

Barataria-Terrebonne National Estuary Program
Management Conference Meeting #68 Minutes
Plantation Suite – NSU Student Union
9:30 a.m. – Thursday, August 7, 2014

BTNEP Staff					
X	Andrew Barron	X	Richard DeMay	X	Alma Robichaux
X	Matt Benoit	X	Delaina LeBlanc	X	Jenny Schexnayder
X	Dean Blanchard	X	Michael Massimi	X	Natalie Waters
X	Joe Dantin	X	Kristy Monier		
Management Conference Member			Member		Alternate
American Sugarcane League				Flattery McCollum	X Herman Waguespack John Constant
Bayou Lafourche Freshwater District				Hugh Caffery	Benjamin Malbrough
Coalition to Restore Coastal Louisiana				Carey L. Perry	Hilary Collis
Coastal Conservation Association of LA				John Walther	
Coastal Protection Restoration Authority				Jerome Zeringue	X Kyle Graham Robert Routon Karim Belhadjali Darin Lee Kenneth Bahlinger Bren Haase
Commercial Fisheries				John Tesvich	Peter Vujnovic Clint Guidry
Greater Lafourche Parish Port Commission				Chett Chaisson	X Davie Breaux Joni Tuck
Iberville Parish				John Clark	
Jefferson Parish				Marnie Winter	X Jason Smith Lily Zhou
LA Association of Conservation District				Brad Spicer	Brad Lanute
LA Association of Levee Boards				Dwayne Bourgeois	
LA Department of Ag & Forestry				Joey Breaux	Carrie Castille
LA Dept. of Culture, Recreation and Tourism				Debra Credeur	Karen Leathem Linda Smith
LA Dept. of Economic Development				Paul Sawyer	Anne Perry
LA Department of Education				Ann Wilson	
LA Department of Environmental Quality				Christy Rogers	Gregory Waldron
LA Department of Health and Hospitals				Chasity Cheramie	Kathy LeBlanc
LA Department of Natural Resources			X	Charles Reulet	X Don Haydel Sarah Krupa Robert Williamson
LA Department of Wildlife and Fisheries				Marty Bourgeois	X Brady Carter
LA Forestry Association					
LA Independent Oil & Gas Association				Randy Robichaux	
LA Landowners Association				Tim Allen	

LA Mid Continent Oil & Gas Association		Mike Lyons		Ed Landgraf
LA Oil Spill Coordinators Office		Brian Wynne	X	David Gisclair Karolien Debusschere
LA Science Teachers Association	X	Shannon Lafont		Tera LaPrarie Nathan Cotten
LA Wildlife Federation		B.J. Barney Callahan		Rebecca Triche
Lafourche Parish		Archie Chaisson, III	X	Charlotte Randolph Amanda Voisin
LSU Ag Center & LA Sea Grant		Rex Caffey		Alan Matherne Julie Falgout
LUMCON	X	Nancy Rabalais		John Conover Murt Conover
National Marine Fisheries Service (NMFS)		Rick Hartman		Rachel Sweeney
Nicholls State University	X	Gary LaFleur		Quenton Fontenot Zack Darnell
Plaquemines Parish		P.J. Hahn	X	Albertine Kimble Krista Clark
Point Coupee Parish		J.A. Rummler		
Sassafras LA		Alex Naquin		
South Central Planning and Development Commission		Kevin Belanger Jo-Anna Jones	X	Martha Cazaubon Cullen Curole Simmons Caesar
South Louisiana Economic Council		Vic Lafont		Simone Maloz
St. Charles Parish		Earl Matherne		Kim Marousek
Terrebonne Parish Consolidated Government	X	Al Levron	X	Nic Matherne James Miller
The Nature Conservancy	X	Jean Landry		Nicole Love Karen Gautreaux
U.S. National Park Service	X	Angela Rathle		Allyn Rodriguez
US Coast Guard	X	Charles Reed		
US Corps of Engineers	X	Susan Hennington		Barbara Kleiss Mark Wingate Cheri Price
US Environmental Protection Agency	X	Doug Jacobson		
US Fish & Wildlife Service		Ronnie Paille		Bill Vermillion
USDA/NRCS		Quin Kinler	X	John Boatman Ryan Johnson Alton James Andrea Moore Harris Russell Richard Scott Edwards
USGS		Scott Wilson	X	Phil Turnipseed Kate Spear Susan Testroet-Bergeron Melissa Collin Cole Ruckstuhl
Guest Organization		Guest		
Assumption Parish Homeland Security and Emergency Preparedness	X	John Boudreaux		
Barataria-Terrebonne Estuary Foundation	X	Earl Melancon		Michele Beary

Daily Comet	X	Lex Wilson		
Ducks Unlimited	X X	Leslie Suazo Joe Fifer		
Moffatt & Nichol	X	Maarten Kluijver		
Royal Engineering	X X	Shelley Sparks Kirk Rhinehart		
South Louisiana Wetlands Discovery Center	X	Jonathan Foret		
UNO – CHART (Center for Hazards Assessment, Response & Technology)		Kristina Peterson		
Gulf of Mexico Program		John Ettinger Ben Scaggs John Bowie		
	X	Kerry St. Pé		

1. Management Conference members and guests were asked to introduce themselves by stating their name and affiliation. Those who had not checked in with Jenny at the door were asked to do so.

READING AND APPROVAL OF THE PREVIOUS DATE MEETING

A motion was made by Susan Testroet-Bergeron and second by Nic Matherne to dispense with the reading of the May 8, 2014 minutes and to accept them as submitted. Motion carried.

2. PROGRAM ACTIVITIES

- A. Personnel Changes – Kerry St. Pé retired July 11, 2014. Dean Blanchard was appointed Interim Director effective July 14, 2014. Consideration of applications for Program Director begins on September 1, 2014. Al Levron reminded all conference members of the opportunity to outreach all agencies for any individuals interested in applying for the position of Director and urged them to submit applications.

- B. Presentations/Exhibits/Field Trips/Volunteer Events

A few program activities were highlighted. Richard DeMay gave an update on Piping Plover Surveys being done for CPRA in conjunction with restoration work of the Caminada Headland. Piping Plover are an endangered species that spend much of their winter time in the Northern Gulf of Mexico. Data is collected twice a month during the winter season which begins in late November and extends through May. BTNEP is collecting information to define the number of birds, the habitat that they are utilizing, and how the restoration project may be impacting their distribution.

Kerry’s Retirement Celebration was a huge success. The Kerry St. Pé Barataria-Terrebonne National Estuary Program Endowed Scholarship in Marine Biology at Nicholls State University will be available for the 2014 fall semester.

Alma Robichaux talked about a busy summer schedule with program sponsored workshops. Camps/Workshops included the Junior Master Naturalist Program through the Jean Lafitte National Park and Preserve, the National Park Service Summer Camps, “From H-2-0,” and “WETSHOP.” The Summer Camps and the Junior Master Naturalist program are for students, WETSHOP and “From H-2-0” are for educators/teachers who take back information to their students. WETSHOP shares information among teachers. Teachers hold their own WETSHOP workshop about wetland issues in their home parish by inviting 20 teachers to attend. Many more students can be reached that way.

This year we were also able to do a school-wide environmental project. We are gearing up for Wetland Youth Summit scheduled for August 22-23, 2014. Flyers were provided and the event was featured in *What Now Magazine*. Alma encouraged the management conference to outreach to high school students 9th-12th grade.

The 2017 State Master Plan meetings have started and Michael Massimi talked about BTNEP's role. He reminded everyone that the plan has to be updated every five years. The Framework Development Team has had roughly a 25% turnover since 2012 and BTNEP was invited once again. He discussed the improved models of the planning tools still in place. The process will remain the same. The projects that didn't get selected last go round will probably not be considered but there is a project solicitation program. Individuals, parishes and/or other agencies can submit new project ideas. The next Framework Development Team meeting is scheduled for December and will have an accelerated meeting schedule up until 2017. Darin Lee added that although new projects would be considered, the emphasis this time would be on implementation of projects rather than on new projects. Timing and implementation and how the integration of projects affects the other are the focus of 2017 efforts. The deadline is August 21st to submit projects. Michael stated that a lot of the modeling work was being done by the Water Institute of the Gulf. Discussion followed regarding modeling and the idea to integrate them so that they run in a continuous environment.

The BTNEP Volunteer Program continues to be successful. Joe Dantin stated that they have had approximately 10 events with major focus being on the NSU Farm infrastructure improvements as well as Lake Fields restoration projects. Joe hoped to have more information at the next meeting.

Dean covered Items C., D., and E., on the agenda. He explained the program's process of compiling activities to be reported to EPA. Staff activities are submitted weekly to EPA. Weekly activities are compiled for the Management Conference Agenda and the quarterly Management Conference Agendas and Minutes become the semi-annual report. Nancy Rabalais added that BTNEP, as a division of LUMCON, has to do a Louisiana Progress Assessment Report (LaPAS).

C. Media Interviews

All media events were listed in the agenda.

D. Meetings

All program meetings were listed in the agenda.

E. Projects Status

All projects initiated and completed were listed on the agenda.

3. SCHEDULE OF NEXT MEETING DATE

- Reminders – November 6, 2014 – Plantation Suite @ NSU Student Union
- Approved – February 5, 2015 – Plantation Suite @ NSU Student Union
- May 7, 2015 – Plantation Suite @ NSU Student Union
- August 6, 2015 – Plantation Suite @ NSU Student Union
- November 5, 2015 – Plantation Suite @ NSU Student Union

4. DISCUSSION ITEMS

A. Bayou Corne Sinkhole Update – John Boudreaux, Director of Homeland Security and Emergency Preparedness for Assumption Parish

John began his presentation by reminding everyone that August 3rd was the two-year anniversary of the sinkhole. He reviewed the timeline of events from the May 30, 2012 report of bubbling in Bayou Corne through the failure of Oxy Cavern 3 in mid-September and elaborated on each. He included an image using Virtual Louisiana showing over 100 bubble site locations. Bubble sites are still being found with the latest reported two days prior indicating that the natural gas collected in the water aquifer is still venting. They have drilled vent wells and have vented over 34 million cubic feet of natural gas from the aquifer. This continues today with about 35 million cubic feet a day vented from the water aquifer. The sinkhole was a result of a breach on the sidewall. He explained a slide showing sinkhole depth changes. The deepest point collected three weeks ago was 275 feet at its deepest point. Results are posted on the DNR website. Preliminary results indicate the sinkhole to be approximately 38 acres. He talked about the established mandatory evacuation that went out a mile in each direction from the sinkhole and included approximately 159 homes. He felt that 80% of the population heeded the evacuation warning and very few have returned. Those that did not evacuate are still there. He was asked about relocation assistance and he confirmed that residents did receive assistance. Camp owners did not. Seismic equipment was explained. Dr. Horton with University of Memphis was originally hired by USGS but currently through DNR to monitor permanent equipment installed by Texas Brine. He showed video of the cleanup crew in an area that was later claimed by the sinkhole. He explained that air monitoring was done wirelessly through the RAE system that transmits to a control center. Texas Brine was ordered to put air monitoring systems in homes. At one point, there were over 400 instruments in the community that were transmitting 24 hours a day. Geoprobes were put in by both the State as well as by Texas Brine. Some of these geoprobes still have pressure and gas on them and used as an evaluation tool to see if gas is migrating to the surface. Vent well location sites were shown with green indicating those still producing gas and red indicating no gas production. He noted that the area still indicating gas was also the area where evacuation orders were not heeded. The Napoleonville Salt Dome was shown. The dome is approximately three miles long and one mile wide with 59 caverns, one of which failed. Some are still in commercial use. In order to discover if there were any additional void spaces near the sink hole, 3D seismic tests were done. He included a slide showing drill holes that were dated March 14, 2013. He also provided a video dated June 30, 2013 used as documentation of evidence where a 500 foot surveyor's tape with a crowbar attached to the end was used to measure the depth and he had not reached the bottom. A 750 foot lanyard was then purchased through a DNR contract. This video was later posted online in response to Texas Brine questioning the accuracy of these measurements. He was happy to report that he is back to his regular surveyor's tape with deepest point at 275 feet today. On August 21, 2013, he received a call from Dr. Horton stating that he was seeing activity at the site. A video was taken at that time. As the video played he talked about this video going viral and noted the changes in the waterline marked on the trees behind those that were being swallowed by the sink hole. Scientist studied that video frame by frame. The importance about what was being seen was that the trees went straight down and the video was used to help determine the slope. Since then, that area has been isolated.

His last slide provided public information sites. These sites are included below.

- Web Site www.assumptionla.com
- Blog Site <http://assumptionla.wordpress.com/>
- YouTube <http://www.youtube.com/user/assumptionla>
- Flickr <http://www.flickr.com/photos/assumptionoep/>
- Facebook <https://www.facebook.com/pages/Assumption-Parish-Police-Jury-OEPNewspaper>

Questions and answers followed.

John responded to a question by Matt Benoit regarding the size of the sink hole. John explained that in order to be considered part of the sink hole it had to have dropped 10 feet; however, there are approximately 55 acres with 2 feet of subsidence. There is a distinction of using a 10 foot contour line and a 2 foot contour line. He confirmed that it was 3-4 acres originally but approximately 38 acres.

Leslie Suazo questioned whether the side breach was man made or a naturally occurring breach. John could only say that it was speculated that Texas Brine mined too close to the outer wall of the salt because of an existing unknown ledge. Doug Jacobson questioned if any seismic activity had been done prior to mining. John explained that if yes, it would have taken place in the 1960s or 1970s. John did confirm that from emergency response view, it was a man-made disaster. Kerry asked if he had reviewed the seismic results. John responded that he would leave the findings and interpretations up to the experts. Darin Lee noted that a model is on the DNR website. Doug asked if drilling was away from the closest resident. John replied that the closest resident not bought out was 1,600 feet from the sink hole. This led John to address the issue with Highway 70 used by approximately 9,000 vehicles per day. The detour for cars is 46 miles and for anything larger than five tons is 60. It is very important that the highway be protected. DOT has instruments along the highway to monitor any changes as the loss of this highway would be another disaster. Earl Melancon asked if the state or parish addressed this issue in regards to revising the permitting process and/or better monitoring of the people who use these salt domes. The parish has no regulatory authority. Discussion followed regarding the permitting process. They discussed the legislation that was passed to prevent this type of disaster from happening again. Kerry asked who would be overseeing the activities around these salt dome sites and discussion followed. Al Levron asked if he anticipated material settlement once the hole filled. He confirmed that he thought it would but the timing was unknown. Recent information showed sediment in the bore hole with depth tagging indicating that it was pretty full. John Bowie asked about the source of the natural gas. John explained what was suspected. Alma expressed concern for the residents. A class action lawsuit was recently settled with fairness hearings the following week. There were a total of 95 residents affected and all but 11 were involved in the lawsuit. Gary LaFleur had questions regarding the toxicity affecting the cypress forest. John felt that the salinity and depth of the water were playing a role in the loss of additional trees. He confirmed that the salinity gets to gulf levels but didn't have numbers available. Michael Massimi asked that he reiterate the fraction of the cavern that has been filled. John explained that because of debris in the cavern it was hard to determine. Al Levron asked why the top had not been opened to allow it to fill. John replied that attempts were made to depressurize the cavern but found that they were not successful. Kerry asked about the turbidity of the water and use of a remote camera. John responded that he could see down approximately 10 feet. John replied that Texas Brine is currently having money difficulties so it wasn't an option. Assumption Parish had a court date Monday for a settlement hearing in attempt to recoup their losses of 344,000.00 dollars, the sheriff's office approximately 300,000 and the State at 14 million. Al Levron thanked John for his presentation.

B. "Atchafalaya Long Distance Sediment Pipeline Feasibility Study – Identification of Borrow Sites" –Maarten Kluijver, Moffatt & Nichol (45 minutes)

Nic Matherne, Director of Coastal Restoration for Terrebonne Parish Government gave a brief introduction and background information on the concept of a long distance sediment transport system from the Atchafalaya River to areas of need in sediment starved portions of the Terrebonne Basin.

Maarten Kluijver started his presentation by explaining that the general objective of this study was to find suitable material for marsh restoration from the Atchafalaya River, dredge the material and transport it by pipeline. This study was divided into two separate efforts. Part I was to identify sediment resources within the Atchafalaya River and Part II the assessment of transporting the material to the areas of need. Moffatt and Nichol was selected for Part I and CB&I was selected to analyze Part II. Part I of the project was broken down into two phases. Phase 1 consisted of identifying and evaluating all potential Atchafalaya River sediment sources/borrow sites. Phase II analyzed the performance of and refill rates for the selected borrow sites. Thirty – two potential borrow sites were evaluated based on vicinity to the point of intake, distance being transported, funding, quality of sediment, navigation issues, levee avoidance and pipeline crossings, etc. Two sites were selected for further investigation Horseshoe Bend (West) and Crew Boat Cut (East) with East being the larger. Questions remain regarding how quickly the borrow site would refill and would the project be sustainable. In order to answer that question, they set a few boundary conditions in terms of what the total project volume demand would be. The Parish and CB&I looked at an approximate volume necessary for restoration. It was determined that the project requires 50 million cubic yards of dredged material available from the identified borrow source. He then talked about Phase II – the refill rates of the two sites. A hydrodynamic and morphological modeling of the river was done to analyze historic flows and sediment transports within the river

to forecast the refill rate. It was assumed that the material would be borrowed at a rate of approximately 5 million cubic yards per year. He reviewed the findings of the hydrodynamic module including boundary conditions for flow, the average discharge hydrograph, and mean flows at Morgan City. He explained that there is a lot of variability by nature with high flow years and low flow years. To test their models, three water years were simulated with 2008, 2009 and 2010. They looked at simulated years versus observed water years to see what the model would produce. The question then became how well did this relate to observations in the year, and how well it simulated reality. Satisfied with model behavior they moved on to how the sediment was being captured by the borrow site and how the borrow site would fill in. He showed an animation of the borrow site slowly capturing sediment from water year 2007, a very low flow water year, to 2008 and then 2011, a peak water flow year to get a better understanding of how the amount of infill changes over various years. They could not predict flow into the future but they could review the discharge record of the Atchafalaya for a good correlation of the total amount of sand that passes through and to the total amount of refill volume. They used this relationship to typecast if this borrow site was in place in 1975. With a good discharge record, they could estimate the amount of sediment passing through the area and how much would fill in. To capture the natural variability that occurs within the Atchafalaya River, they provided hypothetical total volumes of infill for historic years back from 1975 to 2013. On average, the total volume of infill starting with a clean borrow site was 5.6 million cubic yards per year. Going back to the initial assumptions, could they sustain a pipeline that needs about 5 million cubic yards per year with this borrow site of 5.6 million cubic yards? It seems like the borrow site is very feasible. The remaining question is how would the borrow site be utilized to get to a total of 50 million cubic yards. Hypothetically, if they dredged an optimistic 20 million cubic yards in the first year followed with a number of low flow years which would mean a slower infill, the total of 50 million cubic yards for the total project demand could still be reached in about 9-10 years. With high flow years it would be reached much faster. They did similar calculations for the other borrow site and it was determined that borrow site "East" could meet the project demand and was recommended for selection with initial volume of 19.5 Million cubic yards, annual average infill volume of 5.6 million cubic yards and a estimated project duration of 6.5 years for a total demand of 50 million cubic yards. Army Corps dredging material could be used also but is seen as lagniappe as the frequency of dredging is uncertain as well as the funding sources. Optimization of borrow site geometry was recommended to better capture high sediment loads, gradual infilling, minimize impacts on currents and flow fields, minimize impacts on currents and vessel traffic and downstream geometry and gradients in velocity. This concluded his presentation and he called for questions.

Darin Lee asked if they had studied the impacts of the project on the Atchafalaya Delta and its growth. Maarten stated that they had not but there were two things to consider. The total transport load in the Atchafalaya River for one year is in the neighborhood of 30 million metric tons while the area captured by the pit is a small fraction of the total sediment load of the river. Also, while referring to a previous animation he noted that as the flow leaves the borrow site on the southern end that there is also erosion as the river is trying to reestablish some of its sediment load. Nic Matherne added that the Army Corps and Wildlife and Fisheries were brought in early on to review data regarding habitat and that neither entities indicated cause for concern regarding the growth of the delta. He also indicated that it would be more beneficial to use the sediment in areas where communities would be impacted. Discussion followed.

Dean Blanchard asked for confirmation that the navigation channel was on the outside and not where the dredging was occurring. Maarten confirmed that the Corps of Engineers was in the process of changing the channel to Crew Boat Cut. Dredging was completed last week and navigation will be realigned and federally authorized to make Crew Boat Cut the new channel within the next two months.

Nic Matherne explained that they were able to move ahead with this project with the assumption that it was potentially one way of achieving the goals of the lower Atchafalaya diversion of 150,000 cfs that they didn't want to see go any further. They were looking for a more productive and less damaging way to achieve their goals. Moving forward to the 2017 plan, several iterations of this idea of constructing marsh further eastward utilizing this concept will be presented as new stand-alone projects for review.

Nic reiterated some of the things learned from Maarten's presentation and noted that he would be presenting for CB&I. CB&I was charged with the task of determining how to effectively get sediment from the Atchafalaya

River to sediment starved areas of Terrebonne Parish. He covered general project goals some of which were to incorporate engineering, economics, and environmental principles; minimize the risk of execution; incorporating and/or bringing in consultants from the dredging industry; and to use cost saving methods while remaining consistent with the goals of the Master Plan and the Parish.

Nic covered the Scope of Work and coordination for Phase 1 of Moffatt and Nicholl and CB&I. A desktop analysis was done using the best available data to develop the actual pipeline design criteria. They looked at cultural resources, stakeholder involvement and utilizing existing pipeline corridors. Everyone affected by this project, like Corps of Engineers, Wildlife and Fisheries and the Port of Morgan City were brought in from the very beginning.

His presentation covered the pipeline corridor and included the intake structure, pipeline right-of-way and design criteria. Other components were the placement areas, cost analysis, and recommendations. Four different placement areas were reviewed for the study and were looked at because they were CWPPRA or Master Plan projects. Some of these had been left out of the State Master Plan because they were too costly. They looked at those with more cost effective processes in mind and possibly making it through for the 2017 Master Plan. They looked at areas around Bay Raccourci, South of Falgout Canal near the Houma Navigation Channel and in the eastern portion of Terrebonne which is the biggest area of need. They also looked around Terrebonne Bay and further inland around the Wonder Lake area. All of these areas are very sediment starved and disappearing rapidly toward the east. He reminded everyone that the farther east the more expensive it is to do restoration.

He moved to talking about the intake structure. The location of the highest priority pipeline corridors Columbia Gulf Pipeline and the Tennessee Gas Pipeline intersect near the Horseshoe Bend and Crew Boat Cut area. This really drove the decision making on the sediment resources side. They knew that they would need a permanent or semi-permanent intake structure there to be utilized by cutterhead and hopper dredges. From there they had to determine the best pipeline corridor to use. He talked about the pros and cons of the pipelines considered to determine which one best fit the goals and objectives of the project. Tennessee Gas was selected because access was better, there were fewer physical obstructions, closer proximity to the marsh creation sites and it met the Parish and Master Plan's objectives much more effectively. The Tennessee Gas Pipeline is approximately 42 miles, it is a 24 inch gas pipeline 8 to 12 ft deep, the existing right-of-way is 40 ft, the channel varies in width from 60-100 ft. with a depth between 2-6 ft. and 29 pipeline crossings.

Nic reviewed Four Pipeline Segments: Segment 1 – Bay Raccourci, Segment 2 – Falgout Canal, Segment 3 – Lake Tambour also the largest, and Segment 4 – Wonder Lake, further inland. They identified cost by segment. There were 42 miles of the existing right-of-way with approximately 14 miles of additional needed. Funding, sediment availability, and parish and state goals will largely drive the decisions behind the projects chosen. Each segment may require combinations of pipeline placement. Submerged, at grade, floating or legacy landform (ridge feature) were placement options considered. Nic felt that these placement types may be used in combination. He talked about the production rate and the life of the pump itself. The pipeline will be 3/4" steel pipe 30 – 36 inches in diameter with two rotations throughout the life of the project. It will require two booster pumps between 7,000-8,400 spaced 5 miles apart being fueled by natural gas. Natural gas is more expensive initially to retrofit pumps but less expensive in the long run because of natural gas availability in the area rather than having it brought in. Nic showed a slide with the total acreage of marsh creation for each of the four sites and explained that the estimation was made based on the fill volume of approximately 30% to 60% coverage.

His next slide showed a 2007 State Master Plan – Project Map and compared it to the limited number of marsh creation projects in 2010. It was felt that they could not effectively and productively do a 150,000 cfs diversion in western Terrebonne Parish and were hopeful for a stand-alone project specifically geared for long distance sediment pipeline transport in the 2017 Master Plan. He showed the restoration and marsh creation projects in the 2012 Master Plan for Terrebonne Parish with three of the four segments currently included.

In designing their fill areas, they looked at different types of placement including traditional hydraulic placement, spray dredging and slurry placement. Confined and/or semi confined will be the preferred placement approach. Healthy and sustainable marsh is +1.0 NAVD. The target recommended design elevation for

placement areas was +3.0 ft. to +3.5 with settlement taken into account. It is estimated that they can build on average with 50 million cubic yards of sediment 7,500-8,000 acres of land with the entire life of the pipe.

The Bay Raccourci project is projected to cost approximately 506 million dollars. They expect to spend \$5 a cubic yard from the borrow site to the intake structure and \$5 a cubic yard to get it through the system or \$10/cubic yard and a total of \$500 million. Added to that cost is the 6 million dollar intake structure bringing the cost up to \$506 million. He added the cost of the pipeline which was expected to range from \$85-135 million. Floating pipe had the highest price range and would be used in emergency need only due to the high cost. The total pipeline cost for all four segments would range from \$300-350 million if they were to ask for funding in one shot. They do not expect to do that. It would be a sequence of projects over time. If containment dikes were needed, it would drive up additional costs expected to be anywhere from \$5-20 million. With all costs included for Segment 1 to construct 75,000 acres of marsh, the total cost is \$613 million. They do have several projects that could help share the cost. He named several ridge projects, a marsh creation project in the vicinity and the funding that is assumed for that lower Atchafalaya Diversion. There are ways to find the funding and justify the project. Segment 2 around Falgout Canal is expected to cost approximately \$800 million and for the other two approximately \$2.5 billion. Nic reminded everyone that in the 2012 Master Plan that there were projects costing \$150-200,000 per acre. For Segment 1 they were looking at \$100,000 -125,000 per acre. When segmented out into smaller projects, he said it starts to make sense.

Recommendations from the feasibility study were using Crew Boat Cut (ATCH-137E) as borrow area, using cutterhead dredge, intake structure in the Horsehoe Bend vicinity, Tennessee Gas Pipeline corridor, 42 miles of trunk lines, 15 additional R-O-W, 10 booster pumps, a combination of four alternative pipeline placement methods, and traditional hydraulic placement with a combination of confined and unconfined dike.

The entire project would be about \$3.5 billion, but again, they were not going ask for funding all at once. Segment 1 could be completed in 6-7 years. This information was presented to CPRA and determined that there was potential because the numbers were favorable enough on the per acre side to expend more CIAP funding to develop it further. They have had one meeting between the parish, engineers, and CPRA. Another meeting will take place once they receive feedback from that meeting. They did identify several points needing clarification. He felt that the two western most projects were cost effective projects compared to other Master Plan projects and may have to concede that this is not the way to go for Eastern Terrebonne. He called for questions.

David Gisclair made the suggestion to use one inch pipe as the first segment would be used for the entire life of the project. He said, it may add to cost on the front end, but would save in the long run. Nic reminded him that it was an assumption that they would be able to construct more than one segment.

Michael Massimi asked if anyone remembered the cost of the Bayou Penchant Diversion (150,000 CFS) in the 2012 Plan. This figure was not available but was later determined to be \$783,000 million.

John Bowie stated that pipeline companies and land owners have specific agreements for that use and questioned whether or not this would be a problem. Nic replied that Segment 1 is owned by Apache, Conoco Phillips and Continental Land and Fur Company and all have been involved from the beginning and are very supportive. He added that Kinder Morgan owns a pipeline and stressed a 25ft leeway. John also asked if they considered having a major pipeline company own and operate the pipeline. Nic replied that it was uncertain as to who would own and operate the pipeline. Darin Lee confirmed that ownership/maintenance of the pipeline has always been problematic and discussion followed.

5. NEW BUSINESS

There was no new business.

6. ADJOURN

The meeting adjourned at 11:45 a.m.