allegations referred by the Special Counsel, the investigation team expanded the focus of the investigation to any activities that would result in deviation from the implicit requirement to conduct the study in an impartial and unbiased manner.

GENERAL FINDINGS:

1. The investigation found there was greater uncertainty in the UMR-IWW study than in previous similar Corps studies. The uncertainty largely resulted from the use of a new model that delivered unexpected and apparently counter-intuitive results. For the first time in Corps analytic history, they addressed differences between the Mississippi and Ohio Rivers in waterway-shipped commodities. Although the existence of differences in shipped commodities and the rivers upon which they were transported were economically sound principles, there was great concern about how to correctly model for those differences. Additionally, Corps leadership was concerned the study was in its seventh year without a defensible position in sight. This environment of slipping timelines, inability to explain and understand model results, and general pressure from

interest groups affected the study effort.

2. The scope of this investigation did not include an assessment of the validity of the underlying analysis of key study parameters. However, the investigation revealed evidence that one of the key parameters was manipulated to result in a specific study outcome.

a. The N-value was never based on adequate empirical data, although Corps' economists urged additional data research. The uncertainty associated with the N-value made it an easy target for manipulation to achieve a desired end. In the final analysis, the investigation found that the DE directed the use of an N-value because it supported large-scale construction.

b. The preponderance of evidence and testimony indicated that ISH, construction contingency cost estimates, or rehabilitation cost savings were not manipulated. There were rational explanations for why each of those parameters changed during the study. There was testimonial evidence that those parameters might not have been reviewed and reassessed had the original study results supported large-scale construction, but the "relook" of each of those parameters was consistent with established procedures. Additionally, the magnitude of change to ISH, construction contingency cost estimates, and rehabilitation cost savings was less significant than changes to the N-value in affecting the study outcome.

3. Although this investigation focused on only one study, the testimony and evidence presented strong indications that institutional bias might extend throughout the Corps. Advocacy, growth, the customer service model, and the Corps' reliance on external funding combined to create an atmosphere where objectivity in its analyses was placed in jeopardy. These influences created a tension with the honest broker role inherent in reconnaissance and feasibility studies.

a. Major General (MG) Fuhrman's guidance concerning the Corps' role as advocate for the inland waterways was a pivotal event in the study. It provided the impetus for manipulation of the study results. Although several senior Corps officials viewed the terms "advocate" and "steward" as interchangeable, many study team members and Corps Headquarters staffers were unclear about the meaning of advocacy. Witnesses expressed concern that the advocacy role was a departure from the Corps' responsibility to be an honest broker.

b. Senior Corps officials explained that the advocacy role was derived from responsibility for managing the inland navigation system. They compared the role to the Army Chief of Staff's role within the Department of Defense (DoD) concerning ground combat and the Department of Transportation (DOT) role concerning air and land transportation. The investigation did not find an explanation of the advocacy role in any policy or regulation relating to the Corps' civil works mission.

c. The "Grow the Program" initiative had a less defined impact on the study. Its potential for impact on future studies, however, was clear. The pressure on Divisions to deliver projects was immense. Moreover, compelling evidence indicated that a key element of the program was encouragement of grass roots lobbying for projects. The budget process was deemed a "first half" irrelevancy. The measure of effectiveness of the Divisions and Districts was the amount of funds actually appropriated by Congress.

d. Senior Corps officials testified that the "Grow the Program" initiative was established in response to a speech made by the Assistant Secretary of the Army for Civil Works (ASA-CW) to the Corps' Senior Leadership Conference in August 1999. The speech presented three major challenges facing the Corps: civil works as a program that might be losing synergy and support; fragmented planning that resulted from the existing statutory and regulatory structure; and defining and preparing for new missions. The investigation found nothing in the speech that would warrant the method of execution elected by the Corps.

e. The Corps' employment of the customer service model also created a conflict with the Corps' role as honest broker. Because of the taxes it paid into the Inland Waterway Trust Fund, the barge industry was viewed as a partner during the study. This view led Corps leadership to involve the industry to a far greater extent than other interest groups. Industry and Government teams were established to resolve economic analysis issues in closed sessions not accessible to the general public.

f. The Corps' reliance on external funding created another conflict with the honest broker role. The Districts were dependent upon project funding to maintain their staffs. The continued vitality of the Districts was thus dependent on producing study results that favored construction projects. Senior Corps officials believed that the professionalism of its employees was sufficient to overcome the conflict. The effects of the advocacy guidance and the customer service model on the UMR-IWW study offered strong indications to the contrary.

g. The investigation also found a widespread perception of bias among the Corps employees interviewed. Nearly all the economists expressed a view that the Corps (or individuals within the Corps) held an inherent preference for large-scale construction. A senior economist used the term "corrupt" in discussing one division. The term was used in the sense that leadership in that division appeared to be working for the interests of the navigational industry. There were indications of an implicit preference for construction in the day-to-day activities of study managers. For example, an analysis indicating that large-scale construction was not justified was described to a Division Commander as "really bad news."

h. The overall impression conveyed by testimony of Corps employees was that some of them had no confidence in the integrity of the Corps' study processes.

NAMES/POSITIONS:

1. MG Russell L. Fuhrman, Deputy Chief of Engineers and Deputy Commanding General, USACE

2. MG Hans A. Van Winkle, Director for Civil Works, Office of the Chief of Engineers, USACE

3. MG Phillip R. Anderson, Commanding General, Mississippi Valley Division, USACE

4. Mr. Donald W. Herndon, Senior Executive Service (SES) (Retired), former Director of Program Management, Mississippi Valley Division, USACE

5. Colonel (COL) James V. Mudd, Commander, Rock Island District, Mississippi Valley Division, USACE

6. Mr. George H. Rhodes, GS-15, Chief, Programs Execution Division, Mississippi Valley Division, USACE

7. Mr. Dudley M. Hanson, GS-15 (Retired), former Chief, Planning and Programs Management Division, Rock Island District, Mississippi Valley Division, USACE

8. Mr. Gary L. Loss, GS-15, Deputy for Programs and Project Management, Rock Island District, Mississippi Valley Division, USACE

9. Mr. Gerald W. Barnes, GS-15, Deputy for Programs and Project Management, Saint Louis District, Mississippi Valley Division, USACE

AUTHORITY: Secretary of the Army directive, 22 March 2000 (Exhibit A-1)

STANDARDS:

1. Army Regulation (AR) 5-1, The Army Management Philosophy, states the Army management philosophy is to do the right things, the right way, for the right reasons.

2. The laws, regulations and policies that provide the basic guidance for feasibility studies creates an implicit obligation to conduct studies in an impartial, objective manner. Title 33, USC, Section 2282, requires a feasibility plan to describe, with reasonable certainty, the economic benefits and detriments of the recommended and alternative plans. The Economic and Environmental Principles for Water and Related Land Resources Implementation Studies, the Economic and Environmental Guidelines for Water and Related Land Resources Implementation Studies, and Engineer Regulation (ER) 1105-2-100 provides that forecasts will be based on the most likely conditions expected to exist in the future with and without plan conditions. They further provide that the recommended plan be the plan with the greatest net economic benefit.

3. Title 5, Code of Federal Regulations (CFR), Section 2635.101, Basic obligation of public service, states employees will act impartially and not give preferential treatment to any private organization or individual, and endeavor to avoid any actions creating an appearance they violated the law or ethical standards. Whether the particular circumstances create an appearance the law or ethical standards were violated is determined from the perspective of a reasonable person with knowledge of the relevant facts.

4. AR 600-100, Army Leadership, states integrity means honesty, uprightness, the avoidance of deception, and steadfast adherence to standards of behavior. Senior leaders promote Army values by establishing and maintaining the command climate of their organizations through sound, ethical organizational policies and practices. Command climate is the sum of the philosophy, value, procedures, and behaviors, which are modeled, expected and rewarded by the commander. Senior leaders consider individual perceptions and their effects in establishing and maintaining a healthy command climate.

5. Title 5, USC, Section 2302 (b) (8), states supervisors shall not take a personnel action against an employee because of any disclosure of information by an employee which the employee reasonably believes evidences gross mismanagement, gross waste of funds, or abuse of authority.

SUBSTANTIATED ALLEGATION: MG Fuhrman improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

SYNOPSIS: MG Fuhrman gave guidance that influenced the study. He voiced disappointment with the preliminary study results. He indicated a preference for the development of a large-scale construction solution. Notwithstanding his intent that MVD prepare an analysis parallel to the NED plan, his advocacy guidance was the first step in the development of a climate that led to abandonment of objectivity in the economic analysis. AR 600-100, Army Leadership, provides that senior leaders are responsible for considering individual perceptions and their effects in establishing and maintaining a healthy command climate. MG Fuhrman introduced "advocacy" as an analytical perspective without ensuring that subordinates understood his intent. The impact of this guidance was apparent in the events beginning with a meeting with the barge industry in May 1999 and culminating with the DE's direction of an N-value that was mathematically flawed, not empirically supported, and contrary to the advice of Corps economists.

UNSUBSTANTIATED ALLEGATION: MG Van Winkle improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

SYNOPSIS: MG Van Winkle did not engage in activities designed to steer the study to a specific outcome. He first became substantively involved in the UMR-IWW study in January 2000. His unfamiliarity with the study and his perception of uncertainty in the study results caused him to direct a Headquarters Review. E-mails that suggested he had a bias towards an outcome other than the study team's recommendation were not accurate or conclusive. There was no credible evidence to indicate he intended to change study results. His actions appeared to be the measured response of a senior Corps official charged with the responsibility for Corps-wide quality assurance.

SUBSTANTIATED ALLEGATION: MG Anderson improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

SYNOPSIS: As the Division Commander responsible for the study, MG Anderson had a duty to ensure that subordinates clearly understood the obligation to conduct an objective analysis and that the advocacy position could be developed only as an alternative to the NED. MG Anderson failed to provide adequate guidance concerning the "advocacy" concept. This failure, in combination with MG Fuhrman's guidance, created a climate that led to manipulation of the economic analysis.

UNSUBSTANTIATED ALLEGATION: Mr. Herndon improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

SYNOPSIS: The preponderance of the evidence did not establish Mr. Herndon directed any improper actions; however, he was involved in a controversial incident relating to the study. In preparation for a meeting with the barge industry, Mr. Herndon engaged in a heated exchange with one of the Corps economists. Although others present interpreted Mr. Herndon's statements as inappropriate, it had no impact on the study.

SUBSTANTIATED ALLEGATION: COL Mudd improperly took or directed actions that he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

SYNOPSIS: COL Mudd improperly manipulated the study results to support large-scale construction when he directed the use of a specific N-value. Testimony revealed he directed the use of an N-value of 1.2 because he knew it resulted in a study outcome supporting large-scale construction. He directed the N-value change even though it was contrary to the advice of his study team's economic experts, it was based on flawed mathematics, and it lacked a valid empirical foundation.

UNSUBSTANTIATED ALLEGATION: Mr. Rhodes improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

SYNOPSIS: Although the preponderance of evidence did not establish Mr. Rhodes directed any improper actions, he was involved in several controversial incidents relating to the study. In his role as a division senior planner, he perceived a

responsibility to thoroughly investigate study issues and recommend corrective action to the division commander.

UNSUBSTANTIATED ALLEGATION: Mr. Hanson improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

SYNOPSIS: While Mr. Hanson was the study's project manager and responsible for the economic analysis, he directed activities which were interpreted by some of the study team members as biased and inconsistent with objective analysis. The evidence did not reveal that any of the products derived from Mr. Hanson's directed activities were ever used to develop a recommendation for large-scale navigational improvements. However, the evidence reflected that Mr. Hanson's actions were influenced by his interpretation of the guidance he received from his superiors.

UNSUBSTANTIATED ALLEGATION: Mr. Loss improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

SYNOPSIS: Although Mr. Loss became the UMR-IWW study project manager in January 1999, he did not play a significant role in decision making. The DE and other senior Corps officials were the primary decision makers. Mr. Loss knew about the mathematical flaw inherent in the DE's derivation of N = 1.2, but he did not direct its use. Mr. Loss was present for the meetings between Corps and barge industry representatives; however, the preponderance of evidence did not support that Mr. Loss personally directed the study team to conduct joint analyses with industry representatives.

UNSUBSTANTIATED ALLEGATION: Mr. Barnes improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

SYNOPSIS: There was no credible evidence that Mr. Barnes manipulated the study outcome. Testimony and documentation indicated he was only marginally involved in the study and made no recommendations or management decisions of substance affecting the study.

SUBSTANTIATED ALLEGATION: MG Anderson improperly gave preferential treatment to an organization or individuals.

SYNOPSIS: MG Anderson permitted the barge industry to become improperly involved in the economic analysis. He allowed the study team to be harshly criticized and attacked during a "summit" meeting with navigation industry officials in Saint Louis. While it was appropriate to give the navigation industry a forum to present issues, suggestions, and submit data for study inclusion, allowing industry to be an active participant in the conduct of study analysis was preferential treatment. The "summit" meetings resulted in a list of action items with Corps and navigation industry representatives assigned responsibility for task completion. In one instance, industry was assigned sole responsibility for determining the analytic results even though it was the Corps' responsibility to conduct the feasibility study.

UNSUBSTANTIATED ALLEGATION: COL Mudd improperly provided false or misleading information in a sworn statement.

SYNOPSIS: COL Mudd did not provide a misleading or deceptive affidavit to Congress. He accurately answered how the 1.2 N-value methodology was determined even if it was unclear who actually did the calculations. The widely known effect of various N-values and their derivations made who calculated the N-value less critical than which value was selected.

UNSUBSTANTIATED ALLEGATION: Mr. Barnes improperly threatened a government employee.

SYNOPSIS: Dr. Sweeney alleged Mr. Barnes threatened him with the loss of his job. No other witnesses heard the alleged threats, and Mr. Barnes denied threatening any Government employee. There was no evidence he had any involvement in Dr. Sweeney's removal; instead, he tried to get Dr. Sweeney reinstated as the UMR-IWW study's economics technical manager. The 1999 performance evaluation he wrote on Dr. Sweeney contained good ratings and favorable comments. He counseled Dr. Sweeney concerning insubordination towards a first-line supervisor and supported that supervisor's subsequent adverse action against Dr. Sweeney.

BACKGROUND:

1. Abbreviations. In addition to those already identified, the following abbreviations were used in the report:

DAIG -- Department of the Army Inspector General
DCG -- Deputy Commanding General
DoD -- Department of Defense
DOT -- Department of Transportation
ECC -- Economics Coordinating Council
FAA -- Federal Aviation Administration
F.O.B -- Freight on Board
GEM -- General Equilibrium Model
GLC -- Governors Liaison Committee
GM -- General Merit
HQ -- Headquarters
IO -- Investigating Officer
ITR -- Independent Technical Review
LTG -- Lieutenant General
LRD -- Lakes and Rivers District
MAJ -- Major
MFR -- Memorandum for Record
NED -- National Economic Development
ROI -- Report of Investigation
PED -- Preliminary Engineering and Design
P&G -- Principles and Guidelines
SEM -- Spatial Equilibrium Model
VTC -- Video Teleconference
WRDA -- Water Resource Development Act

2. Timeline.

UMR-IWW NAVIGATION STUDY
CHRONOLOGY OF SIGNIFICANT EVENTS

3/4 Feb 98	Dr. Sweeney released preliminary results at public meeting; showed only small-scale measures were needed.
Apr 98	Dr. Sweeney briefed Corps leadership about his analysis; MG Fuhrman expressed concern about consistency with models used for other studies.
17 Jun 98	MG Anderson made Mr. Hanson the project manager, created economics panel to identify NED within 90 days.
Jun 98	Newsletter announced public meetings delayed because some study components were behind schedule.
6/7 Aug 98	Expert elicitation panel thought more data needed, but narrowed range of N to between 1 and 2.
22/23 Aug 98	Economics panel set N at a compromise value of 1.5.
23 Sep 98	MG Fuhrman stated Corps was advocate for inland waterways & study should err on high side.
25-27 Sep 98	Mr. Hanson sent out his version of MG Fuhrman's guidance on e-mails to the study team. Mr. Harry Kitch, HQ, USACE, objected. Mr. Hanson retracted his version of the guidance.
2 Oct 98	At COL Mudd's request, Mr. Hanson prepared an e-mail which COL Mudd used to direct Mr. Richard Manguno, MVD, to develop case for large-scale construction.
14/15 Jan 99	Study Team Leaders limited self-help to 5%.
3 Mar 99	Dr. Mark Burton, Marshall University, reported best estimate for N was 2, not 1.5.

11 Mar 99	Chairman, Midwest Area River Coalition (MARC) 2000, e-mailed COL Mudd about concerns that study would not support construction and that any hope of coming out of process with region behind navigation programs was rapidly slipping.
24 Mar 99	MARC 2000 Chairman harshly criticized Corps at the Inland Waterways Conference.
5 May 99	At the request of the barge industry, MG Anderson and study team met with barge industry on 5 May 99.
11/12 May 99	At follow-up to 5 May 99 meeting, industry given role in development of economic analysis.
27 May 99	COL Mudd directed use of N-value of 1.2.
May 99	New analyses for key components result for the first time in a positive benefits/cost ratio for large-scale construction.
28 Jan 00	MG Van Winkle disapproved release of final study results & appointed Headquarters Review Team to examine study.
Feb 00	Dr. Sweeney made disclosure to OSC.

CONSIDERATION OF ALLEGATIONS:

ALLEGATION #1: MG Fuhrman improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

1. Standards:

a. AR 600-100, Army Leadership, paragraph 2-1, stated senior leaders promoted Army values by establishing and maintaining the command climate of their organizations through sound, ethical organizational policies and practices. Command climate was the sum of the philosophy, value, procedures, and behaviors, which were modeled, expected, and rewarded by the commander. Senior leaders considered

individual perceptions and their effects in establishing and maintaining a healthy command climate. (Exhibit D-5)

b. Paragraph 2.1, AR 5-1, The Army Management Philosophy, provided that the Army management philosophy was to do the right things, the right way, for the right reasons. (Exhibit D-1)

c. The Law, regulation and policy listed below provided the basic guidance for feasibility studies and established a duty to conduct them in an impartial, objective manner.

(1) Title 33 United States Code, Section 2282, required a feasibility plan to describe with reasonable certainty, the economic benefits and detriments of the recommended plan and alternative plans. (Exhibit D-2)

(2) The Economic and Environmental Guidelines for Water and Related Land Resources Implementation Studies (1.4.9) and ER 1105-2-100 (5-5.i(1)) directed forecasts to be based on the most likely conditions expected to exist in the future with and without the plan. (Exhibit D-3)

(3) The Economic and Environmental Principles for Water and Related Land Resources Implementation Studies (paragraph 6) and Engineer Regulation (ER) 1105-2-100 (5-16.b) required the recommended plan to be the plan with the greatest net economic benefit unless an exception was granted by the Secretary. (Exhibit D-4)

2. Documents:

a. In an affidavit filed with the OSC, dated 1 February 2000, Dr. Sweeney stated:

(1) On 23 April 1998 he briefed MG Fuhrman and others on the study. He explained why the analysis differed from previous USACE navigation studies. None of the participants expressed any objections to his analysis. MG Fuhrman initiated a process to evaluate the potential implications of the study results and models to ensure consistency in the evaluation of future projects. Although it was understood that MG Fuhrman's staff would do an investigation to determine the consistency of economic analyses, this investigation was never completed. (p. 20)

(2) In a 25 September 1998 e-mail to Mr. Manguno, the study's lead economist, Mr. Hanson provided guidance given by MG Fuhrman on 23 September 1998: The

Corps was the Government's advocate for inland waterways; there was a need to improve the system; the well-being of the Midwest depended on agricultural exports; if the demand curves, traffic growth projections and other variables associated with the model did not capture the need for navigation improvements, then the Corps had to figure out some other way to do it; they should develop evidence or data to support a defensible set of capacity enhancement projects; they needed to know what the mechanism was that drove the benefits up; and their rationale should err on the high side. (p. 26)

(3) In another e-mail sent on the same day, Mr. Hanson wrote: "MG Fuhrman now tells us that we are the advocates for inland navigation, which sounds to me to be a distinctly more proactive posture than what I've always pictured our role. I've thought of us as "stewards" of inland navigation, i.e., we execute public policy regarding improvements and level of service, and we grease the machinery and repair it. This overt advocacy role, to me, is a new departure. We'll have to work on a story line, and in fact, that's one of the things we'll be doing over the next few weeks. . . . It's pretty clear to me from Wednesday's meeting in Washington that the support will be there when it's needed." (pp. 26-27)

[IO note: MG Fuhrman's guidance was a key component of this investigation. It was referenced many times in this ROI. For the sake of brevity, it was referred to as "MG Fuhrman's 23 September 1998 guidance" and was not repeated verbatim. Mr. Hanson's and related e-mails describing the guidance are at Exhibit I.]

(4) COL Mudd sent Mr. Manguno a memorandum, dated 2 October 1998, which stated, "MG Fuhrman has clearly stated that the Corps has the responsibility as the Federal Government's advocate for the inland waterway system. To help in the execution of this responsibility, you will develop the economic component of the case for a recommendation that includes near-term improvements, recognizing that the nation is better served by improvements that err on the large-scale side than by actions that err on the underdeveloped side. The case will be based on explicit considerations of our position in the world with respect to competitiveness and reliability." (Exhibit C, p. 27)

b. In a 16 April 1998 e-mail to MG Fuhrman, Mr. Steven Stockton, SES, then Chief of Planning, HQ, USACE, said there was a proposed study delay because the results were showing no new locks were justified at least until 2030 and perhaps beyond 2050. (Exhibit E)

c. In a 14 June 1998 e-mail to MG Fuhrman, MG Anderson provided the results of a review. The SEM model worked but documentation was incomplete. The data requirements had not been determined. MG Anderson proposed three alternatives for correcting the study's problems. One alternative was to form an economics panel to bring the study to closure within 90 days. (Exhibit F)

d. In an undated, unsigned memorandum to MG Anderson, MG Fuhrman assigned Mr. Ronald Conner, HQ, USACE, to be the headquarters subject matter expert for the study. He was aware of the controversy surrounding the economic evaluation. To help keep them better informed, Mr. Conner would observe the study team for 90 days. (Exhibit G)

e. In an 18 August 1998 e-mail to MG Fuhrman, Mr. Kitch, a branch chief at HQ, USACE, attached a trip report from Mr. Conner that reported the outcomes of the expert elicitation panel and a teleconference. Experts agreed the curve was downward sloping through the equilibrium point. Mr. Kitch noted that such a curve would reduce benefits by one half as compared to the traditional approach. Additional research was needed to determine the long-term shape of the curve. At the teleconference, MG Anderson briefed the state of economics panel's efforts. MG Fuhrman replied, "Harry, THX for the update. Keep me posted on results as they develop." (Exhibit H)

f. In a 25 September 1998 e-mail to Mr. Hanson, Mr. Kitch said Mr. Hanson's interpretation of MG Fuhrman's guidance was not the way he had heard the guidance. Mr. Hanson replied, "Harry, this is very important that we not go the wrong direction. We need unequivocal command instructions. . . . The version I sent out tried to dig into what the Director was really saying, implicitly as well as explicitly. As you can tell, I'm a little frustrated. Word we get from New Orleans is that the Director told an audience there . . . that we will have lock extensions to 1200 feet in the near term." Mr. Kitch replied they could infer that the Director was not willing to accept unrealistic assumptions to justify projects. Mr. Kitch did not recall anyone specifically saying, "There is a need to improve the system." He did not recall anyone saying, "If the demand curves, traffic growth projections, and associated variables that the economics model can consider do not capture the need for navigation improvements, then we have to figure out some other way to do it." He thought that a better interpretation of what was said was "go back and figure out what is the most reasonable set of assumptions to use in analyzing the system in the NED context, then on separate level build a case (let's call it the "advocacy" argument) based on other factors such as national competitiveness, balance of payments, and well being of the Midwest region." He did not recall MG Fuhrman directing them to develop data to support a defensible set of

capacity improvement projects. There should have been a distinction between the NED analysis and the "advocacy" argument. (Exhibit I-3)

g. In a 19 October 1998 e-mail to MG Fuhrman, Mr. Kitch provided a read-ahead about a MVD presentation on the study.

(1) He stated that at the conclusion of the presentation, MVD would seek approval to make a public release of the economic information, models, and their selection of forecasts and demand curves that "err on the side of construction." He thought that this was likely to reinforce the public perception that the Corps was "cooking the books," because they stopped the process in April 1998.

(2) The study team was required by P&G to develop the most likely scenario, not one that minimized risk. Given the potential for litigation, he suggested the development of the scenario could be viewed as "arbitrary and capricious" by anyone engaged in a rational thought process.

(3) The demand curves used in the minimum risk scenario (not underbuilding) shown at Slide 8 were not defensible. Any analysis that assumed price inelasticity was a short run analysis, and the Corps analysis for water resources infrastructure should have been a long run analysis. He questioned how the Corps could support the use of an N-value of 1.0 when the expert elicitation panel stated it was between 1.0 and 2.0 and the only data that was available supported a value of 2.0. N=2 was the value used in the original SEM runs. He wondered whether the agriculture demand curves could be viewed as reasonable, plausible and defensible.

(4) One slide in the attached presentation stated tasks from the 23 September 1998 briefing. MG Fuhrman directed the study team to gather additional information on demand curves and traffic growth and develop a single scenario that, in the absence of complete information, errs on the side of improvements. (Exhibit J)

h. Mr. Kitch and MG Fuhrman exchanged e-mails on 22 and 23 October 1998, in which Mr. Kitch drafted responses to four questions from a 20 October 1998 meeting. Mr. Kitch addressed: (1) were they consistent in the application of demand curves; (2) had they been consistent in applying the P&G; (3) how much work did they need to do to be comfortable with the demand curves; and (4) what would they release by mid-November or earlier. (Exhibit K)

i. Mr. Herndon sent an e-mail to MG Anderson, dated 8 April 1999, which stated the barge industry's desire to have a "navigation summit" to discuss the study. MG Anderson forwarded the e-mail to MG Fuhrman and asked for MG Fuhrman's thoughts and asked how a conversation with Mr. Steve Sheridan, a barge industry representative, went. MG Fuhrman replied the conversation with Mr. Sheridan went well. MG Fuhrman sent Mr. Sheridan a note that said: "We were not the enemy and continued public attacks just highlights the issues and makes it even harder for us the (sic) maneuver. We need to be working together to insure we have proper capacity in the Upper Miss in the 21st Century. Told him, in the end, the decision will be a balance of political and analytical science and it is not the Corps of Engineers they have to convince on the potential of increased capacity of the system to the region for the 21st Century." (Exhibit L)

j. In an exchange of e-mails dated 6-15 April 1999 between MG Fuhrman and LTG Ballard, MG Fuhrman wrote, "Phil Anderson and I had a good VTC yesterday on Upper Miss study. We are working to bring this to a conclusion in a creative fashion." LTG Ballard replied, "Not sure I fully understand what is meant by 'creative fashion' relative to the Upper Miss study. Tell me more." MG Fuhrman responded, "Will discuss what I meant with the Upper Miss study when I meet with you at GO huddle next Monday." (Exhibit M)

k. In a 13 May 1999 e-mail to MG Anderson, COL Mudd summarized a meeting that followed the economic summit meeting. COL Mudd said: They would re-look and adjust the analysis where appropriate; Mr. Sandor Toth, a navigation industry analyst, and Mr. Jeffery Marmorstein, an analyst in the Saint Louis District, would review and adjust the grain demand curve; and Mr. Chris Brescia, a navigation industry official, would investigate other NED impacts using current demand. MG Anderson forwarded the e-mail to MG Fuhrman. MG Anderson stated that from Mr. Brescia's perspective, the Corps' analysis was better than it was the previous year. MG Anderson also stated that the plan was to release the NED and the preferred plan simultaneously. MG Fuhrman replied, "Phil, THX for update --- Agree with you in that I hope there is some light at the end of the tunnel. Appreciate all the work our folks have been doing. The cause is just." (Exhibit N)

l. In an affidavit before the Senate Committee on Environment and Public Works, dated 3 March 2000, MG Fuhrman testified:

(1) He did not direct anyone to skew or falsify data or the economic analysis in study. He ensured that appropriate and adequate models, data, and assumptions were used in the study. (p. 1)

(2) He was not aware of Mr. Hanson's e-mail that provided his guidance to the study team until much later. He also learned of Mr. Kitch's e-mail which stated that Mr. Hanson's quotations were inaccurate. Mr. Kitch's e-mail was consistent with his recollection. He did not know what Mr. Hanson meant by advocacy, but his personal view of advocacy was that the Corps' role was similar to the advocacy role of the DOT for air and surface transportation and the role the Department of Agriculture played for agricultural interests. As water resource advocates, it was the Corps' mission to assess the nation's needs and present those to the Administration and Congress for their consideration. (p. 2)

(3) Numerous interested parties were concerned about the study's new, untested model, demand curves, low traffic projections, and assumptions. It was important for him to resolve the differences raised by the interest groups. No one on his staff or the MVD staff could properly address the concerns. As a result, reviews were conducted to determine exactly where the study was and how confident they were with the preliminary data. It was determined that further study was necessary to produce the best product possible. (Exhibit O, p. 3)

m. In a 27 June 2000 MFR, LTC Kenneth Blanks, IO, DAIG, stated he called witnesses to determine if MG Fuhrman was informed about Mr. Hanson's 25 September 1998 e-mail which provided MG Fuhrman's guidance. Mr. Kitch stated that after Mr. Hanson sent his e-mail to several people involved in the study, he (Mr. Kitch) replied with an e-mail correcting Mr. Hanson. He did not remember telling MG Fuhrman that his guidance had been misinterpreted; but he might have told MG Fuhrman in passing. Dr. James Johnson, GS-15, Chief, Planning Division, Headquarters, USACE, said he remembered Mr. Kitch telling him that he had corrected Mr. Hanson's interpretation of MG Fuhrman's guidance. He did not tell MG Fuhrman, because, at the time, such things were considered not worth bothering MG Fuhrman about. (Exhibit P)

3. Testimony.

a. Dr. Sweeney testified:

(1) On 23 April 1998 he briefed MG Fuhrman and others on why the economic analysis was providing results that were different from previous studies and it did not

appear that the NED was going to involve large-scale construction in the near-term. MG Fuhrman stated that he did not want to revisit past projects, but he wanted to ensure consistency amongst divisions. MG Fuhrman directed Mr. Stockton, then Chief of Planning, HQ, USACE, to review the situation. (pp. 40-41)

(2) In a meeting he did not attend in September 1998, MG Fuhrman and his staff provided guidance that they were waterways advocates. In a series of e-mails from Mr. Hanson, they needed to find some way, using his model, to improve the system and describe the demand. At the end of three weeks, they were to come back to MG Fuhrman with a way to justify near-term improvements. Mr. Hanson said MG Fuhrman was the source of that guidance. (pp. 61-62)

(3) Mr. Manguno had been told by Mr. Hanson, via several e-mails, shown in paragraph 81 of his affidavit, that MG Fuhrman and MG Fuhrman's staff gave guidance that the Corps was now the advocate. MG Fuhrman's guidance also said they needed to find some way, using Dr. Sweeney's model, to improve the system. They were to come back at the end of 3 weeks with a way to justify those improvements in the near term. (pp. 61-62)

(4) Mr. Brescia, of MARC 2000, communicated with MG Anderson, MG Fuhrman and COL Mudd, and asked that industry be given "one more chance at this." That led to the May 1999 summit meetings between the Corps and industry rather than release of the study results. It was very uncommon for industry to have that kind of input and interaction. (Exhibit B-1, pp. 78-80)

b. Mr. Richard J. Manguno, GS-14, Chief, Economic and Social Analysis Branch, New Orleans District, MVD, and lead economist for the study, testified:

(1) Although he was not sure whether the directive came from MG Fuhrman, there was guidance originating from Corps Headquarters concerning consistency between SEM and models used in other Corps analyses. (pp. 29-30)

(2) He was concerned with a 25 September 1998 e-mail by Mr. Hanson which provided MG Fuhrman's 23 September 1998 guidance. (p. 75).

(3) Around 28 September 1998, Mr. Hanson told him he (Mr. Manguno) was the new leader of the economics work group and MG Fuhrman's guidance was to produce a scenario that resulted in immediate implementation of large-scale measures. Mr. Hanson said that it would involve at least capacity expansions at five locations on

the Lower Mississippi River. He (Mr. Manguno) immediately thought that meant within the next 10 to 15 years. This made him feel uneasy, because the guidance was not consistent with applicable policies and regulations. (pp. 76-77)

(4) He had some fears that Mr. Hanson's e-mail concerning MG Fuhrman's advocacy guidance was an attempt to manipulate the study to put a more favorable look on things than was warranted. After receiving the guidance, they did the sequence of activities required by the study. There was no interference until the point where he made a recommendation for an N-value of 1.5. Shortly after that they had the series of two meetings with industry people that resulted in the changes in the contingencies, N values, and rehabilitation expenditures. At that point he had concerns about where they were heading, that they were going to find a way to use various inputs into the study that produced an outcome that said that lock improvements were justified in the near term. Based on the events occurring after the meeting with industry, he thought that the Corps had influenced the study to arrive at a certain outcome. (Exhibit B-2, pp. 24-28, recall)

c. Mr. Jeffery G. Marmorstein, GS-13, Operations Research Analyst, Saint Louis District, MVD, testified he saw a memorandum from Mr. Hanson concerning advocacy that was attributed to MG Fuhrman. He recalled a memorandum that said something like "err on the high side." (Exhibit B-3, pp. 21)

d. Mr. Robert M. Daniel, GS-15 (Retired), formerly with the Formulation and Planning Branch, Planning Division, Civil Works, HQ, USACE, testified:

(1) There was a strong bias for big construction on the Upper Mississippi. He thought a lot of pressure was put on people to come up with an answer that supported construction. The pressure started at the top and came down through the entire organization to include the divisions and districts. There was a bias to keep people employed. "Grow the Corps" was something that always bothered him. He heard MG Fuhrman use the term in a couple of meetings. He also heard MG Fuhrman say on different occasions during meetings at the headquarters that if we cannot justify structures on the basis of the economics, then we have to find qualitative reasons to show the structures were good investments. (pp. 10-11)

(2) He discussed the study with MG Fuhrman on three different occasions. MG Fuhrman's first response was, " Well, we got to do what's right. We got to fix this." The response the second time was, "Well, we gotta put something in place to fix this." And the third time his response was, "well it's something we going to work on." He did

not know what kind of pressure MG Fuhrman was under, but positions in the headquarters softened. (p. 27)

(3) MG Fuhrman did not make a hard push for construction. He said if they could not do it with numbers and economics, they had to find quality reasons. He recalled a meeting in which MG Fuhrman took on the attitude that they had responsibilities and he (MG Fuhrman) knew that it was important that the price of corn be set at F.O.B. New Orleans, and the way to do that was with improvements on the Upper Mississippi. MG Fuhrman was concerned the United States retained leadership in grain sales. (Exhibit B-4, p. 29)

e. Mr. Harry E. Kitch, GM-15, Chief, Formulation and Evaluation Branch, HQ, USACE, testified:

(1) He was present for a 23 September 1998 meeting during which MG Fuhrman and his staff were briefed by MG Anderson and COL Mudd and their staffs. The main purpose of the meeting was to bring MG Fuhrman up to speed on where it looked like the study was going. The bottom line was that it did not look like large scale improvements were going to be justified. MG Fuhrman said they had to do things right and indicated his gut said the country was going to need a better transportation system on the river because of global competitiveness. MG Fuhrman said to think about what were other considerations that would lead him to a decision, in spite of what the economics told them, and that because of national interest, to go ahead and improve the system. (p. 36)

(2) When he left the meeting, he thought it was pretty clear what they had to do. A couple days later he received an e-mail from Mr. Hanson. He recalled that he thought they must have been at a different meeting because Mr. Hanson indicated the General (MG Fuhrman) said to go out and make sure they could justify big locks. He wrote Mr. Hanson back and indicated "No, no. I don't think that's at all what he (MG Fuhrman) said." After checking with some other folks who were at the meeting and who also heard MG Fuhrman's comments, he wrote back to Mr. Hanson. He indicated that what MG Fuhrman meant was based on MG Fuhrman's "gut," MG Fuhrman really thought they needed to improve the system, but he (MG Fuhrman) had to have something better than his gut. He needed some other reasons. (p. 37)

(3) He heard MG Fuhrman used the term advocate and a lot of them cringed. He had always been of the belief that they were dispassionate analysts. They called it the way they saw it, and it was up to the decision makers at various levels to make their

own interpretations. Although MG Fuhrman used the term advocate, he felt he (MG Fuhrman) did not use it as "at all costs, we must advocate the system." (p. 40)

(4) *[In response to a question, "who else has been advocating the Growing the Corps?", he indicated:]* He had heard MG Fuhrman say when he (MG Fuhrman) was director (Director of Civil Works) "this is what I've started." (p. 54)

(5) It was his opinion that in general the study was conducted properly and in accordance with laws and regulations. The final review of the study had not been done; but based on the way the study was conducted, he thought there were many cases that were not consistent with the letter of their regulations and certainly not the spirit. (p. 68)

(6) He thought MG Fuhrman's statement that "we got to do this right and then if there's other reasons to make different decisions, we can deal with that" characterized his (MG Fuhrman's) position very well. (Exhibit B-5, p. 68)

f. Mr. Paul D. Soyke, GS-13, Economic and Social Analysis Section, Rock Island District, MVD, testified:

(1) He was at the meeting when MG Fuhrman made the statement that the Corps should act as advocates for inland waterways. He and others discussed it at length because it was a surprising statement. They decided it was probably overdue because the DOT and the FAA had similar roles. The Corps dealt with navigation infrastructure. Even though they were advocates, they would still analyze the justifications and benefits for projects. (pp. 35-36)

(2) He thought MG Fuhrman said there was a need to improve the system. The well-being of the Midwest depended upon agricultural exports. They needed to figure out what the demand curves meant and if variables that the economics model considered did not capture the need for navigation improvements, they had to figure out some other way to do it. He was surprised MG Fuhrman's words were not chosen more carefully, because they were open to misinterpretation. He thought MG Fuhrman meant if there was not a NED plan that seemed acceptable, given what they knew about the needs of the navigation system, they should look at other rationales for a recommended plan. People did not understand the difference between a NED plan and a recommended plan. (pp. 36-37)

(3) He thought MG Fuhrman's statement that they needed to know what the mechanism was that drove the benefits up and the rationale should err on the high side

was based on the wide variance in the assumptions they made. He might have considered MG Fuhrman's statement to be guidance, but not direction. Sometimes the Corps had been too conservative in their assumptions and underestimated future conditions. He thought he had been asked before to err on the high side. That was not an uncommon phrase. He did not leave the meeting with any ethical concerns, but he left wishing people had been more careful in choosing their words because it was obvious people could misinterpret what was said. He perceived young Corps workers could have felt pressure from those statements. He did not hear people complaining about being pressured to do anything they did not believe in. (pp. 37-39)

(4) He believed he saw COL Mudd's 2 October 1998 memorandum which talked about MG Fuhrman's guidance. He interpreted COL Mudd's task to Mr. Manguno, the study's chief economist, to develop a recommendation that included near-term improvements, recognizing that the nation was better served by improvements that erred on the large-scale side to mean they should look at an alternative that did that. Nowhere in the memorandum did he ever read they should develop a NED plan that did that. (Exhibit B-7, p. 40)

g. Mr. Bradley E. Thompson, GS-12, Community Planner, Project Management Branch, Rock Island District, MVD, testified:

(1) It was in late 1997 or early 1998 that the study team got the first sense that projects seemed very much in question in terms of whether or not they were justified. (p. 6)

(2) In September 1998 there was a briefing for MG Fuhrman that he did not attend. Some of the information that came out of that briefing was surprising for him and other study team members. There was discussion about looking for something that showed justification. (p. 7)

(3) After the September 1998 briefing, Mr. Hansen sent out some guidance in an e-mail. The guidance struck him and other team members as strange. Some of the guidance was revisited and people backed off. It seemed strange to think of the Corps as advocates for the waterway and navigation. At the time, some of them were wondering if they were getting pressure to come up with something they were not comfortable with. (p. 10)

(4) They tried to answer a tasker from their higher headquarters concerning whether there were things missing in their analysis that should be considered. These

were things that were not considered most likely but should be raised to decision makers for consideration. They put together a list of other considerations. (p. 10)

(5) The economics workgroup put together a single alternative which was called a minimized risk alternative. It had caveats that said it was not the best estimate. This alternative had more of an advocacy role. The study team felt a little pushed in September 1998. They had to find that alternative that would result in near-term improvements, and they did not know what was going to happen with it. (p. 11)

(6) In October 1998, when they went back to brief the single alternative with the caveats, senior Corps officials were not comfortable going out with an overt advocacy position as the Corps recommendation. (p. 12)

(7) He thought the time frame between September 1998 and October 1998 and the information that was put together for the "higher levels" to consider was an anomaly. However, after the October 1998, briefing they got guidance, and they resumed following the guidance for the conduct of studies. (Exhibit B-10, p. 22)

h. Ms. Diane E. Karnish, GS-13, Chief, Environmental and Economic Analysis Branch, Planning, Programs and Project Management Division, Saint Louis District, MVD, testified that when asked if she ever heard anybody say the Corps was advocates for inland navigation as opposed to say stewards of the waterway, she responded she heard that from MG Fuhrman. In her mind she was not exactly sure what the difference was between advocates and stewards. She supposed the Corps was an advocate of the inland waterway system, just as the Federal Highway Administration was an advocate of roads. (Exhibit B-11, pp. 25)

i. MAJ Steven G. Cade, Executive Officer for the DCW, HQ, USACE, testified he heard LTG Ballard, MG Fuhrman, and MG Van Winkle all supported a "Grow the Corps" concept. This initiative concerned budget requests for approximately $36 billion worth of backlogged projects that were already approved by Congress. It was not an attempt to increase the Corps' bureaucracy or size. (Exhibit B-12, pp. 10-12)

j. Mr. Owen D. Dutt, GS-15, Ecologist, Saint Louis District, MVD, testified he saw references to the Corps being advocates for inland waterways. The Corps' role was no different than it was in all of its studies; it was an honest broker, and its role was to take a hard look at the problem, consider those things that needed to be considered and present the facts. (Exhibit B-13, pp. 15,16)

k. Mr. Kenneth A. Barr, GS-13, Chief, Environmental Analysis Branch, Rock Island District, MVD, testified he interpreted Mr. Hanson's 25 September 1998 e-mail, which restated MG Fuhrman's guidance, to be proper guidance for performing a sensitivity analysis. Since there were uncertainties, the study team needed to be sure they explored other alternatives before providing a recommended plan. He was at the meeting where MG Fuhrman provided the guidance, and Mr. Hanson accurately captured MG Fuhrman's words. (Exhibit B-19, pp. 19-20)

l. Mr. John P. Carr, GS-12, Rock Island District, MVD, testified that after having read to him Mr. Hanson's summary of MG Fuhrman's 23 September 1998 guidance, he was asked if the guidance met the intent of the project study plan. He responded it did not as far as he was concerned. He did not know if Mr. Hanson's memo concerning MG Fuhrman's guidance affected the study. There were a lot of meetings and talk about being advocates that never sat very well with him. (Exhibit B-26, pp. 21-22)

m. Mr. Bobby R. Hughey, GM-14, Chief, Design Branch, Engineering Division, Saint Louis District, MVD, testified that after having read to him guidance attributed to MG Fuhrman on 23 September 1998, he recalled the guidance. Neither he nor the engineering work group changed any of their analysis or data as a result. He viewed all actions to review and re-look their analysis as normal management responsibility. (Exhibit B-20, pp. 42-43, 47-48)

n. Mr. John J. Burns III, GS-15, Chief, Planning Management Branch, Planning Division, Civil Works, HQ, USACE, testified Mr. Hanson prepared a document that restated MG Fuhrman's guidance. Mr. Kitch, HQ, USACE, sent a follow-up memorandum that corrected Mr. Hanson. According to Mr. Kitch's memorandum, Mr. Hanson's memorandum was an inaccurate account of MG Fuhrman's guidance. Almost all of the Corps' projects were cost shared with a non-Federal sponsor, except for inland waterway navigation where the funds were provided either from the Department of the Treasury or the Inland Waterway Trust Fund. In the Corps' cost share projects, they always viewed the non-Federal sponsor as the advocate for the project. In the inland waterway situation, there was no non-Federal sponsor to serve as the advocate, so he thought MG Fuhrman wanted the Corps to take the role. He was not sure whether MG Fuhrman intended to influence the study process, but he thought it was a strong possibility that guidance such as this could influence a study member's objectivity. (Exhibit B-25, pp. 9-11)

o. Mr. Denny A. Lundberg, GS-13, Chief, Project Engineering Section, Design Branch, Engineering Division, Rock Island District, MVD, testified he attended a meeting

in 1998 where MG Fuhrman mentioned the Corps should be an advocate for water resource development. It surprised the attendees; nobody really knew what it meant. Mr. Hanson and others discussed it. The meeting had no real effect on the engineering side of the study. Mr. Hanson sent e-mail messages and talked to them. Mr. Hanson tried to explain what advocacy really meant. (Exhibit B-18, pp. 32-34)

p. COL Mudd testified:

(1) In April 1998, Dr. Sweeney briefed the conceptual aspects of economic theory as it pertained to the study and the preliminary results. He believed MG Fuhrman raised a concern about consistency among the models used for inland navigation studies. (pp. 29-31)

(2) He attended the 23 September 1998 meeting in which MG Fuhrman provided guidance on the study. MG Fuhrman felt the public was getting impatient for the study results and the study team had not considered other factors in the analysis. MG Fuhrman said that the Corps was the Federal government's advocate for the inland waterway system. He interpreted advocacy as appropriate for obtaining funds to maintain his existing structures, and in the context of a study that the analysis should include those factors outside the immediate analysis of the NED. He thought MG Fuhrman's guidance was an effort to determine whether the study should be continued. The reconnaissance study found there might be a requirement for improvements, and recommended a feasibility study. (Exhibit B-34, pp. 32-38, 64)

q. Mr. Thomas F. Caver, SES-4, Chief, Programs Management Division, Civil Works Directorate, HQ, USACE, testified:

(1) The Corps was unsure how to address the concept of optimal timing in the study. The challenge was that no recommendation for navigation improvements probably meant another study in the future assessing needs. Economics and forecasting were more like an educated guess. MG Fuhrman had these same concerns about the economic assumptions and their effect on the nation. (pp. 18-21, 29)

(2) The Corps was the correct organization to serve as the nation's advocate for water resources. No other organization could do it. He believed advocacy was more appropriate because stewardship was passive and implied only looking after existing investments. Advocacy meant identifying needs and pursuing a solution. (pp. 30-35)

(3) He did not believe anyone acted improperly in the conduct of the study. MG Fuhrman was essential to the study's progress. MG Fuhrman intervened at a critical point in the study in 1998. There were some poor judgments made and mismanagement that resulted in the economics work group pursuing a tangent course from the study intent. (Exhibit B-15, pp. 65-68)

r. Mr. Mark D. Gmitro, GS-13, Program Manager, Institute for Water Resources, USACE, testified they briefed MG Fuhrman in April 1998, and then changes started to happen. MG Fuhrman directed the Corps not treat the Mississippi River differently than the other rivers throughout the country. MG Fuhrman wanted consistency in the use of models. (Exhibit B-14, pp. 11, 27)

s. Mr. Herndon testified:

(1) The Corps could serve as the nation's advocate and simultaneously be an honest broker conducting a fair and objective study. In keeping with all the laws, regulations and professional standards, it was their job to see to it that the inland navigation system was vibrant. Advocacy meant the Corps was the responsible agent. (pp. 10-11, 13)

(2) He thought MG Fuhrman said words to the effect that the study may not be conclusive. MG Fuhrman told the study team he wanted to know if there were unknowns that gave him a sound basis for recommending more than what the study team determined. MG Fuhrman wanted to account for as many factors as possible. (pp. 19-20)

(3) "Grow the Corps" meant acting in the best interests of the nation for water resources. It was not growing the program just for the sake of construction. Dr. Joseph W. Westphal, Assistant Secretary of the Army for Civil Works (ASA (CW)), introduced the concept and challenged the Corps to develop an implementation plan. LTG Ballard accepted the mission and provided additional supporting guidance. (Exhibit B-33, pp. 48-50)

t. Mr. Steven R. Cone, GS-15, Management and Review Office, Policy Division, Directorate of Civil Works, HQ, USACE, testified he felt MG Fuhrman, MG Van Winkle, Mr. Herndon, Mr. Rhodes, and possibly other Corps leaders saw the study as a giant construction opportunity. The economics work group tried to provide objective analysis. There was concern that after having spent $50 million, the Corps had a feasibility study that did not recommend construction. He saw an e-mail that described MG Fuhrman's

comments about the Corps being a proponent of the navigation industry. He was surprised at some of the comments associated with the concept of growth in the program. He saw a briefing slide Mr. Caver, Chief Program Management Division, HQ, USACE, presented that stated the top two impediments to growing the program were the P&G and cost sharing. Those were inappropriate statements and sent a bad signal confusing subordinate organizations. It implied "don't take no for an answer." He thought the program flew in the face of the concept of honest broker and unbiased judgment. He believed MG Fuhrman gave signals and indications that the Corps did whatever was necessary, but not illegal, to demonstrate that large-scale Mississippi River improvements were warranted. (Exhibit B-17, pp. 30-31, recall; 8-9, 55-58, 61)

u. Mr. Barnes testified something had to be done to restore the locks and dams if they were going to continue to be an asset to the nation. He heard MG Fuhrman say that the United States needed to be wise stewards of the inland waterways system. It was a matter of economic competitiveness. He told COL Thomas Hodgini, former Chief, St. Louis District, it was the first time he saw a high-level Corps official saying they needed to look at the condition of their locks and dams. It was clear to him that Division Headquarters would become engaged in the study. MG Fuhrman was speaking to infrastructure degradation and a need for modernization or replacement repair. MG Fuhrman was not saying they needed to find a way to justify a positive result. (Exhibit B-38, pp. 25-29)

v. Mr. Rhodes testified:

(1) He sent an e-mail which addressed an e-mail he got from Mr. William Arnold, MVD, on 4 September 1998 which was in response to MG Fuhrman's New Orleans statement about the Corps being an advocate. He addressed Mr. Arnold's statement that "I also think that some on the study team have the impression that people at higher levels have already made the decision on what the answer is going to be, and this proposed strategy is to cook the books to back that decision." Mr. Arnold was responding to MG Fuhrman's statement about the Corps being an advocate. MG Fuhrman's comment about the Corps having an advocacy role was perceived by some people in the Corps to be an indication of some predetermination. He did not think that was what MG Fuhrman meant. The context of MG Fuhrman's remarks was that the DOT and the FAA were also advocates in their areas. The Corps was the Federal agency responsible to the administration and the Congress for the inland waterways. He could understand how others could read MG Fuhrman's remarks and arrive at another conclusion. Mr. Arnold's message "sent a ripple through the study team, and so we tried to reassure folks that the study was still on track; that we may

have to do a little innovative stuff with this without project condition because of the uncertainty in establishing the without-project condition." (pp. 69-72)

(2) It was the reporting officer's discretion to make a recommendation. The NED plan should be the recommended plan, but fully justified deviations could occur. MG Fuhrman was saying that if they recommended anything other than the NED plan, the reporting officer was obligated to clearly explain his rationale for making that recommendation. If the reporting officer was concerned about something, and the net benefits were close on the alternatives, then the reporting officer might make a decision to recommend something different to Congress. (pp. 81-82)

(3) Mr. Hanson sent an e-mail message that interpreted MG Fuhrman's 23 September 1998 guidance. The quote attributed to MG Fuhrman was only partially accurate. MG Fuhrman was saying they were using a new, untested model and they did not understand everything about it. Mr. Kitch, HQ, USACE, thought Mr. Hanson was wrong. (pp. 84-85)

(4) He would not have written about MG Fuhrman's comments in the same manner that COL Mudd did in COL Mudd's 2 October 1998 message. COL Mudd said MG Fuhrman saw the Corps as being advocates, and he asked team members to develop the economic component of the case for a recommendation that included near-term improvements. He thought there was a misconception about what MG Fuhrman wanted. (Exhibit B-35, pp. 91-92)

w. Mr. David B. Sanford, SES, Military Programs Director, HQ, USACE, testified:

(1) He believed advocacy was an appropriate role for the Corps because no other agency was in a position to know the water resource needs of the nation. He believed he was at the meeting in the fall of 1998 where MG Fuhrman discussed the advocacy role and responsibilities. Dr. Westphal and previous secretaries wanted the Corps to assume such a role. They were interested in the Corps having a partnership role with the project sponsors; for navigation projects, the sponsor was the navigation industry. The Corps could advocate the nation's water resource needs objectively. Advocacy included stewardship, especially in requesting funds from Congress to maintain existing waterway structures.

(2) He defined the concept to grow the program as being relevant to the nation's needs and national security. This did not mean submitting projects that were not economically justified. In the 5 years that he was an SES, he never saw anyone in Civil

Works direct a program to "Grow the Corps" solely to make it bigger in people or dollars, only actions to better serve the nation. (Exhibit B-16, pp. 27-33, 44-48)

x. Mr. Hanson testified:

(1) It was during a 23 September 1998 briefing that MG Fuhrman used the term advocates. MG Furman indicated they were advocates of the inland waterway. He believed MG Fuhrman used the term in the sense that they were proactive stewards of the inland waterway. They should not wait for the system to fall down before they asked Congress for money to fix it. They anticipated when improvements were needed. Strategic thinking was one of the roles of an advocate. They needed to know what the scenarios were that could lead them to recommend something greatly different from an NED that was based on very shaky assumptions. (pp. 39-40)

(2) After the 23 September 1998 briefing, he sent out a message providing MG Fuhrman's guidance to serve as directions for Mr. Manguno, the study's lead economist. The guidance reflected his understanding of what needed to be done. Mr. Kitch, HQ, USACE, thought he had overstated what MG Fuhrman had said, so he told Mr. Manguno that he might not have faithfully captured MG Fuhrman's guidance, and Mr. Manguno should seek verification from the MVD. (pp. 40-41)

(3) He did not feel there was pressure on the part of the command structure to arrive at a certain decision or recommendation. He thought there was reluctance to go public with where it appeared they were going with the NED. He got the impression they would not look as if they had done their job if they went public with what appeared they were tending toward on the NED. (p. 48)

(4) In a 25 September 1998 e-mail to Mr. Kitch, he indicated he heard that MG Fuhrman told an audience in New Orleans that they would have lock extensions to 1200 feet in the near term. He thought MG Fuhrman's comments were consistent with MG Fuhrman's comments during the 23 September 1998 briefing. (pp. 50-51)

(5) In the September 1998 timeframe, the NED was still a relatively modest plan, and he believed that included guide wall extensions at approximately eight sites and mooring cells at another half dozen sites. He probably gave Mr. Manguno instructions to produce a scenario that resulted in immediate implementation of large-scale measures. The Corps needed to determine if there was something it was missing. He felt his request to Mr. Manguno was appropriate and he operated in what he considered was his duty. In his opinion, he executed a legal order. (pp. 53-55)

(6) He did not know whether the command made the right decision by stonewalling going public with the study results. He and others were frustrated by that decision. They had to make sure the chain of command was comfortable. They got a little petulant with MG Fuhrman at either the 23 September 1998 or the October 1998 briefing. They indicated they had to stop treading water and get on with it. However, MG Fuhrman had an expression "no wine before its time." His understanding of the guidance was to discover if there was a scenario that resulted in near-term major construction, but not to say it was going to happen. (pp. 57-58)

(7) He did not have any official chain of command interpretation of MG Fuhrman's 23 September 1998 guidance as passed from MG Fuhrman to MG Anderson to COL Mudd to himself. There were others in the meeting who heard the same thing. He worked with other staffers to develop what he thought sounded like a reasonable summary of MG Fuhrman's guidance that could be used as directions for the study team. Because the study was already late and because they had to respond within 3 weeks, he thought he could not wait for instructions to work their way down to him. The 3 weeks would have been up before he got clear instructions. There was a lot of confusion. They could not agree about what MG Fuhrman had said, let alone what it meant. So, he tried to capture what MG Fuhrman said and what he meant. He took responsibility for his message, but the thoughts expressed in that message did not originate with him. (Exhibit B-36, p. 59)

y. Mr. Loss testified no one in the Corps leadership did anything improper in relation to the study. MG Fuhrman made the strongest statements in late 1998. He thought MG Fuhrman meant that the Corps owed Congress the full range of alternatives and all pertinent information. The recommended plan might be different than the NED. He was surprised to hear MG Fuhrman use the term advocacy. The advocacy term was new to him because previously the idea was the Corps should be completely objective in its recommendations. That spread like wildfire through the Corps because that was a significant change in how the Corps looked at its role. Based upon subsequent discussions, it seemed as though MG Fuhrman's intent was to ensure that a full disclosure of the other factors were investigated. He believed MG Fuhrman meant advocacy meant that the Corps was the steward of the inland navigation system and the study team must make sure that it was doing the right thing and looking into the future to give the decision makers adequate information. (Exhibit B-37, pp. 17-24, 37)

z. MG Anderson testified:

(1) He corresponded with MG Fuhrman about the different modeling efforts on the Ohio and Mississippi rivers. He was concerned about the Corps-wide implications of using two different models. He hoped at the 23 April 1998 meeting to get some guidance on which model to use, understanding input data, and the sensitivity of changes of that data on the results. The study team concluded they should not be overly concerned about the differences between the models. (pp. 8-9)

(2) MG Fuhrman was briefed on 23 September 1998 on the study. MG Fuhrman felt the study team had not done everything to make sure they were making the right decision. MG Fuhrman talked about the Corps as advocates for the navigational industry; whereby, they had a responsibility to the public to properly maintain and expand the navigation system. MG Fuhrman expressed general disappointment with the study results and said if the results produced so far did not give them the information that intuitively made sense, then they needed to look for other ways to justify the results. MG Fuhrman thought the study results were not aggressive. They lacked large-scale improvements. When they looked at what was going on with the Ohio River, they thought improvements should have been justified on the Mississippi, but the study results were not showing that. He heard MG Fuhrman say if the NED did not justify large-scale improvements, they needed to come up with other information and rationale for the reporting officer to examine and potentially recommend large-scale improvements. If the NED did not produce large-scale improvements, they ought to look at other ways in which to justify improvements. (pp. 30-32)

(3) He did not think COL Mudd found fault with MG Fuhrman's guidance. The purpose of the briefing was to get headquarters guidance and reaction to the status of the study. He did not have any concerns that MG Fuhrman's guidance could be interpreted as identifying a certain study outcome and then developing the data to support that outcome. The unbiased and objective analysis of a feasibility study related to the generation of the NED. There were other qualitative and quantitative factors for the reporting officer to consider. MG Fuhrman's guidance reflected MG Fuhrman's frustration with the study results and how those results were not intuitive when compared with other projects. (pp. 32-33)

(4) COL Mudd's 2 October 1998 e-mail to Mr. Manguno captured MG Fuhrman's guidance. MG Fuhrman gave guidance that they should err on the high side. If after conducting a risk analysis, there were parameters about which they had doubt, they should err on the side of making sure the Corps did not create a bottleneck for commerce. MG Fuhrman indicated they were looking into the future 50 years and they should not be conservative about some of the estimates. He did not think

MG Fuhrman's comments caused the study team to do anything that was inappropriate, but he could see how someone could interpret the guidance as trying to move the study in a certain direction. (pp. 36-38)

(5) The idea to hold a navigational summit came from industry. It was not a public meeting. He sought advice from MG Fuhrman before he committed to the meeting. (pp. 41, 43-44)

(6) Dr. Westphal said they needed to put water resource infrastructure on the national agenda and since it was a period of budget surplus, this was a wonderful time for them to get water resource on the national agenda. LTG Ballard took that as positive guidance to grow the program. Exhibit B-32, (p. 85)

aa. MG Van Winkle testified he did not believe any Corps official acted improperly in the study. He believed the Corps had acted impartially and objectively in feasibility studies. (Exhibit B-31, pp. 80-81)

bb. LTG Joe N. Ballard, Chief of Engineers, testified:

(1) There was absolute expectation that feasibility studies would be conducted in an unbiased and objective manner. At the time of his discussions with MG Fuhrman concerning the study, his only guidance was to make sure they did the right thing. He did not provide any written guidance. After MG Fuhrman met with MG Anderson and the study team, MG Fuhrman assured him that the study team understood what they needed to do to get the study back on track and allay the fears of groups that had expressed concerns. Neither MG Fuhrman nor anyone else discussed with him any of the preliminary results of the study. At that point of the study, he would have not been asking those kinds of questions. (p. 4-8)

(2) He said in his response to MG Fuhrman's e-mail, "I'm not sure I fully understand what is meant by creative fashion as related to the Upper Mississippi Study. Tell me more. " The only reason he said that and it struck his attention was because he did not know what creative was, "We either do what the hell we're suppose to do or we don't do it." That was the reason he questioned MG Fuhrman. He did not recall the response he got from MG Fuhrman. (p. 10)

[IO note: LTG Ballard reviewed a 6 April 1999 e-mail in which MG Fuhrman told him MG Fuhrman had a good VTC with MG Anderson on the study and they were working

to bring the study to a conclusion in a creative fashion. LTG Ballard asked what MG Fuhrman meant by "creative fashion."]

(3) The Corps was an advocate for water resource management and resources. No one else was assigned that mission. The civil works program was a program designed to address the water resource needs of the country. (pp. 29-30)

(4) He thought it was dumb for a commander to tell a study team to develop a concept for a recommendation for large-scale construction even though the NED plan did not call for large-scale construction. Such a statement did not make sense at that stage of the study. For anyone to develop a process outside of the NED was stupidity at best. (Exhibit B-29, pp. 31-35)

cc. After being advised of his rights, MG Fuhrman testified:

(1) He was DCW from October 1996 through May 1999. He was directly responsible for all aspects of the civil works program from programming through execution. This required his involvement in the UMR-IWW Study. Besides some minor updates that he may have received, he did not become directly involved in the study until September or October 1998 when he had two meetings. The final deliverable was the Chief's Report. No final study products had been completed. Normally, he would not get involved until the Chief's Report was submitted for review. In this case, because of the uniqueness of the study and the issues that were raised by the Department of Agriculture and other interest groups, the Corps held a review to see where the study was and to determine if it was in compliance with regulations. Based on the review, he did not think the study had deviated from the regulations. He was not aware of any bias for construction in the Corps. He thought the Corps did a better job producing an objective analysis than any other Federal agency. (pp. 3-6, 10)

(2) He had concerns with the study. He received reports the study team was about to release preliminary data. There was lots of public interest. The preliminary data showed there was not justification for near-term improvements. His staff received a large number of calls from people in the navigation industry and in the Department of Agriculture who questioned the data and the use of the new model. He was concerned about whether or not the two models were consistent. One of his missions as DCW was to make sure the analysts were using standard sets of metrics across the Corps. He called a review in September 1998 to assess the study. He did not care about the results of the study; as long as they had good data the results would be the same no matter which model they used. During the review, no one could answer his questions

on data and data sources, demand curves, barge traffic and agricultural projections, environmental input, and model sensitivity. The consensus of the review attendees was that the study was not ready for public release. (pp. 6-9)

(3) Since the September 1998 meeting, he received updates from MG Anderson and/or from his staff. After he became DCG, he received a report that the two Corps models produced the same results. It was the assumptions that went into the model that really made a difference in the outcomes. (pp. 9-10)

(4) Although Dr. Sweeney may have briefed him in October 1998, he could not recall any specifics. At that time he was not alerted to any problems with the study. He read Dr. Sweeney's affidavit concerning the study, and he thought it had many inaccuracies. The study had managerial problems since its inception, long before he arrived on the scene. Management was too dispersed. Had he known of the reservations held by the study's lead economist, Mr. Manguno, he would have inquired into them. He tasked Mr. Stockton, then Chief of Planning, HQ, USACE, to look into the models and find out why the Corps was using two models and determine their consistency. He did not know if that was ever completed. (pp. 11-12, 16-18, 20-21)

(5) He could not remember receiving an e-mail from Mr. Stockton, dated 23 April 1998, which stated the navigation study would be delayed because the results did not justify large-scale construction. Upon rereading the e-mail, he understood Mr. Stockton to say that since no new improvements were justified, the study team wanted to ensure that economic and environmental analyses were right before they moved forward. From his perspective he would have thought, "Fine, if that's what General Anderson wants to do, then drive on and get it right." (p. 41)

(6) He did not see Mr. Hanson's e-mail until Dr. Sweeney made his allegations public. Mr. Hanson took his guidance out of context. If he had seen the e-mail, he would have corrected the misconception, as Mr. Kitch, HQ, USACE, did. His intent was never to pre-determine and pre-decide any aspect of the study. The purpose of his guidance and the follow-on meeting was to make certain the modeling was consistent with applicable standards, the assumptions were valid, and the data was sufficient for drawing conclusions about the project. He may have said something to the effect that there was a need to improve the system, but he thought that comment was taken out of context as well. The Corps was conducting major improvements on the Upper Mississippi. There was a need to improve the UMR-IWW system. The key question was "what are those improvements?" (pp. 27-32)

(7) He may have stated that there was a need to improve the system, because there was a need, but what were the improvements? He was on the record, as was the Chief of Engineers, that one of the Corps' roles was advocacy of the nation's inland waterways, to ensure that the system was first rate. Congress held the Corps responsible for it. He discussed the Corps' advocacy everywhere, including at the September 1998 study briefing. Advocacy in the context of the navigation study meant making sure that the results were right for everyone the Corps represented. Dr. Sweeney failed to bring up his direction to completely address the environmental impact of the alternatives. The study team failed to do that. From the September 1998 meeting, he remembered some people saying that some issues could not be quantified. The study team asked how they should handle it. He told them to address such issues from a qualitative perspective. The administration and Congress needed to understand the full extent of the risks involved in each alternative. Ultimately, the decision belonged to Congress. (pp. 27-32)

(8) His intended effect concerning advocacy was not for them to view advocacy as saying, "Damn the torpedoes; we're going to build all over the world." That was not the meaning of advocacy. Advocacy was a representation of the whole water resource interest. It was the environmental pieces, hydropower, and navigation. It was that whole piece as they looked at every project across the nation and determined where this country ought to invest the $4 to $5 billion dollars a year it put into water resource development. That was what advocacy was all about. The Corps gave the Congress and the administration the best information it could, and it was incumbent on them to do that. And, when somebody spent $50 million dollars worth of the taxpayers' money to do a study, he expected somebody to come back to him, as Director of Civil Works, and be able to explain why there were two models and what the difference was between them. (p. 33)

(9) He would be greatly surprised if MG Anderson or COL Mudd misunderstood what advocacy meant. He thought there was no misunderstanding whatsoever among the Corps leadership. His first awareness of a problem at lower levels came with a call from The Washington Post about a day before Dr. Sweeney's disclosure. He was not aware that others shared the misperception until the day he was interviewed during this investigation. (p. 34-35)

(10) He did not have a "gut feeling" about what the results of the study should have been, but he thought the study would not stand up to Corps and public scrutiny. After spending $50 million, the study team should have been able to say why a new model was necessary. If the study team had answered his questions and shown their

analysis was complete, he would have accepted that no near-term construction was warranted and released the results. If he had been aware of Mr. Rhodes' and COL Mudd's supplementary guidance, he would have been concerned with guidance that suggested the study team should find "reasonably plausible" alternatives that justified large-scale construction. To the best of his knowledge, this did not represent the guidance of any other senior Corps official. They did discuss using a band of probabilities approach as the Corps had done with the Ohio River Study. This would let Congress and the Administration determine the risk band they wanted to be in. MVD was asked to try to lay that out so they could decide which approach to take. He did not have a view on which approach to take at that time. He could not say whether COL Mudd's guidance to Mr. Manguno, the study's lead economist, was appropriate because he did not know its context. He thought that it might have been laying out a conservative approach. (pp. 31, 35-37, 39)

(11) He did not make a public statement in New Orleans that suggested the Corps would have lock extensions to 1200 feet in the near term. That would have been inappropriate, given the study was not complete. (p. 58)

(12) The "Grow the Corps" initiative belonged to all of the Corps leadership. The initiative addressed the Corps' programming responsibility. The goal was to identify and request the appropriations required each year to maintain Corps systems. In preparation of their recommended programs, all of the districts reviewed their capabilities and determined what they could execute. They contrasted this with what they should be doing and what they wanted to do. It was their wish list. This included a backlog of projects to start and projects ongoing. He thought MG Van Winkle directed the divisions and districts to review their requirements as well as their preferences and compare them with their capabilities. He was not aware of a metric that gauged the success of division and district execution based on how well new projects were generated. That would be inappropriate. (pp. 61-65)

(13) He could not remember specifics concerning a 15 April 1999 e-mail he sent to LTG Ballard. He thought his remark about bringing the "study to conclusion in a creative fashion" referred to MG Anderson's plan to complete the navigation study. MG Anderson had some new ideas that would expedite conclusion. (pp. 66-68)

(14) No one in the Corps leadership attempted to manipulate the study or did anything improper in relation to the study. To his knowledge, no one had a preconceived conclusion about the need for construction along the UMR-IWW system. (Exhibit B-30, p. 68)

4. Discussion:

a. Dr Sweeney alleged MG Fuhrman acted improperly during the conduct of the UMR-IWW study. Implicit in the standards was the expectation that feasibility studies would be conducted in an impartial and objective manner and formulation of alternatives would be based on the most likely future condition. Army Management philosophy stated that managers would do the right things for the right reasons. Army leadership principles held commanders responsible for maintaining the proper command climate.

b. The evidence established:

(1) On 23 September 1998, MG Fuhrman issued guidance that was interpreted by the study team as contrary to the P&G. Although there is conflicting testimony, the preponderance of the evidence supports the conclusion that Mr. Hanson's message accurately captured MG Fuhrman's guidance.

(2) MG Anderson testified that MG Fuhrman expressed general disappointment with the study results and said if the results did not give them the information that intuitively made sense, they needed to look for other ways to justify the results. MG Fuhrman thought the study results were not aggressive, because they lacked large-scale improvements. When they looked at what was going on with the Ohio River, they thought similar improvements should have been justified on the Mississippi, but the study results did not support that. LTG Ballard testified it was not prudent to tell a study team to develop a concept for a recommendation for large-scale construction even though the NED plan did not call for large-scale construction. To develop a process outside of the NED was inappropriate.

(3) Although Mr. Kitch, HQ, USACE, attempted to refute Mr. Hanson's account of MG Fuhrman's guidance, evidence indicated Mr. Hanson's account was accurate. Although, Mr. Kitch contended MG Fuhrman did not say there was a need to improve the system, MG Fuhrman admitted that he might have said it because there was a need to improve the system. Mr. Kitch's effort did not negate the adverse impact that MG Fuhrman's guidance had on the integrity of the study.

(4) Based on the concerns expressed by Mr. Manguno about the directions he received to implement MG Fuhrman's guidance, COL Mudd, on 2 October 1998, sent Mr. Manguno an e-mail drafted for him by Mr. Hanson. The e-mail stated MG Fuhrman had clearly stated the Corps was the advocate for the inland waterways system. To

help execute that responsibility, Mr. Manguno would develop the economic component of the case that included near-term improvements, recognizing that the nation would be better served by improvements that erred on the large-scale side.

(5) The economics panel, acting on MG Fuhrman's guidance, engaged in activities that were not consistent with identification of an unbiased NED. The panel and Mr. Manguno were given instructions to develop a case for a near-term, large-scale alternative that was inconsistent with regulatory guidance. Instead of developing a NED based on the most likely outcome, the study team pursued development of data to support a specific alternative that had not been identified as the most likely outcome.

c. The preponderance of evidence showed MG Fuhrman gave guidance that influenced the study. He voiced disappointment with the preliminary study results. He indicated a preference for the development of a large-scale construction solution. Notwithstanding his intent that MVD prepare an analysis parallel to the NED plan, his advocacy guidance was the first step in the development of a climate that led to abandonment of objectivity in the economic analysis. AR 600-100, Army Leadership, provided that senior leaders were responsible for considering individual perceptions and their effects in establishing and maintaining a healthy command climate. MG Fuhrman introduced "advocacy" as an analytical perspective without ensuring that subordinates understood his intent. The impact of this guidance was apparent in the events beginning with the economic summit and culminating with the District Engineer's direction of an elasticity of demand value that was mathematically flawed, not empirically supported, and contrary to the advice of Corps economists.

5. Conclusion: The allegation that MG Fuhrman improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation was substantiated.

ALLEGATION #2: MG Van Winkle improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

1. Standards: The standards shown under Allegation #1 applied.

2. Documents:

a. In a 4 February 2000 e-mail Mr. Kitch, HQ, USACE, stated MG Van Winkle directed a Headquarters Review of the study. Mr. Kitch quoted MG Van Winkle as saying the review was their last chance to get the study "back in the box," they needed to remember that 40 percent of their budget was navigation, and they needed the support of the navigation industry. He quoted MG Van Winkle as saying the Corps was the navigation proponent and they could not have some "limpwristed recommendation" to build in 2025. The e-mail said the review was time sensitive and an effort to correct MVD errors. (Exhibit Q)

b. In a 30 January 2000 e-mail to LTG Ballard, MG Anderson stated he briefed MG Van Winkle on the NED and tentatively selected plans. MG Van Winkle asked them to do some more work in an attempt to justify the selected plan as the NED plan. MG Anderson indicated they were looking at interpretations of the P&G and the economic assumptions to try and do that quickly. (Exhibit R)

c. In a 1 February 2000 e-mail to Mr. Kitch and others, Mr. Clifford Fitzsimmons, HQ, USACE, stated MG Van Winkle expressed concerns about engineering risks and optimal timing during the video teleconference (VTC). At the post-VTC meeting between MG Van Winkle and several senior staffers, MG Van Winkle directed them to get back with him on a recommended course of action. (Exhibit S)

d. In an undated memorandum from Mr. Rhodes to MG Anderson, Mr. Rhodes identified MG Van Winkle as expressing concern over the MVD study recommendations at the 27 January 2000 VTC. He expressed concern that the headquarters labeled a plan as the NED when it was not the NED. (Exhibit T)

e. In a 3 March 2000 affidavit to the United States Senate, MG Van Winkle admitted to making comments generally critical of the study in the "Kitch e-mail." He did not recall using the phrases "navigation proponent" or "limpwristed." He stated his words expressed his frustration at expending 7 years and over $50 million on a study that was still not complete, and was being portrayed as possibly requiring more time and money beyond the original milestones. In his opinion, the Corps was the proponent for the nation's water resource needs, much as the DOT was for surface transportation systems. He also stated his comment about the "concern for providing for the navigation industry might result in the navigation program being moved to the DOT" referred to the Corps not including those stakeholder's concerns in the development of the study's analysis. (Exhibit U)

3. Testimony:

a. Dr. Sweeney testified he briefed MG Van Winkle and other leaders on 23 April 1998 on the economic model. He explained why the economic analysis provided results different from previous studies. It did not appear the NED was going to include large-scale construction in the near term. Later, MG Van Winkle said in an e-mail that they spent 50 million dollars and were poking "a stick in the eye of industry and the farmers, and can't have such a limpwristed recommendation out of a 50 million dollar study." MG Van Winkle indicated "we need to find a way to make it happen so that we can recommend the locks right now." He believed MG Van Winkle was one of the people who attempted to violate and circumvent Corps regulations. (Exhibit B-1, p. 40, 101-102; pp. 2-4, recall)

b. Mr. Daniel, former planner, HQ, USACE, testified there was a strong bias for big construction on the Upper Mississippi. He thought a lot of pressure was put on people to come up with an answer that supported construction. The pressure started at the top and came down through the entire organization to include the divisions and districts. There was a bias to keep people employed. He thought the leadership of the LRD was corrupt and figured that since they did not work for the American public, they worked for the navigation industry. (Exhibit B-4, pp. 10-11, 14)

c. Mr. Ronald R. Conner, GS-14, Economist, Planning Division, HQ, USACE, testified he had suspicions that an objective view would say there was impropriety on the part of MG Van Winkle. The Headquarters Review of the study was an extraordinary action. Members of the review team were advised by a special review team called the Tiger Team, that he understood was primarily composed of people from the LRD office. He thought there was a substantial question on the part of the people who conducted the review as to whether a credible review took place. (Exhibit B-6, p. 41)

d. Mr. Ron L. Keeney, GS-15, Deputy District Engineer for Project Management, Huntington District, testified MG Van Winkle asked him to go to the summit in Chicago to facilitate a session between Corps study members and dissatisfied industry representatives. He was to get the two groups to communicate. It appeared any progress toward resolving differences or issues had stopped. The previous meeting in Saint Louis had been divisive. He addressed issues to define and develop the costs for the without-project condition and the development of benefits estimates for use in the study. The study team agreed to look at some of those issues and determine if they needed to make adjustments. There were no decisions or commitments of any kind at the meeting, other than to look at some things. Some of the questions industry asked

needed to be addressed. It seemed possible, as industry had claimed, that the Corps had not fully counted all the costs for continuing to operate and maintain old locks. He did not direct the study team to do anything. (Exhibit B-8, pp. 4-8)

e. MAJ Cade, HQ, USACE, testified he heard LTG Ballard, MG Fuhrman, and MG Van Winkle supported a "Grow the Corps" concept. This initiative concerned budget requests for approximately $36 billion worth of backlogged projects that were already approved by Congress. It was not an attempt to increase the Corps' bureaucracy or size. He believed MG Van Winkle's "limpwristed" comment was taken out of context. MG Van Winkle directed the Tiger Team to determine if the Corps "cooked the books." MG Van Winkle specifically told them he did not want some "wishy washy, limpwristed" answer that did not clearly determine whether procedures were followed. (Exhibit B-12, pp. 10-12, 24-25)

[IO note: The Tiger Team was a special HQ, USACE, review team formed in early 2000 to review the emerging results of the UMR-IWW study.]

f. Mr. Burns, Chief, Planning Management Branch, HQ, USACE, testified Mr. Kitch, a branch chief at HQ, USACE, wrote a memorandum in early 2000 concerning MG Van Winkle's statement that the Corps could not have a "limpwristed recommendation" for the study. He was at the VTC and he remembered MG Van Winkle was concerned with recommending to Congress a project in which construction would not begin for 15 or 20 years. MG Van Winkle wanted more information and asked the "Tiger Team" to review the issue. He did not think Mr. Kitch's memorandum was accurate in characterizing MG Van Winkle's wishes. (Exhibit B-25, pp. 29-30)

g. Mr. Cone, Policy Division, HQ, USACE, testified:

(1) MG Van Winkle and other Corps leaders saw the UMR-IWW study as a "giant construction opportunity." (pp. 30-31)

(2) The purpose of a Headquarters Review was to assure that a study was in compliance with the P&G. It was not another ITR. He was surprised the project had "miraculously" justified new construction since meetings in 1999. The Headquarters Review was directed before the newspaper article came out with Dr. Sweeney's allegations. The Headquarters Review was not particularly effective because it occurred prior to the completion of the study's ITRs. Typically, headquarters reviews occurred after all ITRs were completed, with a full set of study products, and with more time. He believed the Headquarters Review was looking for opportunities to justify

actions the district might have overlooked. He did not believe it was an "impartial, unbiased review." (pp. 16; 34-37, recall)

(3) For a Headquarters Review he would normally receive a draft feasibility report, but he did not receive a draft report for the UMR-IWW review. The process for this review was different for some unknown reason. There was a late January 2000 briefing to MG Van Winkle and his staff. On the 3rd or 4th of February 2000 he was directed to conduct a review of the study. He was given 3 weeks to form the team, gather information, conduct the review, and report the results. The review product was designated as comments outlining study deficiencies that MVD must address before or during public review. (pp. 12-14, recall)

(4) The study generally followed the P&G. There were a number of concerns with commodity projections, demand curves, and derivation of the 1.2 N-value being the more notable concerns. They did additional coordination with the district and division to ensure they understood all the concerns. (pp. 21-25, 55-57, recall)

(5) MG Van Winkle's issue with optimal timing was they did not want to wait 20 years to build something if there was a benefits-cost ratio greater than 1 for immediate construction. MG Van Winkle attempted to put as positive a spin as possible on construction for the near term. (Exhibit B-17, pp. 48-52, 61-65, recall)

h. Mr. Rhodes testified the Headquarters Review Team was formed because MG Van Winkle attended a VTC briefing about the study and was not comfortable with the data to let it go public. It was not unusual for management or the study team to have a conclusion based on the most current data. Their conclusion changed as more data became available. MG Van Winkle had been concerned the NED plan was not properly formulated and might be too conservative. (Exhibit B-35, pp. 111-112, 114-115)

i. Mr. Sanford, Military Programs Director, HQ, USACE, testified

(1) He provided MG Van Winkle with two briefings on the review team's work. The review determined MVD generally followed procedures, but they might not have followed the best method. He did not find the Corps predisposed to a specific outcome. He did not recall hearing MG Van Winkle say the study team had the numbers all wrong, nor did he ever say anything like that prior to the Tiger Team review. After the review, he indicated instances where the Tiger Team could not substantiate some of the

numbers or thought the numbers were wrong. There was a lot of help from Congress on this study.

(2) He defined the concept of growing the program as being relevant to the nation's needs and national security. This did not mean submitting projects that were not economically justified. In the 5 years that he was an SES, he never saw anyone in Civil Works direct a program to Grow the Corps solely to make it bigger in people or dollars, only actions to better serve the nation. (Exhibit B-16, pp. 9-12, 18, 38-48)

j. Mr. Loss testified the study team was working towards a draft of the feasibility report and believed the draft report would be released to the public in September 2000. When the study team briefed MG Van Winkle on 28 January 2000, MG Van Winkle asked to review the study before it went public. MG Van Winkle's call for a review preceded Dr. Sweeney's disclosure. The review stemmed from concern about the assumptions in the economic analysis and the use of optimal timing of the alternatives. He thought no one in the Corps leadership did anything improper in relation to the study. Several "stakeholders" told the study team what the recommendation should be. (Exhibit B-37, pp. 7-9, 17-24)

k. MG Anderson testified:

(1) The Grow the Corps program started for him when Dr. Westphal gave a presentation at the August 1999 Corps Senior Leadership Conference (SLC). Dr. Westphal said that since it was a period of budget surplus, this was a wonderful time for them to get water resource on the national agenda. LTG Ballard took that as positive guidance to grow the program. (p. 85)

(2) MG Van Winkle was concerned about optimization of benefits. MVD's interpretation of producing a NED was that it was necessary to optimize the benefits to maximize those benefits. His staff concluded they needed to optimally time the improvements, and Corps Headquarters said that did not make any sense. Headquarters asked why they could not prepare a NED justifying the construction of new locks, or an approach similar to that, when there were sufficient benefits in excess of the cost. His staff was confident they correctly interpreted the regulation on computing benefits. His staff briefed MG Van Winkle on 30 January 2000 on the NED and tentatively selected a plan. MG Van Winkle supported the selected plan, but asked them to do some more work to try to justify the selected plan as the NED. (Exhibit B-32, pp. 98-99, 109)

l. MG Fuhrman testified no one in the Corps leadership did anything he believed improper in relation to the study. The Corps leadership did not attempt to manipulate the study. No one had a preconceived conclusion about the need for or against construction along the UMR-IWW system. (Exhibit B-30, p. 68)

m. Mr. Manguno, lead economist for the study, testified the May 1999 meetings with industry did not serve as an information exchange. The meetings were attacks on the study team with the intent of getting them to change their analysis. None of the Corps leaders present, to include MG Van Winkle, did anything to prevent the attack. He believed the Corps influenced the study outcome to arrive at a certain conclusion. (Exhibit B-2, pp. 25-28, recall)

n. Mr. Harry N. Cook, President, National Waterways Conference, Incorporated, testified he attended the summit in Saint Louis in May 1999. The grain industry representatives were concerned that the assumptions made by the Corps "were not real world. They were half-cocked and not representative of what was really happening in the grain industry." He was not aware of any unethical or improper actions by senior Corps officials with regard to the study. (Exhibit B-28, pp. 23-29)

o. LTG Ballard testified MG Van Winkle briefed him in late 1999 about the study. MG Van Winkle had concerns about the technical data, PED, timeliness of the report, and assumptions. MG Van Winkle was concerned the study might not be completed by December 2000. MG Van Winkle felt MG Anderson was pushing towards completion without addressing all of the issues. (Exhibit B-29, pp. 6-7)

p. After being advised of his rights, MG Van Winkle testified:

(1) He served as the DCW since about June 1999. He ran the Corps civil works program, and had staff personnel responsible for quality assurance. (pp. 3-4)

(2) He attended the 5-6 May 1999 summit in Saint Louis and believed he was invited by MG Anderson. He was a Division Commander on the Ohio River and had a similar study. The meeting was highly contentious. There seemed to be a lot of technical experts in violent disagreement about what the numbers should be. He offered the services of his division by offering up facilitators. He had a senior GS-15 who he thought was particularly adept at finding solutions. (pp. 7,8)

(3) He did not participate in any Corps pre-meetings or post-meetings. He told Mr. Keeney, Deputy District Engineer, Huntington District, to see if he could help

facilitate the disagreements. He thought, as of May 1999, that the MVD analysis was still dealing with some very fundamental sorts of questions, such as what are the inputs, where was the grain coming from, what are future projections, how is it getting transported and how are crop prices? There seemed to be a lot of unanswered questions. He had nothing that told him the study was not being managed properly. (pp. 11, 14)

(4) When asked how the headquarters was dealing with the use of different economic models for navigational analysis on the Mississippi and Ohio Rivers, he said, "We have not really tackled it because we are still in the middle of this study. There was nothing that said you had to use one model vice another." (p. 14)

(5) It was a well known fact that a lot of people pressured the Corps. It was just a daily fact of life. The Corps got pressure from people who had beliefs, opinions, and legitimate concerns from different perspectives. He did not believe the right approach was to try to remove the pressure, but the right way was to allow everybody to have access to the public policy decision-making process. (pp. 62,63)

(6) The barge industry paid a fuel tax. When they did a project, 50 percent of the funding came from the taxes and 50 percent came from general revenues. When asked what privileges a cost sharing partner had over non-cost sharing partners, he said, "From a procedural view, not many, if any at all." Because the barge industry paid the tax, they were eligible to sit on the inland waterway user board. He did not think the barge industry's access to the study was any more or less than other groups. (pp. 71-72)

(7) After a 28 January 2000 meeting, he had two concerns. He was uncomfortable with the fact that they were going out with an alternative that simply looked at extension of old locks without any discussion of what risks were associated with that alternative. He had an engineering question: had they explained from an engineering safety and risk point of view, why they would extend an old lock that was already 50 years old vice building new locks? The second question had to do with the concept of the NED plan being time phased. He tried to get at whether they were following the principles and guidelines by developing a NED that recommended construction out to 2020. In the past, they typically made a decision based on the current costs and benefits. He was not comfortable using the optimal timing approach. He had not seen it before in his experience as an engineer in the Corps. One of the questions the Headquarters Review answered for him was that lock extensions vice new construction was a sound engineering recommendation. (pp. 17-21)

(8) When Headquarters staff concluded the review, they said MVD was in fact within the principles and guidelines. He was comfortable that laying out the NED as MVD had done was, in fact, okay. (p. 25)

(9) He felt very comfortable that the agency did the very best it could in a very difficult environment. The uncertainties and the unknowns were legion. They were trying to make projections 50 years out. He thought a reasonable interpretation of what happened was that well-meaning people were doing the best they could in a difficult environment, trying to produce a study that satisfied many different individuals. (p. 65)

(10) MG Anderson wanted to release the briefing (the briefing MG Van Winkle received on 28 January 2000) to the GLC. Because of the questions he and his staff had raised, he felt uncomfortable letting MG Anderson do that. This would have been the first time the briefing had been laid out. They still did not have a draft feasibility study. He wanted to make sure they had at least answered some of the basic questions. They decided they needed to have a team look at the study. Mr. Sanford, Military Programs Director, HQ, USACE, put together a team. They were not asking for a total review. They were just trying to get to some of the questions that had been raised and assure themselves at the Headquarters that they had, in fact, a good study on their hands. (pp. 28-29)

(11) His reference in the e-mail sent by Mr. Kitch, HQ, USACE, that he wanted to get the study "back in the box" referred to making sure the study was in accordance with the P&G. His comment about "40 percent of the budget was inland navigation, and having support from MARC 2000 and Dynamo" referred to making sure the Corps could answer any criticisms from the industry about the analysis. He was generally frustrated that the study was not more conclusive in the action recommended. He believed the comment about "not having too much MVD representation on the review team" was Mr. Sanford's comment. He believed Mr. Sanford was referring to the need to have somebody other than MVD review the analysis, because MVD personnel were too close to the analysis to consider other aspects. (pp. 32-36)

(12) The Chief was generally aware of what was going on. He told him they were going to do a review and gave him such a recommendation, but that was really the extent of the Chief's familiarity with the Headquarters Review. MG Fuhrman had about the same level of knowledge. He did not believe either MG Fuhrman or LTG Ballard ever saw a briefing on the results of the review process. He told LTG Ballard he had a team look at the study and make recommendations. They felt comfortable that MVD

was okay to go forward and release a document with the understanding that there were a lot of other steps to go through before they produced a draft report. (pp. 43-44)

(13) Growing the program was an out growth of their look at what the needs were, given the requirements and mission of the Corps, putting together a strategic plan that addressed those needs and presenting the budgetary consequences to the national decision makers. The process was not that dissimilar from the Army's or the defense service putting together the POM. The districts knew the needs and their role in the process was identifying requirements at the local level. The divisions looked regionally. Given that districts were project funded, they maintained their objectivity during the conduct of studies because of professionals, principles and guidelines and public reviews. He thought internal quality control and a public review process ensured the integrity of the process. (pp. 53-54)

(14) He told MG Anderson that, given the situation, they should only do PED on small-scale measures that led directly to safety and were short-termed. It was his understanding they were not doing PED on any large-scale lock improvements. It was a legal question as to when PED for lock extensions would be justified. (pp. 79-80)

(15) In response to a question concerning whether LTG Ballard, MG Fuhrman or anyone else had directed him to take any action he believed to be improper, he indicated they had not. He was not personally aware of any inappropriate guidance MG Fuhrman had given to anybody. When asked if he thought any official within the Corps had acted improperly, he indicated that he could not answer that question. He had not read Dr. Sweeney's affidavit and had not looked into the particulars of what happened. When asked if he believed that the Corps could operate as an objective body and serve as an honest broker in conduct of analysis, he answered "absolutely." (Exhibit B-30, pp. 80-81)

4. Discussion:

a. Dr. Sweeney alleged MG Van Winkle was responsible for attempts to circumvent Corps guidance concerning the evaluation of projects and was responsible for influencing parameters within the study. Implicit in the standards was the expectation that feasibility studies would be conducted in an impartial and objective manner and formulation of alternatives would be based on the most likely future condition. Army Management philosophy stated that managers would do the right things for the right reasons.

b. The evidence established:

(1) Documents indicating that MG Van Winkle had a bias towards an outcome other than the study team's recommendation were not accurate or conclusive. When the Headquarters Review determined optimal timing and engineer risks were appropriately included in the analysis, MG Van Winkle accepted those recommendations. There was no credible evidence to indicate MG Van Winkle intended to change study results. His actions appeared to be the measured response of the Corps senior official charged with the responsibility for Corps-wide quality assurance.

(2) Most testimony revealed MG Van Winkle first became substantively involved in the study in January 2000 after receiving a briefing. He believed he was acting in his leadership responsibility as the DCW when he directed a Headquarters Review. The fact that no review was scheduled did not relieve him of the responsibility to act once he determined there were unresolved issues. His lack of familiarity with specific study actions and analytic techniques, like optimal timing, was not an indicator of inappropriate action, rather it indicated a prudent course of action in the face of the unknown. Testimony indicated Mr. Kitch's e-mail did not accurately represent MG Van Winkle's guidance and intent for the study.

(3) MG Van Winkle testified his intent was not accurately captured by Mr. Kitch's e-mail because Mr. Kitch was not at the VTC where the issues were presented. MG Van Winkle wanted to assure the study was performed correctly and on time, and was disappointed it was not more conclusive, given a projected study completion date of December 2000. His reference that he wanted to get the study "back in the box" meant making sure the study was in accordance with the P&G. His comment about "40 percent of the budget was inland navigation, and having support from MARC 2000 and Dynamo" meant making sure the Corps could answer any criticisms from the industry about the analysis.

(4) He attended the economic summit in Saint Louis in May 1999 and volunteered the services of his division to assist in completing the study. He thought the study team was still dealing with fundamental issues and concerns. He provided a facilitator for the subsequent economic meeting, but he did not provide improper guidance to the facilitator.

(5) MG Anderson's e-mail that he (MG Van Winkle) asked MG Anderson's division to do some more work to justify the selected plan as the NED plan was a result of his concern about the appropriateness of optimal timing, and was no longer an issue when optimal timing was determined to be appropriately implemented in the study.

c. The preponderance of evidence indicated that MG Van Winkle did not engage in activities designed to steer the study to a specific outcome.

5. Conclusion: The allegation that MG Van Winkle improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation was not substantiated.

ALLEGATION #3: MG Anderson improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

1. Standards. In addition to the standards shown in Allegation #1, the following standard also applied: AR 5-1, paragraph 1-4b(1) and (3), provided the Army management philosophy was to do the right things, the right way, for the right reasons. Leaders, commanders, and managers at all levels would implement the Army management philosophy through providing a clear vision and ensuring efficient stewardship of and accountability for resources. (Exhibit D-1)

2. Documents:

a. Dr. Sweeney stated in his affidavit that on 23 September 1998, MG Anderson and his staff briefed MG Fuhrman. E-mails from Mr. Hanson and COL Mudd to the study team included MG Fuhrman's 23 September guidance. (Exhibit C-1, pp. 25-28)

b. In a 25 September 1998 e-mail to Mr. Manguno, the study's lead economist, and others, Mr. Hanson said MG Fuhrman directed that they develop evidence or data to support a defensible set of capacity enhancement projects. They needed to know what the mechanism was that drove the benefits up. The rationale should err on the high side. (Exhibit I-2)

c. In a 25 September 1998 e-mail to study team members, Mr. Hanson stated MG Fuhrman said they were the advocates for inland navigation. The overt advocacy role was a new departure. They would need to work on a story line. He had no

problem with this as long as the chain of command supported and helped explain when the heat came. (Exhibit I-1)

d. In a 25 September 1998 e-mail to Mr. Manguno and others, Mr. Hanson stated he heard that he (Mr. Hanson) had not faithfully captured MG Fuhrman's guidance. He recommended that Mr. Manguno seek verification from the MVD as to what his (Mr. Manguno's) assignment was. (Exhibit I-4)

e. In a 2 October 1998 e-mail to Mr. Manguno, COL Mudd stated he considered MG Fuhrman's guidance and he had now provided clarifying guidance to Mr. Manguno for the 20 October 1998 briefing. Mr. Manguno would prepare and present a single set of economic assumptions as directed by MG Fuhrman. MG Fuhrman had clearly stated that the Corps was the advocate for inland waterways system. To help in the execution of that responsibility, Mr. Manguno would develop the economic component of the case that included near-term improvements, recognizing that the nation was better served by improvements that erred on the large-scale side than actions that erred on the underdeveloped side. (Exhibit V)

[IO note: Following his testimony, MG Anderson provided the IO with several documents. Some of those were referenced in the ROI and have been included as individual exhibits. Others were reviewed, but not referred to in the ROI. Those not referred to in the ROI were placed in Exhibit AG.)

3. Testimony:

a. Dr. Sweeney testified:

(1) In April 1998, he and the study team briefed MG Anderson on the study. He tried to explain why this study was not going to look like previous ones. He addressed the broader scope and how the economic model had evolved. He told MG Anderson that, based on using current performance and cost data in the economic model, the comparison of benefits to cost indicated large-scale measures did not appear warranted anytime in the foreseeable future. On 23 April 1998, he briefed MG Anderson and others on the methodology of the economic model. He explained why the economic analysis provided results that were different from previous studies. It did not appear the NED was going to involve large-scale construction. (pp. 39-40)

(2) On 17 June 1998, MG Anderson appointed a panel of economists to oversee the economic products and produce the NED plan. The project manager, Mr. Hanson,

who was an engineer and not an economist, was made chairman. He (Dr. Sweeney) was named as an advisor to the panel. After MG Anderson received criticism for putting an engineer in charge of the panel, Mr. Hanson was removed as chairman and put back as project manager. Mr. Manguno was appointed chairman of the panel. (pp. 45-46, 56, 60)

(3) MG Anderson was one of the people involved in directing and changing the study. (Exhibit B-1, pp. 96-97, 102; 3-4, recall)

b. Mr. Manguno testified:

(1) In April 1998, the study team briefed MG Anderson and his staff on the ITR. Dr. Sweeney reported the model differed from past models. The benefits that would result would generally be lower, and there were potential problems with being able to find economic justification based on the guidance for such calculations. (p. 26)

(2) On 12 June 1998, he attended a briefing to MG Anderson to review the ITR. There was a discussion, principally from Mr. Rhodes, about removing Dr. Sweeney as lead of the Economics Work Group. On 17 June 1998, MG Anderson issued a memorandum directing that an economics panel be formed to complete the economic analysis and identify the alternative that maximized the difference between benefits and costs within 90 days. Dr. Sweeney was made an advisor. Three of the five panel members did not have the right background. Ninety days was an optimistic amount of time to shoot for. This probably would not have happened had Dr. Sweeney's earlier analysis supported large-scale construction. (pp. 35-49)

(3) The modeling results showing small-scale improvements to be adequate were preliminary. Although they were not couched in terms of being a NED plan, the list of candidate NED plans was a pretty short list. (p. 47)

(4) In response to an IO question, he responded that it had occurred to him that senior leadership in the Corps was more interested in finding a scenario to support large-scale construction than coming up with the best NED based on the data available. He sensed some reluctance to embrace the notion of downward sloping demand curves for individual movements, which was a significant improvement over the methodology used in the past. (pp. 74-75).

(5) A 25 September 1998 e-mail from Mr. Hanson caused him additional concern regarding where things were headed. (p. 75).

[IO note: According to Mr. Hanson's e-mail, MG Fuhrman's guidance was that the Corps was to be the advocates of waterways. If the data used in the model did not capture the need for navigation improvements, they would have to figure out some other way to do it. They should err on the high side.]

(6) On 28 September 1998, Mr. Hanson told him he would lead the economics work group, and MG Fuhrman's guidance was to produce a scenario that resulted in immediate implementation of large-scale measures. This guidance was not in accordance with regulations. He sent a memo to a number of people, including COL Mudd and Mr. Rhodes, expressing concern about the guidance. (pp. 76-78).

(7) On 22 June1999, in a conference call with COL Mudd and others, Dr. Sweeney stated that COL Mudd's N-value of 1.2 was not correct. (p. 98)

(8) He had some fears that Mr. Hanson's e-mail concerning MG Fuhrman's advocacy guidance was an attempt to manipulate the study to put a more favorable look on things than was warranted. After receiving the guidance, they did the sequence of activities required by the study. There was no interference until the point where he made a recommendation for an N-value of 1.5. Shortly after that they had the series of meetings with industry people that resulted in the changes in the contingencies, N-values, and rehabilitation expenditures. He had concerns about where they were heading, that they were going to find a way to use various inputs into the study that produced an outcome that said lock improvements were justified in the near term. Based on the events occurring after the meeting with industry, he thought the Corps had influenced the study to arrive at a certain outcome. (Exhibit B 2, pp. 24-25, recall)

c. Mr. Marmorstein, analyst, Saint Louis District, testified:

(1) He and Dr. Sweeney were close friends. (p 14)

(2) Early in 1998, it became apparent that the project that seemed likely to be recommended by the economic analysis was not the project that was desired. That was the turning point in the study. He supposed there was nothing wrong with being disappointed in the result and nothing wrong with looking at the process and the way parameters were estimated. It deviated from other analyses, which also presumably followed the regulation. In fact, it probably should be done. But what he thought ended up happening from that moment forth was a deliberate, confused, clumsy and counterproductive effort to justify a certain set of large-scale, new lock improvements.

He was not indicting any particular individual. He thought several individuals showed quite a lot of integrity in resisting that. But as an organization, that's what they did. (pp. 5, 9)

(3) After the ITR, MG Anderson ordered the creation of a panel. MG Anderson was concerned with the rate of progress, but that made no sense. It was "a cheap excuse to get Sweeney out of the picture" for 90 days while a panel, under the direction of Mr. Hanson, did its work. (Exhibit B-3, p. 15)

d. Mr. Daniel, former planner, HQ, USACE, testified MG Anderson either did not want to understand or did not understand that undue pressure was being placed on people. (Exhibit B-4, p. 31)

e. Mr. Kitch, Chief, Formulation and Evaluation Branch, HQ, USACE, testified:

(1) It was his opinion that, in general, the study was conducted properly and in accordance with laws and regulations. The final review of the study had not been done; but based on the way the study was conducted, he thought there were many cases that were not consistent with the letter of their regulations and certainly not the spirit. (p. 68)

(2) He thought MG Anderson tried to support industry. MG Anderson tried to do the right thing but got a lot of pressure from industry. (Exhibit B-5, p. 70)

f. Mr. Conner, economist, HQ, USACE, testified:

(1) He believed there was a preliminary NED that existed prior to the convening of the economics panel. He thought there were indications that the preliminary NED results of the study would be that large-scale measures would not be justified. He presumed both Mr. Rhodes and MG Anderson were uncomfortable with the preliminary study results. Based on his observations, the Corps had a bias towards constructing projects and not on objectively analyzing projects. (pp. 10,11)

(2) It struck him that they changed the way they were operating, that this was not a part of the sensitivity analysis. A sensitivity analysis explored potential options and alternative assumptions of different variables to show a range of possible answers that could occur. It was not biased in a direction that would justify a project. The panel had been designated to develop a preliminary NED Plan, but then was directed to look at assumptions that could justify near-term, large-scale improvements. He believed that direction came from the Mr. Rhodes level of MVD and potentially from MG Anderson.

However, he had no knowledge of this. He was uncomfortable about the direction the panel was going. (pp. 17, 18)

(3) He thought there was certainly impropriety on the part of the MVD staff and there was likely impropriety on the part of MG Anderson. (Exhibit B-6, p. 41)

g. Mr. Soyke, economist, Rock Island District, testified he could not tell who made the decision, but he assumed MG Anderson made the decision to remove Dr. Sweeney from any direct study involvement. He was asked to serve on an economic panel that was established by a 17 June 1998 memorandum from MG Anderson. His understanding was that the panel's role was to get the study back on track and come up with a NED plan. The panel determined most of Dr. Sweeney's assumptions were probably valid. (Exhibit B-7, pp. 26,28)

h. Mr. Thompson, planner, Rock Island District, testified:

(1) After the September 1998 briefing, Mr. Hanson sent out some guidance in an e-mail. The guidance struck him and other team members as strange. Some of the guidance was revisited and people backed off. It seemed strange to think of the Corps as advocates for the waterway and navigation. At the time, some of them were wondering if they were getting pressure to come up with something they were not comfortable with. (p. 10)

(2) They tried to answer a tasker from their higher headquarters concerning the question of whether there were things missing in their analysis that should be considered. These were things that were not considered most likely but should be raised to decision makers for consideration. They put together a list of other considerations. (p 10)

(3) The economics workgroup put together a single alternative which was called a minimized risk alternative. It had caveats that said it was not the best alternative. This alternative had more of an advocacy role. The study team felt a little pushed in September 1998. They had to find that alternative that would result in near-term improvements, and they did not know what was going to happen with it. (p. 11)

(4) In October 1998, when they went back to brief the single alternative with the caveats, senior Corps officials were not comfortable going out with an overt advocacy position as the Corps recommendation. (p. 12)

(5) He thought the time frame between September 1998 and October 1998 and the information that was put together for the higher levels to consider was an anomaly. However, after the October 1998 briefing, they got guidance to go out and look for additional information, and they resumed following the guidance for the conduct of studies. (p. 22)

(6) He thought Dr. Sweeney was removed as the study team leader because management became frustrated that Dr. Sweeney was not getting things done from a schedule perspective and he could not handle his relationships with other people to include "higher-ups." He thought the people concerned included COL Mudd, Mr. Rhodes and MG Anderson. (Exhibit B-10, p. 24)

i. Ms. Karnish, Economics Branch Chief, Saint Louis District, testified:

(1) No one directed her to remove Dr. Sweeney from the study. (p. 10)

(2) MG Anderson's decision to create the panel and give the economic lead responsibility to New Orleans seriously affected her branch. (pp. 32, 33)

(3) *[When asked to speculate if Dr. Sweeney's initial economic findings had benefits that outweighed cost, would he have been removed from his position of leadership in the study and would Saint Louis have lost the lead? She responded:]* She thought there may not have been as much pressure to remove him from the study if there had been a positive benefit/cost ratio when he first produced results. Additionally, there would not have been as much pressure to change the economic management lead. Also, Dr. Sweeney would have eventually been removed regardless because he showed no respect for the chain of command and for other economists because he (Dr. Sweeney) thought they did not know as much as he did. (Exhibit B-11, pp. 32, 33)

j. Mr. Hughey, engineer, Saint Louis District, testified *[When asked if anyone involved with the study appeared to have decided that a specific measure, whether large or small scale was the proper outcome, he responded:]* they were never given any direction to accomplish "this, that or the other." At no time during the process were they ever directed to do anything. *[When asked if ER 1105-2-100 was followed for the study, he responded:]* "Yes, it was." He believed the study got behind schedule within the last couple of years because of environmental issues. (Exhibit B-20, pp. 7-9)

k. Mr. Roger A. Less, GS-12, Project Engineer, Design Branch, Engineering Division, Rock Island District, MVD, testified Corps officials did not act inappropriately

and he could not think of anything where he was asked to act improperly. (Exhibit B-21, pp. 6, 16)

l. Mr. Jeffrey L. McGrath, GS-12, Economist, Saint Paul District, testified he did not think the economics part of the study was behind schedule and was surprised to hear that given as the reason Dr. Sweeney was replaced. He thought the reason was that Dr. Sweeney was not willing to back down. Dr. Sweeney wanted to ensure the economics team followed the regulations. Over the course of the study they had always talked in terms of constructing 1200-foot locks. When the alternative plan with small-scale features fell out as the recommended plan, it was his impression that the Rock Island and Saint Louis district staffs were disappointed. (Exhibit B-27, pp. 28-29)

m. Mr. William E. Arnold, GS-14, Senior Program Manager, Program Execution Division, MVD, testified:

(1) They were trapped by some of their own procedures that laid out strict guidance on how to do analysis. There were a lot of other factors that should have weight in the model, such as the balance of trade and the ability of the U. S. to compete with other countries. They were concerned about putting too much emphasis on model results. (p. 20)

(2) He could not recall any improper actions or guidance to the study. (Exhibit B-24, p. 22)

n. Mr. Lundberg, engineer, Rock Island District, testified he attended a meeting in 1998 where MG Fuhrman mentioned the Corps should be an advocate for water resource development. It took the attendees by surprise; nobody really knew what it meant. The meeting had no real effect on the engineering side of the study. He got no guidance from MG Anderson, but Mr. Hanson sent e-mail messages and talked to them. Mr. Hanson tried to explain what advocacy really meant. (Exhibit B-18, pp. 32-34)

o. Mr. Gmitro, former project manager for the study, testified:

(1) He was the project manager of the study from April 1995 to December 1998. He was never counseled about his work. MG Anderson and Mr. Rhodes did not like the model results. They wanted results that showed we needed new locks today because they believed they needed them. The only reason Dr. Sweeney was removed from the study was because he (Dr. Sweeney) would not compromise himself or allow his model to be "short-circuited" to justify locks. (pp. 3, 9, 27, 37)

(2) Several study actions after management changes in April 1998 were inappropriate. Studies and independent technical reviews verified the economic model and assumptions. It was his understanding that Mr. Manguno, lead economist for the study, was told they had to come up with a way to justify locks. (p. 16)

(3) Mr. Hanson and Mr. Rhodes pushed for alterations of the economic model and its assumptions. He believed MG Anderson and COL Mudd were aware of those actions and supported those efforts. The formation of the economics panel was wasteful and unnecessary. The panel was created to discredit the economic model and its assumptions. The intent of discrediting the model was to supplant it with the model used for the Ohio River. The Ohio River model would justify new locks because it used an inelastic demand curve, an assumption inappropriate for the Mississippi River because of the differing commodities on the two rivers. (pp. 17-18)

(4) The panel validated the assumptions and the model, but never developed a NED plan or additional economic tools because they did not know how to. There were too many pieces of the puzzle missing. It was unreasonable to expect a panel to develop such products in 90 days, but the timeline was established in an attempt to meet the WRDA 2000. If they had been given the green light in April 1998, they could have produced a NED and had a shot at completing the study in December 1999. But that would have been a NED with nothing for large-scale construction. (pp. 20-21, 30)

(5) At a meeting on 18 September 1998, he told MG Anderson they needed to be careful about the direction they were going because over the last several years, traffic had been way down. Traffic projections exceeded actual traffic and to try to justify locks early would be a mistake. (p. 33)

(6) He thought COL Mudd inappropriately influenced the study. COL Mudd's motivation appeared to be the contact COL Mudd had with Mr. Brescia. MG Anderson also listened to Mr. Brescia, MARC 2000, and became more involved than needed in study team actions. He thought MG Anderson and COL Mudd were very sensitive to the fact that there were a lot of congressman that wanted a feasibility study that justified locks. He also thought they (MG Anderson and COL Mudd) tried to cater to MARC 2000 and allowed Mr. Brescia to bring individuals to the study team meetings who did not have expertise in areas applicable to navigation studies. (Exhibit B-14, pp. 40-41)

p. Mr. Cone, Policy Division, HQ, USACE, testified Dr. Sweeney was removed as the study's lead economist because Dr. Sweeney would not develop an economic

answer justifying large-scale construction. He held Dr. Sweeney in great esteem. Some of the senior leadership saw the study as a "giant construction opportunity." (Exhibit B-17, pp. 59-60, 61-65;17-19, 30-31, recall)

q. Mr. Barnes testified Mr. Herndon and Mr. Rhodes were very concerned that the economic model was not being completed in a timely manner and they were coming up against a milestone. He thought MG Anderson had committed to completing the study for the GLC meeting. He got no guidance from MG Anderson about the direction the study should go. When asked if he saw anything concerning the involvement of industry or environmental groups in the study that troubled him, he replied, "No." (Exhibit B-38, pp. 6-10, 35-38)

r. Mr. Rhodes testified:

(1) Beginning in April 1997, he was the person MG Anderson would contact concerning the economics team. He felt the management structure was not appropriate for a 55 million dollar study. He told MG Anderson in June 1998 they had to make some major management changes because they were missing deadlines. MG Anderson agreed to form an economics panel. Mr. Manguno was the logical choice to take over as head of the economics team. MG Anderson made the decision. They also replaced the project manger soon after the economic panel was formed. They kept Dr. Sweeney as an advisor because Dr. Sweeney was the only one who knew how to run the model. (pp. 13, 18, 21, 28, 30-32)

(2) He thought paragraph 56 of Dr. Sweeney's affidavit was "probably" accurate, but that was with the data they had in April 1998. "Any reasonable person would be concerned," but it did not mean that they directed anyone to do anything different. They started talking about the need for ITRs "and getting other people involved in the study and a wider spectrum to make sure that we were giving this thing the effort that it needed." (pp. 39-40)

[IO note: In paragraph 56, Dr. Sweeney formally told MG Anderson and his staff the study would likely not produce economic justification for large-scale measures at any time in the foreseeable future. MG Anderson and his staff expressed concern with their conclusions. (Exhibit B-2)]

(3) The 31 May 1998 e-mail he got from MG Anderson was inaccurate. Industry was not paying for 50 percent of the bill for this particular study. He and MG Anderson talked about the study a lot. They had begun their ITR and "Mr. Brescia wanted to get

right in the middle of the ITR." However, ITRs were designed by the Corps and not by their "partners," although they would consult their partners most of the time. He defined "partners" as normally being people who were paying half the bill. That was not the case in this study. He did not interpret MG Anderson's e-mail that MG Anderson wanted him to listen more to industry's concerns or do anything different in the way he worked with industry. (pp. 42, 44, 46)

(4) He wrote the memorandum MG Anderson signed on 17 June 1998 in which Mr. Hanson was appointed as the project manager for the study. They had not been satisfied with the project management. The panel was responsible for identification of a NED plan and for producing economic analysis tools to analyze additional alternatives. (pp. 52-55)

(5) The study was conducted ethically and in accordance with law and regulation. He did not feel anyone did or directed anything improper. (Exhibit B-35, p. 116)

s. Mr. Sanford, Military Programs Director, HQ, USACE, testified he did not know of anything that caused him concern with the integrity of the navigation study. He found no evidence of a preconceived notion to arrive at a recommendation for large-scale construction. Dr. Sweeney was looking for a level of accuracy not consistent with the variables involved in forecasting out 50 years. The review recommended MVD look at their traffic forecasts and do an N-value reassessment. He personally believed it was best for the nation to have the capabilities to meet world market needs. (Exhibit B-16, pp. 12-18, 22-27, 35)

t. Mr. Hanson testified:

(1) After the 23 September 1998 briefing and once everyone was satisfied they had captured what MG Fuhrman said, he sent out a message to serve as directions for Mr. Manguno, the study's lead economist. Mr. Kitch, HQ, USACE, responded that he (Mr. Hanson) had overstated what MG Fuhrman had said at the briefing. He sent a second message that Mr. Manguno should seek verification from the MVD. (pp. 40-42)

(2) He did not feel there was pressure on the part of the command structure to arrive at a certain decision or recommendation. He thought there was reluctance to go public with where it appeared they were going with the NED. He got the impression they would not look as if they had done their job if they went public with what appeared they were tending toward on the NED. (p. 48)

(3) He did not think he felt any pressure to arrive at large-scale construction as a conclusion. He thought he felt pressure to examine large-scale construction as an option and do a thorough analysis of that and to develop a scenario that depicted what had to happen in order for that to be reality. (Exhibit B-36, p. 69)

u. Mr. Loss testified no one in the Corps leadership did anything improper in relation to the study. Several "stakeholders" told the study team what the recommendation should be. (Exhibit B-37, pp. 17-18)

v. COL Mudd testified, at least in his district, he did not believe the Corps had a bias towards construction. He did not think it appropriate for a Corps official to make comments about an ongoing study that indicated an outcome. He did not believe there was a violation of laws or regulations in the conduct of the study. (Exhibit B-34, pp. 133-134, 147-148)

w. MG Fuhrman testified:

(1) He did not see Mr. Hanson's 25 September 1998 e-mail until Dr. Sweeney made his allegations public. Mr. Hanson took his guidance out of context. If he had seen the e-mail, he would have corrected the misconception. His intent was never to predetermine any aspect of the study. The purpose of that meeting and the followup meeting was to get their arms around fundamental issues. (pp. 27-28)

(2) If he had been aware of Mr. Rhodes' and COL Mudd's supplementary guidance, he would have been concerned with guidance that suggested that the study team should find "reasonably plausible" alternatives that justified large-scale construction. To the best of his knowledge, this did not represent the guidance of any other senior Corps official. He could not say that the supplementary guidance was inappropriate, because he did not know it's full context. (Exhibit B-30, pp.35-39)

x. After being advised of his rights, MG Anderson testified:

(1) The NED was based on national, not global or regional benefits. Once the NED plan has been identified, the Reporting Officer could recommend a different plan, but that recommendation would have to be supported by logic before he would accept it in his Division Commander's notice. (pp. 5-6)

(2) He first started to have concerns about the study in April 1998. He received reports the study was missing data and milestones. He was aware of Congressional language that directed the Corps to expedite and accelerate completion of the study by December 1999. In April 1998, Dr. Sweeney briefed him on the study and the model. His biggest concern was the model and the parameters and data used in it. He corresponded with MG Fuhrman about the different modeling efforts on the Ohio and Mississippi rivers. He was concerned about the implications of using different models. He hoped at the 23 April 1998 meeting to get some guidance on how to proceed with the study relative to which model to use, understanding input data and the sensitivity of changes of that data on the results. The study team later concluded they should not be overly concerned about the differences between the models. Using the same data inputs, both models provided approximately the same results. (pp. 7-9)

(3) During the April 1998 meeting, Dr. Sweeney also indicated large-scale improvements were not justified in the near term. He was told it would be 20-30 years before large-scale improvements would be justified. The navigation industry was interested in the preliminary results of the study. They pointed out, intuitively, the Corps results did not make sense. They questioned how large-scale improvements were justified on the Ohio River for less tonnage than was being moved on the UMR. (p. 10)

(4) He did not agree with the reason cited for the study delay in a 16 April 1998 e-mail from Mr. Stockton, Director, Programs Management, HQ, USACE, to MG Fuhrman. *(The e-mail indicated no new locks were justified at least until 2030 and maybe beyond 2050.)* He knew there was concern in the Corps Headquarters about those preliminary study results. The navigation industry expressed concern to the Reporting Officer, his headquarters and to Corps Headquarters. It was natural that concern would be generated when your cost-sharing partners felt the study results did not make sense. (pp. 11-12)

(5) Dr. Sweeney was removed as the lead of the economic workgroup because his staff advised him that an economics panel needed to be established to take an objective look at the study's economics. Dr. Sweeney served as an advisor to that panel. COL Mudd later recommended he disband the economics panel. He knew by that time that they were going to continue to use the model and the economic parameters were established. He still had the advice of Mr. Manguno as the senior economist for the study. (pp. 17-18, 27)

(6) Mr. Manguno knew the N-value was between 1 and 2 and thought it was reasonable to take a simple average and use an N-value of 1.5. When COL Mudd gave

him the recommendation to use an N-value of 1.2 in the June 1999 time frame, he knew using that value generated large-scale improvements such as lock extensions on the Upper Mississippi River. (pp. 23, 94, 97)

(7) On 23 September 1998, MG Fuhrman was briefed on the study status. MG Fuhrman felt the study team had not done everything that needed to be done to make sure they were making the right decision. MG Fuhrman talked about the Corps as advocates for the navigation industry; whereby, they had a responsibility to the public to properly maintain and expand the navigation system. MG Fuhrman expressed general disappointment with the study results and said if the results produced so far did not give them the information that intuitively made sense, then they needed to look for other ways to justify the results. MG Fuhrman thought the study results were not aggressive. They lacked large-scale improvements. When they looked at what was going on with the Ohio River, they thought improvements should have been justified on the Mississippi, but the study results were not showing that. (pp. 30-31)

(8) MG Fuhrman did not tell them that they did not have to come up with a NED. He did not tell them that they could ignore the principles and guidelines. He heard MG Fuhrman say that if the NED does not justify large-scale improvements, then they needed to come up with other qualitative and quantitative information, and rationale for the reporting officer to examine and potentially recommend large-scale improvements. The guidance he heard was if the NED did not produce large-scale improvements, then they ought to look at other ways to justify improvements. (pp. 31-32)

(9) COL Mudd did not find fault with MG Fuhrman's guidance. Part of the briefing was to get headquarters guidance and reaction to the study status. He had no concerns that MG Fuhrman's guidance could be interpreted as identifying a certain study outcome and developing the data to support that outcome because COL Mudd was an objective and take-charge commander. The unbiased and objective analysis of a feasibility study related to generating the NED. There were other qualitative and quantitative factors for the reporting officer to consider. MG Fuhrman's guidance reflected MG Fuhrman's frustration with the study results and how those results were not intuitive when compared with other projects in other places. MG Fuhrman's guidance was an opinion, and he did not have any concerns about COL Mudd's objectivity. (pp. 32-33)

(10) COL Mudd's 2 October 1998 e-mail to Mr. Manguno captured MG Fuhrman's guidance. MG Fuhrman gave guidance that they should err on the high side. If after conducting a risk analysis, there were parameters about which they had

doubt, they should err on the side of making sure the Corps did not create a bottleneck for commerce. MG Fuhrman indicated they were looking into the future 50 years and they should not be conservative about the estimates. He did not think MG Fuhrman's comments caused the study team to do anything inappropriate, but he could see how someone could interpret the guidance as trying to move the study in a certain direction. (pp. 36-38)

(11) The study team needed to go through the rest of the study process and document their findings before they came to a conclusion. The draft feasibility report needed the benefit of legal review and all other types of review before being released for public comment. (p. 74)

(12) He was under pressure every day from industry to come up with a study recommendation that supported large-scale construction. The pressure he felt was from environmental groups as well as the barge industry. (pp. 86-87)

(13) There were frequent expressions of concerns, similar to those expressed by MG Fuhrman, from headquarters about the study results. (p. 89)

(14) The allegations against him were totally false. He established a record that clearly showed that before he acted, he actively sought and received advice from higher headquarters and/or experienced staff to ensure he pursued the study in accordance with rules and regulations. At no time did his actions or directions specify or imply that he would not abide by all laws and regulations. If, inadvertently, laws and regulations were not met, he was confident the Corps' study process would ensure appropriate corrective measures. (Exhibit B-32, p. 114)

4. Discussion:

a. Dr. Sweeney alleged MG Anderson acted improperly during the conduct of the study. Implicit in the standards was the expectation that feasibility studies would be conducted in an impartial and objective manner and formulation of alternatives would be based on the most likely future condition. Army Management philosophy stated that managers would do the right things for the right reason. In this study, that included maintaining the integrity of the process. Additionally, Army leadership principles provided that senior leaders were responsible for considering individual perceptions and their effects in establishing and maintaining a healthy command climate.

b. The evidence established the following:

(1) In September 1998, MG Fuhrman told the study team that they were advocates for inland waterways and navigational improvements were needed. The project manager of the study sent MG Fuhrman's guidance to the study team. They were to develop the economic component for a case that included near-term improvements, recognizing that the nation would be better served by improvements that erred on the large-scale side. MG Anderson indicated MG Fuhrman felt the study team had not done enough to make sure they were making the right decision. He (MG Anderson) indicated MG Fuhrman expressed general disappointment with the study results and said if the results produced so far did not give them the information that intuitively made sense, then they needed to look for other ways to justify the results. MG Fuhrman thought the study results were not aggressive. MG Anderson indicated MG Fuhrman's guidance reflected MG Fuhrman's frustration with the study results and how those results were not intuitive when compared with other projects in other places.

(2) MG Anderson indicated COL Mudd's e-mail to Mr. Manguno captured MG Fuhrman's guidance. If after conducting a risk analysis, there were parameters about which they had doubt, they should err on the side of making sure the Corps did not create a bottleneck for commerce. MG Fuhrman indicated they were looking into the future 50 years and they should not be conservative about their estimates. MG Anderson did not think MG Fuhrman's comments caused the study team to do anything that was inappropriate, but he could see how someone could interpret the guidance as trying to move the study in a certain direction.

c. The preponderance of the evidence established that the study team interpreted MG Fuhrman's guidance as a directive to develop a case for near-term, large-scale improvements. MG Anderson acknowledged that such guidance was given to the study team and that such guidance could be interpreted as moving the study in a certain direction. MG Anderson testified he saw nothing inappropriate with MG Fuhrman's comments and raised no objection to it. MG Fuhrman's guidance had the effect of giving preference for a certain study outcome and then directing that data be developed to support that outcome. MG Anderson testified that MG Fuhrman's guidance was directed toward identification of an alternative to the NED and was not intended as instructions to develop a NED that supported large-scale improvements. However, there was no evidence that indicated that MG Anderson took any action to ensure the study team shared the proper interpretation of the actions they were directed to take. MG Fuhrman's comments and guidance interjected bias into the study process and eventually led to the manipulation of a study variable by the DE.

d. Members of the study team felt they were directed to execute actions that were not consistent with feasibility studies' policy and planning guidelines with the concurrence of the MVD leadership. MG Anderson, by allowing MG Fuhrman's guidance to be executed without clarification, failed to uphold the Army management philosophy of doing the right thing for the right reason. In this case, the right thing was to ensure the study was conducted in an impartial and objective manner.

5. Conclusion: The allegation that MG Anderson improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation was substantiated.

ALLEGATION #4: Mr. Herndon improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

[IO Note: The allegation reflects a range of possible actions to manipulate the UMR-IWW Study based on a disclosure by Dr. Sweeney to the OSC. As the investigation progressed, the issues became more narrowly focused. The evidence, testimony, and discussion below focus on Mr. Herndon's alleged involvement in a 5 and 6 May 1999 meeting referred to as the "economic summit."]

1. Standards: The standards shown for Allegation #1 applied.

2. Documents:

a. In his affidavit, Dr. Sweeney alleged that during a 5 May 1999 Corps' pre-meeting to the economic summit, Mr. Herndon told the Corps' attendees their job was to find a way to justify large-scale projects for the UMR-IWW navigation system. (Exhibit C-1)

b. In a 27 September 1998 e-mail to MG Anderson, Mr. Herndon provided comments on Dr. Sweeney's concerns about the direction of the study effort. Mr. Herndon said they were not "cooking the books," but would be so accused if they recommended construction. (Exhibit W)

c. In a 7 May 1999 e-mail to MG Fuhrman, with a copy to Mr. Herndon, Mr. Burns, Chief Planning Management Branch, HQ, USACE, specified a number of areas of disagreement between the Corps and industry on the study to include the N-value and interpretation of data. (Exhibit X)

d. In an MFR by the IO to document a follow-up phone call, Mr. Carr, Rock Island District, stated he clearly remembered that Mr. Herndon told Mr. Marmorstein, analyst, Saint Louis District, it was Mr. Marmorstein's job to justify projects. (Exhibit Y)]

3. Testimony:

a. Dr. Sweeney testified he briefed MG Anderson and his staff on the study in 1998. He explained why the study would not look like previous analyses because of the broader scope and how the economic model had evolved to address that scope. Based on performance and cost data used in the economic model, the comparison of benefits to cost indicated that large-scale measures did not appear warranted anytime in the foreseeable future. Mr. Herndon and Mr. Rhodes expressed concern that the results were so different from previous studies. He believed Mr. Herndon was involved in directing and changing the study. (Exhibit B-1, pp. 39-40, 102; 3, recall)

b. Mr. Manguno, lead economist for the study, testified:

(1) In a Corps employees only meeting on the day before the 5 May 1999 summit, he believed Mr. Marmorstein said something to the effect that they were supposed to provide the best type of analysis possible, not to produce an outcome or justify projects. He believed Mr. Herndon said no, their job was to justify projects. (p. 92)

(2) The nonpublic nature of the 5 May 1999 economic summit was a deviation from the way the study had been conducted. He could not recall having a similar meeting with environmental groups. He had never before been part of anything like the economic summit. He thought the purpose of the economic summit was to allow industry an opportunity to express concerns over the specific demand elasticities used as their best estimates. Industry offered several proposals as alternative views on what the elasticities might be, but the study team did not feel those estimates were valid. (pp. 92-96; 27, recall)

(3) The summit was promoted as an information exchange with industry. However, it was anything but that. The meeting was an attack on the study team with the intent of getting them to see a different point of view. None of the Corps leaders present, to include Mr. Herndon, did anything to intercede or moderate. (pp. 25-26, recall)

(4) Based on the sequence of events occurring after the economic summit, he thought the Corps had influenced the study to arrive at a certain outcome. Those events included timing of the N-value change, change in contingency costs, and addition of rehabilitation cost avoidance. (Exhibit B-2, pp. 27-28, recall)

c. Mr. Marmorstein, analyst, Saint Louis District, testified Mr. Herndon, in a Corps pre-meeting, said something to the effect that the Corps should take what industry had prepared for them, go back to their offices, and justify locks and dams. He responded that he did not think it was their job to justify locks and dams. He thought their job was to do the best analysis they could do. Mr. Herndon, in a noticeably angry way, said that, in fact, their job was to justify locks and dams and they were advocates for the industry. He recalled that Mr. Manguno, Mr. Loss, and others were present. He did not believe there were any uniformed military officers present. (Exhibit B-3, pp. 2-3, 2nd recall)

d. Mr. Kitch, HQ, USACE, testified:

(1) He did not hear anything concerning the May 1999 Corps/industry meeting about Mr. Herndon telling attendees their job was to find a way to justify large-scale navigation projects. It would not have surprised him that such a statement would be made because it was part of the culture and assumed mandate to provide for industry and build things. In other conversations with Mr. Herndon that sentiment had been expressed. (pp. 53-54)

(2) The final review of the study had not been done, but based on the way the study was conducted, he thought there were many cases that were not consistent with the letter of their regulations and certainly not the spirit. He thought Mr. Herndon was an advocate for industry; and when Mr. Herndon took over MVD, Mr. Herndon was in favor of coming in with an answer that supported construction. (Exhibit B-5, pp. 68, 71)

e. Mr. Conner, economist, HQ, USACE, testified at the May 1999 economic summit meeting one of the specific things that was asked was "what N-value do you need to justify this project?" He was not positive, but Mr. Rhodes or Mr. Herndon could have asked the question. (Exhibit B-6, p. 27-28)

f. COL Mudd testified he believed meeting with industry in May 1999 was appropriate because there had been frequent informal contact with industry, environmental, and public groups throughout the study. He would have preferred the May meetings to have been more balanced. Someone from Division Headquarters,

either Mr. Rhodes or Mr. Herndon, told him to go listen to industry. (Exhibit B-32, pp. 78, 83-86)

g. Mr. Cone, Policy Division, HQ, USACE, testified:

(1) He attended the summit in Saint Louis. Prior to the meeting there was an exchange of papers between the Corps economics staff and the barge industry and their consultants on specific economic issues and concerns. Some of the critiques of each other's work were ugly. Mr. Manguno, the study's lead economist, was under considerable pressure from Mr. Herndon and others to accommodate industry's views. He believed Mr. Herndon conducted the meeting. The discussion at the meeting indicated the study was "in big trouble." He sensed the thrust of the meeting was to get closer to the barge industry's position. (pp. 13-15, 29)

(2) Some of the leaders in the MVD saw the study as a "giant construction opportunity." He felt the economics work group was trying to be honest brokers. (pp. 30-31)

(3) He was surprised the project had "miraculously" justified new construction since the meetings in 1999. There were three significant changes to the study in June 1999: a reduction in the N-value from 1.5 to 1.2, cost reductions, and rehabilitation cost avoidance. The economic work group had been insistent the N-value be no lower than 1.5, but they backed off that position. There was pressure, and he suspected, coercion, placed on the study team. (Exhibit B-17, pp. 5-7; 34, recall)

h. Mr. Hanson testified that during the 4 and 5 May 1999 summit meeting, he had no recollection of Mr. Herndon saying words to the effect that "Corps should let industry tell us how to get this project." He had heard Mr. Herndon make similar comments. Mr. Herndon was aggressively proactive in pursuing a construction solution. Mr. Herndon had a way of saying inscrutable things and not leaving e-mails. Mr. Herndon would always have someone like him (Mr. Hanson) leave the tracks. He thought Mr. Herndon felt the business of the Corps was construction of major capital improvements. (Exhibit B-36, pp. 62- 64)

i. Mr. Loss testified he attended both summit meetings. Upon being questioned specifically about the "Corps employees only" meeting and the exchange between Mr. Herndon and Mr. Marmorstein, an analyst from the Saint Louis District, he replied that there may have been such a meeting. Concerning the exchange he replied, "If Don Herndon said that-- uh-- he may have, and I don't recall that." Industry representatives

questioned the study team's assumptions that caused the study team to think they might have underestimated rehabilitation savings. The team members "went back to the drawing board to further sharpen our pencils on those assumptions." The goal was to find out if there was an alternative that was justified. Some members of the study team suggested they invite other parties to the summit. He believed Mr. Herndon came back and said they should keep the meeting on the current issues and resolve them. (Exhibit B-37, pp. 49-54)

j. MG Anderson testified:

(1) The idea to hold a summit came from Mr. Barry Palmer, Executive Vice President of DYNAMO. Mr. Palmer told Mr. Herndon the navigation industry wanted to have a summit to talk about the study. Mr. Herndon recommended they meet. (pp. 41-42)

(2) The summit was held on 4-5 May 1999 in Saint Louis and was unpleasant. The industry representatives made insulting comments about the professionalism of the study, and the study team sat there and took it. (p. 43)

(3) The meeting with industry was not a public meeting. He did not think there was anything inappropriate about meeting with industry in such a forum. He previously met both publicly and privately with different interest groups. (pp. 44-45)

(4) He did not remember all the economic components that were changed as a result of the two meetings with industry. There were changes made to contingency percentages. Prior to the meeting with industry, the study team did not have a NED for large-scale improvements. He also did not know after the meeting if the changes resulted in a NED that justified large-scale improvements. (p. 48)

(5) The navigation industry wanted 12 new locks and they did not care whether the Corps could economically justify them. Industry felt it was intuitively obvious that the 60-year-old locks should be replaced. Industry pointed to the improved 1200-foot locks on the Ohio River system. (Exhibit B-32, p. 51)

k. Mr. Cook, President, National Waterways Conference, testified he attended the summit meeting in Saint Louis. The industry representatives were concerned the assumptions made by the Corps "were not real world. They were half-cocked and not representative of what was really happening in the grain industry." (Exhibit B-28, pp. 23-24)

I. After being advised of his rights, Mr. Herndon testified:

(1) His involvement in the study was limited to resolving issues, differences, priorities or make decisions on behalf of MVD. He followed the study closely because of its magnitude and importance. (pp. 8-9)

(2) In response to a question of whether the Corps could be an advocate and simultaneously be an honest broker conducting a fair and objective study, he replied, "Absolutely." Advocacy meant the Corps was the responsible agent. (pp. 10-11, 13)

(3) In April 1998, he saw Dr. Sweeney brief how farmers were responsive to price changes in barge transportation. He thought there were a variety of factors affecting a farmer's choice of grain use. He was of the opinion that Dr. Sweeney was either unable or unwilling, or both, to provide that type of information. (pp. 15-17)

(4) It was not possible for the Corps to "cook the books" because such action required many employees to act in collusion and all actions were open to public scrutiny. (pp. 18-19)

(5) They viewed the model results as counter-intuitive. There were early indications the benefits-cost ratio would show that construction was not needed until 2020 or 2030. After the model produced unexpected results, they examined the analysis more carefully. Even if the results had been more in line with what was expected, he believed the Corps would have evaluated them because critics of large-scale measures would have demanded to know how those results were derived. (pp. 22-24)

(6) They conducted a parallel effort to evaluate alternatives when the study team's preliminary results provided unexpected results. They wanted to ensure they had the correct NED. After developing the correct NED, the study team was to explore the results' sensitivity to changes in the input data and assumptions. (pp. 27-28)

(7) He attended the 5-6 May 1999 summit. The meeting was appropriate because industry was getting different answers and industry had technical questions. He did not say, at a pre-brief or the conference, that it was the job of Corps employees to find a way to build projects. He recalled a disagreement with a Corps employee from Saint Louis. He misinterpreted an employee's statement. He thought the employee characterized some of the input as frivolous. He wanted to ensure that industry

representatives would be listened to with courtesy. He later apologized to the employee. He did not recall COL Mudd stating a specific N-value at the meeting. (pp. 30-35)

(8) It was a pressure-packed meeting for the study team members. It was a harsh meeting, but the technical discussions were quite good. He spoke to Mr. Palmer and Mr. Brescia, both from the navigation industry, about the conduct of the meeting and told them it was a blunder to put that type of pressure on the Corps participants. (pp. 37-38)

(9) Although the Corps was a project-funded organization, there were checks and balances in the system. Within the system he believed the Corps was successful in meeting the nation's waterway needs and the public interest was served. There were projects the Corps never recommended for action that irritated powerful political leaders. (Exhibit B-33, pp. 54-57)

4. Discussion:

a. Dr. Sweeney alleged Mr. Herndon acted improperly during the conduct of the study. Regulations expected that feasibility studies would be conducted in an impartial and objective manner and formulation of alternatives would be based on the most likely future condition. Army Management philosophy stated that managers would do the right things for the right reasons.

b. Evidence established:

(1) In April 1998, the preliminary economic analysis indicated no large-scale construction measures were warranted. Mr. Herndon thought the results were counter-intuitive.

(2) MG Anderson testified the barge industry contacted Mr. Herndon to seek an economic summit. COL Mudd testified someone in MVD Headquarters, either Mr. Herndon or Mr. Rhodes, directed him to meet with industry.

(3) Mr. Herndon attended the "Corps employees only" meeting prior to the 5-6 May 1999 economic summit. Mr. Manguno, Mr. Carr, and Mr. Marmorstein, all members of the study team, testified or stated Mr. Herndon told Mr. Marmorstein his job was to justify locks and dams. Mr. Herndon denied giving that direction, but he recalled a misunderstanding with one of the economists.

(4) The 5-6 May 1999 summit meeting was considered to be antagonistic by many of the participants. Mr. Herndon testified he told industry representatives it was a blunder to put such pressure on the Corps participants.

c. The preponderance of the evidence indicated Mr. Herndon had a bias towards new construction, but did not establish Mr. Herndon directed any improper actions. In a Corps only pre-meeting, he was involved in a controversial incident relating to the study in which he argued with one of the Corps economists. There was conflicting testimony concerning the nature of the exchange between him and Mr. Marmorstein. Three witnesses asserted that Mr. Herndon told Mr. Marmorstein they were to accept the analysis offered by the barge industry and use that analysis to justify new construction. Assuming the assertion to be accurate, the mutual acrimony in the subsequent meeting and the steadfastness of the Corps economists in their analysis indicated that it was simply a personal exchange that had no impact on the study. There was no evidence Mr. Herndon acted to force a change in analysis on the study team.

5. Conclusion: The allegation that Mr. Herndon improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation was not substantiated.

ALLEGATION #5: COL Mudd improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

1. Standards: The standards shown for Allegation #1 applied. In addition, AR 5-1, paragraph 1-4b(1) and (3), provided that the Army management philosophy was to do the right things, the right way, for the right reasons. Leaders, commanders, and managers at all levels would implement the Army management philosophy through providing a clear vision and ensuring efficient stewardship of and accountability for resources. (Exhibit D-1)

2. Documents:

a. In his 1 February 2000 affidavit to OSC, Dr. Sweeney alleged COL Mudd directed UMR study actions in violation of law and regulation. (Exhibit C-1)

b. In a 2 October 1998 e-mail to Mr. Manguno, lead economist for the study, COL Mudd directed Mr. Manguno to develop "the economic component of the case for a recommendation that included near-term improvements, recognizing that the nation was better served by improvements that erred on the large-scale side than by actions that erred on the underdeveloped side." (Exhibit V)

c. In a series of e-mails dated 9 June through 23 June 1999, numerous Corps officials sought an explanation of why the N-value changed from 1.5 to 1.2. Mr. Manguno explained how the N-value of 1.2 was derived but did not indicate in his explanation that he developed the value. (Exhibit Z)

d. In a 13 April 2000 affidavit to Congress, Mr. Manguno stated in March 1999 the N-value he selected for the study was 1.5. Both the 1.5 value and earlier grain N-values did not justify lock expansion. Mr. Manguno stated in May 1999 COL Mudd directed Mr. Manguno to use an N-value of 1.2. Mr. Manguno also said in his affidavit: "Given the current state of the Study's investigation into the subject of waterway demand price elasticities, I cannot conclude that the waterway demand price elasticity that corresponds to an N of 1.2 for grain falls outside of my notion of the uncertainty bounds surrounding the actual elasticity values." (Exhibit AA)

e. In a 2 November 1998 e-mail to COL Mudd, Mr. Manguno outlined for COL Mudd a weighted average methodology for deriving the coal N-value. (Exhibit BB)

[IO note: Because the methodology used for the coal N-value looked exactly like what COL Mudd asserted for grain in May 1999, and because the coal methodology occurred about 7 months before COL Mudd directed the use of the same methodology for grain, Mr. Manguno was asked to explain why he sent an e-mail using a methodology for coal that he believed inappropriate for grain. He stated the coal methodology was designed solely to meet a short-suspense tasking to demonstrate model sensitivity at the November 1998 GLC meeting. The method contained in the e-mail was not for explicit use in the economic analysis, nor were the coal N-values used in the economic analysis in the spring of 1999. (Exhibit BB-1)]

f. In a 25 May 1999 e-mail to COL Mudd and others, Mr. Loss stated Mr. Manguno and Mr. Marmorstein were exploring a rationale that could be used to derive an N-value based on the probability distribution of corn from Iowa. (Exhibit CC)

g. In a 1 June 1999 e-mail to COL Mudd and others, Mr. Manguno stated he was unable to reach Mr. Keeney, Deputy District Engineer, Huntington District, to discuss their decision on grain N-values. (Exhibit DD)

[IO note: COL Mudd provided e-mails in which he asserted Mr. Manguno and Mr. Marmorstein were evaluating the shape of the demand curve based on a weighted average approach. The e-mail of 25 May 1999 stating Mr. Manguno and Mr. Marmorstein were "exploring the rationale that could be used to derive an N-value based on the probability of corn from Iowa," was authored by Mr. Loss, was Mr. Loss' assessment, and was not Mr. Manguno's or Mr. Marmorstein's understanding of their task. Mr. Manguno's e-mail of 1 June 1999 in which he stated, "He had not been able to reach Mr. Keeney to discuss our decision on grain N-values," was referring to the study team's decision and not his personal or professional effort in deriving an N-value of 1.2.]

3. Testimony:

a. Dr. Sweeney testified:

(1) He briefed COL Mudd and others on 23 April 1998 on the methodology of the economic model. He explained why the economic analysis provided results different from previous studies. It did not appear that the NED plan was going to involve "locks or anything like a lock for as long as we were all alive." (p. 40)

(2) Mr. Brescia, a navigation industry official, sent COL Mudd an e-mail which stated, " You know, if we go this way and we don't have benefits bigger than cost, we're not going to get these projects, that they're not going to give us the exemption to the Secretarial recommendation that we need these projects." Rather than release the study results in May 1999, Mr. Brescia, through communications with MG Anderson, MG Fuhrman and COL Mudd, asked that industry be given one more chance to come up with favorable study results. That led to the May 1999 set of meetings between the Corps and industry. It was very uncommon for industry to have that kind of input and interaction. (pp. 78-79)

(3) COL Mudd guessed an N-value of 1.2 was the kind of number that needed to be used. COL Mudd was very proud that he figured out what it took. When an N-value of 1.2 was used in conjunction with restricted self-help, decreased contingency costs and newfound rehabilitation savings, those changes resulted in a positive benefits to cost ratio for large-scale construction. (pp. 91-92)

(4) On 10 June 1999, after discussions with Mr. Manguno and other people, he sent COL Mudd an e-mail. He informed COL Mudd the economics panel still existed, and none of the changed benefit and cost data had been shared with the panel. He noted that the study recommendation was radically different than it was back when the panel was actually meeting, and asked COL Mudd if the panel would be reviewing the changes. (p. 95)

(5) During a teleconference on 22 June 1999, COL Mudd had Mr. Manguno read the changes made in the analysis. He had a number of questions not answered by Mr. Manguno, but instead answered by COL Mudd. COL Mudd gave him the analysis to explain how an N-value of 1.2 was derived for grain. He (Dr. Sweeney) told COL Mudd that when nonlinear functions were averaged, you did not average the exponents to obtain a weighted average. COL Mudd requested they send him their written comments. In a 2 July 1999 e-mail to MG Anderson, COL Mudd recommended the Economics panel be disbanded. On 4 July 1999, MG Anderson disbanded the panel. In late July or August 1999, the public saw numbers that for the first time showed benefits for large-scale construction exceeded costs. (Exhibit B-1, pp. 96-97)

b. Mr. Manguno, lead economist for the study, testified:

(1) Mr. Hanson told him about 28 September 1998 that he was the new leader of the economics work group and that MG Fuhrman's guidance was to produce a scenario that resulted in immediate implementation of large-scale measures. He asked Mr. Hanson what he meant. Mr. Hanson said immediate meant near-term which Mr. Manguno took to mean within the next 10 to 15 years. Mr. Hanson said it would include at least five expansions. This made him uneasy, because the guidance was not consistent with regulations. He sent a memo to a number of people, including COL Mudd, expressing concern. COL Mudd responded as described in paragraph 84 of Dr. Sweeney's affidavit. (pp. 76-78).

[IO note: Paragraph 84 quoted COL Mudd's 2 October 1998 memorandum, "To help in the execution of this responsibility, you will develop the economic component of the case for a recommendation that includes near-term improvements, recognizing that the nation is better served by improvements that err on the large-scale side than by actions that err on the underdeveloped side."]

(2) In May 1999, COL Mudd decided the N-value should be 1.2. About 27 May 1999, COL Mudd telephonically told him to use the weighted average methodology to

represent the N-value for grain. The specific value outcome of 1.2 was understood and appreciated by COL Mudd at the time. No economist associated with the study who was working this problem ever reached a conclusion that the most likely N-value for grain was 1.2. On 22 June 1999, in a conference call with COL Mudd, himself, and others, Dr. Sweeney told COL Mudd the new N-value of 1.2 was not correct. (pp. 61-63, 97-99).

(3) On recall, Mr. Manguno was questioned about who calculated the N-Value. He testified as follows: COL Mudd directed the use of 1.2 as N. He (Manguno) did not calculate a value of 1.2, nor did any member of his work group. The math was a simple weighted average of three numbers. He thought everyone knew the specific values. The answer was apparent with the selection of the process. As soon as his conversation with COL Mudd ended, he immediately entered 1.2 into the model and began developing model outputs. The change to an N-value of 1.2 coupled with reductions in cost and inclusion of rehabilitation cost avoidance resulted in a benefit-cost ratio supporting lock extensions. (pp. 19-23, recall)

(4) A June 1999 Corps newsletter stated, "A new benefit cost analysis showed a project involving immediate extension of seven locks now gave more benefits than costs." This was based on the collective result of all of the changes made up to that point. The change of the N-value for grain from 1.5 to 1.2 had the effect of increasing the benefits. The study team changed the contingency cost percentage from 35 to 25, which lowered the cost, and the team included the rehabilitation savings as a benefit category. The collective result of those changes was an outcome that near-term construction of locks had benefits that exceeded costs. Optimization requirements indicated the Corps should do the lock extensions some years into the future to maximize net benefits. Although he was comfortable with the cost figures and self-help percentage, he recommended the N-value be 1.5 not 1.2. (pp. 105-107)

(5) During recall testimony, he testified:

a There was no empirical basis for establishing a grain N-value. (p 9, recall).

b In September 1998 they began evaluating a range of N-values in different scenarios. He understood that it was in preparation for an upcoming GLC to show a range of values using different assumptions. He believed this was done at the direction of Mr. Rhodes but could not recall specifically. It was an exercise of picking values and

observing their consequences. It did nothing to enhance their understanding of what they should be calling their most likely estimates. (Exhibit B-2, pp. 14-16, recall)

[IO Note: In his previous testimony, Mr. Manguno identified the direction as coming from Mr. Hanson. (Exhibit B-2, p. 60)

c The May 1999 meetings with industry were promoted as an information exchange with industry. However, it was far from that, and did not serve as an information exchange. His perception of the meeting was as an attack on the study team with the intent of getting them to change their analysis. None of the Corps leaders present, MG Anderson, MG Van Winkle, Mr. Herndon, Mr. Rhodes, or COL Mudd, did anything to prevent the industry attack on the study team. Based on the events occurring after the meeting with industry, he thought that the Corps had influenced the study to arrive at a certain outcome. (pp. (recall) 25-28)

c. Mr. Marmorstein, analyst, Saint Louis District and study team member, testified:

(1) He attended the economic summit in early May 1999. Barge company executives wanted new locks. What industry proposed was ridiculous and produced results at odds with observable things. You could see congestion and tows lined up, so when you told people there should be 20 tows lined up and there were only two, people knew something was wrong. So in the end, the Corps economists carried the day. (p 26)

(2) There was a follow-up meeting on 11 and 12 May 1999. He, Mr. Manguno, COL Mudd, Mr. Loss, and perhaps Mr. Tipple, met with Mr. Sandor Toth and Mr. Jay Kalk from industry. Mr. Brescia, also from industry, came the second day. Mr. Keeney from the Huntington District was brought in to facilitate. The meeting began with Mr. Loss putting up the cost and benefit numbers for certain measures. Mr. Keeney noted the costs and benefits were not far apart, which they were not then. Mr. Loss recorded suggestions that included all the engineering things: contingency costs, channel improvement costs, cost savings from rehabilitation or maintenance avoided, and perhaps one or two others. (pp. 26-27)

(3) He believed the decisions to make the changes to support large-scale construction were made before any kind of documentation was produced in support. He based his conclusion on notes from a 19 May 1999 team meeting that he did not attend. The notes said adjust rehab costs minus 20; delete optimization of approach

improvements minus 25; reduce contingencies from 35 percent to 25 percent minus 55. He believed the numbers were in place and the analysis, if any, was created to support them. He did not see any way that any kind of appropriate analysis could be done in that time. (pp. 28-29)

[IO note: The notes were an attachment to an e-mail from Mr. Loss, dated 22 May 1999, Subject: FW: Nav Study Notes from May 19 meeting in Minneapolis.]

(4) He invented N-values to quantify the elasticity of demand. The technical people involved in the study had long begged for time and resources to do more research, but COL Mudd refused because it was more important to keep on schedule. Without research, he did not know the right number for N. The N-value was a substitute for not doing the research. He did not know exactly what the demand curves ought to look like, so he drew a demand curve that could be easily adjusted by changing one parameter. When they finally did the research to determine what elasticity demands might be, they could adjust each curve appropriately. The early estimate for N was 2.0, and the panel later established N at 1.5. During the meeting with industry, COL Mudd said the value needed to be 1.2. He thought COL Mudd stated 1.2 was the number needed to support construction. Industry's elasticity proposals were ridiculous. COL Mudd had an explanation for using 1.2, but the rationale for using 1.2 was ridiculous. The 1.2 number was done specifically to obtain a certain result. COL Mudd directed Mr. Manguno to use that number. (pp. 32-37)

(5) The N-value of 1.2, taken together with all the other variables and inputs into the model, predicted 60 hours of delay for the year 2000 at locks 20 through 25 on the UMR. What he was seeing at the time of his testimony (11 April 1999) was around 15 hours of delay. So they were already predicting the problem four times bigger than it actually was. (p. 34)

(6) During recall testimony, he testified:

a Mr. Manguno told him COL Mudd directed Mr. Manguno to use an N-value of 1.2. Mr. Manguno also explained what COL Mudd told him the rationale was for the new value. He believed Mr. Manguno became upset when COL Mudd and others attempted to make Mr. Manguno responsible for the development of the 1.2 N-value. COL Mudd previously mentioned a 1.2 value at a meeting with industry. For any reference in e-mails or memorandums where it said the "study team" determined an N-value of 1.2, that meant someone in the management structure determined it, but not that the economics work group specifically developed it. It was a common practice for

management to refer to controversial decisions as a team decision, especially when there was substantial team disagreement over the decision. (pp. 2-4, 10-11, recall)

b The math used to develop 1.2 as a value for N was flawed. Although COL Mudd was told of the flaws in deriving an N of 1.2, it was still used in the model. He never saw a mathematical justification for an N of 1.2. (pp. 4-5, 9, recall)

c There was no empirical data to support 1.2, 1.5, or 2.0 as N-values. There were requests to gather more data, but they were denied. The expert elicitation panel recommended a call for more data. (pp. 5-9, 20-21, recall)

d Because of the number of modeling runs, people were starting to see enough inputs and outputs to get a feeling of how they related. An individual could have an idea of what kind of benefits certain changes would generate. (Exhibit B-3, pp. 12-13, recall)

d. Mr. Daniel, former planner, HQ, USACE, testified there was a strong bias for big construction on the Upper Mississippi. He thought a lot of pressure was put on people to come up with an answer that supported construction. The pressure started at the top and came down through the entire organization to include the divisions and districts. There was a bias to keep people employed. He sensed that COL Mudd and others did not want to understand or did not want to admit that they understood that they were putting undue pressure on people. (Exhibit B-4, pp. 10, 11, 31)

e. Mr. Kitch, HQ, USACE, testified:

(1) Dr. Sweeney used his model to look at grain traffic and destinations in a more sophisticated manner. At one of the formulation meetings after Dr. Sweeney presented what the model was doing, there was a great deal of consternation in the group present. There were not a lot of benefits that meant 1200-foot locks were not going to be built everywhere. Some folks were very upset because they felt their mission and the Corps' job was to provide what industry wanted, which was 1200-foot locks. (p. 16)

(2) Dr. Burton of Marshall University, Dr. Sweeney, and other folks he had talked to generally seemed to think the N-value was between 1.5 and 2. If you went lower, you should see delays that were not being seen. An N-value of 1.2 was probably at the far end of the range of possible values that would give the most benefits. It was his opinion that the N-value of 1.2 was reverse engineered. (Exhibit B-5, pp. 26-29)

f. Mr. Conner, economist, HQ, USACE, testified:

(1) Dr. Sweeney's model was far superior to anything the Corps previously had used on inland navigation. However, there were problems with the model. The nature of the data required by the model made it incredibly costly. There was a limited amount of data. The model was not perfect, but it was closer than what they had been doing. (p. 12)

(2) He found it amazing the Corps met in isolation with industry in May 1999. The meeting was conducted as an attack on the Corps analysis in the study. There were numerous presentations by industry-contracted personnel presenting ludicrous analytic results. The meeting made the Corps look like it conspired to fix a product, and you could argue at some level some of the managers were doing something close to that. (pp. 21-24)

(3) The model value representing elasticity was dropped to 1.2 after the meeting with industry. This value was not consistent with the economics panel's recommended value of 1.5 in September 1998. The first he heard of a 1.2 elasticity value was the second day of the meeting. He believed COL Mudd said, "I know what N is; it's 1.2." He thought COL Mudd was facetious, but a couple of months later the N-value was changed to 1.2. (pp. 25-27)

(4) COL Mudd's analysis of N=1.2 was wrong because you could not use a linear weighted average to come up with an exponent in that type of equation. (Exhibit B-6, p. 29)

g. Mr. Soyke, economist, Rock Island District, testified:

(1) He was at a meeting between the economics panel and state agricultural experts on 7 August 1998. After much discussion, the general consensus was the N-value for grain was between 1 and 2. In a subsequent meeting, the panel compromised on a grain N-value of 1.5. That was an acceptable number given that they were to perform sensitivity analysis. (pp. 29-31)

(2) He saw COL Mudd's 2 October 1998 memorandum tasking Mr. Manguno, the study's lead economist, to develop a recommendation that included near-term improvements. He understood they should do that, but nowhere did he read they should develop a NED plan along those lines. With wide variability in the assumptions and substantial uncertainty about traffic forecasts, there was no right answer. There

were many different valid assumptions, so why err on the low side when there was no right answer? (pp. 40-41)

(3) He did not attend the May 1999 summit, but he was aware of how COL Mudd arrived at an N-value for grain of 1.2. Using one N-value based on data from Iowa did not make sense when applied to Illinois, but there was no other data. Illinois should have had very low elasticity since 90 percent of the state was within 50 miles of the navigation system. COL Mudd did his own calculations to derive an N-value of 1.2 and then asked him to review it. He thought the calculations seemed reasonable because there was no better information. His impression was Mr. Manguno was a little concerned about COL Mudd's N-value number. (Exhibit B-7, pp. 42-45)

h. Mr. Thompson, planner, Rock Island District, testified:

(1) After being asked, he acknowledged he prepared the minutes for a navigation study team meeting held on 19 April 1999 in Rosemont, IL. The minutes indicated that after implementing the 5 percent self-help restriction and reducing the grain N-value to 1.5, the analysis determined only small-scale improvements were warranted. The small-scale improvements were mooring cells and guide wall extensions with powered kevels. Mr. Manguno reported improvements in the IWW did not appear justified. (pp. 38-40).

(2) He helped prepare a June 1999 newsletter that reported the new benefit-cost analysis justified a project involving the immediate extension of seven locks. At a July 1999 public meeting, Corps officials announced the same results published in the newsletter. Immediate, expensive major structural changes to the navigation system were justified. He believed those announcements originally were to include a caution that the analysis was incomplete and did not include environmental costs that might reduce or eliminate the existing benefit. He was surprised the caution was omitted from both presentations. (Exhibit B-10, pp. 52-54)

i. Ms. Karnish, Chief, Economics Branch, Saint Louis District, testified she heard COL Mudd speculate on what N should be while attending the summit in May 1999. She thought he was joking and did not recall if he specifically stated 1.2 was the value. COL Mudd probably directed Mr. Manguno, the study's lead economist, to use 1.2 in the economic analysis, and she believed he (COL Mudd) used a reasonable process to determine the final N-value. (Exhibit B-11, pp. 20-22)

j. Mr. Carr testified:

(1) The economics panel contracted an expert elicitation panel to determine the N-value. The expert elicitation panel concluded N was somewhere between 1 and 2. The economics panel also contracted with Dr. Burton of Marshall University to examine N-values and the shape of demand curves for all commodities. Dr. Burton estimated grain was very elastic and should have a N-value of 2. The panel used Dr. Burton's values for every commodity but grain. Mr. Manguno told him COL Mudd developed the N-value of 1.2 and directed its use. That value contradicted the findings of the expert panel and the study. He believed Mr. Manguno was uncomfortable with the 1.2 N-value because it was not the most likely value. (pp. 15-21).

(2) He was uncomfortable at the 5 May 1999 summit because the Corps was too receptive to industry's point of view. It was a closed meeting, and it was intimidating for him. While the Corps should listen to all points of view, he believed it improper to "trot the analysts out in front of industry." The Corps leadership did not say anything at the meeting on behalf of the analysts and the work the analysts had done. (Exhibit B-26, pp. 28-32)

k. Mr. Hughey, engineer, Saint Louis District, testified that in 1998, the economic model results indicated small-scale measures were justified. However, in 1999 the economic model results justified large-scale lock extensions for five locks. The specific changes occurred after a meeting with industry in May 1999. (Exhibit B-20, pp. 14-15, 44)

l. Mr. Arnold, program manager, MVD, testified he did not understand the technicalities for elasticity in grain shipments, so he could not really comment on whether there was a valid procedure for deriving 1.2 as the eventual number. (Exhibit B-24, p. 15)

m. Mr. Burns, Chief Planning Management Branch, HQ, USACE, testified that although he thought industry representatives were very critical of the Corps analysis during the 5 May 1999 summit meeting, he did not think the meeting was improper. He asked about the N-value of 1.2 around 10 June 1999. He was concerned because he never saw any empirical evidence supporting any value for N. He thought the weighted average was performed by Mr. Manguno or by members of the economic workgroup. (Exhibit B-25, pp. 15-16, 19-20)

n. Mr. Lundberg, engineer, Rock Island District, testified that following the summits in May 1999, Mr. Loss asked if they were absolutely sure they captured all of the benefit

categories in the economic analysis and if they were sure about the costs. Mr. Loss' questions caused them to relook some things. He put together some thoughts on how they would do it and sent a copy to COL Mudd. COL Mudd did not direct them to change numbers, but COL Mudd did challenge them to make sure they had researched all areas. He (Mr. Lundberg) thought their job was to provide all the information and options to Congress, and let them decide what needed to be done. (Exhibit B-18, pp. 25, 29-32)

o. Mr. Gmitro testified:

(1) He was the project manager for the study from April 1995 to April 1998. COL Mudd replaced him with Mr. Hanson because COL Mudd told him the need for quality control work and economics model development required a more senior person. He was never counseled nor told that anyone was dissatisfied with his work. He told COL Mudd the changes in the study team and modeling were inappropriate. COL Mudd disagreed. He believed COL Mudd inappropriately influenced the study and should not have involved himself in the study team's business. COL Mudd's motivation appeared to be the contact he had with industry. (pp. 3-4, 27, 38, 40-41)

(2) There were objections because the model results did not show there was a need to build new locks very soon. Industry, especially Mr. Brescia, was "heavily pounding the Corps" to change the model to justify immediate construction of new locks. There were also critics of the Corps' economic model. (pp. 5-7)

(3) He believed all actions after April 1998 were directed at working to justify locks. He believed any alteration of the economic model was wrong and Mr. Hanson and Mr. Rhodes pushed for that. He believed MG Anderson and COL Mudd were aware of those actions and did not respond correctly. (Exhibit B-14, pp. 16-18)

p. Mr. Herndon testified he believed the 5-6 May 1999 summit was appropriate because it addressed legitimate concerns raised by industry about study methods and analysis. He did not recall COL Mudd stating a specific N-value at the meeting. (Exhibit B-33, pp. 30-38)

q. Mr. Cone, Policy Division, HQ, USACE, testified:

(1) He was very impressed with the economic model developed for the study. Its biggest weakness was the need for sufficient data to determine the demand curve for grain. (pp. 8-12, 19-21)

(2) He attended the summit in Saint Louis. The critiques of each other's work were ugly. Mr. Manguno appeared under considerable pressure from COL Mudd and others to accommodate the barge industry's views. There was discussion at the meeting about what specific N-value supported large-scale construction. He did not recall COL Mudd stating a specific N-value of 1.2 at the meeting. He believed the mathematical process used to develop an N-value of 1.2 was nonsense. (pp. 13-17, 26-28, 32, 33)

(3) The next time he saw any study results was when the Headquarters Review occurred. He was surprised the project had "miraculously" justified new construction since the meetings in 1999. There were three significant changes to the UMR study in June 1999: a reduction in the N-value from 1.5 to 1.2, cost reductions, and rehabilitation cost avoidance. The economic work group had been insistent the N-value be no lower than 1.5, so he was surprised to see a value of 1.2 adopted. There was substantial pressure, and he suspected coercion, placed on the study team at the summit to reduce costs and adjust the N-value. (Exhibit B-17, pp. 34-37; 5-7, recall)

r. Mr. Rhodes testified he would not have written about MG Fuhrman's comments the same way COL Mudd did in a 2 October 1998 message. He thought there was a misconception about what MG Fuhrman wanted done. He was comfortable with taking the mid-point, 1.5, as the N-value, but COL Mudd did not think it was very mathematically sophisticated and they could do better. (Exhibit B-35, pp. 92, 109)

s. Mr. Hanson testified:

(1) At the request of COL Mudd, he prepared large parts of COL Mudd's 2 October 1998 message to Mr. Manguno, the study's lead economist. He did not recall or think he prepared the part about developing a single set of assumptions to support a specific scenario, nor was he an advocate of that point of view. (p. 60)

(2) Prior to the May 1999 meeting between the Corps and industry, they were scheduled for public disclosure of the study findings. Mr. Brescia, a navigation industry official, pulled some strings and got the public meetings postponed. He thought the meeting with industry was appropriate because industry had a legitimate interest in the study outcome. (pp. 66-67)

(3) COL Mudd made the decision on which N-value to use in the analysis. (Exhibit B-36, p. 70)

t. Mr. Loss testified the study team had difficulty estimating the N-value. Dr. Sweeney's original estimation was N = 2.0, an expert elicitation panel determined there was a need for considerably more data and that the N-value should be somewhere between 1 and 2. Mr. Manguno concluded the value should be 1.5. Although he could not validate it, he thought 1.2 was a reasonable "middle-of-the-road estimate." At COL Mudd's request, Mr. Manguno used a weighted average approach to calculate the N-value of 1.2. COL Mudd subsequently recommended to MG Anderson that the study team use the N-value of 1.2, which MG Anderson approved. He was in a teleconference with COL Mudd and Mr. Manguno about 27 May 1999 where they discussed the calculation of the N-value. The study team conducted "what if" drills to determine what value of N would produce net positive benefits for large-scale construction. COL Mudd predicted the value that would justify large-scale construction would be 1.25. He understood the weighted average approach was mathematically flawed, but he accepted the result of that approach since the value fell within the accepted range of 1.0 to 2.0. Net benefits of $16 million were announced at a public meeting in July 1999 for a number of alternatives with an N of 1.2. (Exhibit B-37, pp. 28-34, 52-53, 65-66)

u. MG Anderson testified:

(1) COL Mudd's 2 October 1998 e-mail to Mr. Manguno captured MG Fuhrman's guidance. MG Fuhrman gave guidance that they should err on the high side. If after conducting a risk analysis, there were parameters about which they had doubt, they should err on the side of making sure the Corps did not create a bottleneck for commerce. (p. 36)

(2) COL Mudd explained the methodology used to derive an N-value of 1.2 but did not tell him there was a mathematical problem with it. The ITR defined the value as somewhere between 1 and 2. He read in Mr. Manguno's affidavit that Mr. Manguno recommended an N-value of 1.5. However, when COL Mudd told him that he (COL Mudd) had a reasonable and defensible N-value of 1.2, that seemed all right because it was within the range established by the ITR. (pp. 56-57)

(3) When COL Mudd gave him the recommendation to use an N-value of 1.2 in June 1999, he knew using that value would generate large-scale improvements such as lock extensions on the UMR. (Exhibit B-32, p. 94)

v. Mr. Cook, President, National Waterways Conference, testified he attended the summit meeting in Saint Louis. He did not recall COL Mudd taking any position on grain elasticity or on what the N-value should be. (Exhibit B-28, pp. 23-25)

w. After being advised of his rights, COL Mudd testified:

(1) After assuming command in July 1997, he asked Mr. Gmitro, then the study's project manager, why the study was under-executed and where the study stood in terms of accomplishments. Several delays in the study ensued under Mr. Gmitro. By January, he determined Mr. Gmitro could not handle the responsibilities of project manager. (pp. 3, 5, 131-133, 178)

(2) He believed the study was not in accordance with regulations in May 1999 when he attended a summit with industry and learned the model elasticity of 1.5 was developed because "it was the midpoint between 1 and 2, gave good results, and made the study team's economists feel good about the results." He then developed a methodology he believed was more appropriate and reasonable for representing the elasticity of corn in the study. (pp. 9-12)

(3) He knew the expert elicitation panel developed the N-value at 1.5 in August 1998, and it was accepted by the economics panel. Initially, he believed the panel selected 1.5 for analytic reasons since the panel did not explain to him the details of how 1.5 was derived. Later, he learned that the N-value of 1.5 was merely picked because "it was in the middle" and "it gave believable results from the model." The 1.5 N-value received substantial barge industry criticism throughout the rest of 1998 and into early 1999, which resulted in the May 1999 summit. The directive to meet with industry came from his higher headquarters. The meeting seemed to be "Corps bashing" by the barge industry. There was a follow-up industry meeting between the economists a week later. It was a working meeting designed to get into the details of the N-value. At that meeting he outlined a methodology using a weighted average approach for grain moving to the river for shipment. A data requirements discussion identified Illinois grain data as crucial to the study effort. He believed Mr. Soyke gave the study team Illinois grain data. (pp. 13-19, 62-63, 111)

(4) He attended the 23 September 1998 meeting in which MG Fuhrman provided guidance on the study. He interpreted the guidance as meaning the American public was getting impatient for the study results, and the study team had not considered other factors in the analysis. He heard MG Fuhrman state the Corps was an advocate of inland waterways and he interpreted advocacy as appropriate for obtaining funds to

maintain his existing structures, and, in the context of a study, that the analysis should include those factors outside the immediate analysis of the NED. At the same meeting, Mr. Sanford, Military Programs Director, HQ, USACE, said the biggest risk to the nation was to under build. The guidance was misinterpreted by Mr. Hanson, but corrected by Mr. Kitch, a branch chief at HQ, USACE. He clarified Mr. Manguno's tasks in a 2 October 1998 e-mail when he said to find a "reasonable, plausible, feasible option that opens up the public discussion." His e-mail also said to err on the large-scale side in recommending near-term improvements, and he directed Mr. Manguno to seek additional economic data for grain. He was not aware of any data collection efforts prior to his assumption of command in July 1997. (pp. 32-38, 42)

(5) He believed the study was significantly behind schedule as of June 1998. MG Anderson appointed an economics panel, with Mr. Hanson as the chairman, to help the economics work group meet the timelines. MG Anderson sent a message to the involved district commanders that they must support the study. (pp. 47-49)

(6) The 1998 economics panel was formed to get the study back on schedule within 90 days. The time constraint responded to public criticism that the Corps was behind schedule, but the economics panel failed to achieve its tasks within that timeframe. The panel searched for data on justification of an N-value, developed a range of alternatives, and prepared a briefing for 23 September 1998 to inform management of study status. (pp. 53-56, 60-61)

(7) He believed meeting with industry in May 1999 was appropriate because there had been frequent informal contacts with industry, environmental groups, and public groups throughout the study. He was uncomfortable at the May meetings and would have preferred the meetings be more balanced. Either Mr. Rhodes or Mr. Herndon told him to listen to industry and get their grievances about the study. The meeting in Saint Louis turned into a shouting match. There was substantial distrust of the motivations of the barge industry because they wanted many 1200-foot locks. He realized at the Chicago meeting that an N-value of 1.5 was not based on analytic results. (pp. 68-69, 83-86)

(8) He had some contact with industry representatives. Mr. Brescia e-mailed him in March 1999 and expressed disgust with the Corps' analysis in the study. He told Mr. Brescia he might have to go to Congress to make a case for lock construction if the study results did not justify construction. Mr. Brescia could not understand why the reconnaissance study and the General Equilibrium Model recommended major improvements, but the SEM recommended only small-scale measures. Mr. Brescia

identified areas of serious weakness within the SEM. He (COL Mudd) was dissatisfied with the SEM because he could not calibrate it and he was concerned that it was inconsistent with a prior study. (pp. 25-26, 72-75)

(9) He did not believe the 5 May 1999 meeting turned ugly, but he did believe the study team took some cheap shots from barge industry attendees. The study team took the criticism personally because they had worked hard to do the study right. He and MG Anderson talked to the study team after the meeting to boost morale and restore their self-confidence. He thought the working environment in the Upper Mississippi River area was very different than what was normal in the rest of the Corps. "I mean we have really embraced all the partners, okay?" (pp. 87-91)

(10) During the 5 May 1999 meeting, he joked with Mr. Rhodes that he believed the N-value justifying large-scale improvements was 1.25. This was in response to a question from Mr. Rhodes. He guessed 1.25 as appropriate because he saw numerous model output results dating to the fall of 1998 that had 1.25 in the range of possibility for large-scale construction. (pp. 91-93)

(11) At the conclusion of the Chicago meeting a week later, he used a chart pack to outline a methodology for deriving the N-value. That methodology used 1.25 as an illustrative example. Mr. Manguno provided him the methodology to find the weighted average. (pp. 95, 126)

[IO note: Pages 126-127 of COL Mudd's testimony conflict. He alternately stated he developed the methodology resulting in a N-value of 1.2 and that Mr. Manguno or Mr. Marmorstein developed the methodology. In pages 106-108 and 110-112, he again stated he developed the methodology and expected the economics work group to develop the specific N-value resulting from the new methodology.]

(12) Study efforts went through multiple ITRs. The reduction in the contingency costs from 35 percent to 25 percent was not an ITR product yet, but he believed it was part of the ongoing Headquarters Review of the study. The rehabilitation cost avoidance analysis was also expected to have an ITR by the headquarters. The environmental costs analysis was not complete as of around May 1999 or even as recently as March 2000. (pp. 100-103, 105)

(13) In a telephone call with Mr. Loss and Mr. Manguno, the study's lead economist, on or about 23 May 1999, he directed a methodology be used that applied a weighted average to the Iowa corn data for the development of an N-value. In that

discussion he explained the methodology using the illustrative example of N equal to 1.25, as he had done earlier in Chicago. He did not care what the actual value was, nor did he direct a specific value of 1.2. He expected Mr. Manguno and Mr. Marmorstein to do the detailed analysis resulting in an appropriate N-value using the new methodology. He thought they did the analysis. The decision to use 1.2 was a study team decision. "At no time did I tell those two gentlemen, 'Go find 1.2 and make it work.'" He then recommended to MG Anderson that 1.2 be adopted, and MG Anderson concurred. The 22 June 1999 e-mail from Mr. Manguno to Mr. Loss explained how Mr. Manguno and Mr. Marmorstein developed the weighted average approach deriving an N of 1.2. (Exhibit B-34, pp. 106-108, 110, 112-113, 166-170)

[IO Note: Mr. Manguno prepared the 22 June 1999 e-mail, but did not state he did the analysis supporting the explanation contained in the e-mail.]

[IO note: Following his testimony, COL Mudd provided the IO with several documents. Some of those have been referenced as individual exhibits. Others were reviewed but not referred to in the ROI. Those not referenced were placed in Exhibit AI.)

4. Discussion:

a. Dr. Sweeney alleged COL Mudd was responsible for attempts to circumvent Corps guidance concerning the evaluation of projects and was responsible for changing the UMR-IWW navigational study. Implicit in the standards was the expectation that feasibility studies would be conducted in an impartial and objective manner and formulation of alternatives would be based on the most likely future condition. Army Management philosophy stated that managers would do the right things for the right reasons.

b. The evidence established:

(1) COL Mudd directed Mr. Manguno to develop economic analysis supporting an alternative supporting large-scale construction where there was no previous analysis to support such a recommendation. At the time of the 2 October 1998 e-mail directing that action, the economic analysis indicated only small-scale measures were justified.

(2) COL Mudd directed the use of a specific N-value. COL Mudd testified he directed only a methodology and used an illustrative example that resulted in an N-value of 1.25. However, numerous individuals heard COL Mudd state N should be 1.2 at the 5 May 1999 meeting. COL Mudd testified he used a chart pack to illustrate the

new N-value methodology and derived a value of 1.25 for N at the 11-12 May 1999 summit meeting. Mr. Soyke testified COL Mudd did the math for 1.2 and asked him (Mr. Soyke) to look it over. Mr. Hanson testified COL Mudd directed the use of 1.2 in the study. Mr. Manguno testified he never derived an N-value of 1.2, an assertion consistent with his Congressional affidavit. Mr. Marmorstein testified he never developed any analysis supporting an N of 1.2.

c. The preponderance of the evidence indicated COL Mudd directed the change in the N-value from 1.5 to 1.2. He directed the change knowing the new N-value was contrary to the advice of the experts on the economic study team, that it was based on flawed mathematics, and that it lacked a valid empirical foundation. The evidence also demonstrated that COL Mudd knew the effect of changing the N-value was that lock extensions would be economically justified where they previously were not.

5. Conclusion: The allegation that COL Mudd improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation was substantiated.

ALLEGATION #6: Mr. Rhodes improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

1. Standards: The standards shown for Allegation #1 applied.

2. Documents:

a. In his affidavit, Dr. Sweeney alleged:

(1) In June 1998, Mr. Rhodes stated that he (Mr. Rhodes) would challenge the conclusion of the ITR that the SEM model was correct and suitable for use in evaluating economic impacts. Mr. Rhodes directed that alternatives be developed to alter the management structure of the study team to include replacing Dr. Sweeney with a panel. Mr. Rhodes stated Dr. Sweeney was on a mission to shut down the Corps. (pp. 21-22)

(2) Around 18 September 1998, Mr. Rhodes told Mr. Barnes to tell Dr. Sweeney to justify near-term, large-scale measures for the UMR-IWW, or Dr. Sweeney would be out of his job as technical manager of the economics work group. (p. 25)

(3) In an exchange of e-mail messages on 4 September 1998, Mr. Rhodes told Mr. Arnold, program manager, MVD, they should stick with the concept of scenarios that were reasonably plausible to justify the navigation project. (pp. 25-26)

(4) During the post-meeting of the May 1999 economic summit, Mr. Rhodes repeatedly asked Mr. Manguno, lead economist for the study, to identify the N-value for grain that would be necessary to show that extending the locks was justified in the near term. (Exhibit C-1, p. 33)

b. The following evidence came from exhibits given by Dr. Sweeney to the Environmental Defense Fund and then provided to Investigations Division, DAIG.

(1) In an e-mail message dated 15 June 1998, Mr. Manguno told Dr. Sweeney that Mr. Rhodes told Mr. Hanson that he (Mr. Rhodes) intended to challenge the recommendation of the ITR. Mr. Rhodes proposed to transfer management of the economic effort to a team of economists. (Exhibit C-2)

(2) In a memorandum signed 17 June 1998, MG Anderson stated he was concerned with the rate of progress made by the study team and he was making some management changes. These included creating a panel to replace Dr. Sweeney, making Dr. Sweeney an advisor to the panel, and naming Mr. Rhodes as his point of contact for the action. (Exhibit C-2)

(3) In an e-mail message dated 23 September 1998, with Mr. Rhodes as an recipient, Mr. Arnold, program manager, MVD, said that they had coined the term "reasonably plausible" in regards to variables used in the economic forecasting model. He pointed out that by combining two demand curves, the result could be misleading. "If we are not careful, these alternative futures could have a relatively low chance of reality, and put us in a difficult position to defend." Mr. Rhodes replied on 23 September 1998 that he agreed. "We started with the concept of scenarios that were reasonably plausible. Think we should stick with that." (Exhibit C-2)

(4) In a 14 April 1999 e-mail message, Mr. Hanson said Mr. Rhodes was expressing a request by Mr. Brescia, an official with the navigation industry, to hold an economic summit on 5 and 6 May 1999. That would require changing the date of the next ECC meeting. (Exhibit C-2)

(5) In an e-mail message dated 15 April 1999, with Mr. Rhodes as an recipient and forwarded by Mr. Rhodes to study team members, Mr. Herndon asked study

members and others to attend the economic summit on 5-6 May 1999. In related messages, Mr. Thompson, planner, Rock Island District, noted that Mr. Rhodes directed the study team to postpone the 5 May 1999 ECC meeting and Mr. Rhodes was developing a list of participants for the summit meeting. (Exhibit C-2)

c. In an e-mail message dated 4 September 1998, Mr. Arnold talked about a strategy for getting information to the public that would be "a significant departure from the direction that was being pursued" by the study. Mr. Arnold was concerned "the study team has assumed there is one most likely future condition and thus the NED plan is the basis for alternative evaluation and comparisons through risk analysis. What we have to say to use the proposed strategy is that it is honestly not possible to identify one future condition as more likely than another." Mr. Rhodes endorsed Mr. Arnold's approach in a 4 September 1998 e-mail to Mr. Hanson and others. (Exhibit EE)

d. In an e-mail message dated 23 February 1999, Mr. Rhodes told MG Anderson and Mr. Herndon: "NOW FOR THE REALLY BAD NEWS." He noted the study plan was not good news. Dr. Burton's work showed that grain was an elastic commodity. Dr. Burton proposed an N-value of about 2 for grain. That would result in such a benefit line that it was very doubtful that anything other than guide wall extensions would be economically justified using standard Corps procedures. (Exhibit FF)

e. In an e-mail message dated 29 March 1999, Mr. Rhodes replied to a question from Mr. Kitch about the topic of an VTC to be held on 5 April 1999 on the study. Mr. Rhodes said they had heard from "some senior leaders in HQ that want us to make whatever assumptions are necessary to justify improvements. They will commit to upholding those assumptions. I have talked to MG Anderson a lot about that and I am very uncomfortable with it." (Exhibit GG)

f. In a 9 June 1999 e-mail message to Mr. Burns, Mr. Rhodes said MG Anderson had decided to publicly release information based on an N-value of 1.2. "This value produces a fairly healthy construction program (not included system environmental costs)." He added that industry was not completely happy with that. (Exhibit Z)

g. In an e-mail message dated 3 February 2000, Mr. Rhodes told MG Anderson there could be a potential positive spin put on the Tiger Team review. If the Tiger Team "blessed" their draft District report, the report might have "more credence with both the administration and the Congress." Industry might then find it easier to get an "authorization." (Exhibit HH)

h. In a letter dated 11 May 2000, Mr. Rhodes sent DAIG copies of his calendar entries, MFRs, e-mails, and other materials to support the contention he made during his testimony that Dr. Sweeney was removed from a management position on the study because Dr. Sweeney was behind schedule. (Exhibit II)

3. Testimony:

a. Dr. Sweeney testified:

(1) In April 1998, he said new locks were not warranted in the foreseeable future. Mr. Rhodes expressed concern about those results. (pp. 39, 40)

(2) During a 13 June 1998 briefing on the ITR, Mr. Rhodes stated Dr. Sweeney was out to shut down the Corps and they needed to do something since he (Dr. Sweeney) was going to give the wrong answer. Mr. Rhodes also suggested replacing Dr. Sweeney with a panel of economists. (pp. 44-45)

(3) He thought Mr. Rhodes talked about moving the standard away from "most likely" to "reasonably plausible." (p. 55)

(4) Around 18 September 1998, Mr. Barnes told him Mr. Rhodes and Mr. Herndon had indicated if he (Dr. Sweeney) did not find some way to justify large scale locks in the near term, he (Dr. Sweeney) would be removed from responsibility for this study permanently. (Exhibit B-1, pp. 56-58)

b. Mr. Manguno, lead economist for the study, testified:

(1) In a June 1998 meeting, Mr. Rhodes said Dr. Sweeney was biased and was not being reasonable. Mr. Rhodes made a strong argument for replacing Dr. Sweeney with a panel. He understood that Mr. Rhodes and Dr. Sweeney had clashed on previous studies. (pp. 36-38, 42)

(2) Mr. Rhodes attended the economic summit. The meeting was as an attack on the study team to get them to change their analysis. None of the Corps leaders present, to include Mr. Rhodes, did anything to prevent the industry attack. (Exhibit B-2, pp. 92-96; 25-26, recall)

c. Mr. Kitch, HQ, USACE, testified during a break in the 7 April 1998 meeting, Mr. McDonald and Mr. Rhodes told him they would not be able to use the model results

because it was their job to provide 1200-foot locks for industry. Mr. Rhodes said he was going to fire Dr. Sweeney if he could. The study was slightly behind schedule. He thought the main reason Dr. Sweeney was removed from the study was because he (Dr. Sweeney) would not fudge the model or look at data differently to make grain more inelastic. Dr. Sweeney felt strongly that industry self-help and other things would work and there was no need to make a big investment. (Exhibit B-5, pp. 17, 18, 41-42)

d. Mr. Conner, economist, HQ, USACE, testified:

(1) Given that the panel was extraordinary and not the way they normally did business, there may have been some thinking that the panel was an attempt to move away from objectivity in the analysis. (pp. 8, 9)

(2) He believed there was a preliminary NED that existed prior to the convening of the economics panel. He thought there were indications that the preliminary NED results of the study would be that large-scale measures would not be justified. He presumed both Mr. Rhodes and MG Anderson were uncomfortable with those preliminary study results. (pp. 10, 11)

(3) It struck him that they changed the way they were operating. The panel had been designated to develop a preliminary NED Plan, but then was directed to look at assumptions that could justify near-term, large-scale improvements. He believed that direction came from the Mr. Rhodes level of MVD and potentially from MG Anderson. However he had no knowledge of this. He was uncomfortable about the direction the panel was going. A sensitivity analysis explored potential options and alternative assumptions of different variables to show a range of possible answers that could occur. It was not biased in a direction that would justify a project. (pp. 17, 18)

(4) He thought there was certainly impropriety on the part of the MVD staff. (Exhibit B-6, p. 41)

e. Mr. Soyke, economist, Rock Island District, testified he believed the economics part of the study was behind schedule in the spring of 1998. Dr. Sweeney did not seem to be concerned about meeting schedules. In early April 1998, he recalled the Corps' leadership expressed concern about Dr. Sweeney's conclusions, model, and assumptions. (Exhibit B-7, pp. 12, 19)

f. COL Thomas J. Hodgini, Deputy Commander, South Pacific Division, USACE, and former Commander, Saint Louis Division, MVD, testified he recalled during a June

1998 briefing in Saint Louis for MG Anderson there were discussions concerning changing the structure of the economic work group and whether it was a good decision to allow one economist to derive all the solutions. They wondered if there was a better way to derive the final analysis and the right solution. Dr. Sweeney's model was untested, not validated, and being used for the first time. (Exhibit B-9, p. 10-11)

g. Mr. Thompson testified:

(1) Dr. Sweeney was a foremost authority on the capacity of existing locks. Dr. Sweeney had such a tendency to overpower the agenda that it was hard to compete in a meeting. (p. 23)

(2) He thought Dr. Sweeney was removed as the study team leader because management became frustrated that Dr. Sweeney was not getting things done from a schedule perspective and he could not handle his relationships with other people to include "higher-ups." He thought the people concerned included COL Mudd, Mr. Rhodes, and MG Anderson. (Exhibit B-10, p. 24)

h. Mr. Barr testified Dr. Sweeney was replaced by Mr. Manguno as part of a normal study transition. (Exhibit B-19, p. 13)

i. Mr. Carr, economist, Rock Island District, testified it was his perception that Dr. Sweeney was removed as leader of the workgroup because Dr. Sweeney was a very hard person for senior people, both military and civilians, to deal with. This was because of his analytical and presentation skills. He was strong-willed, argumentative, and hard to manage. He heard Dr. Sweeney was removed because Dr. Sweeney's analysis and emerging results were a departure from what was found in the reconnaissance study and what was being done in the Ohio River Division. (Exhibit B-26, pp. 6-9)

j. Mr. Hughey, engineer, Saint Louis District, testified. When asked if anyone involved with the study appeared to have decided that a specific measure, whether large or small scale was the proper outcome, he responded they were never given any direction to accomplish "this, that or the other." At no time during the process were they ever directed to do anything. The study got behind schedule because of environmental issues. He was surprised when Dr. Sweeney was removed as the technical manager. (Exhibit B-20, pp. 7-9, 11, 39)

k. Mr. McGrath, economist, Saint Paul District, testified he did not think the economics part of the study was behind schedule and was surprised to hear that given as the reason Dr. Sweeney was replaced. He thought the reason was that Dr. Sweeney was not willing to back down. Dr. Sweeney wanted to ensure the economics team followed the regulations. (Exhibit B-27, pp. 28-29)

l. Mr. Arnold, program manager, MVD, testified:

(1) In early 1998 they were having problems getting some of their economics data and technical reviews completed on time. The economics panel was created to get some products out. He did not hear Dr. Sweeney was replaced because people did not like the answers; Dr. Sweeney was actually an advisor to the economic panel. (pp. 6, 10)

(2) He believed N should equal 1.0, the lower limit set by the expert elicitation panel. The panel gave a range between 1.0 and 2.0, so he picked 1.0 as being "the most optimistic or the most inelastic." (Exhibit B-24, pp. 15-18)

m. Mr. Burns, HQ, USACE, testified he heard Dr. Sweeney was removed as economic team leader because things were not getting done. (Exhibit B-25, pp. 5-7)

n. Mr. Lundberg, Rock Island District, testified Dr. Sweeney was removed because Corps leaders thought they were not producing in the economics arena. Every time they came to a milestone involving the economic analysis, it never seemed to be complete or needed additional information. He speculated there was also some sense Dr. Sweeney was not providing the answer that made people more comfortable. (Exhibit B-18, pp. 9-10, 61-63)

o. COL Mudd testified in 1998, the study was significantly behind schedule. He attributed the missed timelines to Mr. Gmitro, the former project director of the study, and Dr. Sweeney. He was concerned that Dr. Sweeney's management of the economic analysis was too centralized. This led to Dr. Sweeney's removal as the economics manager. MG Anderson constructed an economics panel to get back on schedule. Either Mr. Rhodes or Mr. Herndon told him to listen to industry's grievances about the study. During the 5 May 1999 meeting he joked with Mr. Rhodes that he believed the N-value justifying large-scale improvements was 1.25. (Exhibit B-34, pp. 5, 45-49, 83-87, 91-93, 131-133)

p. Mr. Gmitro testified:

(1) In April 1998 the study was about 60 days behind schedule. The economics work group was on schedule, but the environmental work group was not. (pp. 4-5, 12-13, 35-37)

(2) The navigation industry "heavily pounded" the Corps to change the model to justify building something in the near term. Mr. Rhodes and Mr. Hanson were not comfortable with the results of the model. They wanted to discredit the model. Dr. Sweeney would not produce economic results justifying locks and Dr. Sweeney was replaced. (Exhibit B-14, pp. 5-9, 37)

q. Mr. Herndon testified he believed Dr. Sweeney was removed from the study because Dr. Sweeney was difficult to work with, behind schedule, and took an academic rather than a practical analytic approach. (Exhibit B-33, pp. 24-25)

r. Mr. Cone, HQ, USACE, testified:

(1) Dr. Sweeney was removed as the lead economist because Dr. Sweeney would not develop an answer justifying large-scale construction. (pp. 17-19)

(2) Mr. Manguno, the study's next lead economist, appeared under considerable pressure from Mr. Rhodes and others to accommodate the barge industry's views. The leadership in the MVD, to include Mr. Rhodes, saw the study as a "giant construction opportunity." Mr. Rhodes was trying to promote large-scale construction. (Exhibit B-17, pp. 13-17, 30-31; 7, 61-65, recall)

s. Mr. Barnes testified:

(1) Mr. Rhodes was not happy with Dr. Sweeney's lack of timeliness on completing the model. Dr. Sweeney was replaced as technical manger because of dissatisfaction over the slowness of getting the model ready. (pp. 6-9, 10-14, 35-38)

(2) In an e-mail message, Mr. Rhodes said he (Mr. Rhodes) was looking for scenarios that were reasonably plausible. They were talking about scenarios based on values of elasticity that would show a need for lock extensions. They recognized their inability to accurately predict what economic conditions were in the near term. Mr. Rhodes wanted to look at some scenarios that were reasonably plausible over several years and see what N-values would cause those scenarios. (pp. 30-31)

(3) Mr. Rhodes was very focused on studying planning models that would produce a positive result since the reconnaissance study had projected a positive outcome. Mr. Rhodes thought if the reconnaissance study said there was something positive, then there ought to be something positive. He did not think Mr. Rhodes did anything unethical. (Exhibit B-38, pp. 39-40)

t. Mr. Hanson testified:

(1) They waited from October 1997 until March 1998 for documentation of Dr. Sweeney's model. The chain of command exhausted its patience. (pp. 7-8)

(2) He speculated that Mr. Rhodes was tired of hearing excuses. Dr. Sweeney was not producing as the group's manager. (Exhibit B-36, pp. 14-16)

u. MG Anderson testified he received reports the study was missing milestones. Dr. Sweeney was made an advisor to the economics panel because his staff advised him that an economics panel needed to be established to take an objective look at the study's economics. (Exhibit B-32, pp. 7, 18)

v. Mr. Cook, a member of the navigation industry, testified he attended the summit meeting in Saint Louis and he remembered that Mr. Rhodes was there. He did not recall Mr. Rhodes making any specific comment. He was not aware of anything unethical or improper done by senor Corps officials on the study. (Exhibit B-28, pp. 23-25)

w. After being advised of his rights, Mr. Rhodes testified:

(1) Beginning in April 1997, he was the person MG Anderson would contact concerning the economics team. The economics team was not staying on schedule and not producing timely products. Mr. Barnes told him the economic team did not produce products on time. He told MG Anderson in June 1998 they had to make some major management changes because they were missing deadlines. MG Anderson agreed to form an economics panel. Mr. Manguno was the logical choice to take over as head of the economics team. They kept Dr. Sweeney as a technical advisor, because Dr. Sweeney was the only one who knew how to run the model. (pp.13, 17-18, 21, 28, 30-32)

(2) He thought paragraph 56 of Dr. Sweeney's affidavit was "probably" accurate, but that was with the data they had in April 1998. "Any reasonable person would be

concerned." They started talking about the need for ITRs and getting other people involved in the study to make sure they were giving the study the effort that it needed. He did not have any preconceived notions about the study. (pp. 40-41, 116-117)

[IO note: In paragraph 56 of his affidavit, Dr. Sweeney said he informed Corps leadership that the study would likely not produce economic justification for large-scale measures anytime soon; Mr. Rhodes and others expressed concern. (Exhibit C-1)]

(3) He did not tell Mr. Kitch, a branch chief at HQ, USACE, at a meeting break on 7 April 1998 that they would not be able to use the results of Dr. Sweeney's model because it was their job to provide 1200-foot locks for the navigation industry. He did not hear anyone else tell Mr. Kitch that statement, either. (p. 47)

(4) He did not remember stating that he would challenge the conclusion of the ITR, but he directed Mr. Hanson to develop alternatives for the management structure of the economics team. His job was to challenge conclusions. He did not recall saying that Dr. Sweeney was on a mission to shut down the Corps. (pp. 51-52)

[IO note: Mr. Rhodes was asked to respond to Paragraphs 64-66 of Dr. Sweeney's affidavit. (Exhibit C-1)]

(5) He wrote the memorandum signed on 17 June 1998 by MG Anderson in which Mr. Hanson was appointed project manager. The panel would be responsible for identification of a NED plan that would show the maximum economic benefits. The maximum could be zero or even less than zero. As for the phrase "producing economic analysis tools sufficient to analyze alternatives," they were frustrated with Dr. Sweeney's model and the lack of documentation for it. They could not complete the ITR. They wanted the panel to put the project back on schedule. The memorandum did not mention dissatisfaction with the results or preconceived notions. (pp. 52-54)

[IO note: Mr. Rhodes was asked to respond to Paragraph 67 of Dr. Sweeney's affidavit. (Exhibit C-1)]

(6) He responded to a 4 September 1998 e-mail he received from Mr. Arnold that addressed MG Fuhrman's statement about the Corps being an advocate. He changed part of Mr. Arnold's original message before he forwarded it to make it clearer.

a. He thought Mr. Arnold's statement, "What is being proposed is a significant departure from the direction that was being pursued," had to do with the fact that their

study was not a normal navigation study. It was complex and controversial. They were discussing a number of without-project futures because there was a lot of uncertainly about the without-project condition. It was a debate going on about how to manage this scenario. An alternative might be defined, but it was not necessarily the one to recommend. The team would not know what to recommend until it had evaluated all of the alternatives. (pp. 65, 67-69)

b He tried to correct people's impressions of Mr. Arnold's statement about Corps leaders having a strategy to "cook the books." Mr. Arnold, a program manager at MVD, was responding to MG Fuhrman's statement about the Corps being an advocate. MG Fuhrman's comment about the Corps having an advocacy role was perceived by some people to be an indication of predetermination. MG Fuhrman was being misinterpreted. MG Fuhrman was saying the DOT was an advocate for highways and the FAA was an advocate for airports. The Corps was responsible for inland waterways. They gave Congress the status and needs of the waterways. Mr. Arnold's message "sent a ripple through the study team, and so we tried to reassure folks that the study was still on track; that we may have to do a little innovative stuff with this without-project condition because of the uncertainty in establishing the without-project condition." (pp. 70-72)

c Mr. Hanson used the phrase "reasonably plausible solutions," but those might have been his (Mr. Rhodes') words. It got back to the without-project future. "What is reasonable to assume is possible? What is plausible?" The study would do risk and uncertainty analysis and develop the futures that were reasonably plausible. "Reasonably plausible" to him meant that something had a reasonable chance of occurring. (pp. 73-75)

(7) He did not tell Mr. Barnes to tell Dr. Sweeney to find a way to justify large-scale construction or Dr. Sweeney would be out of a job as a technical manager. Dr. Sweeney was already out of a management role. Mr. Barnes tried to keep Dr. Sweeney on the study team for revenue reasons. (pp. 76-77)

(8) He gave MG Anderson a status report on 23 February 1999. He had never considered the meaning of his phrase "NOW FOR THE REALLY BAD NEWS." When the Corps started the feasibility report, they were looking for solutions to problems and they were always disappointed when they had a negative feasibility report because there was a problem or they would never have started the study. If they arrived at the conclusion there was no Federal interest in fixing the problem, it was bad news for them. In this case they were in a situation where it appeared there would be little

Federal interest in doing much except guide wall extensions. "So I characterized that as bad news, and that would not be unlike any other project for which we had just determined there was no Federal interest or minimum Federal interest, not what we had reasonably expected when we started." He got paid to give bad news and good news to his commander. (pp. 93-94)

(9) The navigation industry asked for the May 1999 economic summit because they did not agree with the study data the Corps was developing. It would have been inappropriate to invite the press or the environmental community. It was a working level meeting. The navigation industry provided their own technical experts to refute what the Corps was doing. Prior to the meeting, the Corps released the model and data and asked for input from the public and others. When asked if he thought the two meetings were attempts at collusion between industry and senior Corps managers to find a way to justify large-scale navigation projects, he said no, he did not believe that to be the case. (pp. 103-104, 107)

(10) He was not consulted about what the N-value of grain should be, nor was he an expert in the area. When he saw the e-mails circulate on the issue, Mr. Manguno told him that the right answer was thought to be between 1 and 2. He was comfortable with taking the mid-point, 1.5, as their number. Mr. Manguno said he (Mr. Manguno) could live with COL Mudd's procedure and the number was in the reasonably plausible range. (pp. 108-109)

(11) The study was conducted ethically and in accordance with laws and regulations. (Exhibit B-35, p. 116)

4. Discussion:

a. Dr. Sweeney alleged Mr. Rhodes took several actions to get the study results to justify large-scale construction. Implicit in the standards was the expectation that feasibility studies would be conducted in an impartial and objective manner and formulation of alternatives would be based on the most likely future condition. Army Management philosophy stated that managers would do the right things for the right reasons.

b. The evidence established:

(1) Mr. Rhodes confirmed that he got MG Anderson to replace Dr. Sweeney, but did so because of Dr. Sweeney's management failings, not Dr. Sweeney's results.

Some witnesses testified Mr. Rhodes took the action because he did not like Dr. Sweeney's conclusions, but most witnesses testified, and e-mail messages verified, that Mr. Rhodes pushed for Dr. Sweeney's removal because Corps management had lost confidence in Dr. Sweeney's ability to produce quality work in a timely manner.

(2) Mr. Rhodes denied he told Mr. Barnes to use threats to get Dr. Sweeney to justify large-scale construction. Mr. Barnes also denied Mr. Rhodes said such things. No other witness or document was found to corroborate this issue.

(3) Mr. Rhodes replied to an e-mail from Mr. Arnold, but he said they started with the concept of scenarios that were reasonably plausible and they should stick with that. Mr. Rhodes testified he wanted to examine various scenarios and see what conditions and study inputs would cause them to occur.

(4) Mr. Rhodes testified that when he and Mr. Manguno discussed N-values for grain, Mr. Manguno seemed comfortable with the N-value given by COL Mudd. Mr. Manguno testified it was COL Mudd's decision to use an N-value of 1.2 for grain. Mr. Manguno did not mention Mr. Rhodes and testified Mr. Rhodes did nothing improper in the study.

(5) Mr. Rhodes sent MG Anderson an e-mail message in which he said the study results would likely not justify large-scale construction in the near term. He described that as being very bad news. The Corps liked to build things. He testified that the earlier reconnaissance study had identified a problem, and anytime the Corps could not fix a problem, it was bad news. He was paid to give his boss bad news.

c. The preponderance of evidence established that although Mr. Rhodes was involved in several controversial incidents relating to the study, he did not take any improper actions. As a senior planner at the division level, he advised and provided information to MG Anderson, the division commander.

5. Conclusion: The allegation that Mr. Rhodes improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation was not substantiated.

ALLEGATION #7. Mr. Hanson improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

1. Standards: The standards shown for Allegation #1 applied.

2. Documents:

a. In his affidavit, Dr. Sweeney stated:

(1) Mr. Hanson directed Mr. Manguno to analyze selected alternatives, combinations of small and large scale measures at selected system locks, through the model using different selected values for N and growth predictions for future traffic. (p. 27)

(2) Mr. Arnold and Mr. Rhodes exchanged e-mails on 23 September 1998 and discussed that they had been trying to choose "reasonably plausible" scenarios to justify the project. Regulations required that scenarios be chosen that were the "most likely condition expected to exist in the future." (p. 23)

(3) Mr. Manguno expressed concern with Mr. Hanson's 25 September 1998 instructions to develop evidence or data to support a defensible set of capacity enhancement projects. (Exhibit C-1, pp. 27)

b. On 2 October 1998, COL Mudd responded to Mr. Manguno's concerns in a memorandum. This memorandum said MG Fuhrman clearly stated that the Corps was the Federal Government's advocate for the inland waterway system and they would develop the economic component of the case for a recommendation that included near-term improvements, recognizing that the nation was better served by improvements that erred on the large-scale side. (Exhibit V, p. 27)

c. In a 17 June 1998 memorandum, MG Anderson stated that Mr. Hanson would be appointed project manager for the subject study. He also created a panel comprised of the district chiefs of economics to provide economic analysis products for the study. The panel would report to Mr. Hanson. (Exhibit JJ)

d. In a 22 June 1998 e-mail to panel members, Mr. Soyke, economist, Rock Island District, stated that at the direction of Mr. Hanson he had drafted definitions of the roles for panel members. (Exhibit KK)

e. In a 3 September 1998 e-mail to panel members, Mr. Soyke stated Mr. Hanson wanted their comments. There should be a scenario based on a high commodity

forecast with demand functions for grain of 1.0 and .05 for all other. The team should then determine an alternative, based on these results, which appeared to be most likely to justify large-scale improvements in the near term. (Exhibit LL)

f. In a 25 September 1998 e-mail to study team members, Mr. Hanson stated MG Fuhrman told them they were the advocates for inland navigation, which sounded to him to be a distinctly more proactive posture than he always pictured their role. He thought of the Corps as stewards of inland navigation. They executed public policy regarding improvements. The overt advocacy role was a new departure. They would need to work on a story line. He had no problem with this as long as the chain of command supported and helped explain when the heat came. (Exhibit I-1)

g. In a 25 September 1998 e-mail to Mr. Manguno and others, Mr. Hanson gave Mr. Manguno his scope of work as leader of the economics group. In anticipation of the need, Corps employees would work on the rationale that related the directed enhancements to plausible world conditions that would underlie the need for those enhancements. This would be developed qualitatively and then quantitatively using analytical tools. Mr. Hanson also provided guidance from MG Fuhrman's 23 September 1998 briefing. MG Fuhrman had a gut feeling that the United States needed to be able to move more grain by water when the market opened. The Corps was the Federal Government's advocate for inland waterways and there was a need to improve the system. If the variables considered by the economics model did not capture the need for navigational improvements, they had to figure out some other way to do it. It was a national issue. They needed to develop a rationale for taking this more subjective approach to their analytical process. They should develop evidence or data to support a defensible set of capacity enhancement projects. They needed to know what the mechanism was that drove the benefits up. The rationale should err on the high side. (Exhibit I-2)

h. In a 25 September 1998 e-mail to Mr. Kitch, HQ, USACE, Mr. Hanson stated they got word from New Orleans that MG Fuhrman told an audience they would have lock extensions to 1200' in the near term. He requested that Corps of Engineers Civil Works (CECW) issue a clear summary of MG Fuhrman's instructions to the MVD. (Exhibit I-3)

i. In a 25 September 1998 e-mail to Mr. Hanson, Mr. Kitch stated he did not recall many of the comments cited in Mr. Hanson's e-mail as comments that were made by the MG Fuhrman during the 23 September 1998 briefing. Mr. Kitch indicated Mr. Hanson had not accurately interpreted MG Fuhrman's guidance. (Exhibit I-3)

j. In a 25 September 1998 e-mail to Mr. Manguno and others, Mr. Hanson stated he heard he had not faithfully captured the guidance. He recommended Mr. Manguno seek verification as to what his (Mr. Manguno's) assignment was. (Exhibit I-4)

k. In a 30 September 1998 e-mail, MG Anderson stated the economics panel would be retained for the duration of the study. COL Mudd was responsible for the production of all economic products. Mr. Manguno would chair the economics panel. (Exhibit MM)

l. In a 2 October 1998 e-mail to Mr. Manguno, COL Mudd stated he considered MG Fuhrman's 23 September 1998 guidance and he now provided clarifying guidance to Mr. Manguno for the 20 October 1998 briefing. Mr. Manguno would prepare and present a single scenario, or set of economic assumptions, as directed by MG Fuhrman. MG Fuhrman had clearly stated that the Corps had the responsibility as the Federal Government's advocate for inland waterway system. To help in the execution of that responsibility, Mr. Manguno would develop the economic component of the case that included near-term improvements, recognizing that the nation was better served by improvements that erred on the large-scale side. (Exhibit V)

[IO note: Following his testimony, Mr. Hanson provided the IO with several documents. Some of those were used in the ROI and have been referenced as individual exhibits. Others were reviewed, but not referred to in the ROI. Those not referenced in the ROI were placed in Exhibit AH.)

3. Testimony:

a. Dr. Sweeney testified:

(1) On 17 June 1998, MG Anderson issued a memorandum which appointed a panel of economists to oversee the economic products for the next 90 days. The panel was given full responsibility for production of the NED plan. Mr. Hanson, who was an engineer and not an economist, was made chairman of the panel. (pp. 45, 46)

(2) The panel held its first meeting in July 1998 in New Orleans. Once again it was to look at the fundamental economic assumptions underlying the model. The panel wanted to compare the SEM model with another Corps model. It did not make sense because the SEM model was undergoing an ITR and the other model had not. It was not focusing on the areas that needed addressing such as data for the demand curves. Mr. Hanson said at one of the meetings "I am the panel. I will take responsibility for everything this panel does." (pp. 48,49)

(3) Because of concerns about demand curves the panel decided to form an expert elicitation panel to get information from experts outside the Corps regarding the demand for water transportation for agricultural products. The panel indicated the N-value was somewhere between 1 and 2. The experts recommended they generate more data. The economics panel, during its final meeting, agreed with the SEM model. It also acknowledged that the underlying data was weak and wished it had more information on the demand curves. However, if it had to move on, it would use N-values of 1 and 1.5 for non-grain and grain commodities. (pp. 51, 52)

(4) There were discussions about not having a NED, but rather having an array of alternatives based on a range of model parameters. He believed Mr. Rhodes and Mr. Hanson were driving these discussions. He did not know how far up the chain this thinking originated. Mr. Hanson noted in a memorandum that MG Fuhrman declared the Corps to be advocates for waterway systems. (pp. 55-56)

(5) After MG Anderson received criticism for putting an engineer in charge of the economics panel, Mr. Hanson was removed as chair of the panel and put back as project manager. (p. 56)

(6) Mr. Hanson said MG Fuhrman was the proponent for guidance that stated they were now waterway advocates and needed to improve the system. They needed to find some way to justify near-term improvements. In response, Mr. Manguno sent Mr. Hanson an e-mail that stated he (Mr. Manguno) could not do this under their regulations. Mr. Manguno stated he was not comfortable following the guidance from Mr. Hanson and could not be directed to execute it. Mr. Hanson responded by having COL Mudd order Mr. Manguno to follow the guidance. In an e-mail, COL Mudd directed Mr. Manguno that his job as chairman of the economics panel was to build the best case he could for building locks in the near term. Mr. Manguno did as he was ordered. (Exhibit B-1, p. 62)

b. Mr. Manguno, lead economist for the study, testified:

(1) Around 3 September 1998, Mr. Hansen directed him to model selected alternatives using certain N-values. Feasibility reports always show the consequences of different assumptions for some of the key inputs. They were not really trying to do sensitivity analysis in the context of final report presentation in this particular case, but to show that the final formulation of a NED plan would be sensitive to some of these key inputs. It occurred to him that the senior leadership in the Corps was more interested in

finding a scenario to support large-scale construction than coming up with the best NED based on the data available. (pp. 60-61, 70-71, 74-75)

(2) A 25 September 1998 e-mail by Mr. Hanson caused him concern. According to Mr. Hanson, MG Fuhrman's guidance was that the Corps was to be the advocates and not the stewards of waterways. If the variables considered by the model did not capture the need for navigation improvements, they would have to figure out some other way to do it. A rationale for taking a more subjective approach to the analysis should be developed. They should err on the high side. (p. 75).

(3) Around 28 September 1998, Mr. Hanson told him he was the new leader of the economics work group and MG Fuhrman's guidance was to produce a scenario that resulted in immediate implementation of large-scale measures. Mr Hanson said that it would involve at least capacity expansions at five locations on the Lower Mississippi River. He (Manguno) thought that "immediately" meant within the next 10 to 15 years. This made him feel uneasy, because the guidance was not consistent with applicable policies and regulations. (pp. 76-77).

(4) He sent a memo to a number of people, including Mr. Hansen, expressing concern about the guidance. COL Mudd responded, offering more guidance as described in paragraph 84 of Dr. Sweeney's affidavit. (p. 78)

[IO note: Paragraph 84 of Dr. Sweeney's affidavit quoted COL Mudd's memorandum, dated 2 October 1998, "To help in the execution of this responsibility, you will develop the economic component of the case for a recommendation that includes near-term improvements, recognizing that the nation is better served by improvements that err on the large-scale side than by actions that err on the underdeveloped side."]

(5) During recall testimony, he testified he had some fears that Mr. Hanson's e-mail concerning MG Fuhrman's advocacy guidance was an attempt to manipulate the study to put a more favorable look on things than was warranted. After receiving the guidance they did the sequence of activities required by the study. There was no interference until the point where he made a recommendation for a N-value of 1.5. Shortly after that they had the series of meetings with industry people that resulted in the changes in the contingencies, N-values, and rehabilitation expenditures. At that point he had concerns about where they were heading, that they were going to find a way to use various inputs into the study that produced an outcome that said that lock improvements were justified in the near term. Based on the events occurring after the

meeting with industry, he thought the Corps had influenced the study to arrive at a certain outcome. (Exhibit B-2, pp. 24-28, recall)

c. Mr. Marmorstein, a member of the study team and an analyst from the Saint Louis District, testified:

(1) At a 7 April 1998 committee meeting, it became apparent that the project that seemed likely to be recommended by the economic analysis was not the project that was desired. Mr. Hanson attended the meeting. (pp. 5-7)

(2) When it became clear Dr. Sweeney would not produce an analysis that showed large scale construction was justified, there was improper micromanagement from high-level people. (pp. 13-15)

(3) MG Anderson ordered the creation of a panel under Mr. Hanson. It was given the task of identifying the proper economic tools and told to come up with a NED plan within 90 days. After 90 days, the panel was retained and made responsible for the entire economic product. He speculated that the purpose of the panel was to overturn Dr. Sweeney's work. (pp. 16-18)

(4) He saw a memorandum from Mr. Hanson that said the Corps must be the advocate, not the steward of waterways. He thought Mr. Hanson was trying to "cover his own butt and say that this was direction from above" and that he, Mr. Hanson had believed they were stewards, not advocates. Mr. Hanson knew he (Mr. Hanson) was being "set up to take a fall," so he (Mr. Hanson) wrote the memorandum to attribute that to MG Fuhrman. (Exhibit B-3, pp. 22-26)

d. Mr. Kitch, a branch chief at HQ, USACE, testified:

(1) He was present during a 23 September 1998 meeting during which MG Fuhrman and his staff were briefed by MG Anderson and COL Mudd and their staffs. The main purpose of the meeting was to bring MG Fuhrman up to speed on where it looked like the study was going. The bottom line was that it did not look like large scale improvements were going to be justified. MG Fuhrman said they had to do things right and indicated his (MG Fuhrman's) gut said the country was going to need a better transportation system on the river because of global competitiveness. MG Fuhrman said to think about what were other considerations that would lead him to a decision, in spite of what the economics told them, because of national interest to go ahead and improve the system. (p. 36)

(2) When he left the meeting, he thought it was pretty clear what they had to do. A couple days later he received an e-mail from Dudley Hanson. He recalled that he thought they must have been at a different meeting because Mr. Hanson indicated the General (MG Fuhrman) said to go out and make sure they could justify big locks. He wrote Mr. Hanson back and indicated "No, no. I don't think that's at all what he (MG Fuhrman) said." After checking with some other folks who were at the meeting and who had heard MG Fuhrman's comments, he wrote back to Mr. Hanson. He indicated that what MG Fuhrman meant was based on his (MG Fuhrman's) gut. MG Fuhrman really thought they needed to improve the system, but he (MG Fuhrman) had to have something better than his gut. MG Fuhrman needed some other reasons. (Exhibit B-5, p. 37)

e. Mr. Soyke, Rock Island District, testified:

(1) When asked if in September 1998 Mr. Hanson directed Mr. Manguno to analyze selected alternatives with the model using different N-values and different traffic growth patterns, he responded, "Yes." When asked if Mr. Hanson said the team should determine an alternative based on results that appeared to be the most likely to justify large-scale improvements in the near future, he responded that he believed Mr. Hanson did. All through the study they were trying to determine the NED plan. They knew they could not wait until the end to make that determination because there needed to be other analysis to determine what might be the recommended plan. (pp. 31, 32)

(2) He was at the meeting when MG Fuhrman made the statement that the Corps should act as advocates for inland waterways. He and others discussed it at length because it was a surprising statement. They decided it was probably an overdue statement because the Corps was the agency that dealt with navigation infrastructure; if they were not an advocate for that, what were they? Even though they were advocates, they would still analyze the justifications and benefits for projects. (pp. 35-36)

(3) He thought MG Fuhrman also said that there was a need to improve the system. The well-being of the Midwest depended upon agricultural exports. They needed to figure out what the demand curves meant; and if the demand and other variables that the economics model considered did not capture the need for navigation improvements, then they had to figure out some other way to do it. He interpreted MG Fuhrman's words to mean that if there was not a NED plan that seemed acceptable, given what they knew about the needs of the navigation system, then they should look at other rationales for a recommended plan. (Exhibit B-7, pp. 36-37)

f. Mr. Thompson, Rock Island District, testified:

(1) After the September 1998 briefing, Mr. Hansen sent out some guidance in an e-mail. The guidance struck him and other team members as strange. Some of the guidance was revisited and people backed off. It seemed strange to think of the Corps as advocates for the waterway and navigation. At the time, some of them were wondering if they were getting pressure to come up with something they were not comfortable with. (p. 10)

(2) They tried to answer a tasker from their higher headquarters concerning the question of whether there were things missing in their analysis that should be considered. These were things that were not considered most likely but should be raised to decision makers for consideration. They put together a list of other considerations. (p. 10)

(3) The economics workgroup put together a single alternative which was called a minimized risk alternative. It had caveats that said it was not the best alternative. This alternative had more of an advocacy role. The study team felt a little pushed in September 1998. They had to find that alternative that would result in near-term improvements, and they did not know what was going to happen with it. (Exhibit B-10, p. 11)

g. Mr. Barr, an environmental analyst in the Rock Island District, testified he interpreted Mr. Hanson's 25 September 1998 e-mail, which restated MG Fuhrman's guidance, to be proper guidance for performing a sensitivity analysis. Since there were uncertainties, the study team needed to be sure that they explored other alternatives before providing a recommended plan. He was at the meeting where MG Fuhrman provided the guidance; Mr. Hanson accurately captured MG Fuhrman's words. (Exhibit B-19, pp. 19-20)

h. Mr. Carr, an economist in the Rock Island District, testified that after having read to him Mr. Hanson's summary of MG Fuhrman's 23 September 1998 guidance, he was asked if the guidance met the intent of the project study plan. He responded that it did not, as far as he was concerned. He did not know if Mr. Hanson's memo concerning MG Fuhrman's guidance affected the study. There were a lot of meetings and talk about being advocates that never sat very well with him. (Exhibit B-26, pp. 21-22)

i. Mr. Burns, HQ, USACE, testified he had no knowledge of impropriety by anyone involved in the study. He was familiar with ER 1105-2-100. He knew of no violation of that regulation or any other standard. Mr. Hanson prepared a 25 September 1998 document that restated MG Fuhrman's guidance. Mr. Kitch, HQ, USACE, sent a follow-on memorandum that corrected Mr. Hanson. According to Mr. Kitch's memorandum, Mr. Hanson's memorandum was inaccurate. (Exhibit B-25, pp. 3-4, 9-11)

j. Mr. Lundberg, an engineer in the Rock Island District, testified he attended a meeting in 1998 where MG Fuhrman mentioned the Corps should be the advocate for water resource development. It took the attendees by surprise, but nobody really knew what it meant. Mr. Hanson and others discussed it. The meeting had no real effect on the engineering side of the study. Mr. Hanson sent e-mail messages and talked to them. Mr. Hanson tried to explain what advocacy really meant. (Exhibit B-18, pp. 32-34)

k. COL Mudd testified:

(1) He attended the 23 September 1998 meeting in which MG Fuhrman provided guidance on the study. He interpreted the guidance as meaning the public was getting impatient for the study results, and the study team had not considered other factors in the analysis. He heard MG Fuhrman announce the Corps was an advocate of inland waterways. At the same meeting, Mr. Sanford, SES, HQ, USACE, said, "The biggest risk to the nation is to under build." The guidance was misinterpreted by Mr. Hanson, but corrected by Mr. Kitch in a subsequent e-mail. (pp. 32-38, 42)

(2) The study was significantly behind schedule in June 1998. Mr. Hanson replaced Mr. Gmitro, the project manager, to get the study moving. MG Anderson constructed an economics panel, with Mr. Hanson as the chair, to get the economics work group moving towards meeting the study timelines. There was also a message to the various district commanders from MG Anderson that they must support study completion. The economics panel was to get the study back on schedule within 90 days. The time constraint responded to public criticism that the Corps was behind schedule. The panel conducted a literature search for data or justification of an N-value, developed a range of alternatives, and prepared a briefing to inform management of the study's status. (pp. 45-49, 53-55, 60-61)

(3) He believed MG Fuhrman's 23 September 1998 guidance was also an effort aimed at determining whether the study should be continued. The reconnaissance study recommended a feasibility study and suggested there was a requirement to do

something on the UMR within 50 years. He and Mr. Hanson discussed whether the study should continue. (Exhibit B-34, p. 63-64)

l. Mr. Gmitro testified:

(1) COL Mudd replaced him as project manager with Mr. Hanson in April 1998. The reasons for the management changes were not clear to him. COL Mudd told him that there was a need for some quality control work on the economic model and he needed the involvement of a more senior district individual. The new economic model was challenged on its application and assumptions. Primarily there were objections because the model results did not show there was a need to build new locks. The industry, especially Mr. Brescia, was "heavily pounding the Corps" to change the model to justify immediate construction of new locks. There were people inside the Corps who did believe the model gave the right answers. Mr. Hanson and Mr. Rhodes were uncomfortable with the model results. (pp. 3-7)

(2) Mr. Hanson and Mr. Rhodes pushed for alterations to the economic model and its assumptions. The formation of the economics panel was wasteful and unnecessary. The panel was created to discredit the economic model and its assumptions. The intent of discrediting the model was to supplant it with another model that would justify new locks because it used an inelastic demand curve, an assumption inappropriate for the Mississippi River because it had different commodities. (pp. 17-18)

(3) Feasibility studies were not supposed to prove a position by working backwards to analysis that supported a predetermined position. A study was supposed to begin with a problem statement and employ a systematic, logical approach to conducting analysis. Mr. Hanson always talked about developing a story explaining why the Corps was to build new locks. Mr. Hanson constantly told the study personnel to go out and create a story. (pp. 18-19)

(4) He and Mr. Hanson never got along. (pp. 22-25)

(5) In September 1998 the panel explored a range of alternatives, a clear deviation from the regulations. The planning process required an alternative to be a plan that could be implemented, and the range of alternatives was a deviation from the study's original scope of work. (pp. 30-31)

(6) He told Mr. Hanson the changes in the study team and modeling were inappropriate. He believed Mr. Hanson acted inappropriately and wasted Federal dollars by relooking costs and the modeling effort. (Exhibit B-14, p. 38, 40-41)

m. Mr. Barnes testified he did not know what Mr. Hanson meant in a 25 September 1998 e-mail message that read: "We'll have to work on a storyline." He would not have chosen such words. He did not know anything Mr. Hanson did that might have been improper during the study. (Exhibit B-38, pp. 30-31)

n. Mr. Rhodes testified:

(1) He directed Mr. Hanson to develop alternatives to alter the management structure of the economics team. He wrote the memorandum signed on 17 June 1998 by MG Anderson in which Mr. Hanson was appointed as the study project manager. They had not been satisfied with the overall management of this project. (pp. 51-53)

(2) He sent an e-mail to Mr. Hanson that responded to Mr. Arnold's e-mail that addressed MG Fuhrman's statement in New Orleans about the Corps being an advocate. He clarified part of the original message before he forwarded it. (pp. 65-66)

(3) Mr. Hanson used the phrase "reasonably plausible solutions" in an e-mail, but those might have been his (Mr. Rhodes') words. The study would do risk and uncertainty analysis and develop the futures that were reasonably plausible. "Reasonably plausible" to him meant that something had a reasonable chance of occurring. It fell within a probability band that had a high degree or a reasonable degree of certainty that it would occur. (pp. 73-75)

(4) Mr. Hanson's message quoting MG Fuhrman's guidance "created a flurry of responses from across the study team saying, 'What in the world are you talking about, Dudley?'" He believed Mr. Hanson withdrew the message. The quote attributed to MG Fuhrman was only partially accurate. Mr. Kitch heard MG Fuhrman differently. (Exhibit B-35, pp. 83-85)

o. MG Fuhrman testified:

(1) He did not see Mr. Hanson's 25 September 1998 e-mail until Dr. Sweeney made his allegations. Mr. Hanson took his guidance out of context. If he had seen the e-mail, he would have corrected the misconception, as Mr. Kitch did. His intent was never to predetermine any aspect of the study. The purpose of his guidance and the

follow-on meeting was to make certain that the modeling was consistent with applicable standards, the assumptions were valid, and the data was sufficient for drawing conclusions about the project. He may have said something to the effect that there was a need to improve the system, but he thought that comment was taken out of context as well. The Corps was conducting major improvements on the Upper Mississippi. There was a need to improve the UMR-IWW system. (pp. 27-32)

(2) He did not have a "gut feeling" about what the results of the study should have been. He thought the study would not stand up to Corps and public scrutiny. The study team should have been able to answer a few basic questions, such as why was a new model necessary. If the study team could have answered his questions and shown that the analysis was complete, he would have accepted the conclusion that no near-term construction was warranted. (pp. 35-37)

(3) If he had been aware of Mr. Rhodes' and COL Mudd's supplementary guidance, he would have been concerned with guidance that suggested that the study team should find "reasonably plausible" alternatives that justified large-scale construction. To the best of his knowledge, this did not represent the guidance of any other senior Corps official. (Exhibit B-30, pp. 35-39)

p. After being advised of his rights Mr. Hanson testified:

(1) He retired on 31 December 1999. From June 1998 to October 1998, he had direct responsibility for management of the navigational study and specifically for management of the economic work team. (pp. 3-4)

(2) They had a difficult time getting a technical review of the model. They could never ratify its utility and validity. During a 17 February 1998 meeting, Mr. Rhodes and others thought Mr. Barnes was going to require that Dr. Sweeney complete the model write-up by 11 March 1998. They waited for documentation of the model from October 1997 until March 1998. Around 23 April 1998, the issue came to a head. A public meeting scheduled to discuss the model and its outputs had to be canceled. In its place a meeting was held to brief MG Fuhrman. Several senior Corps officials also attended. Because of the delays, COL Mudd made him the study's focal point. He was not called the project manager. COL Mudd wanted a more senior person to monitor the study on a day-to-day basis. On 17 June 1998, he was given the additional responsibility of manager of the economics team and its products. (pp. 6-8)

(3) The purpose of a feasibility study was not to identify alternatives that justified construction. He indicated repeatedly in public that it was not the Corps' job to promise capital improvements, but rather to come up with a fair answer for Congress. There were several meetings, to include a 23 September 1998 meeting in MG Fuhrman's office, concerning whether or not the Corps was an advocate and what that meant. An advocate meant being responsive to the needs of the navigational system. That could involve construction, but it was not the Corps' job to make construction happen if it was not needed. If the model did not mesh with intuitive logic, they had to determine if there was something they missed. This should not be interpreted as looking for a forgone conclusion as the answer. He considered it as examining every alternative. He was sure there were people in the Corps who thought it was the Corps' role to justify construction, but it was not the Corps' policy. He thought it was their role to try to solve problems, or fairly describe a problem and its alternative of future outcomes. (pp. 12-13)

(4) The task of the economics panel was to produce the NED. He was given 90 days to complete that task. Documentation needed to complete the ITR of the model had been promised for 6 or 8 months. After validating the SEM as the right tool, they would be able to derive the NED in the allotted time. The panel set out on a parallel track to identify an alternative model. If it turned out the SEM was not certified for use, they needed to have another model to use. They engaged a contractor to run a more traditional model using the same inputs and assumptions to see if the traditional model arrived at the same answers as the SEM. The traditional model provided basically the same answers as the SEM. They concluded, given a certain set of assumptions, there were no problems with SEM as a computational model. (pp. 19-21)

(5) There was great concern about the model assumptions. In an April 1998 memo to MG Anderson, COL Mudd described being uneasy with the assumptions on which the economics and the SEM model were based. He agreed with COL Mudd that in order to make the model run, you had to assume the problem away. He could not follow many of the assumptions. They were based on a very little data that came primarily from Iowa. He could not recall the conclusions the economics panel reached concerning the assumptions. (pp. 21-23)

(6) In September 1998, he thought it was prudent to plan for more than one possible future alternative in addition to the NED. They were not prohibited from looking at alternatives other than the NED. They were interested in knowing the likelihood of a world scenario that would lead to a decision that it was worth a gamble to the United States to spend billions of dollars updating the infrastructure. Was there such a

scenario? Was it likely? Was it -- not even likely. Was it possible? Was it possible for reasonable people to imagine such a scenario? And, if so, what was it? (pp. 33-34)

(7) They used the term storyline, not in the sense of a made up story, but in the sense of strategic thinking. He believed the concept of a storyline was not required by the policy and planning guidelines or the engineer regulations, but neither was it prohibited. It was clear to him that development of an alternative that took account of world conditions was part of what he was assigned to do. He was assigned to lead the economics panel not as an economist, but as a manager. He was to complete the ITRs of the economics, derive a NED, and prepare a briefing on the economics panel's efforts for the Director of Civil Works. (pp. 34-35)

(8) They did not identify a NED because the wisdom of the corporate body was that their NED was not logical. The assumptions underlying the process were faulty. They seemed to be going contrary to what intuition told them was really happening in the world. In the summer of 1998, the NED would have been a relatively modest program of small-scale measures. It was a mix of things like guide wall extensions and mooring cells. There was little if any major capital construction. (pp. 35-36)

(9) It was during a 23 September 1998 briefing that MG Fuhrman used the term advocates. MG Furman indicated they were advocates of the inland waterway. He believed MG Fuhrman used the term "advocates" in the sense that they were proactive stewards. They should not wait for the system to fall down before they asked Congress for money to fix it. They anticipated when improvements were needed. They needed to know what are the scenarios that could lead them to recommend something greatly different from a NED that was based on very shaky assumptions. (pp. 39-40)

(10) After the 23 September 1998 briefing, he believed he tasked Mr. Soyke to combine their notes and prepare a message for him to send out for comments. Once everyone was satisfied they had accurately captured what MG Fuhrman said, he sent out a message to serve as directions for Mr. Manguno, the lead economist. Mr. Kitch, HQ, USACE, responded to his message and indicated he overstated what MG Fuhrman said. He sent a second message to Mr. Manguno and indicated he (Mr. Hanson) may not have faithfully captured the guidance of MG Fuhrman and Mr. Manguno should seek verification from the MVD. He told Mr. Manguno that MG Fuhrman's guidance was: "If the demand curves, traffic growth projections and associated variables, that the economic model can consider do not capture the need for navigational improvement, then we have to figure out some other way to do it." The quote reflected his understanding of what needed to be done. (pp. 40-42)

(11) He did not feel there was pressure on the part of the command structure to arrive at a certain decision or recommendation. He thought there was reluctance to go public with where it appeared they were going with the NED. He got the impression they would not look as if they had done their job if they went public with what appeared they were tending toward on the NED. (p. 48)

(12) In a 25 September 1998 e-mail to Mr. Kitch, he indicated he had heard MG Fuhrman told an audience in New Orleans that they would have lock extensions to 1200 feet in the near term. He thought MG Fuhrman's comments were consistent with MG Fuhrman's comments during the 23 September 1998 briefing. (pp. 50-51)

(13) In September 1998, the NED was still a relatively modest plan and he believed that included guide wall extensions at approximately eight sites and mooring cells at another six sites. He called Mr. Manguno at home and probably gave Mr. Manguno instructions to produce a scenario that resulted in immediate implementation of large-scale measures. Mr. Manguno probably said that he (Mr. Manguno) felt uneasy executing such instructions because he (Mr. Manguno) felt such instructions were not within the charter of the study or his role. He felt that as the professional economist on the study, it was appropriate for Mr. Manguno to determine if there was a reasonable scenario that required large-scale improvements. The Corps needed to determine if there was something it was missing. He felt his request to Mr. Manguno was appropriate and he operated in what he considered was his duty. In his opinion, he executed a legal order. (pp. 53-55)

(14) He did not know whether the command made the right decision by stonewalling going public with the study results. He was frustrated by that decision. They got a little petulant with MG Fuhrman at a briefing in late 1998. However, MG Fuhrman had an expression of "no wine before its time." His understanding of the guidance from above was to find the scenario that resulted in near-term major construction. He was to discover if there was such a scenario, not to say that scenario was going to be implemented. (pp. 57-58)

(15) He did not have any official chain of command interpretation of MG Fuhrman's 23 September 1998 guidance as passed from MG Fuhrman to MG Anderson to COL Mudd to himself. There were others in the meeting who heard the same thing. He worked with other staffers to develop what he thought sounded like a reasonable summary of MG Fuhrman's guidance that could be used as directions for the study team. Because the study was already late and because they had to respond

within 3 weeks, he thought he could not wait for instructions to work their way down to him. The 3 weeks would have been up before he got clear instructions. There was a lot of confusion. They could not agree about what MG Fuhrman had said, let alone what it meant. So, he tried to capture what MG Fuhrman said and what he meant. He took responsibility for his message, but the thoughts expressed in that message did not originate with him. (p. 59)

(16) At the request of his boss, COL Mudd, he prepared large parts of COL Mudd's 2 October 1998 message to Mr. Manguno. He did not think he prepared the part about developing a single set of assumptions to support a specific scenario. He was not an advocate of that. (p. 60)

(17) He felt no pressure from anyone in his chain of command to arrive at a conclusion that justified near-term, large-scale construction. He felt pressure to examine that as an option and to conduct a thorough analysis of that option. He also felt pressure to develop a scenario that depicted what had to happen in order for that option to be a reality. (Exhibit B-36, p. 69)

4. Discussion:

a. Dr. Sweeney alleged Mr. Hanson was responsible for attempts to circumvent Corps guidance concerning the evaluation of projects and was responsible for changing the navigational study. Implicit in the standards was the expectation that feasibility studies would be conducted in an impartial and objective manner and formulation of alternatives would be based on the most likely future condition. Army Management philosophy stated that managers would do the right things for the right reasons.

b. The evidence established:

(1) In April 1998, the preliminary economic analysis indicated no large-scale construction measures were warranted. The Corps senior leadership did not receive those results favorably. On 17 June 1998, Mr. Hanson was appointed project manager of the study and placed in charge of the economics panel. The economics panel was responsible for conducting the economic analysis and development of the NED.

(2) Mr. Soyke, an economist in the Rock Island District, indicated that Mr. Hanson suggested that he send out an e-mail. In the e-mail, Mr. Soyke indicated that the team should determine an alternative that appeared to be most likely to justify large-scale construction in the near term.

(3) Mr. Hanson, after attending a 23 September 1998 briefing to MG Fuhrman on the status of the study, sent an e-mail to Mr. Manguno and other study team members summarizing MG Fuhrman's guidance. Mr. Hanson stated the Corps was the Federal advocate for inland waterways. The study team needed to figure out what the demand curves meant, and if the variables did not show the need for navigational improvements, they (study team) had to figure out some other way to do it. Mr. Hanson went on to state that MG Fuhrman had directed that they develop evidence or data to support a defensible set of capacity enhancements. They needed to know what drove the benefits up and they should err on the high side. Mr. Hanson told Mr. Manguno he should use this guidance as a statement of work for his tasks as leader of the economic work group. Mr. Manguno and other study team members expressed concerns about instructions to develop evidence or data to support a defensible set of capacity enhancements projects.

(4) On 25 September 1998, after receiving an e-mail from Mr. Kitch that indicated Mr. Hanson had not accurately captured MG Fuhrman's guidance, Mr. Hanson sent another e-mail to Mr. Manguno and study team members. Mr. Hanson indicated that he might not have faithfully captured MG Fuhrman's guidance. He recommended that Mr. Manguno seek guidance from MVD concerning what his tasks were as leader of the economic work group. In another e-mail, Mr. Hanson indicated MG Fuhrman's statement that they as members of the Corps were advocates for inland navigation sounded to him to be a distinctly more proactive posture than he pictured their role. He (Mr. Hanson) thought of the Corps as stewards responsible for executing public policy regarding improvements. He considered the overt advocacy role a new departure. He indicated they would need to work on a story line. He indicated he had no problem with this as long as the chain of command supported and helped explain when the heat came.

(5) Based on the concerns expressed by Mr. Manguno about the directions to implement MG Fuhrman's guidance, COL Mudd sent Mr. Manguno an e-mail on 2 October 1998, prepared largely by Mr. Hanson at the request of COL Mudd, which indicated MG Fuhrman had clearly stated that the Corps was the Federal Government's advocate for the inland waterway system. To help in the execution of that responsibility, Mr. Manguno would develop the economic component of the case that included near-term improvements, recognizing that the nation would be better served by improvements that erred on the large-scale side.

c. The preponderance of the evidence indicated that during the period of time Mr. Hanson was the study project manager and responsible for the economic analysis, the economics panel engaged in activities, at the direction of Mr. Hanson, that were not consistent with identification of an unbiased NED.

(1) Mr. Hanson originated the initial instructions to Mr. Manguno to develop an economic case for near-term improvements that if used for the development of a NED would have been inconsistent with regulatory guidance on development of a NED based on the most likely outcome. However, he retracted those instructions when Mr. Kitch advised him that he had not accurately captured MG Fuhrman's guidance. Mr. Hanson acknowledged to the study team that the interjection of an overt advocacy role was a new departure that could be problematic and would require the need to develop a new story line. Mr. Hanson advised Mr. Manguno to seek guidance from MVD concerning what his tasks were in relation to MG Fuhrman's guidance. COL Mudd eventually instructed Mr. Manguno on his tasks. In an e-mail, COL Mudd told Mr. Manguno to help in the execution of the Corps' role as the Federal Government's advocate for the inland waterway system, he (Mr. Manguno) would develop the economic component of the case that included near-term, large-scale improvements.

(2) As an Army manager, Mr. Hanson had a responsibility to ensure that the study analysis was conducted in an impartial and objective manner. Mr. Hanson, based on his interpretation of guidance of senior Corps officials, directed the economics work group to look for alternatives that supported large-scale improvements that were reasonably plausible and to develop data that supported near-term implementation of those improvements. Mr. Hanson also indicated that a story line needed to be developed to explain the recently announced Corps advocacy role. At the time that Mr. Hanson gave those instructions, their purpose was unclear and could have been interpreted as interjecting bias into the study process. There was no evidence that those alternatives, data, or story line were ever used in the development or identification of the NED. There was no evidence that directly related any action by Mr. Hanson to development of a NED in a manner inconsistent with laws, policies or regulations. Mr. Hanson should have been more assertive in ensuring that the study team members clearly understood the rationale for the action they were directed to take. However, the evidence reflected that Mr. Hanson executed his interpretation of the guidance he received from his superiors and did not act independently. Mr. Hanson retired prior to the pivotal events that resulted in the manipulation of the analysis.

5. Conclusion: The allegation that Mr. Hanson improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation was not substantiated.

ALLEGATION #8: Mr. Loss improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

1. Standards: The standards shown for Allegation #1 applied.

2. Documents:

a. In his affidavit, Dr. Sweeney stated:

(1) On 27 May 1999, Mr. Loss was in a telephone conference call with COL Mudd and Mr. Manguno. COL Mudd instructed Mr. Manguno to use an N-value for grain of 1.2. Dr. Sweeney explained the flaws with COL Mudd's rationale in a telephone conference with COL Mudd, Mr. Manguno, and Mr. Loss on or about 22 June 1999 and in an e-mail, dated 29 June 1999. COL Mudd's rationale was based on a mathematical error. Dr. Sweeney objected to the changes and he (Dr. Sweeney) cautioned they were fostering a perception of "cooking the economic books" to justify the lock extension projects. Dr. Sweeney was not satisfied with Mr. Loss' response.

(2) Mr. Loss wrote a 28 May 1999 study update which said the engineering review resulted in cutting the contingency cost percentage from 35 percent to 25 percent and found substantial rehabilitation cost savings. Even though the analysis had previously undergone an ITR, this update indicated the previous results were overruled by a subsequent review that stemmed from the 5 May 1999 summit. Dr. Sweeney asserted to his knowledge, no significant documentation of this review was ever disseminated within the study team, made available to the public, or subjected to ITR.

(3) After Mr. Loss briefed the 11-12 May 1999 summit on the Corps' estimates of benefits and costs, Mr. Keeney, Huntington District, opened the meeting by stating the study only needed to close a small gap between benefits and costs to justify large-scale projects. Mr. Loss sent minutes of the meeting to MG Anderson, which described an agreement that Mr. Marmorstein, a study team member, would conduct a joint analysis with Mr. Toth, a consultant for MARC 2000, to determine if they could produce an

acceptable, lower estimate of the N-value for grain. Mr. Loss believed the N-value of 1.2 produced reasonable results and could be defended. (Exhibit C-1, pp. 33-37)

b. In a 28 May 1999 e-mail to several persons, including Mr. Loss, Mr. Thompson stated Mr. Loss provided a study update to the GLC. Mr. Loss reported that the study team's efforts were in keeping with a scheduled completion of December 2000. Mr. Loss described the 5-6 May 1999 summit in Saint Louis. The purpose of the meeting was to allow discussion about the economic analysis and address concerns raised by industry. On 11-13 May 1999, COL Mudd, Mr. Loss, and members of the economic workgroup met with industry representatives to further discuss the economic analysis. The engineering workgroup completed a final review of the lock costs for various alternatives. As a result of the review, the workgroup concluded the alternative designs were sound and the contingency costs could be reduced from 35 to 25 percent. The workgroup also determined that there was increased potential for avoiding without-project rehabilitation costs. (Exhibit NN)

c. In a 29 June 1999 e-mail to Mr. Loss and others, Dr. Sweeney stated the methodology adopted by the study team for estimating N-values was inappropriate. They were fostering a perception of "cooking the economic books" to economically justify lock extension projects. (Exhibit OO)

d. In a 2 June 1999 e-mail to MG Anderson, COL Mudd, and others, Mr. Loss stated the study team briefed MG Anderson. They should review and adjust costs where appropriate. Mr. Marmorstein conducted a joint analysis with Mr. Toth to determine if they could produce an acceptable, lower estimate of the N-value for grain. Following the joint analysis, the study team found they agreed with Mr. Toth's rationale for a lower N-value. Mr. Loss believed that an N-value of 1.2 produced reasonable results and could be defended. (Exhibit PP)

e. In his 13 April 2000 Congressional affidavit, Mr. Manguno testified the N-value could play a significant role in justifying potential waterway expansion projects. At the time of Dr. Sweeney's last analysis, the N-value for grain of 2.0 did not justify lock expansion. After consideration of available data, he selected an N-value of 1.5. Subsequent analysis using 1.5 did not justify lock expansion. COL Mudd directed him to use a value of 1.2. He (Mr. Manguno) could not conclude that the value of 1.2 fell outside the bounds of uncertainty. (Exhibit AA)

3. Testimony:

SAIG-IN (20-1b) (00-019)

a. Dr. Sweeney testified:

(1) In May 1999, the study team had not arrived at the answer that some Corps officials wanted, which was the immediate justification of the large-scale construction. Mr. Manguno told everyone he (Mr. Manguno) had adjusted the study inputs as far as he could. (p.77)

(2) The Corps succumbed to pressure from industry and agreed to a series of private meetings in May 1999. Such meetings for the purpose of finding ways to change the analysis to get to a predetermined result were uncommon. Mr. Marmorstein and Mr. Manguno characterized the meetings as industry telling the Corps how to get projects justified. In the first meeting, the Corps staff resisted the pressure imposed by industry. Mr. Marmorstein put industry's numbers into the model and got results that were laughable. Based on industry's data, one should have been able to look out the window and see many towboats lined up at the locks and dams on the Mississippi River, but that kind of delay was not there. (pp. 78-82)

(3) Mr. Keeney, Deputy District Engineer, Huntington District, facilitated the follow-up meeting in Chicago. Mr. Loss explained the benefits and cost numbers. Mr. Keeney indicated that all that needed to be done was close the little gap between the benefits and costs and then a recommendation for the projects could proceed. (Exhibit B-1, pp. 84-85)

b. COL Mudd testified the directive to meet with industry came from his higher headquarters. The 5 May 1999 meeting seemed to be "Corps bashing" by the barge industry. There was a follow-up meeting a week later designed to get into the details of the N-value. In a telephone call with Mr. Loss and Mr. Manguno on about 23 May 1999, he directed a methodology be used that applied a weighted average to the Iowa corn data for the development of an N-value. He explained the methodology using the illustrative example of N was equal to 1.25, as he had done at the Chicago meeting. He expected Mr. Manguno and Mr. Marmorstein to do the detailed analysis resulting in an appropriate N-value. He thought they did the analysis. "The decision to use 1.2 was a study team decision." (Exhibit B-34, pp. 13-19, 94-95, 106-108, 110, 112)

c. Mr. Manguno, lead economist for the study, testified:

(1) The nonpublic nature of the 5 May 1999 summit was a deviation from the way the study was previously conducted. He could not recall having a similar meeting

with environmental groups. Mr. Loss and other Corps leaders attended the meeting. (pp. 92-96)

(2) About 27 May 1999 in a conference call involving Mr. Loss, COL Mudd directed him (Manguno) to use a weighted average methodology that resulted in an N-value of 1.2. On 22 June, in a conference call with Mr. Loss and others, Dr. Sweeney stated COL Mudd's new N-value of 1.2 was not correct. (Exhibit B-2, pp. 61-63, 97-99)

d. Mr. Marmorstein, analyst and study team member, testified:

(1) He attended the economic summit in early May 1999. Barge executives wanted new locks. What industry proposed was ridiculous and produced results at odds with observable things. You could see congestion and tows lined up, so when you told people there should be 20 tows lined up and there were only 2, people knew something was wrong. So in the end, the Corps economists carried the day. (p 26)

(2) There was a follow-up meeting on 11 and 12 May 1999. He, Mr. Manguno, COL Mudd, Mr. Loss, and, perhaps Mr. Tipple met with Mr. Toth and Mr. Kalk from industry. Mr. Brescia came the second day. Mr. Keeney, from the Huntington District, was brought in to facilitate. The meeting began with Mr. Loss putting up the cost and benefit numbers for certain measures. Mr. Keeney noted that the costs and benefits were not far apart, which they were not at that point. Mr. Loss recorded suggestions that included all the engineering things: contingency costs, channel improvement costs, cost savings from rehabilitation or maintenance avoided, and perhaps one or two others. (pp. 26-27)

(3) He believed the decisions to make the changes to support large-scale construction were made before any kind of documentation was produced in support. He based his conclusion on notes from a 19 May 1999 team meeting that he did not attend. The notes said adjust rehab costs minus 20; delete optimization of approach improvements minus 25; reduce contingencies from 35 percent to 25 percent minus 55. He believed the numbers were in place and the analysis, if any, was created to support them. He did not see any way that any kind of appropriate analysis could be done in that time. (Exhibit B-3, pp 28-29)

[IO note: The notes were an attachment to a 22 May 1999 e-mail from Mr. Loss.]

e. Mr. Soyke, Rock Island District, testified he did not disagree with the cut in contingency cost from 35 percent to 25 percent. As they found more information on

structures that had been put in place with the new construction methodology, they became more comfortable and it made more sense to go to the lesser contingency. (Exhibit B-7, pp. 45-46)

f. Mr. Keeney, Huntington District, testified MG Van Winkle asked if he would facilitate a 11-12 May 1999 summit meeting. His guidance was to get the Corps and industry representatives to communicate. He addressed two issues. One was defining the without-project condition and the cost for that condition, and the second was the development of benefit estimates for use in the study. At the beginning of the meeting, Mr. Loss provided a brief overview of the alternatives that were being considered. It was thought then the recommendation might involve extension of guide walls as opposed to building new locks or rehabilitating existing locks. (Exhibit B-8, pp. 4-6)

g. Mr. Thompson, Rock Island District, testified:

(1) Mr. Loss wrote a memorandum on results of the Chicago summit meeting. Mr. Loss' memorandum summarized discussions that centered on demand curves and alternative methodologies. He recalled statements that said benefits and cost were generally similar for most of the plans considered. There was an effort to make sure no benefit had been overlooked. (pp. 41,42)

(2) When asked if he thought there would have been the concern or the detailed look at all the components had the benefits greatly outweighed the cost in the first place, he responded he did not believe so. (Exhibit B-10, p. 43)

h. Mr. Lundberg, Rock Island District, testified:

(1) At the summit meeting in Saint Louis, Mr. Loss asked him whether they had incorporated any of the rehabilitation cost avoidance benefits. Cost avoidance would occur because there would be an "investment stream" set up to rehabilitate aging locks that could be avoided if the locks or their components were replaced. He said they had not, but it was a valid benefit category. It was used for Ohio River projects. In the next few days, he came up with a method where they could compute the cost avoidance benefits based on work done to date. He gave Mr. Loss a preliminary answer. He thought Mr. Loss discussed the issue with COL Mudd and at the next meeting in Chicago. He knew of no pressure from higher Corps Headquarters or from industry to follow up on those potential benefits. They produced a report in September 1999 that included cost avoidance benefits. They conducted ITRs on their engineering work

throughout the study process and discussed their work in public. Nothing was hidden. (pp. 24-28, 46)

(2) Following the summit, Mr. Loss asked if they were sure they had captured all of the benefit categories that were part of the economic analysis and if they were sure about the costs. That caused them to review some things. He put together some thoughts on how they would do it and sent a copy to COL Mudd. COL Mudd did not direct them to change numbers, but COL Mudd challenged them to make sure they had all areas researched. They could not agree with some of the things COL Mudd came up with. COL Mudd might have been trying to slant things toward a better benefits/cost ratio. COL Mudd did not challenge them in the other direction. (pp. 29-32)

(3) The engineering group had the responsibility to develop contingency costs on projects. Very early in the project, there were large contingencies; as they moved closer to construction, the contingency costs were lower. According to regulations, the costs were to range from 10 percent to 20 percent. Early in the project, they agreed on an initial contingency cost of 35 percent. At the time they had no idea how that would affect the benefits to cost ratio. At the Saint Louis summit meeting, Mr. Loss asked if they were sure on their contingency costs. He then reevaluated them, because they had been carrying contingencies that were based on information from 1996. Because of the additional work they had done and the additional information they had on innovative construction methods, he felt it was time to start cutting back contingency costs, which was the normal process. That idea came from him, not COL Mudd or Mr. Loss. The navigation industry did not suggest it. He discussed it with others, and they decided to reduce contingency costs to 25 percent. (pp. 45-51)

(4) Dr. Sweeney was removed because Mr. Loss and the colonels involved sensed they were not producing in the economic arena and there was no end in sight. There was some sense Dr. Sweeney was not providing the answer people wanted. He was not aware of any regulations that had been violated, nor did he think any Corps officials had acted improperly in regards to the study. (Exhibit B-18, pp. 61-63)

i. Mr. Herndon testified it was not possible for the Corps to "cook the books" because such action required many employees to act in collusion, all actions were open to public scrutiny, and the Corps employees were very professional. There was considerable concern about developing 50-year projections for traffic and the development of the N-value. These were key to meaningful results. They looked at the model results as counter-intuitive. The recommendation of construction measures sometime in 2020 or 2030 was not what was expected. They had to understand the

results so they could explain them. When the model provided the unexpected results, they examined the analysis more carefully. Contingency costs were typically refined and reduced as a study moved through PED and into construction. It was no surprise that the contingency costs in the study were reduced from 35 percent to 25 percent because some of the technology considered innovative early in the study was proven by 1999. (Exhibit B-33, pp. 18-19, 23-24, 42)

j. Mr. Barnes testified he was aware of significant deterioration in parts of some lock and dams. It was clear to him that something had to be done to restore the locks and dams. Mr. Loss did not do anything unethical. (Exhibit B-38, pp. 25-29, 40-42)

k. After being advised of his rights, Mr. Loss testified:

(1) Before he became the project manager, he had limited involvement in the study. When he learned that he would become the project manager, he attended a few meetings in November and December 1998. (p. 3)

(2) There were concerns about the study from the start. The study team received criticism from environmental groups and the barge industry. The study team was working towards a draft of the feasibility report. They had a goal of July 2000 to publish a draft report. He projected the report would be delayed since Corps Headquarters was involved in a policy review of the study. He thought the draft report would be released to the public in September 2000. The study was the largest feasibility study the Corps had ever undertaken. The study team attempted to brief COE Headquarters staff throughout the study process to keep them informed on the progress of the study. When the study team briefed MG Van Winkle on 28 January 2000, MG Van Winkle asked for a review before the study went public. (pp. 7-9)

(3) He was aware of the regulations governing the proper conduct of navigation feasibility studies. He did not question the integrity of the study. (p. 12)

(4) When he became project manager, he recognized that he was working with an equilibrium model that was cutting edge for the Corps. The model considered the demand elasticity of commodities that were shipped. This was the first time the Corps had taken that into consideration. It seemed appropriate because grain was a commodity that gave both the shipper and the farmer many choices. Previous studies, including the Ohio River studies and the reconnaissance studies that were done for the UMR-IWW study, were based upon assumptions that demand was completely inelastic. The study team spent most of 1998 acquiring demand elasticity data for the model.

After consulting with industry; the Department of Agriculture; Corps Headquarters, and different states; the best the study team could come up with was 1994 data from Iowa, which was ultimately used to derive the demand elasticity value for the model. He thought using this limited data was better than assuming inelastic demand. (pp. 12-13)

(5) The study was conducted in an iterative manner. Their goal was to look for an alternative that showed economic justification. They were not there to find things that were not justified. In 1997 and early 1998, the study results indicated that no improvements would be economically justified. Initially, major rehabilitation costs were not factored into the analysis, so the study team revised its findings based on this new factor. Based on that, it appeared that small-scale measures would be justified. (p. 14)

(6) He thought no one in the Corps leadership, including himself, did anything improper in relation to the study. Several "stakeholders" told the study team what the recommendation should be. He had heard that MG Fuhrman said the COE had an advocacy role for inland waterway navigation. He thought MG Fuhrman meant that the Corps owed Congress the full range of alternatives and all pertinent information. The recommended plan might be different than the NED. He was surprised to hear MG Fuhrman use the term advocacy. The advocacy term was new to him (Mr. Loss), because previously the idea was that the Corps should be completely objective in its recommendations. That spread like wildfire throughout the Corps. Based upon subsequent discussions, it seemed as though MG Fuhrman's intent was to ensure that a full disclosure of the other factors were investigated. He believed MG Fuhrman meant the Corps was the steward of the inland navigation system and the study team must make sure that it was doing the right thing and looking into the future to give the decision-makers the information to make the right decision. (pp. 17-24, 37)

(7) The study team continued to work on developing a NED and a recommended plan. They had not completed system and environmental costs, which still had to be factored into the analysis. He thought the NED alternative was one that must provide positive net benefits. However, the recommended plan could provide less than positive net benefits. (pp. 21, 24, 38)

(8) The study team had difficulty estimating the N-value. Dr. Sweeney's original estimation was N = 2.0. An expert elicitation panel met in August 1998 to study the N-value. They came to the same conclusion as the study team: there was a need for more data. The expert elicitation panel concluded the N-value should be somewhere between 1 and 2. Mr. Manguno concluded the value should be 1.5. COL Mudd, who was in charge of the study, was not convinced that the study team had sufficient data,

so the study team continued their search. Although he could not validate it, he thought the value of 1.2 was a reasonable "middle-of-the-road estimate." At COL Mudd's request, Mr. Manguno used a weighted average approach to calculate the N-value of 1.2. COL Mudd recommended to MG Anderson that the study team use the N-value of 1.2. MG Anderson approved COL Mudd's recommendation. On or about 27 May 1999, he was in a teleconference with COL Mudd and Mr. Manguno. The calculation of the N-value was the main topic of discussion. The study team conducted "what if" drills to determine what value of N would produce net positive benefits for large-scale construction. COL Mudd predicted the value that would justify large-scale construction would be 1.2. Even though he (Mr. Loss) understood that the weighted average approach was mathematically flawed, he accepted the result of that approach because the N-value of 1.2 fell within the accepted range of 1.0 to 2.0. Mr. Manguno told him that he could defend a value that fell within that range. Net benefits of $16 million were announced at a public meeting in July 1999 for a number of alternatives with an N-value of 1.2. (pp. 28-34, 52-53, 65-66)

[IO note: This statement conflicts with Mr. Manguno's account. Mr. Manguno testified that COL Mudd did the math and directed the use of the N-value of 1.2.]

(9) The formation of the economics panel preceded his assumption of program management. He was not aware that that economics panel had been given an indefinite status until May 1999 when Dr. Sweeney asked what role the panel should have. He (Mr. Loss) asked, "What panel?" When he checked the study records, he found MG Anderson's letter, dated September 1998, and realized that indeed there had been a panel formed, and he had not employed them. He had been using the economics workgroup to accomplish the panel's work. Mr. Hanson did not inform him about the economics panel before relinquishing his program management. Around June 1999, he and Mr. Manguno discussed the panel. Mr. Manguno did not see a need for the panel, so it was proposed to COL Mudd that the panel be disbanded. COL Mudd recommended this to MG Anderson and MG Anderson disbanded it. (pp. 42-43)

(10) On 14-15 January 1999, Mr. Manguno was told to restrict the model to assume that industry self-help could only be used a maximum of five percent of the lockages. He did not know what the accepted theoretical maximum percentage was prior to this direction. The study team consulted with industry and asked industry if they could live with permanent self-help. Industry said no because of safety concerns. The study team set five percent as the maximum amount of self-help to be used by industry. Other Corps employees agreed with that conclusion. (pp. 46-47)

(11) He attended both economic summit meetings. He did not recall Mr. Herndon telling attendees that it was their job to find a way to justify large-scale navigation projects. Industry representatives questioned the study team's assumptions. That caused the study team to think that possibly they had underestimated rehabilitation savings. They "went back to the drawing board to further sharpen our pencils on those assumptions." The goal was to find out if there was an alternative that was justified. He did not recall Mr. Keeney, Huntington District, saying that they only needed to close a small gap between the benefits and cost to justify the desired large-scale project. Mr. Keeney's goal as facilitator for that meeting was to try to bring the Corps and the industry together. Some members of the study team suggested they invite other parties to the economic summit. Mr. Herndon, he believed, came back and said the issues were complex enough without raising other issues. (pp. 49-53)

(12) It concerned him to hear the word "partner" used to describe the relationship between the barge industry and the Corps. He thought the word "partner" was inappropriate. Partner suggested that both parties had equal rights and responsibilities in regards to decisions about inland waterway navigation projects. He did not believe having private meetings with industry violated law, standard or policy. The 5 May 1999 meeting was especially loud and vocal. Generally, the Corps did not turn down meetings with any group that requested one. (pp. 55-59)

(13) PED spending commenced based on WRDA 1999, which authorized the Corps to proceed with about four or five inland waterway construction projects "if justified." After Corps Headquarters allocated the funds, he reviewed the study alternatives and decided if there was justification to proceed with PED. (Exhibit B-37, pp. 71-79)

4. Discussion:

a. Dr. Sweeney alleged Mr. Loss was responsible for attempts to circumvent Corps guidance concerning the evaluation of projects and was responsible for changing the UMR-IWW study. Implicit in the standards was the expectation that feasibility studies would be conducted in an impartial and objective manner and formulation of alternatives would be based on the most likely future condition. Army Management philosophy stated that managers would do the right things for the right reasons.

b. The evidence established:

(1) In April 1998, the preliminary economic analysis indicated no large-scale construction measures were warranted. Corps senior leadership did not receive those results favorably. Although Mr. Loss' involvement in the study was limited prior to his assumption of project management duties, on 1 January 1999, he was aware of the Corps leadership's preference for large-scale construction and it concerned him.

(2) Several stakeholders told the study team what the recommendation should be. He was surprised to hear that MG Fuhrman had used the term advocacy in concert with the study. Based upon subsequent discussions, he allayed his concerns to some extent because he thought MG Fuhrman might have meant he (MG Fuhrman) wanted the study team to fully include other intangible factors, besides the economic analysis.

(3) He participated in the May 1999 summit which were private meetings between Corps and industry. Mr. Loss believed the study team's goal was to find an alternative that showed economic justification.

(4) Mr. Loss was aware of COL Mudd's involvement, which resulted in a change in the N-value from 1.5 to 1.2. His economics workgroup leader, Mr. Manguno, preferred an N-value of 1.5. Mr. Loss admitted he knew about the mathematical flaw inherent in COL Mudd's derivation of N = 1.2. Since the value fell within the range established by the expert elicitation panel, he rationalized that it was a "middle-of-the-road" estimate.

c. The preponderance of the evidence indicated Mr. Loss was aware of the mathematical flaw inherent in COL Mudd's derivation of the N-value = 1.2, but he did not direct its use. Additionally, Mr. Loss was present during the May 1999 meetings between Corps study team members and industry representatives; however, the evidence did not reveal that Mr. Loss was personally responsible for the decisions that directed the study team to conduct joint analyses with industry representatives.

5. Conclusion: The allegation that Mr. Loss improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation was not substantiated.

ALLEGATION #9: Mr. Barnes improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation.

SAIG-IN (20-1b) (00-019)

1. Standards: The standards shown for Allegation #1 applied.

2. Documents:

a. In his affidavit, Dr. Sweeney alleged Mr. Barnes told him to find a way to justify large-scale measures in the near term. (Exhibit C-1, p. 25)

b. On 25 September 1998, Mr. Barnes sent an e-mail message to COL Hodgini, former District Chief, Saint Louis District, Ms. Karnish, Saint Louis District, and Dr. Sweeney in which he summarized some notes MG Fuhrman had given the same day at the National Waterways Conference. According to Mr. Barnes: MG Fuhrman reiterated (1) that he (MG Fuhrman) saw the Corps as an advocate for inland navigation; (2) the nation needed inland waterway capacity to be competitive in the future; (3) they must look at "demand dynamics" 10 years out and beyond; and (4) the Corps Headquarters would be "decisively engaged" in the results of the study. Mr. Barnes said: "It's pretty clear to me where this is heading." (EXHIBIT QQ)

c. On 20 February 1998, Mr. Barnes replied to an e-mail from Mr. Dutt, Saint Louis District. Mr. Dutt promised Dr. Sweeney would meet the study schedule. Mr. Barnes replied that he appreciated the insights and wanted to talk further about the issues. (Exhibit RR)

d. On 20 July 1998, Mr. Thompson, Rock Island District, sent minutes of a 7 April 1998 study steering committee meeting to several addresses, including Mr. Barnes. Mr. Barnes had attended the meeting. (Exhibit SS)

[IO note: Mr. Barnes provided four official USACE reports, published by the Saint Louis District, to support his contention that UMR locks and dams were deteriorating and needed major rehabilitation. The reports were for Lock and Dam Number 24, May 1997 and May 1999, and Lock and Dam Number 25, May 1997 and May 1998. The reports contained numerous photographs and text describing damage sustained by the locks and dams over the years. The reports were reviewed and considered by the investigation, but they were not included in the ROI exhibits.]

3. Testimony:

a. Dr. Sweeney testified Mr. Barnes sent an e-mail in September 1998 that Corps Headquarters would be decisively engaged in the study and he (Mr. Barnes) knew where that was going to go. On or about 18 September 1998, Mr. Barnes, his second

line supervisor, told him he (Mr. Barnes) had talked with Mr. Rhodes and Mr. Hanson, and if he (Dr. Sweeney) did not find some way to justify large-scale locks in the near term, he (Dr. Sweeney) would be permanently removed from responsibility for the study. He told Mr. Barnes that, given the data they had, it could not be done IAW regulations. (Exhibit B-1, pp. 56-58, 65; 2, 3, recall)

b. Mr. Manguno testified that Dr. Sweeney told him Mr. Barnes told Dr. Sweeney that if he (Dr. Sweeney) could not find a way to justify large-scale improvements, then he (Mr. Barnes) would find somebody that would. The conversation did not occur on 18 September 1990 as recalled by Dr. Sweeney, but sometime during the following week. (Exhibit B-2, p. 65)

c. Mr. Arnold, program manager, MVD, testified Mr. Barnes tried to make sure the economics team had resources and met its schedules. (Exhibit B-24, p. 9)

d. Mr. Hanson testified they had a difficult time getting a technical review of Dr. Sweeney's model. They thought "Jerry" (Mr. Barnes) would require Dr. Sweeney to complete the model documentation write-up by 11 March 1998. (Exhibit B-36, pp. 6-7)

e. After being advised of his rights, Mr. Barnes testified:

(1) In June 1998 he learned through Mr. Rhodes and Mr. Herndon that responsibility for the production of the economic work was being transferred from Saint Louis and assigned to an economics panel. The division leadership was concerned that the economic model was not being completed in a timely manner. He got no guidance from division leadership about the direction they wanted the study to go. He was just told to examine why the completion of the model was taking so long. Dr. Sweeney, Ms. Karnish and Mr. Dutt gave him some defensible reasons relating to the time it was taking to complete the model. (pp. 6-9)

(2) Dr. Sweeney was very professional and not contentious in their dealings. Dr. Sweeney could be cordial, but Dr. Sweeney was also sometimes very opinionated and very insistent on things. Dr. Sweeney had trouble compromising. Dr. Sweeney had been upset about being removed as technical manager. Dr. Sweeney believed he was removed because he would not develop the model to produce recommendations for improvements. He told Dr. Sweeney he would try to get Dr. Sweeney reinstated to the study. He asked Mr. Rhodes and Mr. Herndon to reinstate Dr. Sweeney as a technical manager. (pp. 10-14)

(3) He had no role in Dr. Sweeney's replacement. He felt strongly that Dr. Sweeney should continue to work. He did not feel comfortable when Dr. Sweeney was replaced by a panel, because Dr. Sweeney had the institutional knowledge. After Dr. Sweeney was removed, he had difficulty finding work to fit Dr. Sweeney's job description and grade. (pp. 15-17)

(4) He was aware of significant deterioration in parts of some locks and dams. It was clear that something had to be done to restore them. He attended a conference and heard MG Fuhrman say the United States had to be wise stewards of the inland waterway system to be economically competitive. He told COL Hodgini that "it's clear to me where this is heading because for the first time I see a high-level Corps official saying we need to look at the condition of all of our locks and dams. It's clear to me that -- Division Headquarters is going to be engaged in this study from this point on. Now, whether their results are going to equal positive completion in 3 years or 10 years or 30 years, I'd leave that to completion of the study. But it's clear that a decisive engagement of headquarters in the study is what is stated here." *[IO note: Mr. Barnes was explaining an e-mail he sent.]* (pp. 25-29)

(5) He had no role in COL Mudd's development of an N-value of 1.2. He did not have much involvement with the study in the latter part of 1999. He made no recommendations about the need for large-scale improvements. He was not asked to review the study or provide substantive comments on it. He did not give any guidance or direction to Ms. Karnish about what results she should develop for the study. He was not personally involved in the study until 1 September 1998. Any actions he took were based on recommendations by others. He was not Dr. Sweeney's supervisor when Dr. Sweeney was removed. (Exhibit B-38, pp. 33-35, 46-47)

4. Discussion:

a. Dr. Sweeney alleged Mr. Barnes took improper actions to influence the UMR-IWW study. Implicit in the standards was the expectation that feasibility studies would be conducted in an impartial and objective manner and formulation of alternatives would be based on the most likely future condition. Army Management philosophy stated that managers would do the right things for the right reasons.

b. The evidence established:

(1) Dr. Sweeney testified Mr. Barnes encouraged him to change the results of the ongoing study to justify immediate expansion or replacement of locks. No other testimony or documentation supported that allegation.

(2) Mr. Barnes was only marginally involved in the study and made no recommendations or management decisions of substance.

(3) Mr. Barnes tried to keep Dr. Sweeney on the study team.

c. The preponderance of evidence established there was no credible evidence that Mr. Barnes manipulated the study outcome. Testimony and documentation indicated Mr. Barnes was only marginally involved in the study and made no recommendations or management decisions of substance.

5. Conclusion: The allegation that Mr. Barnes improperly took or directed actions which he knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards established in law and regulation was not substantiated.

ALLEGATION #10: MG Anderson improperly gave preferential treatment to an organization or individuals.

1. Standard. Title 5, CFR, 2635.101 Basic obligation of public service, paragraph (b), stated:

a. In subparagraph (8), employees shall act impartially and not give preferential treatment to any private organization or individual.

b. In subparagraph (14), employees shall endeavor to avoid any actions which created the appearance that they were violating the law or the ethical standards set forth in this part. Whether particular circumstances created an appearance that the law or these standards had been violated shall be determined from the perspective of a reasonable person with knowledge of the relevant facts. (Exhibit D-6)

2. Documents:

a. In his affidavit, Dr. Sweeney stated around mid-April 1999, a representative of the navigation industry requested an "economic summit" that would include top Corps officials, some members of the study team, and industry representatives to discuss

preliminary results of the study. The first summit meeting occurred on 5 May 1999 in Saint Louis and was followed by a smaller meeting in Chicago. The purpose of the meetings was to "come to a meeting of the minds" between the Corps and the barge industry. Mr. Keeney, Huntington District, opened the Chicago meeting by stating that the study only needed to close the small gap between benefits and cost to justify the desired large-scale projects. The meetings resulted in an agreement that Mr. Marmorstein would do some analysis with Mr. Toth, a navigation industry analyst, to determine if Mr. Toth's analysis would produce an acceptable lower estimate of the N-value for grain. (Exhibit C-1)

b. In an 8 April 1999 e-mail addressed to MG Anderson, Mr. Herndon stated representatives of the navigation industry wanted to have a summit meeting. The representatives wanted MG Fuhrman, MG Anderson and other Corps staff present to discuss industry's comments on the study. (Exhibit L)

c. In a 14 April 1999 e-mail to study team members, Mr. Hanson stated if MG Anderson granted Mr. Brescia's request, it would automatically postpone the ECC meeting. Mr. Hanson believed that was probably one of Mr. Brescia's purposes. In a response, Mr. Soyke, Rock Island District, stated the ECC was scheduled for 5 May 1999. He saw no reason the summit could not be held on 6 May 1999. He was not sure a meeting with Mr. Brescia, a navigation industry official, should take precedence. (Exhibit TT)

d. In a 15 April 1999 e-mail to members of the MVD staff and others, Mr. Thompson, Rock Island District, stated Mr. Rhodes directed the study team to postpone the 5 May 1999 ECC meeting. Mr. Rhodes also directed that there would be no additional data releases prior to the meeting. Mr. Rhodes would develop a list of participants that would be limited to Corps senior staff, economic study team members, and navigation industry representatives and their contractors. (Exhibit UU)

e. In a 2 June 1999 e-mail to MG Anderson, Mr. Loss gave a status report that showed industry representatives were assigned study task responsibilities. Corps and industry representatives joined to analyze grain demand elasticities. (Exhibit PP)

3. Testimony:

a. Dr. Sweeney testified:

(1) Mr. Brescia apparently communicated privately by e-mail with MG Anderson and COL Mudd. Mr. Brescia sent COL Mudd an e-mail which stated: "You know, if we go this way and we don't have benefits bigger than cost, we're not going to get these projects, that they're not going to give us the exemption to the Secretarial recommendation that we need for these projects." So, rather than release the study results in May 1999, Mr. Brescia, through communications with MG Anderson, MG Fuhrman and COL Mudd, asked that industry be given one more chance to come up with favorable study results. That led to the May 1999 set of meetings between the Corps and industry. It was very uncommon for industry to have that kind of input and interaction. At first the Corps staff resisted the pressure from industry because the data provided by industry was laughable. (pp. 77, 82)

(2) During a 22 June 1999 teleconference, COL Mudd had Mr. Manguno read the changes to the study analysis. COL Mudd picked 1.2 as the N-value for grain. He (Dr. Sweeney) pointed out that COL Mudd had made a mathematical error. On 2 July 1999, COL Mudd e-mailed MG Anderson and recommended the economics panel be disbanded. On 4 July 1999, MG Anderson disbanded the panel. In late July or August 1999, the public saw study results for the first time that showed benefits for large-scale construction exceeding costs. MG Anderson was one of the people involved in directing and changing the study. (Exhibit B-1, pp. 95-97, 102, 3-4, recall)

b. Mr. Manguno, lead economist for the study, testified:

(1) On the day before a 5 May 1999 economic summit with attendees from industry and government, he heard Mr. Marmorstein, a study team analyst, say something to the effect that they were supposed to provide the best type of analysis possible, not to produce a specific outcome or justify projects. Mr. Herndon replied no, their job was to justify projects. (p. 92).

(2) This study, more than any that he had ever been associated with, had been an extremely public affair. The nonpublic nature of the 5 May 1999 economic summit was a deviation from the way the study had been conducted. He could not recall having a similar meeting with environmental groups. He had never been part of anything like the economic summit before. He thought the purpose of the economic summit was to allow industry an opportunity to comment on the specific demand elasticities used in the analysis. Industry offered several proposals as alternative views on what the elasticities should be, but the study team concluded the proposals were invalid. (pp. 92-96)

(3) The summit meetings were promoted as an information exchange with industry. He thought the meetings were attacks on the study team to get them to change their analysis. None of the Corps leaders present, to include MG Anderson, did anything to prevent industry's attack on the study team. (pp. 25-26, recall)

(4) Based on the events occurring after the economic summit, he thought that the Corps had influenced the study to arrive at a certain outcome. These events included timing of the N-value change, reduction in contingency costs, and inclusion of rehabilitation cost avoidance. (Exhibit B-2, pp. 27-28, recall)

c. Mr. Kitch, HQ, USACE, testified it was his opinion that in general the study was conducted properly and in accordance with laws and regulations. The final review of the study had not been done, but based on the way the study was conducted, he thought there were many cases that were not consistent with the letter of their regulations and certainly not the spirit. He thought MG Anderson supported industry. He also thought MG Anderson tried to do the right thing but got a lot of pressure from industry. (Exhibit B-5, pp. 68, 70)

d. Mr. Conner, HQ, USACE, testified:

(1) During the May 1999 economic summit, industry basically hired economists to attack the Corps' work. He did not think the attacks were creditable. A certain amount of abuse of the study team occurred and to some extent at the encouragement of Corps management. (p. 22)

(2) It struck him as amazing that they allowed the meeting to take place and it was done in isolation. When asked if anybody from the Corps at the meeting said words to the effect "we're here to get this right and we need to pay attention to what industry has to say," he indicated he thought that was probably said. There were some discussions like that. The nature of the way the meeting (the second meeting in May 1999 between the Corps and industry) was held was both extraordinary and, in retrospect, "stupid." It made the Corps look like they were conspiring to fix a product; and, it could be argued at some level, some of the managers were doing something close to that. (Exhibit B-6, pp. 23, 24)

e. Mr. Keeney, Huntington District, testified MG Van Winkle asked him to go to the Chicago summit meeting and facilitate a session between Corps study members and dissatisfied industry representatives. The group briefed MG Anderson on the meeting.

Corps officials were concerned whether they could adequately address and defend the results of the meeting. (Exhibit B-8, pp. 4, 13-14, 16)

f. Mr. Carr, Rock Island District, testified he attended the Saint Louis summit. He felt uncomfortable because it seemed like the Corps was too receptive to industry's point of view. Industry wanted large-scale measures. He did not feel it was an open forum; it was intimidating for him. He felt neither MG Anderson nor MG Van Winkle said anything on behalf of the Corps analysts or their work. While the Corps should listen to all points of view, it was improper to "trot the analysts out in front of industry." (Exhibit B-26, pp. 28-31)

g. Mr. Hughey, Saint Louis District, testified he believed the May 1999 summit was for them to ensure they did not miss anything in their analysis. He guessed the meeting was a little unusual, but he did not get overly concerned about it. He believed no Corps officials acted improperly towards the engineering effort. Actions to review and relook their analysis were normal management responsibilities. (Exhibit B-20, pp. 44, 47-48)

h. Mr. Burns, HQ, USACE, testified although industry representatives were very critical of the Corps analysis during the Saint Louis summit, he did not think the meeting was improper. (Exhibit B-25, pp. 15-16)

i. COL Mudd testified he believed the summit meetings were appropriate because there had been frequent informal contact with industry, environmental groups, and public groups throughout the study. He would have preferred the meetings to be more balanced. Someone from Division Headquarters told him to go listen to industry and get their grievances about the study. He recalled no specific pre-meeting before the 5 May 1999 meeting, but MG Anderson said he (MG Anderson) would not lose control of the meeting. He did not recall anyone ever saying they were there to get instructions from industry on the study's direction or results. He believed the study team took some cheap shots from barge industry attendees. He and MG Anderson talked to the study team after the meeting to boost morale. (Exhibit B-34, pp. 83-91)

j. Mr. Loss testified it was inappropriate to use the word "partner" to describe the relationship between the barge industry and the Corps. It suggested that both parties had equal rights and responsibilities in regards to decisions about navigation projects. The Corps used the word partnering after the Authorization Act of 1986. The Corps said they would cost-share projects at 65/35 percent and local sponsors would be partners. One industry representative, Mr. Palmer, was at the 5 May 1999 meeting, and "he was down our throats about how we, the Corps, were not responsive to what was

needed." The industry contingent was adamant the Corps was not treating industry with enough consideration. Generally, the Corps did not refuse to meet with any group. (Exhibit B-37, pp. 55-59)

k. MG Van Winkle testified:

(1) It was a well-known fact that a lot of people pressured the Corps. It was just a daily fact of life. The Corps got pressured from people who had beliefs, opinions, and legitimate concerns in a different perspective. He did not believe the right approach was to try to remove the pressure, but the right way was to allow everybody to have access to the public policy decision-making process. (pp. 62,63)

(2) The barge industry paid a fuel tax when they fueled up their barges. When they did a project, 50 percent of the funding came from the taxes and 50 percent came from the general revenues. MG Van Winkle responded to the question, what privileges did cost-sharing partners have that non cost-sharing partners did not have during Corps' feasibility studies, by saying that from a procedural view not many, if any at all. Because the barge industry paid the tax, they were eligible to sit on the inland waterway user board. He did not think the barge industry's access to the study was any more or less than other groups. (Exhibit B-31, pp. 71,72)

l. MG Fuhrman testified:

(1) He was sure MG Anderson approved of the May 1999 economic summit with industry. He could not remember if he was consulted on the matter. That was around the time that he became DCG. He remembered industry was pushing for a solution justifying large-scale construction. He thought MG Anderson wanted to make industry comfortable with the Corps' analysis and get information from industry. He did not attend the summit. He was not concerned with the study team meeting with any interested parties. It would have been appropriate for industry to provide information for consideration. When he replied to MG Anderson's 13 May 1999 e-mail that "the cause is just," he meant that it was just to do whatever was necessary to get the study right so the Corps could defend the study in public. He thought it was inappropriate for a senior Corps official to tell attendees at the summit that it was their job to find a way to justify large-scale navigation projects. However, actual determination depended on the full context of the statement. Likewise, it appeared to be inappropriate for a senior Corps official to suggest what the N-Value should be to drive benefits above costs, but it would depend on the situation. (pp. 46-53)

(2) He sent an e-mail to MG Anderson about the summit. Industry was pushing for the study to be completed quickly, and the Corps resisted. His comment, "We were not the enemy," referred to Mr. Brescia's earlier comments that were very critical of the Corps' efforts. He told Mr. Sheridan they were doing their job and the heated language was not good for anybody. He asked Mr. Sheridan to tell them what industry's issues were and they would get back to industry, lay it all out, and get on with the study. When he wrote the public attacks just highlighted the issues and made it harder for them to maneuver, he meant that such attacks made it harder for the Corps to do a good job. He was concerned the study team was distracted by the attacks. When he wrote, "it's not the Corps that they have to convince," he meant industry should redirect their efforts to convince the public of the value for inland waterway transportation. The Corps' role was to make an honest assessment of the need for major improvements. (Exhibit B-30, pp. 56-57)

m. After being advised of his rights, MG Anderson testified:

(1) The idea to hold a summit came from Mr. Palmer, Executive Vice President of DYNAMO. Mr. Palmer told Mr. Herndon the navigation industry wanted to have a summit to talk about the study. Mr. Herndon recommended they meet. (p. 42)

(2) The summit was held on 4-5 May 1999 in Saint Louis and was unpleasant. The industry representatives made insulting comments about the professionalism of the study, and the study team sat there and took it. (p. 43)

(3) He did not recall Mr. Herndon making a Corps pre-summit comment that the Corps' mission during the meeting was to let industry tell them how to get the project justified. The meeting with industry was not a public meeting. He did not think there was anything inappropriate about meeting with industry in such a forum. He previously met both publicly and privately with different interest groups. He sought advice from MG Fuhrman before he committed to the meeting. (pp. 44-45)

(4) The WRDA of 1986, Section 102, and Public Law 99662 specified that one-half of the waterway construction cost would be paid from the inland waterway trust fund. Dollars in the trust fund came from the commercial navigation industry that paid taxes at a rate of 20 cents per gallon of fuel consumed on the inland waterway system. There was nothing improper about meeting with and listening to their 50-50, cost-share partners about the study. The Congressionally mandated trust fund arrangement contained such an expectation. The barge industry was not a cost-share partner in the study, but would be cost-share partners in any construction. (pp. 58-59)

(5) The barge industry was the beneficiary of the study, and there was a Congressional expectation that they consult with the study beneficiary. If he had not met with the members of industry, there would have been Congressional hearings and he would have been taken to task. (p. 61)

(6) He did not remember all the economic components that were changed as a result of the two meetings with industry. COL Mudd reported on what happened. There were changes made to contingency percentages. Prior to the meeting with industry, the study team did not have a NED for large-scale improvements. He also did not know after the meeting if the changes resulted in a NED that justified large-scale improvements. (p. 48)

(7) He did not think it a conflict of interest for industry and government to re-look and adjust the study analysis because he counted on his people to be the honest brokers as they dealt with judgment calls on study parameters. The navigation industry wanted 12 new locks, and they did not care whether the Corps could economically justify them or not. The industry felt it should have been intuitively obvious that the 60-year-old, inadequate locks should be replaced. They pointed to the lock improvements made on the Ohio system. He was under pressure every day from industry to come up with a study recommendation that supported large-scale construction, and pressure from environmentalists that no improvements were needed. He got used to it. (pp. 49, 51, 86-87)

(8) The allegation against him was totally false. He established an administrative record that clearly showed that before he acted, he actively sought and received expert advice from higher headquarters and/or experienced staff to ensure he pursued this study in accordance with rules and regulations. At no time did his actions or directions specify or imply that he would not abide by all laws and regulations. If, inadvertently, laws and regulations were not met, he was confident that the Corps' prescribed study process would ensure appropriate corrective measures. (Exhibit B-32, p. 114)

4. Discussion:

a. Dr. Sweeney alleged that MG Anderson acted improperly during the conduct of the study. Law and regulations stated that employees would act impartially and not give preferential treatment to any private organization or individual.

b. Evidence established the following:

(1) Representatives of the barge industry asked for a meeting with senior Corps officials and staff to discuss their comments on the study. MG Anderson, with the concurrence of MG Fuhrman, agreed to a 5 May 1999 meeting. That meeting resulted in postponement of a scheduled GLC meeting.

(2) Attendance at the meeting was restricted to Corps senior staff, study team members, and navigation industry representatives and their contractors. Several Corps staffers and study team members expressed concern about the appropriateness of Corps officials meeting with industry in such a restricted forum. Several study team members, to include COL Mudd, indicated they were uncomfortable during the meeting.

(3) The meeting was characterized as acrimonious. Several attendees, to include MG Anderson and Mr. Manguno, testified industry representatives and their contractors made personal and professional attacks on the Corps analysts. Neither MG Anderson nor any other senior Corps official took any action to stop or shield Corps analysts from the attacks. COL Mudd and MG Anderson had to talk to the study team after the meeting to buck up their morale and reassure their confidence.

(4) The 11-12 May 1999 meetings resulted in a list of action items. Both Corps and navigation industry representatives were assigned responsibility for tasks related to the study analysis. In one instance, industry was assigned the sole responsibility to determine how to measure NED benefits in one area.

c. The preponderance of the evidence clearly established that MG Anderson allowed the study team to be criticized and attacked during the 5 May 1999 meeting in Saint Louis. While it was appropriate to give the navigational industry a forum to present their concerns and to allow them to present data for consideration during the study, it was not appropriate to allow industry to be an active participant in the conduct of the study analysis. It was the Corps' responsibility to conduct the feasibility study, not industry's. MG Anderson, by allowing industry to participate in the study analysis, gave preferential treatment to the navigational industry.

5. Conclusion: The allegation that MG Anderson improperly gave preferential treatment to an organization or individuals was substantiated.

ALLEGATION #11: COL Mudd improperly provided false or misleading information in a sworn statement.

SAIG-IN (20-1b) (00-019)

1. Standard: AR 600-100, Army Leadership, paragraph 1.8a(4), stated integrity meant honesty, uprightness, the avoidance of deception and steadfast adherence to standards of behavior. (Exhibit D-5)

2. Documents:

a. In a 13 April 2000 sworn affidavit to Congress, Mr. Manguno, the study's lead economist, stated that in March 1999 the N-value he selected for the study was 1.5. He also stated that in May 1999 COL Mudd directed him to use an N-value of 1.2, a value he did not develop or mathematically derive. In the affidavit he explained how the value was derived, but not that he did the mathematical derivation. (Exhibit AA)

b. In a 2 July 1999 e-mail to MG Anderson, COL Mudd recommended MG Anderson disband the economics panel because he believed the panel had completed its mission and was no longer needed. (Exhibit VV)

c. In a 2 March 2000 sworn affidavit to Congress, COL Mudd stated he directed a methodology for Mr. Manguno to use in developing an N-value, but he did not derive a specific N-value. He stated Mr. Manguno calculated the 1.2 N-value. He also stated: "It was my understanding that this decision *[IO note: to disband the economics panel]* was based on MG Anderson's determination that it was no longer necessary to continue the panel since it had completed its function." (Exhibit WW)

3. Testimony:

a. Mr. Manguno testified that about 27 May 1999, COL Mudd telephonically told him to use COL Mudd's weighted average methodology to represent the N-value for grain. During recall testimony, Mr. Manguno testified COL Mudd directed the use of an N-value of 1.2. He (Mr. Manguno) did not calculate a value of 1.2, nor did any member of his work group. As soon as COL Mudd directed him to use the new value, he immediately entered 1.2 into the model and began developing model outputs. The change to an N-value of 1.2, coupled with reductions in cost and inclusion of rehabilitation cost avoidance, resulted in a benefits-cost ratio that supported lock extensions. (Exhibit B-2, pp. 61-63, 97-99; 19-23, recall)

b. Mr. Marmorstein, an analyst and study team member, testified:

(1) At the May 1999 economic summit, COL Mudd said he (COL Mudd) thought the N-value needed to be 1.2. (pp. 29-30))

(2) During recall testimony, Mr. Marmorstein testified Mr. Manguno told him COL Mudd directed Mr. Manguno to use an N-value of 1.2. Mr. Manguno also explained what COL Mudd told him the rationale was for the new value. He believed Mr. Manguno became upset when COL Mudd and others attempted to make Mr. Manguno responsible for the development of the 1.2 N-value. COL Mudd previously mentioned a 1.2 value at a meeting with industry. For any reference in e-mails or memorandums where it said the "study team" determined an N-value of 1.2, that meant someone in the management structure determined it, but not that the economics work group specifically developed it. It was a common practice for management to refer to controversial decisions as a team decision, especially when there was substantial team disagreement over the decision. (pp. 2-4, 10-11, recall)

(3) The math used to develop 1.2 as a value for N was flawed. Although COL Mudd was told of the flaws in deriving an N of 1.2, it was still used in the model. He never saw a mathematical justification for an N of 1.2. (pp. 4-5, 9, recall)

(4) Because of the number of modeling runs, people were starting to see enough inputs and outputs to get a feeling of how they related. An individual could have an idea of what kind of benefits certain changes would generate. (Exhibit B-3, pp. 12-13, recall)

c. Mr. Kitch, HQ, USACE, testified Dr. Burton of Marshall University, Dr. Sweeney, and other folks he had talked to generally seemed to think the N-value was between 1.5 and 2. If you went lower, you should see delays that were not being seen. An N-value of 1.2 was probably at the far end of the range of possible values that would give the most benefits. It was his opinion that the N-value of 1.2 was reverse engineered. (Exhibit B-5, pp. 26-29)

d. Mr. Conner, economist, HQ, USACE, testified he first heard of a 1.2 elasticity value on the second day of the May 1999 industry meetings. He believed COL Mudd said, "I know what N is, it's 1.2." He thought COL Mudd was being facetious, but a couple of months later the N-value was changed to 1.2. (Exhibit B-6, pp. 25-27)

e. Mr. Soyke, Rock Island District, testified he did not attend the summit meetings in May 1999, but he was aware of how COL Mudd arrived at an N-value for grain of 1.2. COL Mudd did his own calculations to derive an N-value of 1.2 and asked him to review it. The calculations seemed reasonable because there was no better information. His

impression was Mr. Manguno was "a little concerned" about COL Mudd's N-value number. (Exhibit B-7, pp. 42-45)

f. Ms. Karnish, Saint Louis District, testified she heard COL Mudd speculate on what N should be while attending the summit in Saint Louis in May 1999. She thought he was joking, and she did not recall him specifically stating 1.2 as the value. COL Mudd probably directed Mr. Manguno to use an N-value of 1.2. (Exhibit B-11, pp. 20-23)

g. Mr. Carr, economist, Rock Island District, testified Mr. Manguno told him COL Mudd directed the use of 1.2 for N. He believed Mr. Manguno was uncomfortable with the directive because it was not the most likely value. (Exhibit B-26, pp. 15-21)

h. Mr. Herndon testified he attended the 5-6 May 1999 summit in Saint Louis and he did not recall COL Mudd stating a specific N-value at the meeting. (Exhibit B-33, pp. 30-35, 44)

i. Mr. Cone, HQ, USACE, testified Mr. Manguno appeared under considerable pressure from COL Mudd and others to accommodate the barge industry's viewpoint during the 5 May 1999 summit in Saint Louis. There was discussion at the meeting about what specific N-value supported large-scale construction, but he did not recall COL Mudd stating a specific N-value of 1.2 at the meeting. (Exhibit B-17, pp. 13-17, 26-28, 33)

j. Mr. Rhodes testified he was comfortable with an N of 1.5, but COL Mudd did not think its derivation was mathematically meaningful. COL Mudd thought the study team could do better analysis. From an economic theory perspective, an N of 1.2 probably was not exact, but neither was 1.5. Mr. Manguno said he could live with COL Mudd's procedure and the number was in "that reasonably plausible range." (Exhibit B-35, p. 109)

k. Mr. Loss testified COL Mudd recommended to MG Anderson the economics panel be disbanded and MG Anderson concurred. (Exhibit B-37, pp. 42-43)

l. MG Anderson testified:

(1) On 4 July 1999, he took at face value the recommendation from COL Mudd to disband the economics panel. (p. 27)

(2) COL Mudd explained the methodology used to derive an N-value of 1.2, but COL Mudd did not tell him there was a mathematical problem with the methodology. When COL Mudd told him that he (COL Mudd) had a reasonable and defensible N-value of 1.2, it seemed appropriate because it was within the range established by the ITR. When COL Mudd recommended 1.2 in June 1999, he knew that N-value would generate study results to justify large-scale improvements. (Exhibit B-32, pp. 56-57, 94, 97)

m. After being advised of his rights, COL Mudd testified:

(1) During the 5 May 1999 meeting, he joked with Mr. Rhodes that he believed the N-value justifying immediate large-scale improvements was 1.25. He guessed 1.25 as appropriate because he saw numerous model output results dating to the fall of 1998 that had 1.25 in the range of possibility for large-scale construction. (pp. 91-93)

(2) At the conclusion of the Chicago meeting a week later, he used a chart pack to outline a methodology for deriving the N-value. That methodology used 1.25 as an illustrative example, it was a guess, some very simple math that is incorrect." Mr. Manguno provided him the methodology to find the weighted average. (pp. 95, 126)

[*IO note: Pages 95 and 126-127 of COL Mudd's testimony conflict. He alternately stated he and Mr. Manguno or Mr. Marmorstein developed the methodology resulting in a N-value of 1.2. In pages 106-108 and 110-112, he again stated he developed the methodology and expected the economics work group to derive the specific N-value from the new methodology.*]

(3) In a telephone call with Mr. Loss and Mr. Manguno on about 23 May 1999, he directed a methodology be used that applied a weighted average to the Iowa corn data for the development of an N-value. In that discussion he explained the methodology using the illustrative example of N equal to 1.25, as he had done earlier at the Chicago meeting. He did not care what the actual value was, nor did he direct a specific value of 1.2. He expected Mr. Manguno and Mr. Marmorstein to do the detailed analysis resulting in an appropriate N-value using the new methodology. He thought they did the analysis. "The decision to use 1.2 was a study team decision." He then recommended to MG Anderson that 1.2 be adopted, and MG Anderson concurred. The 22 June 1999 e-mail from Mr. Manguno to Mr. Loss provided the details on how Mr. Manguno and Mr. Marmorstein developed the weighted average approach deriving an N of 1.2. (pp. 12-15, 94-95, 106-108, 110-112, 166-167)

[IO note: *Mr. Manguno prepared the 22 June 1999 e-mail, but it did not state he did the analysis supporting the explanation contained in the e-mail.]*

(4) He recommended the economics panel be disbanded in July 1999, which MG Anderson subsequently did on 4 July 1999. He did not include his recommendation role in his Congressional affidavit because he was specifically asked to answer questions about the N-value. If he had to do it again, he thought he would include his role in recommending the disbanding of the economics panel. "Maybe it was a shortcoming on my part." During the development of his Congressional affidavit, he told Mr. Manguno he was attributing the development of the N-value to Mr. Manguno. (Exhibit B-34, pp. 117-119, 127)

4. Discussion:

a. Professional ethics, especially the attribute of integrity, dictated soldiers present information relevant to inquiries made by superiors. This requirement included responding to Congressional inquiries about the UMR-IWW study.

b. The evidence showed:

(1) In answering the question of who determined the N-value of 1.2, COL Mudd indicated he developed a methodology and provided an illustrative example of how the methodology resulted in a value of 1.25. He also testified he expected Mr. Manguno and Mr. Marmorstein to do the actual calculations and believed they eventually developed the 1.2 value.

(2) Mr. Manguno testified he did not derive an N of 1.2, nor did he ever ask or direct any member of the study team to do so. Mr. Marmorstein corroborated that he was never directed to perform any calculations that resulted in an N of 1.2.

(3) The fact there was no demand data, except from Iowa, to more fully develop an empirically based N-value indicated it was the only data used to develop the N-values of 2, 1.5, and 1.2. The awareness and availability of that data, coupled with COL Mudd's familiarity with the effect of N in the model, obviated any discussion about who really directed 1.2 be used as the N-value. It was sufficient that COL Mudd explained the basic process used to derive the final N-value to conclude his affidavit to Congress was materially correct even if some specifics were omitted.

(4) Several individuals testified COL Mudd stated at the 5 May 1999 summit that he was interested in what N should be, and that he suggested it should be 1.2. COL Mudd probably speculated on the "appropriate" N-value nearly 3 weeks before the late May 1999 teleconference with Mr. Manguno and Mr. Loss, but the lack of data caused numerous study participants to speculate on commodity elasticities and N-values throughout the study effort. COL Mudd testified he used a "chart pack" to demonstrate the methodology he believed appropriate and characterized his conclusion using the weighted average methodology as yielding an illustrative answer of 1.25. This was an approach he believed more practical than the methodology supporting an N-value of 1.5.

(5) COL Mudd addressed the disbanding of the economics panel in his affidavit by stating it was MG Anderson's decision. He omitted that he made the recommendation to disband the panel, while MG Anderson testified he acted to disband the panel solely based on COL Mudd's recommendation. It was not unreasonable to conclude that COL Mudd did not believe it relevant he recommended an action since making recommendations to his superior, MG Anderson, was a regular occurrence.

c. The preponderance of the evidence indicated COL Mudd did not provide a misleading or deceptive affidavit to Congress. He answered how the 1.2 N-value methodology was determined even if it was unclear who actually did the calculations. The widely known effect of various N-values and their derivations made who calculated the N-value less critical than which one was selected. The evidence did not indicate a specific intent to deceive, merely omissions of facts COL Mudd did not deem essential to answering the Congressional inquiries about the study.

5. Conclusion: The allegation that COL Mudd improperly provided false or misleading information in a sworn statement was not substantiated.

ALLEGATION #12: Mr. Barnes improperly threatened a government employee.

1. Standard. Title 5, USC, Section 2302, stated supervisors should not take a personnel action against any employee because that employee disclosed information which the employee reasonably believed evidenced gross mismanagement, gross waste of funds, or abuse of authority. (Exhibit D-7)

2. Documents:

a. In his affidavit to OSC, Dr. Sweeney alleged Mr. Barnes told him to find a way to justify large-scale measures in the near term for the UMR-IWW navigation system or he (Mr. Barnes) would find an economist who would. Mr. Barnes asked if he (Dr. Sweeney) had a family to support. (Exhibit C-1, p. 25)

b. On 14 August 1998, Mr. Hanson sent an e-mail to Mr. Barnes and others which asked for additional documentation be provided by Dr. Sweeney and tried to clarify Dr. Sweeney's role with the new economics panel. Dr. Sweeney was no longer the study's technical manager, but Dr. Sweeney's counsel and participation in economic matters would be sought and valued. (Exhibit XX)

c. On 23 November 1999, Mr. Barnes, who was Dr. Sweeney's senior rater, signed Dr. Sweeney's 1998/1999 Senior System Civilian Evaluation Report. Mr. Barnes gave Dr. Sweeney a "successful" rating in the "2"-block range. There were five potential ratings, with the "1"-block being the highest. Mr. Barnes made positive comments about Dr. Sweeney on the evaluation. Dr. Sweeney's rater, Ms. Karnish, had given Dr. Sweeney a "2"-block rating, as well. Dr. Sweeney refused to sign the evaluation report or the evaluation support form that documented face-to-face discussion meetings. On his previous four evaluations, Dr. Sweeney had gotten the "1"-block three times and the "2"-block once. Mr. Barnes was not Dr. Sweeney's senior rater on those earlier evaluation reports. (Exhibit YY)

d. In a 7 March 2000 AR 15-6 investigation report, the IO said the preponderance of evidence did not show that Mr. Barnes told Dr. Sweeney to find a way to justify large-scale construction or be replaced nor that Mr. Barnes made any threatening reference to Dr. Sweeney's job or family support. The IO interviewed Mr. Barnes, Mr. Rhodes and Mr. Manguno. (Exhibit ZZ)

e. Mr. Barnes provided travel receipts and a notarized statement to show he was in Vicksburg, not Saint Louis on 18 September 1998. (Exhibit AB)

3. Testimony:

a. Dr. Sweeney testified:

(1) On or about 18 September 1998, Mr. Barnes, his second line supervisor, told him Mr. Rhodes and Mr. Herndon said that if Dr. Sweeney did not find some way to justify large-scale locks in the near term, Dr. Sweeney would be permanently removed from the study. Mr. Barnes made some thinly veiled references about him

(Dr. Sweeney) having a family to support and if he (Dr. Sweeney) did not justify extended locks, they would find another economist that would. Mr. Barnes also asked about Mr. Manguno's family. He told Mr. Barnes he could not do that because it was against guidance. After the meeting, he discussed it with Mr. Manguno. (pp. 56-58)

(2) He was not asking DAIG to investigate allegations of reprisal against him. He was considering filing a complaint with the Office of Special Counsel concerning reprisal matters. (Exhibit B-1, p. 2, recall)

b. Mr. Manguno testified that some time the week after 18 September 1998, Dr. Sweeney told him about a private conversation Dr. Sweeney had with Mr. Barnes. Dr. Sweeney said Mr. Barnes asked him (Dr. Sweeney) "if his job was important to him and he had a family to support, and that if he, Don, couldn't find a way to justify large-scale improvements, then he would find somebody that would." He had no firsthand knowledge of improper actions by Mr. Barnes. (Exhibit B-2, p. 64, 114)

c. Mr. Marmorstein, Saint Louis District, testified Dr. Sweeney told him about his (Dr. Sweeney's) meeting with Mr. Barnes. He was not in the room, so anything he said would be hearsay. Dr. Sweeney said Mr. Barnes asked if Dr. Sweeney had a family to support and then asked if he (Mr. Marmorstein) and Mr. Manguno had families to support. Later Mr. Barnes told him not to talk about the study with anyone, and showed him a legal opinion on the issue. He thought the reason for that was to silence anyone who might speak out against the study. He did not suffer any retribution or threatening actions from Mr. Barnes. (Exhibit B-3, pp. 17-21)

d. Ms. Karnish, testified she supervised Dr. Sweeney. Mr. Barnes told her that Dr. Sweeney claimed he (Mr. Barnes) threatened him in 1998. She knew only what Mr. Barnes told her about the incident. (Exhibit B-11, pp. 29, 35-36)

e. Mr. Dutt, Saint Louis District, testified he had no knowledge of Dr. Sweeney's alleged threat from Mr. Barnes other than what he read in Dr. Sweeney's affidavit to OSC. He believed Dr. Sweeney was a well-qualified economist, but Dr. Sweeney was very opinionated about his work and had a tendency to be inflexible. Dr. Sweeney could sometimes be perceived as somewhat arrogant. Over the past 2 years, Dr. Sweeney appeared disgruntled and frustrated. (Exhibit B-13, pp. 9, 19-20)

f. Mr. Rhodes testified he could not comment on what Mr. Barnes may have told Mr. Sweeney, because he was not in the room. Dr. Sweeney was already out of a management role. He had recommended that Dr. Sweeney be removed from a

management role in June 1998, so there would be no reason for him to make the phone call to Mr. Barnes about Dr. Sweeney. The part about his making that phone call was "just a flat lie." Mr. Barnes made a great effort to keep Mr. Sweeney on the study team to include having the district commander "go behind my back" to the division commander. He did not support putting Dr. Sweeney back in a management role on the study. Dr. Sweeney had been a management problem. Beginning in 1997 he, Mr. Dutt, Ms. Karnish, and Mr. Barnes discussed the personnel problems they were having with Dr. Sweeney, but no one mentioned firing Dr. Sweeney. (Exhibit B-35, pp. 76-78)

g. Mr. Hanson testified he was not aware of the alleged meeting between Dr. Sweeney and Mr. Barnes. He knew there was friction between Dr. Sweeney and Mr. Barnes, but not of any specific action. (Exhibit B-36, p. 79)

h. Mr. Loss testified he heard of no threat of reprisal against Dr. Sweeney. (Exhibit B-37, p. 25-27)

i. COL Hodgini, former District Engineer, Saint Louis District, testified he did not know Dr. Sweeney felt he (Dr. Sweeney) had been threatened by Mr. Barnes. He was shocked when he read the allegation in Dr. Sweeney's affidavit. (Exhibit B-9, p. 25-26)

j. After being advised on his rights, Mr. Barnes testified:

(1) Dr. Sweeney believed he (Dr. Sweeney) was being removed from the study because he would not develop the model such that it would produce recommendations for near range, long-term improvements. He told Dr. Sweeney he would try to get him reinstated. He tried, but Mr. Rhodes never approved the request. He had no role in Dr. Sweeney's replacement. (pp. 10-17)

(2) Dr. Sweeney was very upset and reacted poorly after being removed from the study. Dr. Sweeney's conduct was unprofessional; and Dr. Sweeney's supervisor, Ms. Karnish, proposed taking disciplinary action. He would not let her do that because he felt Dr. Sweeney was traumatized by being removed from the study. He asked Ms. Karnish to work with Dr. Sweeney, but also to keep records about Dr. Sweeney's conduct. He counseled Dr. Sweeney. Dr. Sweeney complained to him about Ms. Karnish and Ms. Karnish complained about Dr. Sweeney's insubordination. He finally told her to propose a proper punishment for Dr. Sweeney. (pp. 17-19)

(3) Paragraph 78 of Doctor Sweeney's affidavit was not true. He did not threaten Dr. Sweeney with removal if Dr. Sweeney did not support large-scale

improvements or ask Dr. Sweeney if he (Dr. Sweeney) knew if he had a family to support. He was not even in Saint Louis on 18 September 1998. He had gone to Vicksburg on 17 September 1998 to try to get Dr. Sweeney reinstated to the study. He did not return to Saint Louis until 21 September. Dr. Sweeney had been in to see him several times, but he did not threaten Dr. Sweeney with removal. Dr. Sweeney had already been removed as technical manager of the study on 17 June 1998. He mentored Dr. Sweeney and he could recall talking with Dr. Sweeney about their families. He talked about his adopted son who had come from a very difficult background. He asked about Dr. Sweeney's son and they laughed about some things. They had such conversations, but he did not make threats. (pp. 20-22, 24)

(4) Dr. Sweeney said he (Dr. Sweeney) might go to the special counsel. He told Dr. Sweeney to do what he had to do, but to be cautious and make sure he understood the consequences of that kind of action. He thought Dr. Sweeney wrote the allegation after he had approved a disciplinary action affecting Dr. Sweeney. While the disciplinary action had nothing to do with Dr. Sweeney's work on the study, he guessed Dr. Sweeney "was just personally very upset with me." (pp. 22-23)

(5) He did not threaten Mr. Marmorstein's family or Mr. Manguno's family. "I don't know that I've ever spoken with Jeff about his family. I don't know that I've ever spoken with Rich about his family other than just in casual conversation." He did not talk with Mr. Rhodes or Mr. Herndon about finding a way to justify large-scale construction. He was trying to convince them to reinstate Dr. Sweeney. (Exhibit B-38, pp. 23-24)

4. Discussion:

a. Dr. Sweeney alleged that on 18 September 1998, Mr. Barnes improperly threatened him with removal from the study and Mr. Barnes made some thinly veiled references about him (Dr. Sweeney) having a family to support. Employees were protected by 5 USC, Section 2302, from personnel actions taken against them because of any disclosure of information that the employee reasonably believed evidenced waste, mismanagement or abuse of authority.

b. The evidence established:

(1) Mr. Manguno and Mr. Marmorstein testified Dr. Sweeney told them about the alleged conversation, but they were not present. Neither suffered any retribution from Mr. Barnes, nor did Mr. Barnes mention the incident to them.

(2) Mr. Barnes denied he ever threatened Dr. Sweeney or made veiled references about Dr. Sweeney's, Mr. Manguno's or Mr. Marmostein's family. Mr. Barnes indicated he was in Vicksburg on 18 September 1998. He testified he had nothing to do with Dr. Sweeney's removal as technical manager of the study and had tried to get Dr. Sweeney reinstated. He praised Dr. Sweeney's work on the study. No other witness, to include the District Engineer, had firsthand knowledge about the alleged conversation between Mr. Barnes and Dr. Sweeney. Other witnesses testified Mr. Barnes tried to get Dr. Sweeney reinstated to the study.

(3) Documentary evidence showed Mr. Barnes tried to get Dr. Sweeney reinstated on the study. As senior rater, Mr. Barnes gave Dr. Sweeney a good rating on 23 November 1999 and made favorable comments about Dr. Sweeney. Mr. Barnes allowed Dr. Sweeney's supervisor to punish Dr. Sweeney for insubordination, but that was done after Mr. Barnes had counseled Dr. Sweeney.

c. The preponderance of evidence showed Mr. Barnes talked with Dr. Sweeney and tried to get Dr. Sweeney reinstated to the study, but the evidence did not support that Mr. Barnes improperly threatened Dr. Sweeney.

5. Conclusion: The allegation that Mr. Barnes improperly threatened a Government employee was not substantiated.

ADDITIONAL FINDINGS:

1. Although this investigation focused on only one study, the testimony and evidence presented strong indications that institutional bias might extend throughout the Corps. Advocacy, growth, the customer service model, and the Corps' reliance on external funding combined to create an atmosphere where objectivity in its analyses was placed in jeopardy. These influences created a tension with the honest broker role inherent in reconnaissance and feasibility studies.

a. MG Fuhrman's guidance concerning the Corps' role as advocate for the inland waterways was a pivotal event in the study. It provided the impetus for manipulation of the study results. Although several senior Corps officials viewed the terms "advocate" and "steward" as interchangeable, many study team members and Corps Headquarters staffers were unclear about the meaning of advocacy. Witnesses expressed concern

that the advocacy role was a departure from the Corps' responsibility to be an honest broker.

b. Senior Corps officials explained that the advocacy role was derived from responsibility for managing the inland navigation system. They compared the role to the Army Chief of Staff's role within the DoD concerning ground combat and the DOT role concerning air and land transportation. The investigation did not find an explanation of the advocacy role in any policy or regulation relating to the Corps' civil works mission.

c. The grow the program initiative had a less defined impact on the study. Its potential for impact on future studies, however, was clear. The pressure on Divisions to deliver projects was immense. Moreover, compelling evidence indicated that a key element of the program was encouragement of grass roots lobbying for projects. The budget process was deemed a "first half" irrelevancy. The measure of effectiveness of the Divisions and Districts was the amount of funds actually appropriated by Congress.

[IO note: E-mail evidence to support this additional finding is at Exhibit AF.]

d. Senior Corps officials testified that the "Grow the Program" initiative was established in response to a speech made by the ASA-CW to the Corps' Senior Leadership Conference in August 1999. The speech presented three major challenges facing the Corps: civil works as a program that might be losing synergy and support; fragmented planning that resulted from the existing statutory and regulatory structure; and defining and preparing for new missions. The investigation found nothing in the speech that would warrant the method of execution elected by the Corps.

e. The Corps' employment of the customer service model also created a conflict with the Corps' role as honest broker. Because of the taxes it paid into the Inland Waterway Trust Fund, the barge industry was viewed as a partner during the study. This view led Corps leadership to involve the industry to a far greater extent than other interest groups. Industry and Government teams were established to resolve economic analysis issues in closed sessions not accessible to the general public.

f. The Corps' reliance on external funding created another conflict with the honest broker role. The Districts were dependent upon project funding to maintain their staffs. The continued vitality of the Districts was thus dependent on producing study results that favored construction projects. Senior Corps officials believed that the professionalism of its employees was sufficient to overcome the conflict. The effects of

the advocacy guidance and the customer service model on the UMR-IWW study offered strong indications to the contrary.

g. The investigation also found a widespread perception of bias among the Corps employees interviewed. Nearly all the economists expressed a view that the Corps (or individuals within the Corps) held an inherent preference for large-scale construction. A senior economist used the term "corrupt" in discussing one division. The term was used in the sense that leadership in that division appeared to be working for the interests of the navigational industry. There were indications of an implicit preference for construction in the day-to-day activities of study managers. For example, an analysis indicating that large-scale construction was not justified was described to a Division Commander as "really bad news."

h. The overall impression conveyed by testimony of Corps employees was that some of them had no confidence in the integrity of the Corps' study processes.

2. The investigation found there was greater uncertainty in the UMR-IWW study than in previous similar Corps studies. It resulted from the use of a new model that delivered unexpected and apparently counter-intuitive results. For the first time in Corps analytic history, they addressed differences in waterway shipped commodities between the Mississippi and Ohio Rivers. Although differences in shipped commodities and the rivers upon which they were transported were economically sound principles, there was great concern about how to correctly model for those differences. Additionally, Corps leadership was concerned the study was in its seventh year without a defendable position in sight. This environment of slipping timelines, inability to explain and understand model results, and general pressure from interest groups affected the study effort.

3. The scope of this investigation did not include an assessment of the validity of the underlying analysis of key study parameters. However, the investigation revealed evidence that one of the key parameters was manipulated to result in a specific study outcome.

a. The N-value, the demand for waterway transportation, was never based on empirical data even though it was specified that data collection was essential to validating the appropriate N-value. The ambiguousness of the selected N-value made it an easy target for manipulation to achieve a desired end. In the final analysis, the investigation found individuals took actions that resulted in an N-value selected solely because it resulted in large-scale construction.

b. There was no evidence to indicate ISH, construction contingency cost estimates, or rehabilitation cost savings were manipulated. Each of those parameters had rational explanations and supporting analyses for why they changed during the study. There was testimonial evidence those parameters might not have been reviewed and reassessed had the original study results supported large-scale construction, but the "relook" of each of those parameters was consistent with established procedures. Additionally, the magnitude of change to ISH, construction contingency cost estimates, and rehabilitation cost savings was inconsequential in affecting study outcome compared to changes in the N-value.

OTHER MATTERS:

1. The Inspector General added LTG Ballard as a suspect in the investigation on 5 April 2000.

a. LTG Ballard was added because of the Command responsibility associated with his position as the Commanding General, U.S. Army Corps of Engineers. (Exhibit A-4)

b. On 23 June 2000, The Inspector General terminated the investigation as it pertained to LTG Ballard because there was no reason to delay LTG Ballard's retirement pending completion of the final report. No witness, to include all the key participants in the feasibility study, offered any testimony alleging wrongdoing or impropriety on the part of LTG Ballard. A review of pertinent e-mail files also resulted in no evidence that would have supported a finding of impropriety concerning LTG Ballard. (Exhibit A-5)

2. The Water Resources Development Act (WRDA) of 1999 stated that The Secretary should expedite completion of the reports for the identified projects and "if justified" proceed directly to PED. One of the identified projects was lock extensions for locks on the UMR-IWW. The investigation revealed the Corps engaged in PED activities for lock extensions. However, the investigation also revealed that at the time the Corps proceeded to PED, it had not completed the UMR-IWW feasibility study, nor had a NED or recommended plan been identified. Given this state of the study, it was questionable how the "if justified" stipulation in the act was met to proceed to PED. The investigation revealed that the Corps suspended PED based on an assessment that a legal review was required to determine how to meet the WRDA 99 stipulations. It was beyond the scope of this investigation to determine if the Corps was authorized to proceed to PED. The PED issue should be referred to the Office of General Counsel for a legal opinion

on whether or not the Corps met the requirements of the WRDA 99 stipulations prior to proceeding to PED. (Exhibit AC)

3. On 10 April 2000, a senior Corps employee indicated he had been instructed by the USACE IG Inspection Team Chief that he should destroy e-mails concerning a recent inspection related to planning capabilities. DAIG found there was no improper intent on the part of the USACE IG; the action to remove inspection results from the e-mail server was a precautionary action to prevent the premature and unauthorized release of IG information. (Exhibit AD)

4. During the course of the DAIG investigation, it was found that a Corps employee maintained pornographic files on the USACE Headquarters server. DAIG referred the matter to the USACE IG for appropriate action. (Exhibit AE)

RECOMMENDATIONS:

1. This report be approved and the case closed.

2. Refer this report to the Office of the General Counsel.

3. Because of the potential for bias and conflict of interest, the Chief of Engineers, The Auditor General, and the Assistant Secretary of the Army for Financial Management and Comptroller should consider ways to ensure future Corps studies are conducted fairly and objectively and are subjected to effective audit and internal review controls. The Army should also consider direct funding of Corps employees or measures to mitigate the inherent conflict created by project-funded employees.

4. The investigation did not reveal an explanation of the Corps' advocacy responsibilities in any of the documents relating to the Corps civil works mission. The Assistant Secretary of the Army for Civil Works and The Chief of Engineers should codify and explain the concept of the Corps as an advocate for the inland navigational system, particularly in the context of conducting impartial and objective feasibility studies at the Division and District levels.

5. The Office of General Counsel should review WRDA 1999 and the Corps execution of PED to assess whether Corps met the stipulation in the Act prior to proceeding to execution of PED.

Carl D. Baxter
GS-14
Investigator

LONNIE L. JOHNSON, Jr.
Colonel, IG
Investigator

CONCUR:

MICHAEL W. ACKERMAN
Lieutenant General, USA
The Inspector General

APPROVED:

LOUIS CALDERA
Secretary of the Army

Encl
Exhibit List

LIST OF EXHIBITS

A Directives

A-1	Directive, Secretary of the Army, 22 March 2000
A-2	Request for Investigation, OSC, 24 Feb 00
A-3	Directive, Secretary of Defense, 9 Mar 00
A-4	Expansion of Investigation, 5 Apr 00
A-5	Termination of Investigation of LTG Ballard, 23 Jun 00

B Testimony

		Consent to Release
B-1	Dr. Donald Sweeney	Yes
B-1R	Dr. Sweeney, recall	Yes
B-2	Mr. Richard Manguno	No
B-2R	Mr. Manguno, recall	No
B-3	Mr. Jeffrey Marmorstein	No
B-3R	Mr. Marmorstein, recall	No
B-4	Mr. Robert Daniel	Yes
B-5	Mr. Harry Kitch	Yes
B-6	Mr. Ronald Conner	Yes
B-7	Mr. Paul Soyke	No
B-8	Mr. Ronald Keeney	No
B-9	COL Thomas Hodgini	No
B-10	Mr. Bradley Thompson	No
B-11	Ms. Diane Karnish	No
B-12	MAJ Steven Cade	No
B-13	Mr. Owen Dutt	No
B-14	Mr. Mark Gmitro	Yes
B-15	Mr. Thomas Caver	Yes
B-16	Mr. Dave Sanford	No
B-17	Mr. Steve Cone	No
B-17R	Mr. Cone, recall	No
B-18	Mr. Dennis Lundberg	Yes
B-19	Mr. Kenneth Barr	No
B-20	Mr. Robert Hughey	Yes
B-21	Mr. Roger Less	Yes
B-22	Mr. Thomas Mack	Yes
B-23	Mr. Joseph Ross	Yes
B-24	Mr. William Arnold	No
B-25	Mr. John Burns	No

B-26	Mr. John Carr	No
B-27	Mr. Jeffrey McGrath	Yes
B-28	Mr. Harry Cook	Yes
B-29	LTG Joe Ballard	No
B-30	MG Russell Fuhrman	No
B-31	MG Hans Van Winkle	No
B-32	MG Phillip Anderson	No
B-33	Mr. Donald Herndon	No
B-34	COL James Mudd	No
B-34R	COL Mudd, recall	No
B-35	Mr. George Rhodes	No
B-36	Mr. Dudley Hanson	No
B-37	Mr. Gary Loss	No
B-38	Mr. Gerald Barnes	No

C Documents used as sources for allegations
- C-1 Dr. Sweeney's Affidavit to Office of Special Counsel
- C-2 Dr. Sweeney's 40 Exhibits

D Standards
- D-1 AR 5-1, Army Management Philosophy
- D-1 Title 33, USC, 2282
- D-3 Economic and Environmental Guidelines and ER 1105-2-100 (5-5.i(1))
- D-4 Economic and Environmental Principles and ER 1105-2-100 (5-16.b)
- D-5 AR 600-100, Army Leadership
- D-6 5 CFR, 2635.101
- D-7 Title 5, USC, 2302

- E E-mail, Mr. Stockton to MG Fuhrman, 16 Apr 98
- F E-mail, MG Anderson to MG Fuhrman, 14 Jun 98
- G Memorandum, MG Fuhrman to MVD and LRD Division Commanders, undated and unsigned
- H E-mail, MG Fuhrman to Mr. Kitch, 18 Aug 98
- I E-mails, Mr. Hanson to Mr. Manguno and Others and Mr. Kitch to Mr. Hanson in reference to MG Fuhrman's guidance, 25 Sep 98
- J E-mail, Mr. Kitch to MG Fuhrman and others, 19 Oct 98
- K E-mail, MG Fuhrman to Mr. Kitch, 23 Oct 98
- L E-mail, Mr. Herndon to MG Anderson, 8 Apr 99
- M E-mails, LTG Ballard to MG Fuhrman, 6-15 Apr 99

N E-mail, MG Fuhrman to MG Anderson, 15 May 99
O Affidavit, MG Fuhrman to U.S. Senate Committee, 3 Mar 00
P MFR, LTC Blanks with Mr. Kitch and others, 27 Jun 00
Q E-mail, Mr. Kitch to Mr. Johnson, 4 Feb 00
R E-mail, MG Anderson to LTG Ballard, 30 Jan 00
S E-mail, Mr. Kitch to Mr. Fitzsimmons, 1 Feb 00
T Memorandum, "Dusty" (Mr. Rhodes) to MG Anderson, undated
U Affidavit, MG Van Winkle to U.S. Senate Committee, 3 Mar 00
V E-mail, COL Mudd to Mr. Manguno, 2 Oct 98
W E-mail, Mr. Herndon to MG Anderson, 27 Sep 98
X E-mail, Mr. Burns to MG Fuhrman, 7 May 99
Y MFR, LTC Rodgers with Mr. Carr, 5 July 00
Z E-mails, Mr. Rhodes and others, 9-23 Jun 99
AA Affidavit, Mr. Manguno to U.S. Senate Committee, 13 Apr 00
BB E-mail, Mr. Manguno to COL Mudd, 2 Nov 98
CC Mr. Loss to COL Mudd and others, 25 May 99
DD Mr. Manguno to Mr. Loss and COL Mudd, 1 Jun 99
EE E-mail, Mr. Arnold to Mr. Rhodes, 4 Sep 98
FF E-mail, Mr. Rhodes to MG Anderson, 23 Feb 09
GG E-mail, Mr. Rhodes to Mr. Kitch, 29 Mar 99
HH E-mail, Mr. Rhodes to MG Anderson, 3 Feb 00
II Letter, Mr. Rhodes sent evidence to DAIG, 11 May 00
JJ Memorandum, MG Anderson to District Cdrs, 17 Jun 98
KK E-mail, Mr. Soyke to Panel Members, 22 Jun 98
LL E-mail, Mr. Soyke to Panel Members, 3 Sep 98
MM MG Anderson to District Commanders, 30 Sep 98
NN E-mail, MR. Thompson to Study Team, 28 May 99
OO E-mail, Dr. Sweeney to Study Team, 29 Jun 00
PP E-mail, Mr. Loss to MG Anderson, 2 Jun 99
QQ E-mail, Mr. Barnes to COL Hodgini, 25 Sep 98
RR E-mail, Mr. Barnes to Mr. Dutt, 20 Feb 98
SS E-mail, Mr. Thompson to Study Team, 20 Jul 98
TT E-mail, Mr. Hanson to Study Team, 14 April 1999
UU E-mail, Mr. Thompson to MVD Staff, 15 Apr 99
VV E-mail, COL Mudd to MG Anderson, 2 July 1999
WW Affidavit, COL Mudd to U.S. Senate Committee, 2 Mar 00
XX E-mail, Mr. Hanson to Mr. Barnes and Others, 14 Aug 98
YY Performance Evaluations on Mr. Sweeney, 95-99
ZZ AR-15-6 Report of Investigating Officer, 7 Mar 00

AB Travel receipts, Mr. Barnes, Sep 98
AC WRDA evidence
AD MFR, COL Johnson, on USACE IG Involvement, 20 Jul 00
AE MFR, COL Johnson, on Pornography Discovery, 20 Jul 0O
AF Evidence to support Additional Finding on "Grow the Corps"
AG Additional evidence provided by MG Anderson
AH Additional evidence provided by Mr. Hanson
AI Additional evidence provided by COL Mudd

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DEPARTMENT OF DEFENSE
OFFICE OF GENERAL COUNSEL
1600 DEFENSE PENTAGON
WASHINGTON, DC 20301-1600

NOV 17 2000

The Honorable Elaine Kaplan
Special Counsel
U.S. Office of Special Counsel
1730 M. Street, N.W., Suite 300
Washington, D.C. 20036-4505

Re: OSC File No. DI-00-0792

Dear Ms. Kaplan:

This responds to your request for additional information concerning the above-referenced investigation into allegations that the U.S. Army Corps of Engineers (USACE) officials manipulated studies related to the Upper Mississippi River and Illinois Waterway navigation systems. Specifically, paragraph 6 of the Executive Summary of the subject investigation notes that the Army has asked the National Academy of Sciences to "evaluate the analytic accuracy" of the waterway studies at issue. You inquired as to the current status of the NAS' evaluation.

According to the Office of the Assistant Secretary of the Army (Civil Works & Environment), the NAS is currently scheduled, under its contract with the Army, to complete its report by November 30, 2000. However, NAS recently requested a 3-month extension. The Army has not yet acted on this request.

Finally, with respect to your question as to whether the USACE has commenced construction activities related to the subject waterway studies, please be advised that no such construction has been initiated.

Sincerely,

Daniel J. Dell'Orto

Daniel J. Dell'Orto
Principal Deputy General Counsel

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SECRETARY OF THE ARMY
WASHINGTON

November 28, 2000

The Honorable Max Baucus
Ranking Minority
Committee on Environment and Public Works
United States Senate
456 Senate Dirksen Office Building
Washington, DC 20510

Dear Senator Baucus:

The purpose of this letter is to provide you a final update regarding enhancement of the management procedures of the Army Corps of Engineers civil works program. On October 24, 2000, I asked the Assistant Secretary of the Army for Civil Works and the new Chief of Engineers to take a fresh look at the clarity and precision of current Army regulations and General Orders governing Corps of Engineers civilian-military oversight relationships. I have enclosed their response, which clearly delineates their joint interpretation of current regulations and standing orders.

I am pleased with this reply. I believe it establishes clarity of roles and responsibilities and improved communications for all levels of the Army on civil works matters. Additionally, this common understanding should help resolve the concerns that have been raised without the need for changes to Army regulations at this time.

I appreciate your interest and insights in this matter. Although this has been the subject of a considerable amount of controversy, I believe the end result has produced a much-improved civilian-military oversight relationship that will serve our nation well.

Sincerely,

Louis Caldera

Enclosure

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

28 NOV 2000

REPLY TO
ATTENTION OF

MEMORANDUM FOR THE SECRETARY OF THE ARMY

SUBJECT: Civil Works Management and Communication Clarifications

This is in reply to your October 24, 2000 memorandum asking that we review the civil works management clarifications that you proposed on March 30, 2000 and take a fresh look at the clarity and precision of the current Army regulations and General Orders governing Corps of Engineers civilian-military oversight relationships. As part of this review, you requested that we provide you with our recommendations on how to improve management processes and communication in the civil works area.

We agree that relationships must be clear and that effective communication must occur at all levels of the Army in order for the Corps of Engineers to perform its important civil works functions in an efficient and successful manner. With this in mind, we have reviewed your March 30, 2000 proposal and the legal opinion of the Army General Counsel that you enclosed concerning this proposal. We agree that the Assistant Secretary of the Army for Civil Works (ASA(CW)) supervises the civil works functions of the Department of the Army and that the Chief of Engineers reports directly to the ASA(CW) on all of the Department of the Army's civil works functions. We also agree that the ASA(CW) has full authority to establish the final position of the Army on any policy, programmatic, legislative, budgetary, or major organizational change involving or affecting the Army's civil works functions. We further agree that the ASA(CW) shall serve as the lead on all civil works budgetary, policy, and legislative matters, and that any initiatives involving these matters require ASA(CW) approval. Moreover, we agree that the Office of the Assistant Secretary of the Army for Civil Works (OASA(CW)) is responsible for fully coordinating budgetary and legislative matters or initiatives involving civil works functions. This responsibility includes accomplishing the necessary coordination with the Chief of Engineers and his representatives and other appropriate Executive branch officials. We support your proposal's goal of promoting effective communications within the Army on civil works matters. We are personally committed to sharing information, communicating effectively, and cooperating fully on all civil works matters and will ensure that the OASA(CW) and the U.S. Army Corps of Engineers (USACE) share this commitment.

SUBJECT: Civil works Management and Communication Clarifications

After discussing the possibility of the ASA(CW) rating the performance of the Deputy Commanding General for Civil Works and the Civil Works Senior Executive Service members, we recommend letter input by the ASA(CW) on the Chief's ratings of those individuals, rather than having the ASA(CW) serve as a rating official. Our sense is that the ASA(CW) providing letter input conforms well with the principle of unity of command.

At this time we do not believe that it is necessary to change any provision of existing law. In addition, based on our mutual understanding of current organizational documents and in light of the legal opinion of the Army General Counsel regarding existing Army Regulations and General Orders, we suggest that it is unnecessary to amend these documents at this time.

We also unequivocally agree that the public, the Administration, and the Congress must have the utmost confidence in the technical analysis performed by the U.S. Army Corps of Engineers. In all instances where the Chief of Engineers exercises his independent technical judgment, there must be no impediments to the exercise of that judgment. Further, we agree that communications between the OASA(CW) and the USACE should occur through established channels. In the event it is not possible to obtain information through established channels of communication, the OASA(CW) shall ensure that the Corps of Engineers headquarters is informed of any requests for information passed directly to Division and District offices.

Finally, we agree that it would be imprudent to implement any changes at this time that relate directly to the allegations made this past spring concerning the Upper Mississippi/Illinois Waterway Project. We share your view that the Army should await the findings of the Army Inspector General investigation and the final outcome of the National Academy of Sciences study that you commissioned, before determining whether there is a need to take any further action with respect to the project study.

Our discussions have been extremely useful and positive and we are confident that these clarifications will promote an efficient and effective civil works program.

JOSEPH W. WESTPHAL
Assistant Secretary of the Army
For Civil Works

ROBERT B. FLOWERS
Lieutenant General
Chief of Engineers

4

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

CECW-PE

12 MAY 2000

MEMORANDUM FOR Commander, Mississippi Valley Division, ATTN: CEMVD-PM

SUBJECT Upper Mississippi River Navigation System Study

1. References

a. CECW-PE memorandum, 16 March 00, subject: Upper Mississippi River Navigation System Study.

b. CEMVD-PM-E memorandum, 7 April 00, subject: Upper Mississippi River-Illinois Waterway System Navigation System—Responses to Policy Review Comments

2. Concur with your basic approach to responding to the policy review comments provided to you in my 16 March 00 memorandum. The following information relating to the quantification of self-help should be included in the report.

a. Describe the conditions under which industry has provided self-help in the past.

b. Describe the conditions under which industry will provide self-help in the future.

Additionally, ensure that industry understands the extent and nature of delays that are expected to occur without the project and that the industry assessment of the extent of self-help is based on that information. The enclosed tables depict the extent of delays expected for the without project condition.

3. The schedule changes up to the draft report are approved subject to the preliminary draft report being submitted to this office concurrent with the independent technical review scheduled in July. When the report is submitted, include a compliance memorandum explaining how and where in the report each of the policy issues included in references 1.a. and 1.b. was addressed in the report.

CECW-PE
SUBJECT: Upper Mississippi River Navigation System Study

4. I have no objection to resumption of suspended PED activities as long as those activities are limited to features that have clearly demonstrated near term feasibility.

FOR THE COMMANDER:

HANS A. VAN WINKLE
Major General, USA
Deputy Commander for Civil Works

Enclosure

UMR-IW
Delay (hrs)
Without Project

Lock	2000	2005	2010	2015	2020	2030	2040	2050
USA	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
LSA	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
UM01	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
UM02	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8
UM03	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
UM04	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
UM05	1.8	1.7	1.8	1.7	1.7	1.7	1.7	1.7
UM05a	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
UM06	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9
UM07	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0
UM08	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1
UM09	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1
UM10	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9
UM11	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5
UM12	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.3
UM13	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2
UM14	4.2	4.4	4.3	4.4	4.4	4.4	4.5	4.5
UM15	4.9	5.1	5.0	5.1	5.1	5.1	5.1	5.1
UM16	4.5	4.7	4.7	4.8	4.8	4.9	4.9	4.9
UM17	5.8	6.1	6.2	6.3	6.4	6.4	6.5	6.5
UM18	5.0	5.3	5.3	5.4	5.5	5.6	5.7	5.7
UM19	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.1
UM20	10.2	12.2	13.0	14.1	15.0	16.7	18.3	20.2
UM21	6.1	6.7	7.0	7.2	7.4	7.7	8.0	8.3
UM22	13.7	16.5	17.8	19.3	20.6	22.9	24.9	27.1
UM24	16.2	22.8	28.8	32.2	37.5	49.3	61.9	71.9
UM25	8.7	10.2	10.9	11.7	12.3	13.4	14.1	14.6
UM26	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1
UM27	1.1	1.1	1.2	1.2	1.2	1.3	1.4	1.4
LAGRAN	3.4	4.0	4.6	5.2	6.0	8.6	13.1	18.7
PEORIA	3.5	4.1	4.8	5.6	6.6	10.3	17.6	27.4
S.R.	2.2	2.3	2.4	2.5	2.7	2.9	3.2	3.4
MARSA	3.4	3.7	3.9	4.2	4.5	5.1	5.8	6.3
DRES	1.9	1.9	2.0	2.0	2.1	2.2	2.3	2.4
BRAN	2.3	2.4	2.5	2.7	2.8	3.0	3.3	3.5
LCKPRT	2.2	2.3	2.4	2.5	2.6	2.8	3.0	3.2
O'BRIEN	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6

Without Project
Mid Growth
Mid Elasticities (N=1.2 for Grain)
Self Help when Queue>=12

Location	Probability of Self Help Lockage				
	2015	2020	2030	2040	2050
UM 11	0.000	0.000	0.000	0.000	0.000
UM 12	0.000	0.000	0.000	0.000	0.000
UM 13	0.000	0.000	0.000	0.000	0.000
UM 14	0.027	0.027	0.028	0.028	0.029
UM 15	0.045	0.046	0.046	0.046	0.046
UM 16	0.039	0.040	0.041	0.042	0.042
UM 17	0.077	0.080	0.083	0.085	0.087
UM 18	0.049	0.051	0.055	0.057	0.060
UM 19	0.000	0.000	0.000	0.000	0.000
UM 20	0.387	0.393	0.435	0.470	0.508
UM 21	0.137	0.146	0.161	0.172	0.184
UM 22	0.457	0.481	0.519	0.550	0.578
UM 24	0.649	0.691	0.757	0.802	0.828
UM 25	0.296	0.317	0.349	0.372	0.384

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

CECW-PE

MAR 16 2000

MEMORANDUM FOR Commander, Mississippi Valley Division, ATTN: CEMVD-PM

SUBJECT: Upper Mississippi River Navigation System Study

1. The purpose of this memorandum is to provide the results of our recent policy review of the subject study. In general, the review found that the district has conducted the study in consonance with the Principles and Guidelines. However, the study results and conclusions are sensitive to certain parameters and assumptions. Accordingly, additional information and explanation is required as indicated in the enclosed policy review comments. Responses to these comments shall be addressed in a policy compliance review memorandum.

2. The Principles and Guidelines provides on page 7, paragraph 6.1(i) that "various schedules, including staged construction, for implementing alternative plans should be considered." It further provides on page 51, paragraph 2.6.3(b)(3) that "project alternatives can differ in their timing as well as in their physical characteristics. Consider the optimal timing of projects and of individual project features in project formulation, so as to maximize net benefits over time." The district incorporated optimal timing into plan formulation, labeling an optimally timed plan as the national economic development plan. Although this approach is generally consistent with the Principles and Guidelines, it may not be the best way to incorporate the Principles and Guidelines guidance. While this approach is acceptable for this project, it should not be applied to other projects without specific approval.

3. An Alternative Formulation Briefing, to discuss the resolution of the enclosed comments and the schedule for completion of the report, shall be scheduled prior to public or interagency coordination of a tentatively selected plan.

FOR THE COMMANDER:

HANS A. VAN WINKLE
Major General, USA
Deputy Commander for
Civil Works

Enclosure

e

ENVIRONMENTAL DEFENSE

finding the ways that work

October 19, 2000

Dr. Lester Lave
Professor of Economics & University Professor
Carnegie Mellon University
Graduate School of Industrial Administration
Pittsburgh, PA 15213

Re: Upper Mississippi River Navigation Study – Rehabilitation Cost Savings

Dear Dr. Lave,

This letter provides further information to you regarding the rehabilitation cost savings issue.

As I indicated previously, much if not all of the Corps' estimated net positive benefit of lock expansion options is based on estimated rehabilitation cost savings. These estimates, as well as the amounts attributed to rehabilitation cost savings are shown in appendix A to this letter, which is taken from a presentation made by Richard Manguno to the Governors Laison Committee for the study in November, 1999.

There are two kinds of possible rehabilitation cost savings. By far the most important can arise if new construction on a project replaces existing equipment and therefore eliminates the need for a cycle of rehabilitation of that equipment. For there to be savings, the estimated costs of new construction must include cost items for rehabilitating existing equipment, and second, the projected rehabilitation that would otherwise occur must be sufficiently near to the present date that (when discounted for time), it results in real savings.

The second kind of rehabilitation cost savings could occur if having locks twice as long results in fewer lockages that results in a slower wearing out of equipment. However, locks that are twice as long mean that the new portion of the lock must also be rehabilitated over time. The second category may therefore result in a net savings or an additional cost. The reason this number is likely to be relatively small in any event is that any saved or increased rehabilitation is likely to be well into the future, so the discount value today is small.

1875 Connecticut Avenue, NW · Washington, DC 20009 · Tel 202 387 3500 · Fax 202 234 6049 · www.environmentaldefense.org
New York, NY · Oakland, CA · Boulder, CO · Raleigh, NC · Austin, TX Project Offices · Boston, MA · Los Angeles, CA

As discussed previously, Dr. Sweeney's affidavit stated that there were two reasons no rehabilitation cost savings were originally included in the project for extended locks. First, he stated, the cost estimates for the expanded locks did not include any (or virtually) any rehabilitation items. In other words, the itemization of costs for the extended locks did not overlap significantly with the itemization of costs in any expected rehabilitation. Regardless of when rehabilitation would occur, therefore, there could be no savings. Second, he stated that the best estimates of needed rehabilitation, based on an engineering/economic study, indicated that rehabilitation would not be required for at least 35 years from the date of the study (1998), in other words, not until at least 2033. When discounted back, this meant that any savings would necessarily be small. Dr. Sweeney stated that this conclusion was only altered in May of 1999, sometime shortly after a meeting with the navigation industry. The relevant pages from Dr. Sweeney's affidavit are included in Appendix B.

Bobby Hughes, the engineer who produced the rehabilitation cost estimates, submitted an affidavit that corroborates this part of Dr. Sweeney's affidavit. It agrees that there were no rehabilitation cost estimates included in the Corps' analysis until the spring of 1999 because not until then had any overlaps been identified between rehabilitation and the costs of new construction. It further states that not only had the original engineering estimates indicated that no rehabilitation was needed for 35 years, but that a second draft had concluded that no rehabilitation was needed for 50 years. However, the affidavit states that "[I]n the spring of 1999, in response to additional preliminary economic analysis, the cost presented in [the Interim revised Lock Extension Design Concept Report published in March 1998] were reevaluated. It was identified at this time that some components listed were items that would be replaced or repaired as part of any future rehabilitation."

However, instead of adding up the specific items to be saved and projecting saved rehabilitation costs for only these items, Mr. Hughey's affidavit states, the Corps did something quite different. It instead determined that the entire costs of rehabilitation could be avoided by extending the date of all needed rehabilitation. The affidavit states, "It was determined that if a lock extension project occurred close in time to the completion of a rehabilitation project, that the scheduled rehabilitation would not take place and these scheduled investments could be avoided." A copy of Bobby Hughey's affidavit is included in Appendix C.

The precise meaning of this is explicated by documents provided to Dr. Sweeney at the time. Dr. Sweeney's affidavit indicates that in June of 1999, he was informed of the changed analysis (at a time when he was still technically an adviser to the study). He then asked for documentation of the rehabilitation cost savings, which was provided in an excel file attached to an email dated June 23rd, 1999 from Gary Loss, the project director. As that excel file indicates, the estimated rehabilitation cost savings were based on broad round numbers of savings for each lock. An estimated rehabilitation cost of $30 million was estimated for each lock to occur once in 2015 and once in 2035 for locks 20-22 without the project and that changed to $30 million

once in 2030 with the project. For the Illinois River locks and locks 24-25, the change was from $30 million in 2020 and again in 2040 to $30 million once in 2030. In other words, by examining only the 50 year time horizon, the construction of the project not only postponed one rehabilitation cost cycle but eliminated the other completely. A copy of the email and chart, as well as other related emails are included as Appendix D.

In essence, from a finding of no overlap whatsoever, the Corps found such complete overlap that it could save all the rehabilitation costs in one rehabilitation cycle.

We have a hard time understanding how, even if some potential rehabilitation cost items were identified, that could justify avoiding all rehabilitation costs. There is no reason, we know, that rehabilitation cannot proceed incrementally on only those items that need rehabilitation. In any event, the claim of overlapping cost items can be checked first and foremost by obtaining a copy of the 1998 Cost Estimate and examining its cost itemization and determining which cost items could even possibly relate to rehabilitation. That would, in our view, provide the maximum base of potential rehabilitation cost savings.

Mr. Hughey's affidavit also stated that the engineering analysis showing no rehabilitation was needed for 50 years (from 1998 or 1999) was ignored because "the engineering work group seriously questioned the results of this report." Instead, he used an analysis that assumed a 25 year period between each rehabilitation, which for those locks last rehabilitated in 1990, meant rehabilitation again in 2015 rehabilitation. Even that claim seems to contradict the excel chart, which used did include 25 years from the last rehabilitation but then included a gap of only 20 years for subsequent rehabilitation work. In any event, the panel can check this analysis by examining the engineering report that actually estimated no rehabilitation would be necessary until roughly 2050 in any event. The panel can decide whether it finds that report more credible or the 25 year assumption for rehabilitation more credible, or perhaps something in between. Again, to the extent there were no overlap items and therefore no potential savings as discussed above, then this issue becomes moot.

I am also aware that you wish to examine these issues based on whatever documentation is available today. I have been told, but have not verified personally, that there is still no detailed explanation of the rehabilitation cost savings in the new round of documents provided to you by the Corps. In other words, there is no statement of the specific items and costs to be saved, the expected date of expenditures with and without, explanation of why rehabilitation would be done etc. However, you have the documents in your possession to determine the truth of this statement.

The only information we have on the second kind of potential rehabilitation cost savings is the discussion in the March, 1998 Engineering Handoff to Economics. This document included two pages showing the calculations. As the discussion of routine maintenance shows, the Corps estimated that future maintenance costs for 600 and 1200 foot locks would be "essentially equal." It determined that the added costs of maintaining 600 feet of additional locks were offset by the greater wear and tear that comes from using a 600 foot lock for more cycles. For major rehabilitation, the Corps analyzed the numbers at different locations and for different types of locks. I believe that the locks as eventually put into the analysis were of type location 3, type c. According to the analysis, the rehabilitation costs of rehabilitating these locks in the future were slightly more ($300,000 more) for 1200 foot locks than 600 foot locks. A copy of the cover and relevant pages of this document is attached as Appendix E.

I hope this information will assist you in analyzing this issue.

Sincerely,

Timothy D. Searchinger

Cc: Delon Hampton
Jeff Jacobs

Optimally Timed
Mid Traffic Growth
Mid Elasticity
Interest Rate = 6.375 Percent, 1997 Price Levels
($1,000's)

Alternative	Begin Const.	End Const.	Total Average Annual Benefits	First Costs Const. & Site Specific Environ. Costs	Average Annual Costs	Average Annual Net Benefits
G Locks 20-25, Locks 14-18	2018 2024	2027 2033	46,782	1,076,785	31,429	15,353
H Locks 20-25, Powered Kevel Guidewalls 14-18 Locks Peoria, LaGrange	2011 2018	2018 2025	69,273	1,039,974	50,847	18,426
I Mooring Cells: 12,18, 20,22,24 Powered Kevel Guidewalls 20-25 Powered Kevel Guidewalls 14-18	2001 2003 Beyond 2050	2003 2007	37,770	190,241	24,860	12,910
J Mooring Cells: 12,18, 20,22,24 Locks 20-25, Powered Kevel Guidewalls 14-18 Locks Peoria, LaGrange	2001 2011 2018	2003 2020 2025	72,552	1,040,674	51,069	21,483

Optimally Timed
Mid Traffic Growth
Mid Elasticity
Interest Rate = 6.375 Percent, 1997 Price Levels
($1,000's)

Alternative	Begin Const.	End Const.	Total Average Annual Benefits	First Costs Const. & Site Specific Environ. Costs	Average Annual Costs	Average Annual Net Benefits
A Mooring Cells: 12,18,20,22,24	2001	2003	1,779	700	218	1,579
B Mooring Cells: 12,18,20,22,24 Powered Kevel Guidewalls 20-25	2001	2007	37,770	190,241	24,860	12,910
C Locks 20-25	2018	2027	31,189	542,054	18,548	12,641
D Locks 20-25, Powered Kevel Guidewalls 14-18	2011	2020	53,398	705,175	38,403	14,995
E Mooring Cells: 12,18,20,22,24 Locks 20-25, Powered Kevel Guidewalls 14-18	2001 2011	2003 2020	56,678	705,875	38,625	18,053
F Mooring Cells: 12,18,20,22,24 Locks 20-25, Powered Kevel Guidewalls 14-18 Powered Kevel Guidewalls, Peoria, LaGrange	2001 2011 2026	2003 2020 2030	61,611	765,207	40,468	21,143

31. As described below, this model was subject to repeated independent technical review both within and without the Army Corps of Engineers and was strongly affirmed by each review. In the course of finding a way to justify doubling of the lengths of locks in 1998 and 1999, the N values were one of the key factors subject to manipulation by senior Corps of Engineers officials.

B. ***Rehabilitation Cost Savings***

32. Another source of national economic development benefits that can be the result of potential structural projects to improve water resource facilities is the postponement or avoidance of rehabilitating or replacing existing components of facilities that would otherwise need rehabilitation or replacement. In this event, these rehabilitation cost savings, if real, are a national economic development benefit of the potential project as those resources that would have been consumed by the rehabilitation are freed up for other productive uses.

33. As part of navigation study, the engineering and economics work groups evaluated whether there would be rehabilitation cost savings as a result of implementing any of the alternatives to decrease congestion at the locks. Throughout 1997 and early 1998, Jeff Marmorstein and I and others participated in a series of meetings with the engineering work group, including Dennis Lundberg and Bob Hughey and others, that examined in detail the construction cost elements of the extended lock alternatives. At these meetings we were informed that no rehabilitation costs for components of the existing locks were included in the construction cost estimates for the extended locks. For this reason, regardless of what future rehabilitation costs proved to be, there could be no immediate rehabilitation cost savings as a consequence of extending existing locks.

34. Subsequent to these meetings, Jeff McGrath, an economist in the St. Paul District at my direction, working with members of the engineering work group, completed a detailed analysis of the need for future rehabilitation for the without project condition. The principal reason for this analysis was guidance from Corps of

TABLES NO. LS-4:

TABLE ENG-#: MAJOR REHABILITATION SUMMARY (1200' LOCKS)			
Location and Type	Major Rehab. Cost	Year(s) Incurred	Present Worth[1]
Pile-Founded Locks			
Location 1, Type C	$3,500,000[2]	20, 40	$1,000,000
Location 2, Type B	0	N/A	0
Location 2, Type C	0	N/A	0
Location 2,Type Revised	$17,500,000	20, 40	$5,200,000
Location 3, Type B	0	N/A	0
Location 3, Type C	$3,500,000[2]	20, 40	$1,000,000
Location 4, Type B	0	N/A	0
Location 4, Type C	$90,000,000	30	$10,700,000
Rock-Founded Locks			
Location 2, Type B	0	N/A	0
Location 2, Type C	$3,500,000[2]	20, 40	$1,000,000
Location 2,Type Revised	$10,750,000	20, 40	$3,200,000
Location 3, Type B	0	N/A	0
Location 3, Type C	$25,000,000	30	3,000,000
Location 4, Type B	0	N/A	0
Location 4, Type C	$44,000,000	30	5,200,000

Notes:

1. The present-worth values were calculated with a discount rate of 7.4 percent.
2. This would not technically qualify as "Major Rehabilitation" by current requirements. However, the work would need to be done, however funded.

TABLE LS-5:

TABLE ENG-#: MAJOR REHABILITATION SUMMARY (600' LOCKS)			
Location and Type	Major Rehab. Cost	Year(s) Incurred	Present Worth[1]
Pile-Founded Locks			
Location 1, Type C	$2,300,000[2]	20, 40	$700,000
Location 3, Type B	0	N/A	0
Location 3, Type C	$2,300,000[2]	20, 40	$700,000
Location 4, Type B	0	N/A	0
Location 4, Type C	$60,000,000	30	$7,000,000
Rock-Founded Locks			
Location 3, Type B	0	N/A	0
Location 3, Type C	$17,000,000	30	2,000,000
Location 4, Type B	0	N/A	0
Location 4, Type C	$30,000,000	30	3,500,000

Notes:

1. The present-worth values were calculated with a discount rate of 7.4 percent.
2. This would not technically qualify as "Major Rehabilitation" by current requirements. However, the work would need to be done, however funded.

agricultural products demands for barge transportation for all origin and destination pairs.

113. Colonel Mudd is not an economist and no economist involved in the study was involved in generating this N of 1.2 or has ever endorsed this number.

114. There are many flaws with this rationale, which I set forth in a telephone conference call with Col. Mudd, Rich Manguno, Gary Loss and others on June 22, 1999 and subsequent memorandum (Appendix 35). The most basic flaw is that this rationale is, among other things, based on an obvious mathematical error. The N value appears in the functions in the ESSENCE model as an exponent. Taking the linearly weighted average of exponents to three (or any number of) functions (the functions for three separate grain regions) does not yield the correctly weighted average of these combined functions.

115. On June 10, 1999, I sent a memorandum by email to Colonel Mudd, Gary Loss, Richard Manguno and Diane Karnish noting that General Anderson's September 1998 directive extending the economics panel for the duration of the study had made the economics panel "responsible for" all economic products but the panel had not met for more than six months (Appendix 35). I asked Colonel Mudd whether he intended to call a meeting prior to public meetings on the navigation study scheduled for July 1999.

116. In response to this email, the first economic panel meeting since September 1998 was held via a teleconference on June 22, 1999 with all available panel members. Not all panel members were available on that date and I recall the participants were Col. Mudd, Rich Manguno, Wes Walker, Gary Loss, and I. On this call, Mr. Manguno briefed the panel members on the changes made to the N values and the theory behind the changes. During this call, Gary Loss also described the changes made to the major rehabilitation analysis and project cost estimates.

38. As described below, a major change was made to this analysis in May and June 1999 in an effort to attempt to justify immediate large-scale measures.

C. *Industry Self-help*

39. One of the means by which tows can themselves reduce the time it takes to proceed through a lock is to receive help from other tows also waiting for lockage. This practice is termed industry self-help. Basically, another line haul towboat waiting at the lock disengages from its barges and assists in removing the first half (called the first "cut") of a locking tow and then removes this first cut to a remote location to await the second cut to remake the original tow. Historical experience developed by the study has shown that tow operators will do this when traffic builds up at locks. The engineering team estimated that "industry self-help" would reduce the time it takes to transit a lock by an average of 18 minutes for up-bound tows and 23 minutes for down-bound tows, or roughly 20 minutes average overall. This conclusion was summarized in the Study's December, 1997 newsletter, attached as Appendix 5. The March 18, 1998 revised Engineering Hand-Off to Economics (attached previously as Appendix 4) reduced slightly the estimate of the time savings from increased usage of industry self-help and increased the costs by requiring that DeLong Piers be installed to extend the existing upstream guidewalls of the locks for safety reasons.

40. This practice has important consequences for estimating the benefits of larger locks. Corps of Engineers regulation ER-1105-2-100 requires this practice to be explicitly included in the without project condition. This practice helps insure the most efficient use of the existing system. Larger locks, according to the engineering team, reduce transit times per lock by approximately 55 minutes (depending on the lock). But when tow operators can themselves significantly reduce transit times by up to 23 minutes under certain conditions, the net reduction in lockage time attributable to longer locks is reduced when measured against the without project condition.

Engineers Headquarters that major rehabilitation expenditures on the Upper Mississippi River must be identified as an integral part of the evaluation of any potential investments on the navigation system. Mr. McGrath's analysis focused on seventeen major components of the all the existing locks in the navigation system study and concluded that no rehabilitation costs for these components would be necessary with or without extended locks for 35 to 40 years, i.e., until at least 2033. These conclusions were embodied in a report prepared by McGrath in early 1998 and are reflected in the public minutes of an Economic Coordinating Committee meeting on May 11 and 12, 1998 which are attached as Appendix 3.

35. This analysis is important because it shows that potential rehabilitation cost savings from extending locks would be small even if the costs of extending locks did include significant rehabilitation of existing locks (in contrast to what we were told above). At best, extending the existing locks in the near future would postpone future rehabilitation costs from around 2035 to some period thereafter. The present value of these foregone rehabilitation costs so far off in the future would be very small.

36. Mr. Lundberg noted correctly at a meeting in early 1998 in the Rock Island District office that I attended that some potential rehabilitation expenses had not been examined by Mr. McGrath's report. However, Mr. Lundberg also noted these other rehabilitation costs were not expected to change with or without the lock extensions. For that reason any such rehabilitation costs were irrelevant to whether extended locks could save future rehabilitation costs.

37. The conclusion that there was no real potential rehabilitation cost savings was documented to the economics team in a statement contained in the document entitled "Engineering Hand-off to Economics" dated March 18, 1998. Key pages from this document are attached as Appendix 4. This document contained performance and cost data compiled by the engineering work group for large-scale measures including lock extensions that had undergone extensive Independent Technical Review in late 1997.

117. During the call, I explained to Colonel Mudd several reasons why his methodology for arriving at an N value of 1.2 was flawed, including most of the reasons set forth later by me in a memorandum dated June 29, 1999 (Appendix 35). Wes Walker expressed concern regarding all the changes that had taken place since the panel last met and requested more detail and time to examine the changes. The economics panel also questioned the use of short run rail elasticities in the model for goods other than grain as a substitute for long run water elasticities.

118. The panel requested details and explanations for why the already reviewed cost estimates for project construction had decreased and for why rehabilitation costs avoided had increased so dramatically over the levels the panel had been previously briefed. Col. Mudd requested written comments and recommended solutions be immediately forwarded to him and the project manager Gary Loss.

119. On June 23, Gary Loss provided panel members with a file setting forth the changes to the major rehabilitation numbers.

120. On June 24, I sent Gary Loss a memorandum, with copies to other economists and Colonel Mudd, requesting further explanation of the new numbers. On the same day, Gary Loss forwarded to me an email response from Roger Less, an engineer in the Rock Island District office, that provided only the most cursory explanation of the changes and that made no reference to any documented technical analysis. Copies of this correspondence are attached as Appendix 36. Wes Walker and I were the only panel members to send written comments. I sent my comments in a memo dated June 29, 1999. Wes Walker sent his comments on also on June 29, 1999. Our comments raised a number of objections to the changes and are attached as Appendix 35.

121. Three days later, on July 2, 1999, Colonel Mudd emailed Gen. Anderson recommending disbanding the economics panel for the UMR-IW system study. In an email dated July 4, 1999, Gen. Anderson so ordered. These emails are attached as Appendix 37.

I, Bobby R. Hughey, being duly sworn under oath and of legal age, and under no legal disability, do hereby state that the following is a true statement of facts according to my best recollection and knowledge.

In response to the question "Did the study update change the date of renovations from 2033 to 2015, and if so, on what basis?"

Yes. The preliminary results of the economic analysis for the reliability studies were discussed at an Economic Coordinating Committee on 11-12 May 1998. This discussion included a summary of the methodology being used and the preliminary results of the analysis, which showed no major rehabilitation needed until 35-40 years out in the future. This preliminary work was documented in a draft report dated June 1998. This preliminary analysis was a work in progress and had not been reviewed by the study team or ready for an Independent Technical Review. Subsequent reviews by the study team indicated some problems with the analysis. A second draft report was completed and distributed to the study team for review in April 1999. The results of this second report indicated that no rehabilitation would be justified in the next 50 years. The analysis indicated that failures will occur and repairs needed, however they would not be justified under current definitions and methodologies. The engineering work group seriously questioned the results of this report. This report is under going internal review by the study team and is not yet ready for an Independent Technical Review.

In the fall of 1997, an additional effort was undertaken to reduce the cost of construction for the lock extension alternative. This work was documented in the, the Interim Revised Lock Extension Design Concept Report published in March 1998. In the spring of 1999, in response to an additional preliminary economic analysis, the costs presented in this report were reevaluated. It was identified at this time that some components listed were items that would be replaced or repaired as part of any future without rehabilitation. An analysis was undertaken at that time to determine whether double counting was occurring for these components. The estimate contained in the referenced report included costs for miter gates, guidewall, some lock chamber concrete and metals, and operating machinery, culvert valves and operating machinery, power and lighting systems, mob/demob and preparatory work; care and diversion of chamber water. Significant portions of these cost factors were also contained in the cost estimates for the scheduled rehabilitation in the without project condition.

Schedules for major rehabilitation in the future were developed utilizing a 25-year expected extended life parameter. The site-specific future schedule for rehabilitations was established by adding 25 years from the last completed rehabilitation. For example lock 22 was last rehabilitated in 1990. The next rehabilitation is projected to occur in 2015. It was determined that if a lock extension project occurred close in time to the completion of a rehabilitation project, that the scheduled rehabilitation would not take place and these scheduled investments could be avoided. This results in the delaying or avoidance of a cycle of major rehabilitation in the 2015-2020 period and associated costs. This information was used in subsequent evaluations of the economic analysis.

Sweeney, Donald C II MVS

From: Loss, Gary L MVR
Sent: Friday, June 25, 1999 8:06 AM
To: Sweeney, Donald C II MVS; Karnish, Diane E MVS; Soyke, Paul D MVR; Manguno, Richai
Cc: MVN; 'Wesley.W.Walker@lrh01.usace.army.mil' Tipple, David A MVR; Loss, Gary L MVR; Thompson, Bradley E MVR; Lundberg, Denny A MVR; Less, Roger A MVR; Hughey, Bobby R MVS; Mudd, James V MVR
Subject: FW: Info to Econ Panel

Economic Panel Members:

Attached is a response to questions asked by Dr. Sweeney re/ how the rehab schedule was revised.

We would like to have your comments by noon Tuesday June 29, so we have a chance to consider them prior to the EC on Wed.

Thanks,

Gary Loss

—Original Message—
From: Less, Roger A MVR
Sent: Thursday, June 24, 1999 1:28 PM
To: Thompson, Bradley E MVR; Lundberg, Denny A MVR; Loss, Gary L MVR; Hughey, Bobby R MVS
Subject: RE: Info to Econ Panel

My answer to Don's question concerning rehab cost avoidance due to lock extension work is a combination of eliminating a cycle of major rehab for some components and delaying major rehab for 10 additional years on other components. I know this answer probably doesn't help Don much, but the rationale is:

The lock extension work will likely include installing new machinery, miter gates, duct banks, power and control cables, emptying (and possibly new filling) valves and critically needed concrete work. Work on the other components that are normally lumped into an existing major rehab contract but not needing immediate attention with the lock extension work will be delayed the additional 10 years until the site's major rehab work (first cycle of rehab for the extended lock) is initiated. Those components having major rehab delayed include such things as lock chamber and horizontal surface concrete, monolith joint repairs, and lock appertanances such as ladders, check posts, handrailing.

Roger

—Original Message—
From: Thompson, Bradley E MVR
Sent: Thursday, June 24, 1999 10:49 AM
To: Less, Roger A MVR
Subject: FW: Info to Econ Panel

Roger,

Interesting little note below. I think the simple answer is that the rehab avoidance is simply pushing back rehab needs for 10 years. However, may be some additional future savings as well. Let me know what you think.

Gary Loss would like any responses to go back through him.

Brad
x5256

—Original Message—
From: Loss, Gary L MVR
Sent: Thursday, June 24, 1999 10:41 AM
To: Hughey, Bobby R MVS; Lundberg, Denny A MVR
Cc: Tipple, David A MVR; Manguno, Richard J MVN; Loss, Gary L MVR; Thompson, Bradley E MVR
Subject: FW: Info to Econ Panel

Bobby/Denny,

Can you answer Don's questions? I have attached the message/file I sent to the econ panel for your reference.

Thanks,

Gary

<< Message: FW: Info to Econ Panel >>

-----Original Message-----
From: Sweeney, Donald C II MVS
Sent: Thursday, June 24, 1999 9:33 AM
To: Loss, Gary L MVR; Karnish, Diane E MVS; Soyke, Paul D MVR; Manguno, Richard J MVN; Mudd, James V MVR; Walker, Wesle W LRH
Subject: RE: Info to Econ Panel

Gary:

Thanks for the quick turn around on this information. I have a couple of questions regarding the attached spreadsheet.

Is the study team saying that we can eliminate a cycle of major rehabilitation expenditures and reschedule the remaining rehabilitation by extending the existing lock chambers, or are we saying that we can postpone the rehabilitation expenditures 10 years by extending the existing chambers? The spreadsheet is not clear on this and the answer makes a difference on how the foregone expenditures should be treated in the NED calculations.

Are the $30 million in rehabilitation expenditures per site per occurrence in both the with and without project conditions all related to the existing locks, or are the with project $30 million rehabilitation expenditures per site per occurrence for the total rehabilitation of the locks with the extensions in place?

Thanks,
Don

-----Original Message-----
From: Loss, Gary L MVR
Sent: Wednesday, June 23, 1999 5:09 PM
To: Karnish, Diane E MVS; Sweeney, Donald C II MVS; Soyke, Paul D MVR; Manguno, Richard J MVN; Mudd, James V MVR; Loss Gary L MVR; 'Wesley.W.Walker@lrh01.usace.army.mil'
Subject: FW: Info to Econ Panel

Major Rehab info discussed with the economic panel members in yesterday's phoncon. FYI.

Gary Loss

<< File: Rehab_Summary.xls >>

Scheduled Rehabilitation Expenditures Per Lock Site
($1,000,000)

Year	Locks: UM 14-18,24,25 Peoria, LaGrange		Locks: UM 20-22	
	Without Project	With Project	Without Project	With Project
2015				
2020	30		30	
2025				
2030		30		30
2035			30	
2040	30			

a. Maintenance Costs. Maintenance costs are discussed in their two basic categories below.

(1). Routine Maintenance. Routine or normal maintenance occurs frequently and includes grounds keeping, building maintenance, and equipment maintenance. Under these categories are such things as lawn mowing; painting; greasing equipment; replacing worn, damaged, or defective parts; making equipment adjustments to restore full function; responding to accidents; and other preventative or reactive maintenance. These types of things would not vary significantly from one type of lock to another, and the maintenance estimates were uniform except as noted below. In addition, the additional wall monoliths of a 1200-foot lock are low maintenance sections, so that the maintenance costs of 600-foot and 1200-foot locks are essentially equal. [1] Therefore, routine maintenance is not a significant screening factor. Routine maintenance costs are, however, a significant contributor to the *total* life-cycle cost of a lock. The only significant maintenance cost difference is between maintenance of a lock at Location 2 (only a single 1200' lock), and maintenance of a 1200' lock at Locations 1, 3, or 4 *plus* maintenance of the existing lock (i.e., maintaining two locks). The annual maintenance cost for a Location 2 (single 1200' lock) is estimated to average $197,000.[2] The annual maintenance cost for the existing 600' lock plus a 1200' lock at either Location 1, 3, or 4 is estimated to average $394,000 ($197,000 each for the two locks).[3] The primary basis for estimating the routine maintenance costs is historic record of similar facilities.

(2). Major Rehabilitation. Since major rehabilitation expenses are incurred in the future, they are heavily discounted when viewed as a present worth. Nevertheless, the major rehabilitation costs were estimated for those lock concepts that are expected to require major rehabilitation within the 50-year planning horizon (see site-by-site tables). Tables LS-4 and LS-5 summarize the costs and timing of the major rehabilitation expenditures, for 1200' and 600' locks, respectively. The present-worth values of these costs were the ones included in the site-by-site cost tables for Major Rehabilitation.

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[1] This conclusion may not be intuitive. However, it is further supported by the fact that a 600' lock will go through many more cycles than a 1200' lock to pass the same traffic. This added "wear and tear" affects the lock components that require the most maintenance (machinery, gates, valves, etc.).

[2] The present worth of 50 years of routine maintenance costs for a Location 2 lock is estimated at $3,600,000 based upon an 8 percent discount rate and the annual maintenance cost of $298,000 (Jan 96 price levels).

[3] The present worth of 50 years of routine maintenance costs for the existing 600' lock plus a 1200' lock at either Location 1, 3, or 4 is estimated at $6,100,000, based upon an 8 percent discount rate and the annual maintenance cost of $495,000 (Jan 96 price levels).

The actual future rehabilitation needs for a lock are very uncertain and are dependent upon a number of site-specific factors such as: quality of original construction (influenced by quality of materials, construction methods and workmanship, weather during construction, etc.), environmental factors (freeze-thaw cycles, corrosive influences, predominant weather), random events (accidents, extreme weather), and extent and timing of routine maintenance. However, since the major rehabilitation costs are heavily discounted, extensive refinement of the estimates and definition of the uncertainties is considered unwarranted for the system feasibility study.

b. Operations Costs. The operations costs are expected to be uniform for each of the lock alternatives (even for 600' and 1200' locks). An exception to this is for Location 2 locks which result in only a single lock rather than the other options which result in two operational locks. The annual operations cost for a Location 2 lock is estimated to be $800,000.[4] The annual operations cost for a lock at any other location plus the existing lock is $1,050,000 ($800,000 and $250,000, respectively, for the two locks).[5] Since the operations costs do not differ greatly from alternative to alternative, this is not a significant screening factor. However, it needs to be included in the total cost picture.

c. Economic Impacts to Navigation During Construction.: The Engineering Work Group's task was to quantify the schedule and duration of delays and closures. To do this, a construction sequence for each lock alternative had to be developed. Then, the need for interrupting navigation was addressed for each step in a construction sequence. The delays to navigation would be greatest with construction of a lock at Location 2 (extending the existing lock) and second highest with construction at Location 3 (immediately adjacent to the existing lock in the auxiliary lock bay). For Locations 1 and 4, the navigation delays are negligible since there is adequate separation from the existing tow maneuvering areas.

Addendum B in the Engineering Appendix contains a description of the construction sequences and estimation of the delays to navigation during construction for those lock locations and types that have the highest impacts.

The magnitude of the economic impacts to navigation would vary depending upon the level of congestion at the time construction is undertaken. Assuming that traffic continues to grow with time, then the later the initiation of construction, the larger the economic impacts would be to the navigation industry. By constructing before traffic levels reach high levels of congestion, the economic impacts could be substantially reduced.

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[4] The present worth estimate of 50 years of operations costs for a Location 2 lock is $10,500,000, based upon an 7.4 percent discount rate and the annual operations cost of $800,000 (Jan 96 price levels).

[5] The present worth estimate of 50 years of operations costs for a lock at any of the other locations plus the existing lock is $13,800,000, based upon an 7.4 percent discount rate and the annual operations cost of $1,050,000 (Jan 96 price levels).