

**ACCOMPANYING TEXT**  
**ADDITIONAL SLIDES FOR TECHNICAL PRESENTATION**

Introductory Text for Slides 1, 2 and 3 – We have seen the slides showing the danger to Highway 1 in coastal Louisiana. This is the only major artery serving Port Fourchon, presently the most significant port serving the deepwater oil and gas industry. Oil and gas production from the deepwaters of the Gulf of Mexico is becoming more and more important to the nation's energy supply as these next few slides show.

Slide 1 – Just over the last seven years or so the amount of oil produced in the deepwaters of the Gulf have increased by over six times over what it was in the mid 1990's. It is now at around 300 million barrels per year production.

Slide 2 – The same dramatic trend is seen in the recent figures for gas production in the deepwater Gulf. Gas production in deepwater is now around One Trillion cubic feet per year compared to less than 200 billion cubic feet in the mid 1990's.

Slide 3 – This slide shows the same figures in terms of comparison to total Gulf of Mexico production of oil and gas. At the present time, deepwater oil production constitutes over 50% of all production in the Gulf while deepwater gas production constitutes over 20%. These percentages are expected to increase more significantly in the future as new leases are being offered in the deepwater areas and the nearshore leases are nearing the end of production.

Slide 4 – We have indicated that the pipelines carrying this production of oil and gas to Louisiana and to the rest of the nation are at risk due to coastal erosion. This slide indicates dramatically how important the maintenance of these pipelines are to the nation. Louisiana pipelines move 27% of the nation's crude oil supply to refineries in this and other states. This crude oil had a value of approximately \$15 Billion in 1999, probably considerably more at present. Louisiana's pipelines also move 32% of the nation's natural gas supply to domestic users in the US. This gas had a value of \$27 Billion in 1999, also probably considerably more now.

Introduction to Slides 5, 6 and 7 - During this presentation we have also indicated that the Gulf Intracoastal Waterway is at risk due to coastal erosion. Let me tell you how important that waterway is to the nation. The GIWW moves much of the oil and chemicals produced in the industrial south to the rest of the nation. Many of these raw materials and products are hazardous cargoes which we would not want to move on highways and rails which traverse our towns and cities.

Slide 5 – GIWW Tonnage – This slide indicates that the amounts of these cargoes have been relatively constant over the last ten years or so. The nation moves over 100 Million Tons of cargo over the GIWW, much of which are these hazardous materials – oils and many petrochemicals. The refining and chemical industry relies on the continued availability of the GIWW to move these raw materials and products safely and efficiently to production facilities and marketplaces.

Slide 6 – Fuel Efficient – Barge transportation on waterways such as the GIWW are the most efficient means to move large volumes of materials over long distances. This slide indicates how far you can move one ton of material per gallon of fuel used with barge traffic versus highway, rail and pipeline. Barge movement is over 8 times more fuel efficient than truck movement, 2 and ½ times more efficient than rail, and is slightly more efficient than movement by pipeline.

Slide 7 – Environmentally Responsible – Barge transportation is also an environmentally responsible way to move bulk cargoes over distances. This slide shows the emissions to the atmosphere of hydrocarbons, carbon monoxide and nitrogen oxides when moving cargo with barges compared to rail and truck transport. On a ton-mile transported basis, barge transport produces far less emissions of these air pollutants than equivalent transport by rail or highway. Moving cargoes by truck produces far greater emissions than by barge. Movement by rail is better than truck but still produces three to four times more of these pollutants than equivalent movement by barge on our inland transportation systems.

Slide 8 – Top Three Fisheries – Earlier in this presentation we talked about the value of the coastal wetlands and how dependent upon them were the numerous fish species inhabiting our coastal areas and Gulf of Mexico. There are a number of species that are commercially important to the State and which would be severely impacted if coastal wetland losses would continue at the present pace. This slide presents the value of the three most significant commercial fisheries in Louisiana in terms of annual volume. In the year 2000 the commercial catch in the state of white shrimp, brown shrimp and menhaden accounted for \$152, 96 and 68 Million, respectively.

Slide 9 – Commercial Fisheries Landings at Major US Ports – To see how the commercial fisheries catch in Louisiana compares to the rest of the nation and Alaska, generally considered the state with the greatest catch please consider this next slide. Louisiana ranks right up there with Alaska in terms of both total tonnage brought in to major ports and the dollar value of that catch. When one evaluates the catch brought into major ports Louisiana brings in 30% of the nation's catch, exceeding Alaska's 27%. Between the two states, 57% of the total tonnage is brought to major ports. On a dollar value basis of fisheries brought into major ports, Louisiana brings in about 16% of the catch while Alaska brings in about 20%.

Slide 9 (Alternate) – Commercial Fish Landings - To see how the commercial fisheries catch in Louisiana compares to the rest of the nation and Alaska, generally considered the state with the greatest catch please consider this next slide. Louisiana ranks second to Alaska in terms of both total tonnage brought to port and the dollar value of that catch. In the year 2000 Louisiana produced 15% of the total commercial fisheries production of the US in terms of tonnage and 11% in terms of total value.

NOTE: The difference in slides 9 and 9 (alternate) are that 9 depicts tonnage and value in fisheries catch brought in to “major ports”. Slide 9 (alternate) depicts state-wide comparisons between the two states and the rest of the nation. Obviously, Alaska fishermen bring in catch to many other locations other than just “major ports” thus making their statewide amounts much greater percentage wise.

Slide 10 – Potential Beneficial Uses of Mississippi River Sediment – The wetlands maintenance and/or restoration potential of the large quantities of sediment carried by the Mississippi River is enormous. We have already stated that the single largest cause of the coastal erosion problem in Louisiana, particularly, southeast Louisiana is that the Mississippi River was leveed to protect the populations of adjoining states from seasonal flooding events, some catastrophic. These levees also served to enhance the navigability of this largest river in the US. These levees, while certainly useful for flood protection and navigation, also served to contain the seasonal supply of fresh water and sediments to the coastal wetlands which allowed them to keep up with natural deltaic subsidence and sea level rise. This slide gives an idea of the potential for future use of these sediments for coastal restoration. One can calculate that if all the suspended sediment carried by the lower passes of the Mississippi River in an average year could be used beneficially for wetlands restoration (which of course they can't without diverting all of the flow) that approximately 30 square miles per year could be restored. This assumes that it would take the deposition of approximately 70 cm to “restore” a wetland that has converted to open water. At present, and as we have discussed, these sediments are generally being carried out into deep waters of the Gulf and no longer contribute to coastal restoration.

(Assumptions: Average annual suspended sediment loads are 18.2 million, 19.6 million and 39.2 million cubic yards respectively for Pass a L'Outre, South Pass and Southwest Pass. Sediments were assumed to have dry density of 100 pounds/cubic foot. The 70 centimeters to restore a wetland was obtained from: “Restoration of Wetlands Using Pipeline Transported Sediments”, Suhayda, J.N., et al, 1991.

Slide 11 – Comparison of Nitrogen Removal – Large scale diversions off of the Mississippi River can also assist in the lowering of the annually occurring hypoxic conditions in the Gulf of Mexico. It has been well documented that wetlands are efficient removers of nutrients from the water column. It can be calculated that a large “standard” 10,000 CFS diversion off of the Mississippi River, such as the Davis Pond Diversion Structure, can lead to the uptake of approximately 7 million pounds of nitrogen per year, preventing it from getting into the Gulf. To accomplish this same level of nitrogen removal at the farm level by constructing wetlands would require approximately 55,000 acres of wetlands constructed at a very conservative cost estimate of around \$22 Million.

(Assumption: \$400/Ac for constructed wetlands.)

Slide 12 – Flood Damages Prevented – It was just stated that the levees placed along the Mississippi River decades ago is generally considered to be the principle culprit in the coastal erosion problems facing this state. It was also stated that these levees were placed there in an attempt to mitigate the sometimes catastrophic flooding events which severely impacted the communities along its banks. This slide presents an assessment of the flood damages prevented by these levees. Just over the last 30 years or so, it is estimated that the MR&T project has saved over \$400 Billion in flood related losses in the US. This estimate obviously far exceeds the best estimates at this time of the expense of the coastal restoration program envisioned for Louisiana.

Slide 13 – Mississippi River Total Tonnage – Not only has the MR&T Project saved the country over \$400 Billion in estimated flood-related losses but it has also proven to be a boon to the inland waterway navigation system in the US. This slide shows the steady rise in tonnage moved

on the River since 1950 to a point where approximately 5 billion tons of cargo were moved in the 1990's alone.