**MINUTES**
**TECHNICAL COMMITTEE MEETING**
**FAIRFIELD JOINT WATER SEWER SERVICE**
**OCTOBER 13, 2021**

**Present:** Kyle Crager, Chairman; Jason Taylor, Brad Caulder.

**Others Present:** John McMeekin, C.D. Rhodes, Patti L. Davis, Scott Elliott, Ty Davenport, Chris Clauson, Bill Bingham, Charles Boykin.

The Fairfield Joint Water Sewer Service met for a Technical Committee Meeting on October 13, 2021, at 4:00 p.m. at the Fairfield County Government Complex Building. In accordance with the South Carolina Code of Laws, 1976, Section 30-4-80 (e), as amended, the following persons and/or organizations have been notified of the time, date and location of this meeting: The Independent Voice of Blythewood and Fairfield, The Country Chronicle and four hundred ninety-two other individuals.

1. **CALL TO ORDER**
   Chairman Crager called the Technical Committee Meeting to order at 4:01 p.m.

2. **APPROVAL OF AGENDA**
   Motion made by Commissioner Taylor, seconded by Commissioner Caulder, to approve the agenda. ***The motion carried unanimously 3-0.***

3. **RECEIVE INFORMATION AND DISCUSS PROJECT DELIVERY METHOD FOR PLANT DESIGN RFP**

   Chairman Crager requested for everyone to introduce themselves for the benefit of the audience, then requested for Mr. Rhodes to give a short synopsis of the Commission. Per Mr. Rhodes, the Fairfield Joint Water Sewer System has been in the planning stage for a number of years with the purpose being to build a wastewater treatment plant. This is a vehicle for Fairfield County, Winnsboro and hopefully Ridgeway to come together to accomplish that purpose. We are at the cusp of being able to start this project. The County, through the Dominion settlement, has roughly $46M to put toward this project. Funding has historically been the insurmountable obstacle, and that obstacle has now been surmounted. The nuts and bolts are now being put together with the relationship between all the parties. One of the critical issues that must be thought through is how the plant will ultimately be built. This is a critical issue in building anything of this magnitude, but in this case, because the participation agreement is being worked out, the way the relationship is memorialized is especially important. The Technical Committee has been charged with giving this consideration and receiving input from other professionals. It will ultimately then make a recommendation to the Joint System as to which delivery method should be

chosen. It will then be up to the Joint System to make that determination. Chairman Crager stated American Engineering has been invited here today to do an overview of the objectives and how they envision doing this with recommendations, pros and cons. Chairman Crager also stated, when he was tasked with this committee, he also reached out to Mr. B. J. Christman from Crowder Construction to also attend the meeting. Crowder Construction is a large Southwest regional alternative delivery water/sewer firm, and they specialist in this type of construction. Per Mr. Rhodes, this would not preclude this company from possibly participating in the future as we are seeking the perspectives from different professionals. One of the reasons Mr. Rhodes wanted Mr. Crager in this role is that he has the knowledge base to help filter out the information that is being received and put it in context which will ultimately aid in the decision-making process. This is an educational effort as we are seeking out different perspectives, which is what anyone would do in this situation. The meeting was then turned over to Mr. Bill Bingham, President of American Engineering.

Mr. Bingham stated his firm has been engaged by the Fairfield Joint Water and Sewer System to provide preliminary engineering services up to the point of attempting to get an NPDES permit approval for the project. For this meeting, he was asked to prepare a few slides on construction project delivery methods and explain the difference between the various types of construction projects. Before Mr. Bingham was in the consulting business, he was a contractor and built water and sewer plants all over the state. The company then morphed from building to actually designing. At that time, progressive design build was not acceptable in the public realm, so the firm decided to go more toward engineering. However, he does bring a construction background to engineering which most engineers do not. In the beginning, an owner would hire a master builder, and the master builder concept was in place when the pyramids were built. This was all encompassing in that the owner would hire the master builder, and the master builder was tasked with the building. The master builder held the expertise to know how to make the project happen. This concept was engaged all the way up through the Renaissance. These people would go through programming, design, construction, commissioning and close out. All the owner needed to do was hire a master builder who would then get the project done. Over time, things have gotten more complex. The contractor must deal with trade contractors, the design consultants must deal with sub consultants at all parts of the design process, and this is not an optimum way for construction. Basically, a project has four main components which are fundamental to how a project might work out: quality, cost, risk and schedule. In an exceptional project, the attempt is to push these together and align them to maximize high quality, low cost, reasonable schedule and a very low risk. This is what we are after, so we need a better project delivery method than a master builder. Mr. Bingham then showed slides representing the spectrum of the current delivery methods, to include design bid build, which is the traditional method, and then

moving all the way to construction manager at risk, design build, design build operate, design build finance operate and design build finance operate and maintain. When universities build dormitories, they use a public private partnership, so basically someone else builds the dorm and someone else finances. We will concentrate on the other end of the spectrum. Project delivery methods applicable to this type of work fall into four types. Each of these have nuances that make them unique, but they are all part of a continuum, more and more open in how things will work.

- Design Bid Build: This is the traditional method for construction, and everyone is used to this method. When a house is built, one would go to different contractors to get prices. From a contract perspective, the owner is the lead who is hired and contracts with an engineer. That same owner will then contract with a contractor once it is bid. There is a contractual relationship between the owner and the engineer and between the owner and the contractor. The engineer then oversees the contractor. In this realm, the engineer has sub consultants, the contractor has subcontractors and they all coordinate. This is known as competitive or fixed price bids. The key is the engineer is working for and responsible to the owner. There will be estimates prepared along the way by the engineer, and then there will be a lump sum bid on bid day. This is chosen because it is tried and true and everyone is used to this method. It is also a competitive bid model. By law, the project would be awarded to the lowest responsible responsive bidder. Being responsible is being qualified to do the job and responsive is representing compliance with the documents set forth without qualification. This is also not necessarily done in the least cost way, but instead, it is done in the least overall cost way. This method is also generally very precise. Market timing is critical in construction due to the material supply shortage and cost. Mr. Bingham suggests, if at all possible, to hold off due to the current market. In the traditional method, there is core team communication, basically the stakeholders communicate with the owner, the subcontractors communicate with the builder and the sub consultants communicate with the designer. The idea in some of the other methods on the spectrum are to intercommunicate, to create an integrated design team; therefore, everyone is communicating with everyone. It is a collaborative design process.
- Construction Manager at Risk: In this realm is the next step from Design Bid Build. The relationships are very similar, except this is not a contractor with low bids, but instead, this is a construction manager who will be part of the team once a certain stage of design is reached. This is similar in contract style to Design Bid Build because the engineer will contract directly with the owner, the construction manager contracts directly with the owner and the engineer will oversee what is going on with the contract manager and verify quality assurance, etc. Generally, the price will not be

known yet. Typically, the CM comes in to be able to provide cost support to the engineering design team and work with them in that integrated team methodology. At about 30% design drawings, then the CM starts to participate to get some general pricing together. He will start giving feedback to the engineer on what that design may cost. As the design gets closer and closer, the GMP (guaranteed maximum price) can come in either at 70 – 75%, 90% or at 100% completion of the design drawings. This method is chosen because it integrates the contractor in the design process, and there is cost control during the design phase. When the engineer is working and engaged by an owner, then the owner is the engineer's client, and the focus is whatever is the best protection. When an engineer is employed by a CM, he is working for the CM. There is also generally a clause in the contract that allows an off ramp for the CM where he can exit out and the design can be finished and put out for bid.

- Progressive Design Build: This method is a little different in that the owner has a contract with the design builder, and this contract is to provide a design and construction. The engineer and the subconsultants and subcontractors are all working for the design builder. Generally, the owner contracts with an owner's engineer, an owner's advocate or an owner's representative, with the purpose being someone is working on the owner's behalf to protect their interest. There must be a very preliminary set of guidelines to give the design builder for what the design is going to be, the size, parameters, etc. (performance specification). Within this method, there are two different types of design build: Fixed price and progressive. Fixed price is where the design builder from the technical information will give a fixed price or guaranteed max price. The progressive design build will work on the design for a while to get to a set of drawings and then a price range is developed. The procurement comes at the end of the design definition, and then there will be a fixed price from the design builder. He will then execute the contract from this point. Procurement is difficult because it will entail the contractor or design builder exerting quite a bit of effort to be able to arrive at a fixed price, and this can be quite expensive. There will be proposals based on the design definition. The owner's engineer will still come up with the design definition, and once this is done, the design builder will be brought on. However, at this point, there will not be a price. The price will come further down the line once there are enough drawings developed in order for them to accurately price the job. There is phase 1, which is what will occur from the time that the design definition is given until the time they come up with a final price, and then phase 2 will be the execution of the contract from that point to finish the design and complete the contract. One of the big selling points for design build is single point accountability. If there is an issue, the only party to point the finger at is the design builder. In some instances, the construction can be started before design is complete. This would be a

little difficult in this instance due to the permitting requirements. The design process would need to be pretty far along before construction could be started. There is also a large component of linear construction, that being pipeline. The design piece of the pipeline is not generally that limiting, and instead, it would be the easement acquisitions, right-of-way issues, etc. There would be a reduced risk of claims and litigation because there is a single point of accountability under this method. There would be several methods of procurement, one being qualifications-based selection, much in the same way an engineer would be chosen. The advantage of this would be reduced procurement time. This would be the advantage to the owner-engineer role in that they could advise and lead through the process of selection.

- Fixed Price Design Build: In this method, there is a realm of how price would be impacted. The project must first be defined, and it can come anywhere from pre-design to final design. The advantage is certainty with a known price. There will be detailed technical information about the proposal when the price is given. The disadvantage is it will take a lot of procurement time because the fixed price will have to be developed. The owner would not have a lot of say once the procurement is over. There is not necessarily an impetus for life cycle cost considerations. This method is based on one side by more of a performance-based spec for what the design is going to be, to identify the parameters but not the specifics, and on the other side by a prescriptive based fixed price where what is wanted is specifically said. Performance based is the maximum potential for cost savings because of innovation. The prescriptive based will give substantial control over the project design and the cost. The proposal selection can emphasize the project design build costs, and there is a high level of project definition at the time the contract is signed. The disadvantages would include the potential for decreased participation due to the higher preparation costs, which will limit the pool of proposals. Not every contractor is suited for design build. There will be very limited owner input in the design after the proposal. The procurement duration is longer in prescriptive-based because the drawings must be developed. The RFP is also more costly because there must be a higher-level design. The design risk is not necessarily clearly assumed by the design builder because a large portion would have been designed before being handed off. Best value selection is balancing between qualifications of the worker and the cost, overlapping as much as possible low cost and high qualifications. If possible, price certainly is needed at the time of the proposal, detailed technical qualifications, and depending on the cost component, there would still be collaboration between the parties. Disadvantages would be best value would take a large investment in the procurement operation with greater effort to review the proposal, and the life cycle cost considerations

are limited. Again, the engineer works for the design builder, not for the owner.

Mr. Bingham stated he has now given the construction methods. Within any method, there is a discrete CM at risk contract that is done by the Construction Manager Association. There is a discrete design build contract that is done by the Design Build Association of America. Within the contract, there are a lot of variables, so one can go as little or as far down that road as they are comfortable going. What impedes the most in the public realm is not having a competitive bid on something of this magnitude.

Commissioner Taylor thanked Mr. Bingham for a very thorough presentation, and given this situation, what would he recommend as a successful method. Mr. Rhodes stated to give a little more context, it seems we are going a little further down the design road before this decision must be made, and how does this influence the route we should take. Mr. Bingham stated no matter what, nothing can be done until the NPDES permit is received. This is what gives the right to build the plant. Until we get to this point, bringing on a contractor is premature unless everything is in and we are just about to get the permit. Nothing that will be done in this realm will have to be done anyway in order to hire a design builder. They must have these design parameters, and this will only be known by securing the NPDES permit. We have waste load allocation and have requested an updated waste load allocation, but this is not the NPDES permit. This permit is what officially gives the limits we must deal with from a design standpoint. Everything done to this point will not make any difference on which method is chosen. Mr. Bingham again stated he has been involved with this a long time, and when speaking of a $40M plus project and if it will be hired as a design builder, this will be limited to fairly large contractors. His experience has been that contractors who do plant work do not usually do line work. Commissioner Taylor asked if it would be split into two projects at this time, and Mr. Bingham stated it could be, but this would make the value of the treatment plant less. The bigger the project, the more advantageous because of the complexity. In a linear project of this nature with 20+ miles of line, generally it is broken into smaller contracts so that there is better participation from smaller contractors. It is a different realm for pump stations or lines or the actual plant. From day one, cost has been a concern, and Mr. Bingham does not see how alternate delivery will improve the cost. One of the issues Mr. Rhodes foresees is not seeing a clear source of funds above the level that is known. There needs to be a comfort that the project can be delivered at the known price. In this case with the current market, Mr. Bingham does not see how compressing the schedule is an advantage because the price would be too high. Commissioner Taylor inquired concerning the timeline on the NPDES permit. Per Mr. Bingham, this would depend on when it is submitted, but the review time can be 90 days to get a draft, then it has to go public. Once a draft is received, it should be

okay. Public comment will be for 30 days before the final document is done. Before it is accepted, there must be a 208 approval. One of the first questions will be is it in conformance with the 208 Plan. Per Mr. Rhodes, the best case scenario for the 208 amendments would be maybe the January, more likely February, meeting of the COG to make that formal request. Per Mr. Bingham, if the design build method is chosen, we would have until then to pull the trigger. If going more traditional, then design can start at any time because it must be finished before a price will be known.

Chairman Crager inquired if we are bound to any methodologies through our procurement, and per Mr. Rhodes, we are not. The procurement code for the Joint System allows for any alternative project delivery method that is contemplated under the state procurement code, and it includes all of these. From the procurement standpoint, we are not limited. Chairman Crager inquired if we find that we are above the allocated funds, are there any limitations with outside funding agencies concerning the alternative delivery methods. Per Mr. Bingham, the state does allow alternative delivery methods, but this would probably need to be identified quickly. If SRF money was going to be attempted, they would need to know that up front before getting too far down the road to make sure of compliance.

Commissioner Caulder inquired of the flexibility for the design with so much line, would the options for actually building the plant be limited considering the set amount of funds in the design build method. Per Mr. Bingham, typically this is more open and there is flexibility, but more will need to be done up front to give the design builder the correct information about what is wanted.

Chairman Crager inquired what has been seen in the last decade for trends of the delivery methodology. Per Mr. Bingham, there is not a lot of plant work going in. He was involved with Crowder with Richland County's Broad River Plant, and that was design bid build. Mr. Bingham was the CM, another engineer handled it and Crowder was the contractor. About 10 years ago, Cayce's 25 MG plant was a design bid build around $52M. A CM at risk for a fixed price was done in Eastover with a 1 MG plant. Commissioner Taylor stated it would be good to speak with some of the people from these various methods to get the pros and cons. The one thing Mr. Bingham cautions with design build is to not think of it as hire and forget. At the end of the day, you will own it and you need somebody watching over the project. Chairman Crager stated he would offer, in our position with no experience or an established set of standards or preferred equipment vendors, this is a setup for a potential nightmare. If we were more established, we would know what to expect. Commissioner Caulder stated this was the basis for his question in that this would be more of a standard type of project with set money, and we can nail down what we will get, what we should expect and need. There should not be a lot of variables included. Chairman Crager stated the obstacle is

not knowing today if there is that delta where we need to be moving forward, that delta being what is allocated versus what we may need. Commissioner Taylor stated as quickly as we want this project done, it may be wise to have more time in the hope that the market can readjust. As previously discussed, it would also be wise to go ahead and get a line in the ground to at least have that part done, even if temporary, so that when companies are looking at us, they would be looking into the existing sewer plant to provide sewer and then do something later to put the line to the new plant. Mr. Bingham agreed in that right now the market is so volatile, and we are having problems with pipeline contractors because they cannot even get firm bids for pipe that will last the duration of the bid time.

Chairman Crager then asked for thoughts from Mr. Christman from Crowder Construction. Mr. Christman stated he was asked to come concerning some of his company's experiences. Crowder is a longtime Carolina contractor beginning in 1947. The company does somewhere in the neighborhood of $200M per year in the water/wastewater market. This year, approximately 70% of their revenue will be in the alternate delivery space, either CMAR or design build. He congratulated everyone for making the commitment to invest in the community from the infrastructure standpoint. This is a big investment, and no one in the country is making this type of investment without first having this discussion about project delivery methods. The information shared by Mr. Bingham is good and accurate information, and there are nuances with all of it. A couple of things that jump out to Mr. Christman include: The biggest nuance between design bid build, CMAR and either progressive or lump sum design build is in the design bid build world and the CMAR world. There would be a contract with the engineer and with the contractor. In that situation, the owner guarantees the accuracy of the drawings through something called the Spearin Doctrine. This means when the documents put together by the engineering partner goes out to bid, we would be saying it is 100% accurate. Anything that comes up in that set of documents that is different and creates a change is a potential for a change order. Crowder has been doing design build for around 20 years, and there has never been a contractor generated change order on a design build project. Mr. Christman has been fortunate enough to be involved in somewhere between $800M and $1B worth of ultimate delivery work, each time helping the owner get through the process on the first time. If that road is chosen, someone must be chosen with the experience of being there before to be sure an informed decision is made. Qualification based selection is very important. The process to pursue that work can be an expensive process. In the design build methodology, the design builder guarantees the accuracy of the drawings. If there is an issue that comes up, it would be up to the design build team to solve that problem to the owner's satisfaction. The design build world is very much qualification based. These teams do not want a bad design build project on their record. Mr. Bingham's point about increased costs right now is real. There are cost pressures being

experienced across the board. One other thing that jumped out to Mr. Christman is the owner loses control in design build. Other points discussed, such as life cycle costs may not be competitive, he does not necessarily agree with. If life cycle cost is important to the client, then they will perform life cycle cost analysis as part of the design. The owner retains all control of all decisions until a price is determined. South Carolina is a little different in that there is sole source. The owner would retain and actually gain a lot more control with the design build process. One important nuance of CMAR is the SC Procurement Code does allow the CMAR to self-perform the work, so you can choose a sub performing CMAR. This process can be open book, bid out and can give the competitiveness. The biggest challenge, as Mr. Bingham stated, is with an elected body and how to get them on board with the process. From a cost and schedule perspective, there is a ton of research and studies that show the design build process can be more cost effective and faster. Mr. Christman feels the design build process would probably offer a different solution that may be more cost effective at the end of the day. Mr. Rhodes inquired when the design build is less effective, where does it commonly fall apart. Mr. Christman stated this would be in procurement. If an owner puts together a bad procurement, they will not get a good project. If the owner has good advisers going in and they put together a good RFQP document, they follow the Design Build Institute of America's best practices and a good selection is made, more than likely there will be a good project. Mr. Christman's company counts on prior clients being contacted and saying the company did a good job. Every company wants this kind of rating, and it is important.

**Commissioner Taylor left the meeting at 5:10 p.m.**

Mr. Rhodes and Chairman Crager stated this has been very educational. Chairman McMeekin suggested the Committee be sure to give any visuals to Vice Chair Roseborough. He also agrees it is a very unusual time with the supply chain issues. Mr. Bingham would imagine in the next year that things should start to stabilize somewhat. Mr. Christman also feels it will stabilize, but he does not feel it will go back to where it was. Chairman Crager inquired concerning the overall timing of trying to time the market and time the needs of the project. Mr. Rhodes stated from his perspective, this is being taken up at the right time. There is a lot of work to do and lots of different moving parts. The deal is not going to come together next week or next month, but will take several months to get there, so this can be given the thought and contemplation that it deserves. Chairman Crager further questioned the scope of work approved for American and what is seen that this will entail. Per Mr. Bingham, it will be preliminary information such as design development type things. The ask at the time was how to integrate the existing infrastructure so that we can turn pump stations around, which was not in the original scope. We must now look at this infrastructure to turn it around and make it work. What was looked at was a

pump station for the Mega Site with a line going to a treatment plant. Now, we are expanding it to start identifying pieces of property, due diligence, etc. The idea was to get it to a point to identify the site, the preliminary layout and technical parameters if you choose to go some other alternate delivery method.

**4. ADJOURN**

At 5:26 p.m., it was moved by Commissioner Caulder, seconded by Commissioner Crager, to adjourn. ***The motion carried.***

Patti L. Davis

PATTI L. DAVIS
SECRETARY

KYLE CRAGER
TECHNICAL COMMITTEE CHAIRMAN