Submission to the
Governors' Liaison Committee
For the
Upper-Mississippi-Illinois Waterway
System Navigation Study
April 12, 2001
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Response to the
Testimony of James V. Mudd
Before the
Congressional Mississippi River Caucus
March 15, 2001

Public Employees for Environmental Responsibility (PEER) is a national service organization for federal, state and local government employees serving the public within pollution control, land management and wildlife protection agencies throughout the country. Among its services, PEER provides legal and other representation to conscientious employees. In this capacity, PEER serves as the legal representative for a number of employees within the U.S. Army Corps of Engineers, most prominently senior economist Dr. Donald C. Sweeney III.

PEER responses are in *italics:*

Co-Chairmen Hulshof and Boswell, members of the Caucus, my name is James V. Mudd. I appear here today as a private citizen. A year has past since the last time I have spoken to this Caucus, then as District Engineer from Rock Island with responsibility for the Upper Mississippi Navigation study.

Since that time a lot has happened to us in regard to the Upper Mississippi Navigation Study. I have been questioned by the DAIG, the Congressional S&I staff and numerous other people, citizens and reporters alike. We have seen the release of the DAIG investigation, we watched three honorable officers get letters of admonishment from the VCSA for their part in the Navigation Study and most recently we have seen the NAS interim report on their investigation. All three of these actions sent mixed signals to the public.

The facts are contrary to Colonel Mudd's assertion that these three actions sent mixed signals to the public. All three of these actions sent a remarkably consistent message to the public:

First, the DAIG (Department of the Army Inspector General) found that three Corps of Engineers officers 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 in law and regulation.

Second, these three officers were disciplined by the VCSA (Vice Chief of Staff Army) for these improper actions.

Third, the NAS (National Academies of Science) report verified these findings by stating in their executive summary, "As a result of flawed assumptions and data, the current (September 2000) results of the spatial equilibrium model and the ESSENCE model should not be used in the feasibility study. The problem lies not in the theoretical motivation behind these models, but in their implementation and data used as input." These same three officers were directly responsible for the flawed assumptions and data used in the September 2000 economic model.

I would like to talk about all three of these actions.

To say that I am disappointed with the DAIG report on the Upper Mississippi and Illinois Waterway Navigation Study would be an understatement. A travesty of justice is more appropriate. I have read the letter of admonishment that the VCSA issued me several times. I have reflected on my actions during the time that I was the District Commander of the Rock Island District and I wouldn't change a thing. I would not make any decisions differently under the same circumstances.

I would like to thank the VCSA for his reasoned actions in this case. I think he saw the folly in all of this and the political motivation for the DAIG outcome. For that reason, he took the least possible disciplinary action that would protect his wronged officers and still bring the investigation to a close. The VCSA said in my case, "The reason I am not officially reprimanding you for your conduct is because I believe your decision to change certain values in the study was based on your own methodology which you believed was more appropriate and reasonable in accounting for certain variables in the study."

I have also read the DAIG report many times and I find the written product wrought with misinformation, hearsay, and paraphrasing. There was an extreme lack of crosschecking of the facts from testimony given and the overwhelming paper trail surrounding the decisions over a two-year period was seemingly neglected. I find this almost criminal in itself. I have seen the words the 'preponderance of the evidence indicated that' throughout the DAIG report. Last time I looked in the dictionary evidence has a truth part to it and I find the search for it in this investigation to be seriously lacking.

The Office of Special Counsel's press conference on 6 December 2000, when the DAIG investigation went public is quite telling. Dr. Sweeney was a guest of honor at the proceedings. The question and answer period was most revealing. Dr Sweeney was asked, " At the time you were removed from the head of the economics study team for the Upper Mississippi project, was the model in any shape to be used to compute NED benefits." Sweeney responded, "No. With respect to the demand curves, an incorrect functional form was developed to allow for a rapid evaluation to see how the various components worked together." What he just admitted, Congressmen, was that the model, which Dr. Sweeney had been responsible to produce, and which was several months behind schedule when Dr. Sweeney was replaced as manager of the economics panel, was not adequate to the task at hand.

In response to a question at the press conference, Dr. Sweeney responded that the functional form in the model at that time had been created to permit the rapid testing of the sensitivity of the preliminary NED plan to alternative estimates of the elasticity of demand for water transportation. That testing demonstrated that the near-term components of the preliminary NED plan were relatively insensitive to estimates of long run elasticities of demand. However, the long-term components and likely implementation dates were sensitive to estimates of the long-run elasticities of demand.

The study and review teams documented this fact at the time and recommended to senior management and Colonel Mudd that, "The economic concepts underlying the spatial equilibrium based model (SEM) are sound. The ESSENCE spreadsheet used to apply the concepts to the UMR-IW Navigation System Feasibility Study correctly applies the concepts to the NED analysis of potential system actions. A sensitivity analysis concerning the impact on estimates of the NED impacts of alternative assumptions regarding the location and shapes of demand curves was undertaken to ascertain the efficacy of gathering additional data. We concluded that the long term NED plan may be sensitive to the shapes of the demand curves and the study should undertake additional efforts to further define these demand for water transportation curves. The original study IPMP did not address demand for water transportation curves." - Memorandum signed by Dr. Sweeney and Mr. Manguno through Owen Dutt to then project manager Dudley Hanson dated 3 August 1998. Note that this recommendation echoes the conclusion reached by the NAS panel.

Contrary to Colonel Mudd's testimony the economic model was not several months behind schedule. The sworn testimony of the UMR-IW lead project manager, Mr. Mark Gmitro, at the time Dr. Sweeney was replaced is paraphrased on page 61 of the DAIG report. The report states, "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." Also on page 61 of the DAIG report, Mr. Jeffrey McGrath another member of the project management work group testifies, "he did not think that the economics part of the study was behind schedule and was surprised to hear that given as the reason Dr. Sweeney was replaced."

This is also what the National Academy of Sciences (NAS) found to be the case. The NAS was complimentary, as were many other qualified reviewers, of the spatial equilibrium model (SEM) theory, which was espoused by Dr. Sweeney. The SEM served as the theoretical basis for what was to follow as an analytical tool. The detailed work was to be done with what Dr. Sweeney called the ESSENCE model. The NAS found that "The ESSENCE model does not, however, adequately use the most important concepts of the spatial equilibrium model." The NAS discovered, in its review, just as I and my subordinate managers had discovered in 1998, that the essence model was not capable of using variables as input, rather it was hard wired to produce a do-nothing solution on the Mississippi and Illinois Rivers.

Contrary to Colonel Mudd's testimony, the ESSENCE model was not hard-wired to produce any result in 1998. The spreadsheet was and is capable of modeling any

reasonable demand curve for water transportation. In fact, Colonel Mudd knew of and utilized this very property when he directed that the N values for grain demand curves be arbitrarily altered to values that appeared to justify immediate large-scale construction of extended lock chambers.

The only reason that the ESSENCE model does not adequately use the most important concepts of spatial equilibrium theory as cited by the NAS report is quite simply, Colonel Mudd. For example, in August 1998 Dr. Sweeney and Richard Manguno advised management "the study should undertake additional efforts to further define these demand for water transportation curves." In September 1998 Gen. Anderson responded by placing the production of all economic products under the direct management of Colonel Mudd. As late as May 12, 1999 members of his study team and industry experts advised Colonel Mudd in a closed meeting in Chicago that more research and model building was still needed. On May 13, 1999 Colonel Mudd wrote to General Anderson and stated, "There was talk about 2-3 months of more model building. I've killed that idea."

The inherently flawed output of this flawed model is the same information that the Environmental Groups took as gospel in early 1998. Why didn't the DAIG find that little tidbit during their investigation? If they would have, the whole investigation and the allegations brought by Dr. Sweeney would have been dismissed.

For your information, the DAIG did have this information, reference page 83 (4), Mr. Marmorstein (Dr. Sweeney's right hand man), admits that he invented N-value to quantify the elasticity of demand. The DAIG team did nothing with that information.

But the press conference provides even more revealing information. Dr. Sweeney was asked another very provocative question, "Given that even at this late date, there still remains no empirical validation of any of the Corps N values for agricultural products, would you be comfortable with an NED benefit calculation from the Corps' model using any of the N values that have been discussed, 1.2, 1.5, 2.0? Sweeney's reply, " No. If I could start all over from a blank piece of paper and begin from scratch, I would not use N values at all but a different functional form altogether."

That statement is absolutely correct. Dr. Sweeney has stated that he would not use that functional form in any real production work using the ESSENCE model. He has further stated that he would have investigated the long-run elasticity of demand for water transportation of individual system users as well as permitted the model to substitute lower cost water origins for higher cost water origins as suggested by spatial equilibrium theory. Numerous Corps economists and analysts including Jeffrey Marmorstein, Richard Manguno, Steven Cone, Ron Conner, Robert Daniel, David Moser as well as many outside economists including those hired by industry made these same recommendations many times to Colonel Mudd. In Colonel Mudd's own words, " I've killed that idea."

There it is. Dr. Sweeney developed a model that didn't have data to make it work but he spent millions of taxpayer dollars developing it and then he convinced everyone inside and outside of the Corps of Engineers that it was reliable, predictive and better than any model that the Corps had in its inventory. Through his own words, he lied to us all. Why didn't the DAIG discover these facts? If they did, there would be no investigation, it would have been thrown out. It is puzzling to me that the VCSA would send the letters of admonishment to the officers in question after these statements were made in public.

As you know, I was the District Commander of the Rock Island District from 1997 to 2000. I watched a very dedicated group of public servants (minus a few on the economics team) work on one of the most challenging civil works studies in US history. Nobody deliberately tried to 'cook the books' (except perhaps Dr. Sweeney) as has been claimed. What I observed was a bunch of great human beings trying to wrestle with a very hard problem/task. Predict the future for the next 50 years with a reasonable level of certainty? I'm not sure it can be done. And with the NAS release of their interim review of the Navigation Study on 28 February 2001, I know and so do you that we can't do it with the Sweeney economic model. As head of the Navigation study's economics study team prior to 1998, Dr. Sweeney was responsible for the development of the model's traffic forecasts. He also oversaw and supervised the development of the transportation rate data prepared for the model by the Tennessee Valley Authority. Finally, Sweeney was the primary author of the Essence model and its controversial demand curve assumptions and 'N' values. The NAS found all of these elements to be seriously flawed to the point where the entire model is analytically useless.

The original study plan was conceived and approved by Corps senior management and officers prior to Dr. Sweeney becoming the technical manager of the economics work group. Dr. Sweeney and the economics work group executed the study plan as directed by the project management work group and senior management.

Dr. Sweeney did not develop the traffic forecasts. An independent contractor, Jack Faucett Associates, developed the traffic forecasts for the study team under a contract with the Corps' research lab at the Institute for Water Resources. This method of developing the traffic forecasts was undertaken as study management's response to input the study team received at eight public meetings held in 1994. The study team was told by the public over and over again that to have a "credible" economic analysis, the study should use independently generated forecasts of water traffic. Colonel VanEpps, then commander of the North Central Division, with approval from Corps Headquarters directed that this independent approach be used to generate the traffic forecasts so that the study could not be accused of "cooking the books." The same reasoning was employed by the study team to contract with the independent Tennessee Valley Authority to prepare the transportation rate data for the study.

As the study progressed, the entire economics work group in coordination with the Economics Coordinating Committee (ECC) realized the errors inherent in the original study plan and began systematically recommending to management appropriate changes regarding the ongoing study. Study management, division commanders, the ECC, and

headquarters staff were routinely kept appraised of the ongoing recommended changes in the system analysis. Senior Corps management was briefed at quarterly in-progress review meetings and ultimately took responsibility for all changes in the study direction and all final work products.

Colonel Mudd was routinely advised of the shortcomings in the ongoing study regarding data for the economic model. He systematically ignored all recommendations of the economics panel he directed to generate real data and improve the model. The flaws and lack of utility of the September 2000 ESSENCE model are the direct responsibility of Colonel Mudd. Dr. Sweeney was excluded from any meaningful role in the study in June 1998 when he was made an advisor to an "economic panel" given responsibility for production of all economic work group products. Colonel Mudd ultimately managed this panel. Colonel Mudd never once convened a meeting of this panel until confronted by Dr. Sweeney about the changes Colonel Mudd had directed to the analysis. Colonel Mudd responded by requesting that General Anderson dismiss the "economics panel" from their duties. On the 4th of July 1999, General Anderson obliged.

This brings me to the point at hand. Much has been said about the N value for grain currently in use in the study. I have been accused by the DAIG of improperly taking or directing actions, which I knew, or reasonably should have known, would contribute to the production of a feasibility study that failed to meet standards established in law and regulation. In the letter of admonishment to me, the VCSA went on to say that, "by improperly directing that certain feasibility study data be altered, you directly influenced the outcome of the study pertaining to the Upper Mississippi River and Illinois Waterway".

I made a decision in June 1999 to use an N value of 1.2 for Grain in the Essence model. I listened to all the proponents of the Essence model, the critics, my economists and staff. My economists had previously stated to several working groups and the public that the value of N was 1.5. I questioned that value and how they came up with it. I was told that they selected it because it was the median number of the expert elicitation panel's range of N values, it produced believable results, and the economic study team was comfortable with it.

Finally, in this testimony Colonel Mudd admits to making the decision to use an N value of 1.2 for grain in the ESSENCE model. He denied this many times in often-conflicting testimony, frequently under oath. For example, on page 93, the DAIG report states, "[IO Note: Pages 126-127 of COLONEL 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.]" In a sworn affidavit to the United States Senate Committee on Environment and Public Works dated March 2, 2000 Colonel Mudd states in part, "Subsequently, New Orleans district economist Richard Manguno, at my direction, calculated the N value for grainI did not set a predetermined N value of 1.2"

Another example of Colonel Mudd's often waffling memory yields some insight into why he directed that the N value of 1.2 be used for grain. The DAIG report, page 93, paraphrases Colonel Mudd's own sworn testimony as, "(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 (Colonel Mudd) 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." Some joke.

Later, in an interview with Colonel Mudd printed in the February 13, 2000 Washington Post Michael Grunwald reports, "But Mudd added that he was 'very careful not to push anyone to do near-term improvements, large-scale improvements, whatever.' In an Oct. 2 (1998) memo clarifying Fuhrman's commands to the economics panel a memo Mudd now says he can't remember writing he seemed to do just that. 'MG Fuhrman has clearly stated that the Corps has the responsibility as the Federal Government's advocate for the inland waterway system,' he wrote. '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.'"

That rationale was, and is, weak and insufficient for an important and far reaching study. It didn't work then and it doesn't work now. I asked them to use the information that we had available (primarily the Iowa Grain Flow Survey) and try to at least develop a reasoned methodology for the selection of an N value for grain. Using this reasoned methodology, the N value for grain was calculated to be 1.2.

The N value was calculated by Colonel Mudd to be 1.2. His self-proclaimed "reasoned methodology" utilized incorrect mathematics to concoct an improperly weighted average of hypothetical sub-regional N values from exactly one year's data on grain flows from one state. Colonel Mudd offers this rationale as a "reasoned methodology" for an important and far reaching study?

Many have stated their opinion that we overlooked Illinois. Illinois is pivotal in the navigation study because it exports more than the other states in the upper mid-west (Illinois ships by water more tonnage than any of the other four states and its total is almost half of all the five states combined). If we would have had Illinois Grain Flow Data, it probably would have shown the dependency of this State on waterborne transportation and therefore the N value of grain for this State would be more inelastic than the rest. We didn't have that data, however, so we didn't fabricate a solution.

In fact, Colonel Mudd not only overlooked the state of Illinois, he overlooked the states of Wisconsin, Minnesota, and Missouri as well. Further, he overlooked the impact of the ultimate end users of grain products on the elasticity of demand for water transportation.

What data Colonel Mudd chose not to collect might show for the state of Illinois is pure conjecture on Colonel Mudd's part. It seems that Colonel Mudd is stating that he only fabricated a rationale for an N value for data that he already had.

We did the best we could with the information and data that we had at the time. In that regard, I have provided you with an attached document prepared by Mr. Rayford Wilbanks, a recently hired senior economist for the Mississippi Valley Division (MVD) of the Corps of Engineers. His report was generated for MG Phillip Anderson, then commander of the MVD, after the Department of the Army Inspector General (DAIG) interviewed the General. MG Anderson was concerned because it seemed as if the DAIG was questioning the mathematical accuracy of the N value of 1.2. Mr. Wilbanks' report to General Anderson is attached as Exhibit 1.

After consulting with other economists and mathematicians, Mr. Wilbanks concluded that his "professional opinion is that there is no mathematical 'error', i.e., you can apply a linear 'N' value to a nonlinear equation. Secondly, I believe the real concern or issue is what is the so-called 'correct' 'N' value and how should it be derived? The utilization of a weighted average of 'N' does have economic merit in that it was derived from actual available data that logically weights the grain distance from the waterway. I do not see a flaw in this approach."

While Mr. Wilbanks is certainly entitled to his opinion, the flaws evident in this approach remain straightforward. First, linear parametric weights are mathematically incorrect for determining the weighted average of non-linear functions characterized by those parameters, period. Second, distance from the waterway is not a good and consistent proxy for the willingness to pay for water transportation as the delivery mode to the waterway changes with distance from the waterway as do alternative markets for potential water transportation users. Third, the calculation of a single N value to be applied to all grain movements is contrary to observable real world flows.

Mr. Wilbanks, a newly hired, inexperienced economist in navigation analysis, wrote this opinion for Gen. Anderson when Gen. Anderson was under investigation and being questioned by the DAIG. Mr. Wilbanks at the time worked for Gen. Anderson. Gen. Anderson was cited by the DAIG as creating a climate for the manipulation of study data.

At the time of Mr. Wilbanks' opinion, he had no exposure to the navigation study. Yes, it would have been nice to have commodity flow data, especially grain, from all five states for multiple years. This would have provided us with better information from which to derive expected values for N for each State to be used in the model. That luxury didn't exist then and it doesn't exist now. We did the best we could with the one data set (the Iowa grain data). I did ask the grain grower organizations in the five state area if much had changed in the way grain is shipped and/or used in the Midwest since the 1994 Iowa Grain Flow Survey. Their answer was an emphatic, NO! They also said they were probably more dependent upon cheap water transportation which helps offset lower than normal commodity prices. This review contradicts the DAIG finding that the mathematical methodology used to estimate the N Value of 1.2 was flawed.

While Mr. Wilbanks' opinion, constructed to support his commander Gen. Anderson, may appear to support Colonel Mudd's opinion, neither of these gentlemen is in any position to redefine the centuries of mathematics available to guide us in taking weighted averages of parameters of non-linear functions. Further, Colonel Mudd had over 16 months to generate or investigate real data from all five states regarding commodity flows. The study already had the Iowa grain flow data in the summer of 1997. The reason that this "luxurious" data doesn't exist is quite simply that Colonel Mudd chose not to investigate or generate this data despite frequent recommendations from his economists that he do exactly that.

There is no similar scientific investigation in the DAIG report, just conclusions totally based on hearsay and false testimony.

As a further validation of the uncertainties surrounding the N-value, I submit a direct quotation from Mr. Manguno's affidavit, dated 1 April 2000, before the United States Senate Committee on Environment and Public Works:

"7. Given the current state of the Study's investigation into the subject of waterway demand elasticities, I cannot conclude that the waterway demand 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."

Although this is a somewhat obtuse way of saying it, I believe Mr. Manguno states in the above quotation that an "N" of 1.2 is within the range of uncertainty bounds, and thus may be the right answer. I find it to be very strange that the news media, and apparently the DAIG, concluded that Mr. Manguno's affidavit supported Dr. Sweeney's allegations completely. I believe that Mr. Manguno's statement refutes Dr. Sweeney's allegations, and supports my decisions concerning the derivation of an "N" of 1.2. Either the DAIG ignored paragraph 7, quoted above, or they did not understand it.

The DAIG appears to have understood perfectly well what Mr. Manguno stated. Mr. Manguno stated that an "N" value of 1.2 is within the range of uncertainty bounds, which is most certainly true given the lack of any real data. Absent real data the uncertainty bounds are necessarily very large. Mr. Manguno made no statement whatsoever as to the appropriateness of Colonel Mudd's directed N value. However, Mr. Manguno did state in his testimony and affidavit that Colonel Mudd ordered him to use 1.2.

I would also like to point out that the NAS on page 40 of their report state that the N value of grain that Dr. Sweeney espoused is not equal to 2.0 but is equal to a lower value of N. They also state that the supply of grain is not uniform across all farms, and that farms face somewhat different local alternatives. Congressmen, what the NAS just told you is the N value is not 2 which Dr. Sweeney adamantly supported and it is not 1.5, which is the mean of the uniform distribution used by Mr. Manguno. They go on to say that we should have based the N on actual historical data and actual shipper behavior that is what I told my team to do when we calculated N equal to 1.2

This paragraph is simply misleading for the following reasons. First, the "team" did not calculate a value of 1.2 for N as Colonel Mudd states. Colonel Mudd directed Mr. Manguno to use 1.2 over Mr. Manguno's objections.

Second, both the study and review teams recommended that empirical data should be used for production runs of the model. They made this recommendation to Colonel Mudd and management over and over again. For example, in an email from Dr. Sweeney to several project leaders documenting the conclusions of the Independent Technical Review of the economic analysis dated June 16, 1998, he stated that sensitivity analysis would be conducted of different demand curves (elasticities), and that further work would be done to define the curves if this analysis showed that ultimate results depended heavily on these shapes. The minutes of the second meeting of the Economics Panel in July of 1998 discuss the focus of work for the panel. They state, "Don Sweeney said that the Panel should spend it's [sic] time determining the shape of the demand curve." Minutes of the expert elicitation group meeting show that this panel also recommended "more research into demand." They also showed more support for more empirical definition of demand curves: "Don Sweeney suggested that sufficient price and flow data by mode ought to be utilized (where possible) to estimate demand curves." And finally, "The spreadsheet is somewhat limited by the lack of data regarding the shapes of existing demand curves for water transportation and the changes of the curves through time as demands for water transportation increase." Sweeney and Manguno memorandum to project manager Dudley Hanson dated 14 August 1998.

Third, the N value of 2.0 was never adamantly supported by Dr. Sweeney, was never used in any model runs other than preliminary model sensitivity testing, and was never intended for use in any final production runs of the ESSENCE model. Dr. Sweeney advocated empirical research to Colonel Mudd and management many times.

Finally, the "logic" offered by Colonel Mudd, namely misapplying commodity flow data from a single year for a single state arbitrarily to all grain movements in the study area for a fifty year period can hardly be characterized as being supported by the NAS statement that the supply of grain is not uniform across all farms, and that farms face somewhat different local alternatives.

In hindsight, the selection of a value of "N" of 1.2 is probably too high/too elastic. On that note, I would also like to provide you a letter from Dr. Hauser from the University of Illinois (Exhibit 3), who did a study with one of the members of the National Academy of Science team investigating the study also, Dr. Baumel. Although this study is dated, he indicates that the value of N of 1.2 is at the upper bound of the feasible range of legitimate N values. He also indicates that the movement of grain has gotten more inelastic since the time of his report. Why Dr. Baumel (Chief economic spokesperson for the Upper Mississippi environmental movement and now member of the NAS review team), who has been an active member of the navigation study economic team/advisors, didn't provide this information to Dr. Sweeney in the early stages of his model development is still puzzling. Or, if he did, why Dr. Sweeney didn't use it is puzzling to me. To the best of my knowledge, the Hauser, Beaulieu and Baumel (HBB) report is the

only totally empirically based grain elasticity information the Study team has to date. The DAIG investigators had this letter and the HBB original study. With this information in hand, I question how the DAIG could conclude that I directed actions which I knew, or reasonably should have known, would contribute to the production of a feasibility study failing to meet standards If anything, my direction got the study into a range of the plausible N values for grain. My directions were not only appropriate but based on a solid mathematical foundation, using the only available empirical data available and the result was closer than any other to grain's true demand elasticity. My direction was on the mark.

Colonel Mudd's direction was on the mark only in the sense of forcing the study to the industry and Corps management desired outcome of appearing to justify immediate construction of large-scale measures. The study team knew that not only was Colonel Mudd's directed N value of 1.2 inappropriate but that more empirical research was required to estimate the appropriate shapes of the long-run demand curves for water transportation. The HBB report that Colonel Mudd refers to is, in fact, an old study, completed near the time of deregulation of rail pricing, of short run price elasticities, and clearly not appropriate for use in a study with a fifty-year planning horizon.

Further, Colonel Mudd seems to completely miss the point of the NAS observation that the supply of grain is not uniform across all farms, and that farms face somewhat different local alternatives. This NAS observation on its face precludes the universal use of any N value.

As to the insinuation that I knew what the outcome would be is anything farther from the truth. In this regard, I submit an E-mail sent by my head economist, Mr. Manguno, written right after the decision to use an N Value of 1.2. (Exhibit 4) Mr. Manguno clearly states that any previous model runs are subject to change because the system environmental impacts (costs) had to be incorporated in the model and the optimal timing of benefits to costs had to be determined. These two facts did have a large impact on the outcome. There was no way for me to have known any of this before Mr. Manguno ran the models. The DAIG had this information and the E-mail and did nothing with these facts either.

The DAIG report, page 93, paraphrases Colonel Mudd's own sworn testimony as, "(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 (Colonel Mudd) 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." This reads more like a confession rather than a joke.

On another note, the Navigation Industry folks were telling my economists verbally and in several written reviews that the model they were using was severely flawed. The Corps economists chose to ignore these critics. MG Anderson was found by the DAIG to have let the industry folks get too close to the study. The NAS interim report finds the same things wrong with the Navigation economic model that the Navigation Industry was trying to point out. To MG Anderson's credit, he has a good eye for the truth. How the

DAIG could find something inappropriate in this regard is totally wrong. And to top it off the Corps regulations tell its planners to seek out the knowledgeable judgment of navigation economists and industry experts. (Exhibit 5) I find the DAIG findings in this regard truly appalling.

The Corps economists did not ignore industry criticism. The Corps economists evaluated and tested each and every industry-supplied recommendation regarding parameter values for the ESSENCE spreadsheet. All industry-supplied parameters were found to yield results wildly inconsistent with currently observable data. These results were documented and presented to the project manager, industry, and Colonel Mudd.

I have tried to figure out how the DAIG could come up with the conclusions it did. I am always left with three outcomes, they were politically coerced by the last administration, they were duped by Dr. Sweeney's affidavit, his quasi-expert testimony and that of the other questionable Corps economists, or the IG investigators were in a highly technical investigation that put them at a severe disadvantage - they were quite inept for the task. All three speak to a sad day for the Army. Not only is this report an embarrassment for the Army but also it could be divisive to our soldier's confidence in the IG process.

There is a fourth "outcome" that Colonel Mudd omits in his calculus of how the DAIG could have come up with the conclusions it did. Perhaps then Secretary of Defense William Cohen best summarizes the fourth outcome in his transmittal letter of the DAIG report to the Office of Special Counsel when he writes, "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 River Valley Division, USACE; and Colonel James V. Mudd, Commander Rock Island District, Mississippi River 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."

These are my conclusions:

I find the DAIG report nothing more than slanderous drivel;

I find the VCSA actions against the only people in the Corps asking the hard questions of Corps economists, who were totally wrong, unconscionable; and

I find the NAS findings totally enlightening but almost lost by the public, press and the Office of Special Counsel.

It's not everyday that a whistleblower blows the whistle on his, own incompetence. How ironic.

I still wonder how the Congressional S&I investigation turned out but it wouldn't surprise me if they find Dr. Sweeney lacking in good management traits. Rather than supporting

Sweeney's allegations and the resulting report prepared by the DAIG, the NAS findings seriously question Dr. Sweeney's professional credibility and his integrity. I feel that Dr. Sweeney owes the American taxpayer a huge apology for wasting more than four years of effort and millions of dollars in taxpayer funds developing a useless model, not to mention the recent three plus years and millions of dollars that it took us to find out it was useless.

I don't know how this injustice can be corrected. I respectfully request your thoughtful consideration of any options you may have to help correct them. I thank you for your attention to all I've said today, and for any actions that you may undertake as a result.

Subject to your questions this completes my testimony.