

Goals:

- Develop Pump Station alternatives for 1000 to 1500cfs expansion
- Minimize operation and maintenance costs of the proposed facility
- Provide options with redundancy and reliability
- Establish schedule and plan for moving forward

Early Tasks Completed:

- Site Survey, including property research and bathymetry of river
- Geotechnical testing, water column sampling, and sediment sampling
- Hydraulic modeling (3D) of the Mississippi River
- 1D model of the bayou to figure out the sediment in bayou, and increased maintenance with the sediment
- Survey of other facilities to see how they operate

Pump Station Recommendations:

- Mixed axial flow pumps with vertical gear motor, which is best type of impeller for this application
- 60" pump discharge -250 CFS
- Open steel structure with reinforced concrete structure
- Operations and electrical in enclosed air condition environment
- Pile supported structure – Spiral welded pipe
- Back-up power
- SCADA System
 - Instrumentation and controls; Simple user interface; River and bayou levels for operation
 - Remote control and monitoring; Alarms for system failures
 - Programmed to maximize siphoning and reduce energy costs
- Overhead crane
- Truck access bridge; Truck or front-end loader for debris pickup and bulkhead installation
- Bulkheads for maintenance
- Bar screen for solids

Intake Options:

- **Option 1** – 1000 CFS with piped intakes -Reduces debris maintenance - No sediment reduction into bayou
- **Option 2** – 1000 CFS with forebay option -Reduces sediment by 40% -Increased maintenance and capital cost

Mr. Grandal stated that the maintenance is part of the cost taken into consideration for the forebay. They did an analysis on how much sediment accumulated over a year, and priced out the maintenance of that. They looked at what erosion we had, and what effects this had inside the river to see if there would have to be any maintenance there. We concluded that the piped option was the better option.

Mr. Grandal showed a graph of the water levels down the bayou from Lockport to Donaldsonville. He advised that the dredging that was designed for 1000cfs works, and you have more or less the same water level. He stated that 1500cfs would be about 1½ ft. above the water level that it is right now.

Re-designed Sediment Basin for all options:

- Will be optimized based on selected flow
- Total costs of \$6 to \$8 million

Goal: Reduce O & M

- Structure Protection – Dolphin Piles
- Sediment Pipeline to dispose dredge material
- Outfall Structure – Concrete Weir structure to regulate and normalize flow to reduce erosion

Mr. Grandal advised that they used a present worth analysis to work the O & M into the total cost so that we are comparing total capital cost, but also the present day worth based on a discount rate. We used a fifty year design life in our analysis. Mr. Grandal reported that Jason Kennedy is working on the design of the sediment pipeline that will easily get dredged material from the sediment trap, pump it right over the levee, and into the river so we do not have disposal and hauling charges.

Mr. Grandal stated that they identified the properties that would potentially be required based on the different options, and that is all detailed in the report.

Cost Estimates and Schedules: Capital Costs

Option 1 - \$44.8 Million Construction Costs

- 1000 CFS Pump Station Facility. No Future Upgrades or Reliability

Option 2 - \$60.2 Million Construction Costs

- 1000 CFS Pump Station Facility. Future Upgrade to 1500 CFS with reliability

Option 3 - \$64.3 Million Construction Costs

- 1000 CFS Pump Station Facility. Future Upgrades to 1500 CFS with Reliability with 2 added bays for Future Reliability or Upgrade

Option 4 - \$79.2 Million Construction Costs

- 1500 CFS Pump Station Facility with Reliability. Future Upgrades to 2000 CFS

Mr. Grandal stated that their recommendation is Option 2 with the piped intake and the two extra pumps for redundancy. In the future, we could get up to 1500cfs. The report has detailed information on this.

Commissioner Jake Giardina asked if the cost is per 1000cfs, and Mr. Grandal answered yes. He stated that this is based on fifty years. Commissioner Jake Giardina asked how does this compare to our operation and maintenance today, and Mr. Malbrough stated that we have \$400,000.00 budgeted for maintenance.

Vice-Chairman Gene Harrell asked if the present pump station will be moved out of production after the new station is completed, and Mr. Malbrough answered that we would run the existing station at least as long as it makes sense to operate. Vice-Chairman Gene Harrell stated that if we go with the eight pump option we are talking about 2500cfs, and Mr. Malbrough advised that is right if you take into consideration the existing station forever.

Commissioner Chris Domangue asked if the redundancy pumps can be added later, and Mr. Grandal answered that it would be an option. Commissioner Chris Domangue asked how much are the pumps per unit, and Mr. Malbrough answered about one million per pump that we just added to the pump station.

Commissioner Jake Giardina stated to Mr. Grandal that he is not comparing apples to apples with the figures for the maintenance cost. Mr. Grandal advised that he does not have it in the presentation, but it is in the detailed report. Mr. Malbrough asked Commissioner Jake Giardina if he wants to see not just the comparison of these options but also want to show it as it relates to our cost to operate the existing facility today. Commissioner Jake Giardina advised that we need to compare units to units.

Commissioner Jake Giardina asked if we have enough revenue coming in to afford any of the options presented. It is good to look at money out there but we need to look at the cost of owning and operating the new station.

Commissioner Jake Giardina stated that if you put your vertical support to close then during high water stages you get driftwood built up around there, and you get tremendous force added to that building. You also get a velocity increase along the levee side with the turn in the river.

Mr. Malbrough reported that on the weir removal project we are working with Royal Engineers to optimize the location of the water control structure. We ran some scenarios, and looked at the resulting water elevations when the structure would be closed. We ran the analysis at the water plant in Napoleonville, and the bayou dropped down to 2½ ft. Now we are looking at moving the structure further south.

Mr. Malbrough advised that we are eight months into the original Cooperative Endeavor Agreement for Friends of Bayou Lafourche, and we need to discuss an extension to the agreement.

Mr. John Lafargue, Friends of Bayou Lafourche, reported that the District has funded \$48,000.00 for the Friends of Bayou Lafourche. Friends of Bayou Lafourche received \$32,000.00 in grants. He advised that they have a lot of momentum going for the Friends of Bayou Lafourche. He stated that with that momentum we had a bit of a setback. He stated that Cyndi Guion has resigned because she needs to help her husband with his business. He stated that we have a lot of gratitude for Cyndi because she really is a detail expert. We would not be in the situation that we are in now as far as all of the assistance that we had from her.

Mr. Lafargue advised that part of the request for the extension of the CEA is to replace Cyndi. We have someone we considered initially in our search for an executive director that is back in play. He stated for that person to come on they would want some kind of continuity. He advised that the Friends of Bayou Lafourche Board is asking the Bayou Lafourche Fresh Water District Board for an extension of the CEA through December 2018 at \$6,000.00 per month.

Mr. Malbrough stated that he believes Friends of Bayou Lafourche is still a very viable organization. There has been a lot of buzz lately with the work we have been doing, and opening up the bayou for people to utilize it. Mr. Malbrough stated that he recommends extending the agreement through December 31, 2018.

Moved by Commissioner Jake Giardina, seconded by Commissioner Eli Miles, Jr. and unanimously approved to extend the Cooperative Endeavor Agreement for Friends of Bayou Lafourche for \$6,000.00 per month until December 31, 2018.

Mr. Malbrough reported that the governor signed the capital outlay bill for \$765,000.00, which will be used to build the pump station project in Donaldsonville that would prevent the flooding on St. Patrick Street. It is cost share so the District would have to put up 25%.

Vice-Chairman Gene Harrell asked for any public comments, and there were none.

Moved by Commissioner Francis Richard, seconded by Commissioner Jake Giardina and unanimously approved the meeting adjourned at 6:20 p.m.

Gene Harrell, Vice-Chairman

Greg Nolan, Secretary/Treasurer

