

SUBJECT: Freeport Harbor Channel Improvement Project, TX, Civil Works Review Board, 28 June 2011

1. On 28 June 2011, the Civil Works Review Board (CWRB) met to review and act on the Freeport Harbor Channel Improvement Project. The Board members included MG William T. Grisoli (Deputy Commanding General for Civil and Emergency Operations, Chair), Mr. Theodore "Tab" Brown (Chief, Planning and Policy Division), Mr. Lester S. Dixon (Director of Programs, SAD), Mr. Michael Enschede (Chief, Operations and Regulatory CoP) and Mr. James Dalton (Chief, Engineering and Construction CoP). Mr. Douglas W. Lamont, Office of the Assistant Secretary of the Army for Civil Works (OASA (CW) also attended. Participants included the CWRB members, representatives from the, Office of Water Project Review (OWPR), Southwestern Division (SWD), Galveston District (SWG), Port Freeport, Deep-Draft Navigation Planning Center of Expertise (DDN-PCX), Planning and Policy Division (CECW-P), Southwestern Division Regional Integration Team (SWD RIT), the Independent External Peer Review Team (IEPR), Office of the Chief Counsel, the Government Accountability Office (GAO) (Ms. Janice Ceperich), and the Office of Management and Budget (Ms. Andrea Leung).
2. Everyone was welcomed at 1300 by MG Grisoli. He then made introductions and went around the room for participants to introduce themselves. He made the statement that it is good to be transparent and show good stewardship.
3. COL Christopher W. Salles began with the project briefing. Col. Salles's briefing included the project history and information about the Corps of Engineers and the non-Federal sponsor's long partnership. Port Freeport is the Non-Federal sponsor and has been extensively involved throughout the study process. The Port desires to be the Port of the Future. Study participants also included the RIT and the PCX. There was not an Interagency Coordination Team (ICT) for the study as the resource agencies did not feel that there were sufficient environmental issues to warrant an ICT. The Port holds a permit for widening the Freeport Harbor Entrance and Jetty Channel. The Sponsor's Section 204 Assumption of Maintenance request is currently being evaluated at HQ awaiting final input from the Sponsor and approval by ASA (CW).
4. Many alternative plans were developed during plan formulation to identify the optimal plan. Alternative plans included No Action, nonstructural and structural. The Recommended Plan is the Locally Preferred Plan (LPP) for Freeport Harbor. Col. Salles described the LPP and its features. The 56-foot LPP fits the Sponsor's goal (financial); NED Plan is 61-foot. Question (Dalton) arose as to why so many benefits are left on the table between the NED and the LPP; why is the Sponsor foregoing these benefits (\$180 million in benefits and only a savings of \$70 million). Port stated that they consulted with local interests and the industries felt that it is most cost effective for them to implement the LPP instead of the NED. It was clarified that the USACE studies look at the National level benefits while the Port's interests include both national and regional benefits. There are no pipeline relocations. The two

pipelines that cross the navigation channel have more than sufficient cover depth for the project. Public involvement for the project studies has been very important throughout the studies.

5. During the public review of the draft Report and DEIS, the EPA submitted an EC-2 rating for the DEIS. All of their issues have been addressed by inclusion of additional information and analyses to the DEIS. A question regarding the ongoing Section 7 consultation was raised by Mr. Lamont (OASA). Ms. Carolyn Murphy stated that SWG is waiting on the Biological Opinion from National Marine Fisheries Service, which is expected by mid-July. There is no beneficial use (BU) of dredged material because the material to be dredged is silty clay that is unsuitable for beach placement. Pumping distances are too great for this material to be used for BU marsh creation.
6. The original IEPR had four comments that were irresolvable between SWG and Panel Reviewers. A Resolution Panel was formed and issues were resolved to the satisfaction of the Resolution Panel and the IEPR was certified in December 2009. An IEPR Back-Check was performed by the same reviewers in 2011. A question arose as to why a Back-Check was done. It was stated that the first review was prior to the AFB. As a result of the AFB and other reviews, the Report has incorporated many changes/revisions. These revisions needed to be reviewed by the Panel Reviewers. As a result of this review, 22 original and 3 new sensitivity comments were added. The final IEPR Back-Check had 21 concurs and 4 non-concurs (2 original and 2 new). Of the 4 non-concur comments, 3 regard the SWG's use of Global Insight forecasts versus use of Department of Energy's AEO forecasts. SWG has written responses as to why they think Global Insight forecasts are within the reliability range of and more appropriate for use than the AEO forecasts. Marianne Matheny-Katz asked why the Global Insight forecast is considered superior to AEO. Mr. Needham (SWG) stated that DOE forecasts are at a national level and reflect a political agenda, whereas Global Insight forecasts are available by regions.
7. The study addresses the Strategic Campaign Plan, particularly Goal 2. There has been close collaboration with all interested parties throughout the study. The Project adds value to the Nation. The Port is posturing itself for the future. Freeport LNG is redefining itself in regard to shale discoveries and processing; they are making changes to be able to export LNG (liquified natural gas).
8. SWG recommended CWRB approval of the Feasibility Report and EIS for State and Agency Review. The project adds value to the Nation and the local interests have some \$4 billion of planned investment. Col. Sallese opened the presentation to questions. Topics that arose included streamlining the study process to 18 months, ongoing pilot studies that have been initiated and moving some risk into PED to shorten the process.
9. Ms. Phyllis Saathoff, Managing Director for Port Freeport presented the Sponsor briefing. Ms. Saathoff stated that the Port and the Corps have a long history on this study. The Port represents stakeholders and the State of Texas, wants sustainability, is a growing port and wants to be a World-Class Port, not a niche port. She emphasized that the Port is close to the open sea; only 15 minutes from pilot boarding to the docks. The Port is close to the Houston Metroplex (4th largest city) and also to San Antonio. Freeport is close to a major petrochemical complex, has rail service and highway infrastructure, extensive pipeline system and supportive constituency from both industry and the public. The Port has plans to

play a major role in containerization industry. The Port is working to build the Port of the Future and to become the Port of Choice for the 21st Century. The Port of Choice will have the Velasco Terminal, a \$350 million container facility when complete, capable of handling 780,000 TEUs annually; first berth and 22 acre backlot are complete. Highway infrastructure improvements will make access to the Port more efficient. The Port is working with the State on six new overpasses. Union Pacific has recently replaced the swing bridge over the Old Brazos River which will improve rail service to and from the Port. There is an extensive pipeline network connecting the Port and the petrochemical industry to other markets in the U.S. Full build-out of the Velasco Terminal will generate approximately 7,476 direct, indirect and induced new jobs, with economic value of \$10 billion and State and local taxes of \$396 million. Velasco will be online next summer. The Panama Canal should be completed by 2014, allowing the larger container ships access to the Gulf and South Atlantic ports. Port Freeport will be ready when the final piece of the puzzle (55-foot channel for petrochemical and oil industry and 50-foot channel for containers) is constructed.

10. Port Freeport sits in the midst of one of the world's largest petrochemical complexes with Dow Chemical, ConocoPhillips/Teppco Seaway, Freeport LNG, Bryan Mound Strategic Petroleum Reserve and many other chemical refiners. Dow has recently announced several expansions. Dow exports 48% of all the products they manufacture which complements the President's goal of doubling exports in 5 years. ConocoPhillips/Teppco Seaway imports approximately 12 million tons of crude annually which is pumped to its refinery in Sweeny, Texas and other refineries across the U.S. Freeport LNG has recently announced a \$2+ billion liquefaction project allowing them to also export domestic product, complementing the President's goal of doubling exports in 5 years. Port Freeport is home to one of two Federal Strategic Petroleum Reserve storage sites in Texas. It has capability of holding a total of 226 million barrels of crude petroleum. Port Freeport and its stakeholders truly add value to the area, the region and the Nation.
11. The Freeport Harbor Channel Improvement Project will improve navigation and safety for the Port, allow for 2-way traffic for certain class vessels, allow for crude carriers to maximize vessel loading at 800,000 barrels versus the current light loading of only 500,000 barrels, thereby taking advantage of economy of scale. It will also allow the larger crude carriers to discharge their crude at a safe and secure berth vs. lightering that goes on now and allow the larger 7,000 TEU container vessels access to Velasco Terminal versus 4,500 TEU vessels at the current 45-foot draft.
12. Port Freeport is also pursuing a separate project to widen the Freeport Harbor Entrance Channel. This is a \$35 million project being funded by local interests. This will accommodate the largest LNG tankers in service today. As with the widening project, the Port is strongly committed to the Freeport Harbor Channel Improvement Project. Combined, the Federal government and the Port have contributed approximately \$7.2 million to this project to date. This is a good project in terms of it being environmentally friendly; there are no overhead obstructions, no pipeline issues, an abundance of dredged material placement areas and a short dredging project of 11.8 miles. The \$324 million price tag is an investment in our nation that will pay enormous dividends for decades. The non-Federal share is \$113 million.
13. BG Thomas Kula, Southwestern Division Engineer, showed several slides emphasizing the ports of the Gulf area and their importance to the Nation. Three of the top 10 ports of the nation are located in Texas. Port Freeport is number 16. The Southwestern Division concurs

fully with Col. Sallèse's findings and recommendations, is in full support of the Recommended Project, confirms that the Report complies with applicable policy and law in place at this time, anticipates favorable response to the draft Chief's Report and agrees that review throughout the process has improved and strengthened the project. Quality assurance has been maintained by Centers of Expertise involvement including the Cost Estimating DX, the DDN-PCX, ERDC and all requirements have been met. SWD appreciates the support and teamwork from everyone. Division and HQ policy reviews began in July 2005 for the FSM and have continued through the Final Report review in June 2011. This has been a 9 year journey so far. The rationale for SWD support includes District Counsel legal certification (12 April 2011), policy compliance, recommended project is economically justified and environmentally compliant, project is consistent with the Environmental Operating Principles, project supports Strategic Campaign Plan Goals 2 and 3 and project has strong local sponsorship. SWD recommended release of the Report for State and Agency (S&A) Review, update the Review Plan for PED and construction, complete Chief of Engineers Report, develop strategy to move the project forward in a timely manner with adequate funding streams and capitalize on the Panama Canal expansion by 2014.

14. Agency Technical Review (ATR) was addressed by Johnny Grandison from the DDN-PCX. The project review was led by the DDN-PCX with additional reviewers in Savannah, New Orleans and Mobile Districts. The ATR was certified on 17 December 2009 with all 143 review comments being resolved and closed. On 2 June 2011 the ATR Backcheck and Limited ATR was certified with all 144 comments being resolved and closed. Cost engineering was part of the ATR team. On 3 June 2011, the Cost Estimating DX certified the cost estimate for the LPP and the NED Plans for both with and without channel widening.
15. Battelle began discussion of IEPR with a brief review history. The original report was submitted for IEPR review on August 20, 2008. Final comment-response results were documented on April 25, 2011. The IEPR Review Panel was comprised of experts in economics, plan formulation, hydrological engineering, geotechnical engineering and environmental processes. Dan Smith, Principal and Co-Founder of the Tioga Group (consulting firm specializing in freight transportation and logistics) and the economics expert was in attendance at the CWRB; the other four panel experts were on-line via telephone. There were 22 original panel comments. The back-check in February – March 2011 covered the original 22 comments and included 3 additional comments. Of the 25 Final Panel Comments, 13 were considered of high significance, 10 of medium significance and 2 of low significance. Based on the PDT's original responses, revisions made to the Report and PDT commitments to additional specific Report improvements, the Panel concurred with 21 of the 25 comments, including 11 of the 13 significant comments. The Panel reached concurrence on comments dealing with plan formulation, environmental issues and engineering issues.
16. Mr. Smith stated that revisions to the economic documentation and discussion in the report are insufficient to address all the Panel's concerns regarding the existence or size of the claimed NED benefits. The Panel eventually reached concurrence on several comments based on PDT commitment to Report revisions. However, four comments remain as non-concurs. Mr. Smith discussed the outstanding issues which relate to project benefits. The Review Panel considers that the project benefit-cost ratio depends on what appears to be overly optimistic commodity forecasts for crude petroleum, petroleum products and chemicals. The Panel stated that actual Freeport volumes of those commodities have been flat or declining. The Report forecast data and methodologies, in contrast, have the outward appearance of being selected to yield positive growth projections and artificially raise the BCR. SWG used Global Insight forecast and the Panel believes that AEO forecasts should

have been used. Mr. Smith stated that the AEO forecast shows a 12% drop in crude imports for the U.S. as a whole from 2007 to 2030, while the project forecast calls for a 33% increase at Freeport. Mr. Tab Brown asked how that forecast would provide total needed energy. Mr. Smith stated that for petroleum products, the report picks the higher U.S. forecast over the lower private one.

17. The Panel also believes that the claimed Lower Stauffer Channel container cargo benefits appear invalid. Mr. Smith stated that the Report did not document the status and future of the Velasco Terminal or the necessary non-project dredging costs from 18 to 40 feet. He also stated that there is no market analysis of demand for containerized cargo and the shipping scenario described in the report is unrealistic. In particular, there is no evidence of potential container cargo benefits for dredging from 40 to 45 feet, which is the basis of the report estimate; 18-foot depth is all the report says (Sponsor responded that the berth is currently at 45-foot). He also stated that there was no timeline for the Velasco Terminal in the report.
18. Mr. Smith also stated that the Upper Stauffer Channel dredging benefits rest on the unsupported opinion of vessel service yards hoping to recapture business lost to Galveston; there was no objective market analysis performed and there is no evidence for benefits that are based on small hypothetical time savings for vessels visiting Freeport instead of Galveston.
19. The Panel also states that there is no evidence of demand for greater vessel drafts for petroleum products or chemicals; vessels are not using the available draft – existing and designed vessels do not need existing 45 feet. Mr. Brown commented to Mr. Smith; how could that be if lightering is going on. The Panel stated that there is no interview with industry or experts.
20. The Panel also states that the report is missing critical reality checks and sensitivity analysis. They contend that there is no record of contact with decision makers in the relevant trades or industries to validate the report forecasts and scenarios. They contend that the report lacks meaningful sensitivity analysis of the serious risks and uncertainties inherent in the cargo forecasts and other key benefit estimation factors.
21. SWG stated that Global Insight forecasts are normally used by SWG. SWG further stated that DOE forecasts were checked and that the Global Insight forecasts are within the DOE's stated error band. The Review Panel's opinion is that DOE shows a decline in commodities based on the latest economic recession whereas Global Insight shows some increase in their forecasts. Global Insight trends contain past recessions. Mr. Dixon commented that we didn't do a good job with addressing the four to five outstanding IEPR comments. Ms. Marianne Matheny-Katz, OASA (CW) said that use of Global Insight was accepted Corps practice. SWG stated that Lower Stauffer Channel benefits are approximately 10% of the total project benefits; Upper Stauffer Channel benefits are approximately 1% of the total project benefits and petroleum products and chemicals are approximately 7% of total project benefits. If all of these benefits were removed from the project, which is unrealistic, the crude petroleum benefits only would have a BCR of approximately 0.96. As for sensitivity analysis, 16 sensitivity analyses were included in the appendix; 10 of them as a result of IEPR original comments. SWG stated that almost all of the sensitivities had BCR (benefit-cost-ratio) over 1.0.

22. Mr. Lee Ware of the Office of Water Project Review gave the final briefing. HQ reviews included the FSM on 6 July 2005, AFB on 3 April and PGM dated 17 July 2009, FRC held on 11 August 2010, draft report review (concurrent with public) 12 January through 11 February 2011 and PGM dated 8 March 2011, draft Final Report – 6 April 2011 with PGM 19 May 2011 and Final Feasibility Report/EIS with current review begun 14 June which is being completed by HQ team. Policy issues highlighted include Economic Analysis and Projections, Beneficiaries and Associated Project Costs, Agency Technical Review, Model Certification, Total Project Cost for Authorization, Datum Conversion and Cost Sharing.
23. Economic concerns were raised during policy review; including uncertainties of projection given the market conditions, effects of the oil spill, Panama Canal expansion, etc. The report was revised to address numerous economic comments through expanded discussion and multiple sensitivity analyses that help to address the uncertainties of forecasts relative to project justification. The concerns have been resolved.
24. The AFB and draft Report documentation did not clearly indicate the facilities benefiting from channel modifications and associated costs/assumptions for berth and bulkhead modifications. Additional information was included in the final Report that shows the locations of benefiting facilities and describes the berth dredging and bulkhead modification costs associated with the navigation improvements. The concern is resolved.
25. Review of the draft report package identified that ATR had not been conducted prior to final submission. The PCX coordinated an expedited ATR of the final Report and provided an updated certification on 2 June as part of the revised submittal. The concern is resolved.
26. The final report summary indicated that the DDNPCX approved the economic spreadsheet model on this study. Under prior guidance, PCXs were responsible for model approval or certification. However, recent ATR documentation did not clearly state that the PCX had approved the model for use and raised a policy question. Further investigation has concluded that the model approval process undertaken in 2009 had not been completed. The OWPR has requested that the model documentation be submitted to HQ for consideration by the Model Certification Panel in order to satisfy current requirements. Concern is being addressed and the S&A review should follow model approval.
27. The draft report included the associated project costs (Local Service Facilities and Navigation Aids) in the total project costs for authorization. The Report has been revised to include specific language on the project costs for authorization. Project costs and cost sharing was revised to include only the GNF and LERR costs. Concern is resolved pending some minor revisions.
28. The original work and report documentation was referenced to the local legacy datum MLT which is one foot lower than MLLW at Freeport. This was a concern relative to project depths for authorization, consistency with national datum standards, and application of cost sharing rules. The Report was revised to explain and reference both datum in key sections related to project description and recommendations. Blended cost sharing was revised based on MLLW. Concern is resolved.
29. The draft/draft final Reports incorrectly included associated costs in the cost sharing calculation. A calculation involving blended cost sharing by depth ranges also needed

clarification. The Freeport cost sharing is complicated based on the depth ranges of various channel, datum conversion, and the rules of LPPs. The Report was revised to address prior concerns on GNF, blended cost sharing, datum effects and LPP rules. Concern is resolved pending some minor revisions.

30. The HQUSACE Office of Water Project Review recommended contingent approval to release the draft Chief's Report, Feasibility Report and EIS for S&A review subject to economic model approval and document revisions reflecting current review of the Final Report.
31. The Board asked if the project would still require any lightering or if it would be eliminated. The answer was that some lightering would be needed on occasions. The question was asked if this met with the approval of the lightering industry; at some ports, the lightering industry does not like projects because of the losses to their business. SWG responded that the businesses have a different time horizon, typically looking at profitability within the next 10-15 years, whereas NED benefits look at a 50-year time horizon and look at national benefits.
32. MG Grisoli subsequently stated that the IEPR comments were not adequately addressed or presented at the CWRB and recommended that SWG should come back to HQ with information responding to the 5 bullets in the Battelle slides. He stated that the Board needs to feel comfortable with proceeding to S&A review and we are not prepared to address those 5 points here today. SWG has flexibility in the schedule to get this done. The IEPR issues/point should be addressed and presented to the Board in August. The presentation will be virtual. The Board will reconvene after all items are received to make a decision on release of the final Report for S&A review. Mr. Brown made a formal motion to reconvene for a decision. All Board members agreed.
33. Other questions from the Board included Mr. Ensich's question as to whether there any improvements to the GIWW with the widening project, address of climate change, relative sea-level rise, benefits that were foregone between the NED Plan and the LPP and whether there been any increase in alternative energy sources in the last 2-3 years. There are no improvements to the GIWW with the non-Federal widening project. The Report took climate change into consideration. Relative Sea-Level Rise is addressed in the Report and EIS. SWG will work on better explanation of LPP preference over the NED and foregone benefits. Alternative energy production has increased some in recent years and is expected to continue, but according to DOE, it is only expected to be a small portion of overall energy consumption.
34. Lessons Learned Discussion: Mr. Dixon asked if you could do it over again, could you do the study quicker? Ms. Laird said "No, three to four years because of the extensive detail and review required." BG Kula stated that the hard brutal facts are the need to make the study process faster and shorter. Ms. Laird stated that it never was the intent to conduct prolonged studies.